

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.280509	.16285	7.86	0.000	.9613288 1.599689
ereri_cde	1.286075	.1633268	7.87	0.000	.9659603 1.606189
ereri_intref	.0006149	.0066894	0.09	0.927	-.0124961 .0137258
ereri_intmed	-.0025149	.011318	-0.22	0.824	-.0246978 .0196681
ereri_pie	-.003666	.0031756	-1.15	0.248	-.0098901 .002558

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zplpbp
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9064.8284

Iteration 1: Log likelihood = -8973.2121

Iteration 2: Log likelihood = -8964.2305

Iteration 3: Log likelihood = -8964.2091

Iteration 4: Log likelihood = -8964.2091

Refining estimates:

Iteration 0: Log likelihood = -8964.2091

Cox regression with Breslow method for ties

No. of subjects = 36,441 Number of obs = 36,441

No. of failures = 968

Time at risk = 442,700.115

Log likelihood = -8964.2091

LR chi2(9) = 201.24

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.29155	.163769	11.60	0.000	1.992035 2.636099
zplpbp	.9201195	.0359642	-2.13	0.033	.8522633 .9933783
_infectionburXzplpbp_000	1.096064	.0784742	1.28	0.200	.9525616 1.261185
AGE	1.03384	.0130239	2.64	0.008	1.008626 1.059684
SEX	.7505706	.0489141	-4.40	0.000	.6605709 .8528323
NonWhite	1.010971	.178926	0.06	0.951	.7146435 1.430171
householdsize	.9269398	.039873	-1.76	0.078	.8519939 1.008478
SES	.8264635	.0408486	-3.86	0.000	.7501574 .9105316
LE8_TOTALSCORE	.9990165	.0003563	-2.76	0.006	.9983185 .999715

-> Model for the mediator

Iteration 0: Log likelihood = -51582.12
 Iteration 1: Log likelihood = -51582.12

Linear regression (Maximum Likelihood)
 Number of obs = 36,441
 Wald chi2(7) = 250.70
 Log likelihood = -51582.12 Prob > chi2 = 0.0000

zplpbp	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.021415	.0152302	-1.41	0.160	-.0512657 .0084356
AGE	-.0021851	.0009947	-2.20	0.028	-.0041348 -.0002355
SEX	-.0232188	.0105539	-2.20	0.028	-.0439041 -.0025336
NonWhite	.0843392	.0252707	3.34	0.001	.0348095 .1338689
householdsize	-.0027914	.0048029	-0.58	0.561	-.0122049 .0066222
SES	-.0087502	.0079198	-1.10	0.269	-.0242727 .0067723
LE8_TOTALSCORE	-.0008006	.0000563	-14.23	0.000	-.0009109 -.0006903
_cons	.5723312	.0718919	7.96	0.000	.4314258 .7132367
sigma2					
_cons	.9931402	.0073575	134.98	0.000	.9787198 1.007561

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.283967	.1630103	7.88	0.000	.9644729 1.603462
ereri_cde	1.287431	.1630994	7.89	0.000	.9677625 1.6071
ereri_intref	-.0030497	.0035295	-0.86	0.388	-.0099675 .003868
ereri_intmed	-.0021989	.0034335	-0.64	0.522	-.0089284 .0045305
ereri_pie	.0017844	.001522	1.17	0.241	-.0011987 .0047675

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpltp
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04643 2.216 -.07512 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9192.681
Iteration 1: Log likelihood = -9103.0918
Iteration 2: Log likelihood = -9094.9751
Iteration 3: Log likelihood = -9094.9583
Iteration 4: Log likelihood = -9094.9583
Refining estimates:
Iteration 0: Log likelihood = -9094.9583

```

Cox regression with Breslow method for ties

No. of subjects =	36,788	Number of obs =	36,788
No. of failures =	981		
Time at risk =	446,887.655	LR chi2(9) =	195.45
Log likelihood =	-9094.9583	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.237588	.1592465	11.32	0.000	1.946261 2.572522
zpltp	1.05184	.0423451	1.26	0.209	.9720351 1.138197
_infectionburXzpltp_000	1.010761	.072179	0.15	0.881	.8787466 1.162608
AGE	1.035427	.0130016	2.77	0.006	1.010255 1.061226
SEX	.7369238	.048678	-4.62	0.000	.6474346 .8387823
NonWhite	1.073969	.1825687	0.42	0.675	.7696483 1.498619
householdsize	.940161	.0391155	-1.48	0.138	.8665385 1.020039
SES	.8223635	.0404338	-3.98	0.000	.7468133 .9055565
LE8_TOTALSCORE	.9989382	.0003579	-2.96	0.003	.9982369 .99964

-> Model for the mediator

Iteration 0: Log likelihood =	-50382.967	Number of obs =	36,788
Iteration 1: Log likelihood =	-50382.967	Wald chi2(7) =	3818.32
Log likelihood =	-50382.967	Prob > chi2 =	0.0000

	zpltp	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0541939	.0144749	-3.74	0.000	-.0825642 -.0258237
AGE		.0120751	.0009453	12.77	0.000	.0102224 .0139278
SEX		.3949673	.0100317	39.37	0.000	.3753055 .4146291
NonWhite		-.0305628	.024038	-1.27	0.204	-.0776764 .0165507
householdsize		-.016212	.0045732	-3.55	0.000	-.0251752 -.0072487
SES		.0925966	.0075299	12.30	0.000	.0778383 .1073549
LE8_TOTALSCORE		.0020305	.0000534	38.00	0.000	.0019257 .0021352
_cons		-2.295626	.0683305	-33.60	0.000	-2.429551 -2.161701
sigma2						
_cons		.9059428	.00666798	135.62	0.000	.8928506 .9190349

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.231562	.1588672	7.75	0.000	.9201883 1.542936
ereri_cde	1.235686	.1589959	7.77	0.000	.9240593 1.547312
ereri_intref	.0032957	.0087478	0.38	0.706	-.0138496 .020441
ereri_intmed	-.0046838	.0077103	-0.61	0.544	-.0197958 .0104282
ereri_pie	-.0027353	.0022948	-1.19	0.233	-.0072331 .0017625

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zplxdc1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8795.2547**
 Iteration 2: Log likelihood = **-8785.8666**
 Iteration 3: Log likelihood = **-8785.8323**
 Iteration 4: Log likelihood = **-8785.8323**
 Refining estimates:
 Iteration 0: Log likelihood = **-8785.8323**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	192.73
Log likelihood =	-8785.8323	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.246307	.1631045	11.15	0.000	1.948333 2.589851
zplxdc1		.9102907	.0407596	-2.10	0.036	.8338084 .9937883
_infectionburXzplxdc1_000		1.006772	.0839167	0.08	0.935	.8550302 1.185443
AGE		1.037679	.013199	2.91	0.004	1.01213 1.063874
SEX		.7499687	.049365	-4.37	0.000	.6591963 .8532407
NonWhite		1.114869	.1897349	0.64	0.523	.7986587 1.556275
householdsize		.9389227	.0396859	-1.49	0.136	.8642744 1.020018
SES		.8307654	.041422	-3.72	0.000	.7534206 .9160502
LE8_TOTALSCORE		.9992792	.0003595	-2.00	0.045	.998575 .999984

-> Model for the mediator

Iteration 0: Log likelihood = **-50377.573**
 Iteration 1: Log likelihood = **-50377.573**

Linear regression (Maximum Likelihood)	Number of obs =	35,573
	Wald chi2(7) =	196.19
Log likelihood =	Prob > chi2 =	0.0000

	<u>zplxdc1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0340095	.0154478	-2.20	0.028	-.0642867 -.0037323
AGE		.0017803	.0010073	1.77	0.077	-.000194 .0037546
SEX		.0260925	.0106891	2.44	0.015	.0051423 .0470427
NonWhite		.0274473	.0255459	1.07	0.283	-.0226218 .0775164
householdsize		.0056586	.004865	1.16	0.245	-.0038766 .0151938
SES		.0031347	.0080171	0.39	0.696	-.0125785 .018848
LE8_TOTALSCORE		.0007244	.0000569	12.73	0.000	.0006129 .000836
_cons		-.5186411	.0728006	-7.12	0.000	-.6613275 -.3759546
sigma2						
_cons		.9944871	.0074568	133.37	0.000	.979872 1.009102

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.251683	.1626134	7.70	0.000	.9329669 1.5704
ereri_cde	1.241394	.1623027	7.65	0.000	.9232864 1.559501
ereri_intref	.0036184	.0135266	0.27	0.789	-.0228933 .0301301
ereri_intmed	.0034693	.0058329	0.59	0.552	-.007963 .0149015
ereri_pie	.0032017	.0021108	1.52	0.129	-.0009354 .0073389

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zplxna4
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9036.4379

Iteration 1: Log likelihood = -8947.8411

Iteration 2: Log likelihood = -8937.873

Iteration 3: Log likelihood = -8937.8193

Iteration 4: Log likelihood = -8937.8193

Refining estimates:

Iteration 0: Log likelihood = -8937.8193

Cox regression with Breslow method for ties

No. of subjects = 36,352 Number of obs = 36,352

No. of failures = 965

Time at risk = 441,650.762

LR chi2(9) = 197.24

Log likelihood = -8937.8193

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.25111	.1616342	11.30	0.000	1.955594 2.591282
zplxna4		.9491089	.036667	-1.35	0.176	.8798963 1.023766
_infectionburXzplxna4_000		.9586859	.0683854	-0.59	0.554	.8336006 1.102541
AGE		1.032264	.0130052	2.52	0.012	1.007086 1.058071
SEX		.75909	.0495067	-4.23	0.000	.6680042 .8625957
NonWhite		1.052614	.1814344	0.30	0.766	.7508472 1.475663
householdsize		.9331566	.0396995	-1.63	0.104	.8585027 1.014302
SES		.8183038	.0404091	-4.06	0.000	.7428154 .9014636
LE8_TOTALSCORE		.9989522	.0003565	-2.94	0.003	.9982537 .9996512

-> Model for the mediator

Iteration 0: Log likelihood = -51354.345
 Iteration 1: Log likelihood = -51354.345

Linear regression (Maximum Likelihood)
 Number of obs = 36,352
 Wald chi2(7) = 455.65
 Prob > chi2 = 0.0000
 Log likelihood = -51354.345

	zplxna4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0118052	.0152238	-0.78	0.438	-.0416434 .018033
AGE		-.0031758	.0009938	-3.20	0.001	-.0051236 -.001228
SEX		-.0210601	.0105368	-2.00	0.046	-.0417119 -.0004084
NonWhite		-.0668971	.0252497	-2.65	0.008	-.1163855 -.0174087
householdsize		-.005659	.0048767	-1.16	0.246	-.0152173 .0038992
SES		-.0156157	.0079031	-1.98	0.048	-.0311055 -.0001259
LE8_TOTALSCORE		-.0011174	.0000561	-19.92	0.000	-.0012274 -.0010075
_cons		.7989384	.0718907	11.11	0.000	.6580351 .9398416
sigma2						
_cons		.9875936	.0073254	134.82	0.000	.9732362 1.001951

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.260361	.1618515	7.79	0.000	.943138 1.577584
ereri_cde	1.249533	.1613885	7.74	0.000	.9332169 1.565848
ereri_intref	.0083103	.0125828	0.66	0.509	-.0163516 .0329721
ereri_intmed	.0019014	.0029717	0.64	0.522	-.003923 .0077258
ereri_pie	.0006168	.0009172	0.67	0.501	-.001181 .0024146

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zplxnb2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04654 2.216 -.07562 500.4

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9164.2794
Iteration 1: Log likelihood = -9076.102
Iteration 2: Log likelihood = -9067.3296
Iteration 3: Log likelihood = -9067.2924
Iteration 4: Log likelihood = -9067.2924
Refining estimates:
Iteration 0: Log likelihood = -9067.2924

```

Cox regression with Breslow method for ties

No. of subjects =	36,718	Number of obs =	36,718
No. of failures =	978		
Time at risk =	446,086.297	LR chi2(9) =	193.97
Log likelihood =	-9067.2924	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.215893	.1614487	10.92	0.000	1.921015 2.556035
zplxnb2	.9924857	.0388744	-0.19	0.847	.9191444 1.071679
_infectionburXzplxnb2_000	1.026096	.0702982	0.38	0.707	.8971636 1.173556
AGE	1.036238	.0130426	2.83	0.005	1.010987 1.062118
SEX	.7466181	.0484465	-4.50	0.000	.6574547 .8478738
NonWhite	1.039916	.1791179	0.23	0.820	.7419678 1.45751
householdsize	.9391044	.0392441	-1.50	0.133	.8652531 1.019259
SES	.820485	.0403205	-4.03	0.000	.7451447 .9034428
LE8_TOTALSCORE	.9990557	.0003581	-2.64	0.008	.9983541 .9997577

-> Model for the mediator

Iteration 0: Log likelihood =	-51043.978	Number of obs =	36,718
Iteration 1: Log likelihood =	-51043.978	Wald chi2(7) =	2174.15
Log likelihood =	-51043.978	Prob > chi2 =	0.0000

	zplxnb2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1149686	.0147848	7.78	0.000	.0859909 .1439462
AGE		.023278	.0009658	24.10	0.000	.0213852 .0251709
SEX		.0742953	.010251	7.25	0.000	.0542037 .0943869
NonWhite		.0969359	.0245302	3.95	0.000	.0488575 .1450142
householdsize		-.0194506	.0046692	-4.17	0.000	-.0286021 -.0102991
SES		-.0519079	.0076895	-6.75	0.000	-.0669791 -.0368367
LE8_TOTALSCORE		-.0016953	.0000546	-31.05	0.000	-.0018023 -.0015883
_cons		-.6476004	.0698234	-9.27	0.000	-.7844518 -.510749
sigma2						
_cons		.9440723	.0069676	135.50	0.000	.9304161 .9577285

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.219912	.1596467	7.64	0.000	.9070099 1.532814
ereri_cde	1.215713	.1614921	7.53	0.000	.8991946 1.532232
ereri_intref	-.0004464	.0009571	-0.47	0.641	-.0023222 .0014295
ereri_intmed	.0055116	.0150892	0.37	0.715	-.0240627 .0350858
ereri_pie	-.0008668	.0045007	-0.19	0.847	-.0096879 .0079543

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zplxnb3
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04652 2.218 -.07585 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9052.4348**
 Iteration 1: Log likelihood = **-8960.7831**
 Iteration 2: Log likelihood = **-8949.5251**
 Iteration 3: Log likelihood = **-8949.4561**
 Iteration 4: Log likelihood = **-8949.4561**
 Refining estimates:
 Iteration 0: Log likelihood = **-8949.4561**

Cox regression with Breslow method for ties

No. of subjects =	36,330	Number of obs =	36,330
No. of failures =	967		
Time at risk =	441,345.475	LR chi2(9) =	205.96
Log likelihood =	-8949.4561	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.278562	.1634668	11.48	0.000	1.979678 2.62257
zplxb3	.916053	.0366041	-2.19	0.028	.8470478 .9906798
_infectionburXzplxb3_000	.9653711	.0710627	-0.48	0.632	.8356719 1.1152
AGE	1.032523	.0130179	2.54	0.011	1.007321 1.058355
SEX	.7507245	.0489521	-4.40	0.000	.6606581 .8530697
NonWhite	1.018265	.1801655	0.10	0.919	.7198704 1.440347
householdszie	.9262161	.0398765	-1.78	0.075	.8512662 1.007765
SES	.8222368	.0407118	-3.95	0.000	.7461925 .9060306
LE8_TOTALSCORE	.9989582	.0003566	-2.92	0.003	.9982595 .9996573

-> Model for the mediator

Iteration 0: Log likelihood = **-51375.952**
 Iteration 1: Log likelihood = **-51375.952**

Linear regression (Maximum Likelihood)	Number of obs =	36,330
	Wald chi2(7) =	348.83
Log likelihood =	Prob > chi2 =	0.0000

<u>zplxb3</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.015952	.0152347	-1.05	0.295	-.0458115 .0139075
AGE	-.003076	.0009947	-3.09	0.002	-.0050257 -.0011264
SEX	-.0351126	.0105565	-3.33	0.001	-.0558029 -.0144222
NonWhite	.080751	.0252694	3.20	0.001	.0312239 .1302781
householdszie	-.0049917	.0048026	-1.04	0.299	-.0144045 .0044212
SES	-.02691	.0079241	-3.40	0.001	-.0424409 -.0113791
LE8_TOTALSCORE	-.0009019	.0000563	-16.03	0.000	-.0010122 -.0007916
_cons	.6978265	.071905	9.70	0.000	.5568953 .8387577
sigma2					
_cons	.9904622	.0073489	134.78	0.000	.9760587 1.004866

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.291262	.1635338	7.90	0.000	.9707421 1.611783
ereri_cde	1.273951	.1627546	7.83	0.000	.9549574 1.592944
ereri_intref	.0128233	.0172269	0.74	0.457	-.0209408 .0465875
ereri_intmed	.0030888	.0037897	0.82	0.415	-.0043389 .0105165
ereri_pie	.0013997	.0014822	0.94	0.345	-.0015053 .0043046

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpm20d1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .0466 2.219 -.07631 500.4

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8989.2482

Iteration 1: Log likelihood = -8898.3128

Iteration 2: Log likelihood = -8888.38

Iteration 3: Log likelihood = -8888.3436

Iteration 4: Log likelihood = -8888.3436

Refining estimates:

Iteration 0: Log likelihood = -8888.3436

Cox regression with Breslow method for ties

No. of subjects = 36,265 Number of obs = 36,265

No. of failures = 961

Time at risk = 440,582.661

LR chi2(9) = 201.81

Log likelihood = -8888.3436

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.293712	.1640333	11.61	0.000	1.993727 2.638834
zpm20d1		1.020752	.039787	0.53	0.598	.9456748 1.101789
_infectionburXzpm20d1_000		1.007934	.0723878	0.11	0.912	.8755892 1.160282
AGE		1.035276	.0131372	2.73	0.006	1.009845 1.061347
SEX		.7479018	.0497275	-4.37	0.000	.6565211 .8520017
NonWhite		1.012223	.1791738	0.07	0.945	.7154922 1.432015
householdsize		.926041	.0400408	-1.78	0.076	.8507959 1.007941
SES		.8219883	.0407965	-3.95	0.000	.7457946 .9059662
LE8_TOTALSCORE		.9990315	.0003572	-2.71	0.007	.9983317 .9997318

-> Model for the mediator

Iteration 0: Log likelihood = -51015.988
 Iteration 1: Log likelihood = -51015.988

Linear regression (Maximum Likelihood)
 Number of obs = 36,265
 Wald chi2(7) = 893.47
 Log likelihood = -51015.988 Prob > chi2 = 0.0000

	zpm20d1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0426572	.0151333	-2.82	0.005	-.0723178 -.0129965
AGE		-.0061725	.0009883	-6.25	0.000	-.0081096 -.0042354
SEX		-.2862423	.0104874	-27.29	0.000	-.3067973 -.2656874
NonWhite		-.1107102	.0250825	-4.41	0.000	-.159871 -.0615493
householdsize		.0070434	.0047668	1.48	0.140	-.0022994 .0163863
SES		.0378661	.0078695	4.81	0.000	.0224422 .0532899
LE8_TOTALSCORE		-.0002231	.0000559	-3.99	0.000	-.0003326 -.0001135
_cons		.9196936	.0714311	12.88	0.000	.7796912 1.059696
sigma2						
_cons		.9759284	.0072475	134.66	0.000	.9617235 .9901332

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.291471	.1638886	7.88	0.000	.9702551 1.612687
ereri_cde	1.293288	.1639746	7.89	0.000	.9719039 1.614672
ereri_intref	.0009645	.0048105	0.20	0.841	-.0084638 .0103929
ereri_intmed	-.001906	.0062055	-0.31	0.759	-.0140685 .0102565
ereri_pie	-.0008758	.00169	-0.52	0.604	-.0041881 .0024366

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zpmvk
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07439 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8782.0287
 Iteration 1: Log likelihood = -8694.5001
 Iteration 2: Log likelihood = -8686.4792
 Iteration 3: Log likelihood = -8686.4521
 Iteration 4: Log likelihood = -8686.4521
 Refining estimates:
 Iteration 0: Log likelihood = -8686.4521

Cox regression with Breslow method for ties

No. of subjects =	35,540	Number of obs =	35,540
No. of failures =	939		
Time at risk =	431,698.305	LR chi2(9) =	191.15
Log likelihood =	-8686.4521	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.223448	.1624513	10.94	0.000	1.926796 2.565772
zpmvk	.9245224	.0341626	-2.12	0.034	.859932 .9939642
_infectionburXzpmvk_000	1.020478	.0722508	0.29	0.775	.8882554 1.172383
AGE	1.037116	.0132096	2.86	0.004	1.011546 1.063332
SEX	.7502296	.0496529	-4.34	0.000	.6589593 .8541413
NonWhite	1.083379	.1868448	0.46	0.642	.772642 1.519088
householdsize	.9243237	.0403894	-1.80	0.072	.848457 1.006974
SES	.8139068	.0407345	-4.11	0.000	.7378594 .897792
LE8_TOTALSCORE	.9991352	.0003611	-2.39	0.017	.9984277 .9998433

-> Model for the mediator

Iteration 0: Log likelihood = -50330.565
 Iteration 1: Log likelihood = -50330.565

Linear regression (Maximum Likelihood)

Number of obs =	35,540
Wald chi2(7) =	196.56
Prob > chi2 =	0.0000

Log likelihood = -50330.565

	zpmvk	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0247409	.0154322	-1.60	0.109	-.0549875 .0055058
AGE		-.0035287	.0010107	-3.49	0.000	-.0055096 -.0015478
SEX		-.02554	.0106939	-2.39	0.017	-.0464996 -.0045804
NonWhite		-.1897274	.0255176	-7.44	0.000	-.2397409 -.1397139
householdsize		-.0038032	.0050716	-0.75	0.453	-.0137433 .006137
SES		-.0229629	.0080318	-2.86	0.004	-.038705 -.0072208
LE8_TOTALSCORE		-.0005959	.000057	-10.46	0.000	-.0007076 -.0004842
_cons		.5687448	.0732607	7.76	0.000	.4251565 .7123331
sigma2						
_cons		.9944717	.0074602	133.30	0.000	.97985 1.009093

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.223741	.1620124	7.55	0.000	.9062026 1.54128
ereri_cde	1.220036	.1618913	7.54	0.000	.9027346 1.537337
ereri_intref	.0005053	.0077995	0.06	0.948	-.0147815 .0157921
ereri_intmed	.0012566	.0035401	0.35	0.723	-.0056819 .008195
ereri_pie	.0019435	.0015204	1.28	0.201	-.0010363 .0049233

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zpnliprp2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.532 .04636 2.216 -.0746 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9073.1164**
 Iteration 1: Log likelihood = **-8986.4618**
 Iteration 2: Log likelihood = **-8977.9429**
 Iteration 3: Log likelihood = **-8977.9148**
 Iteration 4: Log likelihood = **-8977.9148**
 Refining estimates:
 Iteration 0: Log likelihood = **-8977.9148**

Cox regression with Breslow method for ties

No. of subjects =	36,432	Number of obs =	36,432
No. of failures =	969		
Time at risk =	442,512.06	LR chi2(9) =	190.40
Log likelihood =	-8977.9148	Prob > chi2 =	0.0000

	<i>t</i>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.234808	.1601568	11.22	0.000	1.941954 2.571824
zpnliprp2		1.003847	.038318	0.10	0.920	.9314853 1.081829
_infectionburXzpnliprp2_000		.9527952	.0669791	-0.69	0.492	.8301609 1.093546
AGE		1.035721	.0130452	2.79	0.005	1.010465 1.061607
SEX		.7563986	.0492311	-4.29	0.000	.6658084 .8593146
NonWhite		1.092406	.1859229	0.52	0.604	.7825517 1.524948
householdsize		.9388331	.0392781	-1.51	0.131	.8649213 1.019061
SES		.8266123	.0408273	-3.86	0.000	.7503433 .9106336
LE8_TOTALSCORE		.9990329	.000355	-2.72	0.006	.9983373 .999729

-> Model for the mediator

Iteration 0: Log likelihood = **-51690.686**
 Iteration 1: Log likelihood = **-51690.686**

Linear regression (Maximum Likelihood)	Number of obs =	36,432
	Wald chi2(7) =	7.17
Log likelihood =	-51690.686	Prob > chi2 = 0.4118

	zpnliprp2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0037166	.0152936	0.24	0.808	-.0262583 .0336914
AGE		.0006627	.0009977	0.66	0.507	-.0012927 .002618
SEX		.0167528	.0105913	1.58	0.114	-.0040057 .0375113
NonWhite		-.0369871	.0253887	-1.46	0.145	-.0867481 .0127739
householdsize		-.0034164	.0048187	-0.71	0.478	-.012861 .0060281
SES		.0024013	.0079497	0.30	0.763	-.0131798 .0179825
LE8_TOTALSCORE		.0000321	.0000564	0.57	0.570	-.0000785 .0001427
_cons		-.0726407	.0720815	-1.01	0.314	-.2139178 .0686363
sigma2						
_cons		.9997759	.0074076	134.97	0.000	.9852573 1.014294

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.236692	.1601735	7.72	0.000	.9227573 1.550626
ereri_cde	1.234801	.1601562	7.71	0.000	.9209004 1.548701
ereri_intref	.0022609	.0059699	0.38	0.705	-.0094398 .0139616
ereri_intmed	-.0003844	.0016621	-0.23	0.817	-.003642 .0028733
ereri_pie	.0000143	.0001536	0.09	0.926	-.0002867 .0003152

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpnpt1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8913.3312

Iteration 1: Log likelihood = -8828.58

Iteration 2: Log likelihood = -8819.993

Iteration 3: Log likelihood = -8819.948

Iteration 4: Log likelihood = -8819.948

Refining estimates:

Iteration 0: Log likelihood = -8819.948

Cox regression with Breslow method for ties

No. of subjects = 35,761

Number of obs = 35,761

No. of failures = 953

Time at risk = 434,427.923

LR chi2(9) = 186.77

Log likelihood = -8819.948 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.231504	.161702	11.08	0.000	1.936051 2.572044
zpnpt1	.9897373	.0399697	-0.26	0.798	.9144183 1.07126
_infectionburXzpnpt1_000	1.069945	.079145	0.91	0.361	.925544 1.236875
AGE	1.037244	.013175	2.88	0.004	1.011741 1.063391
SEX	.7498711	.049284	-4.38	0.000	.659239 .8529634
NonWhite	1.054723	.184137	0.31	0.760	.7490876 1.485059
householdsize	.9355121	.0397906	-1.57	0.117	.8606862 1.016843
SES	.8275344	.041179	-3.80	0.000	.750636 .9123106
LE8_TOTALSCORE	.999065	.0003582	-2.61	0.009	.9983632 .9997674

-> Model for the mediator

Iteration 0: Log likelihood = -50567.312
 Iteration 1: Log likelihood = -50567.312

Linear regression (Maximum Likelihood)
 Number of obs = 35,761
 Wald chi2(7) = 351.41
 Log likelihood = -50567.312 Prob > chi2 = 0.0000

	zpnpt1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	-.0210679	.0153774	-1.37	0.171	-.0512071	.0090714
AGE	-.0146303	.0010016	-14.61	0.000	-.0165933	-.0126673
SEX	.0837762	.0106365	7.88	0.000	.062929	.1046233
NonWhite	-.1704812	.0254499	-6.70	0.000	-.220362	-.1206003
householdsize	-.0048826	.004838	-1.01	0.313	-.0143649	.0045997
SES	.0134332	.0079748	1.68	0.092	-.0021971	.0290635
LE8_TOTALSCORE	-.0000453	.0000567	-0.80	0.424	-.0001564	.0000658
_cons	.7976609	.072344	11.03	0.000	.6558693	.9394525
sigma2						
_cons	.9902412	.0074054	133.72	0.000	.9757268	1.004756

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.23276	.1620589	7.61	0.000	.9151304 1.55039
ereri_cde	1.231476	.1616818	7.62	0.000	.9145855 1.548367
ereri_intref	.0039805	.0083331	0.48	0.633	-.0123519 .020313
ereri_intmed	-.0029139	.0037294	-0.78	0.435	-.0102234 .0043955
ereri_pie	.0002174	.0008657	0.25	0.802	-.0014793 .001914

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpodxl
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04658 2.216 -.07524 500.8

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -9057.6167
Iteration 1: Log likelihood = -8970.0168
Iteration 2: Log likelihood = -8959.166
Iteration 3: Log likelihood = -8959.0852
Iteration 4: Log likelihood = -8959.0852
Refining estimates:
Iteration 0: Log likelihood = -8959.0852

```

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	197.06
Log likelihood =	-8959.0852	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.252273	.1615546	11.32	0.000	1.956882 2.592253
zpodxl	.950839	.0364199	-1.32	0.188	.8820708 1.024969
_infectionburXzpodxl_000	.970179	.0668419	-0.44	0.660	.8476315 1.110444
AGE	1.0318	.0129931	2.49	0.013	1.006646 1.057583
SEX	.754109	.0491326	-4.33	0.000	.6637059 .8568259
NonWhite	1.092435	.1858296	0.52	0.603	.7827103 1.524719
householdszie	.9358411	.0393195	-1.58	0.115	.8618641 1.016168
SES	.8186551	.0403541	-4.06	0.000	.743263 .9016946
LE8_TOTALSCORE	.9990688	.0003548	-2.62	0.009	.9983737 .9997644

-> Model for the mediator

Iteration 0: Log likelihood =	-51447.187	Number of obs =	36,264
Iteration 1: Log likelihood =	-51447.187	Wald chi2(7) =	17.40
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0150
Log likelihood =	-51447.187		

	zpodxl	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0002705	.0153213	-0.02	0.986	-.0302997
AGE		-.0003039	.0010005	-0.30	0.761	-.0022647
SEX		.0123766	.0106129	1.17	0.244	-.0084243
NonWhite		.046849	.025395	1.84	0.065	-.0029244
householdsize		-.0151547	.0048266	-3.14	0.002	-.0246148
SES		.0072893	.0079596	0.92	0.360	-.0083112
LE8_TOTALSCORE		.0000952	.0000565	1.68	0.092	-.0000156
_cons		-.016326	.0723039	-0.23	0.821	-.1580389
sigma2						
_cons		.9994928	.0074226	134.66	0.000	.9849447
						1.014041

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.256791	.1615373	7.78	0.000	.940184
ereri_cde	1.250686	.1612976	7.75	0.000	.9345486
ereri_intref	.0060561	.0106055	0.57	0.568	-.0147304
ereri_intmed	.0000356	.0020178	0.02	0.986	-.0039193
ereri_pie	.0000136	.0007725	0.02	0.986	-.0015004

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zpodxl2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04641 2.217 -.0748 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9132.2436
 Iteration 1: Log likelihood = -9045.1427
 Iteration 2: Log likelihood = -9034.7845
 Iteration 3: Log likelihood = -9034.7242
 Iteration 4: Log likelihood = -9034.7242
 Refining estimates:
 Iteration 0: Log likelihood = -9034.7242

Cox regression with Breslow method for ties

No. of subjects =	36,540	Number of obs =	36,540
No. of failures =	975		
Time at risk =	443,893.259	LR chi2(9) =	195.04
Log likelihood =	-9034.7242	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.236768	.1603291	11.23	0.000	1.943604 2.574151
zpodx12		1.041711	.040423	1.05	0.292	.9654215 1.124029
_infectionburXzpodx12_000		.8987099	.0609467	-1.57	0.115	.7868549 1.026466
AGE		1.033898	.0129916	2.65	0.008	1.008746 1.059677
SEX		.7653985	.0497259	-4.12	0.000	.6738875 .8693364
NonWhite		1.064506	.1834459	0.36	0.717	.759383 1.492229
householdsize		.9315063	.0394923	-1.67	0.094	.8572315 1.012217
SES		.8226314	.0405562	-3.96	0.000	.7468623 .9060873
LE8_TOTALSCORE		.999047	.0003565	-2.67	0.008	.9983485 .9997459

-> Model for the mediator

Iteration 0: Log likelihood = -51477.897
 Iteration 1: Log likelihood = -51477.897

Linear regression (Maximum Likelihood)	Number of obs =	36,540	
	Wald chi2(7) =	746.76	
Log likelihood =	-51477.897	Prob > chi2 =	0.0000

	zpodx12	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0481588	.0151256	3.18	0.001	.0185131 .0778045
AGE		-.0081459	.0009864	-8.26	0.000	-.0100792 -.0062126
SEX		.0682544	.0104692	6.52	0.000	.0477351 .0887737
NonWhite		.0769081	.0250914	3.07	0.002	.0277299 .1260863
householdsize		.0069189	.004767	1.45	0.147	-.0024243 .0162622
SES		-.0485005	.0078588	-6.17	0.000	-.0639035 -.0330975
LE8_TOTALSCORE		.001331	.0000557	23.88	0.000	.0012218 .0014403
_cons		-.30981	.0713279	-4.34	0.000	-.44961 -.1700099
sigma2						
_cons		.9799456	.0072499	135.17	0.000	.9657361 .9941552

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.234196	.1599822	7.71	0.000	.9206368 1.547756
ereri_cde	1.236094	.1602757	7.71	0.000	.921959 1.550228
ereri_intref	.0052078	.0090776	0.57	0.566	-.012584 .0229997
ereri_intmed	-.0090751	.0069006	-1.32	0.188	-.0226 .0044499
ereri_pie	.0019699	.0019722	1.00	0.318	-.0018955 .0058354

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpolr2f
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8969.8325

Iteration 2: Log likelihood = -8960.9652

Iteration 3: Log likelihood = -8960.9322

Iteration 4: Log likelihood = -8960.9322

Refining estimates:

Iteration 0: Log likelihood = -8960.9322

Cox regression with Breslow method for ties

No. of subjects = 36,264 Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 193.37

Log likelihood = -8960.9322

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.251	.1644018	11.11	0.000	1.950779 2.597425
zpolr2f		.9986265	.0389378	-0.04	0.972	.925153 1.077935
_infectionburXzpolr2f_000		1.007582	.0693264	0.11	0.913	.8804685 1.153047
AGE		1.031794	.0130205	2.48	0.013	1.006588 1.057632
SEX		.7512456	.0489384	-4.39	0.000	.6611989 .8535555
NonWhite		1.086474	.184849	0.49	0.626	.7783928 1.516491
householdsize		.9368302	.0393381	-1.55	0.120	.8628164 1.017193
SES		.8170158	.0403151	-4.10	0.000	.7417003 .8999792
LE8_TOTALSCORE		.9990616	.0003602	-2.60	0.009	.9983558 .9997679

-> Model for the mediator

Iteration 0: Log likelihood = -50319.523
 Iteration 1: Log likelihood = -50319.523

Linear regression (Maximum Likelihood) Number of obs = 36,264
 Wald chi2(7) = 2345.46
 Log likelihood = -50319.523 Prob > chi2 = 0.0000

	zpolr2f	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1420938	.0148522	9.57	0.000	.1129839 .1712037
AGE		.0174274	.0009698	17.97	0.000	.0155266 .0193282
SEX		-.0802842	.010288	-7.80	0.000	-.1004482 -.0601201
NonWhite		-.0947717	.0246175	-3.85	0.000	-.1430211 -.0465223
householdsize		-.0022321	.0046789	-0.48	0.633	-.0114025 .0069383
SES		-.0601706	.0077159	-7.80	0.000	-.0752934 -.0450477
LE8_TOTALSCORE		-.0019715	.0000548	-35.99	0.000	-.0020789 -.0018641
_cons		.0464955	.0700901	0.66	0.507	-.0908786 .1838695
sigma2						
_cons		.9392259	.006975	134.66	0.000	.925555 .9528967

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.25268	.1622783	7.72	0.000	.9346205 1.57074
ereri_cde	1.250965	.1644542	7.61	0.000	.928641 1.573289
ereri_intref	-.0002622	.0019632	-0.13	0.894	-.00411 .0035857
ereri_intmed	.0021723	.019073	0.11	0.909	-.0352101 .0395548
ereri_pie	-.0001953	.0055394	-0.04	0.972	-.0110523 .0106617

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zpon2
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8905.4114
 Iteration 1: Log likelihood = -8820.152
 Iteration 2: Log likelihood = -8812.5546
 Iteration 3: Log likelihood = -8812.5332
 Iteration 4: Log likelihood = -8812.5332
 Refining estimates:
 Iteration 0: Log likelihood = -8812.5332

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	185.76
Log likelihood =	-8812.5332	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.199722	.1596257	10.86	0.000	1.908091 2.535924
zpon2	.9394457	.0364815	-1.61	0.108	.8705966 1.01374
_infectionburXzpon2_000	.9974793	.0711438	-0.04	0.972	.8673475 1.147135
AGE	1.036894	.0131762	2.85	0.004	1.011389 1.063044
SEX	.7514441	.0493624	-4.35	0.000	.6606648 .854697
NonWhite	1.103886	.1879292	0.58	0.562	.7907017 1.541117
householdsize	.9388899	.0396827	-1.49	0.136	.8642477 1.019979
SES	.8311934	.0413779	-3.71	0.000	.7539251 .9163808
LE8_TOTALSCORE	.9988822	.0003625	-3.08	0.002	.998172 .9995929

-> Model for the mediator

Iteration 0: Log likelihood = -49975.143
 Iteration 1: Log likelihood = -49975.143

Linear regression (Maximum Likelihood)
 Number of obs = 35,755
 Wald chi2(7) = 1549.65
 Log likelihood = -49975.143 Prob > chi2 = 0.0000

	zpon2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0205436	.0151152	1.36	0.174	-.0090816 .0501688
AGE		-.0074219	.0009866	-7.52	0.000	-.0093555 -.0054882
SEX		-.0551876	.0104669	-5.27	0.000	-.0757023 -.034673
NonWhite		-.1961205	.0250631	-7.83	0.000	-.2452432 -.1469977
householdsize		.0013966	.0047731	0.29	0.770	-.0079584 .0107517
SES		-.0562764	.0078596	-7.16	0.000	-.071681 -.0408719
LE8_TOTALSCORE		-.0019387	.0000558	-34.77	0.000	-.002048 -.0018294
_cons		1.500536	.0713291	21.04	0.000	1.360734 1.640339
sigma2						
_cons		.9584328	.0071682	133.71	0.000	.9443834 .9724821

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.197141	.1593698	7.51	0.000	.8847822 1.5095
ereri_cde	1.197267	.1592538	7.52	0.000	.8851355 1.509399
ereri_intref	.0028095	.0089662	0.31	0.754	-.014764 .020383
ereri_intmed	-.0016529	.0030921	-0.53	0.593	-.0077134 .0044075
ereri_pie	-.0012824	.0012345	-1.04	0.299	-.003702 .0011371

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zpon3
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04635 2.216 -.07488 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9125.8833**
 Iteration 1: Log likelihood = **-9038.5101**
 Iteration 2: Log likelihood = **-9030.2463**
 Iteration 3: Log likelihood = **-9030.2258**
 Iteration 4: Log likelihood = **-9030.2258**
 Refining estimates:
 Iteration 0: Log likelihood = **-9030.2258**

Cox regression with Breslow method for ties

No. of subjects =	36,595	Number of obs =	36,595
No. of failures =	974		
Time at risk =	444,506.48	LR chi2(9) =	191.31
Log likelihood =	-9030.2258	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.262937	.1645148	11.23	0.000	1.962413 2.609483
zpon3		.9901479	.0397885	-0.25	0.805	.9151559 1.071285
_infectionburXzpon3_000		1.050366	.0750863	0.69	0.492	.9130444 1.208341
AGE		1.035609	.0130044	2.79	0.005	1.010432 1.061413
SEX		.7571075	.0501702	-4.20	0.000	.6648936 .8621104
NonWhite		1.091512	.1862534	0.51	0.608	.781234 1.525021
householdszie		.9366265	.0393366	-1.56	0.119	.8626161 1.016987
SES		.8277149	.0408609	-3.83	0.000	.7513815 .9118031
LE8_TOTALSCORE		.9990311	.0003631	-2.67	0.008	.9983196 .999743

-> Model for the mediator

Iteration 0: Log likelihood = **-49233.006**
 Iteration 1: Log likelihood = **-49233.006**

Linear regression (Maximum Likelihood)	Number of obs =	36,595
	Wald chi2(7) =	5801.49
Log likelihood =	Prob > chi2 =	0.0000

	zpon3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.1376861	.0141716	-9.72	0.000	-.1654619 -.1099103
AGE		-.0103191	.0009249	-11.16	0.000	-.0121319 -.0085064
SEX		.3795765	.0098193	38.66	0.000	.3603311 .398822
NonWhite		-.4260443	.0235417	-18.10	0.000	-.4721853 -.3799033
householdszie		-.0058341	.0044708	-1.30	0.192	-.0145967 .0029284
SES		.0921599	.0073703	12.50	0.000	.0777144 .1066054
LE8_TOTALSCORE		.0025913	.0000523	49.55	0.000	.0024888 .0026938
_cons		-1.198498	.0668047	-17.94	0.000	-1.329432 -1.067563
sigma2						
_cons		.8631375	.0063809	135.27	0.000	.8506311 .8756439

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.254264	.1623195	7.73	0.000	.9361234 1.572404
ereri_cde	1.263123	.1645767	7.67	0.000	.9405583 1.585687
ereri_intref	.0033526	.0073989	0.45	0.650	-.011149 .0178542
ereri_intmed	-.0135758	.0197798	-0.69	0.492	-.0523436 .025192
ereri_pie	.0013642	.0055422	0.25	0.806	-.0094983 .0122266

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zppcdc
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9160.406

Iteration 1: Log likelihood = -9069.6656

Iteration 2: Log likelihood = -9061.5275

Iteration 3: Log likelihood = -9061.5088

Iteration 4: Log likelihood = -9061.5088

Refining estimates:

Iteration 0: Log likelihood = -9061.5088

Cox regression with Breslow method for ties

No. of subjects = 36,751 Number of obs = 36,751

No. of failures = 977

Time at risk = 446,451.479

Log likelihood = -9061.5088

LR chi2(9) = 197.79

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.237616	.1599166	11.27	0.000	1.945147 2.57406
zppcdc	.9212988	.0362382	-2.08	0.037	.852942 .9951338
_infectionburXzppcdc_000	1.083754	.0775045	1.12	0.261	.942014 1.246822
AGE	1.034509	.0129632	2.71	0.007	1.009411 1.060231
SEX	.7519102	.0487869	-4.39	0.000	.6621199 .8538769
NonWhite	1.102784	.1878577	0.57	0.566	.7897497 1.539896
householdszie	.9334066	.0393878	-1.63	0.102	.859314 1.013888
SES	.8170495	.040118	-4.12	0.000	.7420848 .8995872
LE8_TOTALSCORE	.9989784	.0003548	-2.88	0.004	.9982832 .9996741

-> Model for the mediator

Iteration 0: Log likelihood = -51796.555
 Iteration 1: Log likelihood = -51796.555

Linear regression (Maximum Likelihood)
 Number of obs = 36,751
 Wald chi2(7) = 707.43
 Log likelihood = -51796.555 Prob > chi2 = 0.0000

	zppcdc	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0051428	.0150811	-0.34	0.733	-.0347013 .0244156
AGE		-.0018448	.0009869	-1.87	0.062	-.003779 .0000894
SEX		-.0855676	.0104468	-8.19	0.000	-.1060429 -.0650923
NonWhite		.3447533	.025062	13.76	0.000	.2956327 .3938738
householdszie		.0006783	.0049623	0.14	0.891	-.0090476 .0104042
SES		-.0116047	.0078454	-1.48	0.139	-.0269815 .003772
LE8_TOTALSCORE		-.0010433	.0000556	-18.75	0.000	-.0011523 -.0009342
_cons		.746638	.0715557	10.43	0.000	.6063914 .8868846
sigma2						
_cons		.9810875	.0072375	135.56	0.000	.9669023 .9952727

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.230401	.1592049	7.73	0.000	.9183653 1.542437
ereri_cde	1.233616	.1592609	7.75	0.000	.9214701 1.545761
ereri_intref	-.0032322	.0031563	-1.02	0.306	-.0094185 .0029541
ereri_intmed	-.000404	.0013847	-0.29	0.770	-.0031179 .0023099
ereri_pie	.0004217	.0012532	0.34	0.737	-.0020345 .0028778

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zppib
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04628 2.215 -.07568 500.4

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9111.0894
 Iteration 1: Log likelihood = -9019.9859
 Iteration 2: Log likelihood = -9010.8263
 Iteration 3: Log likelihood = -9010.7878
 Iteration 4: Log likelihood = -9010.7878
 Refining estimates:
 Iteration 0: Log likelihood = -9010.7878

Cox regression with Breslow method for ties

No. of subjects =	36,498	Number of obs =	36,498
No. of failures =	973		
Time at risk =	443,428.035	LR chi2(9) =	200.60
Log likelihood =	-9010.7878	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.24269	.1605904	11.28	0.000	1.949028 2.580599
zppib	.9263378	.0353619	-2.00	0.045	.8595591 .9983044
_infectionburXzppib_000	.996132	.0712825	-0.05	0.957	.8657758 1.146115
AGE	1.037592	.0130667	2.93	0.003	1.012295 1.063521
SEX	.750556	.0488264	-4.41	0.000	.6607076 .8526228
NonWhite	1.050461	.1809132	0.29	0.775	.7495204 1.472231
householdsize	.9411684	.0392647	-1.45	0.146	.8672732 1.02136
SES	.8230734	.0405387	-3.95	0.000	.7473336 .9064893
LE8_TOTALSCORE	.9989698	.000355	-2.90	0.004	.9982744 .9996657

-> Model for the mediator

Iteration 0: Log likelihood = -51628.634
 Iteration 1: Log likelihood = -51628.634

Linear regression (Maximum Likelihood)

Number of obs =	36,498
Wald chi2(7) =	319.96
Prob > chi2 =	0.0000

Log likelihood = -51628.634

	zppib	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0007011	.0151928	-0.05	0.963	-.0304784 .0290763
AGE		-.0025626	.0009932	-2.58	0.010	-.0045091 -.000616
SEX		.0400982	.0105367	3.81	0.000	.0194467 .0607497
NonWhite		.0116932	.0252909	0.46	0.644	-.0378759 .0612624
householdsize		-.0051106	.0048672	-1.05	0.294	-.0146502 .004429
SES		-.0341989	.0079158	-4.32	0.000	-.0497135 -.0186842
LE8_TOTALSCORE		-.000873	.0000561	-15.55	0.000	-.000983 -.0007629
_cons		.5379873	.0718697	7.49	0.000	.3971252 .6788493
sigma2						
_cons		.9912824	.007338	135.09	0.000	.9769002 1.005665

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.243492	.1601164	7.77	0.000	.9296693 1.557314
ereri_cde	1.239098	.1600195	7.74	0.000	.925466 1.552731
ereri_intref	.0042668	.0111924	0.38	0.703	-.0176698 .0262035
ereri_intmed	.0000728	.0015807	0.05	0.963	-.0030254 .003171
ereri_pie	.0000536	.0011629	0.05	0.963	-.0022255 .0023328

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zppm1a
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8794.2332**
 Iteration 2: Log likelihood = **-8786.0242**
 Iteration 3: Log likelihood = **-8786.005**
 Iteration 4: Log likelihood = **-8786.005**
 Refining estimates:
 Iteration 0: Log likelihood = **-8786.005**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	192.38
Log likelihood =	-8786.005	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.2599	.1634249	11.27	0.000	1.961256 2.604017
zppm1a	.9070887	.038058	-2.32	0.020	.835481 .9848337
_infectionburXzppm1a_000	1.069001	.0774699	0.92	0.357	.9274534 1.232152
AGE	1.037741	.0131967	2.91	0.004	1.012196 1.063931
SEX	.7452975	.0490228	-4.47	0.000	.6551502 .8478489
NonWhite	1.109297	.1887072	0.61	0.542	.7947789 1.548279
householdszie	.9388745	.0396124	-1.49	0.135	.8643589 1.019814
SES	.8290191	.0413631	-3.76	0.000	.7517867 .9141856
LE8_TOTALSCORE	.9992097	.0003587	-2.20	0.028	.9985069 .999913

-> Model for the mediator

Iteration 0: Log likelihood = **-50467.58**
 Iteration 1: Log likelihood = **-50467.58**

Linear regression (Maximum Likelihood)	Number of obs =	35,573
	Wald chi2(7) =	15.64
Log likelihood =	-50467.58	Prob > chi2 = 0.0286

<u>zppm1a</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0093253	.015487	-0.60	0.547	-.0396792 .0210286
AGE	-.0011126	.0010099	-1.10	0.271	-.0030919 .0008667
SEX	-.0063278	.0107162	-0.59	0.555	-.027331 .0146755
NonWhite	-.0038309	.0256106	-0.15	0.881	-.0540268 .0463651
householdszie	-.0060879	.0048773	-1.25	0.212	-.0156472 .0034715
SES	-.0011337	.0080374	-0.14	0.888	-.0168867 .0146193
LE8_TOTALSCORE	-.0001961	.0000571	-3.44	0.001	-.0003079 -.0000843
_cons	.1897039	.072985	2.60	0.009	.0466559 .3327519
sigma2					
_cons	.9995323	.0074947	133.37	0.000	.9848431 1.014222

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.251091	.1625572	7.70	0.000	.9324853 1.569698
ereri_cde	1.254084	.1624888	7.72	0.000	.9356122 1.572557
ereri_intref	-.0036391	.0056146	-0.65	0.517	-.0146436 .0073654
ereri_intmed	-.0002635	.0013736	-0.19	0.848	-.0029558 .0024287
ereri_pie	.0009098	.0015615	0.58	0.560	-.0021507 .0039702

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zppme1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8970.8141

Iteration 2: Log likelihood = -8960.0464

Iteration 3: Log likelihood = -8959.9705

Iteration 4: Log likelihood = -8959.9705

Refining estimates:

Iteration 0: Log likelihood = -8959.9705

Cox regression with Breslow method for ties

No. of subjects = 36,264 Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 195.29

Log likelihood = -8959.9705 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.251803	.1613711	11.33	0.000	1.956729 2.591374
zppme1	.9790823	.0377166	-0.55	0.583	.9078808 1.055868
_infectionburXzppme1_000	1.102911	.0786287	1.37	0.169	.959084 1.268307
AGE	1.031835	.0129981	2.49	0.013	1.006671 1.057628
SEX	.7520375	.0492	-4.36	0.000	.6615336 .8549231
NonWhite	1.082375	.1841506	0.47	0.642	.775458 1.510767
householdszie	.9367679	.0393483	-1.56	0.120	.8627358 1.017153
SES	.8168261	.040274	-4.10	0.000	.7415846 .8997017
LE8_TOTALSCORE	.9990673	.0003554	-2.62	0.009	.998371 .9997641

-> Model for the mediator

Iteration 0: Log likelihood = -51164.456
 Iteration 1: Log likelihood = -51164.456

Linear regression (Maximum Likelihood)
 Number of obs = 36,264
 Wald chi2(7) = 587.57
 Log likelihood = -51164.456 Prob > chi2 = 0.0000

	zppme1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0008562	.0152024	-0.06	0.955	-.0306523 .0289399
AGE		-.0012062	.0009927	-1.22	0.224	-.0031518 .0007394
SEX		-.2073662	.0105305	-19.69	0.000	-.2280055 -.1867268
NonWhite		.1241031	.0251978	4.93	0.000	.0747163 .1734899
householdszie		.0002527	.0047892	0.05	0.958	-.0091339 .0096393
SES		.0070108	.0078978	0.89	0.375	-.0084685 .0224902
LE8_TOTALSCORE		-.0006267	.0000561	-11.18	0.000	-.0007366 -.0005168
_cons		.6983026	.0717423	9.73	0.000	.5576902 .838915
sigma2						
_cons		.9840286	.0073078	134.66	0.000	.9697056 .9983516

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257731	.1616312	7.78	0.000	.9409398 1.574522
ereri_cde	1.251531	.161327	7.76	0.000	.935336 1.567726
ereri_intref	.0063484	.0103833	0.61	0.541	-.0140025 .0266994
ereri_intmed	-.0001666	.0029604	-0.06	0.955	-.0059688 .0056357
ereri_pie	.0000181	.0003231	0.06	0.955	-.0006151 .0006513

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zppp1r12a
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04641 2.217 -.0748 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9132.2436
 Iteration 1: Log likelihood = -9042.7973
 Iteration 2: Log likelihood = -9033.7436
 Iteration 3: Log likelihood = -9033.7144
 Iteration 4: Log likelihood = -9033.7144
 Refining estimates:
 Iteration 0: Log likelihood = -9033.7144

Cox regression with Breslow method for ties

No. of subjects =	36,540	Number of obs =	36,540
No. of failures =	975		
Time at risk =	443,893.259	LR chi2(9) =	197.06
Log likelihood =	-9033.7144	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.25414	.1611081	11.37	0.000	1.959493 2.593093
zppp1r12a	.9317136	.0363497	-1.81	0.070	.8631252 1.005752
_infectionburXzppp1r12a_000	1.003624	.0716745	0.05	0.960	.8725326 1.15441
AGE	1.034139	.0129883	2.67	0.008	1.008994 1.059912
SEX	.7698455	.0499602	-4.03	0.000	.677897 .8742658
NonWhite	1.068731	.1840721	0.39	0.700	.7625394 1.497871
householdsize	.9317248	.0395049	-1.67	0.095	.8574265 1.012461
SES	.8201197	.040418	-4.02	0.000	.7446076 .9032896
LE8_TOTALSCORE	.9989823	.0003551	-2.86	0.004	.9982865 .9996785

-> Model for the mediator

Iteration 0: Log likelihood = -51607.801
 Iteration 1: Log likelihood = -51607.801

Linear regression (Maximum Likelihood)
 Number of obs = 36,540
 Wald chi2(7) = 482.59
 Log likelihood = -51607.801 Prob > chi2 = 0.0000

	zppp1r12a	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.00202	.0151795	-0.13	0.894	-.0317713 .0277313
AGE		-.0017984	.0009899	-1.82	0.069	-.0037386 .0001418
SEX		.0388449	.0105065	3.70	0.000	.0182526 .0594373
NonWhite		.0787996	.0251807	3.13	0.002	.0294462 .1281529
householdsize		.0026704	.004784	0.56	0.577	-.0067061 .0120469
SES		-.0346199	.0078868	-4.39	0.000	-.0500778 -.0191621
LE8_TOTALSCORE		-.0010894	.0000559	-19.47	0.000	-.0011991 -.0009798
_cons		.5822926	.0715819	8.13	0.000	.4419947 .7225906
sigma2						
_cons		.9869381	.0073016	135.17	0.000	.9726271 1.001249

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.253894	.1607383	7.80	0.000	.9388521 1.568935
ereri_cde	1.251073	.1606264	7.79	0.000	.9362507 1.565895
ereri_intref	.0025152	.0093107	0.27	0.787	-.0157335 .0207639
ereri_intmed	.0001627	.0012551	0.13	0.897	-.0022973 .0026226
ereri_pie	.0001429	.0010767	0.13	0.894	-.0019674 .0022532

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zppp1r2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9064.8284**
 Iteration 1: Log likelihood = **-8972.6856**
 Iteration 2: Log likelihood = **-8962.7712**
 Iteration 3: Log likelihood = **-8962.7299**
 Iteration 4: Log likelihood = **-8962.7299**
 Refining estimates:
 Iteration 0: Log likelihood = **-8962.7299**

Cox regression with Breslow method for ties

No. of subjects =	36,441	Number of obs =	36,441
No. of failures =	968		
Time at risk =	442,700.115	LR chi2(9) =	204.20
Log likelihood =	-8962.7299	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.283047	.1633112	11.54	0.000	1.984388 2.626655
zppp1r2		.9111712	.0361046	-2.35	0.019	.8430856 .9847553
_infectionburXzppp1r2_000		1.006878	.0732195	0.09	0.925	.8731283 1.161116
AGE		1.033934	.0130214	2.65	0.008	1.008725 1.059773
SEX		.753028	.049092	-4.35	0.000	.6627029 .8556642
NonWhite		1.008527	.178431	0.05	0.962	.7130024 1.426541
householdszie		.9266182	.0398843	-1.77	0.077	.851653 1.008182
SES		.8245583	.0407663	-3.90	0.000	.7484071 .9084581
LE8_TOTALSCORE		.9989746	.0003565	-2.87	0.004	.9982761 .9996736

-> Model for the mediator

Iteration 0: Log likelihood = **-51540.612**
 Iteration 1: Log likelihood = **-51540.612**

Linear regression (Maximum Likelihood)	Number of obs =	36,441
	Wald chi2(7) =	334.38
Log likelihood =	-51540.612	Prob > chi2 = 0.0000

	<u>zppp1r2</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0071573	.0152129	0.47	0.638	-.0226593 .036974
AGE		.0001654	.0009936	0.17	0.868	-.001782 .0021128
SEX		.0295327	.0105419	2.80	0.005	.008871 .0501943
NonWhite		.0051258	.025242	0.20	0.839	-.0443475 .0545991
householdszie		-.0038979	.0047975	-0.81	0.417	-.0133007 .0055049
SES		-.0261316	.0079108	-3.30	0.001	-.0416365 -.0106267
LE8_TOTALSCORE		-.0009319	.0000562	-16.58	0.000	-.001042 -.0008217
_cons		.4166513	.07181	5.80	0.000	.2759062 .5573963
sigma2						
_cons		.9908803	.0073408	134.98	0.000	.9764927 1.005268

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.280235	.1627088	7.87	0.000	.9613321 1.599139
ereri_cde	1.277439	.1624645	7.86	0.000	.9590149 1.595864
ereri_intref	.0042028	.0125785	0.33	0.738	-.0204506 .0288561
ereri_intmed	-.0007412	.0018888	-0.39	0.695	-.0044431 .0029607
ereri_pie	-.0006656	.0014423	-0.46	0.644	-.0034925 .0021614

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zppp1r9b
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .0466 2.218 -.07544 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9166.3755

Iteration 1: Log likelihood = -9073.808

Iteration 2: Log likelihood = -9064.8068

Iteration 3: Log likelihood = -9064.7864

Iteration 4: Log likelihood = -9064.7864

Refining estimates:

Iteration 0: Log likelihood = -9064.7864

Cox regression with Breslow method for ties

No. of subjects = 36,824 Number of obs = 36,824

No. of failures = 978

Time at risk = 447,356.911

LR chi2(9) = 203.18

Log likelihood = -9064.7864

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.285581	.1625446	11.62	0.000	1.988206 2.627434
zppp1r9b		.9297874	.0359919	-1.88	0.060	.8618542 1.003075
_infectionburXzppp1r9b_000		1.076872	.0764758	1.04	0.297	.9369464 1.237695
AGE		1.036168	.0129914	2.83	0.005	1.011015 1.061946
SEX		.7550491	.0489452	-4.33	0.000	.6649624 .8573405
NonWhite		1.057069	.182097	0.32	0.747	.7541723 1.481619
householdsize		.9358675	.0392816	-1.58	0.114	.8619588 1.016114
SES		.8183547	.0401463	-4.09	0.000	.7433338 .900947
LE8_TOTALSCORE		.9990421	.0003542	-2.70	0.007	.9983481 .9997366

-> Model for the mediator

Iteration 0: Log likelihood = -52113.034
 Iteration 1: Log likelihood = -52113.034

Linear regression (Maximum Likelihood)
 Number of obs = 36,824
 Wald chi2(7) = 275.95
 Log likelihood = -52113.034 Prob > chi2 = 0.0000

	zppp1r9b	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0176663	.0151586	1.17	0.244	-.0120441 .0473766
AGE		5.68e-06	.0009887	0.01	0.995	-.0019321 .0019435
SEX		-.0058784	.0104961	-0.56	0.575	-.0264504 .0146936
NonWhite		.1144087	.0251082	4.56	0.000	.0651976 .1636198
householdsize		-.0094834	.0047852	-1.98	0.047	-.0188621 -.0001046
SES		-.0049718	.0078707	-0.63	0.528	-.0203981 .0104546
LE8_TOTALSCORE		-.0008272	.0000559	-14.80	0.000	-.0009367 -.0007177
_cons		.4355409	.0714688	6.09	0.000	.2954647 .5756172
sigma2						
_cons		.9925352	.0073147	135.69	0.000	.9781986 1.006872

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.279217	.1619703	7.90	0.000	.9617607 1.596672
ereri_cde	1.281976	.1619771	7.91	0.000	.9645062 1.599445
ereri_intref	-.0028098	.0029187	-0.96	0.336	-.0085304 .0029107
ereri_intmed	.0013361	.0027459	0.49	0.627	-.0040458 .006718
ereri_pie	-.0012853	.0012966	-0.99	0.322	-.0038265 .001256

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zppp3r1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.17 1.532 .0464 2.216 -.07458 500.7

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8985.4467
Iteration 1: Log likelihood = -8894.3134
Iteration 2: Log likelihood = -8885.3216
Iteration 3: Log likelihood = -8885.2734
Iteration 4: Log likelihood = -8885.2734
Refining estimates:
Iteration 0: Log likelihood = -8885.2734

Cox regression with Breslow method for ties

No. of subjects =      36,164                      Number of obs = 36,164
No. of failures =       960
Time at risk      = 439,440.668
Log likelihood = -8885.2734                         LR chi2(9)      = 200.35
                                                               Prob > chi2 = 0.0000

```

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.205575	.158967	10.97	0.000	1.915011 2.540225
zppp3r1	.9133969	.0364069	-2.27	0.023	.8447568 .9876142
_infectionburXzppp3r1_000	.9891919	.0722889	-0.15	0.882	.8571875 1.141525
AGE	1.038801	.013135	3.01	0.003	1.013373 1.064866
SEX	.7399073	.0484188	-4.60	0.000	.6508419 .8411609
NonWhite	1.023198	.1786122	0.13	0.895	.7267277 1.440615
householdsize	.943266	.0392983	-1.40	0.161	.8693036 1.023521
SES	.8067156	.0399464	-4.34	0.000	.7321014 .8889343
LE8_TOTALSCORE	.9989533	.0003566	-2.93	0.003	.9982545 .9996525

-> Model for the mediator

```

Iteration 0: Log likelihood = -51027.517
Iteration 1: Log likelihood = -51027.517

Linear regression (Maximum Likelihood)                      Number of obs = 36,164
                                                               Wald chi2(7) = 577.51
                                                               Prob > chi2 = 0.0000
Log likelihood = -51027.517

```

	zppp3r1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0299862	.0152378	1.97	0.049	.0001206 .0598519
AGE		.0110935	.000997	11.13	0.000	.0091394 .0130476
SEX		-.0547426	.0105477	-5.19	0.000	-.0754157 -.0340696
NonWhite		.0828109	.0252918	3.27	0.001	.0332399 .1323819
householdsize		.0014611	.0050022	0.29	0.770	-.008343 .0112652
SES		-.0509908	.0079288	-6.43	0.000	-.066531 -.0354505
LE8_TOTALSCORE		-.0008459	.0000561	-15.07	0.000	-.0009559 -.0007359
_cons		-.1752477	.072258	-2.43	0.015	-.3168707 -.0336246
sigma2						
_cons		.9842545	.0073195	134.47	0.000	.9699084 .9986005

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.201234	.1590352	7.55	0.000	.8895307 1.512937
ereri_cde	1.200264	.1583043	7.58	0.000	.8899933 1.510535
ereri_intref	.0076768	.0146122	0.53	0.599	-.0209626 .0363162
ereri_intmed	-.0039941	.004744	-0.84	0.400	-.0132921 .005304
ereri_pie	-.0027126	.0018209	-1.49	0.136	-.0062816 .0008563

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zppy
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.532 .04644 2.217 -.07498 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9071.3937**
 Iteration 1: Log likelihood = **-8986.0995**
 Iteration 2: Log likelihood = **-8977.8161**
 Iteration 3: Log likelihood = **-8977.7945**
 Iteration 4: Log likelihood = **-8977.7945**
 Refining estimates:
 Iteration 0: Log likelihood = **-8977.7945**

Cox regression with Breslow method for ties

No. of subjects =	36,372	Number of obs =	36,372
No. of failures =	969		
Time at risk =	441,869.993	LR chi2(9) =	187.20
Log likelihood =	-8977.7945	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.242123	.1615262	11.21	0.000	1.946872 2.582149
zppy	.9893906	.0381009	-0.28	0.782	.9174628 1.066957
_infectionburXzppy_000	.9580223	.0678015	-0.61	0.545	.8339386 1.100569
AGE	1.03628	.0131026	2.82	0.005	1.010915 1.062281
SEX	.7628266	.0499109	-4.14	0.000	.6710157 .8671995
NonWhite	1.012423	.1791765	0.07	0.944	.7156788 1.432207
householdszie	.9337525	.0397231	-1.61	0.107	.859054 1.014946
SES	.8295651	.0410421	-3.78	0.000	.7529012 .9140353
LE8_TOTALSCORE	.9990449	.0003555	-2.69	0.007	.9983483 .9997419

-> Model for the mediator

Iteration 0: Log likelihood = **-51017.141**
 Iteration 1: Log likelihood = **-51017.141**

Linear regression (Maximum Likelihood)	Number of obs =	36,372
	Wald chi2(7) =	1203.46
Log likelihood =	Prob > chi2 =	0.0000

<u>zppy</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0022226	.0150753	-0.15	0.883	-.0317697 .0273244
AGE	.0242957	.0009828	24.72	0.000	.0223695 .0262218
SEX	-.1973983	.010429	-18.93	0.000	-.2178387 -.1769579
NonWhite	-.0953454	.0249909	-3.82	0.000	-.1443267 -.0463641
householdszie	-.0039787	.0047462	-0.84	0.402	-.013281 .0053236
SES	.0174552	.0078281	2.23	0.026	.0021125 .0327979
LE8_TOTALSCORE	-.0003773	.0000555	-6.79	0.000	-.0004862 -.0002685
_cons	-.9562435	.0710598	-13.46	0.000	-1.095518 -.8169689
sigma2					
_cons	.9679455	.0071777	134.86	0.000	.9538775 .9820134

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.24535	.1625025	7.66	0.000	.9268513 1.56385
ereri_cde	1.242058	.1615506	7.69	0.000	.9254248 1.558692
ereri_intref	.003025	.0069717	0.43	0.664	-.0106394 .0166893
ereri_intmed	.0002435	.0016812	0.14	0.885	-.0030515 .0035385
ereri_pie	.0000237	.0001822	0.13	0.896	-.0003333 .0003807

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpqb1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8882.1967

Iteration 1: Log likelihood = -8794.775

Iteration 2: Log likelihood = -8784.3749

Iteration 3: Log likelihood = -8784.2198

Iteration 4: Log likelihood = -8784.2194

Refining estimates:

Iteration 0: Log likelihood = -8784.2194

Cox regression with Breslow method for ties

No. of subjects = 35,573 Number of obs = 35,573

No. of failures = 951

Time at risk = 432,088.637

LR chi2(9) = 195.95

Log likelihood = -8784.2194

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.244999	.1632611	11.12	0.000	1.946771 2.588912
zpqb1	.8868805	.039143	-2.72	0.007	.8133862 .9670154
_infectionburXzpqb1_000	1.201652	.0819934	2.69	0.007	1.051231 1.373598
AGE	1.037873	.0132028	2.92	0.003	1.012316 1.064076
SEX	.7409459	.0487652	-4.56	0.000	.6512756 .8429623
NonWhite	1.101187	.1873459	0.57	0.571	.7889423 1.53701
householdszie	.9390224	.0396149	-1.49	0.136	.864502 1.019966
SES	.8289849	.0413422	-3.76	0.000	.7517898 .9141065
LE8_TOTALSCORE	.9991667	.0003604	-2.31	0.021	.9984605 .9998733

-> Model for the mediator

Iteration 0: Log likelihood = -50259.464
 Iteration 1: Log likelihood = -50259.464

Linear regression (Maximum Likelihood)
 Number of obs = 35,573
 Wald chi2(7) = 434.50
 Log likelihood = -50259.464 Prob > chi2 = 0.0000

zpqb1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0514074	.0153966	3.34	0.001	.0212306 .0815843
AGE	.0021788	.001004	2.17	0.030	.000211 .0041465
SEX	-.0660813	.0106536	-6.20	0.000	-.086962 -.0452005
NonWhite	-.107801	.0254612	-4.23	0.000	-.1577041 -.0578978
householdszie	.0002404	.0048488	0.05	0.960	-.0092631 .009744
SES	-.0050151	.0079905	-0.63	0.530	-.0206762 .0106461
LE8_TOTALSCORE	-.0009975	.0000567	-17.58	0.000	-.0011087 -.0008863
_cons	.4663674	.0725593	6.43	0.000	.3241538 .6085809
sigma2					
_cons	.9879052	.0074075	133.37	0.000	.9733868 1.002424

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.237929	.1618275	7.65	0.000	.9207531 1.555105
ereri_cde	1.235111	.1617629	7.64	0.000	.9180613 1.55216
ereri_intref	-.0044926	.0086446	-0.52	0.603	-.0214358 .0124506
ereri_intmed	.0134632	.0075566	1.78	0.075	-.0013474 .0282738
ereri_pie	-.0061522	.0029084	-2.12	0.034	-.0118526 -.0004518

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zprcp
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04655 2.216 -.07528 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9144.6688
 Iteration 1: Log likelihood = -9049.6204
 Iteration 2: Log likelihood = -9040.6179
 Iteration 3: Log likelihood = -9040.5847
 Iteration 4: Log likelihood = -9040.5847
 Refining estimates:
 Iteration 0: Log likelihood = -9040.5847

Cox regression with Breslow method for ties

No. of subjects =	36,667	Number of obs =	36,667
No. of failures =	976		
Time at risk =	445,367.375	LR chi2(9) =	208.17
Log likelihood =	-9040.5847	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.248582	.1604884	11.35	0.000	1.95504 2.586197
zprcp	.8674084	.0350569	-3.52	0.000	.801349 .9389135
_infectionburXzprcp_000	1.027165	.0740305	0.37	0.710	.89185 1.18301
AGE	1.033207	.0129605	2.60	0.009	1.008115 1.058924
SEX	.7317318	.0477439	-4.79	0.000	.6438919 .831555
NonWhite	1.062896	.1807532	0.36	0.720	.7616189 1.483351
householdsize	.9367115	.0391524	-1.56	0.118	.8630334 1.01668
SES	.8119751	.0399152	-4.24	0.000	.7373933 .8941003
LE8_TOTALSCORE	.9987647	.0003641	-3.39	0.001	.9980513 .9994786

-> Model for the mediator

Iteration 0: Log likelihood = -49796.1
 Iteration 1: Log likelihood = -49796.1

Linear regression (Maximum Likelihood)
 Number of obs = 36,667
 Wald chi2(7) = 4746.25
 Log likelihood = -49796.1 Prob > chi2 = 0.0000

	zprcp	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0300205	.0143433	2.09	0.036	.0019082 .0581328
AGE		.0100165	.0009359	10.70	0.000	.0081822 .0118508
SEX		-.2274405	.009935	-22.89	0.000	-.2469128 -.2079681
NonWhite		-.1283396	.0237723	-5.40	0.000	-.1749324 -.0817468
householdsize		-.0132123	.0045245	-2.92	0.003	-.0220802 -.0043444
SES		-.0790146	.0074557	-10.60	0.000	-.0936275 -.0644018
LE8_TOTALSCORE		-.0029553	.0000529	-55.84	0.000	-.0030591 -.0028516
_cons		1.249695	.0676452	18.47	0.000	1.117113 1.382277
sigma2						
_cons		.8853689	.0065389	135.40	0.000	.872553 .8981848

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.233712	.1605059	7.69	0.000	.9191264 1.548298
ereri_cde	1.236715	.159099	7.77	0.000	.9248862 1.548543
ereri_intref	.0047524	.0154007	0.31	0.758	-.0254324 .0349371
ereri_intmed	-.0034935	.0046505	-0.75	0.453	-.0126083 .0056213
ereri_pie	-.0042612	.0023637	-1.80	0.071	-.0088938 .0003715

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zprdx1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.532 .04633 2.216 -.07417 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8782.9634**
 Iteration 1: Log likelihood = **-8693.242**
 Iteration 2: Log likelihood = **-8685.1086**
 Iteration 3: Log likelihood = **-8685.0915**
 Refining estimates:
 Iteration 0: Log likelihood = **-8685.0915**

Cox regression with Breslow method for ties

No. of subjects =	35,420	Number of obs =	35,420
No. of failures =	940		
Time at risk =	430,521.497	LR chi2(9) =	195.74
Log likelihood =	-8685.0915	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.247316	.1635123	11.13	0.000	1.94864 2.591771
zprdx1	.9604746	.0380661	-1.02	0.309	.8886905 1.038057
_infectionburXzprdx1_000	1.034386	.0752	0.47	0.642	.897016 1.192793
AGE	1.039282	.0132707	3.02	0.003	1.013595 1.065621
SEX	.7374374	.0487916	-4.60	0.000	.6477487 .8395446
NonWhite	1.039476	.1815487	0.22	0.825	.7381565 1.463795
householdszie	.9434975	.0396354	-1.38	0.166	.8689255 1.024469
SES	.8147581	.0408075	-4.09	0.000	.7385773 .8987966
LE8_TOTALSCORE	.9990109	.0003597	-2.75	0.006	.9983061 .9997163

-> Model for the mediator

Iteration 0: Log likelihood = **-50217.606**
 Iteration 1: Log likelihood = **-50217.606**

Linear regression (Maximum Likelihood)	Number of obs =	35,420
	Wald chi2(7) =	81.49
Log likelihood =	-50217.606	Prob > chi2 = 0.0000

<u>zprdx1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0166114	.0155184	-1.07	0.284	-.0470269 .0138041
AGE	-.0018762	.001014	-1.85	0.064	-.0038635 .0001111
SEX	-.0427303	.0107297	-3.98	0.000	-.06376 -.0217005
NonWhite	.1708409	.0257378	6.64	0.000	.1203958 .221286
householdszie	-.0082991	.0050742	-1.64	0.102	-.0182443 .0016461
SES	.0021079	.0080694	0.26	0.794	-.013708 .0179237
LE8_TOTALSCORE	.0002519	.0000571	4.41	0.000	.00014 .0003639
_cons	.0651171	.073483	0.89	0.376	-.0789069 .2091412
sigma2					
_cons	.9976765	.0074969	133.08	0.000	.9829829 1.01237

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.245959	.1632053	7.63	0.000	.9260822 1.565835
ereri_cde	1.24642	.163331	7.63	0.000	.9262971 1.566543
ereri_intref	-.0007044	.0016148	-0.44	0.663	-.0038693 .0024606
ereri_intmed	-.0004269	.0024017	-0.18	0.859	-.0051341 .0042803
ereri_pie	.0006701	.0009089	0.74	0.461	-.0011114 .0024516

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zprdx3
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8913.3312

Iteration 1: Log likelihood = -8826.5455

Iteration 2: Log likelihood = -8818.7654

Iteration 3: Log likelihood = -8818.7477

Iteration 4: Log likelihood = -8818.7477

Refining estimates:

Iteration 0: Log likelihood = -8818.7477

Cox regression with Breslow method for ties

No. of subjects = 35,761 Number of obs = 35,761

No. of failures = 953

Time at risk = 434,427.923

Log likelihood = -8818.7477

LR chi2(9) = 189.17

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.224763	.1611134	11.04	0.000	1.930374 2.564049
zprdx3	.9358449	.0368797	-1.68	0.092	.866283 1.010993
_infectionburXzprdx3_000	1.026118	.0743612	0.36	0.722	.8902502 1.182722
AGE	1.036981	.0131592	2.86	0.004	1.011508 1.063096
SEX	.7489078	.0492024	-4.40	0.000	.6584235 .8518269
NonWhite	1.061885	.1854238	0.34	0.731	.754124 1.495245
householdsize	.934517	.039772	-1.59	0.112	.859728 1.015812
SES	.8245382	.0410502	-3.88	0.000	.747882 .9090515
LE8_TOTALSCORE	.9990211	.0003592	-2.72	0.006	.9983173 .9997255

-> Model for the mediator

Iteration 0: Log likelihood = -50514.186
 Iteration 1: Log likelihood = -50514.186

Linear regression (Maximum Likelihood)
 Number of obs = 35,761
 Wald chi2(7) = 458.87
 Log likelihood = -50514.186 Prob > chi2 = 0.0000

	zprdx3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0394714	.0153546	2.57	0.010	.0093769 .0695659
AGE		-.0043207	.0010001	-4.32	0.000	-.0062808 -.0023606
SEX		-.0207676	.0106207	-1.96	0.051	-.0415838 .0000486
NonWhite		.1674727	.0254121	6.59	0.000	.1176659 .2172796
householdsize		-.0041617	.0048308	-0.86	0.389	-.0136299 .0053065
SES		-.0543707	.0079629	-6.83	0.000	-.0699777 -.0387636
LE8_TOTALSCORE		-.0008833	.0000566	-15.61	0.000	-.0009942 -.0007724
_cons		.7258178	.0722366	10.05	0.000	.5842367 .8673989
sigma2						
_cons		.9873034	.0073835	133.72	0.000	.9728321 1.001775

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.217877	.1605046	7.59	0.000	.9032939 1.53246
ereri_cde	1.221665	.1606225	7.61	0.000	.9068509 1.536479
ereri_intref	-.0002379	.0067514	-0.04	0.972	-.0134704 .0129946
ereri_intmed	-.0009365	.0055747	-0.17	0.867	-.0118628 .0099897
ereri_pie	-.0026137	.0018542	-1.41	0.159	-.0062479 .0010204

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zprdx5
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .0466 2.218 -.07544 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9166.3755
Iteration 1: Log likelihood = -9074.0461
Iteration 2: Log likelihood = -9065.0031
Iteration 3: Log likelihood = -9064.9817
Iteration 4: Log likelihood = -9064.9817
Refining estimates:
Iteration 0: Log likelihood = -9064.9817

```

Cox regression with Breslow method for ties

No. of subjects =	36,824	Number of obs =	36,824
No. of failures =	978		
Time at risk =	447,356.911	LR chi2(9) =	202.79
Log likelihood =	-9064.9817	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.279947	.1620383	11.60	0.000	1.983486 2.62072
zprdx5	.9376562	.0354707	-1.70	0.089	.8706496 1.00982
_infectionburXzprdx5_000	1.030841	.0735	0.43	0.670	.8963968 1.18545
AGE	1.036041	.0129925	2.82	0.005	1.010887 1.061822
SEX	.7538089	.048858	-4.36	0.000	.6638818 .8559172
NonWhite	1.046345	.1802547	0.26	0.793	.7465135 1.466601
householdszie	.9358588	.0393109	-1.58	0.115	.8618973 1.016167
SES	.8181569	.0401537	-4.09	0.000	.7431237 .9007662
LE8_TOTALSCORE	.9990467	.0003538	-2.69	0.007	.9983536 .9997404

-> Model for the mediator

Iteration 0: Log likelihood =	-52154.246	Number of obs =	36,824
Iteration 1: Log likelihood =	-52154.246	Wald chi2(7) =	193.00
Log likelihood =	-52154.246	Prob > chi2 =	0.0000

	zprdx5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0187819	.0151756	-1.24	0.216	-.0485256 .0109617
AGE		.0027831	.0009898	2.81	0.005	.0008431 .0047232
SEX		-.017832	.0105079	-1.70	0.090	-.038427 .002763
NonWhite		-.0776261	.0251363	-3.09	0.002	-.1268923 -.02836
householdsize		-.0038963	.0047905	-0.81	0.416	-.0132855 .005493
SES		-.0064385	.0078795	-0.82	0.414	-.0218821 .0090052
LE8_TOTALSCORE		-.0006877	.0000559	-12.29	0.000	-.0007974 -.0005781
_cons		.2184066	.0715488	3.05	0.002	.0781735 .3586397
sigma2						
_cons		.9947592	.0073311	135.69	0.000	.9803906 1.009128

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.278196	.1619012	7.89	0.000	.9608754 1.595517
ereri_cde	1.277526	.161691	7.90	0.000	.9606179 1.594435
ereri_intref	-.0007846	.0048821	-0.16	0.872	-.0103533 .008784
ereri_intmed	.0002445	.002694	0.09	0.928	-.0050357 .0055246
ereri_pie	.0012098	.0012094	1.00	0.317	-.0011606 .0035801

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zprdx6
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04659 2.218 -.07483 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9201.1117**
 Iteration 1: Log likelihood = **-9112.3843**
 Iteration 2: Log likelihood = **-9103.4135**
 Iteration 3: Log likelihood = **-9103.3865**
 Iteration 4: Log likelihood = **-9103.3865**
 Refining estimates:
 Iteration 0: Log likelihood = **-9103.3865**

Cox regression with Breslow method for ties

No. of subjects =	36,726	Number of obs =	36,726
No. of failures =	982		
Time at risk =	446,105.322	LR chi2(9) =	195.45
Log likelihood =	-9103.3865	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.263125	.1608695	11.49	0.000	1.968805 2.601444
zprdx6		.9906765	.0377837	-0.25	0.806	.919322 1.067569
_infectionburXzprdx6_000		1.056049	.0729857	0.79	0.430	.9222647 1.209239
AGE		1.034053	.0129559	2.67	0.008	1.008969 1.05976
SEX		.7579371	.0490216	-4.29	0.000	.667697 .8603733
NonWhite		1.074453	.1827006	0.42	0.673	.7699255 1.49943
householdszie		.9332826	.0392707	-1.64	0.101	.8594018 1.013515
SES		.821137	.0402764	-4.02	0.000	.7458725 .9039964
LE8_TOTALSCORE		.9990927	.0003536	-2.56	0.010	.9983999 .999786

-> Model for the mediator

Iteration 0: Log likelihood = **-51985.094**
 Iteration 1: Log likelihood = **-51985.094**

Linear regression (Maximum Likelihood)	Number of obs =	36,726
	Wald chi2(7) =	253.56
Log likelihood =	-51985.094	Prob > chi2 = 0.0000

	zprdx6	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0260397	.0151908	-1.71	0.086	-.0558132 .0037338
AGE		-.000093	.0009907	-0.09	0.925	-.0020348 .0018488
SEX		-.0349383	.0105124	-3.32	0.001	-.0555421 -.0143344
NonWhite		.0817785	.0251518	3.25	0.001	.0324819 .1310752
householdszie		-.0030018	.0047864	-0.63	0.531	-.012383 .0063794
SES		.0455927	.0078846	5.78	0.000	.0301393 .0610462
LE8_TOTALSCORE		.0007069	.000056	12.63	0.000	.0005972 .0008166
_cons		-.2848869	.0716477	-3.98	0.000	-.4253138 -.14446
sigma2						
_cons		.9931163	.0073287	135.51	0.000	.9787522 1.00748

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.263103	.1609448	7.85	0.000	.9476568 1.578549
ereri_cde	1.263113	.1608611	7.85	0.000	.9478308 1.578395
ereri_intref	.0026533	.0063911	0.42	0.678	-.009873 .0151797
ereri_intmed	-.0029072	.0039444	-0.74	0.461	-.0106381 .0048236
ereri_pie	.0002439	.0010035	0.24	0.808	-.0017229 .0022108

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpreb
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8913.3312

Iteration 1: Log likelihood = -8830.6041

Iteration 2: Log likelihood = -8819.0969

Iteration 3: Log likelihood = -8818.8504

Iteration 4: Log likelihood = -8818.8498

Refining estimates:

Iteration 0: Log likelihood = -8818.8498

Cox regression with Breslow method for ties

No. of subjects = 35,761 Number of obs = 35,761

No. of failures = 953

Time at risk = 434,427.923

Log likelihood = -8818.8498

LR chi2(9) = 188.96

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.198218	.160336	10.80	0.000	1.905395	2.536044
	zpreb	.9667079	.038293	-0.85	0.393	.8944944
	_infectionburXzpreb_000	1.131582	.0787585	1.78	0.076	.9872839
	AGE	1.036833	.0131577	2.85	0.004	1.011362
	SEX	.7500874	.0493392	-4.37	0.000	.6593585
	NonWhite	1.054318	.1841004	0.30	0.762	.7487528
	householdsize	.9348637	.039712	-1.59	0.113	.8601817
SES						1.01603
	LE8_TOTALSCORE	.8265417	.041142	-3.83	0.000	.7497134
		.9990742	.000359	-2.58	0.010	.9983709
						.999778

-> Model for the mediator

```
Iteration 0: Log likelihood = -50550.546  
Iteration 1: Log likelihood = -50550.546
```

Linear regression (Maximum Likelihood) Number of obs = 35,761
Log likelihood = -50550.546 Wald chi2(7) = 385.29
Prob > chi2 = 0.0000

	zpreb	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0591051	.0153702	3.85	0.000	.02898 .0892302
AGE		.0026775	.0010011	2.67	0.007	.0007154 .0046396
SEX		-.1070471	.0106315	-10.07	0.000	-.1278844 -.0862097
NonWhite		-.0641437	.025438	-2.52	0.012	-.1140012 -.0142862
householdsiz		-.0030295	.0048357	-0.63	0.531	-.0125073 .0064483
SES		-.0310377	.007971	-3.89	0.000	-.0466607 -.0154148
LE8_TOTALSCORE		-.0007238	.0000566	-12.78	0.000	-.0008349 -.0006128
_cons		.3641588	.0723101	5.04	0.000	.2224337 .505884
sigma2						
_cons		.9893131	.0073985	133.72	0.000	.9748123 1.003814

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.215235	.1603976	7.58	0.000	.900861 1.529608
ereri_cde	1.197207	.1602053	7.47	0.000	.8832105 1.511204
ereri_intref	.0063064	.0103643	0.61	0.543	-.0140074 .0266201
ereri_intmed	.0137202	.008625	1.59	0.112	-.0031845 .0306249
ereri_pie	-.0019992	.0023936	-0.84	0.404	-.0066906 .0026922

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zprelp
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.532 .04636 2.216 -.0746 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9073.1164
 Iteration 1: Log likelihood = -8983.4107
 Iteration 2: Log likelihood = -8975.1644
 Iteration 3: Log likelihood = -8975.1421
 Iteration 4: Log likelihood = -8975.1421
 Refining estimates:
 Iteration 0: Log likelihood = -8975.1421

Cox regression with Breslow method for ties

No. of subjects = 36,432	Number of obs = 36,432
No. of failures = 969	
Time at risk = 442,512.06	
Log likelihood = -8975.1421	LR chi2(9) = 195.95 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.293462	.17063	11.16	0.000	1.982273 2.653503
zprelp	1.104417	.0444422	2.47	0.014	1.020658 1.195049
_infectionburXzprelp_000	.9135487	.061657	-1.34	0.180	.800355 1.042751
AGE	1.031604	.0131237	2.45	0.014	1.0062 1.057649
SEX	.7561874	.0492204	-4.29	0.000	.6656172 .8590814
NonWhite	1.099152	.1870931	0.56	0.579	.7873534 1.534425
householdsize	.9381184	.0392918	-1.53	0.127	.8641841 1.018378
SES	.8305147	.041073	-3.76	0.000	.7537915 .9150469
LE8_TOTALSCORE	.9990811	.0003557	-2.58	0.010	.9983842 .9997785

-> Model for the mediator

Iteration 0: Log likelihood = -50541.748
 Iteration 1: Log likelihood = -50541.748

Linear regression (Maximum Likelihood)

Number of obs = 36,432
Wald chi2(7) = 2379.52
Prob > chi2 = 0.0000

Log likelihood = -50541.748

zprelp	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0588877	.0148188	3.97	0.000	.0298434 .0879319
AGE	.0423842	.0009667	43.84	0.000	.0404895 .0442789
SEX	-.03776	.0102625	-0.37	0.713	-.0238901 .0163381
NonWhite	.0141794	.0246006	0.58	0.564	-.0340368 .0623956
householdsize	.0063423	.0046691	1.36	0.174	-.0028091 .0154936
SES	-.0449784	.0077029	-5.84	0.000	-.0600759 -.029881
LE8_TOTALSCORE	-.00046	.0000547	-8.41	0.000	-.0005671 -.0003528
_cons	-2.341151	.0698437	-33.52	0.000	-2.478043 -2.20426
sigma2					
_cons	.9386645	.0069548	134.97	0.000	.9250334 .9522956

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.285839	.1674913	7.68	0.000	.9575624 1.614116
ereri_cde	1.288533	.1692984	7.61	0.000	.9567146 1.620352
ereri_intref	-.0038915	.003437	-1.13	0.258	-.0106279 .0028449
ereri_intmed	-.0046682	.0078031	-0.60	0.550	-.019962 .0106257
ereri_pie	.0058657	.0028059	2.09	0.037	.0003663 .0113651

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zprkab1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8913.3312**
 Iteration 1: Log likelihood = **-8827.5889**
 Iteration 2: Log likelihood = **-8819.7773**
 Iteration 3: Log likelihood = **-8819.7588**
 Iteration 4: Log likelihood = **-8819.7588**
 Refining estimates:
 Iteration 0: Log likelihood = **-8819.7588**

Cox regression with Breslow method for ties

No. of subjects =	35,761	Number of obs =	35,761
No. of failures =	953		
Time at risk =	434,427.923	LR chi2(9) =	187.14
Log likelihood =	-8819.7588	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.222266	.160834	11.03	0.000	1.928374 2.560948
zprkab1	.9559707	.0385035	-1.12	0.264	.883407 1.034495
_infectionburXzprkab1_000	1.047146	.0767652	0.63	0.530	.9069982 1.208949
AGE	1.037311	.013163	2.89	0.004	1.01183 1.063434
SEX	.7485637	.0491816	-4.41	0.000	.6581179 .8514395
NonWhite	1.054713	.1841695	0.31	0.760	.7490332 1.48514
householdsize	.9348466	.0397839	-1.58	0.113	.860035 1.016166
SES	.8264798	.0411171	-3.83	0.000	.7496961 .9111276
LE8_TOTALSCORE	.9990433	.0003595	-2.66	0.008	.998339 .9997481

-> Model for the mediator

Iteration 0: Log likelihood = **-50602.851**
 Iteration 1: Log likelihood = **-50602.851**

Linear regression (Maximum Likelihood)	Number of obs =	35,761
	Wald chi2(7) =	279.71
Log likelihood =	Prob > chi2 =	0.0000

<u>zprkab1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0101524	.0153927	0.66	0.510	-.0200168 .0403217
AGE	.0002861	.0010026	0.29	0.775	-.0016788 .0022511
SEX	-.0504291	.0106471	-4.74	0.000	-.071297 -.0295612
NonWhite	.0215556	.0254752	0.85	0.397	-.0283748 .0714861
householdsize	-.0013587	.0048428	-0.28	0.779	-.0108503 .008133
SES	-.0247758	.0079827	-3.10	0.002	-.0404216 -.00913
LE8_TOTALSCORE	-.0007991	.0000567	-14.09	0.000	-.0009103 -.0006879
_cons	.4586826	.0724159	6.33	0.000	.31675 .6006151
sigma2					
_cons	.9922114	.0074202	133.72	0.000	.9776681 1.006755

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.219912	.1606285	7.59	0.000	.9050864 1.534738
ereri_cde	1.22096	.1606336	7.60	0.000	.9061235 1.535796
ereri_intref	-.0010707	.001874	-0.57	0.568	-.0047436 .0026023
ereri_intmed	.0004805	.0016154	0.30	0.766	-.0026856 .0036465
ereri_pie	-.000457	.0008044	-0.57	0.570	-.0020336 .0011195

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zprkar1a
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9064.8284

Iteration 1: Log likelihood = -8974.5432

Iteration 2: Log likelihood = -8965.4381

Iteration 3: Log likelihood = -8965.4147

Iteration 4: Log likelihood = -8965.4147

Refining estimates:

Iteration 0: Log likelihood = -8965.4147

Cox regression with Breslow method for ties

No. of subjects = 36,441 Number of obs = 36,441

No. of failures = 968

Time at risk = 442,700.115

LR chi2(9) = 198.83

Log likelihood = -8965.4147

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.279741	.1629041	11.53	0.000	1.981805 2.622467
zprkar1a		.9516692	.0370404	-1.27	0.203	.8817713 1.027108
_infectionburXzprkar1a_000		1.005478	.0711259	0.08	0.938	.8753057 1.155008
AGE		1.033564	.0130201	2.62	0.009	1.008357 1.0594
SEX		.7514198	.0489842	-4.38	0.000	.6612926 .8538302
NonWhite		1.00717	.178207	0.04	0.968	.7120208 1.424666
householdsize		.9271961	.0398859	-1.76	0.079	.8522261 1.008761
SES		.8250211	.0408057	-3.89	0.000	.7487977 .9090036
LE8_TOTALSCORE		.9990188	.0003562	-2.75	0.006	.998321 .9997172

-> Model for the mediator

Iteration 0: Log likelihood = **-51570.619**
 Iteration 1: Log likelihood = **-51570.619**

Linear regression (Maximum Likelihood) Number of obs = 36,441
 Wald chi2(7) = 273.86
 Log likelihood = **-51570.619** Prob > chi2 = 0.0000

	zprkar1a	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0208661	.0152254	-1.37	0.171	-.0507073 .0089751
AGE		-.0012018	.0009944	-1.21	0.227	-.0031508 .0007472
SEX		.0352271	.0105506	3.34	0.001	.0145484 .0559059
NonWhite		-.0208434	.0252628	-0.83	0.409	-.0703575 .0286706
householdsize		.0032587	.0048014	0.68	0.497	-.0061519 .0126692
SES		-.0295472	.0079173	-3.73	0.000	-.0450648 -.0140295
LE8_TOTALSCORE		-.0008386	.0000562	-14.91	0.000	-.0009489 -.0007284
_cons		.432523	.0718692	6.02	0.000	.291662 .573384
sigma2						
_cons		.9925136	.0073529	134.98	0.000	.9781022 1.006925

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.281295	.1627617	7.87	0.000	.9622881 1.600302
ereri_cde	1.278367	.16269	7.86	0.000	.9595001 1.597233
ereri_intref	.0008315	.0057931	0.14	0.886	-.0105228 .0121859
ereri_intmed	.0010629	.0030323	0.35	0.726	-.0048803 .0070061
ereri_pie	.0010342	.0011095	0.93	0.351	-.0011404 .0032088

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zprkcq
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8913.3312
 Iteration 1: Log likelihood = -8828.8928
 Iteration 2: Log likelihood = -8819.5623
 Iteration 3: Log likelihood = -8819.4608
 Iteration 4: Log likelihood = -8819.4606
 Refining estimates:
 Iteration 0: Log likelihood = -8819.4606

Cox regression with Breslow method for ties

No. of subjects = 35,761	Number of obs = 35,761
No. of failures = 953	
Time at risk = 434,427.923	
Log likelihood = -8819.4606	LR chi2(9) = 187.74 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.220026	.1608737	11.01	0.000	1.926087 2.558822
zprkcq	.9675062	.0396618	-0.81	0.420	.8928113 1.04845
_infectionburXzprkcq_000	1.096394	.0727481	1.39	0.165	.9626928 1.248665
AGE	1.036813	.0131557	2.85	0.004	1.011346 1.062921
SEX	.7495987	.0492493	-4.39	0.000	.6590283 .8526161
NonWhite	1.053897	.1840429	0.30	0.764	.748432 1.484035
householdsize	.9342095	.0398121	-1.60	0.110	.8593491 1.015591
SES	.8280738	.0411883	-3.79	0.000	.7511563 .9128675
LE8_TOTALSCORE	.9990624	.0003582	-2.62	0.009	.9983606 .9997648

-> Model for the mediator

Iteration 0: Log likelihood = -50729.036
 Iteration 1: Log likelihood = -50729.036

Linear regression (Maximum Likelihood)

Log likelihood = -50729.036	Number of obs = 35,761
	Wald chi2(7) = 26.26
	Prob > chi2 = 0.0005

	zprkcq	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0056657	.0154471	0.37	0.714	-.0246101 .0359416
AGE		-.004089	.0010061	-4.06	0.000	-.006061 -.0021171
SEX		.0225719	.0106847	2.11	0.035	.0016303 .0435135
NonWhite		.0130195	.0255652	0.51	0.611	-.0370874 .0631265
householdsize		-.0084642	.0048599	-1.74	0.082	-.0179894 .0010611
SES		.0029385	.0080109	0.37	0.714	-.0127626 .0186396
LE8_TOTALSCORE		-.0000957	.0000569	-1.68	0.093	-.0002073 .0000159
_cons		.2770331	.0726719	3.81	0.000	.1345988 .4194673
sigma2						
_cons		.9992383	.0074727	133.72	0.000	.984592 1.013885

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.223259	.1608783	7.60	0.000	.9079438 1.538575
ereri_cde	1.219329	.1607395	7.59	0.000	.9042853 1.534373
ereri_intref	.0031874	.0069404	0.46	0.646	-.0104156 .0167905
ereri_intmed	.0009301	.0026306	0.35	0.724	-.0042258 .006086
ereri_pie	-.0001871	.0005605	-0.33	0.738	-.0012858 .0009115

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zprkra
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8789.5368**
 Iteration 2: Log likelihood = **-8781.5499**
 Iteration 3: Log likelihood = **-8781.5327**
 Refining estimates:
 Iteration 0: Log likelihood = **-8781.5327**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	201.33
Log likelihood =	-8781.5327	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.265272	.1640172	11.29	0.000	1.965572 2.610668
zprkra	.8575191	.034603	-3.81	0.000	.7923111 .9280938
_infectionburXzprkra_000	1.143212	.0824398	1.86	0.063	.9925326 1.316768
AGE	1.038171	.0131929	2.95	0.003	1.012633 1.064354
SEX	.7334425	.048394	-4.70	0.000	.644469 .8346994
NonWhite	1.120916	.190748	0.67	0.502	.8030134 1.564672
householdszie	.9399407	.0396165	-1.47	0.142	.8654144 1.020885
SES	.8267249	.0412033	-3.82	0.000	.7497869 .9115578
LE8_TOTALSCORE	.999074	.0003619	-2.56	0.011	.998365 .9997835

-> Model for the mediator

Iteration 0: Log likelihood = **-49903.005**
 Iteration 1: Log likelihood = **-49903.005**

Linear regression (Maximum Likelihood)	Number of obs =	35,573
	Wald chi2(7) =	1163.41
Log likelihood =	-49903.005	Prob > chi2 = 0.0000

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0218698	.0152431	1.43	0.151	-.0080062 .0517458
AGE	.0009955	.000994	1.00	0.317	-.0009526 .0029436
SEX	-.1756731	.0105474	-16.66	0.000	-.1963457 -.1550005
NonWhite	.1089187	.0252074	4.32	0.000	.0595131 .1583242
householdszie	-.0014782	.0048005	-0.31	0.758	-.0108871 .0079306
SES	-.0229625	.0079109	-2.90	0.004	-.0384675 -.0074575
LE8_TOTALSCORE	-.0014658	.0000562	-26.10	0.000	-.0015759 -.0013557
_cons	.9362324	.0718358	13.03	0.000	.7954368 1.077028
sigma2					
_cons	.9683036	.0072605	133.37	0.000	.9540733 .9825339

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.238053	.1618026	7.65	0.000	.9209254 1.55518
ereri_cde	1.250297	.1617924	7.73	0.000	.9331901 1.567405
ereri_intref	-.0112719	.0067557	-1.67	0.095	-.0245129 .0019691
ereri_intmed	.0023833	.0034905	0.68	0.495	-.004458 .0092246
ereri_pie	-.003356	.0024953	-1.34	0.179	-.0082468 .0015348

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpr1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9160.406

Iteration 1: Log likelihood = -9071.497

Iteration 2: Log likelihood = -9063.337

Iteration 3: Log likelihood = -9063.3182

Iteration 4: Log likelihood = -9063.3182

Refining estimates:

Iteration 0: Log likelihood = -9063.3182

Cox regression with Breslow method for ties

No. of subjects = 36,751 Number of obs = 36,751

No. of failures = 977

Time at risk = 446,451.479

Log likelihood = -9063.3182

LR chi2(9) = 194.18

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.237317	.1599945	11.26	0.000	1.944717 2.57394
zprl		.9697986	.0387914	-0.77	0.443	.8966728 1.048888
_infectionburXzprl_000		1.055285	.0726421	0.78	0.434	.922096 1.207712
AGE		1.033812	.0129673	2.65	0.008	1.008706 1.059542
SEX		.7546414	.0489333	-4.34	0.000	.6645781 .85691
NonWhite		1.085548	.1845755	0.48	0.629	.7778923 1.514881
householdszie		.933059	.0394358	-1.64	0.101	.858881 1.013643
SES		.817235	.0401502	-4.11	0.000	.7422119 .8998414
LE8_TOTALSCORE		.9990387	.0003537	-2.72	0.007	.9983457 .9997322

-> Model for the mediator

Iteration 0: Log likelihood = **-51842.225**
 Iteration 1: Log likelihood = **-51842.225**

Linear regression (Maximum Likelihood)
 Number of obs = 36,751
 Wald chi2(7) = 614.45
 Prob > chi2 = 0.0000
 Log likelihood = **-51842.225**

	zprl	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0537096	.0150999	3.56	0.000	.0241144 .0833048
AGE		-.0185153	.0009881	-18.74	0.000	-.0204519 -.0165787
SEX		.1038863	.0104598	9.93	0.000	.0833855 .1243871
NonWhite		-.0407971	.0250931	-1.63	0.104	-.0899787 .0083845
householdszie		-.0216466	.0049685	-4.36	0.000	-.0313846 -.0119086
SES		.017347	.0078552	2.21	0.027	.0019511 .0327429
LE8_TOTALSCORE		.0004895	.0000557	8.79	0.000	.0003803 .0005987
_cons		.7538572	.0716447	10.52	0.000	.6134362 .8942782
sigma2						
_cons		.9835289	.0072555	135.56	0.000	.9693084 .9977494

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.238755	.1602094	7.73	0.000	.9247504 1.55276
ereri_cde	1.236462	.1597661	7.74	0.000	.9233259 1.549597
ereri_intref	-.0004878	.0024819	-0.20	0.844	-.0053522 .0043766
ereri_intmed	.0044269	.0071904	0.62	0.538	-.009666 .0185199
ereri_pie	-.0016457	.0021941	-0.75	0.453	-.0059461 .0026546

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zproc
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .0465 2.216 -.07519 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9110.8828
 Iteration 1: Log likelihood = -9017.7199
 Iteration 2: Log likelihood = -9008.2553
 Iteration 3: Log likelihood = -9008.197
 Iteration 4: Log likelihood = -9008.197
 Refining estimates:
 Iteration 0: Log likelihood = -9008.197

Cox regression with Breslow method for ties

No. of subjects =	36,534	Number of obs =	36,534
No. of failures =	973		
Time at risk =	443,839.498	LR chi2(9) =	205.37
Log likelihood =	-9008.197	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.254255	.1620662	11.31	0.000	1.957975 2.595367
zproc	.8666836	.0339141	-3.66	0.000	.8026983 .9357694
_infectionburXzproc_000	1.089799	.0729732	1.28	0.199	.955762 1.242633
AGE	1.033328	.0130061	2.60	0.009	1.008148 1.059136
SEX	.8074932	.0545536	-3.16	0.002	.7073467 .9218185
NonWhite	1.087413	.1848921	0.49	0.622	.7792289 1.517482
householdsize	.9330791	.0395082	-1.64	0.102	.8587705 1.013818
SES	.828441	.0408491	-3.82	0.000	.7521253 .9125002
LE8_TOTALSCORE	.9988453	.0003589	-3.22	0.001	.9981422 .999549

-> Model for the mediator

Iteration 0: Log likelihood = -50516.777
 Iteration 1: Log likelihood = -50516.777

Linear regression (Maximum Likelihood)
 Number of obs = 36,534
 Wald chi2(7) = 2742.50
 Log likelihood = -50516.777 Prob > chi2 = 0.0000

	zproc	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0659041	.0147371	-4.47	0.000	-.0947883 -.03702
AGE		-.0000108	.0009611	-0.01	0.991	-.0018945 .0018729
SEX		.4052986	.0102007	39.73	0.000	.3853056 .4252917
NonWhite		-.1062119	.024419	-4.35	0.000	-.1540724 -.0583515
householdsize		-.0036754	.004646	-0.79	0.429	-.0127814 .0054306
SES		.0223287	.0076571	2.92	0.004	.0073209 .0373364
LE8_TOTALSCORE		-.0019863	.0000544	-36.52	0.000	-.0020929 -.0018797
_cons		.3984263	.0694658	5.74	0.000	.2622759 .5345767
sigma2						
_cons		.930149	.0068821	135.16	0.000	.9166604 .9436376

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.246475	.160533	7.76	0.000	.9318357 1.561113
ereri_cde	1.243995	.1604431	7.75	0.000	.9295322 1.558458
ereri_intref	-.0059565	.0071475	-0.83	0.405	-.0199652 .0080523
ereri_intmed	-.0010381	.0085996	-0.12	0.904	-.017893 .0158168
ereri_pie	.0094742	.0033628	2.82	0.005	.0028834 .0160651

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zprok1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8954.137**
 Iteration 2: Log likelihood = **-8938.0433**
 Iteration 3: Log likelihood = **-8937.7966**
 Iteration 4: Log likelihood = **-8937.7965**
 Refining estimates:
 Iteration 0: Log likelihood = **-8937.7965**

Cox regression with Breslow method for ties

No. of subjects = **36,352** Number of obs = **36,352**
 No. of failures = **965**
 Time at risk = **441,650.762**
 LR chi2(9) = **197.28**
 Log likelihood = **-8937.7965** Prob > chi2 = **0.0000**

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.241714	.1622501	11.15	0.000	1.945236 2.58338
zprok1	1.090128	.0571545	1.65	0.100	.9836705 1.208107
_infectionburXzprok1_000	1.032306	.0734772	0.45	0.655	.8978872 1.186848
AGE	1.032839	.0130193	2.56	0.010	1.007635 1.058675
SEX	.8691462	.0813238	-1.50	0.134	.7235159 1.044089
NonWhite	1.027265	.177701	0.16	0.876	.7318761 1.441873
householdszie	.9339554	.0397637	-1.60	0.109	.8591831 1.015235
SES	.8210343	.0406019	-3.99	0.000	.745191 .9045968
LE8_TOTALSCORE	.9990881	.0003571	-2.55	0.011	.9983884 .9997883

-> Model for the mediator

Iteration 0: Log likelihood = **-37681.498**
 Iteration 1: Log likelihood = **-37681.498**

Linear regression (Maximum Likelihood) Number of obs = **36,352**
 Wald chi2(7) = **41745.11**
 Log likelihood = **-37681.498** Prob > chi2 = **0.0000**

<u>zprok1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0288762	.0104514	2.76	0.006	.0083917 .0493606
AGE	-.0114708	.0006822	-16.81	0.000	-.012808 -.0101336
SEX	-1.445771	.0072337	-199.87	0.000	-1.459949 -1.431594
NonWhite	.247971	.0173343	14.31	0.000	.2139963 .2819457
householdszie	.0051942	.003348	1.55	0.121	-.0013677 .0117561
SES	-.0270017	.0054256	-4.98	0.000	-.0376357 -.0163676
LE8_TOTALSCORE	-.0006659	.0000385	-17.29	0.000	-.0007414 -.0005904
_cons	3.208438	.0493542	65.01	0.000	3.111705 3.30517
sigma2					
_cons	.465459	.0034525	134.82	0.000	.4586922 .4722257

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.252489	.1618099	7.74	0.000	.9353478 1.569631
ereri_cde	1.239992	.1619593	7.66	0.000	.9225581 1.557427
ereri_intref	.0048291	.0073406	0.66	0.511	-.0095583 .0192164
ereri_intmed	.0051729	.0045586	1.13	0.256	-.0037618 .0141075
ereri_pie	.002495	.0017666	1.41	0.158	-.0009676 .0059575

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zprss2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04645 2.216 -.0751 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9132.7834

Iteration 1: Log likelihood = -9045.3125

Iteration 2: Log likelihood = -9036.8674

Iteration 3: Log likelihood = -9036.8479

Iteration 4: Log likelihood = -9036.8479

Refining estimates:

Iteration 0: Log likelihood = -9036.8479

Cox regression with Breslow method for ties

No. of subjects = 36,596

Number of obs = 36,596

No. of failures = 975

Time at risk = 444,571.57

LR chi2(9) = 191.87

Log likelihood = -9036.8479 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.251812	.1606648	11.38	0.000	1.957941 2.58979
zprss2	.9596804	.0377596	-1.05	0.296	.8884547 1.036616
_infectionburXzprss2_000	1.016038	.066218	0.24	0.807	.8941998 1.154476
AGE	1.03359	.0129833	2.63	0.009	1.008454 1.059352
SEX	.7610056	.0493908	-4.21	0.000	.6701054 .8642365
NonWhite	1.098384	.1867803	0.55	0.581	.787059 1.532855
householdsize	.9347686	.0395108	-1.60	0.111	.8604497 1.015507
SES	.8273435	.0407875	-3.84	0.000	.7511422 .9112751
LE8_TOTALSCORE	.9990382	.0003552	-2.71	0.007	.9983423 .9997345

-> Model for the mediator

Iteration 0: Log likelihood = **-51774.237**
 Iteration 1: Log likelihood = **-51774.237**

Linear regression (Maximum Likelihood) Number of obs = 36,596
 Wald chi2(7) = 306.75
 Log likelihood = **-51774.237** Prob > chi2 = 0.0000

	zprss2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.0962972	.0152033	6.33	0.000	.0664993	.126095
AGE	.007047	.0009915	7.11	0.000	.0051037	.0089902
SEX	-.0043684	.0105234	-0.42	0.678	-.0249938	.016257
NonWhite	.0018483	.0252049	0.07	0.942	-.0475523	.0512489
householdsize	-.0101664	.0047946	-2.12	0.034	-.0195636	-.0007693
SES	-.0108583	.0078998	-1.37	0.169	-.0263417	.0046251
LE8_TOTALSCORE	-.0006688	.0000561	-11.92	0.000	-.0007788	-.0005588
_cons	-.0743933	.0716668	-1.04	0.299	-.2148576	.0660711
sigma2						
_cons	.9916604	.007331	135.27	0.000	.977292	1.006029

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.244691	.1601221	7.77	0.000	.9308573 1.558525
ereri_cde	1.250074	.1604292	7.79	0.000	.9356383 1.564509
ereri_intref	.0000806	.0049745	0.02	0.987	-.0096692 .0098305
ereri_intmed	-.0015082	.011889	-0.13	0.899	-.0248101 .0217937
ereri_pie	-.0039553	.003825	-1.03	0.301	-.0114522 .0035417

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zprss27
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04649 2.218 -.0762 500.4

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -9023.7916
Iteration 1: Log likelihood = -8932.5947
Iteration 2: Log likelihood = -8923.7037
Iteration 3: Log likelihood = -8923.6834
Iteration 4: Log likelihood = -8923.6834
Refining estimates:
Iteration 0: Log likelihood = -8923.6834

```

Cox regression with Breslow method for ties

No. of subjects =	36,333	Number of obs =	36,333
No. of failures =	964		
Time at risk =	441,441.032	LR chi2(9) =	200.22
Log likelihood =	-8923.6834	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.283179	.163201	11.55	0.000	1.984706 2.626538
zprss27	1.046777	.0403327	1.19	0.235	.9706371 1.128889
_infectionburXzprss27_000	.9183688	.0651905	-1.20	0.230	.7990878 1.055455
AGE	1.034635	.0130782	2.69	0.007	1.009317 1.060588
SEX	.7459103	.0487218	-4.49	0.000	.6562772 .8477854
NonWhite	.9848364	.1767891	-0.09	0.932	.69273 1.400117
householdsize	.928996	.0399454	-1.71	0.087	.8539127 1.010681
SES	.8245066	.0408479	-3.90	0.000	.7482104 .9085828
LE8_TOTALSCORE	.9990248	.0003571	-2.73	0.006	.9983251 .999725

-> Model for the mediator

```

Iteration 0: Log likelihood = -51476.117
Iteration 1: Log likelihood = -51476.117

```

Linear regression (Maximum Likelihood)	Number of obs = 36,333
Log likelihood = -51476.117	Wald chi2(7) = 155.69
	Prob > chi2 = 0.0000

	zprss27	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0203462	.0152654	1.33	0.183	-.0095734 .0502658
AGE		-.0021755	.0009974	-2.18	0.029	-.0041304 -.0002206
SEX		-.0063009	.0105832	-0.60	0.552	-.0270436 .0144417
NonWhite		-.095559	.0253396	-3.77	0.000	-.1452237 -.0458943
householdsize		-.0029097	.004814	-0.60	0.546	-.012345 .0065255
SES		-.0318743	.0079408	-4.01	0.000	-.0474381 -.0163105
LE8_TOTALSCORE		-.0005623	.0000564	-9.97	0.000	-.0006729 -.0004517
_cons		.4276111	.0720873	5.93	0.000	.2863226 .5688996
sigma2						
_cons		.9957059	.0073875	134.78	0.000	.9812267 1.010185

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.28129	.1630051	7.86	0.000	.9618063 1.600775
ereri_cde	1.28201	.1630049	7.86	0.000	.9625267 1.601494
ereri_intref	.0011114	.006024	0.18	0.854	-.0106954 .0129183
ereri_intmed	-.002762	.0035523	-0.78	0.437	-.0097244 .0042005
ereri_pie	.0009306	.0010505	0.89	0.376	-.0011285 .0029896

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zprss8
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04623 2.215 -.07547 500.4

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9035.5492**
 Iteration 1: Log likelihood = **-8948.7607**
 Iteration 2: Log likelihood = **-8938.4479**
 Iteration 3: Log likelihood = **-8938.3724**
 Iteration 4: Log likelihood = **-8938.3724**
 Refining estimates:
 Iteration 0: Log likelihood = **-8938.3724**

Cox regression with Breslow method for ties

No. of subjects =	36,295	Number of obs =	36,295
No. of failures =	965		
Time at risk =	440,887.734	LR chi2(9) =	194.35
Log likelihood =	-8938.3724	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.236852	.1678626	10.73	0.000	1.930899 2.591284
zprss8	.9917767	.0420113	-0.19	0.845	.9127614 1.077632
_infectionburXzprss8_000	1.007616	.0702512	0.11	0.913	.8789193 1.155157
AGE	1.037815	.0131353	2.93	0.003	1.012387 1.063882
SEX	.7490918	.0514529	-4.21	0.000	.6547394 .857041
NonWhite	1.076486	.185837	0.43	0.669	.7674724 1.509919
householdszie	.9385221	.0393955	-1.51	0.131	.8643993 1.019001
SES	.8180422	.0405468	-4.05	0.000	.74231 .9015008
LE8_TOTALSCORE	.9990117	.0003685	-2.68	0.007	.9982897 .9997342

-> Model for the mediator

Iteration 0: Log likelihood = **-47013.976**
 Iteration 1: Log likelihood = **-47013.976**

Linear regression (Maximum Likelihood)	Number of obs =	36,295
	Wald chi2(7) =	10177.98
Log likelihood =	Prob > chi2 =	0.0000

zprss8	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1842166	.0135243	13.62	0.000	.1577094 .2107237
AGE	.0223072	.0008833	25.26	0.000	.0205761 .0240384
SEX	-.5609821	.0093783	-59.82	0.000	-.5793631 -.542601
NonWhite	-.2701531	.0225104	-12.00	0.000	-.3142726 -.2260335
householdszie	-.0125216	.0042649	-2.94	0.003	-.0208807 -.0041626
SES	-.1340843	.0070368	-19.05	0.000	-.1478761 -.1202926
LE8_TOTALSCORE	-.0028274	.00005	-56.59	0.000	-.0029253 -.0027295
_cons	.9358498	.0637899	14.67	0.000	.810824 1.060876
sigma2					
_cons	.78097	.0057973	134.71	0.000	.7696075 .7923325

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.236082	.1635932	7.56	0.000	.915445 1.556719
ereri_cde	1.236557	.1679711	7.36	0.000	.9073402 1.565775
ereri_intref	-.0001996	.003613	-0.06	0.956	-.0072809 .0068818
ereri_intmed	.0012438	.0249649	0.05	0.960	-.0476864 .0501741
ereri_pie	-.00152	.0077923	-0.20	0.845	-.0167926 .0137526

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zprtfdc1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8819.5642

Iteration 1: Log likelihood = -8733.1179

Iteration 2: Log likelihood = -8723.6802

Iteration 3: Log likelihood = -8723.6133

Iteration 4: Log likelihood = -8723.6132

Refining estimates:

Iteration 0: Log likelihood = -8723.6132

Cox regression with Breslow method for ties

No. of subjects = 35,601 Number of obs = 35,601

No. of failures = 943

Time at risk = 432,443.367

LR chi2(9) = 191.90

Log likelihood = -8723.6132

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.205389	.1617113	10.79	0.000	1.910163	2.546244
zprtfdc1	.9198878	.0349307	-2.20	0.028	.8539105	.9909629
_infectionburXzprtfdc1_000	.9807712	.0704764	-0.27	0.787	.8519261	1.129103
AGE	1.037394	.0131984	2.89	0.004	1.011846	1.063588
SEX	.7519843	.0496873	-4.31	0.000	.6606412	.8559569
NonWhite	1.09964	.1894857	0.55	0.581	.7844674	1.541439
householdsize	.9297346	.0401733	-1.69	0.092	.8542384	1.011903
SES	.8142354	.0406501	-4.12	0.000	.7383367	.8979364
LE8_TOTALSCORE	.9991473	.0003604	-2.36	0.018	.9984412	.999854

-> Model for the mediator

Iteration 0: Log likelihood = -50438.609
 Iteration 1: Log likelihood = -50438.609

Linear regression (Maximum Likelihood)
 Number of obs = 35,601
 Wald chi2(7) = 153.37
 Log likelihood = -50438.609 Prob > chi2 = 0.0000

	zprtfdc1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	-.0280537	.0154325	-1.82	0.069	-.0583009	.0021935
AGE	-.0038053	.0010104	-3.77	0.000	-.0057857	-.0018249
SEX	.0433056	.010691	4.05	0.000	.0223515	.0642597
NonWhite	.0640754	.0255099	2.51	0.012	.0140769	.1140739
householdsize	-.0017524	.0050719	-0.35	0.730	-.0116931	.0081883
SES	-.0192773	.0080313	-2.40	0.016	-.0350184	-.0035363
LE8_TOTALSCORE	-.0005581	.000057	-9.79	0.000	-.0006698	-.0004464
_cons	.4454024	.0732522	6.08	0.000	.3018307	.5889741
sigma2						
_cons	.9956824	.0074629	133.42	0.000	.9810555	1.010309

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
tereri	1.215588	.161293	7.54	0.000	.8994592	1.531716
ereri_cde	1.201603	.1610576	7.46	0.000	.8859361	1.51727
ereri_intref	.0075968	.01359	0.56	0.576	-.0190392	.0342328
ereri_intmed	.0040425	.0045387	0.89	0.373	-.0048533	.0129382
ereri_pie	.0023453	.0016759	1.40	0.162	-.0009394	.00563

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zprtg
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04659 2.218 -.07483 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9201.1117
 Iteration 1: Log likelihood = -9112.05
 Iteration 2: Log likelihood = -9103.3226
 Iteration 3: Log likelihood = -9103.302
 Iteration 4: Log likelihood = -9103.302
 Refining estimates:
 Iteration 0: Log likelihood = -9103.302

Cox regression with Breslow method for ties

No. of subjects =	36,726	Number of obs =	36,726
No. of failures =	982		
Time at risk =	446,105.322	LR chi2(9) =	195.62
Log likelihood =	-9103.302	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.255915	.1603556	11.45	0.000	1.962535 2.593152
zprtg	.9666221	.0378	-0.87	0.385	.8953035 1.043622
_infectionburXzprtg_000	1.051517	.0731367	0.72	0.470	.9175134 1.205093
AGE	1.03428	.0129557	2.69	0.007	1.009197 1.059987
SEX	.7570776	.0489675	-4.30	0.000	.6669372 .859401
NonWhite	1.068298	.1820454	0.39	0.698	.7649652 1.491911
householdsize	.932855	.0392971	-1.65	0.099	.858928 1.013145
SES	.8229081	.040336	-3.98	0.000	.7475298 .9058873
LE8_TOTALSCORE	.9991021	.0003532	-2.54	0.011	.99841 .9997946

-> Model for the mediator

Iteration 0: Log likelihood = -51887.815	Number of obs = 36,726
Iteration 1: Log likelihood = -51887.815	Wald chi2(7) = 449.98
Linear regression (Maximum Likelihood)	Prob > chi2 = 0.0000
Log likelihood = -51887.815	

	zprtg	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0092052	.0151507	0.61	0.543	-.0204896 .0388999
AGE		.0068072	.0009881	6.89	0.000	.0048706 .0087439
SEX		-.0624152	.0104845	-5.95	0.000	-.0829646 -.0418659
NonWhite		-.3881318	.0250853	-15.47	0.000	-.437298 -.3389656
householdsize		-.0178413	.0047737	-3.74	0.000	-.0271977 -.0084849
SES		.0209033	.0078637	2.66	0.008	.0054907 .0363159
LE8_TOTALSCORE		.0003075	.0000558	5.51	0.000	.000198 .0004169
_cons		-.4101156	.0714582	-5.74	0.000	-.5501711 -.2700602
sigma2						
_cons		.9878691	.00729	135.51	0.000	.973581 1.002157

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.25512	.1602699	7.83	0.000	.9409967 1.569243
ereri_cde	1.255146	.1602601	7.83	0.000	.9410416 1.56925
ereri_intref	-.0003638	.0023933	-0.15	0.879	-.0050546 .004327
ereri_intmed	.0006505	.0016444	0.40	0.692	-.0025725 .0038735
ereri_pie	-.0003124	.0006276	-0.50	0.619	-.0015425 .0009176

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zprtn3
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.531 .04626 2.216 -.07513 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8772.006**
 Iteration 1: Log likelihood = **-8691.692**
 Iteration 2: Log likelihood = **-8674.3837**
 Iteration 3: Log likelihood = **-8673.5877**
 Iteration 4: Log likelihood = **-8673.5822**
 Iteration 5: Log likelihood = **-8673.5822**
 Refining estimates:
 Iteration 0: Log likelihood = **-8673.5822**

Cox regression with Breslow method for ties

No. of subjects =	35,520	Number of obs =	35,520
No. of failures =	940		
Time at risk =	431,545.752	LR chi2(9) =	196.85
Log likelihood =	-8673.5822	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.207843	.1636077	10.69	0.000	1.909377 2.552964
zprtn3	1.023352	.0391379	0.60	0.546	.9494476 1.103009
_infectionburXzprtn3_000	1.107095	.0722964	1.56	0.119	.9740894 1.258261
AGE	1.035756	.0132727	2.74	0.006	1.010066 1.0621
SEX	.7504802	.0496104	-4.34	0.000	.6592811 .8542949
NonWhite	1.059629	.1854577	0.33	0.741	.7519261 1.493249
householdszie	.9520973	.0393543	-1.19	0.235	.878006 1.032441
SES	.8082982	.0405003	-4.25	0.000	.7326922 .8917058
LE8_TOTALSCORE	.9991729	.0003622	-2.28	0.022	.9984633 .9998831

-> Model for the mediator

Iteration 0: Log likelihood = **-49948.717**
 Iteration 1: Log likelihood = **-49948.717**

Linear regression (Maximum Likelihood)	Number of obs =	35,520
	Wald chi2(7) =	914.53
Log likelihood =	Prob > chi2 =	0.0000

<u>zprtn3</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0912045	.0152857	5.97	0.000	.0612452 .1211638
AGE	.0053297	.000999	5.34	0.000	.0033717 .0072877
SEX	-.029862	.0105934	-2.82	0.005	-.0506246 -.0090994
NonWhite	-.3000749	.0254259	-11.80	0.000	-.3499088 -.2502411
householdszie	-.0005875	.0048946	-0.12	0.904	-.0101808 .0090058
SES	-.0766437	.0079547	-9.64	0.000	-.0922347 -.0610528
LE8_TOTALSCORE	-.0011779	.0000564	-20.87	0.000	-.0012885 -.0010673
_cons	.3112598	.0722994	4.31	0.000	.1695556 .452964
sigma2					
_cons	.9748718	.0073152	133.27	0.000	.9605343 .9892093

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.246663	.1636365	7.62	0.000	.9259411 1.567384
ereri_cde	1.207883	.1635953	7.38	0.000	.8872421 1.528524
ereri_intref	.013348	.0128225	1.04	0.298	-.0117835 .0384796
ereri_intmed	.0233243	.0120172	1.94	0.052	-.0002289 .0468775
ereri_pie	.0021075	.0035133	0.60	0.549	-.0047784 .0089934

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpsg1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8985.4467**

Iteration 1: Log likelihood = **-8885.0338**

Iteration 2: Log likelihood = **-8871.3912**

Iteration 3: Log likelihood = **-8871.2766**

Iteration 4: Log likelihood = **-8871.2766**

Refining estimates:

Iteration 0: Log likelihood = **-8871.2766**

Cox regression with Breslow method for ties

No. of subjects = 36,164 Number of obs = 36,164

No. of failures = 960

Time at risk = 439,440.668

LR chi2(9) = 228.34

Log likelihood = -8871.2766

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.172346	.1648729	10.22	0.000	1.872087 2.520763
zpsg1	1.229424	.0530729	4.78	0.000	1.129682 1.337973
_infectionburXzpsg1_000	1.005042	.0771504	0.07	0.948	.8646556 1.168222
AGE	1.031177	.0130705	2.42	0.015	1.005875 1.057116
SEX	.7073707	.046644	-5.25	0.000	.6216113 .8049618
NonWhite	.9882051	.1725561	-0.07	0.946	.7018009 1.39149
householdsize	.9443478	.0392938	-1.38	0.169	.87039 1.02459
SES	.8089693	.0400111	-4.29	0.000	.7342301 .8913164
LE8_TOTALSCORE	.9989734	.0003549	-2.89	0.004	.998278 .9996693

-> Model for the mediator

Iteration 0: Log likelihood = **-50757.989**
 Iteration 1: Log likelihood = **-50757.989**

Linear regression (Maximum Likelihood) Number of obs = 36,164
 Wald chi2(7) = 1129.28
 Log likelihood = **-50757.989** Prob > chi2 = 0.0000

zpsg1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0743111	.0151247	4.91	0.000	.0446672 .1039549
AGE	.023605	.0009896	23.85	0.000	.0216654 .0255446
SEX	.2112907	.0104694	20.18	0.000	.1907711 .2318103
NonWhite	.1470364	.025104	5.86	0.000	.0978335 .1962393
householdsize	-.0068681	.004965	-1.38	0.167	-.0165994 .0028632
SES	-.0157718	.00787	-2.00	0.045	-.0311966 -.0003469
LE8_TOTALSCORE	.0003452	.0000557	6.20	0.000	.000236 .0004544
_cons	-1.919956	.0717215	-26.77	0.000	-2.060528 -1.779385
sigma2					
_cons	.9696921	.0072113	134.47	0.000	.9555583 .9838259

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.208907	.159713	7.57	0.000	.8958757 1.521939
ereri_cde	1.150793	.1607811	7.16	0.000	.8356681 1.465918
ereri_intref	.0236564	.0275053	0.86	0.390	-.0302529 .0775658
ereri_intmed	.0189907	.0116031	1.64	0.102	-.003751 .0417323
ereri_pie	.0154671	.004547	3.40	0.001	.0065552 .0243789

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zpsip1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9036.4379
 Iteration 1: Log likelihood = -8948.1395
 Iteration 2: Log likelihood = -8939.3479
 Iteration 3: Log likelihood = -8939.3198
 Iteration 4: Log likelihood = -8939.3198
 Refining estimates:
 Iteration 0: Log likelihood = -8939.3198

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	194.24
Log likelihood =	-8939.3198	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.25595	.1619276	11.33	0.000	1.959891 2.596732
zpsip1	.9567936	.0383594	-1.10	0.271	.8844885 1.03501
_infectionburXzpsip1_000	1.052991	.0744432	0.73	0.465	.9167423 1.209489
AGE	1.032716	.0130173	2.55	0.011	1.007515 1.058547
SEX	.7574968	.0494186	-4.26	0.000	.6665748 .8608206
NonWhite	1.059725	.1826635	0.34	0.736	.755914 1.48564
householdsize	.9332643	.039694	-1.62	0.104	.85862 1.014398
SES	.8191539	.0404498	-4.04	0.000	.7435893 .9023973
LE8_TOTALSCORE	.9989838	.0003584	-2.83	0.005	.9982815 .9996865

-> Model for the mediator

Iteration 0: Log likelihood = -51129.955
 Iteration 1: Log likelihood = -51129.955

Linear regression (Maximum Likelihood)
 Number of obs = 36,352
 Wald chi2(7) = 912.87
 Log likelihood = -51129.955 Prob > chi2 = 0.0000

	zpsip1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0498057	.0151302	3.29	0.001	.0201511 .0794603
AGE		.0030208	.0009877	3.06	0.002	.001085 .0049565
SEX		-.0969241	.0104719	-9.26	0.000	-.1174488 -.0763995
NonWhite		.1109268	.0250943	4.42	0.000	.0617429 .1601107
householdsize		-.0014113	.0048467	-0.29	0.771	-.0109107 .0080881
SES		-.0199493	.0078545	-2.54	0.011	-.0353438 -.0045549
LE8_TOTALSCORE		-.0014045	.0000558	-25.19	0.000	-.0015137 -.0012952
_cons		.6593025	.0714483	9.23	0.000	.5192663 .7993387
sigma2						
_cons		.9754763	.0072355	134.82	0.000	.961295 .9896576

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.253901	.1614918	7.76	0.000	.937383 1.570419
ereri_cde	1.254373	.1617155	7.76	0.000	.9374169 1.57133
ereri_intref	-.0013105	.0020314	-0.65	0.519	-.0052921 .0026711
ereri_intmed	.0030354	.0069161	0.44	0.661	-.0105199 .0165908
ereri_pie	-.0021974	.002101	-1.05	0.296	-.0063153 .0019205

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zpsma1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8796.3784**
 Iteration 2: Log likelihood = **-8788.3612**
 Iteration 3: Log likelihood = **-8788.3445**
 Refining estimates:
 Iteration 0: Log likelihood = **-8788.3445**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	187.70
Log likelihood =	-8788.3445	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.255178	.1629468	11.26	0.000	1.957391 2.598268
zpsma1		.9569597	.0387348	-1.09	0.277	.8839743 1.035971
_infectionburXzpsma1_000		1.06127	.0780042	0.81	0.418	.9188869 1.225716
AGE		1.037475	.0131947	2.89	0.004	1.011934 1.063661
SEX		.7460407	.0490702	-4.45	0.000	.6558061 .848691
NonWhite		1.107873	.1885152	0.60	0.547	.7936878 1.546429
householdszie		.9389314	.0396187	-1.49	0.135	.8644044 1.019884
SES		.8289533	.0413463	-3.76	0.000	.7517511 .914084
LE8_TOTALSCORE		.999224	.0003588	-2.16	0.031	.998521 .9999276

-> Model for the mediator

Iteration 0: Log likelihood = **-50450.308**
 Iteration 1: Log likelihood = **-50450.308**

Linear regression (Maximum Likelihood)	Number of obs =	35,573
	Wald chi2(7) =	50.22
Log likelihood =	-50450.308	Prob > chi2 = 0.0000

	zpsma1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0027534	.0154795	-0.18	0.859	-.0330926 .0275858
AGE		-.0037785	.0010094	-3.74	0.000	-.0057568 -.0018001
SEX		.0255986	.010711	2.39	0.017	.0046055 .0465917
NonWhite		-.1026695	.0255982	-4.01	0.000	-.1528411 -.052498
householdszie		-.0037372	.0048749	-0.77	0.443	-.0132919 .0058175
SES		.0065763	.0080335	0.82	0.413	-.0091691 .0223217
LE8_TOTALSCORE		.0001546	.000057	2.71	0.007	.0000428 .0002664
_cons		.1248114	.0729496	1.71	0.087	-.0181671 .2677899
sigma2						
_cons		.9985622	.0074874	133.37	0.000	.9838872 1.013237

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.253224	.1627878	7.70	0.000	.9341656 1.572282
ereri_cde	1.253986	.1627381	7.71	0.000	.9350254 1.572947
ereri_intref	-.0006665	.0028461	-0.23	0.815	-.0062448 .0049119
ereri_intmed	-.0002171	.0012837	-0.17	0.866	-.0027331 .0022988
ereri_pie	.0001211	.0006901	0.18	0.861	-.0012315 .0014738

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpsmd9
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9057.6167**

Iteration 1: Log likelihood = **-8971.1537**

Iteration 2: Log likelihood = **-8960.3668**

Iteration 3: Log likelihood = **-8960.221**

Iteration 4: Log likelihood = **-8960.2208**

Refining estimates:

Iteration 0: Log likelihood = **-8960.2208**

Cox regression with Breslow method for ties

No. of subjects = 36,264 Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 194.79

Log likelihood = -8960.2208

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.249499	.161264	11.31	0.000	1.954628 2.588853
zpsmd9	.9838977	.0383013	-0.42	0.677	.9116208 1.061905
_infectionburXzpsmd9_000	1.083279	.0734277	1.18	0.238	.9485137 1.237193
AGE	1.031735	.012997	2.48	0.013	1.006573 1.057526
SEX	.7513986	.0491441	-4.37	0.000	.660996 .8541655
NonWhite	1.083406	.1843061	0.47	0.638	.7762239 1.512152
householdsize	.9366452	.0392919	-1.56	0.119	.8627153 1.01691
SES	.8167303	.0402791	-4.10	0.000	.7414801 .8996173
LE8_TOTALSCORE	.9990705	.000356	-2.61	0.009	.9983729 .9997686

-> Model for the mediator

Iteration 0: Log likelihood = -51092.345
 Iteration 1: Log likelihood = -51092.345

Linear regression (Maximum Likelihood)
 Number of obs = 36,264
 Wald chi2(7) = 734.42
 Log likelihood = -51092.345 Prob > chi2 = 0.0000

	zpsmd9	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0094621	.0151722	-0.62	0.533	-.0391989 .0202748
AGE		.0012139	.0009907	1.23	0.220	-.0007278 .0031557
SEX		-.204805	.0105096	-19.49	0.000	-.2254033 -.1842066
NonWhite		.1234294	.0251478	4.91	0.000	.0741407 .1727182
householdsize		.005803	.0047796	1.21	0.225	-.0035649 .0151709
SES		.0085585	.0078821	1.09	0.278	-.00689 .0240071
LE8_TOTALSCORE		-.0008857	.000056	-15.83	0.000	-.0009954 -.000776
_cons		.6674852	.0715998	9.32	0.000	.5271521 .8078183
sigma2						
_cons		.9801229	.0072788	134.66	0.000	.9658568 .994389

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.252571	.1612615	7.77	0.000	.9365047 1.568638
ereri_cde	1.249364	.1612442	7.75	0.000	.9333314 1.565397
ereri_intref	.0045666	.0080867	0.56	0.572	-.011283 .0204162
ereri_intmed	-.001513	.0027267	-0.55	0.579	-.0068571 .0038312
ereri_pie	.0001536	.0004432	0.35	0.729	-.000715 .0010222

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpsme1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.17 1.532 .04642 2.216 -.07448 500.7

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -8955.3336
Iteration 1: Log likelihood = -8865.3182
Iteration 2: Log likelihood = -8856.0483
Iteration 3: Log likelihood = -8855.9935
Iteration 4: Log likelihood = -8855.9935
Refining estimates:
Iteration 0: Log likelihood = -8855.9935

```

Cox regression with Breslow method for ties

No. of subjects =	36,107	Number of obs =	36,107
No. of failures =	957		
Time at risk =	438,780.038	LR chi2(9) =	198.68
Log likelihood =	-8855.9935	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.213649	.1600498	10.99	0.000	1.92117 2.550656
zpsme1	.9085061	.0357886	-2.44	0.015	.8410013 .9814294
_infectionburXzpsme1_000	1.158544	.0825215	2.07	0.039	1.007588 1.332118
AGE	1.037739	.0131355	2.93	0.003	1.01231 1.063806
SEX	.7332597	.048362	-4.70	0.000	.6443428 .8344467
NonWhite	1.022822	.1786143	0.13	0.897	.7263667 1.440272
householdsize	.9404328	.0395556	-1.46	0.144	.8660148 1.021246
SES	.8133171	.0403557	-4.16	0.000	.7379458 .8963865
LE8_TOTALSCORE	.9989693	.0003584	-2.87	0.004	.998267 .9996721

-> Model for the mediator

Iteration 0: Log likelihood =	-50637.796	Number of obs =	36,107
Iteration 1: Log likelihood =	-50637.796	Wald chi2(7) =	1210.48
Log likelihood =	-50637.796	Prob > chi2 =	0.0000

	zpsme1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0023519	.0151185	0.16	0.876	-.0272799 .0319837
AGE		.0007194	.0009891	0.73	0.467	-.0012192 .0026581
SEX		-.2566893	.0104655	-24.53	0.000	-.2772013 -.2361773
NonWhite		.1201871	.0250896	4.79	0.000	.0710123 .1693619
householdsize		.0010553	.0049614	0.21	0.832	-.0086688 .0107795
SES		-.0057099	.0078661	-0.73	0.468	-.0211271 .0097073
LE8_TOTALSCORE		-.0011721	.0000557	-21.04	0.000	-.0012812 -.0010629
_cons		.9280725	.0716817	12.95	0.000	.7875789 1.068566
sigma2						
_cons		.9675357	.0072009	134.36	0.000	.9534223 .9816492

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.206769	.1592866	7.58	0.000	.894573 1.518965
ereri_cde	1.208218	.1592249	7.59	0.000	.8961427 1.520293
ereri_intref	-.0017145	.0075826	-0.23	0.821	-.0165762 .0131471
ereri_intmed	.0004914	.0031754	0.15	0.877	-.0057322 .006715
ereri_pie	-.0002256	.0014533	-0.16	0.877	-.0030741 .0026228

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zpsme2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.531 .0464 2.216 -.07445 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8913.9738**
 Iteration 1: Log likelihood = **-8829.0888**
 Iteration 2: Log likelihood = **-8813.9667**
 Iteration 3: Log likelihood = **-8813.6988**
 Iteration 4: Log likelihood = **-8813.6986**
 Refining estimates:
 Iteration 0: Log likelihood = **-8813.6986**

Cox regression with Breslow method for ties

No. of subjects =	35,988	Number of obs =	35,988
No. of failures =	953		
Time at risk =	437,297.453	LR chi2(9) =	200.55
Log likelihood =	-8813.6986	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.158913	.1584578	10.49	0.000	1.869646 2.492934
zpsme2	.9514976	.0375208	-1.26	0.207	.8807283 1.027953
_infectionburXzpsme2_000	1.209939	.0867728	2.66	0.008	1.05128 1.392544
AGE	1.03961	.0132208	3.05	0.002	1.014018 1.065848
SEX	.731182	.0485492	-4.72	0.000	.6419588 .832806
NonWhite	1.018059	.17784	0.10	0.918	.7229042 1.433724
householdszie	.9404933	.0395709	-1.46	0.145	.8660475 1.021339
SES	.8096928	.0402213	-4.25	0.000	.7345765 .8924903
LE8_TOTALSCORE	.9990595	.0003586	-2.62	0.009	.9983569 .9997627

-> Model for the mediator

Iteration 0: Log likelihood = **-50327.99**
 Iteration 1: Log likelihood = **-50327.99**

Linear regression (Maximum Likelihood)	Number of obs =	35,988
	Wald chi2(7) =	1503.08
Log likelihood =	Prob > chi2 =	0.0000

zpsme2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0459107	.0150824	3.04	0.002	.0163496 .0754718
AGE	.0054875	.0009871	5.56	0.000	.0035528 .0074221
SEX	-.3164396	.0104406	-30.31	0.000	-.3369028 -.2959763
NonWhite	.1835064	.0250357	7.33	0.000	.1344373 .2325756
householdszie	.001455	.0049471	0.29	0.769	-.0082412 .0111511
SES	-.0122234	.007849	-1.56	0.119	-.027607 .0031603
LE8_TOTALSCORE	-.0009649	.0000556	-17.36	0.000	-.0010739 -.000856
_cons	.6185448	.0715331	8.65	0.000	.4783425 .7587471
sigma2					
_cons	.9598816	.0071557	134.14	0.000	.9458566 .9739066

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.188448	.1586067	7.49	0.000	.8775849 1.499312
ereri_cde	1.157172	.1582275	7.31	0.000	.8470519 1.467292
ereri_intref	.0171701	.0170602	1.01	0.314	-.0162673 .0506074
ereri_intmed	.0163862	.008317	1.97	0.049	.0000852 .0326871
ereri_pie	-.00228	.0019551	-1.17	0.244	-.0061119 .0015519

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpsmg3
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**

Iteration 1: Log likelihood = **-8959.1083**

Iteration 2: Log likelihood = **-8935.2052**

Iteration 3: Log likelihood = **-8934.4747**

Iteration 4: Log likelihood = **-8934.4733**

Refining estimates:

Iteration 0: Log likelihood = **-8934.4733**

Cox regression with Breslow method for ties

No. of subjects = 36,352 Number of obs = 36,352

No. of failures = 965

Time at risk = 441,650.762

LR chi2(9) = 203.93

Log likelihood = -8934.4733

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.208916	.1605706	10.90	0.000	1.915595 2.547152
zpsmg3	.981464	.0381493	-0.48	0.630	.9094699 1.059157
_infectionburXzpsmg3_000	1.230258	.0842067	3.03	0.002	1.075807 1.406883
AGE	1.031776	.0130104	2.48	0.013	1.006588 1.057593
SEX	.76677	.050557	-4.03	0.000	.6738158 .8725475
NonWhite	1.03689	.1788246	0.21	0.834	.7394903 1.453895
householdszie	.9328843	.0396912	-1.63	0.102	.8582463 1.014013
SES	.8176374	.0403339	-4.08	0.000	.7422857 .9006383
LE8_TOTALSCORE	.9990783	.000357	-2.58	0.010	.998379 .9997782

-> Model for the mediator

Iteration 0: Log likelihood = -50779.056
 Iteration 1: Log likelihood = -50779.056

Linear regression (Maximum Likelihood)
 Number of obs = 36,352
 Wald chi2(7) = 1639.28
 Prob > chi2 = 0.0000
 Log likelihood = -50779.056

zpsmg3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0104191	.0149848	0.70	0.487	-.0189506 .0397888
AGE	.0008804	.0009782	0.90	0.368	-.0010367 .0027976
SEX	-.3278623	.0103713	-31.61	0.000	-.3481897 -.3075348
NonWhite	.1949068	.0248532	7.84	0.000	.1461954 .2436182
householdszie	.0026598	.0048002	0.55	0.580	-.0067484 .012068
SES	.0036529	.007779	0.47	0.639	-.0115937 .0188995
LE8_TOTALSCORE	-.0011192	.0000552	-20.27	0.000	-.0012274 -.0010109
_cons	.993206	.070762	14.04	0.000	.8545151 1.131897
sigma2					
_cons	.9568248	.0070971	134.82	0.000	.9429146 .9707349

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.250159	.1614145	7.75	0.000	.9337929 1.566526
ereri_cde	1.208681	.1605416	7.53	0.000	.8940255 1.523337
ereri_intref	.0370628	.0227599	1.63	0.103	-.0075459 .0816715
ereri_intmed	.0046102	.0067842	0.68	0.497	-.0086865 .0179069
ereri_pie	-.0001949	.0004925	-0.40	0.692	-.0011601 .0007703

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zpspn
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9036.4379
 Iteration 1: Log likelihood = -8945.9487
 Iteration 2: Log likelihood = -8937.3333
 Iteration 3: Log likelihood = -8937.3104
 Iteration 4: Log likelihood = -8937.3104
 Refining estimates:
 Iteration 0: Log likelihood = -8937.3104

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	198.25
Log likelihood =	-8937.3104	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.27358	.1630553	11.45	0.000	1.975442 2.616714
zpspn	.9137327	.046799	-1.76	0.078	.8264619 1.010219
_infectionburXzpspn_000	.9599403	.0657681	-0.60	0.551	.8393172 1.097899
AGE	1.032173	.0130098	2.51	0.012	1.006986 1.057989
SEX	.6526907	.0617091	-4.51	0.000	.542288 .7855699
NonWhite	1.05141	.1812147	0.29	0.771	.7500051 1.473941
householdsize	.9331755	.0397304	-1.62	0.104	.8584658 1.014387
SES	.81949	.0404955	-4.03	0.000	.7438427 .9028304
LE8_TOTALSCORE	.9988567	.0003627	-3.15	0.002	.9981461 .9995679

-> Model for the mediator

Iteration 0: Log likelihood = -38390.9
 Iteration 1: Log likelihood = -38390.9

Linear regression (Maximum Likelihood)

Number of obs =	36,352
Wald chi2(7) =	38755.72
Prob > chi2 =	0.0000

Log likelihood = -38390.9

	zpspn	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0361595	.0106574	3.39	0.001	.0152714 .0570476
AGE		-.0045497	.0006957	-6.54	0.000	-.0059132 -.0031862
SEX		-1.396076	.0073762	-189.27	0.000	-1.410533 -1.381619
NonWhite		-.005721	.0176759	-0.32	0.746	-.0403652 .0289232
householdsize		-.0073922	.0034139	-2.17	0.030	-.0140834 -.000701
SES		.0065807	.0055325	1.19	0.234	-.0042629 .0174243
LE8_TOTALSCORE		-.0014018	.0000393	-35.69	0.000	-.0014788 -.0013249
_cons		3.125401	.0503268	62.10	0.000	3.026763 3.22404
sigma2						
_cons		.4839849	.0035899	134.82	0.000	.4769488 .4910209

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.268253	.1631322	7.77	0.000	.9485192 1.587986
ereri_cde	1.270499	.1627333	7.81	0.000	.951548 1.589451
ereri_intref	.0085314	.0098603	0.87	0.387	-.0107944 .0278572
ereri_intmed	-.0075214	.0056942	-1.32	0.187	-.0186818 .003639
ereri_pie	-.0032569	.0020799	-1.57	0.117	-.0073334 .0008197

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zpsrc1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

```
Referent exposure level (a0): 0
Actual exposure level (a1): 1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6
```

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8794.4569**
 Iteration 2: Log likelihood = **-8785.8497**
 Iteration 3: Log likelihood = **-8785.8162**
 Iteration 4: Log likelihood = **-8785.8162**
 Refining estimates:
 Iteration 0: Log likelihood = **-8785.8162**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	192.76
Log likelihood =	-8785.8162	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.263902	.1638412	11.29	0.000	1.964514 2.608916
zpsrc1	.9039885	.0375748	-2.43	0.015	.8332632 .9807167
_infectionburXzpsrc1_000	1.135229	.0822842	1.75	0.080	.9848872 1.308521
AGE	1.037646	.0131986	2.91	0.004	1.012097 1.06384
SEX	.7474494	.0491735	-4.42	0.000	.657026 .8503173
NonWhite	1.101077	.1873471	0.57	0.571	.7888357 1.536911
householdszie	.9389418	.0395887	-1.49	0.135	.864469 1.01983
SES	.8292161	.0413404	-3.76	0.000	.7520233 .9143325
LE8_TOTALSCORE	.9991491	.0003612	-2.35	0.019	.9984414 .9998573

-> Model for the mediator

Iteration 0: Log likelihood = **-50163.261**
 Iteration 1: Log likelihood = **-50163.261**

Linear regression (Maximum Likelihood)	Number of obs =	35,573	
	Wald chi2(7) =	629.79	
Log likelihood =	-50163.261	Prob > chi2 =	0.0000

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0085651	.0153551	0.56	0.577	-.0215302 .0386605
AGE	-.0065929	.0010013	-6.58	0.000	-.0085553 -.0046304
SEX	-.007257	.0106249	-0.68	0.495	-.0280813 .0135674
NonWhite	-.152433	.0253925	-6.00	0.000	-.2022014 -.1026646
householdszie	-.0037599	.0048358	-0.78	0.437	-.0132378 .005718
SES	-.0119348	.0079689	-1.50	0.134	-.0275536 .0036841
LE8_TOTALSCORE	-.0013002	.0000566	-22.98	0.000	-.0014111 -.0011893
_cons	1.072197	.0723633	14.82	0.000	.9303675 1.214026
sigma2					
_cons	.9825762	.0073675	133.37	0.000	.9681362 .9970163

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.253501	.1628454	7.70	0.000	.9343295 1.572672
ereri_cde	1.25744	.1627795	7.72	0.000	.9383984 1.576482
ereri_intref	-.0044394	.0053782	-0.83	0.409	-.0149805 .0061017
ereri_intmed	.001364	.0027253	0.50	0.617	-.0039774 .0067054
ereri_pie	-.0008642	.0015889	-0.54	0.587	-.0039784 .00225

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpten
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8819.5642

Iteration 1: Log likelihood = -8734.4604

Iteration 2: Log likelihood = -8726.8173

Iteration 3: Log likelihood = -8726.7986

Iteration 4: Log likelihood = -8726.7986

Refining estimates:

Iteration 0: Log likelihood = -8726.7986

Cox regression with Breslow method for ties

No. of subjects = 35,601 Number of obs = 35,601

No. of failures = 943

Time at risk = 432,443.367

LR chi2(9) = 185.53

Log likelihood = -8726.7986

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.215772	.1613729	10.92	0.000	1.921024
	zpten	.9618453	.0373379	-1.00	0.317	.8913063
_infectionburXzpten_000		1.067511	.0762975	0.91	0.361	.9279723
	AGE	1.037474	.0132089	2.89	0.004	1.011906
	SEX	.7497579	.0495271	-4.36	0.000	.6587078
	NonWhite	1.094377	.1885839	0.52	0.601	.7807059
	householdsize	.9304926	.040149	-1.67	0.095	.8550376
	SES	.8153411	.040701	-4.09	0.000	.7393467
	LE8_TOTALSCORE	.9991881	.0003605	-2.25	0.024	.9984818
						.9998949

-> Model for the mediator

Iteration 0: Log likelihood = -50492.803
Iteration 1: Log likelihood = -50492.803

Linear regression (Maximum Likelihood) Number of obs = 35,601
Log likelihood = -50492.803 Wald chi2(7) = 44.68
Prob > chi2 = 0.0000

	zpten	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0154259	.015456	1.00	0.318	-.0148674 .0457192
AGE		-.0029865	.001012	-2.95	0.003	-.0049699 -.0010031
SEX		.0275655	.0107073	2.57	0.010	.0065795 .0485515
NonWhite		.0143629	.0255488	0.56	0.574	-.0357118 .0644375
householdsizE		-.0047351	.0050796	-0.93	0.351	-.0146909 .0052208
SES		-.0136546	.0080435	-1.70	0.090	-.0294196 .0021104
LE8_TOTALSCORE		-.0002579	.0000571	-4.52	0.000	-.0003698 -.0001461
_cons		.2732988	.0733638	3.73	0.000	.1295084 .4170892
sigma2						
_cons		.9987184	.0074856	133.42	0.000	.9840469 1.01339

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.215464	.1612882	7.54	0.000	.8993448 1.531583
ereri_cde	1.214753	.1611949	7.54	0.000	.8988164 1.530689
ereri_intref	-.0001918	.0036382	-0.05	0.958	-.0073224 .0069389
ereri_intmed	.0015029	.0026147	0.57	0.565	-.0036217 .0066275
ereri_pie	-.0005999	.0008485	-0.71	0.480	-.002263 .0010632

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zptgds
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07567 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9006.1319
 Iteration 1: Log likelihood = -8917.4891
 Iteration 2: Log likelihood = -8907.0686
 Iteration 3: Log likelihood = -8906.9523
 Iteration 4: Log likelihood = -8906.9522
 Refining estimates:
 Iteration 0: Log likelihood = -8906.9522

Cox regression with Breslow method for ties

No. of subjects =	36,176	Number of obs =	36,176
No. of failures =	963		
Time at risk =	439,553.522	LR chi2(9) =	198.36
Log likelihood =	-8906.9522	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.263385	.1700962	10.87	0.000	1.953393 2.622571
zptgds	1.105346	.0425705	2.60	0.009	1.02498 1.192012
_infectionburXzptgds_000	.9333353	.0592743	-1.09	0.277	.8240993 1.057051
AGE	1.032505	.0131286	2.52	0.012	1.007091 1.05856
SEX	.7850169	.0530819	-3.58	0.000	.6875777 .8962645
NonWhite	1.071804	.1846415	0.40	0.687	.7646756 1.502288
householdsize	.934488	.0396977	-1.59	0.111	.859833 1.015625
SES	.8277852	.0411277	-3.80	0.000	.750977 .9124493
LE8_TOTALSCORE	.9991288	.0003592	-2.42	0.015	.9984251 .999833

-> Model for the mediator

Iteration 0: Log likelihood = -49010.129
 Iteration 1: Log likelihood = -49010.129

Linear regression (Maximum Likelihood)

Number of obs =	36,176
Wald chi2(7) =	4952.73
Prob > chi2 =	0.0000

Log likelihood = -49010.129

	zptgds	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1843664	.0143965	12.81	0.000	.1561497 .2125831
AGE		.0264114	.000939	28.13	0.000	.0245709 .0282518
SEX		-.500986	.0099692	-50.25	0.000	-.5205253 -.4814467
NonWhite		-.01492	.0238452	-0.63	0.532	-.0616556 .0318157
householdsize		.006526	.0045303	1.44	0.150	-.0023533 .0154053
SES		-.0911929	.0074869	-12.18	0.000	-.105867 -.0765188
LE8_TOTALSCORE		-.0011142	.0000532	-20.95	0.000	-.0012184 -.0010099
_cons		-.3111828	.0678712	-4.58	0.000	-.4442078 -.1781577
sigma2						
_cons		.8795554	.0065399	134.49	0.000	.8667375 .8923733

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.27138	.1656283	7.68	0.000	.9467543 1.596005
ereri_cde	1.261049	.1694176	7.44	0.000	.928997 1.593102
ereri_intref	-.002684	.0024166	-1.11	0.267	-.0074205 .0020525
ereri_intmed	-.005623	.0225053	-0.25	0.803	-.0497326 .0384866
ereri_pie	.0186373	.0073805	2.53	0.012	.0041717 .0331029

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zpth1r
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8954.1307**
 Iteration 2: Log likelihood = **-8938.9295**
 Iteration 3: Log likelihood = **-8937.9568**
 Iteration 4: Log likelihood = **-8937.9309**
 Iteration 5: Log likelihood = **-8937.9309**
 Refining estimates:
 Iteration 0: Log likelihood = **-8937.9309**

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	197.01
Log likelihood =	-8937.9309	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.227513	.1615559	11.04	0.000	1.932345 2.567768
zpth1r	1.036517	.0365924	1.02	0.310	.9672218 1.110776
_infectionburXzpth1r_000	1.056624	.0633761	0.92	0.358	.939432 1.188434
AGE	1.031889	.0130118	2.49	0.013	1.006699 1.05771
SEX	.7560071	.0493304	-4.29	0.000	.6652486 .8591475
NonWhite	1.060179	.1827713	0.34	0.735	.756197 1.486358
householdszie	.9343198	.039628	-1.60	0.109	.859791 1.015309
SES	.8206595	.0405278	-4.00	0.000	.7449496 .9040639
LE8_TOTALSCORE	.999029	.0003555	-2.73	0.006	.9983324 .999726

-> Model for the mediator

Iteration 0: Log likelihood = **-51407.359**
 Iteration 1: Log likelihood = **-51407.359**

Linear regression (Maximum Likelihood)	Number of obs =	36,352
	Wald chi2(7) =	348.45
Log likelihood =	-51407.359	Prob > chi2 = 0.0000

<u>zpth1r</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0908866	.0152461	5.96	0.000	.0610049 .1207683
AGE	.0108807	.0009952	10.93	0.000	.0089301 .0128313
SEX	.0805497	.0105522	7.63	0.000	.0598678 .1012315
NonWhite	-.1401056	.0252865	-5.54	0.000	-.1896663 -.090545
householdszie	.0087551	.0048839	1.79	0.073	-.0008171 .0183273
SES	-.0359035	.0079146	-4.54	0.000	-.0514159 -.0203911
LE8_TOTALSCORE	-.0003564	.0000562	-6.34	0.000	-.0004665 -.0002463
_cons	-.6279565	.0719957	-8.72	0.000	-.7690654 -.4868476
sigma2					
_cons	.9904784	.0073468	134.82	0.000	.976079 1.004878

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.25222	.1615063	7.75	0.000	.9356734 1.568767
ereri_cde	1.227286	.1614912	7.60	0.000	.9107688 1.543803
ereri_intref	.0063951	.0084267	0.76	0.448	-.010121 .0229112
ereri_intmed	.0152742	.0106947	1.43	0.153	-.0056871 .0362355
ereri_pie	.003265	.0032655	1.00	0.317	-.0031352 .0096653

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zptk7
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.531 .04688 2.215 -.07424 500.5**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8819.5642**

Iteration 1: Log likelihood = **-8736.2905**

Iteration 2: Log likelihood = **-8725.9625**

Iteration 3: Log likelihood = **-8725.8593**

Iteration 4: Log likelihood = **-8725.8592**

Refining estimates:

Iteration 0: Log likelihood = **-8725.8592**

Cox regression with Breslow method for ties

No. of subjects = **35,601** Number of obs = **35,601**

No. of failures = **943**

Time at risk = **432,443.367**

LR chi2(9) = **187.41**

Log likelihood = **-8725.8592** Prob > chi2 = **0.0000**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.182002	.1612211	10.56	0.000	1.887829 2.522016
zptk7	1.032968	.0407927	0.82	0.411	.9560314 1.116096
_infectionburXzptk7_000	1.059967	.0745423	0.83	0.408	.9234884 1.216615
AGE	1.036846	.0132067	2.84	0.005	1.011281 1.063056
SEX	.7476194	.0493994	-4.40	0.000	.6568057 .8509895
NonWhite	1.100934	.189827	0.56	0.577	.7852251 1.543578
householdsize	.9305092	.0401189	-1.67	0.095	.8551084 1.012559
SES	.817423	.0408233	-4.04	0.000	.741202 .9014822
LE8_TOTALSCORE	.9992226	.0003608	-2.15	0.031	.9985157 .9999299

-> Model for the mediator

Iteration 0: Log likelihood = **-50368.071**
 Iteration 1: Log likelihood = **-50368.071**

Linear regression (Maximum Likelihood) Number of obs = 35,601
 Wald chi2(7) = 295.34
 Log likelihood = **-50368.071** Prob > chi2 = 0.0000

zptk7	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1084806	.015402	7.04	0.000	.0782933 .138668
AGE	.0042484	.0010084	4.21	0.000	.002272 .0062249
SEX	.0858601	.0106699	8.05	0.000	.0649475 .1067727
NonWhite	-.1778325	.0254594	-6.98	0.000	-.227732 -.127933
householdsize	-.0024415	.0050618	-0.48	0.630	-.0123626 .0074795
SES	-.0364213	.0080154	-4.54	0.000	-.0521312 -.0207114
LE8_TOTALSCORE	-.0004178	.0000569	-7.35	0.000	-.0005292 -.0003063
_cons	-.1820329	.0731072	-2.49	0.013	-.3253204 -.0387454
sigma2					
_cons	.9917447	.0074333	133.42	0.000	.9771756 1.006314

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.20948	.1609566	7.51	0.000	.894011 1.524949
ereri_cde	1.181963	.1612022	7.33	0.000	.866013 1.497914
ereri_intref	.00589	.0095497	0.62	0.537	-.012827 .024607
ereri_intmed	.0181018	.014746	1.23	0.220	-.0107999 .0470035
ereri_pie	.0035249	.0043282	0.81	0.415	-.0049583 .012008

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zptn
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04648 2.218 -.07459 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8905.4114
Iteration 1: Log likelihood = -8820.0874
Iteration 2: Log likelihood = -8812.4608
Iteration 3: Log likelihood = -8812.4383
Iteration 4: Log likelihood = -8812.4383
Refining estimates:
Iteration 0: Log likelihood = -8812.4383

```

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	185.95
Log likelihood =	-8812.4383	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.246259	.1663496	10.93	0.000	1.942777 2.597148
zptn	1.07819	.0430045	1.89	0.059	.997113 1.165859
_infectionburXzptn_000	.8978903	.064262	-1.50	0.132	.780374 1.033103
AGE	1.034938	.0132279	2.69	0.007	1.009334 1.061192
SEX	.7374478	.0497162	-4.52	0.000	.6461691 .8416207
NonWhite	1.124131	.1913762	0.69	0.492	.8052022 1.569381
householdsize	.938846	.0396282	-1.50	0.135	.8643021 1.019819
SES	.8362445	.041646	-3.59	0.000	.7584769 .9219856
LE8_TOTALSCORE	.9990217	.0003586	-2.73	0.006	.9983191 .9997248

-> Model for the mediator

Iteration 0: Log likelihood = -48974.986	Number of obs = 35,755
Iteration 1: Log likelihood = -48974.986	Wald chi2(7) = 3696.14
Log likelihood = -48974.986	Prob > chi2 = 0.0000

	zptn	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1031018	.0146982	7.01	0.000	.0742939 .1319098
AGE		.0364216	.0009594	37.96	0.000	.0345413 .0383019
SEX		.4209613	.0101781	41.36	0.000	.4010125 .44091
NonWhite		-.1298805	.0243717	-5.33	0.000	-.1776482 -.0821129
householdsize		-.0004737	.0046414	-0.10	0.919	-.0095707 .0086233
SES		-.0652279	.0076428	-8.53	0.000	-.0802075 -.0502483
LE8_TOTALSCORE		-.0007329	.0000542	-13.52	0.000	-.0008392 -.0006266
_cons		-2.481273	.0693615	-35.77	0.000	-2.617219 -2.345327
sigma2						
_cons		.9062855	.0067782	133.71	0.000	.8930006 .9195705

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.237531	.1640568	7.54	0.000	.9159859 1.559077
ereri_cde	1.244403	.1658108	7.50	0.000	.9194195 1.569386
ereri_intref	.0006209	.0064951	0.10	0.924	-.0121092 .0133511
ereri_intmed	-.0152846	.0147977	-1.03	0.302	-.0442876 .0137184
ereri_pie	.0077921	.0042918	1.82	0.069	-.0006196 .0162038

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zptpn1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8985.4467**
 Iteration 1: Log likelihood = **-8895.0981**
 Iteration 2: Log likelihood = **-8887.5284**
 Iteration 3: Log likelihood = **-8887.513**
 Refining estimates:
 Iteration 0: Log likelihood = **-8887.513**

Cox regression with Breslow method for ties

No. of subjects = **36,164** Number of obs = **36,164**
 No. of failures = **960**
 Time at risk = **439,440.668**
 Log likelihood = **-8887.513** LR chi2(9) = **195.87**
 Prob > chi2 = **0.0000**

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.211639	.1596117	11.00	0.000	1.919923 2.547678
zptpn1	.9309839	.0369002	-1.80	0.071	.8613987 1.00619
_infectionburXzptpn1_000	1.050732	.0771255	0.67	0.500	.9099389 1.213309
AGE	1.037792	.0131125	2.94	0.003	1.012408 1.063813
SEX	.7407401	.0484787	-4.59	0.000	.6515652 .8421198
NonWhite	1.026841	.1793221	0.15	0.879	.7292118 1.445947
householdszie	.9431672	.0393649	-1.40	0.161	.8690849 1.023564
SES	.8085606	.0400443	-4.29	0.000	.7337642 .8909815
LE8_TOTALSCORE	.9989793	.0003571	-2.86	0.004	.9982795 .9996795

-> Model for the mediator

Iteration 0: Log likelihood = **-51111.685**
 Iteration 1: Log likelihood = **-51111.685**

Linear regression (Maximum Likelihood) Number of obs = **36,164**
 Log likelihood = **-51111.685** Wald chi2(7) = **406.89**
 Prob > chi2 = **0.0000**

<u>zptpn1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0274371	.0152734	1.80	0.072	-.0024981 .0573723
AGE	-.0023889	.0009993	-2.39	0.017	-.0043475 -.0004302
SEX	-.0055264	.0105723	-0.52	0.601	-.0262477 .0151948
NonWhite	.15401	.0253507	6.08	0.000	.1043236 .2036965
householdszie	-.0032735	.0050138	-0.65	0.514	-.0131004 .0065534
SES	-.0383269	.0079473	-4.82	0.000	-.0539034 -.0227505
LE8_TOTALSCORE	-.0009096	.0000563	-16.17	0.000	-.0010198 -.0007993
_cons	.6010322	.0724264	8.30	0.000	.4590792 .7429853
sigma2					
_cons	.9888467	.0073537	134.47	0.000	.9744337 1.00326

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.204835	.1589685	7.58	0.000	.8932622 1.516407
ereri_cde	1.20825	.1590454	7.60	0.000	.8965272 1.519974
ereri_intref	-.0020828	.0045631	-0.46	0.648	-.0110263 .0068608
ereri_intmed	.0006273	.0039161	0.16	0.873	-.0070481 .0083028
ereri_pie	-.0019602	.0015383	-1.27	0.203	-.0049752 .0010548

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zptpn6
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04634 2.216 -.07461 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9114.2295

Iteration 1: Log likelihood = -9025.9036

Iteration 2: Log likelihood = -9017.0552

Iteration 3: Log likelihood = -9017.0161

Iteration 4: Log likelihood = -9017.0161

Refining estimates:

Iteration 0: Log likelihood = -9017.0161

Cox regression with Breslow method for ties

No. of subjects = 36,537 Number of obs = 36,537

No. of failures = 973

Time at risk = 443,808.024

Log likelihood = -9017.0161

LR chi2(9) = 194.43

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.230196	.1601109	11.17	0.000	1.937462 2.567159
zptpn6	.9357688	.0348221	-1.78	0.074	.8699482 1.006569
_infectionburXzptpn6_000	.996149	.0702715	-0.05	0.956	.8675166 1.143854
AGE	1.035902	.0130091	2.81	0.005	1.010716 1.061715
SEX	.7612464	.0494869	-4.20	0.000	.6701787 .864689
NonWhite	1.096087	.1865073	0.54	0.590	.7852481 1.529971
householdszie	.9378056	.0392916	-1.53	0.125	.8638726 1.018066
SES	.825903	.0407187	-3.88	0.000	.7498304 .9096933
LE8_TOTALSCORE	.9990089	.000354	-2.80	0.005	.9983152 .9997029

-> Model for the mediator

Iteration 0: Log likelihood = -51783.551
 Iteration 1: Log likelihood = -51783.551

Linear regression (Maximum Likelihood) Number of obs = 36,537
 Wald chi2(7) = 119.61
 Log likelihood = -51783.551 Prob > chi2 = 0.0000

	zptpn6	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.029684	.0152407	-1.95	0.051	-.0595552 .0001873
AGE		-.003978	.0009947	-4.00	0.000	-.0059275 -.0020285
SEX		.0659862	.01056	6.25	0.000	.0452889 .0866835
NonWhite		.0511048	.025319	2.02	0.044	.0014804 .1007292
householdszie		-.0007193	.0048069	-0.15	0.881	-.0101406 .008702
SES		-.0224658	.0079268	-2.83	0.005	-.038002 -.0069295
LE8_TOTALSCORE		-.0003583	.0000562	-6.37	0.000	-.0004685 -.0002481
_cons		.3193824	.0718599	4.44	0.000	.1785395 .4602253
sigma2						
_cons		.9967098	.0073742	135.16	0.000	.9822565 1.011163

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.235403	.1597843	7.73	0.000	.9222313 1.548574
ereri_cde	1.227833	.1597027	7.69	0.000	.9148216 1.540845
ereri_intref	.0029133	.0091	0.32	0.749	-.0149224 .0207489
ereri_intmed	.0026838	.0043564	0.62	0.538	-.0058546 .0112221
ereri_pie	.0019726	.0015009	1.31	0.189	-.0009692 .0049143

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zptprf
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04648 2.216 -.0752 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9225.1762
Iteration 1: Log likelihood = -9133.7377
Iteration 2: Log likelihood = -9123.6451
Iteration 3: Log likelihood = -9123.5814
Iteration 4: Log likelihood = -9123.5814
Refining estimates:
Iteration 0: Log likelihood = -9123.5814

```

Cox regression with Breslow method for ties

No. of subjects =	36,896	Number of obs =	36,896
No. of failures =	984		
Time at risk =	448,211.761	LR chi2(9) =	203.19
Log likelihood =	-9123.5814	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.238203	.1590295	11.34	0.000	1.947241 2.572642
zptprf	.9016282	.034892	-2.68	0.007	.8357703 .9726757
_infectionburXzptprf_000	1.006687	.0682875	0.10	0.922	.8813619 1.149833
AGE	1.035497	.0129468	2.79	0.005	1.01043 1.061186
SEX	.7348415	.0478696	-4.73	0.000	.6467614 .834917
NonWhite	1.028098	.1752612	0.16	0.871	.7360865 1.435952
householdsize	.9354168	.0391914	-1.59	0.111	.8616724 1.015473
SES	.8275554	.0405749	-3.86	0.000	.7517316 .9110272
LE8_TOTALSCORE	.9990526	.0003516	-2.69	0.007	.9983636 .999742

-> Model for the mediator

Iteration 0: Log likelihood = -51622.616	Number of obs = 36,896
Iteration 1: Log likelihood = -51622.616	Wald chi2(7) = 1489.35
Log likelihood = -51622.616	Prob > chi2 = 0.0000

	zptprf	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0108635	.0148904	0.73	0.466	-.0183212 .0400482
AGE		.0170196	.0009721	17.51	0.000	.0151142 .0189249
SEX		-.2623857	.0103184	-25.43	0.000	-.2826094 -.242162
NonWhite		-.3866566	.0247094	-15.65	0.000	-.4350861 -.3382271
householdsize		-.0129964	.0047043	-2.76	0.006	-.0222168 -.0037761
SES		.018283	.0077435	2.36	0.018	.0031061 .03346
LE8_TOTALSCORE		-.0004238	.000055	-7.71	0.000	-.0005315 -.0003161
_cons		-.3638679	.0702827	-5.18	0.000	-.5016196 -.2261163
sigma2						
_cons		.9611739	.0070766	135.82	0.000	.9473039 .9750439

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.234391	.1592395	7.75	0.000	.9222875 1.546495
ereri_cde	1.231646	.1582308	7.78	0.000	.9215194 1.541773
ereri_intref	.0050982	.0125081	0.41	0.684	-.0194173 .0296137
ereri_intmed	-.0012287	.0022182	-0.55	0.580	-.0055763 .0031188
ereri_pie	-.0011243	.0015964	-0.70	0.481	-.0042533 .0020046

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zptprm
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04649 2.216 -.07483 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9016.166**
 Iteration 1: Log likelihood = **-8927.2599**
 Iteration 2: Log likelihood = **-8917.6951**
 Iteration 3: Log likelihood = **-8917.6489**
 Iteration 4: Log likelihood = **-8917.6489**
 Refining estimates:
 Iteration 0: Log likelihood = **-8917.6489**

Cox regression with Breslow method for ties

No. of subjects =	36,305	Number of obs =	36,305
No. of failures =	963		
Time at risk =	441,078.297	LR chi2(9) =	197.03
Log likelihood =	-8917.6489	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.249973	.1613346	11.31	0.000	1.954978 2.589482
zptprm	.9341507	.0363972	-1.75	0.080	.8654692 1.008283
_infectionburXzptprm_000	.9695969	.069641	-0.43	0.667	.842275 1.116165
AGE	1.033434	.0130395	2.61	0.009	1.00819 1.059309
SEX	.7527677	.049249	-4.34	0.000	.662174 .8557559
NonWhite	1.066235	.1837619	0.37	0.710	.7605917 1.494702
householdszie	.9311185	.0396927	-1.67	0.094	.8564835 1.012257
SES	.8185249	.0405047	-4.05	0.000	.7428655 .9018901
LE8_TOTALSCORE	.9989849	.0003561	-2.85	0.004	.9982872 .999683

-> Model for the mediator

Iteration 0: Log likelihood = **-51182.779**
 Iteration 1: Log likelihood = **-51182.779**

Linear regression (Maximum Likelihood)	Number of obs =	36,305
	Wald chi2(7) =	668.65
Log likelihood =	-51182.779	Prob > chi2 = 0.0000

<u>zptprm</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0087076	.0151915	0.57	0.567	-.0210671 .0384823
AGE	.0134936	.0009916	13.61	0.000	.0115502 .015437
SEX	-.1620283	.0105131	-15.41	0.000	-.1826336 -.1414231
NonWhite	.1055818	.0251852	4.19	0.000	.0562198 .1549438
householdszie	-.00601	.0048646	-1.24	0.217	-.0155444 .0035243
SES	-.0185911	.0078852	-2.36	0.018	-.0340458 -.0031363
LE8_TOTALSCORE	-.0005674	.000056	-10.14	0.000	-.0006771 -.0004577
_cons	-.2741659	.0717272	-3.82	0.000	-.4147486 -.1335832
sigma2					
_cons	.9818884	.0072878	134.73	0.000	.9676047 .9961721

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.25382	.1620729	7.74	0.000	.9361629 1.571477
ereri_cde	1.247026	.1610328	7.74	0.000	.9314079 1.562645
ereri_intref	.0087372	.0137227	0.64	0.524	-.0181589 .0356333
ereri_intmed	-.0013506	.0026674	-0.51	0.613	-.0065786 .0038773
ereri_pie	-.000593	.0010884	-0.54	0.586	-.0027261 .0015402

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zptprn2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.531 .04643 2.216 -.07452 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8953.8692

Iteration 1: Log likelihood = -8862.4477

Iteration 2: Log likelihood = -8852.5199

Iteration 3: Log likelihood = -8852.4554

Iteration 4: Log likelihood = -8852.4554

Refining estimates:

Iteration 0: Log likelihood = -8852.4554

Cox regression with Breslow method for ties

No. of subjects = 36,055

Number of obs = 36,055

No. of failures = 957

Time at risk = 438,082.431

LR chi2(9) = 202.83

Log likelihood = -8852.4554

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.235191	.1613496	11.14	0.000	1.940304 2.574895
zptprn2		.9102831	.0360583	-2.37	0.018	.8422839 .9837719
_infectionburXzptprn2_000		.9971241	.0678522	-0.04	0.966	.8726231 1.139388
AGE		1.040166	.0132021	3.10	0.002	1.014609 1.066366
SEX		.746264	.0490986	-4.45	0.000	.6559789 .8489755
NonWhite		1.020718	.1782416	0.12	0.907	.7248798 1.437295
householdsize		.9422011	.0395285	-1.42	0.156	.8678263 1.02295
SES		.8080373	.0401217	-4.29	0.000	.7331055 .8906281
LE8_TOTALSCORE		.9990431	.0003567	-2.68	0.007	.9983442 .9997425

-> Model for the mediator

Iteration 0: Log likelihood = -50833.934
 Iteration 1: Log likelihood = -50833.934

Linear regression (Maximum Likelihood)
 Number of obs = 36,055
 Wald chi2(7) = 656.70
 Prob > chi2 = 0.0000
 Log likelihood = -50833.934

	zptprn2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1370945	.0152373	9.00	0.000	.10723 .166959
AGE		.0120475	.0009973	12.08	0.000	.0100927 .0140022
SEX		.1612472	.0105514	15.28	0.000	.1405669 .1819275
NonWhite		-.0275014	.025296	-1.09	0.277	-.0770807 .0220778
householdsize		-.0032931	.0050028	-0.66	0.510	-.0130985 .0065122
SES		-.0628335	.0079317	-7.92	0.000	-.0783794 -.0472876
LE8_TOTALSCORE		.0004645	.0000562	8.27	0.000	.0003544 .0005745
_cons		-1.219587	.072272	-16.87	0.000	-1.361237 -1.077936
sigma2						
_cons		.9820848	.0073144	134.27	0.000	.9677487 .9964208

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.206416	.1592816	7.57	0.000	.8942301 1.518603
ereri_cde	1.227645	.1603377	7.66	0.000	.9133889 1.541901
ereri_intref	.0082718	.01494	0.55	0.580	-.02101 .0375535
ereri_intmed	-.0166962	.0181392	-0.92	0.357	-.0522483 .0188559
ereri_pie	-.0128042	.0055444	-2.31	0.021	-.023671 -.0019373

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zptprs
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04648 2.216 -.0752 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9225.1762
 Iteration 1: Log likelihood = -9136.6582
 Iteration 2: Log likelihood = -9127.9594
 Iteration 3: Log likelihood = -9127.9306
 Iteration 4: Log likelihood = -9127.9306
 Refining estimates:
 Iteration 0: Log likelihood = -9127.9306

Cox regression with Breslow method for ties

No. of subjects = 36,896	Number of obs = 36,896
No. of failures = 984	
Time at risk = 448,211.761	LR chi2(9) = 194.49
Log likelihood = -9127.9306	Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.236099	.1590446	11.31	0.000	1.945129 2.570594
zptprs	.9691471	.0369792	-0.82	0.411	.899313 1.044404
_infectionburXzptprs_000	1.079406	.0734422	1.12	0.261	.9446465 1.233389
AGE	1.034579	.0129463	2.72	0.007	1.009513 1.060267
SEX	.7550075	.048961	-4.33	0.000	.6648938 .8573345
NonWhite	1.064102	.1808935	0.37	0.715	.7625745 1.484857
householdsize	.9379695	.0391315	-1.53	0.125	.8643251 1.017889
SES	.8224293	.0403207	-3.99	0.000	.7470802 .905378
LE8_TOTALSCORE	.9990743	.0003522	-2.63	0.009	.9983841 .9997649

-> Model for the mediator

Iteration 0: Log likelihood = -52147.605
 Iteration 1: Log likelihood = -52147.605

Linear regression (Maximum Likelihood)

Number of obs = 36,896	
Wald chi2(7) = 412.39	
Log likelihood = -52147.605	Prob > chi2 = 0.0000

	zptprs	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0037353	.0151038	0.25	0.805	-.0258677 .0333382
AGE		.0007563	.0009861	0.77	0.443	-.0011763 .0026889
SEX		.178976	.0104663	17.10	0.000	.1584625 .1994896
NonWhite		-.0966504	.0250635	-3.86	0.000	-.1457739 -.0475269
householdsize		.0150585	.0047718	3.16	0.002	.005706 .024411
SES		-.0741828	.0078545	-9.44	0.000	-.0895772 -.0587883
LE8_TOTALSCORE		.0002116	.0000557	3.80	0.000	.0001024 .0003209
_cons		-.4603912	.0712899	-6.46	0.000	-.6001169 -.3206655
sigma2						
_cons		.9889197	.0072809	135.82	0.000	.9746493 1.00319

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.237547	.1589985	7.78	0.000	.9259156 1.549178
ereri_cde	1.235478	.1589442	7.77	0.000	.9239535 1.547003
ereri_intref	.001692	.0057404	0.29	0.768	-.009559 .0129429
ereri_intmed	.0004937	.0020564	0.24	0.810	-.0035368 .0045243
ereri_pie	-.0001171	.0004943	-0.24	0.813	-.0010858 .0008517

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zpts
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04679 2.215 -.07451 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8759.2886**
 Iteration 1: Log likelihood = **-8669.325**
 Iteration 2: Log likelihood = **-8661.7735**
 Iteration 3: Log likelihood = **-8661.7577**
 Iteration 4: Log likelihood = **-8661.7577**
 Refining estimates:
 Iteration 0: Log likelihood = **-8661.7577**

Cox regression with Breslow method for ties

No. of subjects =	35,433	Number of obs =	35,433
No. of failures =	937		
Time at risk =	430,407.033	LR chi2(9) =	195.06
Log likelihood =	-8661.7577	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.21615	.1619422	10.89	0.000	1.920431 2.557405
zpts	.8824817	.0375284	-2.94	0.003	.8119092 .9591884
_infectionburXzpts_000	1.090208	.0803321	1.17	0.241	.9436015 1.259593
AGE	1.038929	.013288	2.99	0.003	1.013209 1.065302
SEX	.7452726	.0494016	-4.44	0.000	.6544732 .8486692
NonWhite	1.108541	.1910995	0.60	0.550	.7907049 1.554136
householdsize	.9272769	.0401682	-1.74	0.081	.8517982 1.009444
SES	.8150657	.0407866	-4.09	0.000	.7389205 .8990576
LE8_TOTALSCORE	.9989276	.0003695	-2.90	0.004	.9982038 .999652

-> Model for the mediator

Iteration 0: Log likelihood = **-49023.574**
 Iteration 1: Log likelihood = **-49023.574**

Linear regression (Maximum Likelihood)	Number of obs =	35,433
	Wald chi2(7) =	2597.12
Log likelihood =	Prob > chi2 =	0.0000

<u>zpts</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.042179	.0149546	2.82	0.005	.0128685 .0714896
AGE	.0064089	.0009795	6.54	0.000	.0044891 .0083288
SEX	-.1330875	.0103661	-12.84	0.000	-.1534048 -.1127702
NonWhite	.1134362	.0247543	4.58	0.000	.0649188 .1619537
householdsize	-.006223	.0049135	-1.27	0.205	-.0158533 .0034073
SES	.0001874	.007784	0.02	0.981	-.015069 .0154438
LE8_TOTALSCORE	-.0025092	.0000553	-45.41	0.000	-.0026175 -.0024009
_cons	1.076396	.0710024	15.16	0.000	.9372341 1.215558
sigma2					
_cons	.9316825	.0069997	133.10	0.000	.9179634 .9454017

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.196905	.160699	7.45	0.000	.881941 1.51187
ereri_cde	1.206442	.160635	7.51	0.000	.8916037 1.521281
ereri_intref	-.005953	.00757	-0.79	0.432	-.0207899 .008884
ereri_intmed	.001675	.0059532	0.28	0.778	-.0099931 .0133431
ereri_pie	-.0052592	.0025773	-2.04	0.041	-.0103106 -.0002079

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zptx3
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9036.4379

Iteration 1: Log likelihood = -8944.4758

Iteration 2: Log likelihood = -8933.0646

Iteration 3: Log likelihood = -8932.9997

Iteration 4: Log likelihood = -8932.9997

Refining estimates:

Iteration 0: Log likelihood = -8932.9997

Cox regression with Breslow method for ties

No. of subjects = 36,352 Number of obs = 36,352

No. of failures = 965

Time at risk = 441,650.762

LR chi2(9) = 206.88

Log likelihood = -8932.9997

Prob > chi2 = 0.0000

-> Model for the mediator

Iteration 0: Log likelihood = -51336.924
Iteration 1: Log likelihood = -51336.924

Linear regression (Maximum Likelihood)
Number of obs = 36,352
Log likelihood = -51336.924 Wald chi2(7) = 490.95
Prob > chi2 = 0.0000

	zptx3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0911328	.0152166	5.99	0.000	.0613089 .1209567
AGE		.0049056	.0009933	4.94	0.000	.0029588 .0068524
SEX		.0350114	.0105317	3.32	0.001	.0143695 .0556532
NonWhite		-.369316	.0252376	-14.63	0.000	-.4187807 -.3198512
householdsiz		-.0169751	.0048744	-3.48	0.000	-.0265287 -.0074214
SES		-.0505423	.0078993	-6.40	0.000	-.0660247 -.0350599
LE8_TOTALSCORE		.0005724	.0000561	10.21	0.000	.0004625 .0006824
_cons		-.5971012	.0718563	-8.31	0.000	-.737937 -.4562655
sigma2						
_cons		.9866475	.0073183	134.82	0.000	.9723038 1.000991

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.261808	.1620292	7.79	0.000	.9442368 1.57938
ereri_cde	1.230574	.1618149	7.60	0.000	.9134222 1.547725
ereri_intref	.0061562	.0163028	0.38	0.706	-.0257967 .0381092
ereri_intmed	.0130069	.0140594	0.93	0.355	-.014549 .0405628
ereri_pie	.0120716	.004396	2.75	0.006	.0034556 .0206877

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator      (mvar): zpvalb
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04672 2.218 -.07476 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -9176.4158
Iteration 1: Log likelihood = -9085.9931
Iteration 2: Log likelihood = -9077.3288
Iteration 3: Log likelihood = -9077.3101
Refining estimates:
Iteration 0: Log likelihood = -9077.3101

```

Cox regression with Breslow method for ties

No. of subjects =	36,555	Number of obs =	36,555
No. of failures =	980		
Time at risk =	444,037.138	LR chi2(9) =	198.21
Log likelihood =	-9077.3101	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.264287	.1612603	11.48	0.000	1.96929 2.603474
zpvalb	.9316275	.0349799	-1.89	0.059	.86553 1.002773
_infectionburXzpvalb_000	1.063535	.0770363	0.85	0.395	.922775 1.225767
AGE	1.034386	.0129673	2.70	0.007	1.00928 1.060116
SEX	.7619413	.0493196	-4.20	0.000	.671157 .8650055
NonWhite	1.066228	.1813367	0.38	0.706	.7639827 1.488046
householdszie	.9332222	.039318	-1.64	0.101	.8592561 1.013555
SES	.820063	.0402312	-4.04	0.000	.7448836 .9028301
LE8_TOTALSCORE	.9990772	.0003537	-2.61	0.009	.9983843 .9997706

-> Model for the mediator

```

Iteration 0: Log likelihood = -51843.486
Iteration 1: Log likelihood = -51843.486

```

Linear regression (Maximum Likelihood)	Number of obs = 36,555
Log likelihood = -51843.486	Wald chi2(7) = 50.66
	Prob > chi2 = 0.0000

	zpvalb	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0125056	.0152783	-0.82	0.413	-.0424506
AGE		.0001593	.0009956	0.16	0.873	-.0017921
SEX		.0042479	.0105655	0.40	0.688	-.01646
NonWhite		-.1169574	.025246	-4.63	0.000	-.1664387
householdsize		-.0051976	.0048065	-1.08	0.280	-.0146182
SES		-.0105934	.0079252	-1.34	0.181	-.0261266
LE8_TOTALSCORE		-.0002642	.0000563	-4.69	0.000	-.0003745
_cons		.1340856	.0719938	1.86	0.063	-.0070196
sigma2						
_cons		.9985887	.0073863	135.19	0.000	.9841118
						1.013066

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.259221	.160786	7.83	0.000	.944086
ereri_cde	1.261279	.1607954	7.84	0.000	.9461261
ereri_intref	-.0023191	.0028021	-0.83	0.408	-.007811
ereri_intmed	-.0006255	.0019669	-0.32	0.750	-.0044806
ereri_pie	.0008861	.0011806	0.75	0.453	-.0014278
					.0032

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zpv
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9160.406**
 Iteration 1: Log likelihood = **-9071.9872**
 Iteration 2: Log likelihood = **-9058.4189**
 Iteration 3: Log likelihood = **-9058.1491**
 Iteration 4: Log likelihood = **-9058.1488**
 Iteration 5: Log likelihood = **-9058.1488**
 Refining estimates:
 Iteration 0: Log likelihood = **-9058.1488**

Cox regression with Breslow method for ties

No. of subjects =	36,751	Number of obs =	36,751
No. of failures =	977		
Time at risk =	446,451.479	LR chi2(9) =	204.51
Log likelihood =	-9058.1488	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.21526	.1603642	10.99	0.000	1.922231 2.552958
zpv		1.110993	.0421394	2.78	0.006	1.031397 1.196733
_infectionburXzpv_000		1.004891	.0679332	0.07	0.942	.8801887 1.147262
AGE		1.033488	.0129532	2.63	0.009	1.008409 1.05919
SEX		.7520265	.0487642	-4.39	0.000	.6622746 .8539418
NonWhite		1.110259	.1889003	0.61	0.539	.7954271 1.549703
householdszie		.9356881	.0393946	-1.58	0.114	.861576 1.016175
SES		.8227785	.0404773	-3.97	0.000	.7471492 .9060633
LE8_TOTALSCORE		.9991705	.0003557	-2.33	0.020	.9984735 .999868

-> Model for the mediator

Iteration 0: Log likelihood = **-51698.21**
 Iteration 1: Log likelihood = **-51698.21**

Linear regression (Maximum Likelihood)	Number of obs =	36,751
	Wald chi2(7) =	908.45
Log likelihood =	Prob > chi2 =	0.0000

	zpv	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0826142	.0150408	5.49	0.000	.0531348 .1120937
AGE		.0030924	.0009842	3.14	0.002	.0011633 .0050214
SEX		-.0188211	.0104189	-1.81	0.071	-.0392417 .0015995
NonWhite		-.2995125	.024995	-11.98	0.000	-.3485018 -.2505233
householdszie		-.0185629	.004949	-3.75	0.000	-.0282628 -.008863
SES		-.0596347	.0078245	-7.62	0.000	-.0749704 -.044299
LE8_TOTALSCORE		-.0012151	.0000555	-21.90	0.000	-.0013238 -.0011063
_cons		.4900667	.0713645	6.87	0.000	.3501949 .6299386
sigma2						
_cons		.9758508	.0071989	135.56	0.000	.9617413 .9899603

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.236529	.1597103	7.74	0.000	.9235026 1.549556
ereri_cde	1.210168	.1594514	7.59	0.000	.8976494 1.522687
ereri_intref	.0061036	.0123731	0.49	0.622	-.0181472 .0303544
ereri_intmed	.0115236	.011031	1.04	0.296	-.0100968 .033144
ereri_pie	.0087334	.0035414	2.47	0.014	.0017924 .0156744

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zpxn
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8819.5642

Iteration 1: Log likelihood = -8735.5054

Iteration 2: Log likelihood = -8726.7769

Iteration 3: Log likelihood = -8726.7201

Iteration 4: Log likelihood = -8726.7201

Refining estimates:

Iteration 0: Log likelihood = -8726.7201

Cox regression with Breslow method for ties

No. of subjects = 35,601 Number of obs = 35,601

No. of failures = 943

Time at risk = 432,443.367

LR chi2(9) = 185.69

Log likelihood = -8726.7201

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.196228	.1613904	10.71	0.000	1.901633
zpxn		.9633079	.0388741	-0.93	0.354	.8900513
_infectionburXzpxn_000		1.081041	.0765014	1.10	0.271	.9410349
AGE		1.037656	.013226	2.90	0.004	1.012055
SEX		.7467813	.0493642	-4.42	0.000	.6560347
NonWhite		1.091802	.1882993	0.51	0.611	.7786462
householdsize		.930235	.0401393	-1.68	0.094	.8547983
SES		.8162573	.0407373	-4.07	0.000	.7401944
LE8_TOTALSCORE		.9991756	.0003642	-2.26	0.024	.9984621

-> Model for the mediator

Iteration 0: Log likelihood = -49872.258
Iteration 1: Log likelihood = -49872.258

Linear regression (Maximum Likelihood) Number of obs = 35,601
Log likelihood = -49872.258 Wald chi2(7) = 1309.25
Prob > chi2 = 0.0000

	zpxn	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0407764	.015189	2.68	0.007	.0110066 .0705462
AGE		.0089366	.0009945	8.99	0.000	.0069875 .0108858
SEX		-.125172	.0105223	-11.90	0.000	-.1457953 -.1045486
NonWhite		.1558933	.0251073	6.21	0.000	.106684 .2051027
householdsiz		.0018225	.0049918	0.37	0.715	-.0079613 .0116063
SES		-.0148544	.0079045	-1.88	0.060	-.0303469 .0006382
LE8_TOTALSCORE		-.0016197	.0000561	-28.88	0.000	-.0017297 -.0015098
sigma2						
	_cons	.9645018	.0072291	133.42	0.000	.950333 .9786707

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.199153	.1607345	7.46	0.000	.8841187 1.514186
ereri_cde	1.195169	.1612942	7.41	0.000	.8790385 1.5113
ereri_intref	.0003507	.004688	0.07	0.940	-.0088377 .0095391
ereri_intmed	.0051557	.0057939	0.89	0.374	-.0062 .0165115
ereri_pie	-.0015231	.0017381	-0.88	0.381	-.0049297 .0018834

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zqdpr
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04645 2.218 -.07511 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9022.4741
Iteration 1: Log likelihood = -8928.458
Iteration 2: Log likelihood = -8919.3892
Iteration 3: Log likelihood = -8919.3649
Iteration 4: Log likelihood = -8919.3649
Refining estimates:
Iteration 0: Log likelihood = -8919.3649

```

Cox regression with Breslow method for ties

No. of subjects =	36,275	Number of obs =	36,275
No. of failures =	964		
Time at risk =	440,686.08	LR chi2(9) =	206.22
Log likelihood =	-8919.3649	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.293564	.1643303	11.59	0.000	1.993075 2.639357
zqdpr	.8880891	.035457	-2.97	0.003	.8212441 .9603749
_infectionburXzqdpr_000	1.061538	.0759742	0.83	0.404	.9226036 1.221395
AGE	1.033324	.0130399	2.60	0.009	1.00808 1.059201
SEX	.7393639	.0483232	-4.62	0.000	.6504674 .8404094
NonWhite	.9912053	.1779145	-0.05	0.961	.6972345 1.409121
householdsize	.9281083	.0399607	-1.73	0.083	.8530005 1.009829
SES	.8250849	.0409083	-3.88	0.000	.7486787 .9092888
LE8_TOTALSCORE	.9989121	.00036	-3.02	0.003	.9982068 .9996179

-> Model for the mediator

Iteration 0: Log likelihood = -50965.042	Number of obs = 36,275
Iteration 1: Log likelihood = -50965.042	Wald chi2(7) = 1027.18
Log likelihood = -50965.042	Prob > chi2 = 0.0000

zqdpr	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0085551	.015101	0.57	0.571	-.0210422 .0381525
AGE	-.0022122	.0009867	-2.24	0.025	-.0041461 -.0002782
SEX	-.0920234	.0104673	-8.79	0.000	-.1125391 -.0715078
NonWhite	.1117809	.0250701	4.46	0.000	.0626443 .1609174
householdsize	-.0026723	.004761	-0.56	0.575	-.0120038 .0066591
SES	-.0253538	.0078603	-3.23	0.001	-.0407597 -.0099479
LE8_TOTALSCORE	-.001556	.0000558	-27.87	0.000	-.0016654 -.0014466
_cons	1.050389	.0713306	14.73	0.000	.9105835 1.190194
sigma2					
_cons	.9724364	.0072206	134.68	0.000	.9582844 .9865885

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.280451	.1630594	7.85	0.000	.9608605 1.600041
ereri_cde	1.284554	.162965	7.88	0.000	.9651481 1.603959
ereri_intref	-.002952	.0091852	-0.32	0.748	-.0209547 .0150506
ereri_intmed	-.0001358	.0012403	-0.11	0.913	-.0025667 .0022951
ereri_pie	-.0010148	.0018226	-0.56	0.578	-.0045871 .0025575

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zqpc
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04663 2.216 -.0758 500.4

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9101.9905**
 Iteration 1: Log likelihood = **-9014.0916**
 Iteration 2: Log likelihood = **-9004.387**
 Iteration 3: Log likelihood = **-9004.3312**
 Iteration 4: Log likelihood = **-9004.3312**
 Refining estimates:
 Iteration 0: Log likelihood = **-9004.3312**

Cox regression with Breslow method for ties

No. of subjects =	36,503	Number of obs =	36,503
No. of failures =	972		
Time at risk =	443,392.717	LR chi2(9) =	195.32
Log likelihood =	-9004.3312	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.240675	.1635832	11.05	0.000	1.94194 2.585365
zqpct		1.043563	.0406411	1.09	0.274	.9668725 1.126337
_infectionburXzqpct_000		.9874447	.0676103	-0.18	0.854	.8634378 1.129262
AGE		1.032879	.0130212	2.57	0.010	1.007671 1.058718
SEX		.752808	.0491851	-4.35	0.000	.6623241 .8556533
NonWhite		1.066516	.184244	0.37	0.709	.7601852 1.496288
householdszie		.9398024	.039325	-1.48	0.138	.8658028 1.020127
SES		.8197091	.0404932	-4.02	0.000	.7440649 .9030435
LE8_TOTALSCORE		.9991312	.0003568	-2.43	0.015	.9984322 .9998308

-> Model for the mediator

Iteration 0: Log likelihood = **-50844.295**
 Iteration 1: Log likelihood = **-50844.295**

Linear regression (Maximum Likelihood)	Number of obs =	36,503
	Wald chi2(7) =	1951.83
Log likelihood =	Prob > chi2 =	0.0000

	zqpct	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1150291	.0148755	7.73	0.000	.0858736 .1441847
AGE		.0105327	.0009713	10.84	0.000	.008629 .0124363
SEX		-.1615577	.0103102	-15.67	0.000	-.1817653 -.1413501
NonWhite		-.4781091	.0246509	-19.40	0.000	-.526424 -.4297942
householdszie		.001575	.0046936	0.34	0.737	-.0076243 .0107743
SES		-.107392	.0077349	-13.88	0.000	-.122552 -.092232
LE8_TOTALSCORE		-.0013241	.0000549	-24.11	0.000	-.0014318 -.0012165
_cons		.270737	.0702077	3.86	0.000	.1331324 .4083416
sigma2						
_cons		.9492176	.0070261	135.10	0.000	.9354466 .9629885

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.247897	.1616335	7.72	0.000	.9311009 1.564693
ereri_cde	1.24045	.163473	7.59	0.000	.9200488 1.560851
ereri_intref	-.0002987	.0018507	-0.16	0.872	-.003926 .0033285
ereri_intmed	.0028285	.0152535	0.19	0.853	-.0270678 .0327247
ereri_pie	.004917	.0045467	1.08	0.279	-.0039943 .0138284

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrab37
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.53 .04656 2.215 -.07626 500.6**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8913.3312**

Iteration 1: Log likelihood = **-8830.5071**

Iteration 2: Log likelihood = **-8817.747**

Iteration 3: Log likelihood = **-8817.4184**

Iteration 4: Log likelihood = **-8817.4174**

Refining estimates:

Iteration 0: Log likelihood = **-8817.4174**

Cox regression with Breslow method for ties

No. of subjects = **35,761** Number of obs = **35,761**

No. of failures = **953**

Time at risk = **434,427.923**

LR chi2(9) = **191.83**

Log likelihood = **-8817.4174** Prob > chi2 = **0.0000**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.237125	.1621417	11.11	0.000	1.940873 2.578597
zrab37	.9425892	.0390413	-1.43	0.153	.8690933 1.0223
_infectionburXzrab37_000	1.191962	.0842039	2.49	0.013	1.037841 1.36897
AGE	1.037355	.0131706	2.89	0.004	1.011859 1.063492
SEX	.7504424	.0493013	-4.37	0.000	.6597761 .8535681
NonWhite	1.056024	.1843468	0.31	0.755	.7500365 1.486844
householdsize	.9350619	.0398111	-1.58	0.115	.8602006 1.016438
SES	.8281534	.041174	-3.79	0.000	.7512611 .9129157
LE8_TOTALSCORE	.9990623	.0003582	-2.62	0.009	.9983606 .9997646

-> Model for the mediator

Iteration 0: Log likelihood = -50674.599
 Iteration 1: Log likelihood = -50674.599

Linear regression (Maximum Likelihood)
 Number of obs = 35,761
 Wald chi2(7) = 135.38
 Log likelihood = -50674.599 Prob > chi2 = 0.0000

zrab37	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0076003	.0154237	-0.49	0.622	-.0378301 .0226295
AGE	-.0102554	.0010046	-10.21	0.000	-.0122243 -.0082865
SEX	.0254001	.0106684	2.38	0.017	.0044903 .0463099
NonWhite	-.0940875	.0255264	-3.69	0.000	-.1441182 -.0440568
householdsize	-.0044776	.0048525	-0.92	0.356	-.0139883 .0050332
SES	.007803	.0079987	0.98	0.329	-.0078743 .0234802
LE8_TOTALSCORE	-.0001511	.0000568	-2.66	0.008	-.0002625 -.000397
_cons	.6699114	.0725614	9.23	0.000	.5276938 .8121291
sigma2					
_cons	.9962008	.00745	133.72	0.000	.981599 1.010803

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.246801	.1628966	7.65	0.000	.92753 1.566073
ereri_cde	1.23505	.1617299	7.64	0.000	.918065 1.552035
ereri_intref	.0137415	.0153915	0.89	0.372	-.0164253 .0439082
ereri_intmed	-.0024393	.005059	-0.48	0.630	-.0123548 .0074761
ereri_pie	.0004495	.0009652	0.47	0.641	-.0014422 .0023411

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zrab6a
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9036.4379
 Iteration 1: Log likelihood = -8948.4235
 Iteration 2: Log likelihood = -8931.3919
 Iteration 3: Log likelihood = -8931.0551
 Iteration 4: Log likelihood = -8931.0549
 Iteration 5: Log likelihood = -8931.0549
 Refining estimates:
 Iteration 0: Log likelihood = -8931.0549

Cox regression with Breslow method for ties

No. of subjects = 36,352	Number of obs = 36,352
No. of failures = 965	
Time at risk = 441,650.762	
Log likelihood = -8931.0549	LR chi2(9) = 210.77 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.220188	.1661971	10.65	0.000	1.917217 2.571037
zrab6a	.8666908	.0349538	-3.55	0.000	.8008203 .9379794
_infectionburXzrab6a_000	.9989503	.0721864	-0.01	0.988	.8670301 1.150942
AGE	1.030672	.012978	2.40	0.016	1.005546 1.056425
SEX	.8081362	.0540447	-3.19	0.001	.708859 .9213174
NonWhite	1.056413	.1821147	0.32	0.750	.7535208 1.481058
householdszie	.9332541	.0396683	-1.63	0.104	.8586562 1.014333
SES	.8329489	.0412313	-3.69	0.000	.7559334 .9178108
LE8_TOTALSCORE	.9990962	.0003554	-2.54	0.011	.9983998 .9997931

-> Model for the mediator

Iteration 0: Log likelihood = -50529.786	Number of obs = 36,352
Iteration 1: Log likelihood = -50529.786	Wald chi2(7) = 2163.89
Log likelihood = -50529.786	Prob > chi2 = 0.0000

	zrab6a	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.1205769	.0148824	-8.10	0.000	-.1497459 -.0914079
AGE		-.0053693	.0009715	-5.53	0.000	-.0072734 -.0034652
SEX		.4176033	.0103005	40.54	0.000	.3974147 .4377918
NonWhite		-.0229398	.0246834	-0.93	0.353	-.0713184 .0254387
householdsize		-.0036798	.0047674	-0.77	0.440	-.0130237 .005664
SES		.1011203	.0077259	13.09	0.000	.0859779 .1162627
LE8_TOTALSCORE		.0003589	.0000548	6.54	0.000	.0002514 .0004664
_cons		-.4624033	.0702784	-6.58	0.000	-.6001465 -.3246602
sigma2						
_cons		.9437922	.0070005	134.82	0.000	.9300715 .9575129

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.25939	.1625919	7.75	0.000	.9407157 1.578064
ereri_cde	1.211352	.1644707	7.37	0.000	.8889952 1.533708
ereri_intref	.0091137	.0164839	0.55	0.580	-.0231942 .0414215
ereri_intmed	.0215234	.0171611	1.25	0.210	-.0121117 .0551584
ereri_pie	.017401	.005401	3.22	0.001	.0068152 .0279867

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrab6b
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8819.5642
 Iteration 1: Log likelihood = -8735.2012
 Iteration 2: Log likelihood = -8726.6845
 Iteration 3: Log likelihood = -8726.6308
 Iteration 4: Log likelihood = -8726.6307
 Refining estimates:
 Iteration 0: Log likelihood = -8726.6307

Cox regression with Breslow method for ties

No. of subjects =	35,601	Number of obs =	35,601
No. of failures =	943		
Time at risk =	432,443.367	LR chi2(9) =	185.87
Log likelihood =	-8726.6307	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.210072	.1610361	10.88	0.000	1.915949 2.549347
zrab6b	1.024831	.0387043	0.65	0.516	.951712 1.103569
_infectionburXzrab6b_000	1.037461	.0706607	0.54	0.589	.9078139 1.185622
AGE	1.037417	.0132104	2.88	0.004	1.011846 1.063635
SEX	.7474579	.0493724	-4.41	0.000	.6566919 .8507693
NonWhite	1.091755	.1880949	0.51	0.610	.7788871 1.530298
householdszie	.9303917	.0401392	-1.67	0.094	.8549546 1.012485
SES	.8161159	.0407443	-4.07	0.000	.7400412 .9000109
LE8_TOTALSCORE	.9991913	.0003605	-2.24	0.025	.998485 .9998981

-> Model for the mediator

Iteration 0: Log likelihood = -50502.518
 Iteration 1: Log likelihood = -50502.518

Linear regression (Maximum Likelihood)	Number of obs =	35,601	
	Wald chi2(7) =	25.24	
Log likelihood =	-50502.518	Prob > chi2 =	0.0007

<u>zrab6b</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0108466	.0154603	0.70	0.483	-.0194549 .0411482
AGE	-.0007969	.0010122	-0.79	0.431	-.0027808 .0011871
SEX	.0494334	.0107103	4.62	0.000	.0284416 .0704251
NonWhite	-.0311563	.0255557	-1.22	0.223	-.0812446 .018932
householdszie	-.0024941	.005081	-0.49	0.624	-.0124527 .0074644
SES	.0043676	.0080457	0.54	0.587	-.0114017 .0201369
LE8_TOTALSCORE	-7.48e-06	.0000571	-0.13	0.896	-.0001194 .0001044
_cons	-.0181582	.0733838	-0.25	0.805	-.1619879 .1256714
sigma2					
_cons	.9992636	.0074897	133.42	0.000	.9845841 1.013943

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.21491	.1612325	7.54	0.000	.8989005 1.53092
ereri_cde	1.209754	.1609885	7.51	0.000	.8942218 1.525285
ereri_intref	.0036847	.0075658	0.49	0.626	-.011144 .0185134
ereri_intmed	.0012062	.0022342	0.54	0.589	-.0031728 .0055853
ereri_pie	.0002661	.0005584	0.48	0.634	-.0008283 .0013605

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrabepk
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8882.1967

Iteration 1: Log likelihood = -8797.1206

Iteration 2: Log likelihood = -8788.4152

Iteration 3: Log likelihood = -8788.3775

Iteration 4: Log likelihood = -8788.3775

Refining estimates:

Iteration 0: Log likelihood = -8788.3775

Cox regression with Breslow method for ties

No. of subjects = 35,573 Number of obs = 35,573

No. of failures = 951

Time at risk = 432,088.637

LR chi2(9) = 187.64

Log likelihood = -8788.3775

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.255884	.1629563	11.26	0.000	1.958075 2.598988
zrabepk		.9705417	.0395745	-0.73	0.463	.8959956 1.05129
_infectionburXzrabepk_000		1.084074	.0802487	1.09	0.275	.9376667 1.25334
AGE		1.037701	.0132021	2.91	0.004	1.012145 1.063902
SEX		.746357	.0490927	-4.45	0.000	.6560812 .8490545
NonWhite		1.107414	.1884199	0.60	0.549	.7933832 1.545741
householdszie		.9397696	.0396392	-1.47	0.141	.8652028 1.020763
SES		.8291215	.0413501	-3.76	0.000	.7519119 .9142594
LE8_TOTALSCORE		.9992193	.0003591	-2.17	0.030	.9985157 .9999233

-> Model for the mediator

Iteration 0: Log likelihood = -50405.633
 Iteration 1: Log likelihood = -50405.633

Linear regression (Maximum Likelihood) Number of obs = 35,573
 Wald chi2(7) = 139.81
 Log likelihood = -50405.633 Prob > chi2 = 0.0000

	zrabepk	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.000489	.01546	-0.03	0.975	-.0307901 .0298122
AGE		-.0058322	.0010081	-5.79	0.000	-.007808 -.0038563
SEX		.0197702	.0106975	1.85	0.065	-.0011966 .0407369
NonWhite		-.1312964	.0255661	-5.14	0.000	-.181405 -.0811878
householdszie		-.0042661	.0048688	-0.88	0.381	-.0138088 .0052766
SES		.0049074	.0080234	0.61	0.541	-.0108183 .020633
LE8_TOTALSCORE		-.0005197	.000057	-9.12	0.000	-.0006314 -.0004081
_cons		.5969702	.072858	8.19	0.000	.4541711 .7397693
sigma2						
_cons		.9960572	.0074686	133.37	0.000	.981419 1.010695

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257739	.1632001	7.71	0.000	.9378724 1.577605
ereri_cde	1.255327	.1628456	7.71	0.000	.936156 1.574499
ereri_intref	.0024674	.0072372	0.34	0.733	-.0117173 .016652
ereri_intmed	-.0000707	.0022374	-0.03	0.975	-.0044559 .0043145
ereri_pie	.0000146	.0004627	0.03	0.975	-.0008924 .0009216

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zrabgap11
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8913.3312
 Iteration 1: Log likelihood = -8824.2693
 Iteration 2: Log likelihood = -8815.3473
 Iteration 3: Log likelihood = -8815.2976
 Iteration 4: Log likelihood = -8815.2976
 Refining estimates:
 Iteration 0: Log likelihood = -8815.2976

Cox regression with Breslow method for ties

No. of subjects = 35,761	Number of obs = 35,761
No. of failures = 953	
Time at risk = 434,427.923	
Log likelihood = -8815.2976	LR chi2(9) = 196.07 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.236134	.1623991	11.08	0.000	1.939453 2.578198
zrabgap11	.8851132	.0355663	-3.04	0.002	.8180789 .9576403
_infectionburXzrabgap11_000	1.188889	.0848279	2.42	0.015	1.033731 1.367335
AGE	1.037593	.013162	2.91	0.004	1.012114 1.063713
SEX	.7443457	.0489484	-4.49	0.000	.6543338 .8467398
NonWhite	1.054764	.1841619	0.31	0.760	.749093 1.485167
householdsize	.9345108	.0397669	-1.59	0.111	.8597309 1.015795
SES	.8277846	.0411801	-3.80	0.000	.7508831 .9125619
LE8_TOTALSCORE	.999005	.0003599	-2.76	0.006	.9982999 .9997106

-> Model for the mediator

Iteration 0: Log likelihood = -50481.283
 Iteration 1: Log likelihood = -50481.283

Linear regression (Maximum Likelihood)

Number of obs = 35,761
Wald chi2(7) = 525.58
Prob > chi2 = 0.0000

Log likelihood = -50481.283

		Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0128645	.0153405	0.84	0.402	-.0172024 .0429313
AGE		-.0032131	.0009992	-3.22	0.001	-.0051714 -.0012548
SEX		-.1161437	.0106109	-10.95	0.000	-.1369407 -.0953466
NonWhite		.0365877	.0253887	1.44	0.150	-.0131733 .0863487
householdsize		-.0045604	.0048264	-0.94	0.345	-.0140199 .0048991
SES		-.0061188	.0079556	-0.77	0.442	-.0217116 .0094739
LE8_TOTALSCORE		-.0010354	.0000565	-18.31	0.000	-.0011462 -.0009245
_cons		.8955422	.0721702	12.41	0.000	.7540913 1.036993
sigma2						
_cons		.9854883	.0073699	133.72	0.000	.9710436 .999933

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.2234	.160974	7.60	0.000	.907897 1.538904
ereri_cde	1.226828	.1608792	7.63	0.000	.911511 1.542146
ereri_intref	-.0048859	.0081538	-0.60	0.549	-.020867 .0110953
ereri_intmed	.0030264	.0040186	0.75	0.451	-.0048499 .0109027
ereri_pie	-.0015687	.0019392	-0.81	0.419	-.0053694 .0022319

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrad23b
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8793.8337**
 Iteration 2: Log likelihood = **-8784.631**
 Iteration 3: Log likelihood = **-8784.5916**
 Iteration 4: Log likelihood = **-8784.5916**
 Refining estimates:
 Iteration 0: Log likelihood = **-8784.5916**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	195.21
Log likelihood =	-8784.5916	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.256328	.163772	11.21	0.000	1.957128 2.60127
zrad23b	.8999486	.0361901	-2.62	0.009	.8317407 .9737501
_infectionburXzrad23b_000	1.022406	.0766903	0.30	0.768	.8826225 1.184327
AGE	1.037804	.0131945	2.92	0.004	1.012263 1.06399
SEX	.7459187	.0490595	-4.46	0.000	.6557036 .8485462
NonWhite	1.110447	.1889175	0.62	0.538	.7955827 1.549925
householdsize	.9391967	.0396901	-1.48	0.138	.86454 1.0203
SES	.8295506	.0413669	-3.75	0.000	.7523091 .9147228
LE8_TOTALSCORE	.9991804	.0003588	-2.28	0.022	.9984774 .9998838

-> Model for the mediator

Iteration 0: Log likelihood = **-50441.264**
 Iteration 1: Log likelihood = **-50441.264**

Linear regression (Maximum Likelihood)	Number of obs =	35,573
	Wald chi2(7) =	68.34
Log likelihood =	-50441.264	Prob > chi2 = 0.0000

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0061679	.0154755	-0.40	0.690	-.0364994 .0241636
AGE	-.0039369	.0010091	-3.90	0.000	-.0059148 -.0019591
SEX	-.0140388	.0107082	-1.31	0.190	-.0350265 .006949
NonWhite	-.0104043	.0255917	-0.41	0.684	-.0605631 .0397545
householdsize	-.0022014	.0048737	-0.45	0.651	-.0117537 .0073508
SES	-.0040417	.0080315	-0.50	0.615	-.0197831 .0116997
LE8_TOTALSCORE	-.0003953	.000057	-6.93	0.000	-.0005071 -.0002835
_cons	.4622655	.072931	6.34	0.000	.3193233 .6052077
sigma2					
_cons	.9980545	.0074836	133.37	0.000	.983387 1.012722

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.252825	.1626851	7.70	0.000	.9339678 1.571682
ereri_cde	1.249493	.1626293	7.68	0.000	.9307453 1.56824
ereri_intref	.0021753	.0124279	0.18	0.861	-.022183 .0265337
ereri_intmed	.0005062	.001567	0.32	0.747	-.0025651 .0035775
ereri_pie	.0006504	.0016512	0.39	0.694	-.0025859 .0038867

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrangap1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8882.1967

Iteration 1: Log likelihood = -8796.6209

Iteration 2: Log likelihood = -8786.086

Iteration 3: Log likelihood = -8786.0322

Iteration 4: Log likelihood = -8786.0322

Refining estimates:

Iteration 0: Log likelihood = -8786.0322

Cox regression with Breslow method for ties

No. of subjects = 35,573 Number of obs = 35,573

No. of failures = 951

Time at risk = 432,088.637

LR chi2(9) = 192.33

Log likelihood = -8786.0322

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.237051	.1629427	11.05	0.000	1.939438 2.580333
zrangap1		.9412755	.0400145	-1.42	0.155	.8660268 1.023062
_infectionburXzrangap1_000		.9341469	.0752032	-0.85	0.397	.7977916 1.093807
AGE		1.03743	.0131985	2.89	0.004	1.011882 1.063624
SEX		.7460395	.0490692	-4.45	0.000	.6558066 .8486876
NonWhite		1.106918	.1883632	0.60	0.551	.7929893 1.545125
householdsize		.9386872	.0395885	-1.50	0.134	.8642156 1.019576
SES		.8319658	.0415329	-3.69	0.000	.7544184 .9174844
LE8_TOTALSCORE		.9992407	.000359	-2.11	0.034	.9985373 .9999445

-> Model for the mediator

Iteration 0: Log likelihood = **-50420.762**
 Iteration 1: Log likelihood = **-50420.762**

Linear regression (Maximum Likelihood) Number of obs = 35,573
 Wald chi2(7) = 109.44
 Log likelihood = **-50420.762** Prob > chi2 = 0.0000

	zrangap1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0028661	.0154666	-0.19	0.853	-.0331801 .0274479
AGE		-.0051849	.0010085	-5.14	0.000	-.0071616 -.0032082
SEX		.0115785	.0107021	1.08	0.279	-.0093971 .0325542
NonWhite		-.0864394	.025577	-3.38	0.001	-.1365693 -.0363095
householdsize		-.0040343	.0048709	-0.83	0.408	-.0135811 .0055124
SES		.0216685	.0080268	2.70	0.007	.0059361 .0374008
LE8_TOTALSCORE		.0003643	.000057	6.39	0.000	.0002526 .000476
_cons		.1269701	.072889	1.74	0.082	-.0158898 .2698299
sigma2						
_cons		.9969048	.007475	133.37	0.000	.9822542 1.011555

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.252235	.1627083	7.70	0.000	.9333328 1.571137
ereri_cde	1.234824	.1625206	7.60	0.000	.9162897 1.553359
ereri_intref	.0165806	.0197726	0.84	0.402	-.0221731 .0553342
ereri_intmed	.0006568	.0035748	0.18	0.854	-.0063496 .0076632
ereri_pie	.0001735	.0009441	0.18	0.854	-.0016769 .0020239

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zrarres1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8882.1967
 Iteration 1: Log likelihood = -8797.1844
 Iteration 2: Log likelihood = -8788.9956
 Iteration 3: Log likelihood = -8788.9738
 Iteration 4: Log likelihood = -8788.9738
 Refining estimates:
 Iteration 0: Log likelihood = -8788.9738

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	186.45
Log likelihood =	-8788.9738	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.250295	.1633727	11.17	0.000	1.951828 2.594401
zrarres1	.9954133	.0399457	-0.11	0.909	.920121 1.076867
_infectionburXzrarres1_000	1.002393	.068903	0.03	0.972	.8760477 1.14696
AGE	1.037648	.0132055	2.90	0.004	1.012085 1.063856
SEX	.745466	.0491767	-4.45	0.000	.6550523 .8483591
NonWhite	1.109339	.1887812	0.61	0.542	.7947147 1.548521
householdsize	.9395193	.0396259	-1.48	0.139	.8649773 1.020485
SES	.8288678	.0413619	-3.76	0.000	.7516383 .9140325
LE8_TOTALSCORE	.9992221	.000359	-2.17	0.030	.9985188 .999926

-> Model for the mediator

Iteration 0: Log likelihood = -50292.766
 Iteration 1: Log likelihood = -50292.766

Linear regression (Maximum Likelihood)
 Number of obs = 35,573
 Wald chi2(7) = 367.15
 Log likelihood = -50292.766 Prob > chi2 = 0.0000

	zrarres1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0621504	.0154111	4.03	0.000	.0319452 .0923555
AGE		.0107012	.0010049	10.65	0.000	.0087316 .0126708
SEX		-.1168452	.0106636	-10.96	0.000	-.1377455 -.0959449
NonWhite		.0352585	.0254851	1.38	0.167	-.0146913 .0852084
householdsize		.0020026	.0048534	0.41	0.680	-.0075099 .011515
SES		-.0234225	.007998	-2.93	0.003	-.0390983 -.0077467
LE8_TOTALSCORE		-.0003279	.0000568	-5.77	0.000	-.0004392 -.0002166
_cons		-.3175579	.0726272	-4.37	0.000	-.4599047 -.1752112
sigma2						
_cons		.9897565	.0074214	133.37	0.000	.975211 1.004302

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.249921	.1628763	7.67	0.000	.9306898 1.569153
ereri_cde	1.250232	.163388	7.65	0.000	.9299973 1.570467
ereri_intref	-1.85e-06	.0014579	-0.00	0.999	-.0028594 .0028557
ereri_intmed	-.000023	.0082108	-0.00	0.998	-.0161158 .0160699
ereri_pie	-.0002857	.0024944	-0.11	0.909	-.0051746 .0046032

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrarres2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04641 2.216 -.07506 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9134.0033**
 Iteration 1: Log likelihood = **-9043.6744**
 Iteration 2: Log likelihood = **-9034.8361**
 Iteration 3: Log likelihood = **-9034.8082**
 Iteration 4: Log likelihood = **-9034.8082**
 Refining estimates:
 Iteration 0: Log likelihood = **-9034.8082**

Cox regression with Breslow method for ties

No. of subjects =	36,648	Number of obs =	36,648
No. of failures =	975		
Time at risk =	445,198.116	LR chi2(9) =	198.39
Log likelihood =	-9034.8082	Prob > chi2 =	0.0000

	t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.276071	.1636769	11.44	0.000	1.976852 2.62058
zrarres2		.9050786	.0380285	-2.37	0.018	.8335307 .982768
_infectionburXzrarres2_000		1.004971	.0710179	0.07	0.944	.8749879 1.154264
AGE		1.034581	.0130063	2.70	0.007	1.0094 1.060389
SEX		.781477	.0513132	-3.76	0.000	.6871075 .8888074
NonWhite		1.084198	.1843901	0.48	0.635	.7768632 1.513119
householdsize		.9336041	.0394925	-1.62	0.104	.8593221 1.014307
SES		.8186816	.0404388	-4.05	0.000	.7431387 .9019036
LE8_TOTALSCORE		.9987452	.0003722	-3.37	0.001	.9980159 .9994751

-> Model for the mediator

Iteration 0: Log likelihood = **-48977.669**
 Iteration 1: Log likelihood = **-48977.669**

Linear regression (Maximum Likelihood)	Number of obs =	36,648
	Wald chi2(7) =	6573.53
Log likelihood =	Prob > chi2 =	0.0000

	zrarres2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1445186	.014047	10.29	0.000	.1169871 .1720502
AGE		.0134527	.000916	14.69	0.000	.0116574 .015248
SEX		.2547308	.0097238	26.20	0.000	.2356725 .2737891
NonWhite		-.1484949	.0232991	-6.37	0.000	-.1941603 -.1028294
householdsize		.0024529	.0044306	0.55	0.580	-.006231 .0111368
SES		-.1165977	.0072996	-15.97	0.000	-.1309047 -.1022906
LE8_TOTALSCORE		-.0034807	.0000519	-67.12	0.000	-.0035823 -.0033791
_cons		.5155874	.0662171	7.79	0.000	.3858043 .6453705
sigma2						
_cons		.8478877	.0062637	135.37	0.000	.8356111 .8601642

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.243968	.1611433	7.72	0.000	.9281324 1.559803
ereri_cde	1.268164	.1628021	7.79	0.000	.9490774 1.58725
ereri_intref	.0067503	.0142149	0.47	0.635	-.0211103 .034611
ereri_intmed	-.0166365	.0205576	-0.81	0.418	-.0569286 .0236557
ereri_pie	-.01431	.0061425	-2.33	0.020	-.0263491 -.0022708

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrasa1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8819.5642

Iteration 1: Log likelihood = -8734.9606

Iteration 2: Log likelihood = -8727.0939

Iteration 3: Log likelihood = -8727.0719

Iteration 4: Log likelihood = -8727.0719

Refining estimates:

Iteration 0: Log likelihood = -8727.0719

Cox regression with Breslow method for ties

No. of subjects = 35,601 Number of obs = 35,601

No. of failures = 943

Time at risk = 432,443.367

Log likelihood = -8727.0719

LR chi2(9) = 184.98

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.2134	.161112	10.92	0.000	1.919118 2.552809
zrasa1	1.003687	.0394029	0.09	0.925	.9293554 1.083964
_infectionburXzrasa1_000	.9501964	.068085	-0.71	0.476	.825699 1.093465
AGE	1.037589	.0132137	2.90	0.004	1.012011 1.063813
SEX	.7488779	.0494618	-4.38	0.000	.657947 .8523758
NonWhite	1.091413	.1880624	0.51	0.612	.7786065 1.529891
householdsize	.9301095	.0401435	-1.68	0.093	.8546656 1.012213
SES	.8157709	.0407345	-4.08	0.000	.7397151 .8996466
LE8_TOTALSCORE	.9991915	.0003605	-2.24	0.025	.9984852 .9998983

-> Model for the mediator

Iteration 0: Log likelihood = -50507.952
 Iteration 1: Log likelihood = -50507.952

Linear regression (Maximum Likelihood)
 Number of obs = 35,601
 Wald chi2(7) = 14.36
 Log likelihood = -50507.952 Prob > chi2 = 0.0451

	zrasa1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.0188463	.0154626	1.22	0.223	-.0114598	.0491525
AGE	-.0010221	.0010124	-1.01	0.313	-.0030063	.0009622
SEX	.0241116	.0107119	2.25	0.024	.0031166	.0451065
NonWhite	-.0666092	.0255596	-2.61	0.009	-.1167052	-.0165133
householdsize	-.0000705	.0050818	-0.01	0.989	-.0100305	.0098896
SES	-.0006536	.0080469	-0.08	0.935	-.0164253	.0151181
LE8_TOTALSCORE	-.0000284	.0000571	-0.50	0.619	-.0001403	.0000835
_cons	.0394275	.073395	0.54	0.591	-.1044242	.1832791
sigma2						
_cons	.9995687	.007492	133.42	0.000	.9848847	1.014253

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.21419	.1611494	7.53	0.000	.898343 1.530037
ereri_cde	1.213404	.1611125	7.53	0.000	.8976291 1.529179
ereri_intref	.0027653	.0066715	0.41	0.679	-.0103107 .0158412
ereri_intmed	-.0020485	.0031087	-0.66	0.510	-.0081414 .0040444
ereri_pie	.0000694	.0007421	0.09	0.926	-.0013851 .0015239

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrassf2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04669 2.217 -.07551 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -8882.1967
Iteration 1: Log likelihood = -8796.8555
Iteration 2: Log likelihood = -8788.8352
Iteration 3: Log likelihood = -8788.8185
Iteration 4: Log likelihood = -8788.8185
Refining estimates:
Iteration 0: Log likelihood = -8788.8185

```

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	186.76
Log likelihood =	-8788.8185	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.254473	.1632217	11.23	0.000	1.956225 2.598191
zrassf2	.9850143	.0390516	-0.38	0.703	.9113727 1.064606
_infectionburXzrassf2_000	.9892083	.0718555	-0.15	0.881	.8579401 1.140561
AGE	1.037949	.013216	2.93	0.003	1.012367 1.064178
SEX	.7448956	.0490383	-4.47	0.000	.6547247 .8474851
NonWhite	1.109176	.1887053	0.61	0.542	.794666 1.548162
householdsize	.9395394	.0396157	-1.48	0.139	.8650159 1.020483
SES	.8285584	.0413346	-3.77	0.000	.7513787 .9136658
LE8_TOTALSCORE	.9991958	.0003622	-2.22	0.026	.9984862 .9999058

-> Model for the mediator

```

Iteration 0: Log likelihood = -49951.988
Iteration 1: Log likelihood = -49951.988

```

Linear regression (Maximum Likelihood)	Number of obs = 35,573
Log likelihood = -49951.988	Wald chi2(7) = 1062.38
	Prob > chi2 = 0.0000

zrassf2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0319887	.0152641	2.10	0.036	.0020715 .0619058
AGE	.0074159	.0009953	7.45	0.000	.0054651 .0093667
SEX	-.1026446	.010562	-9.72	0.000	-.1233457 -.0819436
NonWhite	.0187107	.0252421	0.74	0.459	-.030763 .0681843
householdsize	.005447	.0048071	1.13	0.257	-.0039748 .0148688
SES	-.0393422	.0079218	-4.97	0.000	-.0548686 -.0238159
LE8_TOTALSCORE	-.0014764	.0000562	-26.25	0.000	-.0015866 -.0013662
_cons	.4295309	.0719348	5.97	0.000	.2885413 .5705205
sigma2					
_cons	.970974	.0072805	133.37	0.000	.9567044 .9852435

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.253198	.1631529	7.68	0.000	.9334237 1.572971
ereri_cde	1.25425	.1632154	7.68	0.000	.9343535 1.574146
ereri_intref	.0008189	.004173	0.20	0.844	-.0073601 .0089979
ereri_intmed	-.0013882	.0046485	-0.30	0.765	-.010499 .0077225
ereri_pie	-.0004829	.0012884	-0.37	0.708	-.003008 .0020423

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrbks
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04636 2.215 -.07321 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8812.3214**
 Iteration 1: Log likelihood = **-8722.1253**
 Iteration 2: Log likelihood = **-8713.7625**
 Iteration 3: Log likelihood = **-8713.7347**
 Iteration 4: Log likelihood = **-8713.7346**
 Refining estimates:
 Iteration 0: Log likelihood = **-8713.7346**

Cox regression with Breslow method for ties

No. of subjects =	35,594	Number of obs =	35,594
No. of failures =	943		
Time at risk =	432,515.252	LR chi2(9) =	197.17
Log likelihood =	-8713.7346	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.21795	.1612723	10.96	0.000	1.923353 2.557671
zrbks		.9186747	.0353174	-2.21	0.027	.8519975 .9905701
_infectionburXzrbks_000		1.107861	.0805339	1.41	0.159	.9607462 1.277503
AGE		1.037025	.0132112	2.85	0.004	1.011452 1.063244
SEX		.7371463	.0490927	-4.58	0.000	.6469417 .8399283
NonWhite		1.031197	.1801912	0.18	0.860	.7321547 1.452381
householdszie		.929831	.0403527	-1.68	0.094	.8540115 1.012382
SES		.8169746	.0409271	-4.04	0.000	.7405713 .9012604
LE8_TOTALSCORE		.9988471	.0003615	-3.19	0.001	.9981389 .9995559

-> Model for the mediator

Iteration 0: Log likelihood = **-49510.027**
 Iteration 1: Log likelihood = **-49510.027**

Linear regression (Maximum Likelihood)	Number of obs =	35,594
	Wald chi2(7) =	2047.04
Log likelihood =	Prob > chi2 =	0.0000

	zrbks	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0039075	.0150528	-0.26	0.795	-.0334105 .0255955
AGE		.0034599	.0009859	3.51	0.000	.0015277 .0053922
SEX		-.328768	.0104195	-31.55	0.000	-.3491897 -.3083462
NonWhite		-.0252645	.0250052	-1.01	0.312	-.0742737 .0237447
householdszie		-.0055938	.004998	-1.12	0.263	-.0153896 .0042021
SES		.0291191	.0078409	3.71	0.000	.0137513 .044487
LE8_TOTALSCORE		-.0016004	.0000554	-28.89	0.000	-.001709 -.0014918
_cons		1.112769	.0714933	15.56	0.000	.9726451 1.252894
sigma2						
_cons		.9455902	.0070881	133.41	0.000	.9316978 .9594826

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.210713	.160692	7.53	0.000	.8957624 1.525664
ereri_cde	1.21387	.1607074	7.55	0.000	.8988893 1.528851
ereri_intref	-.003005	.0039502	-0.76	0.447	-.0107472 .0047372
ereri_intmed	-.0004836	.0019444	-0.25	0.804	-.0042946 .0033274
ereri_pie	.0003315	.0012861	0.26	0.797	-.0021891 .0028521

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrbp2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8969.9807

Iteration 2: Log likelihood = -8959.1571

Iteration 3: Log likelihood = -8959.0688

Iteration 4: Log likelihood = -8959.0688

Refining estimates:

Iteration 0: Log likelihood = -8959.0688

Cox regression with Breslow method for ties

No. of subjects = 36,264 Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

Log likelihood = -8959.0688

LR chi2(9) = 197.10

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.240421	.1638797	11.03	0.000	1.941185 2.585785
zrbp2	1.065353	.0405999	1.66	0.097	.9886781 1.147975
_infectionburXzrbp2_000	.9956469	.0686056	-0.06	0.950	.869867 1.139614
AGE	1.030562	.0129929	2.39	0.017	1.005408 1.056345
SEX	.7568762	.0493766	-4.27	0.000	.6660314 .860112
NonWhite	1.080704	.1838263	0.46	0.648	.7743167 1.508326
householdsize	.9386121	.0392697	-1.51	0.130	.8647161 1.018823
SES	.8194281	.0404143	-4.04	0.000	.7439256 .9025936
LE8_TOTALSCORE	.9991126	.0003558	-2.49	0.013	.9984155 .9998101

-> Model for the mediator

Iteration 0: Log likelihood = **-50993.227**
 Iteration 1: Log likelihood = **-50993.227**

Linear regression (Maximum Likelihood)
 Number of obs = 36,264
 Wald chi2(7) = 937.23
 Prob > chi2 = 0.0000
 Log likelihood = **-50993.227**

zrbp2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1301225	.0151307	8.60	0.000	.1004668 .1597782
AGE	.0139277	.000988	14.10	0.000	.0119913 .0158642
SEX	-.1084624	.0104809	-10.35	0.000	-.1290045 -.0879202
NonWhite	.0751578	.0250791	3.00	0.003	.0260036 .124312
householdsize	-.0186562	.0047666	-3.91	0.000	-.0279985 -.0093138
SES	-.0479487	.0078606	-6.10	0.000	-.0633551 -.0325423
LE8_TOTALSCORE	-.0008468	.0000558	-15.17	0.000	-.0009561 -.0007374
_cons	-.2318975	.0714044	-3.25	0.001	-.3718476 -.0919475
sigma2					
_cons	.9747797	.0072391	134.66	0.000	.9605914 .9889681

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257262	.1620581	7.76	0.000	.9396342 1.57489
ereri_cde	1.239418	.1636214	7.57	0.000	.9187258 1.56011
ereri_intref	.0005976	.0053383	0.11	0.911	-.0098652 .0110603
ereri_intmed	.0089752	.0174989	0.51	0.608	-.0253221 .0432724
ereri_pie	.0082716	.0050923	1.62	0.104	-.0017092 .0182524

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zrbp5
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9057.6167
 Iteration 1: Log likelihood = -8967.5749
 Iteration 2: Log likelihood = -8959.1478
 Iteration 3: Log likelihood = -8959.13
 Iteration 4: Log likelihood = -8959.13
 Refining estimates:
 Iteration 0: Log likelihood = -8959.13

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	196.97
Log likelihood =	-8959.13	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.270334	.164542	11.31	0.000	1.969696 2.61686
zrbp5	.9318023	.0390666	-1.68	0.092	.8582948 1.011605
_infectionburXzrbp5_000	1.014754	.0725795	0.20	0.838	.8820213 1.16746
AGE	1.032333	.0130005	2.53	0.012	1.007165 1.058131
SEX	.744255	.0486128	-4.52	0.000	.6548224 .8459019
NonWhite	1.058252	.1806461	0.33	0.740	.757333 1.478738
householdsize	.9357079	.039351	-1.58	0.114	.8616745 1.016102
SES	.8141136	.040181	-4.17	0.000	.7390495 .8968018
LE8_TOTALSCORE	.9988615	.00037	-3.08	0.002	.9981365 .9995869

-> Model for the mediator

Iteration 0: Log likelihood = -48768.458	Number of obs = 36,264
Iteration 1: Log likelihood = -48768.458	Wald chi2(7) = 5793.61
Log likelihood = -48768.458	Prob > chi2 = 0.0000

	zrbp5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1636501	.0142304	11.50	0.000	.1357591 .1915412
AGE		.0094792	.0009292	10.20	0.000	.007658 .0113004
SEX		-.2085084	.0098572	-21.15	0.000	-.2278282 -.1891886
NonWhite		-.353521	.0235868	-14.99	0.000	-.3997503 -.3072918
householdsize		-.0094081	.004483	-2.10	0.036	-.0181945 -.0006216
SES		-.0507061	.0073928	-6.86	0.000	-.0651958 -.0362165
LE8_TOTALSCORE		-.0033075	.0000525	-63.01	0.000	-.0034104 -.0032047
_cons		1.415906	.0671554	21.08	0.000	1.284284 1.547528
sigma2						
_cons		.8622222	.0064032	134.66	0.000	.8496722 .8747722

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.247081	.1617622	7.71	0.000	.9300329 1.564129
ereri_cde	1.265571	.1640654	7.71	0.000	.9440089 1.587133
ereri_intref	.0021936	.0101956	0.22	0.830	-.0177895 .0221767
ereri_intmed	-.0091908	.0231537	-0.40	0.691	-.0545712 .0361895
ereri_pie	-.0114928	.0068547	-1.68	0.094	-.0249278 .0019422

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrcor1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8905.4114**
 Iteration 1: Log likelihood = **-8820.4884**
 Iteration 2: Log likelihood = **-8811.9199**
 Iteration 3: Log likelihood = **-8811.8939**
 Refining estimates:
 Iteration 0: Log likelihood = **-8811.8939**

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	187.03
Log likelihood =	-8811.8939	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.189706	.1592676	10.78	0.000	1.898776 2.525211
zrcor1	1.026646	.0392246	0.69	0.491	.952575 1.106476
_infectionburXzrcor1_000	.8383751	.0711933	-2.08	0.038	.7098324 .9901954
AGE	1.037211	.0131751	2.88	0.004	1.011707 1.063357
SEX	.7518133	.0493984	-4.34	0.000	.6609692 .8551432
NonWhite	1.111569	.1891118	0.62	0.534	.7963727 1.551517
householdszie	.9385786	.0396887	-1.50	0.134	.8639265 1.019681
SES	.8334783	.0414621	-3.66	0.000	.7560501 .9188361
LE8_TOTALSCORE	.9989646	.0003586	-2.89	0.004	.998262 .9996678

-> Model for the mediator

Iteration 0: Log likelihood = **-50658.941**
 Iteration 1: Log likelihood = **-50658.941**

Linear regression (Maximum Likelihood)	Number of obs =	35,755
	Wald chi2(7) =	149.73
Log likelihood =	Prob > chi2 =	0.0000

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0486264	.015407	3.16	0.002	.0184292 .0788236
AGE	-.0021192	.0010056	-2.11	0.035	-.0040902 -.0001483
SEX	-.0365287	.010669	-3.42	0.001	-.0574395 -.0156179
NonWhite	-.0402552	.025547	-1.58	0.115	-.0903264 .009816
householdszie	.0021463	.0048652	0.44	0.659	-.0073894 .011682
SES	-.0214148	.0080114	-2.67	0.008	-.0371167 -.0057128
LE8_TOTALSCORE	-.0005446	.0000568	-9.58	0.000	-.000656 -.0004332
_cons	.4448293	.0727063	6.12	0.000	.3023275 .5873311
sigma2					
_cons	.9958021	.0074477	133.71	0.000	.9812049 1.010399

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.20014	.1596172	7.52	0.000	.8872962 1.512984
ereri_cde	1.189507	.1592347	7.47	0.000	.8774129 1.501602
ereri_intref	.0267384	.0262742	1.02	0.309	-.0247581 .078235
ereri_intmed	-.0173852	.0101235	-1.72	0.086	-.0372269 .0024566
ereri_pie	.0012795	.0019039	0.67	0.502	-.0024521 .0050112

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zreg1a
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04656 2.216 -.07544 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9024.3458

Iteration 1: Log likelihood = -8934.021

Iteration 2: Log likelihood = -8924.9061

Iteration 3: Log likelihood = -8924.8474

Iteration 4: Log likelihood = -8924.8474

Refining estimates:

Iteration 0: Log likelihood = -8924.8474

Cox regression with Breslow method for ties

No. of subjects = 36,236 Number of obs = 36,236

No. of failures = 965

Time at risk = 440,221.029

Log likelihood = -8924.8474

LR chi2(9) = 199.00

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.262941	.1664738	11.10	0.000	1.95909 2.613919
zreg1a	1.12483	.0403853	3.28	0.001	1.048397 1.206836
_infectionburXzreg1a_000	.9161684	.0582348	-1.38	0.168	.8088538 1.037721
AGE	1.032848	.0131027	2.55	0.011	1.007484 1.058851
SEX	.7644868	.0498859	-4.12	0.000	.6727064 .8687891
NonWhite	1.066043	.1836436	0.37	0.710	.7605737 1.494199
householdsize	.9405739	.0394354	-1.46	0.144	.8663724 1.02113
SES	.8286461	.0411135	-3.79	0.000	.7518591 .9132753
LE8_TOTALSCORE	.9991114	.0003557	-2.50	0.013	.9984145 .9998088

-> Model for the mediator

Iteration 0: Log likelihood = -50888.933
 Iteration 1: Log likelihood = -50888.933

Linear regression (Maximum Likelihood)
 Number of obs = 36,236
 Wald chi2(7) = 1069.94
 Log likelihood = -50888.933 Prob > chi2 = 0.0000

	zreg1a	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.1720103	.0151283	11.37	0.000	.1423594	.2016611
AGE	.020838	.0009859	21.14	0.000	.0189057	.0227702
SEX	-.0652937	.0104671	-6.24	0.000	-.0858088	-.0447785
NonWhite	-.0766079	.025041	-3.06	0.002	-.1256875	-.0275284
householdsize	-.0147	.0047585	-3.09	0.002	-.0240264	-.0053736
SES	-.0880214	.0078546	-11.21	0.000	-.1034162	-.0726267
LE8_TOTALSCORE	-.0001184	.0000558	-2.12	0.034	-.0002279	-8.98e-06
_cons	-1.089114	.0712529	-15.29	0.000	-1.228768	-.9494613
sigma2						
_cons	.9712931	.007216	134.60	0.000	.95715	.9854361

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.265157	.1632098	7.75	0.000	.9452714 1.585042
ereri_cde	1.258003	.1654658	7.60	0.000	.9336959 1.58231
ereri_intref	-.0045349	.0033091	-1.37	0.171	-.0110206 .0019508
ereri_intmed	-.0087513	.0212952	-0.41	0.681	-.0504891 .0329864
ereri_pie	.0204401	.0065584	3.12	0.002	.0075858 .0332943

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zreg1b
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04648 2.216 -.0752 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9225.1762
 Iteration 1: Log likelihood = -9133.2261
 Iteration 2: Log likelihood = -9125.1519
 Iteration 3: Log likelihood = -9125.1332
 Iteration 4: Log likelihood = -9125.1332
 Refining estimates:
 Iteration 0: Log likelihood = -9125.1332

Cox regression with Breslow method for ties

No. of subjects =	36,896	Number of obs =	36,896
No. of failures =	984		
Time at risk =	448,211.761	LR chi2(9) =	200.09
Log likelihood =	-9125.1332	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.267426	.1633024	11.37	0.000	1.968923 2.611185
zreg1b	1.101011	.0395497	2.68	0.007	1.026161 1.181321
_infectionburXzreg1b_000	.8987896	.060245	-1.59	0.111	.7881391 1.024975
AGE	1.033155	.0129394	2.60	0.009	1.008103 1.05883
SEX	.7559356	.0488818	-4.33	0.000	.6659516 .8580782
NonWhite	1.07573	.182861	0.43	0.668	.7709204 1.501057
householdsize	.9380281	.0392063	-1.53	0.126	.8642484 1.018106
SES	.8267158	.0405755	-3.88	0.000	.7508945 .9101931
LE8_TOTALSCORE	.9990758	.0003518	-2.63	0.009	.9983865 .9997657

-> Model for the mediator

Iteration 0: Log likelihood = -51939.267	Number of obs = 36,896
Iteration 1: Log likelihood = -51939.267	Wald chi2(7) = 836.11
Log likelihood = -51939.267	Prob > chi2 = 0.0000

	zreg1b	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1501774	.0150188	10.00	0.000	.1207412 .1796137
AGE		.0176873	.0009805	18.04	0.000	.0157656 .0196091
SEX		-.0755967	.0104074	-7.26	0.000	-.0959947 -.0551986
NonWhite		-.112999	.0249224	-4.53	0.000	-.1618459 -.0641521
householdsize		-.0149381	.0047449	-3.15	0.002	-.0242379 -.0056383
SES		-.0688296	.0078102	-8.81	0.000	-.0841374 -.0535218
LE8_TOTALSCORE		-.0001649	.0000554	-2.97	0.003	-.0002735 -.0000562
_cons		-.8539094	.0708885	-12.05	0.000	-.9928483 -.7149705
sigma2						
_cons		.9778144	.0071992	135.82	0.000	.9637043 .9919244

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.258783	.1608013	7.83	0.000	.9436177 1.573947
ereri_cde	1.264238	.1626486	7.77	0.000	.9454531 1.583024
ereri_intref	-.001899	.0048408	-0.39	0.695	-.0113867 .0075887
ereri_intmed	-.0181132	.0201206	-0.90	0.368	-.0575489 .0213224
ereri_pie	.0145563	.0056661	2.57	0.010	.003451 .0256617

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zreg3a
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.216 -.0752 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9225.1762**
 Iteration 1: Log likelihood = **-9129.2346**
 Iteration 2: Log likelihood = **-9119.9191**
 Iteration 3: Log likelihood = **-9119.8555**
 Iteration 4: Log likelihood = **-9119.8555**
 Refining estimates:
 Iteration 0: Log likelihood = **-9119.8555**

Cox regression with Breslow method for ties

No. of subjects =	36,896	Number of obs =	36,896
No. of failures =	984		
Time at risk =	448,211.761	LR chi2(9) =	210.64
Log likelihood =	-9119.8555	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.270176	.1680031	11.08	0.000	1.963662 2.624534
zreg3a	1.162372	.0418097	4.18	0.000	1.083248 1.247275
_infectionburXzreg3a_000	.9036878	.0569037	-1.61	0.108	.7987663 1.022391
AGE	1.029482	.0129323	2.31	0.021	1.004445 1.055143
SEX	.7349839	.0477078	-4.74	0.000	.6471819 .8346978
NonWhite	1.046517	.1779638	0.27	0.789	.7498884 1.460481
householdszie	.9383795	.0391383	-1.52	0.127	.8647214 1.018312
SES	.8393896	.0412809	-3.56	0.000	.7622577 .9243264
LE8_TOTALSCORE	.9990823	.0003521	-2.60	0.009	.9983923 .9997727

-> Model for the mediator

Iteration 0: Log likelihood = **-51258.452**
 Iteration 1: Log likelihood = **-51258.452**

Linear regression (Maximum Likelihood)	Number of obs =	36,896
	Wald chi2(7) =	2254.61
Log likelihood =	Prob > chi2 =	0.0000

<u>zreg3a</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1899163	.0147442	12.88	0.000	.1610183 .2188144
AGE	.0293096	.0009626	30.45	0.000	.027423 .0311963
SEX	.1973594	.0102171	19.32	0.000	.1773343 .2173845
NonWhite	.1846554	.0244667	7.55	0.000	.1367016 .2326093
householdszie	-.004879	.0046581	-1.05	0.295	-.0140087 .0042508
SES	-.1365188	.0076674	-17.81	0.000	-.1515467 -.1214909
LE8_TOTALSCORE	-.0000341	.0000544	-0.63	0.531	-.0001408 .0000726
_cons	-2.083408	.0695925	-29.94	0.000	-2.219807 -1.947009
sigma2					
_cons	.9423863	.0069383	135.82	0.000	.9287874 .9559852

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.275832	.1630311	7.83	0.000	.9562973 1.595368
ereri_cde	1.2617	.1662736	7.59	0.000	.9358099 1.587591
ereri_intref	-.00703	.0047214	-1.49	0.136	-.0162838 .0022237
ereri_intmed	-.0078252	.0232352	-0.34	0.736	-.0533653 .0377149
ereri_pie	.0289875	.0073905	3.92	0.000	.0145023 .0434727

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zreg4
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.532 .04635 2.216 -.07454 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9083.3359

Iteration 1: Log likelihood = -8995.061

Iteration 2: Log likelihood = -8984.54

Iteration 3: Log likelihood = -8984.4356

Iteration 4: Log likelihood = -8984.4356

Refining estimates:

Iteration 0: Log likelihood = -8984.4356

Cox regression with Breslow method for ties

No. of subjects = 36,480 Number of obs = 36,480

No. of failures = 970

Time at risk = 443,094.176

LR chi2(9) = 197.80

Log likelihood = -8984.4356

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.238803	.1673289	10.78	0.000	1.933735
	zreg4	1.110394	.0416892	2.79	0.005	1.031619
_infectionburXzreg4_000		.9491312	.0605115	-0.82	0.413	.8376416
	AGE	1.032637	.0130617	2.54	0.011	1.007351
	SEX	.7581579	.0493429	-4.25	0.000	.6673617
	NonWhite	1.080014	.1838955	0.45	0.651	.7735605
	householdszie	.9414006	.0391477	-1.45	0.146	.8677162
	SES	.837016	.0414087	-3.60	0.000	.7596671
	LE8_TOTALSCORE	.9991271	.0003564	-2.45	0.014	.9984289
						.9998258

-> Model for the mediator

Iteration 0: Log likelihood = -50679.787
Iteration 1: Log likelihood = -50679.787

Linear regression (Maximum Likelihood)
Number of obs = 36,480
Log likelihood = -50679.787 Wald chi2(7) = 2230.73
Prob > chi2 = 0.0000

	zreg4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1382001	.0148333	9.32	0.000	.1091274 .1672727
AGE		.0297507	.0009679	30.74	0.000	.0278536 .0316478
SEX		-.0325258	.010276	-3.17	0.002	-.0526664 -.0123852
NonWhite		.0035818	.0246347	0.15	0.884	-.0447013 .0518649
householdszie		-.0128927	.0046767	-2.76	0.006	-.0220588 -.0037267
SES		-.1108973	.0077136	-14.38	0.000	-.1260157 -.0957788
LE8_TOTALSCORE		-.0009937	.0000547	-18.15	0.000	-.001101 -.0008864
_cons		-1.242427	.0699373	-17.76	0.000	-1.379502 -1.105353
sigma2						
_cons		.9423486	.0069775	135.06	0.000	.928673 .9560243

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.248656	.1633641	7.64	0.000	.9284686 1.568844
ereri_cde	1.2349	.1663848	7.42	0.000	.9087916 1.561008
ereri_intref	-.0025018	.0045623	-0.55	0.583	-.0114437 .0064402
ereri_intmed	.0016813	.0167094	0.10	0.920	-.0310685 .0344312
ereri_pie	.0145768	.0054951	2.65	0.008	.0038066 .025347

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator      (mvar): zreln
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04638 2.215 -.07464 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9121.8147
Iteration 1: Log likelihood = -9034.4466
Iteration 2: Log likelihood = -9025.3987
Iteration 3: Log likelihood = -9025.352
Iteration 4: Log likelihood = -9025.3519
Refining estimates:
Iteration 0: Log likelihood = -9025.3519

```

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	192.93
Log likelihood =	-9025.3519	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.255948	.1675003	10.96	0.000	1.950423 2.609332
zreln	1.035403	.0428841	0.84	0.401	.9546731 1.12296
_infectionburXzreln_000	.9583385	.0634993	-0.64	0.521	.8416247 1.091238
AGE	1.034531	.0130472	2.69	0.007	1.009273 1.060422
SEX	.7638566	.0523057	-3.93	0.000	.6679211 .8735717
NonWhite	1.08827	.1850134	0.50	0.619	.7798777 1.518612
householdsize	.9390694	.0393226	-1.50	0.133	.8650765 1.019391
SES	.8267297	.0408034	-3.86	0.000	.7505028 .9106989
LE8_TOTALSCORE	.9990532	.0003589	-2.64	0.008	.9983501 .9997568

-> Model for the mediator

Iteration 0: Log likelihood = -47666.604	Number of obs = 36,459
Iteration 1: Log likelihood = -47666.604	Wald chi2(7) = 9110.20
Log likelihood = -47666.604	Prob > chi2 = 0.0000

zrelt	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.2181213	.0136696	15.96	0.000	.1913294 .2449132
AGE	.0228285	.0008947	25.52	0.000	.021075 .0245821
SEX	-.6875239	.0094723	-72.58	0.000	-.7060893 -.6689585
NonWhite	-.0281809	.0227098	-1.24	0.215	-.0726913 .0163295
householdsize	.003285	.0045012	0.73	0.466	-.0055372 .0121072
SES	-.1174918	.0071146	-16.51	0.000	-.1314362 -.1035474
LE8_TOTALSCORE	-.001712	.0000504	-33.95	0.000	-.0018108 -.0016131
_cons	.4905801	.0648822	7.56	0.000	.3634133 .6177469
sigma2					
_cons	.8000579	.0059256	135.02	0.000	.7884439 .8116719

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.254	.1632286	7.68	0.000	.934078 1.573922
ereri_cde	1.256665	.1676088	7.50	0.000	.9281574 1.585172
ereri_intref	.0011557	.004507	0.26	0.798	-.0076778 .0099892
ereri_intmed	-.0114375	.0278268	-0.41	0.681	-.065977 .043102
ereri_pie	.0076175	.0091155	0.84	0.403	-.0102486 .0254836

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zren
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

```
Model for the outcome (yreg): cox
Model for the mediator (mreg): linear
```

```
Referent exposure level (a0): 0
Actual exposure level (a1): 1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5
```

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9064.8284**
 Iteration 1: Log likelihood = **-8985.4179**
 Iteration 2: Log likelihood = **-8962.1979**
 Iteration 3: Log likelihood = **-8961.3308**
 Iteration 4: Log likelihood = **-8961.328**
 Iteration 5: Log likelihood = **-8961.328**
 Refining estimates:
 Iteration 0: Log likelihood = **-8961.328**

Cox regression with Breslow method for ties

No. of subjects =	36,441	Number of obs =	36,441
No. of failures =	968		
Time at risk =	442,700.115	LR chi2(9) =	207.00
Log likelihood =	-8961.328	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.2245	.1681126	10.58	0.000	1.918246 2.579647
zren		1.096776	.040945	2.47	0.013	1.019391 1.180036
_infectionburXzren_000		1.015953	.0598652	0.27	0.788	.905141 1.14033
AGE		1.030181	.0130245	2.35	0.019	1.004967 1.056027
SEX		.7956306	.0539035	-3.37	0.001	.6966955 .908615
NonWhite		1.021119	.1807378	0.12	0.906	.7217952 1.444571
householdszie		.9278095	.0398045	-1.75	0.081	.852984 1.009199
SES		.8397217	.0417096	-3.52	0.000	.7618256 .9255826
LE8_TOTALSCORE		.9991803	.000357	-2.30	0.022	.9984809 .9998802

-> Model for the mediator

Iteration 0: Log likelihood = **-49115.415**
 Iteration 1: Log likelihood = **-49115.415**

Linear regression (Maximum Likelihood)	Number of obs =	36,441
	Wald chi2(7) =	5569.99
Log likelihood =	Prob > chi2 =	0.0000

	zren	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1981222	.0142334	13.92	0.000	.1702253 .2260191
AGE		.0209868	.0009296	22.58	0.000	.0191648 .0228088
SEX		-.5548959	.0098631	-56.26	0.000	-.5742273 -.5355645
NonWhite		-.1631621	.0236168	-6.91	0.000	-.2094501 -.1168741
householdszie		-.0037928	.0044886	-0.84	0.398	-.0125903 .0050046
SES		-.1307696	.0074015	-17.67	0.000	-.1452762 -.116263
LE8_TOTALSCORE		-.0010424	.0000526	-19.83	0.000	-.0011455 -.0009394
_cons		.0868816	.0671865	1.29	0.196	-.0448016 .2185647
sigma2						
_cons		.8673921	.0064259	134.98	0.000	.8547975 .8799867

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.274841	.1650628	7.72	0.000	.9513236 1.598358
ereri_cde	1.223083	.1676668	7.29	0.000	.894462 1.551704
ereri_intref	.0035108	.0071473	0.49	0.623	-.0104977 .0175193
ereri_intmed	.0297771	.0217501	1.37	0.171	-.0128524 .0724065
ereri_pie	.01847	.007651	2.41	0.016	.0034743 .0334658

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zret
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8959.6707

Iteration 2: Log likelihood = -8946.2266

Iteration 3: Log likelihood = -8946.0448

Iteration 4: Log likelihood = -8946.0447

Refining estimates:

Iteration 0: Log likelihood = -8946.0447

Cox regression with Breslow method for ties

No. of subjects = 36,264

Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 223.14

Log likelihood = -8946.0447 Prob > chi2 = 0.0000

-> Model for the mediator

Iteration 0: Log likelihood = -50336.92
Iteration 1: Log likelihood = -50336.92

Linear regression (Maximum Likelihood) Number of obs = 36,264
Log likelihood = -50336.92 Wald chi2(7) = 2308.43
Prob > chi2 = 0.0000

	zret	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0305417	.0148594	-2.06	0.040	-.0596655
AGE		-.029501	.0009703	-30.40	0.000	-.0314027
SEX		.0671269	.0102929	6.52	0.000	.0469532
NonWhite		.2336777	.0246293	9.49	0.000	.1854051
householdszie		.0091657	.0046811	1.96	0.050	-9.12e-06
SES		-.0254436	.0077196	-3.30	0.001	-.0405737
LE8_TOTALSCORE		-.0017561	.0000548	-32.04	0.000	-.0018636
_cons		2.523132	.0701237	35.98	0.000	2.385692
sigma2						
_cons		.9401274	.0069817	134.66	0.000	.9264435
						.9538114

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.266273	.1631882	7.76	0.000	.94643 1.586116
ereri_cde	1.250758	.1644656	7.60	0.000	.9284111 1.573104
ereri_intref	.0053009	.0180359	0.29	0.769	-.0300488 .0406506
ereri_intmed	.0043331	.0045516	0.95	0.341	-.0045879 .0132542
ereri_pie	.0058812	.0031154	1.89	0.059	-.0002249 .0119874

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator      (mvar): zretn
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04632 2.216 -.07493 500.4

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9065.1586
Iteration 1: Log likelihood = -8974.1916
Iteration 2: Log likelihood = -8963.9849
Iteration 3: Log likelihood = -8963.9013
Iteration 4: Log likelihood = -8963.9013
Refining estimates:
Iteration 0: Log likelihood = -8963.9013

```

Cox regression with Breslow method for ties

No. of subjects =	36,379	Number of obs =	36,379
No. of failures =	969		
Time at risk =	441,927.92	LR chi2(9) =	202.51
Log likelihood =	-8963.9013	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.246845	.1661165	10.95	0.000	1.943753 2.597199
zretn	1.111139	.0414833	2.82	0.005	1.032737 1.195494
_infectionburXzretn_000	.9474118	.0629577	-0.81	0.416	.8317149 1.079203
AGE	1.033359	.0130791	2.59	0.010	1.00804 1.059314
SEX	.7575136	.049356	-4.26	0.000	.6666996 .8606978
NonWhite	1.097185	.1894203	0.54	0.591	.7822158 1.53898
householdsize	.9354517	.0398959	-1.56	0.118	.8604361 1.017007
SES	.8306089	.041109	-3.75	0.000	.7538212 .9152185
LE8_TOTALSCORE	.9990969	.0003562	-2.53	0.011	.9983989 .9997953

-> Model for the mediator

Iteration 0: Log likelihood = -50916.254	Number of obs = 36,379
Iteration 1: Log likelihood = -50916.254	Wald chi2(7) = 1433.13
Log likelihood = -50916.254	Prob > chi2 = 0.0000

	zretn	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1574251	.0150015	10.49	0.000	.1280227 .1868275
AGE		.0140556	.0009805	14.34	0.000	.0121339 .0159773
SEX		-.0224062	.0103958	-2.16	0.031	-.0427816 -.0020307
NonWhite		-.3740965	.0249402	-15.00	0.000	-.4229784 -.3252146
householdsize		.0025786	.0047855	0.54	0.590	-.0068008 .011958
SES		-.1002005	.0078035	-12.84	0.000	-.1154952 -.0849059
LE8_TOTALSCORE		-.0011025	.0000554	-19.91	0.000	-.001211 -.000994
_cons		-.2776309	.0709362	-3.91	0.000	-.4166633 -.1385986
sigma2						
_cons		.9620722	.0071334	134.87	0.000	.948091 .9760534

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.258549	.1625653	7.74	0.000	.9399273 1.577171
ereri_cde	1.243067	.1652947	7.52	0.000	.9190954 1.567039
ereri_intref	-.0027068	.0044874	-0.60	0.546	-.011502 .0060884
ereri_intmed	.0014603	.0202781	0.07	0.943	-.038284 .0412047
ereri_pie	.0167288	.006188	2.70	0.007	.0046004 .0288571

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrgma
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9160.406**
 Iteration 1: Log likelihood = **-9072.5124**
 Iteration 2: Log likelihood = **-9063.0405**
 Iteration 3: Log likelihood = **-9062.9893**
 Iteration 4: Log likelihood = **-9062.9893**
 Refining estimates:
 Iteration 0: Log likelihood = **-9062.9893**

Cox regression with Breslow method for ties

No. of subjects =	36,751	Number of obs =	36,751
No. of failures =	977		
Time at risk =	446,451.479	LR chi2(9) =	194.83
Log likelihood =	-9062.9893	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.226842	.1589537	11.22	0.000	1.93611 2.561231
zrgma		1.010861	.0392854	0.28	0.781	.9367224 1.090867
_infectionburXzrgma_000		1.056636	.0722471	0.81	0.420	.9241121 1.208164
AGE		1.033894	.0129598	2.66	0.008	1.008802 1.059609
SEX		.759255	.0495398	-4.22	0.000	.668111 .862833
NonWhite		1.079666	.1836499	0.45	0.652	.7735723 1.506877
householdszie		.933633	.0393889	-1.63	0.104	.8595379 1.014116
SES		.8158907	.0400778	-4.14	0.000	.7410024 .8983473
LE8_TOTALSCORE		.99901	.000355	-2.79	0.005	.9983145 .999706

-> Model for the mediator

Iteration 0: Log likelihood = **-51545.468**
 Iteration 1: Log likelihood = **-51545.468**

Linear regression (Maximum Likelihood)	Number of obs =	36,751
	Wald chi2(7) =	1222.79
Log likelihood =	Prob > chi2 =	0.0000

	zrgma	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0049458	.0149784	-0.33	0.741	-.0343029 .0244114
AGE		-.0018116	.0009801	-1.85	0.065	-.0037327 .0001094
SEX		-.2558956	.0103756	-24.66	0.000	-.2762315 -.2355597
NonWhite		.1090322	.0248913	4.38	0.000	.0602461 .1578183
householdszie		.0032398	.0049285	0.66	0.511	-.0064199 .0128995
SES		.0307458	.007792	3.95	0.000	.0154737 .0460179
LE8_TOTALSCORE		.0013358	.0000553	24.17	0.000	.0012275 .0014441
_cons		-.1771336	.0710685	-2.49	0.013	-.3164253 -.0378419
sigma2						
_cons		.9677728	.0071393	135.56	0.000	.9537801 .9817656

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.230756	.1591585	7.73	0.000	.9188115 1.542701
ereri_cde	1.226763	.1589469	7.72	0.000	.9152332 1.538293
ereri_intref	.0047201	.0081824	0.58	0.564	-.011317 .0207573
ereri_intmed	-.0006737	.0021425	-0.31	0.753	-.0048729 .0035256
ereri_pie	-.0000534	.0002512	-0.21	0.832	-.0005458 .000439

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrgmb
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9160.406

Iteration 1: Log likelihood = -9069.5584

Iteration 2: Log likelihood = -9060.5141

Iteration 3: Log likelihood = -9060.4781

Iteration 4: Log likelihood = -9060.4781

Refining estimates:

Iteration 0: Log likelihood = -9060.4781

Cox regression with Breslow method for ties

No. of subjects = 36,751 Number of obs = 36,751

No. of failures = 977

Time at risk = 446,451.479

Log likelihood = -9060.4781

LR chi2(9) = 199.86

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.2415	.1600761	11.30	0.000	1.948725 2.578262
zrgmb	.9275767	.0363048	-1.92	0.055	.8590814 1.001533
_infectionburXzrgmb_000	.9835781	.0661491	-0.25	0.806	.8621097 1.122161
AGE	1.035713	.0130016	2.80	0.005	1.010542 1.061512
SEX	.7342857	.0482919	-4.70	0.000	.6454818 .835307
NonWhite	1.08259	.1840402	0.47	0.641	.7758181 1.510665
householdsize	.9328389	.0394682	-1.64	0.100	.8586032 1.013493
SES	.8152944	.0400449	-4.16	0.000	.7404673 .8976832
LE8_TOTALSCORE	.9990218	.0003537	-2.76	0.006	.9983289 .9997153

-> Model for the mediator

Iteration 0: Log likelihood = -51305.314
 Iteration 1: Log likelihood = -51305.314

Linear regression (Maximum Likelihood) Number of obs = 36,751
 Wald chi2(7) = 1722.33
 Log likelihood = -51305.314 Prob > chi2 = 0.0000

	zrgmb	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0801236	.0148809	5.38	0.000	.0509576 .1092896
AGE		.0146767	.0009738	15.07	0.000	.0127682 .0165852
SEX		-.37362	.0103081	-36.25	0.000	-.3938235 -.3534166
NonWhite		-.0383632	.0247292	-1.55	0.121	-.0868315 .0101051
householdsize		.007341	.0048964	1.50	0.134	-.0022557 .0169378
SES		-.0330148	.0077413	-4.26	0.000	-.0481874 -.0178422
LE8_TOTALSCORE		.0000943	.0000549	1.72	0.086	-.0000133 .0002019
_cons		-.3864988	.0706056	-5.47	0.000	-.5248833 -.2481144
sigma2						
_cons		.9552071	.0070466	135.56	0.000	.9413961 .9690181

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.228434	.159554	7.70	0.000	.915714 1.541154
ereri_cde	1.237118	.1596166	7.75	0.000	.9242755 1.549961
ereri_intref	.007756	.0127178	0.61	0.542	-.0171705 .0326825
ereri_intmed	-.0104346	.0107028	-0.97	0.330	-.0314117 .0105424
ereri_pie	-.0060056	.0033096	-1.81	0.070	-.0124922 .0004811

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zrgs8
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8913.3312
 Iteration 1: Log likelihood = -8825.7119
 Iteration 2: Log likelihood = -8816.1578
 Iteration 3: Log likelihood = -8816.1264
 Iteration 4: Log likelihood = -8816.1264
 Refining estimates:
 Iteration 0: Log likelihood = -8816.1264

Cox regression with Breslow method for ties

No. of subjects = 35,761	Number of obs = 35,761
No. of failures = 953	
Time at risk = 434,427.923	LR chi2(9) = 194.41
Log likelihood = -8816.1264	Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.215732	.1611948	10.94	0.000	1.921287 2.555302
zrgs8	.9200052	.0399635	-1.92	0.055	.8449198 1.001763
_infectionburXzrgs8_000	.947975	.076844	-0.66	0.510	.8087186 1.111211
AGE	1.037006	.0131584	2.86	0.004	1.011534 1.063119
SEX	.748766	.0491848	-4.40	0.000	.6583133 .8516471
NonWhite	1.055789	.184379	0.31	0.756	.7497673 1.486715
householdsize	.9354708	.039819	-1.57	0.117	.8605938 1.016863
SES	.826065	.0411442	-3.84	0.000	.7492349 .9107735
LE8_TOTALSCORE	.9990643	.0003584	-2.61	0.009	.998362 .999767

-> Model for the mediator

Iteration 0: Log likelihood = -50735.748
 Iteration 1: Log likelihood = -50735.748

Linear regression (Maximum Likelihood)

Number of obs = 35,761	
Wald chi2(7) = 12.83	
Log likelihood = -50735.748	Prob > chi2 = 0.0764

	zrgs8	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0039956	.01545	0.26	0.796	-.0262859 .0342772
AGE		-.0013849	.0010063	-1.38	0.169	-.0033572 .0005874
SEX		-.0052599	.0106867	-0.49	0.623	-.0262054 .0156857
NonWhite		.0482431	.02557	1.89	0.059	-.0018732 .0983595
householdsize		.0072741	.0048608	1.50	0.135	-.0022529 .0168011
SES		.0019067	.0080124	0.24	0.812	-.0137974 .0176107
LE8_TOTALSCORE		.000072	.0000569	1.26	0.206	-.0000396 .0001836
_cons		.0365775	.0726855	0.50	0.615	-.1058836 .1790385
sigma2						
_cons		.9996135	.0074755	133.72	0.000	.9849617 1.014265

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.227646	.1612383	7.61	0.000	.9116248 1.543667
ereri_cde	1.21146	.1604843	7.55	0.000	.8969164 1.526003
ereri_intref	.0174042	.0212031	0.82	0.412	-.0241531 .0589616
ereri_intmed	-.0008849	.0034806	-0.25	0.799	-.0077067 .0059368
ereri_pie	-.0003331	.0012994	-0.26	0.798	-.0028798 .0022136

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrhoc
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04629 2.215 -.0741 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8878.5578**
 Iteration 1: Log likelihood = **-8789.3751**
 Iteration 2: Log likelihood = **-8780.9374**
 Iteration 3: Log likelihood = **-8780.8989**
 Iteration 4: Log likelihood = **-8780.8989**
 Refining estimates:
 Iteration 0: Log likelihood = **-8780.8989**

Cox regression with Breslow method for ties

No. of subjects =	35,944	Number of obs =	35,944
No. of failures =	949		
Time at risk =	436,726.896	LR chi2(9) =	195.32
Log likelihood =	-8780.8989	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.20147	.1599409	10.86	0.000	1.909288 2.538366
zrhoc		.9345156	.0356242	-1.78	0.076	.867238 1.007012
_infectionburXzrhoc_000		.9907424	.0711832	-0.13	0.897	.8606039 1.14056
AGE		1.03866	.0131806	2.99	0.003	1.013145 1.064818
SEX		.751934	.0494988	-4.33	0.000	.660916 .8554866
NonWhite		1.038463	.181356	0.22	0.829	.7374593 1.462325
householdszie		.936834	.0399458	-1.53	0.126	.8617239 1.018491
SES		.8123381	.0404967	-4.17	0.000	.7367205 .8957172
LE8_TOTALSCORE		.998929	.0003578	-2.99	0.003	.998228 .9996305

-> Model for the mediator

Iteration 0: Log likelihood = **-50952.186**
 Iteration 1: Log likelihood = **-50952.186**

Linear regression (Maximum Likelihood)	Number of obs =	35,944
	Wald chi2(7) =	99.42
Log likelihood =	-50952.186	Prob > chi2 = 0.0000

	zrhoc	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0047092	.0153779	-0.31	0.759	-.0348493 .0254309
AGE		.0005507	.0010069	0.55	0.584	-.0014228 .0025243
SEX		.0607596	.0106486	5.71	0.000	.0398888 .0816304
NonWhite		.0856719	.0255645	3.35	0.001	.0355665 .1357773
householdszie		.0008797	.0050614	0.17	0.862	-.0090405 .0107999
SES		-.0269275	.0080061	-3.36	0.001	-.0426192 -.0112357
LE8_TOTALSCORE		-.0003179	.0000567	-5.61	0.000	-.000429 -.0002069
_cons		.0257502	.0729513	0.35	0.724	-.1172318 .1687321
sigma2						
_cons		.997214	.0074386	134.06	0.000	.9826346 1.011793

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.203735	.1597334	7.54	0.000	.8906627 1.516806
ereri_cde	1.198779	.1595005	7.52	0.000	.8861636 1.511394
ereri_intref	.0041566	.0105329	0.39	0.693	-.0164876 .0248007
ereri_intmed	.0004802	.0017017	0.28	0.778	-.0028551 .0038156
ereri_pie	.000319	.0010572	0.30	0.763	-.0017531 .0023911

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrilp
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.531 .04667 2.218 -.0747 500.6**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9178.4359**

Iteration 1: Log likelihood = **-9088.944**

Iteration 2: Log likelihood = **-9078.6693**

Iteration 3: Log likelihood = **-9078.6084**

Iteration 4: Log likelihood = **-9078.6084**

Refining estimates:

Iteration 0: Log likelihood = **-9078.6084**

Cox regression with Breslow method for ties

No. of subjects = **36,616** Number of obs = **36,616**

No. of failures = **980**

Time at risk = **444,808.265**

Log likelihood = **-9078.6084**

LR chi2(9) = **199.66**

Prob > chi2 = **0.0000**

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.262436	.1613782	11.45	0.000	1.967254
zrilp		.9234786	.035597	-2.07	0.039	.8562802
_infectionburXzrilp_000		1.15092	.0803667	2.01	0.044	1.003708
AGE		1.034731	.0129761	2.72	0.006	1.009609
SEX		.7602443	.0492195	-4.23	0.000	.6696454
NonWhite		1.086732	.1849313	0.49	0.625	.7785235
householdsize		.9330927	.0392511	-1.65	0.100	.859248
SES		.8207491	.0402358	-4.03	0.000	.7455586
LE8_TOTALSCORE		.9990569	.0003548	-2.66	0.008	.9983617
						.9997526

-> Model for the mediator

Iteration 0: Log likelihood = -51670.837
Iteration 1: Log likelihood = -51670.837

Linear regression (Maximum Likelihood)
Number of obs = 36,616
Log likelihood = -51670.837 Wald chi2(7) = 573.48
Prob > chi2 = 0.0000

	zrilp	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0022923	.0151541	-0.15	0.880	-.0319938 .0274092
AGE		-.0005543	.000988	-0.56	0.575	-.0024907 .001382
SEX		-.060364	.0104826	-5.76	0.000	-.0809096 -.0398184
NonWhite		.3028142	.0250599	12.08	0.000	.2536977 .3519306
householdsiz		.0017175	.0047705	0.36	0.719	-.0076325 .0110675
SES		-.0071019	.0078632	-0.90	0.366	-.0225134 .0083096
LE8_TOTALSCORE		-.001002	.0000558	-17.94	0.000	-.0011114 -.0008925
_cons		.6091595	.0714427	8.53	0.000	.4691344 .7491845
sigma2						
_cons		.9845527	.0072764	135.31	0.000	.9702912 .9988143

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.259302	.1609157	7.83	0.000	.9439135 1.574691
ereri_cde	1.258535	.160758	7.83	0.000	.9434552 1.573615
ereri_intref	.001083	.008621	0.13	0.900	-.0158139 .01798
ereri_intmed	-.0004982	.0033088	-0.15	0.880	-.0069832 .0059868
ereri_pie	.0001825	.0012098	0.15	0.880	-.0021887 .0025537

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator      (mvar): zrnase3
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04653 2.218 -.07617 500.4

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9002.3478
Iteration 1: Log likelihood = -8914.2081
Iteration 2: Log likelihood = -8902.1575
Iteration 3: Log likelihood = -8902.0087
Iteration 4: Log likelihood = -8902.0086
Refining estimates:
Iteration 0: Log likelihood = -8902.0086

```

Cox regression with Breslow method for ties

No. of subjects =	36,274	Number of obs =	36,274
No. of failures =	962		
Time at risk =	440,702.261	LR chi2(9) =	200.68
Log likelihood =	-8902.0086	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.262153	.1632021	11.32	0.000	1.963868 2.605743
zrnase3	.9717325	.0381477	-0.73	0.465	.8997684 1.049452
_infectionburXzrnase3_000	1.109088	.0756556	1.52	0.129	.9702909 1.26774
AGE	1.035906	.0131327	2.78	0.005	1.010484 1.061968
SEX	.7445329	.0486867	-4.51	0.000	.6549708 .8463419
NonWhite	.9804995	.1759484	-0.11	0.913	.6897651 1.393778
householdsize	.9284669	.0400005	-1.72	0.085	.8532862 1.010272
SES	.8287088	.0411136	-3.79	0.000	.7519215 .9133378
LE8_TOTALSCORE	.9990323	.0003591	-2.69	0.007	.9983288 .9997363

-> Model for the mediator

Iteration 0: Log likelihood =	-51062.648	Number of obs =	36,274
Iteration 1: Log likelihood =	-51062.648	Wald chi2(7) =	824.08
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-51062.648		

	zrnase3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0376813	.0151346	2.49	0.013	.0080181 .0673446
AGE		.0075655	.0009893	7.65	0.000	.0056265 .0095044
SEX		-.0338743	.0104958	-3.23	0.001	-.0544457 -.013303
NonWhite		.0224905	.0251183	0.90	0.371	-.0267405 .0717214
householdsize		.0118495	.0047725	2.48	0.013	.0024956 .0212035
SES		-.0189902	.0078756	-2.41	0.016	-.034426 -.0035544
LE8_TOTALSCORE		-.001405	.000056	-25.10	0.000	-.0015147 -.0012953
_cons		.2656368	.0714863	3.72	0.000	.1255263 .4057473
sigma2						
_cons		.9777596	.0072602	134.67	0.000	.9635298 .9919893

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.272618	.1628716	7.81	0.000	.9533959 1.591841
ereri_cde	1.261456	.163134	7.73	0.000	.941719 1.581192
ereri_intref	.0047608	.0087823	0.54	0.588	-.0124522 .0219738
ereri_intmed	.0074818	.0058348	1.28	0.200	-.0039542 .0189178
ereri_pie	-.0010799	.00154	-0.70	0.483	-.0040982 .0019383

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrnaset2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .0465 2.216 -.07517 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9174.3498**
 Iteration 1: Log likelihood = **-9089.1389**
 Iteration 2: Log likelihood = **-9077.0579**
 Iteration 3: Log likelihood = **-9076.9036**
 Iteration 4: Log likelihood = **-9076.9035**
 Refining estimates:
 Iteration 0: Log likelihood = **-9076.9035**

Cox regression with Breslow method for ties

No. of subjects =	36,728	Number of obs =	36,728
No. of failures =	979		
Time at risk =	446,112.766	LR chi2(9) =	194.89
Log likelihood =	-9076.9035	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.208089	.1643684	10.64	0.000	1.908331 2.554932
zrnaset2		1.052648	.0397918	1.36	0.175	.9774768 1.1336
_infectionburXzrnaset2_000		1.014495	.0674179	0.22	0.829	.8906021 1.155623
AGE		1.031587	.0129646	2.47	0.013	1.006487 1.057312
SEX		.7636679	.0499621	-4.12	0.000	.6717624 .8681473
NonWhite		1.079184	.1835826	0.45	0.654	.7732069 1.506245
householdsize		.9400702	.0391452	-1.48	0.138	.8663945 1.020011
SES		.8258136	.0406321	-3.89	0.000	.7498956 .9094175
LE8_TOTALSCORE		.9991494	.000356	-2.39	0.017	.9984518 .9998475

-> Model for the mediator

Iteration 0: Log likelihood = **-50641.248**
 Iteration 1: Log likelihood = **-50641.248**

Linear regression (Maximum Likelihood)	Number of obs =	36,728
	Wald chi2(7) =	3067.43
Log likelihood =	Prob > chi2 =	0.0000

	zrnaset2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.191691	.014634	13.10	0.000	.163009 .2203731
AGE		.0221078	.0009545	23.16	0.000	.020237 .0239786
SEX		-.2711869	.0101347	-26.76	0.000	-.2910505 -.2513233
NonWhite		-.2122714	.0242619	-8.75	0.000	-.2598239 -.1647189
householdsize		-.0010232	.0046167	-0.22	0.825	-.0100718 .0080254
SES		-.0980508	.0076058	-12.89	0.000	-.1129579 -.0831437
LE8_TOTALSCORE		-.0013892	.000054	-25.73	0.000	-.001495 -.0012834
_cons		-.2418796	.069008	-3.51	0.000	-.3771329 -.1066264
sigma2						
_cons		.9228949	.0068103	135.51	0.000	.9095469 .9362429

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.236955	.1611079	7.68	0.000	.9211896 1.552721
ereri_cde	1.208271	.1643042	7.35	0.000	.8862403 1.530301
ereri_intref	.0006887	.0042505	0.16	0.871	-.007642 .0090195
ereri_intmed	.0181119	.0243382	0.74	0.457	-.0295901 .0658138
ereri_pie	.009884	.007357	1.34	0.179	-.0045355 .0243035

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrnf41
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8882.1967

Iteration 1: Log likelihood = -8794.4757

Iteration 2: Log likelihood = -8786.389

Iteration 3: Log likelihood = -8786.3704

Iteration 4: Log likelihood = -8786.3704

Refining estimates:

Iteration 0: Log likelihood = -8786.3704

Cox regression with Breslow method for ties

No. of subjects = 35,573 Number of obs = 35,573

No. of failures = 951

Time at risk = 432,088.637

LR chi2(9) = 191.65

Log likelihood = -8786.3704

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.261952	.1636339	11.28	0.000	1.962935 2.606519
zrnf41	.9124931	.0368416	-2.27	0.023	.843068 .9876351
_infectionburXzrnf41_000	1.096581	.0790648	1.28	0.201	.9520678 1.263029
AGE	1.03787	.013192	2.92	0.003	1.012334 1.064051
SEX	.7440542	.0489632	-4.49	0.000	.6540192 .8464839
NonWhite	1.112578	.1893116	0.63	0.531	.7970645 1.552985
householdsize	.9391225	.039628	-1.49	0.137	.8645782 1.020094
SES	.8282565	.0412959	-3.78	0.000	.751147 .9132818
LE8_TOTALSCORE	.9991631	.0003601	-2.32	0.020	.9984576 .9998692

-> Model for the mediator

Iteration 0: Log likelihood = -50235.905
 Iteration 1: Log likelihood = -50235.905

Linear regression (Maximum Likelihood)
 Number of obs = 35,573
 Wald chi2(7) = 482.23
 Log likelihood = -50235.905 Prob > chi2 = 0.0000

zrnf41	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0080953	.0153864	-0.53	0.599	-.0382522 .0220616
AGE	-.0044	.0010033	-4.39	0.000	-.0063665 -.0024336
SEX	-.0621027	.0106466	-5.83	0.000	-.0829696 -.0412357
NonWhite	.066357	.0254444	2.61	0.009	.0164869 .1162271
householdsize	-.0022506	.0048456	-0.46	0.642	-.0117478 .0072467
SES	-.016496	.0079852	-2.07	0.039	-.0321468 -.0008453
LE8_TOTALSCORE	-.0010821	.0000567	-19.09	0.000	-.0011932 -.0009709
_cons	.9033651	.0725112	12.46	0.000	.7612457 1.045485
sigma2					
_cons	.9865975	.0073977	133.37	0.000	.9720984 1.001097

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.252836	.1627277	7.70	0.000	.9338957 1.571777
ereri_cde	1.256871	.162792	7.72	0.000	.9378049 1.575938
ereri_intref	-.0040239	.0036354	-1.11	0.268	-.0111491 .0031013
ereri_intmed	-.0007529	.0018299	-0.41	0.681	-.0043396 .0028337
ereri_pie	.0007416	.0014475	0.51	0.608	-.0020954 .0035786

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zrobo1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.532 .04635 2.216 -.07454 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9083.3359
 Iteration 1: Log likelihood = -8995.6791
 Iteration 2: Log likelihood = -8986.6994
 Iteration 3: Log likelihood = -8986.6601
 Iteration 4: Log likelihood = -8986.6601
 Refining estimates:
 Iteration 0: Log likelihood = -8986.6601

Cox regression with Breslow method for ties

No. of subjects =	36,480	Number of obs =	36,480
No. of failures =	970		
Time at risk =	443,094.176	LR chi2(9) =	193.35
Log likelihood =	-8986.6601	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.237968	.1603769	11.24	0.000	1.944712 2.575447
zrobo1	.9351379	.0377642	-1.66	0.097	.8639748 1.012162
_infectionburXzrobo1_000	.999225	.0688301	-0.01	0.991	.8730307 1.14366
AGE	1.036306	.0130511	2.83	0.005	1.01104 1.062204
SEX	.7783182	.0519682	-3.75	0.000	.6828456 .8871394
NonWhite	1.106422	.1883524	0.59	0.552	.7925305 1.544634
householdsize	.9382053	.0392645	-1.52	0.127	.8643199 1.018407
SES	.8247138	.0407534	-3.90	0.000	.7485847 .9085851
LE8_TOTALSCORE	.9989522	.000357	-2.93	0.003	.9982527 .9996523

-> Model for the mediator

Iteration 0: Log likelihood = -50583.764
 Iteration 1: Log likelihood = -50583.764

Linear regression (Maximum Likelihood)
 Number of obs = 36,480
 Wald chi2(7) = 2435.05
 Log likelihood = -50583.764 Prob > chi2 = 0.0000

	zrobo1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.0667297	.0147943	4.51	0.000	.0377335	.0957259
AGE	.0012956	.0009654	1.34	0.180	-.0005964	.0031877
SEX	.4119377	.010249	40.19	0.000	.3918501	.4320254
NonWhite	.1466474	.0245699	5.97	0.000	.0984913	.1948036
householdsize	-.0044255	.0046644	-0.95	0.343	-.0135675	.0047165
SES	-.0835466	.0076934	-10.86	0.000	-.0986253	-.0684679
LE8_TOTALSCORE	-.0012347	.0000546	-22.62	0.000	-.0013418	-.0011277
_cons	-.1033785	.0697534	-1.48	0.138	-.2400926	.0333357
sigma2						
_cons	.9374008	.0069409	135.06	0.000	.9237969	.9510046

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.227986	.1595274	7.70	0.000	.9153177 1.540654
ereri_cde	1.234594	.1598346	7.72	0.000	.9213238 1.547864
ereri_intref	.0035003	.0096714	0.36	0.717	-.0154554 .0224559
ereri_intmed	-.0056433	.0089568	-0.63	0.529	-.0231983 .0119116
ereri_pie	-.0044465	.0028588	-1.56	0.118	-.0100681 .0011381

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrobo2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9160.406**
 Iteration 1: Log likelihood = **-9070.2652**
 Iteration 2: Log likelihood = **-9060.8884**
 Iteration 3: Log likelihood = **-9060.8423**
 Iteration 4: Log likelihood = **-9060.8423**
 Refining estimates:
 Iteration 0: Log likelihood = **-9060.8423**

Cox regression with Breslow method for ties

No. of subjects =	36,751	Number of obs =	36,751
No. of failures =	977		
Time at risk =	446,451.479	LR chi2(9) =	199.13
Log likelihood =	-9060.8423	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.233895	.1595869	11.25	0.000	1.94202 2.569636
zrobo2	.9130062	.0374645	-2.22	0.027	.8424523 .9894689
_infectionburXzrobo2_000	1.03162	.072133	0.45	0.656	.8995021 1.183144
AGE	1.034846	.012976	2.73	0.006	1.009724 1.060594
SEX	.8001119	.0554815	-3.22	0.001	.6984359 .9165895
NonWhite	1.064153	.1811166	0.37	0.715	.7623096 1.485514
householdszie	.9339821	.0393217	-1.62	0.105	.8600072 1.01432
SES	.8121596	.0399093	-4.23	0.000	.7375876 .8942711
LE8_TOTALSCORE	.9989793	.0003546	-2.88	0.004	.9982845 .9996745

-> Model for the mediator

Iteration 0: Log likelihood = **-49567.193**
 Iteration 1: Log likelihood = **-49567.193**

Linear regression (Maximum Likelihood)	Number of obs =	36,751
	Wald chi2(7) =	5539.16
Log likelihood =	Prob > chi2 =	0.0000

<u>zrobo2</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0185281	.0141935	1.31	0.192	-.0092906 .0463468
AGE	.0104854	.0009288	11.29	0.000	.0086651 .0123058
SEX	.6997544	.0098319	71.17	0.000	.6804842 .7190246
NonWhite	-.2665309	.0235869	-11.30	0.000	-.3127603 -.2203015
householdszie	-.0012384	.0046702	-0.27	0.791	-.0103919 .0079151
SES	-.0675381	.0073837	-9.15	0.000	-.0820098 -.0530663
LE8_TOTALSCORE	-.0005693	.0000524	-10.87	0.000	-.0006719 -.0004667
_cons	-1.409883	.0673441	-20.94	0.000	-1.541875 -1.277891
sigma2					
_cons	.8689965	.0064106	135.56	0.000	.856432 .8815611

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.226689	.1589114	7.72	0.000	.9152287 1.53815
ereri_cde	1.229174	.1588764	7.74	0.000	.9177818 1.540566
ereri_intref	-.0000126	.0077539	-0.00	0.999	-.01521 .0151847
ereri_intmed	-.000787	.0025934	-0.30	0.762	-.00587 .004296
ereri_pie	-.0016849	.0014964	-1.13	0.260	-.0046177 .001248

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zror1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9064.8284

Iteration 1: Log likelihood = -8971.0111

Iteration 2: Log likelihood = -8961.8349

Iteration 3: Log likelihood = -8961.8069

Iteration 4: Log likelihood = -8961.8068

Refining estimates:

Iteration 0: Log likelihood = -8961.8068

Cox regression with Breslow method for ties

No. of subjects = 36,441 Number of obs = 36,441

No. of failures = 968

Time at risk = 442,700.115

Log likelihood = -8961.8068 LR chi2(9) = 206.04

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.303691	.1682281	11.43	0.000	1.996479 2.658175
zror1	1.124097	.0440031	2.99	0.003	1.041078 1.213736
_infectionburXzror1_000	.9256341	.0615371	-1.16	0.245	.8125509 1.054455
AGE	1.030173	.0130228	2.35	0.019	1.004962 1.056016
SEX	.7343787	.0481364	-4.71	0.000	.645842 .8350526
NonWhite	1.032839	.1828932	0.18	0.855	.7299677 1.461376
householdsize	.9272161	.0398369	-1.76	0.079	.8523342 1.008677
SES	.8285747	.0410003	-3.80	0.000	.7519894 .9129596
LE8_TOTALSCORE	.9990179	.0003556	-2.76	0.006	.9983212 .9997152

-> Model for the mediator

Iteration 0: Log likelihood = **-50827.434**
 Iteration 1: Log likelihood = **-50827.434**

Linear regression (Maximum Likelihood) Number of obs = **36,441**
 Wald chi2(7) = **1802.36**
 Log likelihood = **-50827.434** Prob > chi2 = **0.0000**

	zror1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1051885	.014918	7.05	0.000	.0759497 .1344273
AGE		.0298097	.0009743	30.60	0.000	.0279 .0317193
SEX		.2117017	.0103376	20.48	0.000	.1914404 .2319629
NonWhite		-.2812396	.0247528	-11.36	0.000	-.3297541 -.2327251
householdsize		.0080346	.0047045	1.71	0.088	-.001186 .0172552
SES		-.0423576	.0077575	-5.46	0.000	-.0575619 -.0271532
LE8_TOTALSCORE		.0005619	.0000551	10.20	0.000	.0004539 .00067
_cons		-2.422007	.0704183	-34.39	0.000	-2.560024 -2.283989
sigma2						
_cons		.952845	.007059	134.98	0.000	.9390097 .9666804

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.302625	.1652398	7.88	0.000	.9787614 1.626489
ereri_cde	1.297436	.1669414	7.77	0.000	.9702365 1.624635
ereri_intref	-.0044067	.0047198	-0.93	0.350	-.0136574 .0048439
ereri_intmed	-.0027844	.0136283	-0.20	0.838	-.0294953 .0239265
ereri_pie	.012381	.0045275	2.73	0.006	.0035072 .0212548

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrp2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04658 2.216 -.07524 500.8

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9057.6167
Iteration 1: Log likelihood = -8969.8259
Iteration 2: Log likelihood = -8960.6657
Iteration 3: Log likelihood = -8960.6267
Iteration 4: Log likelihood = -8960.6267
Refining estimates:
Iteration 0: Log likelihood = -8960.6267

```

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	193.98
Log likelihood =	-8960.6267	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.252792	.1613291	11.34	0.000	1.957781 2.592258
zrp2	.9984361	.0387691	-0.04	0.968	.9252696 1.077388
_infectionburXzrp2_000	1.048966	.0732773	0.68	0.494	.914743 1.202883
AGE	1.031858	.0129957	2.49	0.013	1.006699 1.057646
SEX	.7508337	.0489672	-4.39	0.000	.6607404 .8532114
NonWhite	1.084239	.1844562	0.48	0.634	.7768094 1.513337
householdsize	.9368077	.0393364	-1.55	0.120	.862797 1.017167
SES	.8171325	.0402998	-4.09	0.000	.7418438 .9000621
LE8_TOTALSCORE	.9990689	.0003555	-2.62	0.009	.9983724 .9997659

-> Model for the mediator

Iteration 0: Log likelihood =	-51302.76	Number of obs =	36,264
Iteration 1: Log likelihood =	-51302.76	Wald chi2(7) =	307.55
Log likelihood =	-51302.76	Prob > chi2 =	0.0000

	zrp2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.007719	.0152604	0.51	0.613	-.0221909 .0376289
AGE		-.0021975	.0009965	-2.21	0.027	-.0041506 -.0002445
SEX		.1041921	.0105707	9.86	0.000	.0834738 .1249103
NonWhite		.0578048	.0252941	2.29	0.022	.0082292 .1073803
householdsize		-.0015583	.0048075	-0.32	0.746	-.0109807 .0078642
SES		-.0254842	.0079279	-3.21	0.001	-.0410227 -.0099457
LE8_TOTALSCORE		-.0007361	.0000563	-13.08	0.000	-.0008465 -.0006258
_cons		.3390752	.0720165	4.71	0.000	.1979255 .4802248
sigma2						
_cons		.9915631	.0073637	134.66	0.000	.9771305 1.005996

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.255868	.1614633	7.78	0.000	.9394059 1.57233
ereri_cde	1.252789	.1613279	7.77	0.000	.9365916 1.568985
ereri_intref	.0022746	.0059029	0.39	0.700	-.009295 .0138441
ereri_intmed	.0008171	.0019309	0.42	0.672	-.0029674 .0046016
ereri_pie	-.0000121	.0003007	-0.04	0.968	-.0006014 .0005772

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrrm2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8796.4249**
 Iteration 2: Log likelihood = **-8788.164**
 Iteration 3: Log likelihood = **-8788.1443**
 Iteration 4: Log likelihood = **-8788.1443**
 Refining estimates:
 Iteration 0: Log likelihood = **-8788.1443**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	188.10
Log likelihood =	-8788.1443	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.253952	.1627283	11.26	0.000	1.956549	2.596563
zrrm2	.9707993	.0400456	-0.72	0.472	.8954004	1.052547
_infectionburXzrrm2_000	.9664995	.0713671	-0.46	0.644	.8362732	1.117005
AGE	1.037517	.0131934	2.90	0.004	1.011978	1.063701
SEX	.7449058	.0490041	-4.48	0.000	.6547938	.8474189
NonWhite	1.110416	.1889415	0.62	0.538	.7955191	1.549962
householdszie	.9399164	.0395873	-1.47	0.141	.865443	1.020798
SES	.8266224	.0412587	-3.81	0.000	.7495864	.9115754
LE8_TOTALSCORE	.9991809	.0003608	-2.27	0.023	.998474	.9998882

-> Model for the mediator

Iteration 0: Log likelihood = **-50101.199**
 Iteration 1: Log likelihood = **-50101.199**

Linear regression (Maximum Likelihood)	Number of obs =	35,573	
	Wald chi2(7) =	756.33	
Log likelihood =	-50101.199	Prob > chi2 =	0.0000

	zrrm2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0790183	.0153283	5.16	0.000	.0489754
AGE		-.0020997	.0009995	-2.10	0.036	-.0040587
SEX		-.0297244	.0106064	-2.80	0.005	-.0505125
NonWhite		.0783192	.0253482	3.09	0.002	.0286376
householdszie		-.0016589	.0048273	-0.34	0.731	-.0111203
SES		-.0624241	.0079551	-7.85	0.000	-.0780157
LE8_TOTALSCORE		-.001249	.0000565	-22.12	0.000	-.0013597
_cons		.7815261	.0722372	10.82	0.000	.6399439
sigma2						
_cons		.9791537	.0073419	133.37	0.000	.9647639
						.9935435

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.246968	.162232	7.69	0.000	.9289987 1.564936
ereri_cde	1.253006	.1625861	7.71	0.000	.9343436 1.571669
ereri_intref	.0053014	.0103379	0.51	0.608	-.0149606 .0255634
ereri_intmed	-.0090013	.0115806	-0.78	0.437	-.0316988 .0136961
ereri_pie	-.002339	.0032833	-0.71	0.476	-.0087742 .0040962

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrrm2b
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8882.1967

Iteration 1: Log likelihood = -8791.5926

Iteration 2: Log likelihood = -8781.2721

Iteration 3: Log likelihood = -8781.2047

Iteration 4: Log likelihood = -8781.2047

Refining estimates:

Iteration 0: Log likelihood = -8781.2047

Cox regression with Breslow method for ties

No. of subjects = 35,573 Number of obs = 35,573

No. of failures = 951

Time at risk = 432,088.637

LR chi2(9) = 201.98

Log likelihood = -8781.2047

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.235677	.163266	11.02	0.000	1.937528 2.579706
zrrm2b	.8756846	.0348367	-3.34	0.001	.81 .9466956
_infectionburXzrrm2b_000	1.005457	.0732925	0.07	0.940	.871596 1.159876
AGE	1.037602	.0131822	2.91	0.004	1.012084 1.063763
SEX	.7380559	.048606	-4.61	0.000	.648682 .8397435
NonWhite	1.117227	.1900527	0.65	0.515	.8004651 1.559338
householdsize	.9394653	.0396599	-1.48	0.139	.8648622 1.020504
SES	.8274016	.0412711	-3.80	0.000	.7503399 .9123776
LE8_TOTALSCORE	.9991229	.0003596	-2.44	0.015	.9984184 .999828

-> Model for the mediator

Iteration 0: Log likelihood = -50325.898
 Iteration 1: Log likelihood = -50325.898

Linear regression (Maximum Likelihood)
 Number of obs = 35,573
 Wald chi2(7) = 300.26
 Log likelihood = -50325.898 Prob > chi2 = 0.0000

	zrrm2b	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0404886	.0154254	-2.62	0.009	-.0707218 -.0102553
AGE		-.0003307	.0010059	-0.33	0.742	-.0023022 .0016407
SEX		-.0752158	.0106736	-7.05	0.000	-.0961356 -.054296
NonWhite		.0800942	.0255088	3.14	0.002	.0300978 .1300906
householdsize		-.0012977	.0048579	-0.27	0.789	-.010819 .0082236
SES		-.0050941	.0080055	-0.64	0.525	-.0207846 .0105963
LE8_TOTALSCORE		-.000809	.0000568	-14.23	0.000	-.0009204 -.0006976
_cons		.5444314	.0726949	7.49	0.000	.401952 .6869108
sigma2						
_cons		.991602	.0074352	133.37	0.000	.9770293 1.006175

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.245723	.1622097	7.68	0.000	.9277981 1.563648
ereri_cde	1.225841	.1617161	7.58	0.000	.9088834 1.542799
ereri_intref	.0083363	.0171281	0.49	0.626	-.0252342 .0419069
ereri_intmed	.0061565	.0062825	0.98	0.327	-.006157 .01847
ereri_pie	.0053893	.0026193	2.06	0.040	.0002555 .0105231

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrspo1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.17 1.532 .0464 2.216 -.07458 500.7

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -8985.4467
Iteration 1: Log likelihood = -8895.2736
Iteration 2: Log likelihood = -8887.0628
Iteration 3: Log likelihood = -8887.0333
Iteration 4: Log likelihood = -8887.0333
Refining estimates:
Iteration 0: Log likelihood = -8887.0333

```

Cox regression with Breslow method for ties

No. of subjects =	36,164	Number of obs =	36,164
No. of failures =	960		
Time at risk =	439,440.668	LR chi2(9) =	196.83
Log likelihood =	-8887.0333	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.284934	.1684959	11.21	0.000	1.977444 2.640238
zrspo1	1.060194	.0424878	1.46	0.145	.9801059 1.146826
_infectionburXzrspo1_000	.8591647	.0639251	-2.04	0.041	.7425809 .994052
AGE	1.036352	.013207	2.80	0.005	1.010787 1.062563
SEX	.7402683	.0484461	-4.60	0.000	.6511532 .8415795
NonWhite	1.033211	.1812159	0.19	0.852	.7326489 1.457076
householdsize	.9423001	.0393396	-1.42	0.155	.8682662 1.022647
SES	.8107402	.040226	-4.23	0.000	.735611 .8935426
LE8_TOTALSCORE	.9990255	.0003567	-2.73	0.006	.9983266 .9997248

-> Model for the mediator

```

Iteration 0: Log likelihood = -50185.031
Iteration 1: Log likelihood = -50185.031

```

Linear regression (Maximum Likelihood)	Number of obs =	36,164
Log likelihood =	Wald chi2(7) =	2329.90
	Prob > chi2 =	0.0000

	zrspo1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.0918418	.014887	6.17	0.000	.0626639	.1210197
AGE	.0354772	.000974	36.42	0.000	.0335681	.0373863
SEX	-.0036721	.0103048	-0.36	0.722	-.0238691	.016525
NonWhite	-.4836699	.0247094	-19.57	0.000	-.5320994	-.4352404
householdsize	.0111864	.004887	2.29	0.022	.0016081	.0207647
SES	-.0753175	.0077463	-9.72	0.000	-.0904999	-.0601351
LE8_TOTALSCORE	-.0004834	.0000548	-8.82	0.000	-.0005909	-.000376
_cons	-1.907865	.0705941	-27.03	0.000	-2.046227	-1.769503
sigma2						
_cons	.9394475	.0069863	134.47	0.000	.9257545	.9531405

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.275467	.1675542	7.61	0.000	.947067 1.603867
ereri_cde	1.283829	.1680684	7.64	0.000	.9544208 1.613237
ereri_intref	.0112292	.0150247	0.75	0.455	-.0182186 .040677
ereri_intmed	-.0249737	.0147471	-1.69	0.090	-.0538775 .0039302
ereri_pie	.0053828	.0038024	1.42	0.157	-.0020699 .0128354

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zrspo3
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04659 2.218 -.07483 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9201.1117**
 Iteration 1: Log likelihood = **-9108.437**
 Iteration 2: Log likelihood = **-9099.9785**
 Iteration 3: Log likelihood = **-9099.9606**
 Refining estimates:
 Iteration 0: Log likelihood = **-9099.9606**

Cox regression with Breslow method for ties

No. of subjects =	36,726	Number of obs =	36,726
No. of failures =	982		
Time at risk =	446,105.322	LR chi2(9) =	202.30
Log likelihood =	-9099.9606	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.339878	.1761166	11.29	0.000	2.01895 2.711821
zrspo3		1.114561	.043772	2.76	0.006	1.031988 1.203741
_infectionburXzrspo3_000		.8914137	.0593023	-1.73	0.084	.782442 1.015562
AGE		1.028933	.0130655	2.25	0.025	1.003641 1.054862
SEX		.7452334	.0484726	-4.52	0.000	.6560352 .8465594
NonWhite		1.10075	.1873593	0.56	0.573	.7885059 1.53664
householdszie		.9327615	.0393209	-1.65	0.099	.8587918 1.013102
SES		.8271224	.0405725	-3.87	0.000	.7513047 .9105912
LE8_TOTALSCORE		.9991321	.0003533	-2.46	0.014	.9984399 .9998248

-> Model for the mediator

Iteration 0: Log likelihood = **-49968.568**
 Iteration 1: Log likelihood = **-49968.568**

Linear regression (Maximum Likelihood)	Number of obs =	36,726
	Wald chi2(7) =	4545.82
Log likelihood =	-49968.568	Prob > chi2 = 0.0000

	zrspo3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1534972	.0143792	10.67	0.000	.1253144 .1816799
AGE		.0523065	.0009378	55.77	0.000	.0504684 .0541445
SEX		.1626534	.0099507	16.35	0.000	.1431503 .1821564
NonWhite		-.2939049	.023808	-12.34	0.000	-.3405677 -.247242
householdszie		-.008382	.0045307	-1.85	0.064	-.017262 .0004979
SES		-.0726736	.0074633	-9.74	0.000	-.0873014 -.0580458
LE8_TOTALSCORE		-.0003695	.000053	-6.97	0.000	-.0004734 -.0002657
_cons		-3.20649	.0678198	-47.28	0.000	-3.339414 -3.073566
sigma2						
_cons		.8898324	.0065665	135.51	0.000	.8769622 .9027026

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.331085	.1705645	7.80	0.000	.9967849 1.665386
ereri_cde	1.335963	.1749547	7.64	0.000	.9930583 1.678868
ereri_intref	-.0025561	.0046797	-0.55	0.585	-.011728 .0066159
ereri_intmed	-.0191098	.020564	-0.93	0.353	-.0594145 .021195
ereri_pie	.0167877	.0063313	2.65	0.008	.0043786 .0291968

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrtbdn
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8969.5596

Iteration 2: Log likelihood = -8956.6964

Iteration 3: Log likelihood = -8956.5738

Iteration 4: Log likelihood = -8956.5738

Refining estimates:

Iteration 0: Log likelihood = -8956.5738

Cox regression with Breslow method for ties

No. of subjects = 36,264

Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 202.09

Log likelihood = -8956.5738

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.273014	.1626046	11.48	0.000	1.975648 2.615137
zrtbdn	.927724	.0372081	-1.87	0.061	.8575902 1.003593
_infectionburXzrtbdn_000	.9431224	.0667641	-0.83	0.408	.8209394 1.08349
AGE	1.033547	.0130365	2.62	0.009	1.008309 1.059417
SEX	.7689992	.0504942	-4.00	0.000	.6761361 .8746164
NonWhite	1.088022	.1849988	0.50	0.620	.7796613 1.518341
householdszie	.9363245	.0393381	-1.57	0.117	.8623123 1.016689
SES	.8151293	.0402171	-4.14	0.000	.7399965 .8978904
LE8_TOTALSCORE	.999086	.0003547	-2.58	0.010	.998391 .9997816

-> Model for the mediator

Iteration 0: Log likelihood = -50987.32
 Iteration 1: Log likelihood = -50987.32

Linear regression (Maximum Likelihood)
 Number of obs = 36,264
 Wald chi2(7) = 949.35
 Log likelihood = -50987.32 Prob > chi2 = 0.0000

zrtbdn	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0698999	.0151283	4.62	0.000	.040249 .0995508
AGE	.0178481	.0009878	18.07	0.000	.015912 .0197842
SEX	.2417757	.0104792	23.07	0.000	.2212369 .2623145
NonWhite	.0077855	.025075	0.31	0.756	-.0413607 .0569317
householdszie	-.0028072	.0047658	-0.59	0.556	-.012148 .0065336
SES	-.0089894	.0078593	-1.14	0.253	-.0243933 .0064145
LE8_TOTALSCORE	.0003428	.0000558	6.14	0.000	.0002334 .0004522
_cons	-1.620583	.0713928	-22.70	0.000	-1.76051 -1.480656
sigma2					
_cons	.9744622	.0072367	134.66	0.000	.9602785 .9886459

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.26662	.1626553	7.79	0.000	.9478211 1.585418
ereri_cde	1.268603	.162078	7.83	0.000	.950936 1.58627
ereri_intref	.0192797	.0191983	1.00	0.315	-.0183484 .0569077
ereri_intmed	-.0160329	.0105812	-1.52	0.130	-.0367716 .0047059
ereri_pie	-.0052302	.0030087	-1.74	0.082	-.0111271 .0006666

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zrtn4r
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04659 2.218 -.07483 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9201.1117
 Iteration 1: Log likelihood = -9112.6704
 Iteration 2: Log likelihood = -9102.6862
 Iteration 3: Log likelihood = -9102.6309
 Iteration 4: Log likelihood = -9102.6309
 Refining estimates:
 Iteration 0: Log likelihood = -9102.6309

Cox regression with Breslow method for ties

No. of subjects =	36,726	Number of obs =	36,726
No. of failures =	982		
Time at risk =	446,105.322	LR chi2(9) =	196.96
Log likelihood =	-9102.6309	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.243282	.1632715	11.10	0.000	1.945053 2.587238
zrtn4r	.941955	.0382529	-1.47	0.141	.8698868 1.019994
_infectionburXzrtn4r_000	1.057999	.0744773	0.80	0.423	.9216487 1.214521
AGE	1.034932	.0129783	2.74	0.006	1.009805 1.060684
SEX	.7437083	.0493326	-4.46	0.000	.6530398 .8469653
NonWhite	1.079382	.183509	0.45	0.653	.7734996 1.506228
householdsize	.9338765	.0392457	-1.63	0.104	.860039 1.014053
SES	.8193965	.0402059	-4.06	0.000	.7442651 .9021122
LE8_TOTALSCORE	.9989988	.000363	-2.76	0.006	.9982876 .9997106

-> Model for the mediator

Iteration 0: Log likelihood = -49698.667
 Iteration 1: Log likelihood = -49698.667

Linear regression (Maximum Likelihood)

Number of obs =	36,726
Wald chi2(7) =	5156.91
Prob > chi2 =	0.0000

Log likelihood = -49698.667

zrtn4r	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1004063	.0142739	7.03	0.000	.0724299 .1283828
AGE	.0122707	.0009309	13.18	0.000	.0104461 .0140953
SEX	-.3983774	.0098779	-40.33	0.000	-.4177376 -.3790171
NonWhite	.1206641	.0236337	5.11	0.000	.0743429 .1669852
householdsize	.0229536	.0044975	5.10	0.000	.0141387 .0317686
SES	-.0737988	.0074087	-9.96	0.000	-.0883195 -.059278
LE8_TOTALSCORE	-.0024938	.0000526	-47.40	0.000	-.0025969 -.0023907
_cons	1.0437	.0673232	15.50	0.000	.9117491 1.175651
sigma2					
_cons	.8768492	.0064707	135.51	0.000	.8641668 .8895316

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.237255	.161289	7.67	0.000	.9211343 1.553375
ereri_cde	1.240302	.1630534	7.61	0.000	.9207232 1.559881
ereri_intref	-.0022792	.003429	-0.66	0.506	-.0089998 .0044414
ereri_intmed	.0052181	.013851	0.38	0.706	-.0219294 .0323655
ereri_pie	-.0059861	.004141	-1.45	0.148	-.0141022 .00213

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zruvbl1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8796.5217**
 Iteration 2: Log likelihood = **-8788.2556**
 Iteration 3: Log likelihood = **-8788.2347**
 Iteration 4: Log likelihood = **-8788.2347**
 Refining estimates:
 Iteration 0: Log likelihood = **-8788.2347**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	187.92
Log likelihood =	-8788.2347	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.247395	.1624475	11.20	0.000	1.950529 2.589443
zruvb11	1.040336	.0384144	1.07	0.284	.9677054 1.118419
_infectionburXzruvb11_000	.9256083	.067237	-1.06	0.287	.8027775 1.067233
AGE	1.037559	.0131969	2.90	0.004	1.012013 1.063749
SEX	.7442781	.0489769	-4.49	0.000	.6542176 .8467363
NonWhite	1.1115	.1891129	0.62	0.534	.7963142 1.551439
householdsize	.9399534	.0395804	-1.47	0.141	.8654922 1.020821
SES	.8280613	.0412899	-3.78	0.000	.7509634 .9130746
LE8_TOTALSCORE	.9992208	.0003589	-2.17	0.030	.9985176 .9999245

-> Model for the mediator

Iteration 0: Log likelihood = **-50431.893**
 Iteration 1: Log likelihood = **-50431.893**

Linear regression (Maximum Likelihood)	Number of obs =	35,573
	Wald chi2(7) =	87.12
Log likelihood =	-50431.893	Prob > chi2 = 0.0000

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0004449	.0154715	-0.03	0.977	-.0307684 .0298786
AGE	-.0009583	.0010089	-0.95	0.342	-.0029356 .001019
SEX	.0719459	.0107054	6.72	0.000	.0509637 .0929281
NonWhite	-.1408432	.025585	-5.50	0.000	-.1909888 -.0906976
householdsize	-.0011627	.0048724	-0.24	0.811	-.0107124 .0083871
SES	.0169779	.0080294	2.11	0.034	.0012406 .0327151
LE8_TOTALSCORE	-.0001634	.000057	-2.87	0.004	-.0002751 -.0000517
_cons	.0398414	.0729118	0.55	0.585	-.1030631 .1827459
sigma2					
_cons	.9975288	.0074796	133.37	0.000	.982869 1.012189

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.247267	.162277	7.69	0.000	.9292101 1.565324
ereri_cde	1.246419	.1623099	7.68	0.000	.9282976 1.564541
ereri_intref	.0008103	.0055265	0.15	0.883	-.0100215 .011642
ereri_intmed	.0000553	.0019259	0.03	0.977	-.0037193 .00383
ereri_pie	-.0000176	.000612	-0.03	0.977	-.0012172 .001182

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zrwdd1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9160.406

Iteration 1: Log likelihood = -9068.8128

Iteration 2: Log likelihood = -9060.7429

Iteration 3: Log likelihood = -9060.7254

Iteration 4: Log likelihood = -9060.7254

Refining estimates:

Iteration 0: Log likelihood = -9060.7254

Cox regression with Breslow method for ties

No. of subjects = 36,751 Number of obs = 36,751

No. of failures = 977

Time at risk = 446,451.479

Log likelihood = -9060.7254

LR chi2(9) = 199.36

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.233745	.1597657	11.24	0.000	1.941568 2.569891
zrwdd1	.9124326	.0353557	-2.37	0.018	.8457028 .9844277
_infectionburXzrwdd1_000	1.057186	.0756214	0.78	0.437	.9188911 1.216293
AGE	1.034539	.0129629	2.71	0.007	1.009442 1.060261
SEX	.7520704	.0487893	-4.39	0.000	.6622748 .854041
NonWhite	1.090741	.1854484	0.51	0.609	.7816278 1.522101
householdszie	.9330602	.0394121	-1.64	0.101	.858925 1.013594
SES	.8165092	.0400915	-4.13	0.000	.741594 .8989923
LE8_TOTALSCORE	.9989641	.0003546	-2.92	0.004	.9982693 .9996594

-> Model for the mediator

Iteration 0: Log likelihood = -51941.956
 Iteration 1: Log likelihood = -51941.956

Linear regression (Maximum Likelihood)
 Number of obs = 36,751
 Wald chi2(7) = 412.20
 Log likelihood = -51941.956 Prob > chi2 = 0.0000

zrwdd1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0167326	.0151409	-1.11	0.269	-.0464083 .012943
AGE	-.0019226	.0009908	-1.94	0.052	-.0038645 .0000193
SEX	-.0736095	.0104882	-7.02	0.000	-.094166 -.053053
NonWhite	.0839559	.0251613	3.34	0.001	.0346406 .1332712
householdszie	-.003135	.004982	-0.63	0.529	-.0128994 .0066295
SES	-.0164448	.0078765	-2.09	0.037	-.0318826 -.0010071
LE8_TOTALSCORE	-.0009506	.0000559	-17.02	0.000	-.0010601 -.0008412
_cons	.7084252	.0718394	9.86	0.000	.5676226 .8492278
sigma2					
_cons	.9888814	.007295	135.56	0.000	.9745835 1.003179

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.227548	.1589709	7.72	0.000	.9159706 1.539125
ereri_cde	1.228895	.1590011	7.73	0.000	.9172582 1.540531
ereri_intref	-.0026894	.0056072	-0.48	0.631	-.0136792 .0083004
ereri_intmed	-.000192	.0023437	-0.08	0.935	-.0047856 .0044016
ereri_pie	.0015346	.0015339	1.00	0.317	-.0014718 .0045409

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zs100a11
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04659 2.218 -.07572 500.4

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9019.0856
Iteration 1: Log likelihood = -8929.5882
Iteration 2: Log likelihood = -8920.2757
Iteration 3: Log likelihood = -8920.25
Iteration 4: Log likelihood = -8920.25
Refining estimates:
Iteration 0: Log likelihood = -8920.25

```

Cox regression with Breslow method for ties

No. of subjects =	36,163	Number of obs =	36,163
No. of failures =	964		
Time at risk =	439,288.115	LR chi2(9) =	197.67
Log likelihood =	-8920.25	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.292059	.1647451	11.54	0.000	1.990877 2.638804
zs100a11	.9920748	.0393117	-0.20	0.841	.9179414 1.072195
_infectionburXzs100a11_000	1.009794	.0713904	0.14	0.890	.8791326 1.159874
AGE	1.035437	.0131113	2.75	0.006	1.010055 1.061456
SEX	.7492333	.0489186	-4.42	0.000	.6592358 .8515171
NonWhite	.9772536	.1754949	-0.13	0.898	.6873038 1.389523
householdsize	.9311042	.0399353	-1.66	0.096	.8560321 1.01276
SES	.8300377	.0411588	-3.76	0.000	.7531641 .9147577
LE8_TOTALSCORE	.9990396	.0003593	-2.67	0.008	.9983356 .9997442

-> Model for the mediator

Iteration 0: Log likelihood =	-50700.154	Number of obs =	36,163
Iteration 1: Log likelihood =	-50700.154	Wald chi2(7) =	1245.82
Log likelihood =	-50700.154	Prob > chi2 =	0.0000

	zs100a11	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0407018	.0150842	2.70	0.007	.0111375 .0702662
AGE		.0118044	.0009856	11.98	0.000	.0098726 .0137362
SEX		-.0325983	.0104509	-3.12	0.002	-.0530817 -.0121148
NonWhite		.1631209	.0250004	6.52	0.000	.1141209 .2121208
householdsize		-.0021026	.0047519	-0.44	0.658	-.0114161 .007211
SES		-.0340332	.0078456	-4.34	0.000	-.0494103 -.0186561
LE8_TOTALSCORE		-.0015841	.0000557	-28.43	0.000	-.0016933 -.0014749
_cons		.1210265	.0712035	1.70	0.089	-.0185299 .2605828
sigma2						
_cons		.9666705	.0071889	134.47	0.000	.9525805 .9807604

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.292033	.1643225	7.86	0.000	.9699665 1.614099
ereri_cde	1.291961	.1647556	7.84	0.000	.969046 1.614876
ereri_intref	-.0000953	.0007481	-0.13	0.899	-.0015614 .0013709
ereri_intmed	.0004907	.0057201	0.09	0.932	-.0107205 .011702
ereri_pie	-.0003238	.0016168	-0.20	0.841	-.0034926 .002845

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zs100a12
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.532 .04664 2.216 -.07546 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8983.8498**
 Iteration 1: Log likelihood = **-8897.9831**
 Iteration 2: Log likelihood = **-8884.6277**
 Iteration 3: Log likelihood = **-8884.4475**
 Iteration 4: Log likelihood = **-8884.4474**
 Refining estimates:
 Iteration 0: Log likelihood = **-8884.4474**

Cox regression with Breslow method for ties

No. of subjects =	35,931	Number of obs =	35,931
No. of failures =	961		
Time at risk =	436,494.729	LR chi2(9) =	198.80
Log likelihood =	-8884.4474	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.230644	.1627482	11.00	0.000	1.933421 2.573559
zs100a12		1.057591	.0410508	1.44	0.149	.9801169 1.141188
_infectionburXzs100a12_000		1.055551	.0732147	0.78	0.436	.9213794 1.209261
AGE		1.028224	.0130154	2.20	0.028	1.003028 1.054052
SEX		.7513325	.0491875	-4.37	0.000	.6608555 .8541965
NonWhite		1.094761	.1862942	0.53	0.595	.7842801 1.528154
householdsize		.9311808	.0398887	-1.66	0.096	.8561924 1.012737
SES		.8170896	.0404706	-4.08	0.000	.7414972 .9003883
LE8_TOTALSCORE		.9991473	.0003575	-2.38	0.017	.9984468 .9998484

-> Model for the mediator

Iteration 0: Log likelihood = **-50597.057**
 Iteration 1: Log likelihood = **-50597.057**

Linear regression (Maximum Likelihood)	Number of obs =	35,931
	Wald chi2(7) =	781.01
Log likelihood =	-50597.057	Prob > chi2 = 0.0000

	zs100a12	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0367	.0152231	2.41	0.016	.0068632 .0665368
AGE		.0096952	.0009951	9.74	0.000	.0077449 .0116456
SEX		-.1350248	.0105503	-12.80	0.000	-.155703 -.1143466
NonWhite		-.0713706	.0252341	-2.83	0.005	-.1208284 -.0219127
householdsize		.0027666	.0048361	0.57	0.567	-.0067121 .0122453
SES		-.019571	.0079151	-2.47	0.013	-.0350844 -.0040576
LE8_TOTALSCORE		-.0010726	.0000562	-19.10	0.000	-.0011827 -.0009625
_cons		.1510555	.0719711	2.10	0.036	.0099947 .2921164
sigma2						
_cons		.9786987	.0073018	134.04	0.000	.9643875 .9930099

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.248912	.1618423	7.72	0.000	.9317064 1.566117
ereri_cde	1.229108	.162427	7.57	0.000	.9107574 1.547459
ereri_intref	.010738	.0133162	0.81	0.420	-.0153613 .0368372
ereri_intmed	.0070081	.0057403	1.22	0.222	-.0042426 .0182588
ereri_pie	.0020571	.0016635	1.24	0.216	-.0012033 .0053174

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zs100a16
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04684 2.215 -.07399 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8796.3455

Iteration 1: Log likelihood = -8709.1853

Iteration 2: Log likelihood = -8700.4034

Iteration 3: Log likelihood = -8700.3638

Iteration 4: Log likelihood = -8700.3638

Refining estimates:

Iteration 0: Log likelihood = -8700.3638

Cox regression with Breslow method for ties

No. of subjects = 35,544 Number of obs = 35,544

No. of failures = 940

Time at risk = 431,741.054

LR chi2(9) = 191.96

Log likelihood = -8700.3638

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.230331	.1627214	10.99	0.000	1.933157 2.573189
zs100a16		.9240494	.0375734	-1.94	0.052	.8532649 1.000706
_infectionburXzs100a16_000		1.018799	.0741193	0.26	0.798	.8834099 1.174938
AGE		1.037744	.0132386	2.90	0.004	1.012118 1.064018
SEX		.7555267	.0501749	-4.22	0.000	.6633169 .8605548
NonWhite		1.099079	.1894433	0.55	0.584	.7839916 1.540802
householdsize		.9290089	.0401712	-1.70	0.089	.8535189 1.011176
SES		.8114119	.0405333	-4.18	0.000	.7357333 .8948748
LE8_TOTALSCORE		.9992113	.0003611	-2.18	0.029	.9985039 .9999192

-> Model for the mediator

Iteration 0: Log likelihood = **-50307.477**
 Iteration 1: Log likelihood = **-50307.477**

Linear regression (Maximum Likelihood) Number of obs = 35,544
 Wald chi2(7) = 254.46
 Log likelihood = **-50307.477** Prob > chi2 = 0.0000

	zs100a16	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0319944	.015424	2.07	0.038	.0017641 .0622248
AGE		.0022703	.00101	2.25	0.025	.0002908 .0042498
SEX		.1530697	.0106849	14.33	0.000	.1321276 .1740118
NonWhite		.0636557	.025504	2.50	0.013	.0136687 .1136426
householdsize		-.0238427	.0050667	-4.71	0.000	-.0337732 -.0139121
SES		.014944	.0080273	1.86	0.063	-.0007893 .0306772
LE8_TOTALSCORE		-.0001131	.000057	-1.99	0.047	-.0002247 -1.45e-06
_cons		-.2678515	.0732133	-3.66	0.000	-.4113469 -.1243561
sigma2						
_cons		.9928641	.0074477	133.31	0.000	.9782668 1.007461

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.222977	.1619339	7.55	0.000	.9055929 1.540362
ereri_cde	1.226096	.1620439	7.57	0.000	.9084957 1.543696
ereri_intref	.0011791	.0092862	0.13	0.899	-.0170215 .0193798
ereri_intmed	-.0017734	.0045832	-0.39	0.699	-.0107563 .0072094
ereri_pie	-.002524	.0017779	-1.42	0.156	-.0060086 .0009605

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zs100a4
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04641 2.217 -.0748 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9132.2436
Iteration 1: Log likelihood = -9042.9267
Iteration 2: Log likelihood = -9031.9465
Iteration 3: Log likelihood = -9031.8643
Iteration 4: Log likelihood = -9031.8643
Refining estimates:
Iteration 0: Log likelihood = -9031.8643

```

Cox regression with Breslow method for ties

No. of subjects =	36,540	Number of obs =	36,540
No. of failures =	975		
Time at risk =	443,893.259	LR chi2(9) =	200.76
Log likelihood =	-9031.8643	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.228991	.1614532	11.07	0.000	1.933985 2.568998
zs100a4	.9203198	.0356075	-2.15	0.032	.8531109 .9928236
_infectionburXzs100a4_000	.9704557	.0678443	-0.43	0.668	.846191 1.112969
AGE	1.03336	.0129769	2.61	0.009	1.008237 1.05911
SEX	.7624385	.0494816	-4.18	0.000	.671371 .8658588
NonWhite	1.080538	.1861881	0.45	0.653	.7708487 1.514646
householdsize	.9321533	.039452	-1.66	0.097	.8579492 1.012775
SES	.8217898	.04047	-3.99	0.000	.7461778 .9050637
LE8_TOTALSCORE	.9989555	.0003553	-2.94	0.003	.9982593 .9996521

-> Model for the mediator

Iteration 0: Log likelihood =	-51535.39	Number of obs =	36,540
Iteration 1: Log likelihood =	-51535.39	Wald chi2(7) =	629.61
Log likelihood =	-51535.39	Prob > chi2 =	0.0000

zs100a4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0713899	.0151495	-4.71	0.000	-.1010823 -.0416975
AGE	-.0099674	.000988	-10.09	0.000	-.0119038 -.0080311
SEX	-.0893075	.0104857	-8.52	0.000	-.1098591 -.0687559
NonWhite	.1724663	.0251309	6.86	0.000	.1232107 .2217219
householdsize	.0020832	.0047746	0.44	0.663	-.0072747 .0114411
SES	-.0111423	.0078712	-1.42	0.157	-.0265695 .0042849
LE8_TOTALSCORE	-.0010041	.0000558	-17.99	0.000	-.0011136 -.0008947
_cons	1.235818	.0714402	17.30	0.000	1.095798 1.375838
sigma2					
_cons	.9830342	.0072728	135.17	0.000	.9687799 .9972886

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.252884	.1607613	7.79	0.000	.9377974 1.56797
ereri_cde	1.225841	.1608829	7.62	0.000	.9105162 1.541166
ereri_intref	.008938	.0134187	0.67	0.505	-.0173622 .0352383
ereri_intmed	.0121594	.0101014	1.20	0.229	-.0076391 .0319579
ereri_pie	.0059454	.0030531	1.95	0.051	-.0000386 .0119294

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zs100p
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8905.4114**
 Iteration 1: Log likelihood = **-8831.4562**
 Iteration 2: Log likelihood = **-8810.1016**
 Iteration 3: Log likelihood = **-8808.4975**
 Iteration 4: Log likelihood = **-8808.4715**
 Iteration 5: Log likelihood = **-8808.4715**
 Refining estimates:
 Iteration 0: Log likelihood = **-8808.4715**

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	193.88
Log likelihood =	-8808.4715	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.132338	.1601886	10.08	0.000	1.840394 2.470593
zs100p	1.077533	.0385454	2.09	0.037	1.004573 1.155792
_infectionburXzs100p_000	1.069291	.0639666	1.12	0.263	.9509894 1.202309
AGE	1.034506	.0131652	2.67	0.008	1.009021 1.060633
SEX	.7477284	.0491585	-4.42	0.000	.6573288 .8505602
NonWhite	1.12513	.1915886	0.69	0.489	.8058592 1.570893
householdsize	.9395679	.0396755	-1.48	0.140	.8649363 1.020639
SES	.8379754	.0417094	-3.55	0.000	.7600875 .9238447
LE8_TOTALSCORE	.9990747	.0003589	-2.58	0.010	.9983716 .9997782

-> Model for the mediator

Iteration 0: Log likelihood =	-50305.091	Number of obs =	35,755
Iteration 1: Log likelihood =	-50305.091	Wald chi2(7) =	867.47
Log likelihood =	-50305.091	Prob > chi2 =	0.0000

<u>zs100p</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0871874	.0152553	5.72	0.000	.0572876 .1170872
AGE	.0176614	.0009957	17.74	0.000	.0157099 .019613
SEX	-.0254621	.0105639	-2.41	0.016	-.0461669 -.0047572
NonWhite	-.1750376	.0252954	-6.92	0.000	-.2246157 -.1254595
householdsize	.0005715	.0048173	0.12	0.906	-.0088703 .0100132
SES	-.0431614	.0079325	-5.44	0.000	-.0587087 -.0276141
LE8_TOTALSCORE	-.0008774	.0000563	-15.59	0.000	-.0009877 -.0007671
_cons	-.5930916	.0719903	-8.24	0.000	-.73419 -.4519931
sigma2					
_cons	.9762859	.0073017	133.71	0.000	.9619749 .990597

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.172405	.158978	7.37	0.000	.8608141 1.483996
ereri_cde	1.130281	.159718	7.08	0.000	.8172393 1.443322
ereri_intref	.0154562	.0130063	1.19	0.235	-.0100356 .040948
ereri_intmed	.0201362	.0101245	1.99	0.047	.0002926 .0399798
ereri_pie	.0065319	.0033421	1.95	0.051	-.0000185 .0130822

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsamd91
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9036.4379

Iteration 1: Log likelihood = -8946.226

Iteration 2: Log likelihood = -8937.8171

Iteration 3: Log likelihood = -8937.7994

Iteration 4: Log likelihood = -8937.7994

Refining estimates:

Iteration 0: Log likelihood = -8937.7994

Cox regression with Breslow method for ties

No. of subjects = 36,352 Number of obs = 36,352

No. of failures = 965

Time at risk = 441,650.762

Log likelihood = -8937.7994

LR chi2(9) = 197.28

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.264281	.1623339	11.40	0.000	1.967455 2.605888
zsamd91		.9232825	.0367114	-2.01	0.045	.8540618 .9981135
_infectionburXzsamd91_000		1.051049	.0764448	0.68	0.494	.9114092 1.212083
AGE		1.033005	.0130144	2.58	0.010	1.00781 1.058831
SEX		.759699	.0495577	-4.21	0.000	.6685207 .8633129
NonWhite		1.067003	.1839474	0.38	0.707	.7610651 1.495925
householdsize		.9333156	.0397061	-1.62	0.105	.8586492 1.014475
SES		.8182163	.0404093	-4.06	0.000	.742728 .901377
LE8_TOTALSCORE		.9989717	.0003563	-2.88	0.004	.9982737 .9996702

-> Model for the mediator

Iteration 0: Log likelihood = **-51429.104**
 Iteration 1: Log likelihood = **-51429.104**

Linear regression (Maximum Likelihood) Number of obs = 36,352
 Wald chi2(7) = 304.57
 Log likelihood = **-51429.104** Prob > chi2 = 0.0000

	zsamd91	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0031342	.0152552	0.21	0.837	-.0267654 .0330338
AGE		-.0006849	.0009958	-0.69	0.492	-.0026367 .0012669
SEX		-.0069705	.0105585	-0.66	0.509	-.0276647 .0137237
NonWhite		.1778814	.0253016	7.03	0.000	.1282911 .2274717
householdsize		-.0030976	.0048868	-0.63	0.526	-.0126755 .0064803
SES		-.0228053	.0079194	-2.88	0.004	-.038327 -.0072836
LE8_TOTALSCORE		-.0007897	.0000562	-14.05	0.000	-.0008999 -.0006795
_cons		.4437189	.0720387	6.16	0.000	.3025256 .5849123
sigma2						
_cons		.991664	.0073556	134.82	0.000	.9772474 1.006081

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257887	.161682	7.78	0.000	.9409966 1.574778
ereri_cde	1.26025	.1616901	7.79	0.000	.9433427 1.577156
ereri_intref	-.0021496	.0052151	-0.41	0.680	-.012371 .0080717
ereri_intmed	.0000376	.0004854	0.08	0.938	-.0009137 .000989
ereri_pie	-.0002501	.0012237	-0.20	0.838	-.0026486 .0021483

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zscamp3
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04658 2.216 -.07524 500.8

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9057.6167
Iteration 1: Log likelihood = -8968.6896
Iteration 2: Log likelihood = -8960.2883
Iteration 3: Log likelihood = -8960.2704
Iteration 4: Log likelihood = -8960.2704
Refining estimates:
Iteration 0: Log likelihood = -8960.2704

```

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	194.69
Log likelihood =	-8960.2704	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.258154	.1616281	11.38	0.000	1.962586 2.598236
zscamp3	.9618289	.0375744	-1.00	0.319	.8909332 1.038366
_infectionburXzscamp3_000	1.003066	.0723565	0.04	0.966	.870819 1.155397
AGE	1.03221	.0129984	2.52	0.012	1.007045 1.058003
SEX	.7502961	.0488744	-4.41	0.000	.660367 .8524719
NonWhite	1.09098	.1856012	0.51	0.609	.7816417 1.522741
householdsize	.9365712	.0393213	-1.56	0.119	.8625885 1.016899
SES	.8158044	.0402452	-4.13	0.000	.7406186 .8986229
LE8_TOTALSCORE	.9990188	.0003566	-2.75	0.006	.99832 .999718

-> Model for the mediator

Iteration 0: Log likelihood = -51116.014	Number of obs = 36,264
Iteration 1: Log likelihood = -51116.014	Wald chi2(7) = 686.16
Linear regression (Maximum Likelihood)	Prob > chi2 = 0.0000
Log likelihood = -51116.014	

	zscamp3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.0470943	.0151821	3.10	0.002	.017338	.0768506
AGE	.0016331	.0009914	1.65	0.099	-.0003099	.0035761
SEX	-.0472772	.0105164	-4.50	0.000	-.067889	-.0266654
NonWhite	.1156041	.0251642	4.59	0.000	.0662832	.164925
householdsize	-.0058741	.0047828	-1.23	0.219	-.0152482	.0034999
SES	-.0442492	.0078872	-5.61	0.000	-.0597079	-.0287906
LE8_TOTALSCORE	-.0011992	.000056	-21.41	0.000	-.0013089	-.0010894
_cons	.5723785	.0716466	7.99	0.000	.4319538	.7128032
sigma2						
_cons	.9814032	.0072883	134.66	0.000	.9671184	.9956879

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.254046	.1613283	7.77	0.000	.9378483 1.570244
ereri_cde	1.2569	.1614564	7.78	0.000	.9404509 1.573348
ereri_intref	.0009559	.005998	0.16	0.873	-.0107999 .0127118
ereri_intmed	-.0019784	.0067618	-0.29	0.770	-.0152312 .0112744
ereri_pie	-.0018312	.0019288	-0.95	0.342	-.0056115 .0019492

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zscara5
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9160.406**
 Iteration 1: Log likelihood = **-9073.8992**
 Iteration 2: Log likelihood = **-9063.2815**
 Iteration 3: Log likelihood = **-9063.1874**
 Iteration 4: Log likelihood = **-9063.1873**
 Refining estimates:
 Iteration 0: Log likelihood = **-9063.1873**

Cox regression with Breslow method for ties

No. of subjects =	36,751	Number of obs =	36,751
No. of failures =	977		
Time at risk =	446,451.479	LR chi2(9) =	194.44
Log likelihood =	-9063.1873	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.188725	.162752	10.53	0.000	1.891893 2.53213
zscara5	1.000222	.0399991	0.01	0.996	.9248186 1.081773
_infectionburXzscara5_000	1.054938	.0691399	0.82	0.414	.9277691 1.199538
AGE	1.033543	.0130186	2.62	0.009	1.00834 1.059377
SEX	.7546242	.0489559	-4.34	0.000	.664522 .8569433
NonWhite	1.081132	.1838513	0.46	0.646	.7746906 1.508792
householdszie	.9333332	.039416	-1.63	0.102	.8591901 1.013874
SES	.8181935	.0402289	-4.08	0.000	.7430263 .900965
LE8_TOTALSCORE	.9990649	.0003585	-2.61	0.009	.9983626 .9997678

-> Model for the mediator

Iteration 0: Log likelihood = **-50517.142**
 Iteration 1: Log likelihood = **-50517.142**

Linear regression (Maximum Likelihood)	Number of obs =	36,751
	Wald chi2(7) =	3408.45
Log likelihood =	Prob > chi2 =	0.0000

<u>zscara5</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1345927	.0145651	9.24	0.000	.1060456 .1631398
AGE	.0369641	.0009531	38.78	0.000	.0350961 .0388321
SEX	.0081463	.0100894	0.81	0.419	-.0116285 .0279211
NonWhite	.1204089	.0242045	4.97	0.000	.072969 .1678489
householdszie	-.0027072	.0047925	-0.56	0.572	-.0121003 .006686
SES	-.0555029	.007577	-7.33	0.000	-.0703536 -.0406522
LE8_TOTALSCORE	-.0017735	.0000537	-33.00	0.000	-.0018788 -.0016682
_cons	-1.371628	.0691075	-19.85	0.000	-1.507076 -1.23618
sigma2					
_cons	.9151021	.0067507	135.56	0.000	.9018709 .9283332

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.205309	.1602375	7.52	0.000	.8912492 1.519369
ereri_cde	1.18873	.1628386	7.30	0.000	.8695722 1.507888
ereri_intref	.0006963	.0036601	0.19	0.849	-.0064773 .0078698
ereri_intmed	.015853	.0162872	0.97	0.330	-.0160692 .0477753
ereri_pie	.0000299	.0053827	0.01	0.996	-.01052 .0105797

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zscarb1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8819.5642

Iteration 1: Log likelihood = -8734.5805

Iteration 2: Log likelihood = -8726.7633

Iteration 3: Log likelihood = -8726.7372

Iteration 4: Log likelihood = -8726.7372

Refining estimates:

Iteration 0: Log likelihood = -8726.7372

Cox regression with Breslow method for ties

No. of subjects = 35,601 Number of obs = 35,601

No. of failures = 943

Time at risk = 432,443.367

LR chi2(9) = 185.65

Log likelihood = -8726.7372

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.21412	.1612602	10.91	0.000	1.919579 2.553856
zscarb1		.9609306	.0399854	-0.96	0.338	.8856712 1.042585
_infectionburXzscarb1_000		1.078559	.0768423	1.06	0.288	.9379937 1.24019
AGE		1.037445	.0132081	2.89	0.004	1.011878 1.063659
SEX		.7489131	.0494667	-4.38	0.000	.6579736 .8524214
NonWhite		1.09115	.1880377	0.51	0.613	.77839 1.529579
householdsize		.9305257	.0402003	-1.67	0.096	.8549782 1.012749
SES		.8164301	.0407557	-4.06	0.000	.7403336 .9003482
LE8_TOTALSCORE		.9991854	.0003606	-2.26	0.024	.9984788 .9998925

-> Model for the mediator

Iteration 0: Log likelihood = **-50494.407**
 Iteration 1: Log likelihood = **-50494.407**

Linear regression (Maximum Likelihood) Number of obs = 35,601
 Wald chi2(7) = 41.47
 Log likelihood = **-50494.407** Prob > chi2 = 0.0000

	zscarb1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0128745	.0154567	0.83	0.405	-.0174201 .0431692
AGE		-.0010448	.001012	-1.03	0.302	-.0030283 .0009387
SEX		.0351993	.0107078	3.29	0.001	.0142124 .0561862
NonWhite		-.0457223	.0255499	-1.79	0.074	-.0957992 .0043546
householdsize		.0047424	.0050798	0.93	0.351	-.0052139 .0146987
SES		-.0016685	.0080439	-0.21	0.836	-.0174342 .0140972
LE8_TOTALSCORE		-.0002944	.0000571	-5.16	0.000	-.0004062 -.0001825
_cons		.1460527	.0733671	1.99	0.047	.0022558 .2898496
sigma2						
_cons		.9988084	.0074863	133.42	0.000	.9841355 1.013481

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.214499	.1611904	7.53	0.000	.8985722 1.530427
ereri_cde	1.213071	.161085	7.53	0.000	.8973504 1.528792
ereri_intref	.0004086	.0047253	0.09	0.931	-.0088529 .0096701
ereri_intmed	.0015326	.0025291	0.61	0.545	-.0034244 .0064897
ereri_pie	-.000513	.0008159	-0.63	0.530	-.0021122 .0010863

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zscarb2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.532 .0464 2.216 -.07385 500.8

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8795.5056
Iteration 1: Log likelihood = -8705.8362
Iteration 2: Log likelihood = -8695.5762
Iteration 3: Log likelihood = -8695.4541
Iteration 4: Log likelihood = -8695.454
Refining estimates:
Iteration 0: Log likelihood = -8695.454

```

Cox regression with Breslow method for ties

No. of subjects =	35,471	Number of obs =	35,471
No. of failures =	941		
Time at risk =	431,102.039	LR chi2(9) =	200.10
Log likelihood =	-8695.454	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.247406	.1747817	10.41	0.000	1.929671 2.617459
zscarb2	1.114698	.0434365	2.79	0.005	1.032734 1.203167
_infectionburXzscarb2_000	.9424712	.0584275	-0.96	0.339	.8346392 1.064235
AGE	1.032804	.0132668	2.51	0.012	1.007126 1.059136
SEX	.7377667	.0487931	-4.60	0.000	.6480728 .8398743
NonWhite	1.044742	.1824583	0.25	0.802	.7419109 1.471183
householdsize	.9420466	.0397896	-1.41	0.158	.8672013 1.023352
SES	.8219019	.0411935	-3.91	0.000	.7450029 .9067383
LE8_TOTALSCORE	.9992023	.0003651	-2.18	0.029	.9984871 .999918

-> Model for the mediator

Iteration 0: Log likelihood = -47931.404	Number of obs = 35,471
Iteration 1: Log likelihood = -47931.404	Wald chi2(7) = 5138.25
Log likelihood = -47931.404	Prob > chi2 = 0.0000

zscarb2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.2735342	.0145005	18.86	0.000	.2451138 .3019547
AGE	.0438719	.0009483	46.26	0.000	.0420133 .0457306
SEX	.0804084	.010033	8.01	0.000	.060744 .1000728
NonWhite	-.0715419	.0240465	-2.98	0.003	-.1186722 -.0244115
householdsize	-.0011024	.0047444	-0.23	0.816	-.0104013 .0081965
SES	-.1012669	.0075429	-13.43	0.000	-.1160507 -.086483
LE8_TOTALSCORE	-.0018989	.0000534	-35.57	0.000	-.0020036 -.0017943
_cons	-1.85198	.0687214	-26.95	0.000	-1.986672 -1.717289
sigma2					
_cons	.8734464	.0065587	133.17	0.000	.8605916 .8863011

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.273749	.1686187	7.55	0.000	.9432624 1.604236
ereri_cde	1.246116	.1742098	7.15	0.000	.9046712 1.587561
ereri_intref	-.002844	.0023045	-1.23	0.217	-.0073608 .0016728
ereri_intmed	.00033	.0316148	0.01	0.992	-.0616339 .0622939
ereri_pie	.0301467	.0110993	2.72	0.007	.0083925 .051901

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zscarf1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.216 -.0752 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9225.1762**
 Iteration 1: Log likelihood = **-9136.8413**
 Iteration 2: Log likelihood = **-9127.377**
 Iteration 3: Log likelihood = **-9127.3353**
 Iteration 4: Log likelihood = **-9127.3353**
 Refining estimates:
 Iteration 0: Log likelihood = **-9127.3353**

Cox regression with Breslow method for ties

No. of subjects =	36,896	Number of obs =	36,896
No. of failures =	984		
Time at risk =	448,211.761	LR chi2(9) =	195.68
Log likelihood =	-9127.3353	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.247342	.159593	11.40	0.000	1.955338 2.582953
zscarf1		.984631	.0382956	-0.40	0.690	.9123625 1.062624
_infectionburXzscarf1_000		.9243899	.067194	-1.08	0.279	.8016434 1.065931
AGE		1.034578	.0129433	2.72	0.007	1.009518 1.06026
SEX		.7560819	.0489358	-4.32	0.000	.6660038 .8583434
NonWhite		1.062545	.1807354	0.36	0.721	.7613082 1.482975
householdszie		.9363394	.0392045	-1.57	0.116	.8625683 1.01642
SES		.8215121	.040295	-4.01	0.000	.7462128 .9044097
LE8_TOTALSCORE		.9990186	.000354	-2.77	0.006	.998325 .9997127

-> Model for the mediator

Iteration 0: Log likelihood = **-51951.075**
 Iteration 1: Log likelihood = **-51951.075**

Linear regression (Maximum Likelihood)	Number of obs =	36,896
	Wald chi2(7) =	811.97
Log likelihood =	Prob > chi2 =	0.0000

	<u>zscarf1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0883738	.0150236	5.88	0.000	.0589281 .1178195
AGE		.0040363	.0009808	4.12	0.000	.0021139 .0059586
SEX		.0862722	.0104107	8.29	0.000	.0658676 .1066768
NonWhite		-.18696	.0249303	-7.50	0.000	-.2358226 -.1380975
householdszie		-.0054101	.0047464	-1.14	0.254	-.0147129 .0038927
SES		-.0721098	.0078127	-9.23	0.000	-.0874225 -.0567972
LE8_TOTALSCORE		-.0011243	.0000555	-20.27	0.000	-.001233 -.0010156
_cons		.1906702	.0709112	2.69	0.007	.0516868 .3296536
sigma2						
_cons		.9784404	.0072038	135.82	0.000	.9643213 .9925596

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.240307	.1591865	7.79	0.000	.9283069 1.552306
ereri_cde	1.246958	.1595601	7.81	0.000	.9342264 1.55969
ereri_intref	.0120582	.0146624	0.82	0.411	-.0166797 .040796
ereri_intmed	-.0173421	.0132014	-1.31	0.189	-.0432164 .0085322
ereri_pie	-.0013678	.0034403	-0.40	0.691	-.0081107 .0053751

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zscarf2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9160.406

Iteration 1: Log likelihood = -9066.473

Iteration 2: Log likelihood = -9057.6304

Iteration 3: Log likelihood = -9057.5914

Iteration 4: Log likelihood = -9057.5914

Refining estimates:

Iteration 0: Log likelihood = -9057.5914

Cox regression with Breslow method for ties

No. of subjects = 36,751 Number of obs = 36,751

No. of failures = 977

Time at risk = 446,451.479

Log likelihood = -9057.5914

LR chi2(9) = 205.63

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.263376	.1709875	10.81	0.000	1.951876 2.624587
zscarf2		1.144636	.0459223	3.37	0.001	1.058077 1.238275
_infectionburXzscarf2_000		.9317914	.0641419	-1.03	0.305	.8141874 1.066383
AGE		1.026936	.0130378	2.09	0.036	1.001698 1.05281
SEX		.7292111	.0478317	-4.81	0.000	.6412387 .8292526
NonWhite		1.109019	.1886433	0.61	0.543	.7946034 1.547846
householdsize		.9354195	.0394556	-1.58	0.113	.8611981 1.016038
SES		.822361	.0404265	-3.98	0.000	.7468239 .9055383
LE8_TOTALSCORE		.9989741	.0003532	-2.90	0.004	.998282 .9996667

-> Model for the mediator

Iteration 0: Log likelihood = **-49582.566**
 Iteration 1: Log likelihood = **-49582.566**

Linear regression (Maximum Likelihood) Number of obs = 36,751
 Wald chi2(7) = 5503.79
 Log likelihood = **-49582.566** Prob > chi2 = 0.0000

	zscarf2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1391759	.0141994	9.80	0.000	.1113456 .1670062
AGE		.0551993	.0009292	59.41	0.000	.0533782 .0570204
SEX		.2952512	.009836	30.02	0.000	.275973 .3145295
NonWhite		-.2547335	.0235967	-10.80	0.000	-.3009822 -.2084847
householdsize		-.0098624	.0046722	-2.11	0.035	-.0190197 -.0007051
SES		-.0631154	.0073868	-8.54	0.000	-.0775932 -.0486376
LE8_TOTALSCORE		.0006546	.0000524	12.50	0.000	.0005519 .0007573
_cons		-4.091991	.0673723	-60.74	0.000	-4.224038 -3.959944
sigma2						
_cons		.8697238	.006416	135.56	0.000	.8571488 .8822989

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.27291	.1654776	7.69	0.000	.9485802 1.59724
ereri_cde	1.256665	.1693132	7.42	0.000	.9248176 1.588513
ereri_intref	-.0040486	.0060221	-0.67	0.501	-.0158517 .0077545
ereri_intmed	.0013149	.0184195	0.07	0.943	-.0347866 .0374164
ereri_pie	.0189786	.006016	3.15	0.002	.0071875 .0307698

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zscg2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04659 2.217 -.07439 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -9166.962
Iteration 1: Log likelihood = -9076.6179
Iteration 2: Log likelihood = -9068.1353
Iteration 3: Log likelihood = -9068.1172
Refining estimates:
Iteration 0: Log likelihood = -9068.1172

```

Cox regression with Breslow method for ties

No. of subjects =	36,556	Number of obs =	36,556
No. of failures =	979		
Time at risk =	444,053.626	LR chi2(9) =	197.69
Log likelihood =	-9068.1172	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.25	.1617857	11.28	0.000	1.954236 2.590526
zscg2	.9240874	.0359618	-2.03	0.042	.8562245 .997329
_infectionburXzscg2_000	1.073071	.0695257	1.09	0.276	.9451 1.218369
AGE	1.035168	.0130104	2.75	0.006	1.00998 1.060985
SEX	.7638143	.0495089	-4.16	0.000	.6726895 .8672833
NonWhite	1.070813	.1821344	0.40	0.688	.7672429 1.494495
householdszie	.9334906	.0393507	-1.63	0.103	.8594648 1.013892
SES	.8208398	.0402729	-4.02	0.000	.7455826 .9036931
LE8_TOTALSCORE	.9990778	.0003538	-2.61	0.009	.9983846 .9997716

-> Model for the mediator

Iteration 0: Log likelihood = -51556.293	Number of obs = 36,556
Iteration 1: Log likelihood = -51556.293	Wald chi2(7) = 633.27
Linear regression (Maximum Likelihood)	Prob > chi2 = 0.0000
Log likelihood = -51556.293	

	zscg2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.113841	.0151596	7.51	0.000	.0841288 .1435532
AGE		.0177148	.0009903	17.89	0.000	.0157738 .0196558
SEX		.0832266	.0104838	7.94	0.000	.0626787 .1037746
NonWhite		-.1841887	.0250953	-7.34	0.000	-.2333746 -.1350028
householdsize		-.0146046	.0049742	-2.94	0.003	-.0243538 -.0048554
SES		-.0137379	.0078743	-1.74	0.081	-.0291713 .0016956
LE8_TOTALSCORE		-.0000984	.0000558	-1.76	0.078	-.0002078 .000011
_cons		-1.120053	.0718516	-15.59	0.000	-1.260879 -.979226
sigma2						
_cons		.9829448	.0072705	135.20	0.000	.9686949 .9971948

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.238558	.1601158	7.74	0.000	.924737 1.552379
ereri_cde	1.244628	.1611538	7.72	0.000	.9287723 1.560484
ereri_intref	-.0039219	.0045791	-0.86	0.392	-.0128968 .0050529
ereri_intmed	.0067994	.0139903	0.49	0.627	-.020621 .0342198
ereri_pie	-.0089473	.004548	-1.97	0.049	-.0178612 -.0000334

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zscg3
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.532 .04635 2.216 -.07454 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9083.3359**
 Iteration 1: Log likelihood = **-8996.6194**
 Iteration 2: Log likelihood = **-8988.6236**
 Iteration 3: Log likelihood = **-8988.6067**
 Iteration 4: Log likelihood = **-8988.6067**
 Refining estimates:
 Iteration 0: Log likelihood = **-8988.6067**

Cox regression with Breslow method for ties

No. of subjects =	36,480	Number of obs =	36,480
No. of failures =	970		
Time at risk =	443,094.176	LR chi2(9) =	189.46
Log likelihood =	-8988.6067	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.229108	.1597131	11.19	0.000	1.937062 2.565185
zscg3		1.014146	.039758	0.36	0.720	.9391405 1.095142
_infectionburXzscg3_000		1.001425	.0686822	0.02	0.983	.8754656 1.145506
AGE		1.036047	.0130496	2.81	0.005	1.010783 1.061942
SEX		.7510763	.0497823	-4.32	0.000	.6595767 .8552692
NonWhite		1.091323	.1858577	0.51	0.608	.7816086 1.523762
householdszie		.9390543	.039274	-1.50	0.133	.8651492 1.019273
SES		.8293436	.0409512	-3.79	0.000	.7528422 .9136189
LE8_TOTALSCORE		.999011	.0003566	-2.77	0.006	.9983123 .9997102

-> Model for the mediator

Iteration 0: Log likelihood = **-50734.141**
 Iteration 1: Log likelihood = **-50734.141**

Linear regression (Maximum Likelihood)	Number of obs =	36,480
	Wald chi2(7) =	2115.54
Log likelihood =	Prob > chi2 =	0.0000

	zscg3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0699299	.0148554	4.71	0.000	.0408139 .0990459
AGE		.0053817	.0009693	5.55	0.000	.0034818 .0072816
SEX		.3845359	.0102913	37.37	0.000	.3643652 .4047065
NonWhite		.167347	.0246714	6.78	0.000	.1189919 .2157021
householdszie		-.0034871	.0046836	-0.74	0.457	-.0126669 .0056926
SES		-.0154045	.0077251	-1.99	0.046	-.0305455 -.0002635
LE8_TOTALSCORE		.0012146	.0000548	22.15	0.000	.0011071 .001322
_cons		-1.531667	.0700415	-21.87	0.000	-1.668946 -1.394388
sigma2						
_cons		.9451609	.0069983	135.06	0.000	.9314445 .9588774

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.231534	.1598028	7.71	0.000	.9183264 1.544742
ereri_cde	1.229161	.1597207	7.70	0.000	.9161141 1.542208
ereri_intref	-.0000397	.0006478	-0.06	0.951	-.0013093 .0012299
ereri_intmed	.0014301	.0092759	0.15	0.877	-.0167503 .0196106
ereri_pie	.0009828	.0027521	0.36	0.721	-.0044113 .0063769

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zscgb1a1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04632 2.215 -.07519 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9088.337

Iteration 1: Log likelihood = -9000.5837

Iteration 2: Log likelihood = -8992.2765

Iteration 3: Log likelihood = -8992.2564

Iteration 4: Log likelihood = -8992.2564

Refining estimates:

Iteration 0: Log likelihood = -8992.2564

Cox regression with Breslow method for ties

No. of subjects = 36,466 Number of obs = 36,466

No. of failures = 970

Time at risk = 442,911.537

Log likelihood = -8992.2564 LR chi2(9) = 192.16

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.24589	.1619871	11.22	0.000	1.949821 2.586916
zscgb1a1		1.002571	.0398492	0.06	0.948	.9274326 1.083797
_infectionburXzscgb1a1_000		.9840795	.0666676	-0.24	0.813	.8617167 1.123818
AGE		1.036649	.0130861	2.85	0.004	1.011315 1.062617
SEX		.7548167	.0491632	-4.32	0.000	.6643555 .8575954
NonWhite		1.104112	.1879571	0.58	0.561	.7908787 1.541404
householdsize		.9376804	.0393413	-1.53	0.125	.863658 1.018047
SES		.8239358	.0406704	-3.92	0.000	.7479577 .9076317
LE8_TOTALSCORE		.9990676	.0003557	-2.62	0.009	.9983707 .999765

-> Model for the mediator

Iteration 0: Log likelihood = **-50827.379**
 Iteration 1: Log likelihood = **-50827.379**

Linear regression (Maximum Likelihood) Number of obs = 36,466
 Wald chi2(7) = 1876.98
 Log likelihood = **-50827.379** Prob > chi2 = 0.0000

	zscgb1a1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0273643	.0148997	1.84	0.066	-.0018386 .0565671
AGE		.0335066	.0009725	34.45	0.000	.0316006 .0354127
SEX		-.1005584	.0103255	-9.74	0.000	-.1207959 -.0803208
NonWhite		-.1298382	.0247625	-5.24	0.000	-.1783718 -.0813046
householdsize		.0070967	.0047014	1.51	0.131	-.0021178 .0163112
SES		.0654384	.0077505	8.44	0.000	.0502477 .0806292
LE8_TOTALSCORE		.0010452	.000055	19.01	0.000	.0009374 .001153
_cons		-2.394251	.0702546	-34.08	0.000	-2.531948 -2.256555
sigma2						
_cons		.9510216	.0070431	135.03	0.000	.9372175 .9648257

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.245386	.1618269	7.70	0.000	.9282107 1.562561
ereri_cde	1.245898	.1619932	7.69	0.000	.9283973 1.563399
ereri_intref	.0003159	.0020792	0.15	0.879	-.0037592 .0043911
ereri_intmed	-.0008987	.0036014	-0.25	0.803	-.0079574 .0061599
ereri_pie	.0000703	.0010884	0.06	0.949	-.002063 .0022035

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zscgb3a2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04634 2.216 -.07461 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9114.2295
Iteration 1: Log likelihood = -9024.6809
Iteration 2: Log likelihood = -9015.1142
Iteration 3: Log likelihood = -9015.0251
Iteration 4: Log likelihood = -9015.025
Refining estimates:
Iteration 0: Log likelihood = -9015.025

```

Cox regression with Breslow method for ties

No. of subjects =	36,537	Number of obs =	36,537
No. of failures =	973		
Time at risk =	443,808.024	LR chi2(9) =	198.41
Log likelihood =	-9015.025	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.22983	.1607103	11.13	0.000	1.936079 2.56815
zscgb3a2	1.101351	.0390462	2.72	0.006	1.027421 1.180602
_infectionburXzscgb3a2_000	.9708951	.061103	-0.47	0.639	.858227 1.098354
AGE	1.034285	.0130002	2.68	0.007	1.009117 1.060082
SEX	.7394296	.0484474	-4.61	0.000	.6503185 .8407512
NonWhite	1.082849	.1842321	0.47	0.640	.7757961 1.511431
householdsize	.9412662	.0392164	-1.45	0.146	.867458 1.021354
SES	.8296497	.0408964	-3.79	0.000	.7532446 .9138049
LE8_TOTALSCORE	.9990042	.0003531	-2.82	0.005	.9983124 .9996964

-> Model for the mediator

Iteration 0: Log likelihood = -51385.639	Number of obs = 36,537
Iteration 1: Log likelihood = -51385.639	Wald chi2(7) = 926.80
Log likelihood = -51385.639	Prob > chi2 = 0.0000

		Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0460695	.0150756	3.06	0.002	.0165218 .0756172
AGE		.010267	.0009839	10.44	0.000	.0083386 .0121954
SEX		.2452426	.0104457	23.48	0.000	.2247695 .2657157
NonWhite		-.0332954	.0250448	-1.33	0.184	-.0823823 .0157915
householdsize		-.0205232	.0047548	-4.32	0.000	-.0298425 -.0112039
SES		-.0405787	.0078409	-5.18	0.000	-.0559467 -.0252107
LE8_TOTALSCORE		.0006103	.0000556	10.97	0.000	.0005013 .0007193
_cons		-1.261347	.0710816	-17.75	0.000	-1.400664 -1.122029
sigma2						
_cons		.9752349	.0072154	135.16	0.000	.961093 .9893767

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.231883	.1596935	7.71	0.000	.9188899 1.544877
ereri_cde	1.225011	.159906	7.66	0.000	.9116007 1.538421
ereri_intref	-6.03e-06	.0074886	-0.00	0.999	-.0146834 .0146713
ereri_intmed	.0024212	.0056534	0.43	0.668	-.0086593 .0135017
ereri_pie	.0044574	.0021974	2.03	0.043	.0001506 .0087642

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zscgn
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8913.3312**
 Iteration 1: Log likelihood = **-8823.466**
 Iteration 2: Log likelihood = **-8815.8857**
 Iteration 3: Log likelihood = **-8815.8698**
 Iteration 4: Log likelihood = **-8815.8698**
 Refining estimates:
 Iteration 0: Log likelihood = **-8815.8698**

Cox regression with Breslow method for ties

No. of subjects =	35,761	Number of obs =	35,761
No. of failures =	953		
Time at risk =	434,427.923	LR chi2(9) =	194.92
Log likelihood =	-8815.8698	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.240248	.1633482	11.06	0.000	1.941916 2.584411
zscgn		1.12065	.0419472	3.04	0.002	1.041378 1.205955
_infectionburXzscgn_000		.8969091	.0589393	-1.66	0.098	.7885201 1.020197
AGE		1.035578	.0131436	2.75	0.006	1.010135 1.061662
SEX		.7305685	.0484735	-4.73	0.000	.6414804 .8320291
NonWhite		1.056655	.1844714	0.32	0.752	.7504642 1.487772
householdszie		.9360875	.0398808	-1.55	0.121	.861097 1.017609
SES		.8315861	.0414642	-3.70	0.000	.7541626 .916958
LE8_TOTALSCORE		.9990359	.0003577	-2.69	0.007	.9983349 .9997373

-> Model for the mediator

Iteration 0: Log likelihood = **-50217.845**
 Iteration 1: Log likelihood = **-50217.845**

Linear regression (Maximum Likelihood)	Number of obs =	35,761
	Wald chi2(7) =	1064.16
Log likelihood =	Prob > chi2 =	0.0000

	zscgn	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0867911	.0152279	5.70	0.000	.056945 .1166373
AGE		.0112802	.0009918	11.37	0.000	.0093363 .0132241
SEX		.2732414	.010533	25.94	0.000	.252597 .2938858
NonWhite		-.0846138	.0252024	-3.36	0.001	-.1340096 -.035218
householdszie		-.0039723	.0047909	-0.83	0.407	-.0133624 .0054177
SES		-.0702246	.0078972	-8.89	0.000	-.0857029 -.0547463
LE8_TOTALSCORE		.0004611	.0000561	8.22	0.000	.0003511 .0005711
_cons		-1.332415	.0716405	-18.60	0.000	-1.472828 -1.192002
sigma2						
_cons		.9710753	.0072621	133.72	0.000	.9568418 .9853088

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.230109	.1615093	7.62	0.000	.9135569 1.546662
ereri_cde	1.234148	.1622875	7.60	0.000	.9160702 1.552226
ereri_intref	-.0050269	.0038258	-1.31	0.189	-.0125253 .0024715
ereri_intmed	-.0089469	.0111127	-0.81	0.421	-.0307273 .0128335
ereri_pie	.0099353	.0037194	2.67	0.008	.0026455 .0172251

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zscl
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04667 2.218 -.0747 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9178.4359**

Iteration 1: Log likelihood = **-9077.5844**

Iteration 2: Log likelihood = **-9065.4962**

Iteration 3: Log likelihood = **-9065.4046**

Iteration 4: Log likelihood = **-9065.4046**

Refining estimates:

Iteration 0: Log likelihood = **-9065.4046**

Cox regression with Breslow method for ties

No. of subjects = 36,616 Number of obs = 36,616

No. of failures = 980

Time at risk = 444,808.265

Log likelihood = **-9065.4046**

LR chi2(9) = 226.06

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.256308	.1631528	11.25	0.000	1.95816 2.599851
zscl	.8197723	.0335539	-4.86	0.000	.7565766 .8882467
_infectionburXzscl_000	1.004147	.0752301	0.06	0.956	.867013 1.16297
AGE	1.03036	.0129282	2.38	0.017	1.005331 1.056013
SEX	.7097119	.0467745	-5.20	0.000	.6237097 .8075728
NonWhite	1.031945	.1756088	0.18	0.853	.7392741 1.440482
householdsize	.9332333	.0391081	-1.65	0.099	.8596463 1.013119
SES	.8151442	.0399737	-4.17	0.000	.7404445 .8973799
LE8_TOTALSCORE	.9987192	.0003587	-3.57	0.000	.9980163 .9994225

-> Model for the mediator

Iteration 0: Log likelihood = **-49950.286**
 Iteration 1: Log likelihood = **-49950.286**

Linear regression (Maximum Likelihood) Number of obs = **36,616**
 Wald chi2(7) = **4237.97**
 Log likelihood = **-49950.286** Prob > chi2 = **0.0000**

zscl	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0250987	.0144585	1.74	0.083	-.0032394 .0534369
AGE	-.0140619	.0009426	-14.92	0.000	-.0159094 -.0122144
SEX	-.4080732	.0100015	-40.80	0.000	-.4276757 -.3884707
NonWhite	-.2013564	.0239096	-8.42	0.000	-.2482183 -.1544945
householdsize	-.0157792	.0045515	-3.47	0.001	-.0247 -.0068583
SES	-.0290139	.0075022	-3.87	0.000	-.0437179 -.0143098
LE8_TOTALSCORE	-.0023481	.0000533	-44.07	0.000	-.0024525 -.0022437
_cons	2.68509	.0681633	39.39	0.000	2.551493 2.818688
sigma2					
_cons	.896241	.0066238	135.31	0.000	.8832586 .9092233

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.243645	.1598606	7.78	0.000	.9303245 1.556966
ereri_cde	1.233417	.1596136	7.73	0.000	.9205806 1.546254
ereri_intref	.0212128	.0262806	0.81	0.420	-.0302963 .0727218
ereri_intmed	-.0060093	.0051417	-1.17	0.243	-.0160869 .0040683
ereri_pie	-.0049754	.0030363	-1.64	0.101	-.0109264 .0009755

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zscp2
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8882.1967
 Iteration 1: Log likelihood = -8798.9549
 Iteration 2: Log likelihood = -8787.9432
 Iteration 3: Log likelihood = -8787.7518
 Iteration 4: Log likelihood = -8787.7513
 Refining estimates:
 Iteration 0: Log likelihood = -8787.7513

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	188.89
Log likelihood =	-8787.7513	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.255147	.1629864	11.25	0.000	1.957294 2.598327
zscp2	.9855026	.0400766	-0.36	0.720	.9100027 1.067266
_infectionburXzscp2_000	1.112277	.0787539	1.50	0.133	.968154 1.277856
AGE	1.037934	.0132105	2.93	0.003	1.012362 1.064152
SEX	.7467588	.0491284	-4.44	0.000	.6564185 .8495323
NonWhite	1.109574	.1887606	0.61	0.541	.7949684 1.548683
householdsize	.9411802	.0396147	-1.44	0.150	.8666531 1.022116
SES	.8284982	.0413217	-3.77	0.000	.7513418 .913578
LE8_TOTALSCORE	.9992239	.0003588	-2.16	0.031	.9985209 .9999273

-> Model for the mediator

Iteration 0: Log likelihood = -50365.607
 Iteration 1: Log likelihood = -50365.607

Linear regression (Maximum Likelihood)

Number of obs =	35,573
Wald chi2(7) =	220.27
Prob > chi2 =	0.0000

Log likelihood = -50365.607

	zscp2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0020771	.0154427	0.13	0.893	-.02819 .0323441
AGE		-.0110584	.001007	-10.98	0.000	-.0130321 -.0090848
SEX		.0693965	.0106855	6.49	0.000	.0484534 .0903397
NonWhite		-.1420998	.0255373	-5.56	0.000	-.1921521 -.0920476
householdsize		-.0052061	.0048633	-1.07	0.284	-.014738 .0043259
SES		.0094931	.0080144	1.18	0.236	-.0062149 .025201
LE8_TOTALSCORE		-.0002798	.0000569	-4.92	0.000	-.0003913 -.0001683
_cons		.7180449	.0727761	9.87	0.000	.5754064 .8606834
sigma2						
_cons		.9938182	.0074518	133.37	0.000	.9792129 1.008424

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.264734	.1637881	7.72	0.000	.9437156 1.585753
ereri_cde	1.255009	.16294	7.70	0.000	.9356525 1.574365
ereri_intref	.0092936	.0120359	0.77	0.440	-.0142964 .0328835
ereri_intmed	.0004621	.0034483	0.13	0.893	-.0062964 .0072207
ereri_pie	-.0000303	.0002408	-0.13	0.900	-.0005023 .0004417

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zscrn1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8947.2284**
 Iteration 2: Log likelihood = **-8938.8079**
 Iteration 3: Log likelihood = **-8938.7903**
 Iteration 4: Log likelihood = **-8938.7903**
 Refining estimates:
 Iteration 0: Log likelihood = **-8938.7903**

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	195.30
Log likelihood =	-8938.7903	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.259563	.1618357	11.38	0.000	1.963628 2.600098
zscrn1	.9418275	.0373087	-1.51	0.130	.8714705 1.017865
_infectionburXzscrn1_000	1.057109	.0759632	0.77	0.440	.9182336 1.216989
AGE	1.032863	.0130174	2.57	0.010	1.007662 1.058694
SEX	.7602978	.0495995	-4.20	0.000	.6690429 .8639995
NonWhite	1.055891	.1819937	0.32	0.752	.7531924 1.480241
householdszie	.932561	.0397174	-1.64	0.101	.8578769 1.013747
SES	.8203041	.0405084	-4.01	0.000	.7446302 .9036685
LE8_TOTALSCORE	.9989976	.0003558	-2.82	0.005	.9983006 .9996951

-> Model for the mediator

Iteration 0: Log likelihood = **-51511.528**
 Iteration 1: Log likelihood = **-51511.528**

Linear regression (Maximum Likelihood)	Number of obs =	36,352
	Wald chi2(7) =	138.72
Log likelihood =	Prob > chi2 =	0.0000

zscrn1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0140827	.0152898	-0.92	0.357	-.0440502 .0158848
AGE	.0047986	.0009981	4.81	0.000	.0028424 .0067548
SEX	.0200968	.0105824	1.90	0.058	-.0006444 .040838
NonWhite	-.0181449	.0253591	-0.72	0.474	-.0678478 .0315579
householdszie	-.0105952	.0048979	-2.16	0.031	-.0201949 -.0009956
SES	.0129465	.0079374	1.63	0.103	-.0026105 .0285034
LE8_TOTALSCORE	-.0005636	.0000563	-10.00	0.000	-.0006741 -.0004532
_cons	-.0101537	.0722023	-0.14	0.888	-.1516675 .1313601
sigma2					
_cons	.9961712	.007389	134.82	0.000	.9816891 1.010653

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.25593	.1615489	7.77	0.000	.9392998 1.57256
ereri_cde	1.257459	.161521	7.79	0.000	.9408833 1.574034
ereri_intref	-.0016684	.0023241	-0.72	0.473	-.0062234 .0028867
ereri_intmed	-.0007048	.0021285	-0.33	0.741	-.0048765 .003467
ereri_pie	.0008444	.0010737	0.79	0.432	-.0012601 .0029488

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsdcl
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9064.8284

Iteration 1: Log likelihood = -8975.3224

Iteration 2: Log likelihood = -8965.5256

Iteration 3: Log likelihood = -8965.4762

Iteration 4: Log likelihood = -8965.4762

Refining estimates:

Iteration 0: Log likelihood = -8965.4762

Cox regression with Breslow method for ties

No. of subjects = 36,441 Number of obs = 36,441

No. of failures = 968

Time at risk = 442,700.115

Log likelihood = -8965.4762 LR chi2(9) = 198.70

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.289489	.165556	11.46	0.000	1.986951
zsdc1		1.058171	.041763	1.43	0.152	.9794029
_infectionburXzsdc1_000		.9547603	.0653188	-0.68	0.499	.8349499
AGE		1.032963	.0130195	2.57	0.010	1.007758
SEX		.76353	.0508546	-4.05	0.000	.6700886
NonWhite		1.011922	.1790498	0.07	0.947	.715377
householdsize		.9273954	.0398869	-1.75	0.080	.8524229
SES		.8285803	.0410186	-3.80	0.000	.7519625
LE8_TOTALSCORE		.9990971	.000357	-2.53	0.011	.9983977

-> Model for the mediator

Iteration 0: Log likelihood = -50397.285
Iteration 1: Log likelihood = -50397.285

Linear regression (Maximum Likelihood) Number of obs = 36,441
Log likelihood = -50397.285 Wald chi2(7) = 2715.95
Prob > chi2 = 0.0000

	zsdcl	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1480169	.014743	10.04	0.000	.1191212 .1769126
AGE		.0088261	.0009629	9.17	0.000	.0069389 .0107134
SEX		-.4204381	.0102163	-41.15	0.000	-.4404616 -.4004146
NonWhite		-.1076016	.0244623	-4.40	0.000	-.1555468 -.0596563
householdsiz		-.0030131	.0046493	-0.65	0.517	-.0121255 .0060993
SES		-.0660163	.0076664	-8.61	0.000	-.0810423 -.0509904
LE8_TOTALSCORE		-.0010126	.0000545	-18.59	0.000	-.0011193 -.0009059
_cons		.6054941	.069592	8.70	0.000	.4690963 .7418919
sigma2						
_cons		.9306137	.0068943	134.98	0.000	.9171012 .9441263

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.291849	.1638294	7.89	0.000	.9707494 1.612949
ereri_cde	1.289071	.1654078	7.79	0.000	.9648775 1.613264
ereri_intref	-.0006951	.0019453	-0.36	0.721	-.0045077 .0031176
ereri_intmed	-.0049308	.0200065	-0.25	0.805	-.0441428 .0342812
ereri_pie	.0084043	.0059506	1.41	0.158	-.0032586 .0200672

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsd4
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9064.8284
 Iteration 1: Log likelihood = -8979.1071
 Iteration 2: Log likelihood = -8956.9896
 Iteration 3: Log likelihood = -8956.2419
 Iteration 4: Log likelihood = -8956.2401
 Refining estimates:
 Iteration 0: Log likelihood = -8956.2401

Cox regression with Breslow method for ties

No. of subjects =	36,441	Number of obs =	36,441
No. of failures =	968		
Time at risk =	442,700.115	LR chi2(9) =	217.18
Log likelihood =	-8956.2401	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.22531	.1626433	10.94	0.000	1.928315 2.568048
zsd4	.889732	.0337606	-3.08	0.002	.8259631 .9584242
_infectionburXzsd4_000	.9319466	.0617844	-1.06	0.288	.8183888 1.061261
AGE	1.031165	.0130013	2.43	0.015	1.005995 1.056964
SEX	.7665461	.0500906	-4.07	0.000	.6743973 .871286
NonWhite	1.02943	.1821898	0.16	0.870	.7276958 1.456275
householdsize	.9257742	.0398496	-1.79	0.073	.8508744 1.007267
SES	.8279154	.0409475	-3.82	0.000	.7514269 .9121898
LE8_TOTALSCORE	.9989227	.0003561	-3.02	0.002	.998225 .999621

-> Model for the mediator

Iteration 0: Log likelihood =	-51473.742	Number of obs =	36,441
Iteration 1: Log likelihood =	-51473.742	Wald chi2(7) =	469.59
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-51473.742		

	zsd4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.1045268	.015185	-6.88	0.000	-.1342888
AGE		-.0071795	.0009918	-7.24	0.000	-.0091233
SEX		.0618987	.0105225	5.88	0.000	.0412749
NonWhite		.1422865	.0251957	5.65	0.000	.0929038
householdsize		-.0096298	.0047887	-2.01	0.044	-.0190154
SES		.017575	.0078963	2.23	0.026	.0020986
LE8_TOTALSCORE		-.0009824	.0000561	-17.51	0.000	-.0010924
_cons		.8595997	.0716784	11.99	0.000	.7191127
sigma2						
_cons		.9872504	.0073139	134.98	0.000	.9729155
						1.001585

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.291103	.1635078	7.90	0.000	.9706339
ereri_cde	1.219149	.1615945	7.54	0.000	.9024293
ereri_intref	.0275324	.0209387	1.31	0.189	-.0135067
ereri_intmed	.0321349	.0145466	2.21	0.027	.003624
ereri_pie	.0122873	.0043983	2.79	0.005	.0036667

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsele
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.216 -.0752 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9225.1762**
 Iteration 1: Log likelihood = **-9134.3934**
 Iteration 2: Log likelihood = **-9126.0551**
 Iteration 3: Log likelihood = **-9126.0357**
 Iteration 4: Log likelihood = **-9126.0357**
 Refining estimates:
 Iteration 0: Log likelihood = **-9126.0357**

Cox regression with Breslow method for ties

No. of subjects =	36,896	Number of obs =	36,896
No. of failures =	984		
Time at risk =	448,211.761	LR chi2(9) =	198.28
Log likelihood =	-9126.0357	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.240083	.1594167	11.33	0.000	1.948444	2.575374
zsele	.9152272	.0363707	-2.23	0.026	.8466474	.989362
_infectionburXzsele_000	1.063064	.0742971	0.88	0.382	.9269781	1.219129
AGE	1.033877	.0129402	2.66	0.008	1.008823	1.059553
SEX	.7426768	.0482767	-4.58	0.000	.6538358	.8435892
NonWhite	1.077291	.1831378	0.44	0.661	.7720226	1.503266
householdsize	.9362042	.0391354	-1.58	0.115	.8625583	1.016138
SES	.8201887	.0402237	-4.04	0.000	.7450221	.9029389
LE8_TOTALSCORE	.9988979	.0003611	-3.05	0.002	.9981903	.9996059

-> Model for the mediator

Iteration 0: Log likelihood = **-50537.51**
 Iteration 1: Log likelihood = **-50537.51**

Linear regression (Maximum Likelihood)	Number of obs =	36,896
	Wald chi2(7) =	3814.89
Log likelihood =	Prob > chi2 =	0.0000

	zsele	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0435755	.0144589	3.01	0.003	.0152366
AGE		-.0045269	.0009439	-4.80	0.000	-.006377
SEX		-.2432378	.0100194	-24.28	0.000	-.2628754
NonWhite		.0839133	.0239933	3.50	0.000	.0368874
householdsize		-.0151762	.004568	-3.32	0.001	-.0241294
SES		-.0618439	.0075191	-8.22	0.000	-.076581
LE8_TOTALSCORE		-.002692	.0000534	-50.44	0.000	-.0027966
_cons		2.011095	.0682458	29.47	0.000	1.877335
sigma2						
_cons		.9062685	.0066724	135.82	0.000	.8931908
						.9193462

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.2294	.1586376	7.75	0.000	.918476 1.540324
ereri_cde	1.235019	.1587402	7.78	0.000	.9238936 1.546144
ereri_intref	-.0029525	.0052254	-0.57	0.572	-.0131942 .0072891
ereri_intmed	.0011865	.0059428	0.20	0.842	-.0104611 .0128342
ereri_pie	-.0038526	.0021456	-1.80	0.073	-.0080579 .0003526

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zselp
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.19 1.531 .04645 2.216 -.0751 500.6**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9132.7834**

Iteration 1: Log likelihood = **-9042.0531**

Iteration 2: Log likelihood = **-9030.1434**

Iteration 3: Log likelihood = **-9030.0429**

Iteration 4: Log likelihood = **-9030.0429**

Refining estimates:

Iteration 0: Log likelihood = **-9030.0429**

Cox regression with Breslow method for ties

No. of subjects = **36,596**

Number of obs = **36,596**

No. of failures = **975**

Time at risk = **444,571.57**

LR chi2(9) = **205.48**

Log likelihood = **-9030.0429** Prob > chi2 = **0.0000**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.23792	.1602506	11.25	0.000	1.944879 2.575114
zselp	.8945791	.035357	-2.82	0.005	.8278967 .9666324
_infectionburXzselp_000	.9509846	.0688467	-0.69	0.488	.8251837 1.095964
AGE	1.03396	.0129899	2.66	0.008	1.008812 1.059736
SEX	.7512109	.0488212	-4.40	0.000	.6613666 .8532603
NonWhite	1.093002	.1858252	0.52	0.601	.783259 1.525235
householdsize	.9332527	.0394167	-1.64	0.102	.8591087 1.013796
SES	.8249893	.0406361	-3.91	0.000	.7490677 .9086059
LE8_TOTALSCORE	.9988849	.0003576	-3.12	0.002	.9981842 .999586

-> Model for the mediator

Iteration 0: Log likelihood = -51452.651
 Iteration 1: Log likelihood = -51452.651

Linear regression (Maximum Likelihood)
 Number of obs = 36,596
 Wald chi2(7) = 961.05
 Log likelihood = -51452.651 Prob > chi2 = 0.0000

zselp	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0007847	.0150702	0.05	0.958	-.0287525 .0303218
AGE	.0018278	.0009828	1.86	0.063	-.0000984 .0037541
SEX	-.1155521	.0104313	-11.08	0.000	-.135997 -.0951071
NonWhite	-.059846	.0249843	-2.40	0.017	-.1088144 -.0108777
householdsize	-.0101054	.0047526	-2.13	0.033	-.0194204 -.0007905
SES	-.0322529	.0078307	-4.12	0.000	-.0476008 -.0169049
LE8_TOTALSCORE	-.0014301	.0000556	-25.70	0.000	-.0015391 -.001321
_cons	.8053888	.0710398	11.34	0.000	.6661533 .9446242
sigma2					
_cons	.9743843	.0072032	135.27	0.000	.9602662 .9885024

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.252659	.1608616	7.79	0.000	.9373764 1.567942
ereri_cde	1.230443	.1592174	7.73	0.000	.9183828 1.542503
ereri_intref	.0225021	.0220293	1.02	0.307	-.0206745 .0656786
ereri_intmed	-.0001984	.003811	-0.05	0.958	-.0076679 .0072711
ereri_pie	-.0000874	.001679	-0.05	0.958	-.0033782 .0032033

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zselplg
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04646 2.216 -.07503 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -9036.4379
Iteration 1: Log likelihood = -8947.5641
Iteration 2: Log likelihood = -8939.1544
Iteration 3: Log likelihood = -8939.1369
Refining estimates:
Iteration 0: Log likelihood = -8939.1369

```

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	194.60
Log likelihood =	-8939.1369	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.259774	.1618697	11.38	0.000	1.963779 2.600383
zselplg	.9526848	.0356748	-1.29	0.196	.8852678 1.025236
_infectionburXzselplg_000	1.04979	.0704619	0.72	0.469	.9203855 1.197388
AGE	1.032127	.0130118	2.51	0.012	1.006937 1.057948
SEX	.7611039	.0497146	-4.18	0.000	.6696444 .8650548
NonWhite	1.031924	.1796552	0.18	0.857	.7335944 1.451576
householdszie	.9335064	.0397138	-1.62	0.106	.8588256 1.014681
SES	.8208748	.0405683	-3.99	0.000	.745092 .9043655
LE8_TOTALSCORE	.9989608	.0003592	-2.89	0.004	.998257 .999665

-> Model for the mediator

Iteration 0: Log likelihood = -50800.369	Number of obs = 36,352
Iteration 1: Log likelihood = -50800.369	Wald chi2(7) = 1594.76
Log likelihood = -50800.369	Prob > chi2 = 0.0000

zselplg	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0096533	.0149936	-0.64	0.520	-.0390403 .0197336
AGE	-.0032932	.0009787	-3.36	0.001	-.0052115 -.0013749
SEX	.0972175	.0103774	9.37	0.000	.0768781 .1175569
NonWhite	-.6266528	.0248678	-25.20	0.000	-.6753927 -.5779128
householdsize	-.0004851	.004803	-0.10	0.920	-.0098988 .0089286
SES	.0419545	.0077836	5.39	0.000	.0266989 .05721
LE8_TOTALSCORE	-.0016827	.0000553	-30.45	0.000	-.001791 -.0015744
_cons	.9264364	.0708035	13.08	0.000	.7876641 1.065209
sigma2					
_cons	.9579474	.0071055	134.82	0.000	.944021 .9718739

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257376	.1616584	7.78	0.000	.9405317 1.574221
ereri_cde	1.258438	.1616607	7.78	0.000	.9415893 1.575288
ereri_intref	-.0010595	.0017217	-0.62	0.538	-.0044341 .002315
ereri_intmed	-.0004706	.0014697	-0.32	0.749	-.0033512 .00241
ereri_pie	.000468	.0008121	0.58	0.564	-.0011236 .0020597

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsema3f
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9064.8284**
 Iteration 1: Log likelihood = **-8975.6511**
 Iteration 2: Log likelihood = **-8966.4307**
 Iteration 3: Log likelihood = **-8966.4039**
 Iteration 4: Log likelihood = **-8966.4039**
 Refining estimates:
 Iteration 0: Log likelihood = **-8966.4039**

Cox regression with Breslow method for ties

No. of subjects =	36,441	Number of obs =	36,441
No. of failures =	968		
Time at risk =	442,700.115	LR chi2(9) =	196.85
Log likelihood =	-8966.4039	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.286656	.1665849	11.35	0.000	1.982395 2.637617
zsema3f	1.01742	.0406391	0.43	0.665	.9408073 1.100272
_infectionburXzsema3f_000	.9811074	.0671458	-0.28	0.780	.8579488 1.121945
AGE	1.033216	.013031	2.59	0.010	1.007989 1.059075
SEX	.7505149	.0489129	-4.40	0.000	.6605176 .8527745
NonWhite	1.012384	.1794526	0.07	0.945	.7152592 1.432937
householdsize	.9272403	.039888	-1.76	0.079	.8522664 1.00881
SES	.8272062	.0409555	-3.83	0.000	.7507067 .9115013
LE8_TOTALSCORE	.9990796	.0003631	-2.53	0.011	.9983682 .9997916

-> Model for the mediator

Iteration 0: Log likelihood = **-50133.243**
 Iteration 1: Log likelihood = **-50133.243**

Linear regression (Maximum Likelihood)	Number of obs =	36,441
	Wald chi2(7) =	3287.53
Log likelihood =	Prob > chi2 =	0.0000

<u>zsema3f</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1756586	.0146365	12.00	0.000	.1469715 .2043456
AGE	.0146598	.0009559	15.34	0.000	.0127862 .0165334
SEX	-.0951687	.0101425	-9.38	0.000	-.1150476 -.0752898
NonWhite	-.3793395	.0242857	-15.62	0.000	-.4269386 -.3317405
householdsize	-.0039912	.0046157	-0.86	0.387	-.0130379 .0050554
SES	-.0627467	.0076111	-8.24	0.000	-.0776642 -.0478292
LE8_TOTALSCORE	-.0023661	.0000541	-43.76	0.000	-.0024721 -.0022601
_cons	.4449823	.0690896	6.44	0.000	.3095692 .5803953
sigma2					
_cons	.917225	.0067951	134.98	0.000	.9039069 .9305432

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.286687	.1640024	7.85	0.000	.9652485 1.608126
ereri_cde	1.287023	.166659	7.72	0.000	.960377 1.613668
ereri_intref	.0003889	.0033868	0.11	0.909	-.0062492 .007027
ereri_intmed	-.0037626	.0236424	-0.16	0.874	-.0501008 .0425756
ereri_pie	.0030383	.0070423	0.43	0.666	-.0107643 .0168409

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsema4c
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8972.6683

Iteration 2: Log likelihood = -8959.545

Iteration 3: Log likelihood = -8958.8862

Iteration 4: Log likelihood = -8958.8725

Iteration 5: Log likelihood = -8958.8725

Refining estimates:

Iteration 0: Log likelihood = -8958.8725

Cox regression with Breslow method for ties

No. of subjects = 36,264	Number of obs = 36,264
No. of failures = 968	
Time at risk = 440,524.906	LR chi2(9) = 197.49
Log likelihood = -8958.8725	Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.235911	.1620071	11.11	0.000	1.939899 2.577092
zsema4c		1.050111	.038237	1.34	0.179	.9777797 1.127793
_infectionburXzsema4c_000		1.028621	.0605612	0.48	0.632	.9165161 1.154439
AGE		1.030582	.0129899	2.39	0.017	1.005434 1.056359
SEX		.7410083	.0485548	-4.57	0.000	.6517001 .8425552
NonWhite		1.088331	.1851407	0.50	0.619	.7797574 1.519017
householdsize		.9384018	.0392926	-1.52	0.129	.8644651 1.018662
SES		.8169084	.0402902	-4.10	0.000	.7416377 .8998185
LE8_TOTALSCORE		.9990726	.0003551	-2.61	0.009	.9983767 .9997689

-> Model for the mediator

Iteration 0: Log likelihood = -50995.906
 Iteration 1: Log likelihood = -50995.906

Linear regression (Maximum Likelihood)
 Number of obs = 36,264
 Wald chi2(7) = 931.73
 Log likelihood = -50995.906 Prob > chi2 = 0.0000

	zsema4c	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0666697	.0151319	4.41	0.000	.0370118 .0963276
AGE		.0185259	.0009881	18.75	0.000	.0165893 .0204625
SEX		.2322779	.0104817	22.16	0.000	.2117343 .2528216
NonWhite		.0335539	.025081	1.34	0.181	-.015604 .0827117
householdsize		-.0177027	.0047669	-3.71	0.000	-.0270457 -.0083596
SES		.000091	.0078611	0.01	0.991	-.0153165 .0154986
LE8_TOTALSCORE		-.0000558	.0000558	-1.00	0.317	-.0001652 .0000536
_cons		-1.414264	.0714097	-19.80	0.000	-1.554225 -1.274304
sigma2						
_cons		.9749237	.0072402	134.66	0.000	.9607333 .9891141

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.250746	.1615449	7.74	0.000	.9341244 1.567369
ereri_cde	1.23503	.1617983	7.63	0.000	.9179115 1.552149
ereri_intref	.0041743	.0069844	0.60	0.550	-.0095148 .0178634
ereri_intmed	.0082768	.007568	1.09	0.274	-.0065563 .0231098
ereri_pie	.0032652	.0025461	1.28	0.200	-.0017251 .0082555

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsema4d
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9160.406
 Iteration 1: Log likelihood = -9074.2106
 Iteration 2: Log likelihood = -9060.0042
 Iteration 3: Log likelihood = -9059.8033
 Iteration 4: Log likelihood = -9059.8032
 Refining estimates:
 Iteration 0: Log likelihood = -9059.8032

Cox regression with Breslow method for ties

No. of subjects =	36,751	Number of obs =	36,751
No. of failures =	977		
Time at risk =	446,451.479	LR chi2(9) =	201.21
Log likelihood =	-9059.8032	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.19958	.1583495	10.95	0.000	1.910122 2.532903
zsema4d	.9827733	.0375741	-0.45	0.649	.911821 1.059247
_infectionburXzsema4d_000	.8600354	.0616616	-2.10	0.035	.7472882 .9897934
AGE	1.033431	.0129461	2.63	0.009	1.008366 1.059119
SEX	.7579312	.0491995	-4.27	0.000	.6673841 .8607632
NonWhite	1.078938	.1834484	0.45	0.655	.7731605 1.505649
householdsize	.9327254	.0395376	-1.64	0.100	.8583649 1.013528
SES	.8154716	.0400632	-4.15	0.000	.7406113 .8978988
LE8_TOTALSCORE	.9989777	.0003543	-2.88	0.004	.9982836 .9996723

-> Model for the mediator

Iteration 0: Log likelihood = -51950.176	Number of obs = 36,751
Iteration 1: Log likelihood = -51950.176	Wald chi2(7) = 395.58
Log likelihood = -51950.176	Prob > chi2 = 0.0000

	zsema4d	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0113686	.0151443	0.75	0.453	-.0183137 .0410509
AGE		-.0052801	.000991	-5.33	0.000	-.0072224 -.0033378
SEX		.0690586	.0104905	6.58	0.000	.0484975 .0896196
NonWhite		-.0473495	.0251669	-1.88	0.060	-.0966758 .0019768
householdsize		-.0036201	.0049831	-0.73	0.468	-.0133867 .0061466
SES		-.0275281	.0078783	-3.49	0.000	-.0429693 -.0120869
LE8_TOTALSCORE		-.0009478	.0000559	-16.96	0.000	-.0010573 -.0008383
_cons		.6930499	.0718554	9.65	0.000	.5522159 .833884
sigma2						
_cons		.9893239	.0072983	135.56	0.000	.9750196 1.003628

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.226501	.158868	7.72	0.000	.9151253 1.537876
ereri_cde	1.199368	.1583084	7.58	0.000	.8890896 1.509647
ereri_intref	.031393	.0226882	1.38	0.166	-.013075 .0758609
ereri_intmed	-.004063	.0056479	-0.72	0.472	-.0151327 .0070067
ereri_pie	-.0001975	.000508	-0.39	0.697	-.0011932 .0007982

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsema7a
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.216 -.07561 500.4

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9184.0417**
 Iteration 1: Log likelihood = **-9095.5319**
 Iteration 2: Log likelihood = **-9086.5552**
 Iteration 3: Log likelihood = **-9086.5104**
 Iteration 4: Log likelihood = **-9086.5104**
 Refining estimates:
 Iteration 0: Log likelihood = **-9086.5104**

Cox regression with Breslow method for ties

No. of subjects =	36,787	Number of obs =	36,787
No. of failures =	980		
Time at risk =	446,939.679	LR chi2(9) =	195.06
Log likelihood =	-9086.5104	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.224663	.1602321	11.10	0.000	1.931773 2.56196
zsema7a	1.002526	.0382789	0.07	0.947	.9302393 1.08043
_infectionburXzsema7a_000	1.024542	.0655066	0.38	0.705	.90387 1.161324
AGE	1.035512	.0130167	2.78	0.006	1.010311 1.061341
SEX	.7507533	.0487152	-4.42	0.000	.6610953 .8525707
NonWhite	1.039428	.1789863	0.22	0.822	.7416858 1.456695
householdsize	.9393228	.0392276	-1.50	0.134	.8655006 1.019442
SES	.8204889	.0402803	-4.03	0.000	.7452203 .9033597
LE8_TOTALSCORE	.9990427	.0003536	-2.71	0.007	.9983499 .9997359

-> Model for the mediator

Iteration 0: Log likelihood = **-51784.737**
 Iteration 1: Log likelihood = **-51784.737**

Linear regression (Maximum Likelihood)	Number of obs =	36,787	
	Wald chi2(7) =	835.86	
Log likelihood =	-51784.737	Prob > chi2 =	0.0000

<u>zsema7a</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0887692	.0150335	5.90	0.000	.0593041 .1182342
AGE	.0182216	.0009818	18.56	0.000	.0162972 .020146
SEX	-.105558	.0104224	-10.13	0.000	-.1259857 -.0851304
NonWhite	-.031415	.0249569	-1.26	0.208	-.0803296 .0174996
householdsize	-.0024378	.0047495	-0.51	0.608	-.0117466 .0068711
SES	-.0275244	.0078205	-3.52	0.000	-.0428523 -.0121964
LE8_TOTALSCORE	-.0006797	.0000555	-12.24	0.000	-.0007885 -.0005709
_cons	-.6024735	.0709863	-8.49	0.000	-.7416041 -.4633428
sigma2					
_cons	.9777565	.0072094	135.62	0.000	.9636264 .9918867

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.230062	.1594144	7.72	0.000	.9176153 1.542508
ereri_cde	1.224697	.1602616	7.64	0.000	.9105903 1.538804
ereri_intref	.0000718	.0016605	0.04	0.966	-.0031828 .0033264
ereri_intmed	.0050688	.0107126	0.47	0.636	-.0159275 .026065
ereri_pie	.000224	.0033904	0.07	0.947	-.0064211 .006869

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zseptin9
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8968.9691

Iteration 2: Log likelihood = -8960.5588

Iteration 3: Log likelihood = -8960.5409

Iteration 4: Log likelihood = -8960.5409

Refining estimates:

Iteration 0: Log likelihood = -8960.5409

Cox regression with Breslow method for ties

No. of subjects = 36,264 Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 194.15

Log likelihood = -8960.5409

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.256361	.1614948	11.37	0.000	1.961036 2.596162
zseptin9		.9669153	.0381089	-0.85	0.393	.8950352 1.044568
_infectionburXzseptin9_000		1.020178	.0722145	0.28	0.778	.8880201 1.172005
AGE		1.031858	.0129921	2.49	0.013	1.006706 1.057639
SEX		.7519026	.0489709	-4.38	0.000	.661795 .854279
NonWhite		1.086958	.1848791	0.49	0.624	.778813 1.517024
householdsize		.9365196	.0393396	-1.56	0.118	.862504 1.016887
SES		.8170197	.0402778	-4.10	0.000	.7417706 .8999025
LE8_TOTALSCORE		.9990445	.0003554	-2.69	0.007	.9983481 .9997413

-> Model for the mediator

Iteration 0: Log likelihood = -51380.01
 Iteration 1: Log likelihood = -51380.01

Linear regression (Maximum Likelihood)
 Number of obs = 36,264
 Wald chi2(7) = 152.07
 Prob > chi2 = 0.0000
 Log likelihood = -51380.01

	zseptin9	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0110506	.015293	0.72	0.470	-.0189231 .0410243
AGE		-.000616	.0009986	-0.62	0.537	-.0025732 .0013412
SEX		-.0004267	.0105933	-0.04	0.968	-.0211891 .0203357
NonWhite		-.02462	.025348	-0.97	0.331	-.0743012 .0250613
householdsize		-.0054828	.0048177	-1.14	0.255	-.0149253 .0039597
SES		-.0126781	.0079448	-1.60	0.111	-.0282497 .0028935
LE8_TOTALSCORE		-.0006418	.0000564	-11.38	0.000	-.0007524 -.0005312
_cons		.3699185	.07217	5.13	0.000	.2284678 .5113691
sigma2						
_cons		.9957966	.0073952	134.66	0.000	.9813024 1.010291

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.25489	.161358	7.78	0.000	.9386341 1.571146
ereri_cde	1.255589	.1613703	7.78	0.000	.9393087 1.571869
ereri_intref	-.000358	.0024368	-0.15	0.883	-.005134 .0044179
ereri_intmed	.0000311	.0015306	0.02	0.984	-.0029688 .0030311
ereri_pie	-.0003717	.0006739	-0.55	0.581	-.0016925 .000949

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zserpina11
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04648 2.216 -.0752 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9225.1762
Iteration 1: Log likelihood = -9132.3117
Iteration 2: Log likelihood = -9122.6687
Iteration 3: Log likelihood = -9122.6212
Iteration 4: Log likelihood = -9122.6212
Refining estimates:
Iteration 0: Log likelihood = -9122.6212

```

Cox regression with Breslow method for ties

No. of subjects =	36,896	Number of obs =	36,896
No. of failures =	984		
Time at risk =	448,211.761	LR chi2(9) =	205.11
Log likelihood =	-9122.6212	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.219913	.1601629	11.05	0.000	1.927184 2.557105
zserpina11	1.12371	.0463365	2.83	0.005	1.036465 1.218298
_infectionburXzserpina11_000	1.022196	.0748266	0.30	0.764	.8855731 1.179895
AGE	1.031774	.0129343	2.50	0.013	1.006732 1.057438
SEX	.6864782	.0481548	-5.36	0.000	.5982973 .7876558
NonWhite	1.040198	.1770838	0.23	0.817	.7450872 1.452195
householdszie	.9392143	.0392203	-1.50	0.133	.8654056 1.019318
SES	.8312882	.0408383	-3.76	0.000	.7549793 .91531
LE8_TOTALSCORE	.999058	.0003517	-2.68	0.007	.9983689 .9997476

-> Model for the mediator

Iteration 0: Log likelihood = -48769.816	Number of obs = 36,896
Iteration 1: Log likelihood = -48769.816	Wald chi2(7) = 7908.84
Linear regression (Maximum Likelihood)	Prob > chi2 = 0.0000
Log likelihood = -48769.816	

	zserpina11	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0512509	.0137825	3.72	0.000	.0242378 .0782641
AGE		.0186903	.0008998	20.77	0.000	.0169267 .0204538
SEX		.7978159	.0095507	83.54	0.000	.7790969 .8165348
NonWhite		.2550489	.0228709	11.15	0.000	.2102228 .2998749
householdsize		-.0029442	.0043543	-0.68	0.499	-.0114785 .0055901
SES		-.0923023	.0071673	-12.88	0.000	-.1063501 -.0782546
LE8_TOTALSCORE		.0001957	.0000509	3.85	0.000	.000096 .0002954
_cons		-2.463491	.0650532	-37.87	0.000	-2.590993 -2.335989
sigma2						
_cons		.8234602	.0060627	135.82	0.000	.8115775 .835343

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.240549	.1593494	7.79	0.000	.9282304 1.552869
ereri_cde	1.214107	.1591818	7.63	0.000	.9021169 1.526098
ereri_intref	.0105843	.0152261	0.70	0.487	-.0192584 .0404269
ereri_intmed	.0098622	.0079308	1.24	0.214	-.005682 .0254063
ereri_pie	.0059956	.0026712	2.24	0.025	.0007602 .011231

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zserpina12
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04646 2.218 -.0753 500.4

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8829.7622**
 Iteration 1: Log likelihood = **-8741.7428**
 Iteration 2: Log likelihood = **-8730.599**
 Iteration 3: Log likelihood = **-8730.5494**
 Iteration 4: Log likelihood = **-8730.5494**
 Refining estimates:
 Iteration 0: Log likelihood = **-8730.5494**

Cox regression with Breslow method for ties

No. of subjects =	35,385	Number of obs =	35,385
No. of failures =	946		
Time at risk =	429,819.244	LR chi2(9) =	198.43
Log likelihood =	-8730.5494	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.279867	.1650353	11.38	0.000	1.978302 2.627401
zserpina12		1.002247	.0413763	0.05	0.957	.9243453 1.086715
_infectionburXzserpina12_000		.8935359	.0731326	-1.38	0.169	.7611046 1.04901
AGE		1.033603	.0131722	2.59	0.010	1.008105 1.059745
SEX		.7537558	.0502156	-4.24	0.000	.6614899 .8588912
NonWhite		.9924914	.1825071	-0.04	0.967	.6921514 1.423156
householdsize		.9338153	.0401601	-1.59	0.111	.8583289 1.01594
SES		.8210983	.0411702	-3.93	0.000	.7442445 .9058884
LE8_TOTALSCORE		.9990191	.0003615	-2.71	0.007	.9983108 .9997279

-> Model for the mediator

Iteration 0: Log likelihood = **-49234.353**
 Iteration 1: Log likelihood = **-49234.353**

Linear regression (Maximum Likelihood)	Number of obs =	35,385
	Wald chi2(7) =	2003.22
Log likelihood =	Prob > chi2 =	0.0000

	zserpina12	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0153756	.0150931	1.02	0.308	-.0142063 .0449575
AGE		-.0010698	.0009855	-1.09	0.278	-.0030015 .0008618
SEX		.2939645	.0104547	28.12	0.000	.2734736 .3144553
NonWhite		.7894167	.0250404	31.53	0.000	.7403384 .8384949
householdsize		.0102407	.0047349	2.16	0.031	.0009605 .019521
SES		-.0102538	.0078588	-1.30	0.192	-.0256569 .0051492
LE8_TOTALSCORE		-.000618	.0000558	-11.08	0.000	-.0007274 -.0005087
_cons		-.1386613	.0712088	-1.95	0.052	-.2782279 .0009054
sigma2						
_cons		.9463943	.007115	133.01	0.000	.932449 .9603395

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.289694	.1650204	7.82	0.000	.9662597 1.613128
ereri_cde	1.27987	.1650357	7.76	0.000	.9564058 1.603334
ereri_intref	.0137112	.0174607	0.79	0.432	-.0205112 .0479335
ereri_intmed	-.0039218	.0046437	-0.84	0.398	-.0130234 .0051797
ereri_pie	.0000345	.0006357	0.05	0.957	-.0012114 .0012804

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zserpina9
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.531 .04641 2.217 -.07494 500.7**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8990.5918**

Iteration 1: Log likelihood = **-8902.8939**

Iteration 2: Log likelihood = **-8894.1081**

Iteration 3: Log likelihood = **-8894.0766**

Iteration 4: Log likelihood = **-8894.0766**

Refining estimates:

Iteration 0: Log likelihood = **-8894.0766**

Cox regression with Breslow method for ties

No. of subjects = **36,093** Number of obs = **36,093**

No. of failures = **961**

Time at risk = **438,424.654**

LR chi2(9) = **193.03**

Log likelihood = **-8894.0766** Prob > chi2 = **0.0000**

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.245014	.1616104	11.23	0.000	1.949594
zserpina9		.9454928	.0373505	-1.42	0.156	.8750493
_infectionburXzserpina9_000		1.008703	.0716135	0.12	0.903	.8776712
AGE		1.032659	.0130406	2.54	0.011	1.007414
SEX		.7614488	.0500423	-4.15	0.000	.6694218
NonWhite		1.069164	.1842733	0.39	0.698	.7626718
householdsize		.9371816	.0393589	-1.54	0.122	.8631291
SES		.8170429	.0404218	-4.08	0.000	.7415376
LE8_TOTALSCORE		.9990048	.0003567	-2.79	0.005	.9983059

-> Model for the mediator

```
Iteration 0: Log likelihood = -50765.742  
Iteration 1: Log likelihood = -50765.742
```

Linear regression (Maximum Likelihood) Number of obs = 36,093
Log likelihood = -50765.742 Wald chi2(7) = 906.20
Prob > chi2 = 0.0000

	zserpina9	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.05355	.0151684	3.53	0.000	.0238206 .0832794
AGE		.0165676	.0009908	16.72	0.000	.0146257 .0185095
SEX		.1887894	.010509	17.96	0.000	.1681921 .2093867
NonWhite		.1724286	.0251903	6.85	0.000	.1230566 .2218006
householdsize		-.0152575	.0047746	-3.20	0.001	-.0246154 -.0058995
SES		.0091246	.0078823	1.16	0.247	-.0063243 .0245736
LE8_TOTALSCORE		-.0008308	.000056	-14.84	0.000	-.0009405 -.000721
_cons		-.8511162	.0715948	-11.89	0.000	-.9914394 -.710793
sigma2						
_cons		.9754805	.0072614	134.34	0.000	.9612483 .9897126

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.238202	.1612592	7.68	0.000	.9221396 1.554264
ereri_cde	1.242589	.1613452	7.70	0.000	.9263587 1.55882
ereri_intref	.0012987	.0075541	0.17	0.864	-.013507 .0161044
ereri_intmed	-.0026895	.0074895	-0.36	0.720	-.0173686 .0119897
ereri_pie	-.0029969	.002273	-1.32	0.187	-.007452 .0014582

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zserpinb1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04632 2.214 -.07507 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9065.8493
Iteration 1: Log likelihood = -8975.1558
Iteration 2: Log likelihood = -8966.9148
Iteration 3: Log likelihood = -8966.896
Iteration 4: Log likelihood = -8966.896
Refining estimates:
Iteration 0: Log likelihood = -8966.896

```

Cox regression with Breslow method for ties

No. of subjects =	36,334	Number of obs =	36,334
No. of failures =	968		
Time at risk =	441,328.276	LR chi2(9) =	197.91
Log likelihood =	-8966.896	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.245756	.1609377	11.29	0.000	1.951475 2.584415
zserpinb1	.9282397	.0364745	-1.90	0.058	.8594346 1.002553
_infectionburXzserpinb1_000	1.033279	.0747154	0.45	0.651	.8967433 1.190604
AGE	1.035818	.0130419	2.79	0.005	1.010569 1.061697
SEX	.7511916	.048946	-4.39	0.000	.6611321 .853519
NonWhite	1.100106	.1870361	0.56	0.575	.7883444 1.535157
householdsize	.9408611	.0392937	-1.46	0.144	.8669145 1.021115
SES	.8186904	.0403606	-4.06	0.000	.7432867 .9017435
LE8_TOTALSCORE	.9989617	.0003562	-2.91	0.004	.9982639 .99966

-> Model for the mediator

Iteration 0: Log likelihood =	-51384.593	Number of obs =	36,334
Iteration 1: Log likelihood =	-51384.593	Wald chi2(7) =	342.85
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-51384.593		

	zserpinb1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0012535	.0152321	-0.08	0.934	-.0311079 .028601
AGE		-.0021474	.000997	-2.15	0.031	-.0041015 -.0001933
SEX		-.0395583	.0105588	-3.75	0.000	-.0602531 -.0188635
NonWhite		.0174441	.0253296	0.69	0.491	-.0322009 .0670891
householdsize		.0004477	.0050168	0.09	0.929	-.009385 .0102805
SES		-.0268475	.0079286	-3.39	0.001	-.0423874 -.0113077
LE8_TOTALSCORE		-.0009151	.0000562	-16.28	0.000	-.0010252 -.0008049
_cons		.6442262	.0723021	8.91	0.000	.5025168 .7859357
sigma2						
_cons		.990625	.0073497	134.79	0.000	.9762199 1.00503

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.241659	.1604208	7.74	0.000	.9272401 1.556078
ereri_cde	1.242356	.1603912	7.75	0.000	.9279948 1.556717
ereri_intref	-.0008138	.0063005	-0.13	0.897	-.0131626 .0115351
ereri_intmed	.0000239	.0003406	0.07	0.944	-.0006437 .0006915
ereri_pie	.0000933	.0011354	0.08	0.934	-.0021321 .0023188

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zserpinb5
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8905.4114**
 Iteration 1: Log likelihood = **-8821.5451**
 Iteration 2: Log likelihood = **-8814.2096**
 Iteration 3: Log likelihood = **-8814.1937**
 Iteration 4: Log likelihood = **-8814.1937**
 Refining estimates:
 Iteration 0: Log likelihood = **-8814.1937**

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	182.44
Log likelihood =	-8814.1937	Prob > chi2 =	0.0000

	<i>t</i>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.198337	.1595042	10.86	0.000	1.906926 2.534281
zserpinb5		1.02386	.0398497	0.61	0.545	.9486611 1.105021
_infectionburXzserpinb5_000		.9826794	.0722447	-0.24	0.812	.8508111 1.134986
AGE		1.037194	.0131783	2.87	0.004	1.011684 1.063348
SEX		.753802	.0495789	-4.30	0.000	.6626317 .8575163
NonWhite		1.114649	.1896213	0.64	0.523	.7986082 1.555759
householdsize		.9382348	.0396895	-1.51	0.132	.8635822 1.019341
SES		.8341573	.0414996	-3.64	0.000	.7566594 .9195926
LE8_TOTALSCORE		.9989929	.0003579	-2.81	0.005	.9982917 .9996945

-> Model for the mediator

Iteration 0: Log likelihood = **-50673.856**
 Iteration 1: Log likelihood = **-50673.856**

Linear regression (Maximum Likelihood)	Number of obs =	35,755
	Wald chi2(7) =	119.78
Log likelihood =	-50673.856	Prob > chi2 = 0.0000

	zserpinb5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.002954	.0154134	-0.19	0.848	-.0331637 .0272558
AGE		.0014658	.001006	1.46	0.145	-.000506 .0034376
SEX		-.1100294	.0106734	-10.31	0.000	-.1309489 -.0891098
NonWhite		-.0394904	.0255577	-1.55	0.122	-.0895825 .0106017
householdsize		.0103344	.0048673	2.12	0.034	.0007947 .019874
SES		-.0082297	.0080147	-1.03	0.305	-.0239382 .0074788
LE8_TOTALSCORE		.0000612	.0000569	1.08	0.282	-.0000503 .0001727
_cons		.02828	.0727367	0.39	0.697	-.1142812 .1708413
sigma2						
_cons		.9966332	.0074539	133.71	0.000	.9820239 1.011243

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.197714	.1594206	7.51	0.000	.8852549 1.510172
ereri_cde	1.197994	.1594389	7.51	0.000	.8854991 1.510488
ereri_intref	-.0002403	.0012889	-0.19	0.852	-.0027665 .0022858
ereri_intmed	.00003	.0004492	0.07	0.947	-.0008504 .0009104
ereri_pie	-.0000697	.0003812	-0.18	0.855	-.0008168 .0006774

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zserpinb6
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04639 2.216 -.07436 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9127.0019

Iteration 1: Log likelihood = -9036.5534

Iteration 2: Log likelihood = -9027.96

Iteration 3: Log likelihood = -9027.9307

Iteration 4: Log likelihood = -9027.9307

Refining estimates:

Iteration 0: Log likelihood = -9027.9307

Cox regression with Breslow method for ties

No. of subjects = 36,624

Number of obs = 36,624

No. of failures = 974

Time at risk = 444,900.635

LR chi2(9) = 198.14

Log likelihood = -9027.9307 Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.22972	.1595535	11.21	0.000	1.93794 2.565431
zserpinb6		.9260529	.0364606	-1.95	0.051	.8572792 1.000344
_infectionburXzserpinb6_000		.9977234	.0731458	-0.03	0.975	.864184 1.151898
AGE		1.035679	.0130195	2.79	0.005	1.010473 1.061514
SEX		.7563453	.0491288	-4.30	0.000	.6659319 .859034
NonWhite		1.095092	.1861858	0.53	0.593	.7847487 1.528166
householdsize		.9312162	.0395689	-1.68	0.094	.8568041 1.012091
SES		.8158832	.0401362	-4.14	0.000	.740891 .898466
LE8_TOTALSCORE		.9989773	.0003544	-2.88	0.004	.9982829 .9996722

-> Model for the mediator

Iteration 0: Log likelihood = **-51843.845**
 Iteration 1: Log likelihood = **-51843.845**

Linear regression (Maximum Likelihood)
 Number of obs = 36,624
 Wald chi2(7) = 246.55
 Prob > chi2 = 0.0000
 Log likelihood = **-51843.845**

	zserpinb6	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0160151	.015197	1.05	0.292	-.0137704 .0458006
AGE		.0005898	.0009946	0.59	0.553	-.0013596 .0025392
SEX		-.0092227	.0105303	-0.88	0.381	-.0298617 .0114163
NonWhite		.0720885	.025253	2.85	0.004	.0225935 .1215834
householdsize		-.0010521	.0049991	-0.21	0.833	-.0108502 .008746
SES		-.0346064	.0079048	-4.38	0.000	-.0500995 -.0191133
LE8_TOTALSCORE		-.0007221	.0000561	-12.88	0.000	-.000832 -.0006122
_cons		.3342684	.0721164	4.64	0.000	.1929228 .4756139
sigma2						
_cons		.9932861	.0073402	135.32	0.000	.9788996 1.007673

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.227302	.1591929	7.71	0.000	.9152894 1.539314
ereri_cde	1.225912	.1589612	7.71	0.000	.9143534 1.53747
ereri_intref	.0042136	.0115802	0.36	0.716	-.0184831 .0269103
ereri_intmed	-.0015938	.0027619	-0.58	0.564	-.007007 .0038193
ereri_pie	-.0012296	.0013253	-0.93	0.354	-.003827 .0013679

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zserpinb8
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .0466 2.218 -.07544 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9166.3755
 Iteration 1: Log likelihood = -9076.8295
 Iteration 2: Log likelihood = -9066.0685
 Iteration 3: Log likelihood = -9065.9714
 Iteration 4: Log likelihood = -9065.9713
 Refining estimates:
 Iteration 0: Log likelihood = -9065.9713

Cox regression with Breslow method for ties

No. of subjects = 36,824	Number of obs = 36,824
No. of failures = 978	
Time at risk = 447,356.911	LR chi2(9) = 200.81
Log likelihood = -9065.9713	Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.258863	.1629798	11.29	0.000	1.960986 2.601987
zserpinb8	.9656941	.0384826	-0.88	0.381	.8931398 1.044142
_infectionburXzserpinb8_000	1.072516	.0734985	1.02	0.307	.9377166 1.226692
AGE	1.035813	.0130063	2.80	0.005	1.010633 1.061621
SEX	.7516108	.0488356	-4.39	0.000	.6617386 .8536887
NonWhite	1.045428	.1801305	0.26	0.797	.7458124 1.465409
householdsize	.9363419	.0392688	-1.57	0.117	.8624548 1.016559
SES	.8178762	.0401453	-4.10	0.000	.7428591 .9004687
LE8_TOTALSCORE	.9990668	.0003571	-2.61	0.009	.9983671 .999767

-> Model for the mediator

Iteration 0: Log likelihood = -51439.096
 Iteration 1: Log likelihood = -51439.096

Linear regression (Maximum Likelihood)

Number of obs = 36,824	
Wald chi2(7) = 1659.08	
Log likelihood = -51439.096	Prob > chi2 = 0.0000

	zserpinb8	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1050893	.0148837	7.06	0.000	.0759177 .1342609
AGE		.0086477	.0009708	8.91	0.000	.006745 .0105504
SEX		-.1532345	.0103058	-14.87	0.000	-.1734335 -.1330356
NonWhite		-.092451	.0246528	-3.75	0.000	-.1407696 -.0441323
householdsize		-.0017286	.0046984	-0.37	0.713	-.0109372 .0074801
SES		-.0601101	.007728	-7.78	0.000	-.0752567 -.0449635
LE8_TOTALSCORE		-.0016307	.0000549	-29.72	0.000	-.0017383 -.0015232
_cons		.5193837	.0701727	7.40	0.000	.3818478 .6569196
sigma2						
_cons		.956862	.0070518	135.69	0.000	.9430408 .9706833

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.264911	.1616076	7.83	0.000	.9481661 1.581656
ereri_cde	1.257489	.1628574	7.72	0.000	.9382941 1.576683
ereri_intref	-.0009162	.0031654	-0.29	0.772	-.0071203 .0052879
ereri_intmed	.0120005	.0140081	0.86	0.392	-.0154549 .0394559
ereri_pie	-.0036618	.0042044	-0.87	0.384	-.0119023 .0045788

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zserpinb9
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8985.4467**
 Iteration 1: Log likelihood = **-8895.1802**
 Iteration 2: Log likelihood = **-8887.1801**
 Iteration 3: Log likelihood = **-8887.1554**
 Iteration 4: Log likelihood = **-8887.1554**
 Refining estimates:
 Iteration 0: Log likelihood = **-8887.1554**

Cox regression with Breslow method for ties

No. of subjects =	36,164	Number of obs =	36,164
No. of failures =	960		
Time at risk =	439,440.668	LR chi2(9) =	196.58
Log likelihood =	-8887.1554	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.207862	.1595609	10.96	0.000	1.916268 2.543829
zserpinb9		.933403	.0359455	-1.79	0.074	.8655443 1.006582
_infectionburXzserpinb9_000		1.010289	.0716255	0.14	0.885	.8792228 1.160894
AGE		1.037317	.0131064	2.90	0.004	1.011945 1.063326
SEX		.7421674	.0485836	-4.56	0.000	.6528008 .843768
NonWhite		1.017534	.1776446	0.10	0.921	.7226757 1.432698
householdsize		.9431013	.0393691	-1.40	0.161	.8690114 1.023508
SES		.8088918	.0400765	-4.28	0.000	.7340366 .8913804
LE8_TOTALSCORE		.9989806	.0003566	-2.86	0.004	.9982819 .9996798

-> Model for the mediator

Iteration 0: Log likelihood = **-51212.223**
 Iteration 1: Log likelihood = **-51212.223**

Linear regression (Maximum Likelihood)	Number of obs =	36,164	
	Wald chi2(7) =	204.11	
Log likelihood =	-51212.223	Prob > chi2 =	0.0000

	zserpinb9	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0015804	.0153159	0.10	0.918	-.0284381 .031599
AGE		-.0052163	.0010021	-5.21	0.000	-.0071804 -.0032522
SEX		.0293421	.0106017	2.77	0.006	.0085632 .050121
NonWhite		-.0422019	.0254213	-1.66	0.097	-.0920267 .0076229
householdsize		-.0033808	.0050278	-0.67	0.501	-.0132351 .0064734
SES		-.0217909	.0079694	-2.73	0.006	-.0374107 -.0061711
LE8_TOTALSCORE		-.0006875	.0000564	-12.19	0.000	-.0007981 -.000577
_cons		.6207747	.072628	8.55	0.000	.4784264 .7631229
sigma2						
_cons		.9943601	.0073947	134.47	0.000	.9798667 1.008853

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.206219	.1590335	7.58	0.000	.8945195 1.517919
ereri_cde	1.204995	.1590627	7.58	0.000	.893238 1.516752
ereri_intref	.0014288	.0081355	0.18	0.861	-.0145164 .0173741
ereri_intmed	-.0000957	.0009525	-0.10	0.920	-.0019625 .0017711
ereri_pie	-.0001089	.0010572	-0.10	0.918	-.0021809 .0019631

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zserpine1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.216 -.0752 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9225.1762

Iteration 1: Log likelihood = -9135.8891

Iteration 2: Log likelihood = -9117.0168

Iteration 3: Log likelihood = -9116.5871

Iteration 4: Log likelihood = -9116.5867

Refining estimates:

Iteration 0: Log likelihood = -9116.5867

Cox regression with Breslow method for ties

No. of subjects = 36,896 Number of obs = 36,896

No. of failures = 984

Time at risk = 448,211.761

Log likelihood = -9116.5867

LR chi2(9) = 217.18

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.213857	.1586225	11.09	0.000	1.923805 2.54764
zserpine1		.8832738	.0337983	-3.24	0.001	.8194536 .9520645
_infectionburXzserpine1_000		.9100124	.0625377	-1.37	0.170	.795337 1.041222
AGE		1.033224	.0129296	2.61	0.009	1.008191 1.058879
SEX		.7496818	.0484858	-4.45	0.000	.6604279 .850998
NonWhite		1.045596	.1779274	0.26	0.793	.7490597 1.459525
householdsize		.933048	.0392958	-1.65	0.100	.8591227 1.013334
SES		.8204114	.0401682	-4.04	0.000	.7453427 .9030409
LE8_TOTALSCORE		.9987682	.0003582	-3.44	0.001	.9980663 .9994705

-> Model for the mediator

Iteration 0: Log likelihood = -51543.987
 Iteration 1: Log likelihood = -51543.987

Linear regression (Maximum Likelihood) Number of obs = 36,896
 Wald chi2(7) = 1653.31
 Log likelihood = -51543.987 Prob > chi2 = 0.0000

	zserpine1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0144372	.0148587	0.97	0.331	-.0146854 .0435597
AGE		-.0010723	.0009701	-1.11	0.269	-.0029735 .000829
SEX		-.0993111	.0102965	-9.65	0.000	-.1194918 -.0791305
NonWhite		-.2712306	.0246568	-11.00	0.000	-.319557 -.2229041
householdsize		-.0131123	.0046943	-2.79	0.005	-.022313 -.0039116
SES		-.0332122	.007727	-4.30	0.000	-.0483569 -.0180676
LE8_TOTALSCORE		-.0019323	.0000548	-35.23	0.000	-.0020398 -.0018248
_cons		1.220786	.0701331	17.41	0.000	1.083328 1.358245
sigma2						
_cons		.9570859	.0070465	135.82	0.000	.9432749 .9708969

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.241688	.1594281	7.79	0.000	.9292151 1.554162
ereri_cde	1.204641	.1573352	7.66	0.000	.8962697 1.513012
ereri_intref	.0441272	.0275624	1.60	0.109	-.0098941 .0981485
ereri_intmed	-.0052896	.0058007	-0.91	0.362	-.0166588 .0060796
ereri_pie	-.0017903	.0019218	-0.93	0.352	-.005557 .0019763

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsestd1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04688 2.215 -.07424 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8819.5642
Iteration 1: Log likelihood = -8734.2575
Iteration 2: Log likelihood = -8726.3153
Iteration 3: Log likelihood = -8726.2884
Iteration 4: Log likelihood = -8726.2884
Refining estimates:
Iteration 0: Log likelihood = -8726.2884

```

Cox regression with Breslow method for ties

No. of subjects =	35,601	Number of obs =	35,601
No. of failures =	943		
Time at risk =	432,443.367	LR chi2(9) =	186.55
Log likelihood =	-8726.2884	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.2232	.1620263	10.96	0.000	1.927273 2.564567
zsestd1	.948476	.0375389	-1.34	0.181	.8776825 1.02498
_infectionburXzsestd1_000	1.095315	.0781026	1.28	0.202	.952452 1.259606
AGE	1.03754	.013207	2.90	0.004	1.011975 1.063751
SEX	.7507178	.0496023	-4.34	0.000	.6595308 .8545123
NonWhite	1.08912	.1876809	0.50	0.620	.7769517 1.526714
householdsize	.9299815	.040169	-1.68	0.093	.8544922 1.01214
SES	.8160398	.0407427	-4.07	0.000	.7399682 .8999318
LE8_TOTALSCORE	.9991889	.0003606	-2.25	0.025	.9984825 .9998959

-> Model for the mediator

Iteration 0: Log likelihood = -50464.676	Number of obs = 35,601
Iteration 1: Log likelihood = -50464.676	Wald chi2(7) = 101.05
Log likelihood = -50464.676	Prob > chi2 = 0.0000

	zsestd1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0024188	.0154438	-0.16	0.876	-.0326882 .0278505
AGE		-.0057074	.0010112	-5.64	0.000	-.0076893 -.0037256
SEX		.0514503	.0106989	4.81	0.000	.0304809 .0724197
NonWhite		-.0864497	.0255286	-3.39	0.001	-.1364848 -.0364146
householdsize		-.0039426	.0050756	-0.78	0.437	-.0138906 .0060053
SES		-.0039833	.0080372	-0.50	0.620	-.0197359 .0117692
LE8_TOTALSCORE		-.0003504	.000057	-6.14	0.000	-.0004622 -.0002386
_cons		.4529241	.0733059	6.18	0.000	.3092472 .596601
sigma2						
_cons		.9971415	.0074738	133.42	0.000	.9824932 1.01179

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.221575	.1618511	7.55	0.000	.9043526 1.538797
ereri_cde	1.221517	.1616996	7.55	0.000	.9045915 1.538442
ereri_intref	.000263	.0055289	0.05	0.962	-.0105734 .0110995
ereri_intmed	-.0003329	.0021518	-0.15	0.877	-.0045505 .0038846
ereri_pie	.000128	.0008227	0.16	0.876	-.0014844 .0017403

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsetmar
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .04633 2.216 -.07447 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8963.6234**
 Iteration 1: Log likelihood = **-8871.0115**
 Iteration 2: Log likelihood = **-8863.3545**
 Iteration 3: Log likelihood = **-8863.3381**
 Iteration 4: Log likelihood = **-8863.3381**
 Refining estimates:
 Iteration 0: Log likelihood = **-8863.3381**

Cox regression with Breslow method for ties

No. of subjects =	36,049	Number of obs =	36,049
No. of failures =	958		
Time at risk =	438,067.915	LR chi2(9) =	200.57
Log likelihood =	-8863.3381	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.213922	.1599061	11.00	0.000	1.921685 2.550601
zsetmar	.8943791	.036368	-2.75	0.006	.8258656 .9685765
_infectionburXzsetmar_000	1.072003	.0806375	0.92	0.355	.9250548 1.242294
AGE	1.037295	.0131279	2.89	0.004	1.011881 1.063347
SEX	.7301219	.0479298	-4.79	0.000	.6419735 .8303738
NonWhite	1.042245	.1820905	0.24	0.813	.7400423 1.467855
householdszie	.9417521	.0393848	-1.44	0.151	.8676382 1.022197
SES	.810572	.0401307	-4.24	0.000	.7356129 .8931694
LE8_TOTALSCORE	.9988987	.0003591	-3.07	0.002	.9981952 .9996027

-> Model for the mediator

Iteration 0: Log likelihood = **-50272.2**
 Iteration 1: Log likelihood = **-50272.2**

Linear regression (Maximum Likelihood)	Number of obs =	36,049
	Wald chi2(7) =	1800.76
Log likelihood =	Prob > chi2 =	0.0000

<u>zsetmar</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.044116	.0150082	2.94	0.003	.0147004 .0735316
AGE	.0060192	.0009822	6.13	0.000	.0040941 .0079442
SEX	-.2012818	.0103926	-19.37	0.000	-.2216509 -.1809128
NonWhite	.2545824	.0249343	10.21	0.000	.2057122 .3034527
householdszie	-.0141739	.0049263	-2.88	0.004	-.0238292 -.0045186
SES	-.0117175	.0078103	-1.50	0.134	-.0270254 .0035904
LE8_TOTALSCORE	-.0017407	.0000553	-31.48	0.000	-.0018491 -.0016323
_cons	.8302299	.0711898	11.66	0.000	.6907005 .9697593
sigma2					
_cons	.9523969	.0070939	134.26	0.000	.9384931 .9663008

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.19766	.1588037	7.54	0.000	.8864105 1.50891
ereri_cde	1.205916	.1588006	7.59	0.000	.8946728 1.51716
ereri_intref	-.004171	.0078892	-0.53	0.597	-.0196335 .0112916
ereri_intmed	.0008272	.0064516	0.13	0.898	-.0118176 .0134721
ereri_pie	-.0049124	.0024425	-2.01	0.044	-.0096995 -.0001252

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsez61
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04641 2.217 -.0748 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9132.2436

Iteration 1: Log likelihood = -9050.2417

Iteration 2: Log likelihood = -9033.1928

Iteration 3: Log likelihood = -9032.7289

Iteration 4: Log likelihood = -9032.7283

Refining estimates:

Iteration 0: Log likelihood = -9032.7283

Cox regression with Breslow method for ties

No. of subjects = 36,540 Number of obs = 36,540

No. of failures = 975

Time at risk = 443,893.259

Log likelihood = -9032.7283

LR chi2(9) = 199.03

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.237644	.1603882	11.24	0.000	1.944371 2.575151
zsez61	.9942307	.0401633	-0.14	0.886	.9185478 1.07615
_infectionburXzsez61_000	.869462	.0593038	-2.05	0.040	.7606631 .9938226
AGE	1.034639	.013017	2.71	0.007	1.009439 1.060469
SEX	.7855665	.053113	-3.57	0.000	.6880695 .8968785
NonWhite	1.091315	.188706	0.51	0.613	.7776129 1.531569
householdsize	.9315403	.0394911	-1.67	0.094	.8572675 1.012248
SES	.8191568	.040395	-4.05	0.000	.7436898 .9022819
LE8_TOTALSCORE	.9991149	.0003564	-2.48	0.013	.9984166 .9998137

-> Model for the mediator

Iteration 0: Log likelihood = **-49699.054**
 Iteration 1: Log likelihood = **-49699.054**

Linear regression (Maximum Likelihood) Number of obs = 36,540
 Wald chi2(7) = 4559.77
 Prob > chi2 = 0.0000

Log likelihood = **-49699.054**

zsez61	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0003949	.0144069	0.03	0.978	-.0278421 .028632
AGE	.0161868	.0009395	17.23	0.000	.0143454 .0180283
SEX	.5570562	.0099718	55.86	0.000	.537512 .5766005
NonWhite	.4001833	.0238991	16.74	0.000	.3533418 .4470247
householdsize	-.0001344	.0045405	-0.03	0.976	-.0090337 .0087649
SES	-.0375428	.0074854	-5.02	0.000	-.0522139 -.0228717
LE8_TOTALSCORE	.0013986	.0000531	26.34	0.000	.0012945 .0015026
_cons	-2.548558	.0679387	-37.51	0.000	-2.681715 -2.4154
sigma2					
_cons	.8890318	.0065773	135.17	0.000	.8761405 .901923

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.258703	.1611431	7.81	0.000	.9428681 1.574538
ereri_cde	1.237625	.1603893	7.72	0.000	.9232677 1.551982
ereri_intref	.021208	.0166486	1.27	0.203	-.0114227 .0538386
ereri_intmed	-.0001277	.0046571	-0.03	0.978	-.0092554 .009
ereri_pie	-2.29e-06	.0000849	-0.03	0.979	-.0001686 .0001641

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsez612
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04658 2.216 -.07524 500.8

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9057.6167
Iteration 1: Log likelihood = -8970.3588
Iteration 2: Log likelihood = -8960.8308
Iteration 3: Log likelihood = -8960.7865
Iteration 4: Log likelihood = -8960.7864
Refining estimates:
Iteration 0: Log likelihood = -8960.7864

```

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	193.66
Log likelihood =	-8960.7864	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.257312	.1615667	11.38	0.000	1.961856 2.597265
zsez612	.9862121	.0414281	-0.33	0.741	.9082673 1.070846
_infectionburXzsez612_000	.9858373	.0709336	-0.20	0.843	.8561681 1.135145
AGE	1.032185	.01302	2.51	0.012	1.006979 1.058021
SEX	.7606286	.0529833	-3.93	0.000	.6635602 .8718965
NonWhite	1.088977	.1852707	0.50	0.616	.780192 1.519974
householdsize	.936537	.0393133	-1.56	0.118	.8625689 1.016848
SES	.8168322	.0402824	-4.10	0.000	.7415757 .8997259
LE8_TOTALSCORE	.9990665	.0003552	-2.63	0.009	.9983706 .9997629

-> Model for the mediator

Iteration 0: Log likelihood = -48537.676	Number of obs = 36,264
Iteration 1: Log likelihood = -48537.676	Wald chi2(7) = 6332.33
Log likelihood = -48537.676	Prob > chi2 = 0.0000

zsez612	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0705364	.0141401	4.99	0.000	.0428223 .0982505
AGE	.0097456	.0009233	10.55	0.000	.007936 .0115553
SEX	.7512642	.0097947	76.70	0.000	.732067 .7704614
NonWhite	.0995383	.0234372	4.25	0.000	.0536023 .1454743
householdsize	-.010002	.0044545	-2.25	0.025	-.0187327 -.0012713
SES	-.0269195	.0073459	-3.66	0.000	-.0413172 -.0125218
LE8_TOTALSCORE	.0005039	.0000522	9.66	0.000	.0004017 .0006062
_cons	-1.983705	.0667294	-29.73	0.000	-2.114493 -1.852918
sigma2					
_cons	.8513175	.0063222	134.66	0.000	.8389262 .8637088

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.253725	.1612927	7.77	0.000	.9375972 1.569853
ereri_cde	1.257038	.1615147	7.78	0.000	.9404754 1.573601
ereri_intref	.0011659	.0046979	0.25	0.804	-.0080418 .0103735
ereri_intmed	-.0035003	.0100159	-0.35	0.727	-.0231312 .0161306
ereri_pie	-.0009788	.0029666	-0.33	0.741	-.0067933 .0048357

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsf3b4
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9057.6167**
 Iteration 1: Log likelihood = **-8967.7434**
 Iteration 2: Log likelihood = **-8959.2712**
 Iteration 3: Log likelihood = **-8959.251**
 Iteration 4: Log likelihood = **-8959.251**
 Refining estimates:
 Iteration 0: Log likelihood = **-8959.251**

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	196.73
Log likelihood =	-8959.251	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.26158	.1620123	11.39	0.000	1.965326 2.602491
zsf3b4	.9325107	.0363604	-1.79	0.073	.8639008 1.00657
_infectionburXzsf3b4_000	1.095959	.0786207	1.28	0.201	.9522082 1.261412
AGE	1.03228	.0129982	2.52	0.012	1.007116 1.058073
SEX	.7532366	.0490717	-4.35	0.000	.662945 .8558257
NonWhite	1.084827	.1845271	0.48	0.632	.7772708 1.514078
householdszie	.9366977	.039339	-1.56	0.119	.8626826 1.017063
SES	.8184123	.0403551	-4.06	0.000	.7430196 .901455
LE8_TOTALSCORE	.9990405	.0003551	-2.70	0.007	.9983449 .9997367

-> Model for the mediator

Iteration 0: Log likelihood = **-51406.667**
 Iteration 1: Log likelihood = **-51406.667**

Linear regression (Maximum Likelihood)	Number of obs =	36,264
	Wald chi2(7) =	98.57
Log likelihood =	-51406.667	Prob > chi2 = 0.0000

<u>zsf3b4</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0059392	.0153042	-0.39	0.698	-.0359349 .0240566
AGE	.0011763	.0009993	1.18	0.239	-.0007824 .003135
SEX	.0476732	.0106011	4.50	0.000	.0268956 .0684509
NonWhite	.0304752	.0253667	1.20	0.230	-.0192426 .080193
householdszie	-.0002212	.0048212	-0.05	0.963	-.0096707 .0092283
SES	.0210748	.0079507	2.65	0.008	.0054917 .0366578
LE8_TOTALSCORE	-.0005097	.0000565	-9.03	0.000	-.0006203 -.0003991
_cons	.1129147	.0722231	1.56	0.118	-.02864 .2544694
sigma2					
_cons	.9972617	.007406	134.66	0.000	.9827461 1.011777

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.256492	.1614954	7.78	0.000	.9399668 1.573017
ereri_cde	1.258585	.1615195	7.79	0.000	.9420122 1.575157
ereri_intref	-.001801	.0041288	-0.44	0.663	-.0098933 .0062912
ereri_intmed	-.0007067	.0020058	-0.35	0.725	-.004638 .0032246
ereri_pie	.0004151	.0010946	0.38	0.705	-.0017303 .0025605

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsfrp1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .04646 2.215 -.07439 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8964.6506

Iteration 1: Log likelihood = -8877.9053

Iteration 2: Log likelihood = -8867.7306

Iteration 3: Log likelihood = -8867.6122

Iteration 4: Log likelihood = -8867.6121

Refining estimates:

Iteration 0: Log likelihood = -8867.6121

Cox regression with Breslow method for ties

No. of subjects = 36,055 Number of obs = 36,055

No. of failures = 958

Time at risk = 438,109.626

Log likelihood = -8867.6121

LR chi2(9) = 194.08

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.159714	.1620249	10.26	0.000	1.864395 2.501812
zsfrp1	.9870159	.0400772	-0.32	0.748	.9115103 1.068776
_infectionburXzsfrp1_000	1.084007	.0756427	1.16	0.248	.9454417 1.242881
AGE	1.036875	.013197	2.85	0.004	1.011329 1.063066
SEX	.7365405	.0485482	-4.64	0.000	.6472779 .838113
NonWhite	1.020911	.1782786	0.12	0.906	.7250115 1.437575
householdsize	.9432922	.0394999	-1.39	0.163	.8689656 1.023976
SES	.8127212	.040331	-4.18	0.000	.7373963 .8957404
LE8_TOTALSCORE	.9990431	.0003641	-2.63	0.009	.9983298 .9997569

-> Model for the mediator

Iteration 0: Log likelihood = **-49258.668**
 Iteration 1: Log likelihood = **-49258.668**

Linear regression (Maximum Likelihood) Number of obs = 36,055
 Wald chi2(7) = 4008.94
 Log likelihood = **-49258.668** Prob > chi2 = 0.0000

zsfrp1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1041734	.0145911	7.14	0.000	.0755753 .1327715
AGE	.0338732	.0009547	35.48	0.000	.0320021 .0357443
SEX	.1860564	.0101007	18.42	0.000	.1662594 .2058535
NonWhite	.1156524	.024207	4.78	0.000	.0682075 .1630973
householdsize	-.009034	.0047889	-1.89	0.059	-.0184201 .0003521
SES	-.0606188	.0075921	-7.98	0.000	-.075499 -.0457387
LE8_TOTALSCORE	-.0022184	.0000538	-41.27	0.000	-.0023237 -.002113
_cons	-1.21694	.0691894	-17.59	0.000	-1.352549 -1.081331
sigma2					
_cons	.8999114	.0067024	134.27	0.000	.8867749 .9130479

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.176746	.1598022	7.36	0.000	.8635391 1.489952
ereri_cde	1.159406	.1620992	7.15	0.000	.8416974 1.477115
ereri_intref	.0020657	.0059852	0.35	0.730	-.0096651 .0137965
ereri_intmed	.0166345	.0136773	1.22	0.224	-.0101726 .0434416
ereri_pie	-.0013605	.0042284	-0.32	0.748	-.0096481 .006927

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsftpa1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8882.1967
 Iteration 1: Log likelihood = -8797.1667
 Iteration 2: Log likelihood = -8788.5897
 Iteration 3: Log likelihood = -8788.5513
 Iteration 4: Log likelihood = -8788.5512
 Refining estimates:
 Iteration 0: Log likelihood = -8788.5512

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	187.29
Log likelihood =	-8788.5512	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.246346	.162518	11.19	0.000	1.949369 2.588566
zsftpa1	.9687584	.0398454	-0.77	0.440	.8937277 1.050088
_infectionburXzsftpa1_000	1.06439	.0781313	0.85	0.395	.9217614 1.229088
AGE	1.037699	.0131983	2.91	0.004	1.01215 1.063892
SEX	.7475857	.0492194	-4.42	0.000	.6570823 .8505546
NonWhite	1.10674	.188417	0.60	0.551	.7927432 1.545106
householdsize	.9400132	.0396527	-1.47	0.143	.8654214 1.021034
SES	.8288131	.0413482	-3.76	0.000	.7516082 .9139486
LE8_TOTALSCORE	.9992175	.0003593	-2.18	0.029	.9985135 .9999219

-> Model for the mediator

Iteration 0: Log likelihood = -50302.22
 Iteration 1: Log likelihood = -50302.22

Linear regression (Maximum Likelihood)
 Number of obs = 35,573
 Wald chi2(7) = 348.05
 Log likelihood = -50302.22 Prob > chi2 = 0.0000

	zsftpa1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0374791	.0154152	2.43	0.015	.0072659 .0676922
AGE		.0030747	.0010052	3.06	0.002	.0011046 .0050448
SEX		.0980213	.0106665	9.19	0.000	.0771154 .1189272
NonWhite		-.2534514	.0254919	-9.94	0.000	-.3034145 -.2034883
householdsize		-.0058541	.0048547	-1.21	0.228	-.0153691 .0036609
SES		-.0395608	.0080001	-4.95	0.000	-.0552407 -.0238808
LE8_TOTALSCORE		-.0005505	.0000568	-9.69	0.000	-.0006618 -.0004392
_cons		-.0428993	.0726465	-0.59	0.555	-.1852838 .0994853
sigma2						
_cons		.9902828	.0074253	133.37	0.000	.9757295 1.004836

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.248125	.1623771	7.69	0.000	.9298716 1.566378
ereri_cde	1.245519	.1624074	7.67	0.000	.9272064 1.563832
ereri_intref	.0000239	.0038027	0.01	0.995	-.0074293 .0074771
ereri_intmed	.0037709	.0055707	0.68	0.498	-.0071474 .0146892
ereri_pie	-.0011889	.0016154	-0.74	0.462	-.004355 .0019772

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsftpa2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8796.6811**
 Iteration 2: Log likelihood = **-8788.6483**
 Iteration 3: Log likelihood = **-8788.6313**
 Iteration 4: Log likelihood = **-8788.6313**
 Refining estimates:
 Iteration 0: Log likelihood = **-8788.6313**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	187.13
Log likelihood =	-8788.6313	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.252504	.1635522	11.18	0.000	1.953713 2.596992
zsftpa2		.968833	.0387049	-0.79	0.428	.8958667 1.047742
_infectionburXzsftpa2_000		1.016377	.0717442	0.23	0.818	.8850548 1.167185
AGE		1.037864	.0132047	2.92	0.003	1.012303 1.06407
SEX		.7467607	.0491266	-4.44	0.000	.6564233 .8495303
NonWhite		1.103031	.187831	0.58	0.565	.7900231 1.540053
householdszie		.939035	.0396338	-1.49	0.136	.8644804 1.020019
SES		.827724	.0413115	-3.79	0.000	.7505891 .9127856
LE8_TOTALSCORE		.9991929	.0003609	-2.24	0.025	.9984858 .9999005

-> Model for the mediator

Iteration 0: Log likelihood = **-49921.539**
 Iteration 1: Log likelihood = **-49921.539**

Linear regression (Maximum Likelihood)	Number of obs =	35,573
	Wald chi2(7) =	1125.15
Log likelihood =	Prob > chi2 =	0.0000

	zsftpa2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0934649	.0152511	6.13	0.000	.0635733 .1233564
AGE		.0090869	.0009945	9.14	0.000	.0071377 .011036
SEX		.0474672	.0105529	4.50	0.000	.0267839 .0681506
NonWhite		-.2263176	.0252205	-8.97	0.000	-.2757489 -.1768863
householdszie		-.0124924	.004803	-2.60	0.009	-.0219062 -.0030787
SES		-.089739	.007915	-11.34	0.000	-.1052521 -.074226
LE8_TOTALSCORE		-.0012628	.0000562	-22.47	0.000	-.0013729 -.0011526
_cons		.0311107	.0718732	0.43	0.665	-.1097583 .1719797
sigma2						
_cons		.9693132	.0072681	133.37	0.000	.955068 .9835583

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.247954	.1626391	7.67	0.000	.929187 1.56672
ereri_cde	1.251382	.163444	7.66	0.000	.9310379 1.571727
ereri_intref	-.0001867	.0040614	-0.05	0.963	-.008147 .0077735
ereri_intmed	-.0002868	.0128518	-0.02	0.982	-.0254759 .0249023
ereri_pie	-.002955	.0037539	-0.79	0.431	-.0103125 .0044025

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsftpd
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9064.8284

Iteration 1: Log likelihood = -8978.1979

Iteration 2: Log likelihood = -8961.6899

Iteration 3: Log likelihood = -8961.4416

Iteration 4: Log likelihood = -8961.4415

Refining estimates:

Iteration 0: Log likelihood = -8961.4415

Cox regression with Breslow method for ties

No. of subjects = 36,441 Number of obs = 36,441

No. of failures = 968

Time at risk = 442,700.115

LR chi2(9) = 206.77

Log likelihood = -8961.4415

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.293888	.1638959	11.62	0.000	1.994136 2.638698
zsftpds	.9899025	.0387152	-0.26	0.795	.9168574 1.068767
_infectionburXzsftpds_000	.8392818	.0586955	-2.51	0.012	.7317769 .9625801
AGE	1.034375	.0130515	2.68	0.007	1.009109 1.060275
SEX	.7478355	.0487531	-4.46	0.000	.658134 .8497631
NonWhite	.9672771	.1725328	-0.19	0.852	.6819027 1.37208
householdsize	.9260197	.0399071	-1.78	0.075	.8510155 1.007634
SES	.8220627	.0406867	-3.96	0.000	.7460639 .9058031
LE8_TOTALSCORE	.9990279	.0003563	-2.73	0.006	.9983297 .9997265

-> Model for the mediator

Iteration 0: Log likelihood = **-51087.043**
 Iteration 1: Log likelihood = **-51087.043**

Linear regression (Maximum Likelihood) Number of obs = 36,441
 Wald chi2(7) = 1261.33
 Log likelihood = **-51087.043** Prob > chi2 = 0.0000

zsftpds	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0268295	.0150247	1.79	0.074	-.0026183 .0562773
AGE	.0171396	.0009813	17.47	0.000	.0152163 .0190629
SEX	-.021577	.0104115	-2.07	0.038	-.0419831 -.0011709
NonWhite	-.6189748	.0249297	-24.83	0.000	-.6678362 -.5701135
householdsize	-.0055857	.0047381	-1.18	0.238	-.0148723 .0037008
SES	-.0674763	.0078129	-8.64	0.000	-.0827893 -.0521632
LE8_TOTALSCORE	-.0003871	.0000555	-6.97	0.000	-.0004959 -.0002783
_cons	-.7723988	.0709218	-10.89	0.000	-.9114029 -.6333947
sigma2					
_cons	.9665185	.0071603	134.98	0.000	.9524846 .9805524

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.322124	.1663882	7.95	0.000	.9960089 1.648239
ereri_cde	1.293775	.1639169	7.89	0.000	.9725036 1.615046
ereri_intref	.0399259	.0250751	1.59	0.111	-.0092205 .0890722
ereri_intmed	-.0113046	.0074552	-1.52	0.129	-.0259164 .0033073
ereri_pie	-.0002723	.00106	-0.26	0.797	-.0023499 .0018054

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsh2b3
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8882.1967
 Iteration 1: Log likelihood = -8796.0382
 Iteration 2: Log likelihood = -8786.7278
 Iteration 3: Log likelihood = -8786.6815
 Iteration 4: Log likelihood = -8786.6815
 Refining estimates:
 Iteration 0: Log likelihood = -8786.6815

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	191.03
Log likelihood =	-8786.6815	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.244457	.1627518	11.15	0.000	1.9471 2.587225
zsh2b3	.9450549	.0364824	-1.46	0.143	.8761888 1.019334
_infectionburXzsh2b3_000	.9623845	.0687465	-0.54	0.591	.836651 1.107013
AGE	1.037503	.0131857	2.90	0.004	1.011978 1.063671
SEX	.7409092	.0487862	-4.55	0.000	.6512031 .8429728
NonWhite	1.099653	.1871189	0.56	0.577	.7877957 1.534962
householdsize	.9393394	.0396169	-1.48	0.138	.8648144 1.020287
SES	.8273765	.0412708	-3.80	0.000	.7503156 .912352
LE8_TOTALSCORE	.9991764	.0003591	-2.29	0.022	.9984728 .9998804

-> Model for the mediator

Iteration 0: Log likelihood = -50314.235	Number of obs = 35,573
Iteration 1: Log likelihood = -50314.235	Wald chi2(7) = 323.80
Linear regression (Maximum Likelihood)	Prob > chi2 = 0.0000
Log likelihood = -50314.235	

	zsh2b3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.005405	.0154204	0.35	0.726	-.0248184 .0356283
AGE		-.0056559	.0010055	-5.62	0.000	-.0076267 -.0036851
SEX		-.1093729	.0106701	-10.25	0.000	-.1302859 -.08846
NonWhite		-.1138898	.0255005	-4.47	0.000	-.1638698 -.0639098
householdsize		-.0000511	.0048563	-0.01	0.992	-.0095693 .0094671
SES		-.0185371	.0080028	-2.32	0.021	-.0342224 -.0028518
LE8_TOTALSCORE		-.00068	.0000568	-11.97	0.000	-.0007913 -.0005686
_cons		.851544	.0726711	11.72	0.000	.7091113 .9939766
sigma2						
_cons		.9909519	.0074303	133.37	0.000	.9763888 1.005515

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.249831	.1624552	7.69	0.000	.9314249 1.568238
ereri_cde	1.242437	.1624012	7.65	0.000	.9241363 1.560737
ereri_intref	.0085482	.0130161	0.66	0.511	-.0169629 .0340593
ereri_intmed	-.0008483	.0025377	-0.33	0.738	-.0058221 .0041254
ereri_pie	-.0003054	.0008958	-0.34	0.733	-.0020611 .0014503

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsh2d1a
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8945.3712**
 Iteration 2: Log likelihood = **-8936.2447**
 Iteration 3: Log likelihood = **-8936.2169**
 Iteration 4: Log likelihood = **-8936.2169**
 Refining estimates:
 Iteration 0: Log likelihood = **-8936.2169**

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	200.44
Log likelihood =	-8936.2169	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.26292	.1622078	11.39	0.000	1.966321 2.604258
zsh2d1a	.9101895	.038288	-2.24	0.025	.8381566 .9884129
_infectionburXzsh2d1a_000	1.001686	.0759998	0.02	0.982	.8632756 1.162289
AGE	1.032332	.0130044	2.53	0.012	1.007156 1.058137
SEX	.7525282	.0491208	-4.36	0.000	.6621573 .8552328
NonWhite	1.063978	.1833719	0.36	0.719	.7589822 1.491535
householdsize	.9341793	.0396544	-1.60	0.109	.8596034 1.015225
SES	.8179115	.0404069	-4.07	0.000	.7424287 .9010686
LE8_TOTALSCORE	.9989045	.0003581	-3.06	0.002	.9982028 .9996067

-> Model for the mediator

Iteration 0: Log likelihood = **-51216.566**
 Iteration 1: Log likelihood = **-51216.566**

Linear regression (Maximum Likelihood)	Number of obs =	36,352
	Wald chi2(7) =	735.72
Log likelihood =	Prob > chi2 =	0.0000

<u>zsh2d1a</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0197038	.0151663	1.30	0.194	-.0100215 .0494291
AGE	-.0004856	.00099	-0.49	0.624	-.002426 .0014548
SEX	-.1243269	.0104969	-11.84	0.000	-.1449005 -.1037533
NonWhite	.0949106	.0251541	3.77	0.000	.0456094 .1442118
householdsize	.003562	.0048583	0.73	0.463	-.00596 .0130841
SES	-.0080032	.0078732	-1.02	0.309	-.0234344 .007428
LE8_TOTALSCORE	-.0012275	.0000559	-21.96	0.000	-.001337 -.0011179
_cons	.8184826	.0716188	11.43	0.000	.6781124 .9588529
sigma2					
_cons	.9801357	.00727	134.82	0.000	.9658867 .9943847

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.258445	.1617955	7.78	0.000	.9413314 1.575558
ereri_cde	1.257128	.1613536	7.79	0.000	.9408807 1.573375
ereri_intref	.005433	.0139675	0.39	0.697	-.0219428 .0328089
ereri_intmed	-.0022639	.0034408	-0.66	0.511	-.0090077 .00448
ereri_pie	-.0018525	.0016474	-1.12	0.261	-.0050812 .0013763

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zshmt1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04634 2.216 -.07461 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9114.2295

Iteration 1: Log likelihood = -9024.1801

Iteration 2: Log likelihood = -9015.7851

Iteration 3: Log likelihood = -9015.7601

Iteration 4: Log likelihood = -9015.7601

Refining estimates:

Iteration 0: Log likelihood = -9015.7601

Cox regression with Breslow method for ties

No. of subjects = 36,537 Number of obs = 36,537

No. of failures = 973

Time at risk = 443,808.024

Log likelihood = -9015.7601

LR chi2(9) = 196.94

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.236162	.1601277	11.24	0.000	1.943346 2.573098
zshmt1	.9086198	.0354882	-2.45	0.014	.8416598 .9809068
_infectionburXzshmt1_000	1.036583	.0744458	0.50	0.617	.9004763 1.193263
AGE	1.036284	.0130156	2.84	0.005	1.011085 1.06211
SEX	.7572699	.0491865	-4.28	0.000	.6667502 .8600788
NonWhite	1.096113	.1865651	0.54	0.590	.7851919 1.530154
householdsize	.9379939	.03927	-1.53	0.126	.8640993 1.018208
SES	.826645	.0407298	-3.86	0.000	.7505495 .9104555
LE8_TOTALSCORE	.9989387	.0003557	-2.98	0.003	.9982418 .999636

-> Model for the mediator

Iteration 0: Log likelihood = -51593.561
 Iteration 1: Log likelihood = -51593.561

Linear regression (Maximum Likelihood) Number of obs = 36,537
 Wald chi2(7) = 502.82
 Log likelihood = -51593.561 Prob > chi2 = 0.0000

	zshmt1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0019562	.0151617	0.13	0.897	-.0277602 .0316725
AGE		-.0007221	.0009895	-0.73	0.466	-.0026615 .0012173
SEX		-.0246042	.0105053	-2.34	0.019	-.0451942 -.0040143
NonWhite		.0784675	.0251877	3.12	0.002	.0291005 .1278346
householdsize		-.0046786	.004782	-0.98	0.328	-.0140511 .0046939
SES		-.0114491	.0078857	-1.45	0.147	-.0269047 .0040066
LE8_TOTALSCORE		-.0011596	.000056	-20.73	0.000	-.0012693 -.00105
_cons		.6671817	.0714872	9.33	0.000	.5270693 .8072941
sigma2						
_cons		.9863979	.0072979	135.16	0.000	.9720941 1.000702

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.229717	.1594214	7.71	0.000	.9172565 1.542177
ereri_cde	1.230544	.1592836	7.73	0.000	.9183538 1.542734
ereri_intref	-.0005661	.0087929	-0.06	0.949	-.0177998 .0166677
ereri_intmed	-.0000738	.000635	-0.12	0.907	-.0013183 .0011706
ereri_pie	-.0001874	.0014547	-0.13	0.897	-.0030385 .0026636

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsiae
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04649 2.217 -.07521 500.7

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9112.6982
 Iteration 1: Log likelihood = -9022.852
 Iteration 2: Log likelihood = -9011.989
 Iteration 3: Log likelihood = -9011.9209
 Iteration 4: Log likelihood = -9011.9209
 Refining estimates:
 Iteration 0: Log likelihood = -9011.9209

Cox regression with Breslow method for ties

No. of subjects =	36,480	Number of obs =	36,480
No. of failures =	973		
Time at risk =	443,165.812	LR chi2(9) =	201.55
Log likelihood =	-9011.9209	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.267115	.1616365	11.48	0.000	1.971452 2.60712
zsiae	.9326879	.0372384	-1.75	0.081	.8624847 1.008605
_infectionburXzsiae_000	.9229763	.0671122	-1.10	0.270	.800382 1.064348
AGE	1.034888	.0130191	2.73	0.006	1.009683 1.060722
SEX	.75668	.0493504	-4.28	0.000	.6658818 .8598592
NonWhite	1.065038	.1834564	0.37	0.715	.759876 1.492751
householdsize	.9296872	.0394863	-1.72	0.086	.8554292 1.010391
SES	.8160539	.0402676	-4.12	0.000	.7408272 .8989194
LE8_TOTALSCORE	.9989138	.0003576	-3.04	0.002	.9982131 .999615

-> Model for the mediator

Iteration 0: Log likelihood = -51016.249
 Iteration 1: Log likelihood = -51016.249

Linear regression (Maximum Likelihood)

Number of obs =	36,480
Wald chi2(7) =	1523.20
Prob > chi2 =	0.0000

Log likelihood = -51016.249

zsiae	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0484906	.0149745	3.24	0.001	.0191412 .0778401
AGE	.0059941	.000977	6.13	0.000	.0040791 .007909
SEX	-.1736159	.01037	-16.74	0.000	-.1939406 -.1532911
NonWhite	-.0519675	.0248343	-2.09	0.036	-.1006419 -.0032931
householdsize	-.0136149	.0047202	-2.88	0.004	-.0228663 -.0043635
SES	-.0643912	.0077827	-8.27	0.000	-.0796451 -.0491373
LE8_TOTALSCORE	-.0015523	.0000552	-28.11	0.000	-.0016605 -.0014441
_cons	.7032593	.0706539	9.95	0.000	.5647802 .8417384
sigma2					
_cons	.9598929	.0071074	135.06	0.000	.9459626 .9738231

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.271015	.1625898	7.82	0.000	.9523448 1.589685
ereri_cde	1.263573	.1612619	7.84	0.000	.9475051 1.57964
ereri_intref	.0240028	.0214387	1.12	0.263	-.0180162 .0660219
ereri_intmed	-.0131872	.0083067	-1.59	0.112	-.0294679 .0030936
ereri_pie	-.0033733	.0021919	-1.54	0.124	-.0076694 .0009227

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsinglec1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04635 2.216 -.07488 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9125.8833**
 Iteration 1: Log likelihood = **-9038.9805**
 Iteration 2: Log likelihood = **-9029.7634**
 Iteration 3: Log likelihood = **-9029.7194**
 Iteration 4: Log likelihood = **-9029.7194**
 Refining estimates:
 Iteration 0: Log likelihood = **-9029.7194**

Cox regression with Breslow method for ties

No. of subjects =	36,595	Number of obs =	36,595
No. of failures =	974		
Time at risk =	444,506.48	LR chi2(9) =	192.33
Log likelihood =	-9029.7194	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.234352	.1642328	10.94	0.000	1.934573 2.580583
zsiglec1		1.0458	.0419208	1.12	0.264	.9667818 1.131278
_infectionburXzsiglec1_000		.985944	.0680948	-0.20	0.838	.8611197 1.128862
AGE		1.034684	.0130086	2.71	0.007	1.009499 1.060497
SEX		.7565314	.0491242	-4.30	0.000	.6661246 .8592082
NonWhite		1.082922	.1845277	0.47	0.640	.7754504 1.512307
householdsize		.9367388	.0392974	-1.56	0.119	.8627988 1.017015
SES		.8323157	.0411259	-3.71	0.000	.7554906 .9169531
LE8_TOTALSCORE		.9991019	.0003574	-2.51	0.012	.9984018 .9998026

-> Model for the mediator

Iteration 0: Log likelihood = **-50674.484**
 Iteration 1: Log likelihood = **-50674.484**

Linear regression (Maximum Likelihood)	Number of obs =	36,595
	Wald chi2(7) =	2589.67
Log likelihood =	Prob > chi2 =	0.0000

	zsiglec1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1798545	.0147409	12.20	0.000	.1509628 .2087462
AGE		.0188874	.0009621	19.63	0.000	.0170019 .020773
SEX		.0609176	.0102138	5.96	0.000	.0408989 .0809363
NonWhite		.2350589	.0244876	9.60	0.000	.1870641 .2830536
householdsize		.0016994	.0046504	0.37	0.715	-.0074152 .010814
SES		-.1271687	.0076664	-16.59	0.000	-.1421945 -.1121428
LE8_TOTALSCORE		-.0017095	.0000544	-31.43	0.000	-.0018161 -.0016029
_cons		-.4235956	.0694887	-6.10	0.000	-.5597909 -.2874003
sigma2						
_cons		.9338857	.006904	135.27	0.000	.9203542 .9474172

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.246368	.1613949	7.72	0.000	.9300402 1.562697
ereri_cde	1.234578	.1641977	7.52	0.000	.9127559 1.556399
ereri_intref	-.0005489	.0008305	-0.66	0.509	-.0021767 .0010789
ereri_intmed	.0042529	.023832	0.18	0.858	-.0424569 .0509628
ereri_pie	.0080869	.0072982	1.11	0.268	-.0062173 .022391

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsiglec10
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**

Iteration 1: Log likelihood = **-8949.0085**

Iteration 2: Log likelihood = **-8939.1813**

Iteration 3: Log likelihood = **-8939.0948**

Iteration 4: Log likelihood = **-8939.0947**

Refining estimates:

Iteration 0: Log likelihood = **-8939.0947**

Cox regression with Breslow method for ties

No. of subjects = 36,352 Number of obs = 36,352

No. of failures = 965

Time at risk = 441,650.762

Log likelihood = **-8939.0947** LR chi2(9) = 194.69

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.245314	.1644076	11.05	0.000	1.945136
zsigle10		1.044159	.0410375	1.10	0.272	.9667471
_infectionburXzsigle10_000		.9932493	.0622649	-0.11	0.914	.8784117
AGE		1.031617	.013019	2.47	0.014	1.006413
SEX		.7563002	.0493626	-4.28	0.000	.6654838
NonWhite		1.063139	.1833089	0.36	0.723	.7582703
householdsize		.933574	.0396737	-1.62	0.106	.8589652
SES		.8219992	.0406201	-3.97	0.000	.7461193
LE8_TOTALSCORE		.9990631	.0003569	-2.62	0.009	.9983638

-> Model for the mediator

```
Iteration 0: Log likelihood = -50812.406  
Iteration 1: Log likelihood = -50812.406
```

Linear regression (Maximum Likelihood) Number of obs = 36,352
Log likelihood = -50812.406 Wald chi2(7) = 1569.64
Prob > chi2 = 0.0000

	zsiglec10	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1901728	.0149986	12.68	0.000	.1607761 .2195694
AGE		.0183308	.0009791	18.72	0.000	.0164118 .0202497
SEX		.072493	.0103809	6.98	0.000	.0521469 .0928391
NonWhite		-.1832111	.024876	-7.36	0.000	-.2319672 -.1344555
householdszie		-.0001988	.0048046	-0.04	0.967	-.0096156 .009218
SES		-.0935666	.0077862	-12.02	0.000	-.1088272 -.078306
LE8_TOTALSCORE		-.0011601	.0000553	-20.99	0.000	-.0012684 -.0010518
_cons		-.6578965	.0708269	-9.29	0.000	-.7967147 -.5190782
sigma2						
_cons		.958582	.0071102	134.82	0.000	.9446463 .9725177

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.260746	.1625183	7.76	0.000	.9422165 1.579276
ereri_cde	1.245618	.1644015	7.58	0.000	.9233974 1.567839
ereri_intref	-.0004838	.0011437	-0.42	0.672	-.0027254 .0017579
ereri_intmed	.0073603	.0221901	0.33	0.740	-.0361316 .0508522
ereri_pie	.0082516	.0075641	1.09	0.275	-.0065738 .023077

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsinglec15
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8819.5642
 Iteration 1: Log likelihood = -8734.7799
 Iteration 2: Log likelihood = -8727.2136
 Iteration 3: Log likelihood = -8727.1964
 Iteration 4: Log likelihood = -8727.1964
 Refining estimates:
 Iteration 0: Log likelihood = -8727.1964

Cox regression with Breslow method for ties

No. of subjects =	35,601	Number of obs =	35,601
No. of failures =	943		
Time at risk =	432,443.367	LR chi2(9) =	184.74
Log likelihood =	-8727.1964	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.213069	.1610733	10.91	0.000	1.918855 2.552394
zsinglec15		1.02115	.0390249	0.55	0.584	.9474567 1.100575
_infectionburXzsinglec15_000		.9993417	.0718463	-0.01	0.993	.8679966 1.150562
AGE		1.037525	.0132115	2.89	0.004	1.011952 1.063745
SEX		.7475317	.0494002	-4.40	0.000	.6567173 .8509043
NonWhite		1.091514	.1881182	0.51	0.611	.7786246 1.530138
householdsize		.9301892	.0401597	-1.68	0.094	.8547158 1.012327
SES		.816373	.040763	-4.06	0.000	.7402639 .9003072
LE8_TOTALSCORE		.9991954	.0003605	-2.23	0.026	.9984891 .9999021

-> Model for the mediator

Iteration 0: Log likelihood = -50473.162
 Iteration 1: Log likelihood = -50473.162

Linear regression (Maximum Likelihood)
 Number of obs = 35,601
 Wald chi2(7) = 84.04
 Log likelihood = -50473.162 Prob > chi2 = 0.0000

	zsiglec15	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0135925	.0154475	0.88	0.379	-.016684 .0438691
AGE		-.0029625	.0010114	-2.93	0.003	-.0049448 -.0009802
SEX		.0831202	.0107014	7.77	0.000	.0621458 .1040947
NonWhite		-.0411176	.0255347	-1.61	0.107	-.0911646 .0089294
householdsize		.0036651	.0050768	0.72	0.470	-.0062852 .0136155
SES		-.0169721	.0080391	-2.11	0.035	-.0327284 -.0012158
LE8_TOTALSCORE		-.0001391	.000057	-2.44	0.015	-.0002509 -.0000273
_cons		.1113566	.0733233	1.52	0.129	-.0323545 .2550677
sigma2						
_cons		.997617	.0074774	133.42	0.000	.9829617 1.012272

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.213652	.1611672	7.53	0.000	.8977696 1.529534
ereri_cde	1.212852	.1610469	7.53	0.000	.8972056 1.528498
ereri_intref	.0001899	.0025794	0.07	0.941	-.0048656 .0052454
ereri_intmed	.0003253	.0019415	0.17	0.867	-.00348 .0041307
ereri_pie	.0002845	.000612	0.46	0.642	-.000915 .0014841

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsiglec5
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9121.8147**
 Iteration 1: Log likelihood = **-9033.416**
 Iteration 2: Log likelihood = **-9022.9864**
 Iteration 3: Log likelihood = **-9022.9376**
 Iteration 4: Log likelihood = **-9022.9376**
 Refining estimates:
 Iteration 0: Log likelihood = **-9022.9376**

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	197.75
Log likelihood =	-9022.9376	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.197721	.161425	10.72	0.000	1.903053 2.538015
zsiglec5		1.069796	.0437066	1.65	0.099	.9874723 1.158982
_infectionburXzsiglec5_000		1.039474	.0802016	0.50	0.616	.8935897 1.209174
AGE		1.034248	.0130062	2.68	0.007	1.009068 1.060056
SEX		.7542582	.0489974	-4.34	0.000	.6640871 .8566729
NonWhite		1.131831	.1932094	0.73	0.468	.809985 1.581561
householdsize		.9399254	.0392348	-1.48	0.138	.8660882 1.020058
SES		.8290314	.0408182	-3.81	0.000	.7527682 .913021
LE8_TOTALSCORE		.9990464	.0003541	-2.69	0.007	.9983527 .9997406

-> Model for the mediator

Iteration 0: Log likelihood = **-51320.802**
 Iteration 1: Log likelihood = **-51320.802**

Linear regression (Maximum Likelihood)	Number of obs =	36,459
	Wald chi2(7) =	832.93
Log likelihood =	Prob > chi2 =	0.0000

	zsiglec5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1113645	.0151107	7.37	0.000	.0817481 .1409809
AGE		.0081533	.000989	8.24	0.000	.0062149 .0100917
SEX		-.0577601	.0104709	-5.52	0.000	-.0782827 -.0372375
NonWhite		-.5301721	.025104	-21.12	0.000	-.579375 -.4809693
householdsize		.0015326	.0049758	0.31	0.758	-.0082197 .0112849
SES		-.0634854	.0078647	-8.07	0.000	-.0788999 -.048071
LE8_TOTALSCORE		-.0004365	.0000557	-7.83	0.000	-.0005458 -.0003272
_cons		-.1828174	.0717223	-2.55	0.011	-.3233905 -.0422444
sigma2						
_cons		.9776379	.0072409	135.02	0.000	.963446 .9918297

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.229847	.1595619	7.71	0.000	.9171118 1.542583
ereri_cde	1.196307	.1611064	7.43	0.000	.8805444 1.51207
ereri_intref	.0073278	.0128553	0.57	0.569	-.0178683 .0325238
ereri_intmed	.0186707	.0169359	1.10	0.270	-.0145231 .0518645
ereri_pie	.0075418	.0046978	1.61	0.108	-.0016657 .0167493

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsiglec6
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04659 2.218 -.07483 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9201.1117

Iteration 1: Log likelihood = -9112.106

Iteration 2: Log likelihood = -9103.2978

Iteration 3: Log likelihood = -9103.2749

Iteration 4: Log likelihood = -9103.2749

Refining estimates:

Iteration 0: Log likelihood = -9103.2749

Cox regression with Breslow method for ties

No. of subjects = 36,726 Number of obs = 36,726

No. of failures = 982

Time at risk = 446,105.322

LR chi2(9) = 195.67

Log likelihood = -9103.2749

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.247392	.1611155	11.30	0.000	1.952793 2.586435
zsiglec6		.9671968	.0369953	-0.87	0.383	.8973387 1.042493
_infectionburXzsiglec6_000		1.054244	.070519	0.79	0.430	.9247059 1.201928
AGE		1.034428	.0129629	2.70	0.007	1.009331 1.06015
SEX		.7607859	.0494823	-4.20	0.000	.6697295 .8642224
NonWhite		1.073614	.1825325	0.42	0.676	.76936 1.49819
householdsize		.9332882	.0392583	-1.64	0.101	.8594298 1.013494
SES		.8209241	.0402423	-4.03	0.000	.7457212 .9037108
LE8_TOTALSCORE		.9990857	.0003541	-2.58	0.010	.9983919 .9997801

-> Model for the mediator

Iteration 0: Log likelihood = -51570.715
 Iteration 1: Log likelihood = -51570.715

Linear regression (Maximum Likelihood) Number of obs = 36,726
 Wald chi2(7) = 1097.52
 Log likelihood = -51570.715 Prob > chi2 = 0.0000

	zsiglec6	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1023011	.0150204	6.81	0.000	.0728617 .1317406
AGE		.0121333	.0009796	12.39	0.000	.0102133 .0140534
SEX		.2173726	.0103944	20.91	0.000	.197 .2377453
NonWhite		-.0216016	.0248696	-0.87	0.385	-.0703451 .0271419
householdsize		-.0031362	.0047327	-0.66	0.508	-.0124122 .0061397
SES		-.0581513	.0077961	-7.46	0.000	-.0734314 -.0428712
LE8_TOTALSCORE		-.0009287	.0000554	-16.78	0.000	-.0010372 -.0008202
_cons		-.6087112	.0708438	-8.59	0.000	-.7475626 -.4698598
sigma2						
_cons		.9709566	.0071652	135.51	0.000	.9569131 .9850001

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.249386	.1601977	7.80	0.000	.9354043 1.563368
ereri_cde	1.246129	.1609964	7.74	0.000	.9305822 1.561677
ereri_intref	-.0012192	.0019267	-0.63	0.527	-.0049955 .0025571
ereri_intmed	.0078822	.0132736	0.59	0.553	-.0181335 .033898
ereri_pie	-.0034063	.0039315	-0.87	0.386	-.0111119 .0042994

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsiglec7
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9064.8284
 Iteration 1: Log likelihood = -8976.2176
 Iteration 2: Log likelihood = -8965.4991
 Iteration 3: Log likelihood = -8965.4315
 Iteration 4: Log likelihood = -8965.4315
 Refining estimates:
 Iteration 0: Log likelihood = -8965.4315

Cox regression with Breslow method for ties

No. of subjects =	36,441	Number of obs =	36,441
No. of failures =	968		
Time at risk =	442,700.115	LR chi2(9) =	198.79
Log likelihood =	-8965.4315	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.252712	.1633864	11.20	0.000	1.9542 2.596823
zsiglec7	.9524144	.0384654	-1.21	0.227	.8799303 1.030869
_infectionburXzsiglec7_000	1.100467	.0784036	1.34	0.179	.957045 1.265381
AGE	1.033822	.0130329	2.64	0.008	1.008591 1.059684
SEX	.752606	.0491938	-4.35	0.000	.6621086 .8554726
NonWhite	.9985742	.1771192	-0.01	0.994	.7053439 1.413708
householdsize	.9273194	.0398623	-1.76	0.079	.8523914 1.008834
SES	.8263813	.0409483	-3.85	0.000	.7498983 .910665
LE8_TOTALSCORE	.9990153	.0003638	-2.70	0.007	.9983025 .9997287

-> Model for the mediator

Iteration 0: Log likelihood =	-50099.922	Number of obs =	36,441
Iteration 1: Log likelihood =	-50099.922	Wald chi2(7) =	3360.25
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-50099.922		

	zsiglec7	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.0836608	.0146232	5.72	0.000	.0549999	.1123216
AGE	.0151447	.0009551	15.86	0.000	.0132728	.0170166
SEX	.0844487	.0101332	8.33	0.000	.0645879	.1043094
NonWhite	-.3355321	.0242635	-13.83	0.000	-.3830877	-.2879766
householdsize	-.0188775	.0046115	-4.09	0.000	-.0279158	-.0098391
SES	-.08397	.0076041	-11.04	0.000	-.0988739	-.0690662
LE8_TOTALSCORE	-.0024931	.000054	-46.15	0.000	-.002599	-.0023873
_cons	.246511	.0690264	3.57	0.000	.1112217	.3818003
sigma2						
_cons	.9155492	.0067827	134.98	0.000	.9022554	.928843

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.258892	.1621716	7.76	0.000	.9410414 1.576742
ereri_cde	1.250641	.1632231	7.66	0.000	.9307293 1.570552
ereri_intref	-.0006095	.0049328	-0.12	0.902	-.0102777 .0090587
ereri_intmed	.0129313	.0118586	1.09	0.276	-.0103112 .0361738
ereri_pie	-.0040706	.0034392	-1.18	0.237	-.0108112 .0026701

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsiglec9
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04665 2.218 -.07501 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9189.9316**
 Iteration 1: Log likelihood = **-9101.844**
 Iteration 2: Log likelihood = **-9089.9303**
 Iteration 3: Log likelihood = **-9089.8294**
 Iteration 4: Log likelihood = **-9089.8294**
 Refining estimates:
 Iteration 0: Log likelihood = **-9089.8294**

Cox regression with Breslow method for ties

No. of subjects =	36,674	Number of obs =	36,674
No. of failures =	981		
Time at risk =	445,504.928	LR chi2(9) =	200.20
Log likelihood =	-9089.8294	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.230929	.1604372	11.16	0.000	1.937633 2.56862
zsiglec9		.9599338	.0375131	-1.05	0.295	.8891547 1.036347
_infectionburXzsiglec9_000		1.170321	.08285	2.22	0.026	1.0187 1.344509
AGE		1.034592	.0129694	2.71	0.007	1.009482 1.060327
SEX		.7580125	.0498461	-4.21	0.000	.6663498 .8622843
NonWhite		1.071963	.1823713	0.41	0.683	.7680092 1.496213
householdsize		.933229	.0392575	-1.64	0.100	.8593722 1.013433
SES		.8222679	.0403492	-3.99	0.000	.7468688 .9052789
LE8_TOTALSCORE		.9991145	.0003539	-2.50	0.012	.9984212 .9998084

-> Model for the mediator

Iteration 0: Log likelihood = **-51406.995**
 Iteration 1: Log likelihood = **-51406.995**

Linear regression (Maximum Likelihood)	Number of obs =	36,674
	Wald chi2(7) =	1283.25
Log likelihood =	Prob > chi2 =	0.0000

	zsiglec9	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0626785	.0149967	4.18	0.000	.0332854 .0920716
AGE		.0063964	.0009778	6.54	0.000	.0044799 .008313
SEX		.3135504	.0103762	30.22	0.000	.2932135 .3338873
NonWhite		-.1227416	.024809	-4.95	0.000	-.1713665 -.0741168
householdsize		-.0098774	.0047226	-2.09	0.036	-.0191334 -.0006213
SES		-.0609212	.0077826	-7.83	0.000	-.0761748 -.0456677
LE8_TOTALSCORE		-.000673	.0000553	-12.18	0.000	-.0007813 -.0005647
_cons		-.5137457	.0707177	-7.26	0.000	-.6523499 -.3751416
sigma2						
_cons		.9661658	.0071349	135.41	0.000	.9521816 .9801499

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257106	.1606638	7.82	0.000	.9422105 1.572001
ereri_cde	1.229498	.1602449	7.67	0.000	.9154243 1.543573
ereri_intref	.0112016	.0140604	0.80	0.426	-.0163563 .0387596
ereri_intmed	.0189653	.0098714	1.92	0.055	-.0003822 .0383128
ereri_pie	-.0025597	.0025185	-1.02	0.309	-.0074959 .0023765

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsirpa
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04635 2.215 -.07555 500.4

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9120.7788

Iteration 1: Log likelihood = -9032.2008

Iteration 2: Log likelihood = -9024.04

Iteration 3: Log likelihood = -9024.0203

Iteration 4: Log likelihood = -9024.0203

Refining estimates:

Iteration 0: Log likelihood = -9024.0203

Cox regression with Breslow method for ties

No. of subjects = 36,546 Number of obs = 36,546

No. of failures = 974

Time at risk = 443,975.312

LR chi2(9) = 193.52

Log likelihood = -9024.0203

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.220972	.1593548	11.12	0.000	1.929609 2.556329
zsirpa	.9810088	.0369727	-0.51	0.611	.9111554 1.056218
_infectionburXzsirpa_000	1.045986	.0748186	0.63	0.530	.9091597 1.203405
AGE	1.037929	.0130885	2.95	0.003	1.01259 1.063901
SEX	.7461047	.0485345	-4.50	0.000	.6567933 .8475609
NonWhite	1.045017	.1800621	0.26	0.798	.7455161 1.46484
householdsize	.9414204	.0392849	-1.45	0.148	.867488 1.021654
SES	.8245222	.0406005	-3.92	0.000	.748666 .9080643
LE8_TOTALSCORE	.9990363	.0003544	-2.72	0.007	.998342 .999731

-> Model for the mediator

Iteration 0: Log likelihood = **-51704.418**
 Iteration 1: Log likelihood = **-51704.418**

Linear regression (Maximum Likelihood)
 Number of obs = 36,546
 Wald chi2(7) = 304.48
 Log likelihood = **-51704.418** Prob > chi2 = 0.0000

zsirpa	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0600848	.0151852	3.96	0.000	.0303224 .0898472
AGE	.0101501	.000993	10.22	0.000	.0082038 .0120964
SEX	.053525	.0105322	5.08	0.000	.0328822 .0741679
NonWhite	-.1552228	.0252587	-6.15	0.000	-.204729 -.1057166
householdsize	.0097145	.0048662	2.00	0.046	.0001769 .0192522
SES	-.0466378	.0079084	-5.90	0.000	-.062138 -.0311377
LE8_TOTALSCORE	-.000354	.0000561	-6.31	0.000	-.0004639 -.000244
_cons	-.5418903	.0718602	-7.54	0.000	-.6827336 -.4010469
sigma2					
_cons	.9917102	.0073363	135.18	0.000	.9773313 1.006089

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.223907	.1590042	7.70	0.000	.9122642 1.535549
ereri_cde	1.220554	.1593282	7.66	0.000	.908276 1.532831
ereri_intref	-.0000899	.0025825	-0.03	0.972	-.0051515 .0049718
ereri_intmed	.0045944	.0085031	0.54	0.589	-.0120714 .0212602
ereri_pie	-.0011514	.0022805	-0.50	0.614	-.0056211 .0033183

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsirpb1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.532 .0463 2.216 -.07467 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9061.6518
 Iteration 1: Log likelihood = -8971.4818
 Iteration 2: Log likelihood = -8962.0594
 Iteration 3: Log likelihood = -8962.0024
 Iteration 4: Log likelihood = -8962.0024
 Refining estimates:
 Iteration 0: Log likelihood = -8962.0024

Cox regression with Breslow method for ties

No. of subjects = 36,373	Number of obs = 36,373
No. of failures = 968	
Time at risk = 441,785.53	
Log likelihood = -8962.0024	LR chi2(9) = 199.30
	Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.264504	.168175	11.01	0.000	1.957753 2.619317
zsirpb1	1.119627	.0429705	2.94	0.003	1.038496 1.207096
_infectionburXzsirpb1_000	.923407	.0627722	-1.17	0.241	.8082197 1.055011
AGE	1.032936	.0130492	2.57	0.010	1.007674 1.058832
SEX	.7752144	.0508842	-3.88	0.000	.681632 .881645
NonWhite	1.121789	.191107	0.67	0.500	.8033433 1.566466
householdsize	.9401659	.0393161	-1.48	0.140	.8661812 1.02047
SES	.8301423	.0411171	-3.76	0.000	.7533423 .9147718
LE8_TOTALSCORE	.9991126	.0003563	-2.49	0.013	.9984146 .9998112

-> Model for the mediator

Iteration 0: Log likelihood = -50529.345
 Iteration 1: Log likelihood = -50529.345

Linear regression (Maximum Likelihood)

Number of obs = 36,373
Wald chi2(7) = 2227.98
Prob > chi2 = 0.0000

Log likelihood = -50529.345

	zsirpb1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1697862	.014858	11.43	0.000	.1406651 .1989073
AGE		.0202675	.0009693	20.91	0.000	.0183677 .0221673
SEX		-.248547	.0102904	-24.15	0.000	-.2687157 -.2283783
NonWhite		-.2431036	.0246822	-9.85	0.000	-.2914798 -.1947274
householdsize		.0037295	.0046805	0.80	0.426	-.0054442 .0129032
SES		-.1018448	.0077257	-13.18	0.000	-.116987 -.0867027
LE8_TOTALSCORE		-.0009356	.0000548	-17.06	0.000	-.0010431 -.0008281
_cons		-.3990788	.0700289	-5.70	0.000	-.5363329 -.2618247
sigma2						
_cons		.9422558	.0069871	134.86	0.000	.9285614 .9559501

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.269132	.1639066	7.74	0.000	.9478811 1.590383
ereri_cde	1.260273	.1671879	7.54	0.000	.9325909 1.587955
ereri_intref	-.0039382	.0033212	-1.19	0.236	-.0104477 .0025712
ereri_intmed	-.0065731	.022547	-0.29	0.771	-.0507643 .0376182
ereri_pie	.0193703	.0068594	2.82	0.005	.0059261 .0328145

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsirt2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9057.6167**
 Iteration 1: Log likelihood = **-8966.4643**
 Iteration 2: Log likelihood = **-8958.0259**
 Iteration 3: Log likelihood = **-8958.0061**
 Iteration 4: Log likelihood = **-8958.0061**
 Refining estimates:
 Iteration 0: Log likelihood = **-8958.0061**

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	199.22
Log likelihood =	-8958.0061	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.267483	.1625848	11.42	0.000	1.970201 2.609622
zsirt2		.9103486	.0353103	-2.42	0.015	.8437068 .9822542
_infectionburXzsirt2_000		1.101406	.0794567	1.34	0.181	.9561825 1.268686
AGE		1.032062	.0129928	2.51	0.012	1.006909 1.057845
SEX		.7530752	.0490448	-4.35	0.000	.6628313 .8556059
NonWhite		1.09398	.1861358	0.53	0.598	.7837566 1.526995
householdsize		.936859	.0393351	-1.55	0.120	.8628505 1.017215
SES		.8162212	.0402487	-4.12	0.000	.7410274 .8990452
LE8_TOTALSCORE		.9990037	.000356	-2.80	0.005	.9983062 .9997016

-> Model for the mediator

Iteration 0: Log likelihood = **-51259.623**
 Iteration 1: Log likelihood = **-51259.623**

Linear regression (Maximum Likelihood)	Number of obs =	36,264
	Wald chi2(7) =	394.66
Log likelihood =	-51259.623	Prob > chi2 = 0.0000

	<u>zsirt2</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0055616	.0152423	-0.36	0.715	-.0354359 .0243128
AGE		-.0045313	.0009953	-4.55	0.000	-.006482 -.0025806
SEX		.0130924	.0105582	1.24	0.215	-.0076012 .033786
NonWhite		.1353889	.025264	5.36	0.000	.0858723 .1849055
householdsize		.0017533	.0048017	0.37	0.715	-.0076579 .0111646
SES		-.0231591	.0079185	-2.92	0.003	-.0386791 -.0076391
LE8_TOTALSCORE		-.0009549	.0000562	-16.98	0.000	-.0010651 -.0008447
_cons		.7196733	.0719309	10.01	0.000	.5786914 .8606552
sigma2						
_cons		.9892069	.0073462	134.66	0.000	.9748086 1.003605

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257754	.1616334	7.78	0.000	.9409579 1.574549
ereri_cde	1.262056	.1616976	7.81	0.000	.9451347 1.578978
ereri_intref	-.0042693	.0036354	-1.17	0.240	-.0113946 .002856
ereri_intmed	-.0005559	.0017189	-0.32	0.746	-.0039249 .002813
ereri_pie	.0005225	.0014486	0.36	0.718	-.0023167 .0033617

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsirt5
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.531 .04688 2.215 -.07424 500.5**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8819.5642**

Iteration 1: Log likelihood = **-8734.1855**

Iteration 2: Log likelihood = **-8726.3628**

Iteration 3: Log likelihood = **-8726.3418**

Iteration 4: Log likelihood = **-8726.3418**

Refining estimates:

Iteration 0: Log likelihood = **-8726.3418**

Cox regression with Breslow method for ties

No. of subjects = **35,601** Number of obs = **35,601**

No. of failures = **943**

Time at risk = **432,443.367**

LR chi2(9) = **186.44**

Log likelihood = **-8726.3418** Prob > chi2 = **0.0000**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.212664	.161137	10.91	0.000	1.918346 2.552138
zsirt5	1.04907	.0382065	1.32	0.188	.9767971 1.126691
_infectionburXzsirt5_000	.9130647	.068255	-1.22	0.224	.7886259 1.057139
AGE	1.037481	.0132115	2.89	0.004	1.011908 1.063701
SEX	.7482007	.0494274	-4.39	0.000	.6573344 .8516279
NonWhite	1.093464	.1884363	0.52	0.604	.7800402 1.532822
householdsize	.9302544	.0401468	-1.68	0.094	.8548041 1.012364
SES	.8156998	.0407469	-4.08	0.000	.7396223 .8996026
LE8_TOTALSCORE	.9991902	.0003605	-2.25	0.025	.9984839 .9998969

-> Model for the mediator

Iteration 0: Log likelihood = -50504.645
 Iteration 1: Log likelihood = -50504.645

Linear regression (Maximum Likelihood)
 Number of obs = 35,601
 Wald chi2(7) = 20.98
 Log likelihood = -50504.645 Prob > chi2 = 0.0038

zsirt5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.013993	.0154612	0.91	0.365	-.0163104 .0442963
AGE	-.0025927	.0010123	-2.56	0.010	-.0045768 -.0006086
SEX	.0186027	.0107109	1.74	0.082	-.0023903 .0395957
NonWhite	-.0803729	.0255573	-3.14	0.002	-.1304642 -.0302816
householdsize	.0009931	.0050813	0.20	0.845	-.0089661 .0109522
SES	-.0033484	.0080462	-0.42	0.677	-.0191187 .0124218
LE8_TOTALSCORE	-.0000739	.0000571	-1.29	0.195	-.0001858 .000038
_cons	.1639257	.0733882	2.23	0.026	.0200874 .307764
sigma2					
_cons	.999383	.0074906	133.42	0.000	.9847018 1.014064

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.211234	.1609473	7.53	0.000	.8957835 1.526685
ereri_cde	1.211387	.1609471	7.53	0.000	.8959369 1.526838
ereri_intref	.0011793	.0067553	0.17	0.861	-.0120609 .0144195
ereri_intmed	-.0020028	.0030416	-0.66	0.510	-.0079643 .0039586
ereri_pie	.0006706	.0008996	0.75	0.456	-.0010927 .0024338

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsit1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8913.3312
 Iteration 1: Log likelihood = -8828.7414
 Iteration 2: Log likelihood = -8818.8664
 Iteration 3: Log likelihood = -8818.7945
 Iteration 4: Log likelihood = -8818.7945
 Refining estimates:
 Iteration 0: Log likelihood = -8818.7945

Cox regression with Breslow method for ties

No. of subjects =	35,761	Number of obs =	35,761
No. of failures =	953		
Time at risk =	434,427.923	LR chi2(9) =	189.07
Log likelihood =	-8818.7945	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.213181	.1611233	10.91	0.000	1.918881 2.552618
zsit1	.9450494	.0374626	-1.43	0.154	.874404 1.021402
_infectionburXzsit1_000	1.125822	.0793772	1.68	0.093	.9805161 1.29266
AGE	1.036688	.0131654	2.84	0.005	1.011203 1.062815
SEX	.7499095	.0492641	-4.38	0.000	.6593113 .8529571
NonWhite	1.060152	.1851764	0.33	0.738	.7528165 1.492957
householdsize	.9353854	.0398007	-1.57	0.116	.8605417 1.016738
SES	.8260281	.0411768	-3.83	0.000	.7491404 .9108072
LE8_TOTALSCORE	.9990396	.0003631	-2.64	0.008	.9983282 .9997516

-> Model for the mediator

Iteration 0: Log likelihood = -49854.239	Number of obs = 35,761
Iteration 1: Log likelihood = -49854.239	Wald chi2(7) = 1820.68
Log likelihood = -49854.239	Prob > chi2 = 0.0000

	zsit1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0519636	.0150739	3.45	0.001	.0224194 .0815079
AGE		-.0130164	.0009818	-13.26	0.000	-.0149407 -.0110922
SEX		.0226542	.0104265	2.17	0.030	.0022187 .0430898
NonWhite		-.0460246	.0249474	-1.84	0.065	-.0949207 .0028715
householdsize		.0012781	.0047425	0.27	0.788	-.0080169 .0105732
SES		-.1014347	.0078173	-12.98	0.000	-.1167564 -.0861131
LE8_TOTALSCORE		-.0019491	.0000556	-35.09	0.000	-.002058 -.0018402
_cons		1.708818	.0709157	24.10	0.000	1.569826 1.84781
sigma2						
_cons		.9515275	.0071159	133.72	0.000	.9375806 .9654745

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.219114	.1607296	7.58	0.000	.9040897 1.534138
ereri_cde	1.210846	.1607394	7.53	0.000	.8958025 1.525889
ereri_intref	.0011307	.0072896	0.16	0.877	-.0131566 .015418
ereri_intmed	.0100699	.0076479	1.32	0.188	-.0049197 .0250596
ereri_pie	-.0029326	.0022226	-1.32	0.187	-.0072887 .0014236

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zskap1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.531 .04636 2.216 -.07448 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8964.5425**
 Iteration 1: Log likelihood = **-8873.266**
 Iteration 2: Log likelihood = **-8863.9036**
 Iteration 3: Log likelihood = **-8863.8448**
 Iteration 4: Log likelihood = **-8863.8448**
 Refining estimates:
 Iteration 0: Log likelihood = **-8863.8448**

Cox regression with Breslow method for ties

No. of subjects =	36,107	Number of obs =	36,107
No. of failures =	958		
Time at risk =	438,744.714	LR chi2(9) =	201.40
Log likelihood =	-8863.8448	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.212616	.160262	10.96	0.000	1.919785 2.550113
zskap1		.9064646	.0358945	-2.48	0.013	.8387734 .9796186
_infectionburXzskap1_000		1.180134	.0826775	2.36	0.018	1.028722 1.353831
AGE		1.037641	.0131452	2.92	0.004	1.012194 1.063727
SEX		.7389195	.0484561	-4.61	0.000	.6497974 .8402651
NonWhite		1.020544	.1782233	0.12	0.907	.7247386 1.437082
householdszie		.9445844	.0393784	-1.37	0.171	.8704732 1.025005
SES		.8100524	.0401396	-4.25	0.000	.7350799 .8926715
LE8_TOTALSCORE		.998938	.0003617	-2.94	0.003	.9982294 .999647

-> Model for the mediator

Iteration 0: Log likelihood = **-50511.215**
 Iteration 1: Log likelihood = **-50511.215**

Linear regression (Maximum Likelihood)	Number of obs =	36,107
	Wald chi2(7) =	1473.05
Log likelihood =	Prob > chi2 =	0.0000

	zskap1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0122333	.0150619	-0.81	0.417	-.0417542 .0172875
AGE		-.0108676	.0009858	-11.02	0.000	-.0127997 -.0089354
SEX		.0702809	.0104289	6.74	0.000	.0498407 .0907212
NonWhite		-.056808	.0250184	-2.27	0.023	-.1058432 -.0077728
householdszie		-.003918	.0049452	-0.79	0.428	-.0136103 .0057744
SES		-.0378725	.0078411	-4.83	0.000	-.0532408 -.0225043
LE8_TOTALSCORE		-.0019298	.0000555	-34.77	0.000	-.0020386 -.001821
_cons		1.522688	.0714465	21.31	0.000	1.382656 1.662721
sigma2						
_cons		.9607757	.0071506	134.36	0.000	.9467608 .9747906

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.206004	.1592895	7.57	0.000	.8938026 1.518206
ereri_cde	1.207212	.1593795	7.57	0.000	.8948342 1.51959
ereri_intref	.0006124	.0094709	0.06	0.948	-.0179502 .019175
ereri_intmed	-.0030224	.00407	-0.74	0.458	-.0109994 .0049546
ereri_pie	.0012021	.0015583	0.77	0.440	-.0018522 .0042563

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zskap2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04635 2.216 -.07488 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9125.8833

Iteration 1: Log likelihood = -9036.0709

Iteration 2: Log likelihood = -9027.0383

Iteration 3: Log likelihood = -9027.0012

Iteration 4: Log likelihood = -9027.0012

Refining estimates:

Iteration 0: Log likelihood = -9027.0012

Cox regression with Breslow method for ties

No. of subjects = 36,595

Number of obs = 36,595

No. of failures = 974

Time at risk = 444,506.48

LR chi2(9) = 197.76

Log likelihood = -9027.0012

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.238496	.1605478	11.24	0.000	1.944944 2.576354
zskap2	.9168418	.0353807	-2.25	0.024	.8500545 .9888765
_infectionburXzskap2_000	1.003802	.0715885	0.05	0.958	.8728562 1.154393
AGE	1.035883	.0129909	2.81	0.005	1.010731 1.06166
SEX	.7580525	.0492308	-4.27	0.000	.6674505 .8609531
NonWhite	1.100217	.1872017	0.56	0.575	.7882179 1.535713
householdsize	.9364832	.0392912	-1.56	0.118	.8625551 1.016748
SES	.8263219	.0406825	-3.87	0.000	.7503121 .910032
LE8_TOTALSCORE	.9989677	.0003546	-2.91	0.004	.998273 .9996628

-> Model for the mediator

Iteration 0: Log likelihood = **-51755.174**
 Iteration 1: Log likelihood = **-51755.174**

Linear regression (Maximum Likelihood)
 Number of obs = 36,595
 Wald chi2(7) = 342.35
 Log likelihood = **-51755.174** Prob > chi2 = 0.0000

zskap2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0151433	.0151827	-1.00	0.319	-.044901 .0146143
AGE	-.0040654	.0009909	-4.10	0.000	-.0060075 -.0021233
SEX	-.0117195	.0105199	-1.11	0.265	-.0323382 .0088992
NonWhite	.0646372	.0252215	2.56	0.010	.015204 .1140704
householdsize	-.001029	.0047898	-0.21	0.830	-.0104168 .0083587
SES	-.0255931	.0078962	-3.24	0.001	-.0410693 -.0101169
LE8_TOTALSCORE	-.0009124	.000056	-16.29	0.000	-.0010222 -.0008026
_cons	.7187371	.0715714	10.04	0.000	.5784597 .8590144
sigma2					
_cons	.9907044	.007324	135.27	0.000	.9763496 1.005059

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.240615	.1599898	7.75	0.000	.9270404 1.554189
ereri_cde	1.234106	.1598331	7.72	0.000	.9208387 1.547373
ereri_intref	.0036935	.0112283	0.33	0.742	-.0183136 .0257007
ereri_intmed	.0014997	.0026049	0.58	0.565	-.0036059 .0066053
ereri_pie	.0013156	.0014438	0.91	0.362	-.0015142 .0041454

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zslamf1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8913.3312
 Iteration 1: Log likelihood = -8829.8502
 Iteration 2: Log likelihood = -8819.8694
 Iteration 3: Log likelihood = -8819.7929
 Iteration 4: Log likelihood = -8819.7929
 Refining estimates:
 Iteration 0: Log likelihood = -8819.7929

Cox regression with Breslow method for ties

No. of subjects =	35,761	Number of obs =	35,761
No. of failures =	953		
Time at risk =	434,427.923	LR chi2(9) =	187.08
Log likelihood =	-8819.7929	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.205188	.1619416	10.77	0.000	1.909573 2.546567
zslamf1	1.026625	.0405004	0.67	0.505	.9502373 1.109154
_infectionburXzslamf1_000	1.026317	.072825	0.37	0.714	.8930637 1.179454
AGE	1.036474	.0131602	2.82	0.005	1.010999 1.062591
SEX	.7553911	.0499891	-4.24	0.000	.6635021 .8600058
NonWhite	1.054977	.1842109	0.31	0.759	.749227 1.485499
householdsize	.9355169	.0398339	-1.57	0.117	.860613 1.01694
SES	.8291407	.0413006	-3.76	0.000	.7520189 .9141715
LE8_TOTALSCORE	.9990918	.000359	-2.53	0.011	.9983884 .9997956

-> Model for the mediator

Iteration 0: Log likelihood = -50360.62
 Iteration 1: Log likelihood = -50360.62

Linear regression (Maximum Likelihood)

Number of obs =	35,761
Wald chi2(7) =	771.28
Prob > chi2 =	0.0000

Log likelihood = -50360.62

	zslamf1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0780938	.0152888	5.11	0.000	.0481282 .1080593
AGE		.0081906	.0009958	8.23	0.000	.0062389 .0101423
SEX		-.2034242	.0105752	-19.24	0.000	-.2241512 -.1826973
NonWhite		.0014653	.0253032	0.06	0.954	-.0481281 .0510587
householdsize		.0031579	.0048101	0.66	0.511	-.0062697 .0125855
SES		-.0636106	.0079288	-8.02	0.000	-.0791508 -.0480704
LE8_TOTALSCORE		-.0005392	.0000563	-9.57	0.000	-.0006497 -.0004288
_cons		.0655527	.0719271	0.91	0.362	-.0754217 .2065272
sigma2						
_cons		.9788603	.0073203	133.72	0.000	.9645127 .9932079

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.215794	.1608667	7.56	0.000	.9005014 1.531087
ereri_cde	1.205123	.1619007	7.44	0.000	.8878039 1.522443
ereri_intref	.0016473	.0053235	0.31	0.757	-.0087866 .0120812
ereri_intmed	.0069694	.0107251	0.65	0.516	-.0140515 .0279903
ereri_pie	.0020542	.0031133	0.66	0.509	-.0040477 .0081561

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zslamf6
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8797.0652**
 Iteration 2: Log likelihood = **-8787.5513**
 Iteration 3: Log likelihood = **-8787.4725**
 Iteration 4: Log likelihood = **-8787.4725**
 Refining estimates:
 Iteration 0: Log likelihood = **-8787.4725**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	189.45
Log likelihood =	-8787.4725	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.233011	.16261	11.03	0.000	1.936001 2.575587
zslamf6	.9514607	.0384724	-1.23	0.218	.8789668 1.029934
_infectionburXzslamf6_000	1.121344	.0739084	1.74	0.082	.9854529 1.275975
AGE	1.037735	.0131991	2.91	0.004	1.012185 1.06393
SEX	.7498044	.0497163	-4.34	0.000	.6584282 .8538616
NonWhite	1.111725	.1891614	0.62	0.534	.7964608 1.551781
householdsize	.9400374	.0396025	-1.47	0.142	.8655361 1.020951
SES	.8279737	.0412686	-3.79	0.000	.7509141 .9129413
LE8_TOTALSCORE	.999218	.0003598	-2.17	0.030	.998513 .9999235

-> Model for the mediator

Iteration 0: Log likelihood = **-49991.495**
 Iteration 1: Log likelihood = **-49991.495**

Linear regression (Maximum Likelihood)	Number of obs =	35,573	
	Wald chi2(7) =	981.10	
Log likelihood =	-49991.495	Prob > chi2 =	0.0000

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0999689	.0152811	6.54	0.000	.0700185 .1299193
AGE	.005078	.0009964	5.10	0.000	.003125 .007031
SEX	.255348	.0105737	24.15	0.000	.234624 .2760721
NonWhite	.0738756	.0252702	2.92	0.003	.024347 .1234042
householdsize	-.000635	.0048125	-0.13	0.895	-.0100672 .0087973
SES	-.0397242	.0079306	-5.01	0.000	-.0552678 -.0241805
LE8_TOTALSCORE	-.0008873	.0000563	-15.76	0.000	-.0009977 -.000777
_cons	-.2712077	.0720147	-3.77	0.000	-.412354 -.1300614
sigma2					
_cons	.9731331	.0072967	133.37	0.000	.9588318 .9874344

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.245831	.1622889	7.68	0.000	.9277502 1.563911
ereri_cde	1.230678	.1622642	7.58	0.000	.9126459 1.54871
ereri_intref	.0006578	.0063752	0.10	0.918	-.0118375 .013153
ereri_intmed	.0194569	.0127071	1.53	0.126	-.0054485 .0443622
ereri_pie	-.0049618	.0040927	-1.21	0.225	-.0129834 .0030598

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zslamf7
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**

Iteration 1: Log likelihood = **-8947.7368**

Iteration 2: Log likelihood = **-8939.2378**

Iteration 3: Log likelihood = **-8939.2187**

Iteration 4: Log likelihood = **-8939.2187**

Refining estimates:

Iteration 0: Log likelihood = **-8939.2187**

Cox regression with Breslow method for ties

No. of subjects = 36,352 Number of obs = 36,352

No. of failures = 965

Time at risk = 441,650.762

Log likelihood = -8939.2187

LR chi2(9) = 194.44

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.261964	.1620726	11.39	0.000	1.965604 2.603007
zslamf7		.9650282	.0378241	-0.91	0.364	.8936702 1.042084
_infectionburXzslamf7_000		.9889961	.0685686	-0.16	0.873	.8633353 1.132947
AGE		1.032908	.0130242	2.57	0.010	1.007694 1.058753
SEX		.7531031	.0493174	-4.33	0.000	.6623888 .8562408
NonWhite		1.074982	.1858789	0.42	0.676	.765979 1.508639
householdsize		.9344286	.0396779	-1.60	0.110	.8598095 1.015524
SES		.8163666	.0403949	-4.10	0.000	.7409121 .8995055
LE8_TOTALSCORE		.9990085	.0003557	-2.79	0.005	.9983116 .9997059

-> Model for the mediator

Iteration 0: Log likelihood = -51117.514
 Iteration 1: Log likelihood = -51117.514

Linear regression (Maximum Likelihood)
 Number of obs = 36,352
 Wald chi2(7) = 938.39
 Log likelihood = -51117.514 Prob > chi2 = 0.0000

	zslamf7	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0560229	.015125	3.70	0.000	.0263784 .0856673
AGE		.0076174	.0009873	7.72	0.000	.0056823 .0095526
SEX		-.1459982	.0104684	-13.95	0.000	-.1665158 -.1254806
NonWhite		.4595333	.0250857	18.32	0.000	.4103662 .5087003
householdsize		.0166079	.0048451	3.43	0.001	.0071117 .026104
SES		-.0913072	.0078518	-11.63	0.000	-.1066964 -.075918
LE8_TOTALSCORE		-.0002986	.0000557	-5.36	0.000	-.0004078 -.0001893
_cons		-.1582105	.0714239	-2.22	0.027	-.2981988 -.0182223
sigma2						
_cons		.9748089	.0072305	134.82	0.000	.9606373 .9889804

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257254	.1618177	7.77	0.000	.9400968 1.574411
ereri_cde	1.260836	.1619669	7.78	0.000	.943387 1.578286
ereri_intref	.002326	.0071501	0.33	0.745	-.011688 .01634
ereri_intmed	-.0039163	.0077097	-0.51	0.611	-.019027 .0111945
ereri_pie	-.0019923	.0022564	-0.88	0.377	-.0064147 .0024301

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zslamf8
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04669 2.217 -.07551 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8882.1967
Iteration 1: Log likelihood = -8796.8379
Iteration 2: Log likelihood = -8788.76
Iteration 3: Log likelihood = -8788.742
Iteration 4: Log likelihood = -8788.742
Refining estimates:
Iteration 0: Log likelihood = -8788.742

```

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	186.91
Log likelihood =	-8788.742	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.264757	.1654932	11.19	0.000	1.962554 2.613495
zslamf8	.990284	.0386441	-0.25	0.802	.917367 1.068997
_infectionburXzslamf8_000	.9732754	.0668209	-0.39	0.693	.8507382 1.113462
AGE	1.038001	.0132251	2.93	0.003	1.012401 1.064248
SEX	.7456744	.0490455	-4.46	0.000	.6554851 .8482729
NonWhite	1.107463	.1885247	0.60	0.549	.7932831 1.546074
householdsize	.939574	.0395773	-1.48	0.139	.8651197 1.020436
SES	.8276446	.0413659	-3.78	0.000	.7504134 .9128244
LE8_TOTALSCORE	.999206	.0003601	-2.20	0.028	.9985004 .999912

-> Model for the mediator

Iteration 0: Log likelihood =	-49742.776	Number of obs =	35,573
Iteration 1: Log likelihood =	-49742.776	Wald chi2(7) =	1495.84
Log likelihood =	-49742.776	Prob > chi2 =	0.0000

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1463343	.0151746	9.64	0.000	.1165926 .176076
AGE	.0215619	.0009895	21.79	0.000	.0196225 .0235012
SEX	-.0199299	.0105	-1.90	0.058	-.0405096 .0006498
NonWhite	-.1492431	.0250941	-5.95	0.000	-.1984267 -.1000596
householdsize	.0063566	.0047789	1.33	0.183	-.00301 .0157231
SES	-.0956766	.0078753	-12.15	0.000	-.1111119 -.0802412
LE8_TOTALSCORE	-.0010582	.0000559	-18.93	0.000	-.0011678 -.0009487
_cons	-.7721282	.071513	-10.80	0.000	-.912291 -.6319653
sigma2					
_cons	.9596199	.0071954	133.37	0.000	.9455172 .9737226

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.255181	.1637185	7.67	0.000	.9342989 1.576064
ereri_cde	1.264449	.1655465	7.64	0.000	.9399836 1.588914
ereri_intref	.0029267	.0073031	0.40	0.689	-.0113872 .0172405
ereri_intmed	-.0107666	.0197813	-0.54	0.586	-.0495372 .0280041
ereri_pie	-.0014277	.0057042	-0.25	0.802	-.0126078 .0097523

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zslc16a1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8819.5642**
 Iteration 1: Log likelihood = **-8746.4135**
 Iteration 2: Log likelihood = **-8725.8016**
 Iteration 3: Log likelihood = **-8724.0326**
 Iteration 4: Log likelihood = **-8723.9884**
 Iteration 5: Log likelihood = **-8723.9884**
 Refining estimates:
 Iteration 0: Log likelihood = **-8723.9884**

Cox regression with Breslow method for ties

No. of subjects =	35,601	Number of obs =	35,601
No. of failures =	943		
Time at risk =	432,443.367	LR chi2(9) =	191.15
Log likelihood =	-8723.9884	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.187434	.1603872	10.68	0.000	1.894624 2.525496
zslc16a1		1.005851	.0394473	0.15	0.882	.9314329 1.086216
_infectionburXzslc16a1_000		1.155031	.0769557	2.16	0.031	1.013634 1.316153
AGE		1.03803	.0132246	2.93	0.003	1.012432 1.064276
SEX		.7539529	.0499159	-4.27	0.000	.6622011 .8584173
NonWhite		1.097798	.1891656	0.54	0.588	.7831571 1.538849
householdsize		.933964	.0401035	-1.59	0.112	.8585793 1.015968
SES		.8149773	.0407164	-4.10	0.000	.7389572 .8988179
LE8_TOTALSCORE		.99923	.0003611	-2.13	0.033	.9985225 .999938

-> Model for the mediator

Iteration 0: Log likelihood = **-50279.343**
 Iteration 1: Log likelihood = **-50279.343**

Linear regression (Maximum Likelihood)	Number of obs =	35,601
	Wald chi2(7) =	474.71
Log likelihood =	-50279.343	Prob > chi2 = 0.0000

	<u>zslc16a1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.059166	.0153636	3.85	0.000	.0290539 .0892782
AGE		-.0033947	.0010059	-3.37	0.001	-.0053663 -.0014232
SEX		-.1559502	.0106433	-14.65	0.000	-.1768107 -.1350897
NonWhite		-.1553675	.025396	-6.12	0.000	-.2051428 -.1055922
householdsize		-.0142456	.0050492	-2.82	0.005	-.0241419 -.0043493
SES		-.0030702	.0079954	-0.38	0.701	-.018741 .0126005
LE8_TOTALSCORE		-.0007103	.0000567	-12.52	0.000	-.0008215 -.0005991
_cons		.8288724	.0729252	11.37	0.000	.6859416 .9718033
sigma2						
_cons		.9868135	.0073964	133.42	0.000	.9723169 1.00131

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.228874	.1623822	7.57	0.000	.9106108 1.547137
ereri_cde	1.187471	.160393	7.40	0.000	.8731061 1.501835
ereri_intref	.0217151	.0166604	1.30	0.192	-.0109386 .0543688
ereri_intmed	.0193433	.0091118	2.12	0.034	.0014845 .037202
ereri_pie	.0003453	.0023229	0.15	0.882	-.0042075 .0048981

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zslc27a4
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.531 .04688 2.215 -.07424 500.5**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8819.5642**

Iteration 1: Log likelihood = **-8734.6657**

Iteration 2: Log likelihood = **-8726.8671**

Iteration 3: Log likelihood = **-8726.8435**

Iteration 4: Log likelihood = **-8726.8435**

Refining estimates:

Iteration 0: Log likelihood = **-8726.8435**

Cox regression with Breslow method for ties

No. of subjects = **35,601** Number of obs = **35,601**

No. of failures = **943**

Time at risk = **432,443.367**

LR chi2(9) = **185.44**

Log likelihood = **-8726.8435** Prob > chi2 = **0.0000**

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.213391	.1612253	10.91	0.000	1.918915 2.553056
zslc27a4		.9591248	.0392721	-1.02	0.308	.8851605 1.03927
_infectionburXzslc27a4_000		1.056091	.0801572	0.72	0.472	.9101128 1.225483
AGE		1.037802	.013217	2.91	0.004	1.012218 1.064033
SEX		.7489841	.0494989	-4.37	0.000	.6579886 .8525636
NonWhite		1.093838	.1884831	0.52	0.603	.7803322 1.533298
householdsize		.9299914	.0401425	-1.68	0.093	.8545499 1.012093
SES		.8156761	.0407197	-4.08	0.000	.7396471 .8995202
LE8_TOTALSCORE		.9991793	.0003611	-2.27	0.023	.9984719 .9998873

-> Model for the mediator

Iteration 0: Log likelihood = -50397.37
 Iteration 1: Log likelihood = -50397.37

Linear regression (Maximum Likelihood)
 Number of obs = 35,601
 Wald chi2(7) = 236.30
 Log likelihood = -50397.37 Prob > chi2 = 0.0000

	zslc27a4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0338996	.0154147	2.20	0.028	.0036875 .0641118
AGE		.0004404	.0010092	0.44	0.663	-.0015377 .0024185
SEX		-.0409231	.0106787	-3.83	0.000	-.0618529 -.0199933
NonWhite		.0483823	.0254804	1.90	0.058	-.0015583 .0983229
householdsize		-.0108267	.005066	-2.14	0.033	-.0207559 -.0008975
SES		-.0226927	.008022	-2.83	0.005	-.0384155 -.0069699
LE8_TOTALSCORE		-.0007028	.0000569	-12.35	0.000	-.0008144 -.0005912
_cons		.4031968	.0731674	5.51	0.000	.2597913 .5466023
sigma2						
_cons		.9933783	.0074456	133.42	0.000	.9787853 1.007971

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.212052	.1610448	7.53	0.000	.89641 1.527694
ereri_cde	1.212103	.1610334	7.53	0.000	.8964834 1.527723
ereri_intref	-.0010136	.0022439	-0.45	0.651	-.0054116 .0033844
ereri_intmed	.0023764	.0051076	0.47	0.642	-.0076343 .0123872
ereri_pie	-.0014138	.0015277	-0.93	0.355	-.004408 .0015805

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zslc39a14
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04688 2.215 -.07424 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8819.5642
Iteration 1: Log likelihood = -8733.8059
Iteration 2: Log likelihood = -8726.285
Iteration 3: Log likelihood = -8726.2685
Iteration 4: Log likelihood = -8726.2685
Refining estimates:
Iteration 0: Log likelihood = -8726.2685

```

Cox regression with Breslow method for ties

No. of subjects =	35,601	Number of obs =	35,601
No. of failures =	943		
Time at risk =	432,443.367	LR chi2(9) =	186.59
Log likelihood =	-8726.2685	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.215356	.161991	10.88	0.000	1.919561 2.55673
zslc39a14	1.058143	.0399153	1.50	0.134	.9827323 1.13934
_infectionburXzslc39a14_000	.9614925	.0630915	-0.60	0.550	.845457 1.093453
AGE	1.036924	.0132087	2.85	0.004	1.011356 1.063138
SEX	.7422101	.0491994	-4.50	0.000	.6517824 .8451836
NonWhite	1.100742	.189781	0.56	0.578	.7851058 1.543273
householdsize	.9307475	.0401672	-1.66	0.096	.8552588 1.012899
SES	.8179915	.040851	-4.02	0.000	.7417188 .9021075
LE8_TOTALSCORE	.9991562	.0003611	-2.34	0.020	.9984486 .9998643

-> Model for the mediator

Iteration 0: Log likelihood =	-50074.885	Number of obs =	35,601
Iteration 1: Log likelihood =	-50074.885	Wald chi2(7) =	891.47
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-50074.885		

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0680618	.0152757	4.46	0.000	.0381221 .0980016
AGE	.011231	.0010001	11.23	0.000	.0092708 .0131913
SEX	.1891424	.0105824	17.87	0.000	.1684013 .2098834
NonWhite	-.2261871	.0252506	-8.96	0.000	-.2756774 -.1766969
householdsize	-.000925	.0050203	-0.18	0.854	-.0107646 .0089147
SES	-.0565626	.0079496	-7.12	0.000	-.0721437 -.0409816
LE8_TOTALSCORE	.0008756	.0000564	15.52	0.000	.000765 .0009861
_cons	-1.404602	.0725076	-19.37	0.000	-1.546714 -1.26249
sigma2					
_cons	.9755437	.0073119	133.42	0.000	.9612126 .9898748

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.215649	.1613729	7.53	0.000	.8993635 1.531934
ereri_cde	1.214112	.1617569	7.51	0.000	.8970745 1.53115
ereri_intref	-.0010629	.0019315	-0.55	0.582	-.0048485 .0027227
ereri_intmed	-.0012546	.0085059	-0.15	0.883	-.017926 .0154167
ereri_pie	.0038539	.0027191	1.42	0.156	-.0014755 .0091833

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zslc39a5
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8945.2735**
 Iteration 2: Log likelihood = **-8932.5676**
 Iteration 3: Log likelihood = **-8932.4288**
 Iteration 4: Log likelihood = **-8932.4287**
 Refining estimates:
 Iteration 0: Log likelihood = **-8932.4287**

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	208.02
Log likelihood =	-8932.4287	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.283489	.1634684	11.53	0.000	1.984558 2.627447
zslc39a5		.904709	.0376269	-2.41	0.016	.8338874 .9815454
_infectionburXzslc39a5_000		.9128593	.06639	-1.25	0.210	.7915859 1.052712
AGE		1.034318	.013038	2.68	0.007	1.009077 1.06019
SEX		.7343529	.0484272	-4.68	0.000	.6453154 .8356754
NonWhite		.974806	.1695837	-0.15	0.883	.6931664 1.370878
householdsize		.9345416	.0397224	-1.59	0.111	.8598419 1.015731
SES		.8188231	.0404103	-4.05	0.000	.7433303 .9019831
LE8_TOTALSCORE		.9987477	.0003624	-3.45	0.001	.9980378 .9994582

-> Model for the mediator

Iteration 0: Log likelihood = **-49656.494**
 Iteration 1: Log likelihood = **-49656.494**

Linear regression (Maximum Likelihood)	Number of obs =	36,352
	Wald chi2(7) =	4059.62
Log likelihood =	Prob > chi2 =	0.0000

	zslc39a5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0447873	.0145292	3.08	0.002	.0163107 .0732639
AGE		.0182692	.0009484	19.26	0.000	.0164103 .0201281
SEX		-.3266382	.010056	-32.48	0.000	-.3463476 -.3069289
NonWhite		-.5717701	.0240975	-23.73	0.000	-.6190003 -.5245399
householdsize		.0064793	.0046542	1.39	0.164	-.0026428 .0156014
SES		-.0034578	.0075425	-0.46	0.647	-.0182407 .0113252
LE8_TOTALSCORE		-.0021009	.0000535	-39.24	0.000	-.0022059 -.001996
_cons		.4581308	.0686102	6.68	0.000	.3236573 .5926044
sigma2						
_cons		.8995185	.0066721	134.82	0.000	.8864415 .9125955

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.292524	.1662504	7.77	0.000	.9666794 1.618369
ereri_cde	1.276919	.1628936	7.84	0.000	.957653 1.596184
ereri_intref	.0353335	.0257522	1.37	0.170	-.0151399 .0858069
ereri_intmed	-.0152529	.0084851	-1.80	0.072	-.0318834 .0013776
ereri_pie	-.004475	.002353	-1.90	0.057	-.0090869 .0001368

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zslit2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8819.5642

Iteration 1: Log likelihood = -8734.7624

Iteration 2: Log likelihood = -8725.5079

Iteration 3: Log likelihood = -8725.4652

Iteration 4: Log likelihood = -8725.4652

Refining estimates:

Iteration 0: Log likelihood = -8725.4652

Cox regression with Breslow method for ties

No. of subjects = 35,601 Number of obs = 35,601

No. of failures = 943

Time at risk = 432,443.367

LR chi2(9) = 188.20

Log likelihood = -8725.4652

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.209285	.1610332	10.87	0.000	1.915174 2.548562
zslit2	.9981343	.0391666	-0.05	0.962	.9242469 1.077929
_infectionburXzslit2_000	.8894011	.0655838	-1.59	0.112	.7697162 1.027696
AGE	1.037661	.0132146	2.90	0.004	1.012081 1.063887
SEX	.7509154	.0496041	-4.34	0.000	.6597239 .854712
NonWhite	1.092692	.1882619	0.51	0.607	.7795478 1.531627
householdsize	.929707	.0401343	-1.69	0.091	.8542811 1.011792
SES	.8145833	.0406317	-4.11	0.000	.7387156 .8982427
LE8_TOTALSCORE	.9991566	.0003623	-2.33	0.020	.9984467 .999867

-> Model for the mediator

Iteration 0: Log likelihood = -50327.521
 Iteration 1: Log likelihood = -50327.521

Linear regression (Maximum Likelihood)
 Number of obs = 35,601
 Wald chi2(7) = 377.20
 Log likelihood = -50327.521 Prob > chi2 = 0.0000

	zslit2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.027	.0153844	1.76	0.079	-.003153 .057153
AGE		.0008995	.0010073	0.89	0.372	-.0010747 .0028737
SEX		.044773	.0106577	4.20	0.000	.0238842 .0656618
NonWhite		-.0525189	.0254304	-2.07	0.039	-.1023616 -.0026762
householdsize		-.0097909	.0050561	-1.94	0.053	-.0197007 .0001188
SES		-.0328952	.0080063	-4.11	0.000	-.0485872 -.0172033
LE8_TOTALSCORE		-.0009475	.0000568	-16.68	0.000	-.0010589 -.0008362
_cons		.3695319	.073024	5.06	0.000	.2264075 .5126564
sigma2						
_cons		.989488	.0074164	133.42	0.000	.9749521 1.004024

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.218667	.1614555	7.55	0.000	.9022198 1.535114
ereri_cde	1.209274	.1610347	7.51	0.000	.8936521 1.524897
ereri_intref	.0165369	.0169828	0.97	0.330	-.0167488 .0498226
ereri_intmed	-.0070941	.0056483	-1.26	0.209	-.0181646 .0039764
ereri_pie	-.0000504	.0010598	-0.05	0.962	-.0021276 .0020267

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zslitrk2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04659 2.218 -.07483 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9201.1117
Iteration 1: Log likelihood = -9112.4011
Iteration 2: Log likelihood = -9103.6351
Iteration 3: Log likelihood = -9103.6137
Iteration 4: Log likelihood = -9103.6137
Refining estimates:
Iteration 0: Log likelihood = -9103.6137

```

Cox regression with Breslow method for ties

No. of subjects =	36,726	Number of obs =	36,726
No. of failures =	982		
Time at risk =	446,105.322	LR chi2(9) =	195.00
Log likelihood =	-9103.6137	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.258529	.1605592	11.46	0.000	1.964778 2.596197
zslitrk2	1.017509	.0396975	0.44	0.656	.9426038 1.098367
_infectionburXzslitrk2_000	.9762919	.0679794	-0.34	0.730	.8517465 1.119049
AGE	1.034055	.0129511	2.67	0.008	1.00898 1.059753
SEX	.754456	.0498106	-4.27	0.000	.6628815 .858681
NonWhite	1.078551	.1835426	0.44	0.657	.7726585 1.505547
householdsize	.9327882	.0392947	-1.65	0.099	.8588658 1.013073
SES	.8222871	.0403232	-3.99	0.000	.7469343 .9052418
LE8_TOTALSCORE	.9991081	.000354	-2.52	0.012	.9984147 .9998021

-> Model for the mediator

Iteration 0: Log likelihood =	-51127.732	Number of obs =	36,726
Iteration 1: Log likelihood =	-51127.732	Wald chi2(7) =	2021.06
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-51127.732		

	zslitrk2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0374888	.0148403	2.53	0.012	.0084023 .0665753
AGE		.0031314	.0009679	3.24	0.001	.0012343 .0050284
SEX		.4222394	.0102698	41.11	0.000	.402111 .4423678
NonWhite		-.3081068	.0245714	-12.54	0.000	-.356266 -.2599477
householdsize		.0102262	.004676	2.19	0.029	.0010615 .0193909
SES		-.0370646	.0077026	-4.81	0.000	-.0521615 -.0219677
LE8_TOTALSCORE		-.0007449	.0000547	-13.62	0.000	-.0008521 -.0006377
_cons		-.4783212	.0699945	-6.83	0.000	-.6155078 -.3411345
sigma2						
_cons		.9478139	.0069944	135.51	0.000	.9341051 .9615227

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257973	.1604471	7.84	0.000	.9435027 1.572444
ereri_cde	1.258463	.1605458	7.84	0.000	.9437985 1.573127
ereri_intref	.0000724	.0016003	0.05	0.964	-.0030642 .003209
ereri_intmed	-.0012127	.0051601	-0.24	0.814	-.0113264 .008901
ereri_pie	.0006509	.0014861	0.44	0.661	-.0022617 .0035636

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zslitrk6
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8905.4114**
 Iteration 1: Log likelihood = **-8820.9206**
 Iteration 2: Log likelihood = **-8813.6172**
 Iteration 3: Log likelihood = **-8813.6018**
 Iteration 4: Log likelihood = **-8813.6018**
 Refining estimates:
 Iteration 0: Log likelihood = **-8813.6018**

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	183.62
Log likelihood =	-8813.6018	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.203228	.1601187	10.87	0.000	1.910727 2.540506
zslitrk6		1.049452	.0406191	1.25	0.212	.972785 1.132162
_infectionburXzslitrk6_000		.9461902	.0657937	-0.80	0.426	.8256384 1.084344
AGE		1.036923	.01318	2.85	0.004	1.01141 1.06308
SEX		.7502219	.0493235	-4.37	0.000	.659519 .8533992
NonWhite		1.117759	.1901527	0.65	0.513	.8008331 1.560106
householdsize		.9391743	.0396727	-1.49	0.137	.8645491 1.020241
SES		.8350962	.041555	-3.62	0.000	.7574955 .9206465
LE8_TOTALSCORE		.9989634	.0003586	-2.89	0.004	.9982607 .9996666

-> Model for the mediator

Iteration 0: Log likelihood = **-50435.224**
 Iteration 1: Log likelihood = **-50435.224**

Linear regression (Maximum Likelihood)	Number of obs =	35,755	
	Wald chi2(7) =	601.86	
Log likelihood =	-50435.224	Prob > chi2 =	0.0000

	zslitrk6	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0446834	.0153109	2.92	0.004	.0146745 .0746922
AGE		.0117245	.0009993	11.73	0.000	.0097658 .0136832
SEX		.1155168	.0106024	10.90	0.000	.0947364 .1362971
NonWhite		-.144639	.0253877	-5.70	0.000	-.1943979 -.0948801
householdsize		.0010491	.0048349	0.22	0.828	-.0084271 .0105253
SES		-.0383079	.0079614	-4.81	0.000	-.0539119 -.0227038
LE8_TOTALSCORE		.0008938	.0000565	15.82	0.000	.0007831 .0010045
_cons		-1.334422	.0722528	-18.47	0.000	-1.476035 -1.192809
sigma2						
_cons		.9834184	.007355	133.71	0.000	.9690028 .997834

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.200822	.1596992	7.52	0.000	.8878171 1.513827
ereri_cde	1.20221	.1599231	7.52	0.000	.888767 1.515654
ereri_intref	-.0006959	.0023424	-0.30	0.766	-.005287 .0038952
ereri_intmed	-.0028519	.0060271	-0.47	0.636	-.0146648 .0089611
ereri_pie	.0021591	.0018848	1.15	0.252	-.0015351 .0058533

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsmad1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8882.1967

Iteration 1: Log likelihood = -8790.9411

Iteration 2: Log likelihood = -8782.7458

Iteration 3: Log likelihood = -8782.724

Iteration 4: Log likelihood = -8782.724

Refining estimates:

Iteration 0: Log likelihood = -8782.724

Cox regression with Breslow method for ties

No. of subjects = 35,573 Number of obs = 35,573

No. of failures = 951

Time at risk = 432,088.637

LR chi2(9) = 198.95

Log likelihood = -8782.724

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.260125	.1640489	11.23	0.000	1.960419 2.60565
zsmad1	.8733199	.0351895	-3.36	0.001	.8070029 .9450866
_infectionburXzsmad1_000	1.074318	.0781438	0.99	0.324	.9315757 1.238933
AGE	1.037366	.0131845	2.89	0.004	1.011844 1.063532
SEX	.740405	.0487366	-4.57	0.000	.6507882 .8423625
NonWhite	1.111219	.1890426	0.62	0.535	.7961439 1.550985
householdsize	.9395649	.0396046	-1.48	0.139	.8650612 1.020485
SES	.8266015	.0412164	-3.82	0.000	.7496407 .9114634
LE8_TOTALSCORE	.9990666	.0003615	-2.58	0.010	.9983583 .9997754

-> Model for the mediator

Iteration 0: Log likelihood = -50008.803
 Iteration 1: Log likelihood = -50008.803

Linear regression (Maximum Likelihood)
 Number of obs = 35,573
 Wald chi2(7) = 945.54
 Log likelihood = -50008.803 Prob > chi2 = 0.0000

zsmad1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0223321	.0152885	-1.46	0.144	-.0522971 .0076329
AGE	-.0055651	.0009969	-5.58	0.000	-.0075191 -.0036112
SEX	-.1076084	.0105788	-10.17	0.000	-.1283425 -.0868742
NonWhite	.0108371	.0252825	0.43	0.668	-.0387156 .0603898
householdsize	.001328	.0048148	0.28	0.783	-.0081088 .0107648
SES	-.0194793	.0079344	-2.46	0.014	-.0350305 -.0039282
LE8_TOTALSCORE	-.0015006	.0000563	-26.64	0.000	-.001611 -.0013902
_cons	1.249085	.0720498	17.34	0.000	1.10787 1.3903
sigma2					
_cons	.9740805	.0073038	133.37	0.000	.9597653 .9883957

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.248157	.1623965	7.69	0.000	.9298654 1.566448
ereri_cde	1.249439	.1623564	7.70	0.000	.9312261 1.567652
ereri_intref	-.0044813	.0095217	-0.47	0.638	-.0231434 .0141808
ereri_intmed	.0001697	.0031879	0.05	0.958	-.0060785 .0064179
ereri_pie	.0030295	.0022648	1.34	0.181	-.0014093 .0074684

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsmad5
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9057.6167
 Iteration 1: Log likelihood = -8968.2707
 Iteration 2: Log likelihood = -8959.1036
 Iteration 3: Log likelihood = -8959.0664
 Iteration 4: Log likelihood = -8959.0664
 Refining estimates:
 Iteration 0: Log likelihood = -8959.0664

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	197.10
Log likelihood =	-8959.0664	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.258203	.1619422	11.36	0.000	1.962099 2.598993
zsmad5	.9504727	.0376289	-1.28	0.199	.8795101 1.027161
_infectionburXzsmad5_000	.9601542	.0690258	-0.57	0.572	.8339649 1.105437
AGE	1.032673	.0130135	2.55	0.011	1.007479 1.058496
SEX	.7463527	.0486866	-4.48	0.000	.656777 .8481453
NonWhite	1.082525	.1841482	0.47	0.641	.7756043 1.5109
householdsize	.9370081	.0393381	-1.55	0.121	.8629937 1.01737
SES	.8158141	.0402179	-4.13	0.000	.7406768 .8985737
LE8_TOTALSCORE	.9989184	.0003626	-2.98	0.003	.998208 .9996293

-> Model for the mediator

Iteration 0: Log likelihood = -50018.98	Number of obs = 36,264
Iteration 1: Log likelihood = -50018.98	Wald chi2(7) = 2990.75
Log likelihood = -50018.98	Prob > chi2 = 0.0000

	zsmad5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.030085	.0147297	-2.04	0.041	-.0589546 -.0012154
AGE		.0170328	.0009618	17.71	0.000	.0151476 .0189179
SEX		-.1495447	.0102031	-14.66	0.000	-.1695423 -.129547
NonWhite		-.0059303	.0244143	-0.24	0.808	-.0537815 .041921
householdsize		-.0081642	.0046402	-1.76	0.079	-.0172589 .0009305
SES		-.0196731	.0076522	-2.57	0.010	-.0346711 -.0046751
LE8_TOTALSCORE		-.0024498	.0000543	-45.09	0.000	-.0025563 -.0023433
_cons		.4518149	.0695116	6.50	0.000	.3155746 .5880552
sigma2						
_cons		.9237862	.0068604	134.66	0.000	.9103401 .9372323

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.270097	.164379	7.73	0.000	.9479204 1.592274
ereri_cde	1.256971	.1619214	7.76	0.000	.9396112 1.574332
ereri_intref	.0068884	.0112521	0.61	0.540	-.0151653 .0289421
ereri_intmed	.0047082	.0049544	0.95	0.342	-.0050021 .0144186
ereri_pie	.0015294	.0014087	1.09	0.278	-.0012317 .0042904

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsmarca2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8819.5642**
 Iteration 1: Log likelihood = **-8734.9574**
 Iteration 2: Log likelihood = **-8727.3634**
 Iteration 3: Log likelihood = **-8727.3459**
 Iteration 4: Log likelihood = **-8727.3459**
 Refining estimates:
 Iteration 0: Log likelihood = **-8727.3459**

Cox regression with Breslow method for ties

No. of subjects =	35,601	Number of obs =	35,601
No. of failures =	943		
Time at risk =	432,443.367	LR chi2(9) =	184.44
Log likelihood =	-8727.3459	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.212927	.1610819	10.91	0.000	1.918699 2.552273
zsmarca2		1.006919	.0390304	0.18	0.859	.9332549 1.086399
_infectionburXzsmarca2_000		1.009328	.0718967	0.13	0.896	.8778071 1.160554
AGE		1.03749	.013211	2.89	0.004	1.011917 1.063709
SEX		.7484692	.0494324	-4.39	0.000	.6575921 .8519052
NonWhite		1.091984	.1881589	0.51	0.610	.7790165 1.530687
householdsize		.9301185	.0401543	-1.68	0.093	.8546552 1.012245
SES		.8162363	.0407538	-4.07	0.000	.7401442 .9001511
LE8_TOTALSCORE		.999197	.0003606	-2.23	0.026	.9984904 .999904

-> Model for the mediator

Iteration 0: Log likelihood = **-50472.391**
 Iteration 1: Log likelihood = **-50472.391**

Linear regression (Maximum Likelihood)	Number of obs =	35,601
	Wald chi2(7) =	85.58
Log likelihood =	-50472.391	Prob > chi2 = 0.0000

	zsmarca2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0150884	.0154472	0.98	0.329	-.0151875 .0453643
AGE		-.0056693	.0010114	-5.61	0.000	-.0076516 -.003687
SEX		.0130448	.0107012	1.22	0.223	-.0079291 .0340188
NonWhite		-.0393454	.0255341	-1.54	0.123	-.0893914 .0107005
householdsize		-.0050595	.0050767	-1.00	0.319	-.0150096 .0048907
SES		-.0105704	.0080389	-1.31	0.189	-.0263263 .0051856
LE8_TOTALSCORE		-.0003875	.000057	-6.79	0.000	-.0004993 -.0002757
_cons		.5253151	.0733218	7.16	0.000	.3816071 .6690231
sigma2						
_cons		.9975738	.007477	133.42	0.000	.9829191 1.012229

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.213661	.1611613	7.53	0.000	.8977904 1.529531
ereri_cde	1.212916	.1610831	7.53	0.000	.8971985 1.528633
ereri_intref	.0002047	.0018751	0.11	0.913	-.0034704 .0038798
ereri_intmed	.0004363	.0021288	0.20	0.838	-.003736 .0046086
ereri_pie	.000104	.0005945	0.18	0.861	-.0010612 .0012693

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsmoc1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04659 2.218 -.07483 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9201.1117

Iteration 1: Log likelihood = -9112.6995

Iteration 2: Log likelihood = -9102.0564

Iteration 3: Log likelihood = -9101.9722

Iteration 4: Log likelihood = -9101.9721

Refining estimates:

Iteration 0: Log likelihood = -9101.9721

Cox regression with Breslow method for ties

No. of subjects = 36,726 Number of obs = 36,726

No. of failures = 982

Time at risk = 446,105.322

Log likelihood = -9101.9721

LR chi2(9) = 198.28

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.259449	.1699247	10.84	0.000	1.949786 2.618293
zsmoc1	1.07176	.042588	1.74	0.081	.9914571 1.158568
_infectionburXzsmoc1_000	.9741694	.0668885	-0.38	0.703	.8515088 1.114499
AGE	1.031633	.012987	2.47	0.013	1.00649 1.057403
SEX	.7630153	.0494314	-4.18	0.000	.6720303 .8663187
NonWhite	1.08618	.1847067	0.49	0.627	.7783118 1.515828
householdsize	.9331602	.0392975	-1.64	0.100	.8592315 1.01345
SES	.8257023	.0405398	-3.90	0.000	.7499491 .9091074
LE8_TOTALSCORE	.9992195	.0003592	-2.17	0.030	.9985158 .9999237

-> Model for the mediator

Iteration 0: Log likelihood = -50039.47
 Iteration 1: Log likelihood = -50039.47

Linear regression (Maximum Likelihood)
 Number of obs = 36,726
 Wald chi2(7) = 4386.77
 Log likelihood = -50039.47 Prob > chi2 = 0.0000

	zsmoc1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1503547	.014407	10.44	0.000	.1221174 .1785919
AGE		.0355023	.0009396	37.78	0.000	.0336606 .0373439
SEX		-.1831126	.0099699	-18.37	0.000	-.2026533 -.1635718
NonWhite		-.1483589	.023854	-6.22	0.000	-.195112 -.1016059
householdsize		-.0007061	.0045394	-0.16	0.876	-.0096033 .008191
SES		-.080223	.0074777	-10.73	0.000	-.0948791 -.0655669
LE8_TOTALSCORE		-.0019506	.0000531	-36.73	0.000	-.0020546 -.0018465
_cons		-.8983419	.0679508	-13.22	0.000	-1.031523 -.7651607
sigma2						
_cons		.8932748	.0065919	135.51	0.000	.8803548 .9061948

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.272402	.1653041	7.70	0.000	.9484118 1.596392
ereri_cde	1.258567	.1695398	7.42	0.000	.926275 1.590859
ereri_intref	-.0008541	.0027739	-0.31	0.758	-.0062909 .0045827
ereri_intmed	.0042148	.0199832	0.21	0.833	-.0349516 .0433811
ereri_pie	.0104744	.0061209	1.71	0.087	-.0015223 .0224711

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsmoc2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04635 2.216 -.07488 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9125.8833
Iteration 1: Log likelihood = -9041.0371
Iteration 2: Log likelihood = -9030.2539
Iteration 3: Log likelihood = -9030.154
Iteration 4: Log likelihood = -9030.154
Refining estimates:
Iteration 0: Log likelihood = -9030.154

```

Cox regression with Breslow method for ties

No. of subjects =	36,595	Number of obs =	36,595
No. of failures =	974		
Time at risk =	444,506.48	LR chi2(9) =	191.46
Log likelihood =	-9030.154	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.226073	.1646327	10.82	0.000	1.925694 2.573305
zsmoc2	1.02428	.0420053	0.58	0.559	.9451731 1.110008
_infectionburXzsmoc2_000	1.00868	.0683559	0.13	0.899	.8832208 1.151959
AGE	1.034789	.0130306	2.72	0.007	1.009562 1.060646
SEX	.7690377	.0518665	-3.89	0.000	.6738136 .877719
NonWhite	1.089433	.1854252	0.50	0.615	.7804103 1.52082
householdszie	.9372113	.0392766	-1.55	0.122	.8633072 1.017442
SES	.828825	.0408282	-3.81	0.000	.7525448 .9128373
LE8_TOTALSCORE	.9990813	.0003577	-2.57	0.010	.9983805 .9997826

-> Model for the mediator

Iteration 0: Log likelihood = -49279.518	Number of obs = 36,595
Iteration 1: Log likelihood = -49279.518	Wald chi2(7) = 5693.86
Log likelihood = -49279.518	Prob > chi2 = 0.0000

zsmoc2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1274651	.0141896	8.98	0.000	.099654 .1552762
AGE	.0206749	.0009261	22.33	0.000	.0188598 .0224899
SEX	-.5783576	.0098318	-58.83	0.000	-.5976276 -.5590877
NonWhite	.1398153	.0235717	5.93	0.000	.0936157 .186015
householdsize	-.0049818	.0044765	-1.11	0.266	-.0137555 .0037919
SES	-.0238772	.0073796	-3.24	0.001	-.038341 -.0094133
LE8_TOTALSCORE	-.0014962	.0000524	-28.58	0.000	-.0015988 -.0013936
_cons	.3753292	.0668897	5.61	0.000	.2442278 .5064307
sigma2					
_cons	.8653343	.0063972	135.27	0.000	.8527961 .8778726

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.235482	.1620116	7.63	0.000	.9179452 1.553019
ereri_cde	1.226288	.1646485	7.45	0.000	.9035832 1.548993
ereri_intref	-.0000853	.0013428	-0.06	0.949	-.0027171 .0025466
ereri_intmed	.0062165	.0164182	0.38	0.705	-.0259625 .0383955
ereri_pie	.0030626	.0052544	0.58	0.560	-.0072359 .013361

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsmoc2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

```
Model for the outcome (yreg): cox
Model for the mediator (mreg): linear
```

```
Referent exposure level (a0): 0
Actual exposure level (a1): 1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c): 60.18 1.531 .04635 2.217 -.07411 500.6
```

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9106.4789**
 Iteration 1: Log likelihood = **-9018.0769**
 Iteration 2: Log likelihood = **-9009.6019**
 Iteration 3: Log likelihood = **-9009.574**
 Iteration 4: Log likelihood = **-9009.574**
 Refining estimates:
 Iteration 0: Log likelihood = **-9009.574**

Cox regression with Breslow method for ties

No. of subjects =	36,571	Number of obs =	36,571
No. of failures =	972		
Time at risk =	444,264.796	LR chi2(9) =	193.81
Log likelihood =	-9009.574	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.232756	.1612261	11.12	0.000	1.938101	2.572207
zsmpd1	1.00075	.0393899	0.02	0.985	.92645	1.081009
_infectionburXzsmpd1_000	.9906053	.0679774	-0.14	0.891	.8659433	1.133214
AGE	1.035285	.013036	2.75	0.006	1.010048	1.061153
SEX	.752602	.0499237	-4.28	0.000	.6608473	.8570963
NonWhite	1.091132	.1856519	0.51	0.608	.7817154	1.523021
householdsize	.9347193	.0394534	-1.60	0.110	.8605042	1.015335
SES	.8173359	.0402862	-4.09	0.000	.7420705	.9002351
LE8_TOTALSCORE	.9990165	.000356	-2.76	0.006	.998319	.9997145

-> Model for the mediator

Iteration 0: Log likelihood = **-50817.456**
 Iteration 1: Log likelihood = **-50817.456**

Linear regression (Maximum Likelihood)	Number of obs =	36,571
	Wald chi2(7) =	2212.43
Log likelihood =	Prob > chi2 =	0.0000

	zsmpd1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.081327	.014814	5.49	0.000	.052292
AGE		.0098402	.0009696	10.15	0.000	.0079398
SEX		-.3610753	.0102667	-35.17	0.000	-.3811978
NonWhite		.0922213	.0246369	3.74	0.000	.0439339
householdsize		-.0128158	.004872	-2.63	0.009	-.0223648
SES		-.0872721	.0077084	-11.32	0.000	-.1023803
LE8_TOTALSCORE		-.0009384	.0000547	-17.16	0.000	-.0010456
_cons		.4367669	.0703117	6.21	0.000	.2989585
sigma2						
_cons		.9429284	.0069731	135.22	0.000	.9292614
						.9565954

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.231495	.1603694	7.68	0.000	.9171771 1.545814
ereri_cde	1.232766	.1612563	7.64	0.000	.9167092 1.548822
ereri_intref	.000307	.0025222	0.12	0.903	-.0046365 .0052505
ereri_intmed	-.0016385	.0108149	-0.15	0.880	-.0228353 .0195583
ereri_pie	.000061	.0032013	0.02	0.985	-.0062135 .0063354

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsm pdl3a
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.532 .04628 2.216 -.07495 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9114.4129**

Iteration 1: Log likelihood = **-9027.0102**

Iteration 2: Log likelihood = **-9018.4998**

Iteration 3: Log likelihood = **-9018.4757**

Iteration 4: Log likelihood = **-9018.4757**

Refining estimates:

Iteration 0: Log likelihood = **-9018.4757**

Cox regression with Breslow method for ties

No. of subjects = 36,536

Number of obs = 36,536

No. of failures = 973

Time at risk = 443,779.95

LR chi2(9) = 191.87

Log likelihood = **-9018.4757**

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.236188	.1600773	11.24	0.000	1.943458	2.57301
zsmpdl3a	.9958323	.0381228	-0.11	0.913	.9238473	1.073426
_infectionburXzsmpdl3a_000	.966584	.0658059	-0.50	0.618	.8458415	1.104562
AGE	1.035297	.0130042	2.76	0.006	1.01012	1.061101
SEX	.7574865	.0494178	-4.26	0.000	.6665662	.8608085
NonWhite	1.091392	.1856982	0.51	0.607	.7818985	1.52339
householdsize	.937197	.0392236	-1.55	0.121	.8633887	1.017315
SES	.8255586	.04067	-3.89	0.000	.7495741	.9092455
LE8_TOTALSCORE	.9990366	.0003544	-2.72	0.007	.9983423	.9997314

-> Model for the mediator

Iteration 0: Log likelihood = **-51622.178**
 Iteration 1: Log likelihood = **-51622.178**

Linear regression (Maximum Likelihood) Number of obs = 36,536
 Wald chi2(7) = 441.97
 Prob > chi2 = 0.0000

Log likelihood = **-51622.178**

	zsmpdl3a	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	-.0465774	.0151732	-3.07	0.002	-.0763164	-.0168385
AGE	-.0025316	.0009903	-2.56	0.011	-.0044726	-.0005906
SEX	-.2106524	.0105141	-20.04	0.000	-.2312595	-.1900452
NonWhite	-.1045396	.0252225	-4.14	0.000	-.1539748	-.0551043
householdsize	-.0129032	.0047858	-2.70	0.007	-.0222832	-.0035233
SES	-.0056867	.0078937	-0.72	0.471	-.021158	.0097847
LE8_TOTALSCORE	-.0000858	.000056	-1.53	0.126	-.0001956	.000024
_cons	.5574195	.0715269	7.79	0.000	.4172294	.6976096
sigma2						
_cons	.9880206	.0073101	135.16	0.000	.9736932	1.002348

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
tereri	1.241267	.1600603	7.75	0.000	.9275544	1.554979
ereri_cde	1.236211	.1600793	7.72	0.000	.9224616	1.549961
ereri_intref	.0010751	.0039648	0.27	0.786	-.0066958	.0088459
ereri_intmed	.0037859	.0062657	0.60	0.546	-.0084947	.0160665
ereri_pie	.0001945	.0017846	0.11	0.913	-.0033031	.0036922

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator      (mvar): zsnap23
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04649 2.218 -.07578 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9064.8284
Iteration 1: Log likelihood = -8972.1026
Iteration 2: Log likelihood = -8961.9088
Iteration 3: Log likelihood = -8961.852
Iteration 4: Log likelihood = -8961.852
Refining estimates:
Iteration 0: Log likelihood = -8961.852

```

Cox regression with Breslow method for ties

No. of subjects =	36,441	Number of obs =	36,441
No. of failures =	968		
Time at risk =	442,700.115	LR chi2(9) =	205.95
Log likelihood =	-8961.852	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.282631	.1635688	11.52	0.000	1.983537 2.626825
zsnap23	.9047561	.0338721	-2.67	0.008	.8407452 .9736405
_infectionburXzsnap23_000	1.009705	.0703013	0.14	0.890	.8809054 1.157338
AGE	1.033528	.0130115	2.62	0.009	1.008338 1.059347
SEX	.7488459	.0488109	-4.44	0.000	.6590371 .8508933
NonWhite	1.002513	.1773644	0.01	0.989	.7087541 1.418027
householdsize	.9276534	.0398539	-1.75	0.080	.8527394 1.009149
SES	.8247406	.0407699	-3.90	0.000	.748582 .9086474
LE8_TOTALSCORE	.9989605	.0003565	-2.91	0.004	.9982621 .9996595

-> Model for the mediator

Iteration 0: Log likelihood =	-51502.124	Number of obs =	36,441
Iteration 1: Log likelihood =	-51502.124	Wald chi2(7) =	412.14
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-51502.124		

	zsnap23	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.011033	.0151968	-0.73	0.468	-.0408182 .0187521
AGE		-.0030231	.0009925	-3.05	0.002	-.0049684 -.0010778
SEX		-.047815	.0105307	-4.54	0.000	-.0684549 -.0271751
NonWhite		-.0541447	.0252153	-2.15	0.032	-.1035658 -.0047236
householdsize		.0003867	.0047924	0.08	0.936	-.0090062 .0097796
SES		-.0173508	.0079024	-2.20	0.028	-.0328393 -.0018623
LE8_TOTALSCORE		-.0010289	.0000561	-18.33	0.000	-.0011389 -.0009189
_cons		.7719915	.0717342	10.76	0.000	.631395 .9125879
sigma2						
_cons		.9887894	.0073253	134.98	0.000	.9744322 1.003147

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.282866	.1628997	7.88	0.000	.9635885 1.602143
ereri_cde	1.27649	.1626101	7.85	0.000	.9577803 1.5952
ereri_intref	.0040991	.012313	0.33	0.739	-.0200339 .0282321
ereri_intmed	.0011716	.0022349	0.52	0.600	-.0032086 .0055519
ereri_pie	.0011049	.0015779	0.70	0.484	-.0019877 .0041975

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsnap29
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04641 2.217 -.0748 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9132.2436
 Iteration 1: Log likelihood = -9042.8693
 Iteration 2: Log likelihood = -9031.5212
 Iteration 3: Log likelihood = -9031.4321
 Iteration 4: Log likelihood = -9031.432
 Refining estimates:
 Iteration 0: Log likelihood = -9031.432

Cox regression with Breslow method for ties

No. of subjects =	36,540	Number of obs =	36,540
No. of failures =	975		
Time at risk =	443,893.259	LR chi2(9) =	201.62
Log likelihood =	-9031.432	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.243682	.1607959	11.28	0.000	1.949661 2.582044
zsnap29	.9217305	.0355668	-2.11	0.035	.8545917 .994144
_infectionburXzsnap29_000	.9513334	.0680171	-0.70	0.485	.8269413 1.094437
AGE	1.033769	.012984	2.64	0.008	1.008631 1.059533
SEX	.7666929	.0497336	-4.10	0.000	.6751589 .8706366
NonWhite	1.064197	.183279	0.36	0.718	.7593217 1.491484
householdszie	.9312678	.0394897	-1.68	0.093	.8569985 1.011973
SES	.8193264	.0403693	-4.04	0.000	.7439044 .9023952
LE8_TOTALSCORE	.9989348	.0003558	-2.99	0.003	.9982378 .9996323

-> Model for the mediator

Iteration 0: Log likelihood = -51543.565
 Iteration 1: Log likelihood = -51543.565

Linear regression (Maximum Likelihood)	Number of obs =	36,540	
	Wald chi2(7) =	612.98	
Log likelihood =	-51543.565	Prob > chi2 =	0.0000

<u>zsnap29</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0057338	.0151529	-0.38	0.705	-.0354328 .0239653
AGE	-.0031448	.0009882	-3.18	0.001	-.0050816 -.001208
SEX	-.0294684	.010488	-2.81	0.005	-.0500246 -.0089122
NonWhite	.0090235	.0251365	0.36	0.720	-.0402431 .0582902
householdszie	-.0027472	.0047756	-0.58	0.565	-.0121072 .0066129
SES	-.0307076	.0078729	-3.90	0.000	-.0461383 -.0152769
LE8_TOTALSCORE	-.0012582	.0000558	-22.53	0.000	-.0013676 -.0011487
_cons	.868454	.0714562	12.15	0.000	.7284025 1.008506
sigma2					
_cons	.9834742	.007276	135.17	0.000	.9692135 .9977349

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257042	.1609754	7.81	0.000	.941536 1.572548
ereri_cde	1.239707	.1601953	7.74	0.000	.9257299 1.553684
ereri_intref	.0156354	.0177236	0.88	0.378	-.0191023 .050373
ereri_intmed	.0012323	.0033602	0.37	0.714	-.0053534 .0078181
ereri_pie	.0004674	.0012552	0.37	0.710	-.0019928 .0029277

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsncg
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8985.4467**

Iteration 1: Log likelihood = **-8897.0067**

Iteration 2: Log likelihood = **-8888.6862**

Iteration 3: Log likelihood = **-8888.6541**

Iteration 4: Log likelihood = **-8888.6541**

Refining estimates:

Iteration 0: Log likelihood = **-8888.6541**

Cox regression with Breslow method for ties

No. of subjects = 36,164

Number of obs = 36,164

No. of failures = 960

Time at risk = 439,440.668

LR chi2(9) = 193.59

Log likelihood = -8888.6541

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.192093	.1640426	10.49	0.000	1.893043 2.538386
zsncg	1.035178	.0416909	0.86	0.391	.9566069 1.120202
_infectionburXzsncg_000	1.004816	.0703882	0.07	0.945	.8759097 1.152694
AGE	1.036016	.0131578	2.79	0.005	1.010546 1.062129
SEX	.7311936	.0485599	-4.71	0.000	.6419519 .8328413
NonWhite	1.019894	.1780748	0.11	0.910	.7243261 1.436071
householdsize	.9436516	.0393609	-1.39	0.164	.869575 1.024039
SES	.811287	.0402002	-4.22	0.000	.7362012 .8940308
LE8_TOTALSCORE	.9991084	.0003647	-2.44	0.015	.9983937 .9998235

-> Model for the mediator

Iteration 0: Log likelihood = **-49261.216**
 Iteration 1: Log likelihood = **-49261.216**

Linear regression (Maximum Likelihood) Number of obs = 36,164
 Wald chi2(7) = 4347.67
 Log likelihood = **-49261.216** Prob > chi2 = 0.0000

zsncg	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.106729	.0145115	7.35	0.000	.078287 .135171
AGE	.0310357	.0009495	32.69	0.000	.0291747 .0328966
SEX	.3015066	.0100449	30.02	0.000	.281819 .3211942
NonWhite	.0170118	.0240862	0.71	0.480	-.0301962 .0642198
householdsize	-.0007985	.0047637	-0.17	0.867	-.0101352 .0085382
SES	-.0483441	.0075509	-6.40	0.000	-.0631435 -.0335446
LE8_TOTALSCORE	-.0023596	.0000535	-44.14	0.000	-.0024644 -.0022548
_cons	-1.165388	.0688136	-16.94	0.000	-1.30026 -1.030516
sigma2					
_cons	.8926563	.0066384	134.47	0.000	.8796454 .9056673

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.201518	.161327	7.45	0.000	.885323 1.517713
ereri_cde	1.192067	.1639681	7.27	0.000	.8706958 1.513439
ereri_intref	.0002177	.0026984	0.08	0.936	-.0050709 .0055064
ereri_intmed	.0055363	.0142297	0.39	0.697	-.0223535 .0334261
ereri_pie	.0036968	.0043436	0.85	0.395	-.0048165 .0122101

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsnx9
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9064.8284
 Iteration 1: Log likelihood = -8972.2459
 Iteration 2: Log likelihood = -8963.147
 Iteration 3: Log likelihood = -8963.122
 Iteration 4: Log likelihood = -8963.122
 Refining estimates:
 Iteration 0: Log likelihood = -8963.122

Cox regression with Breslow method for ties

No. of subjects =	36,441	Number of obs =	36,441
No. of failures =	968		
Time at risk =	442,700.115	LR chi2(9) =	203.41
Log likelihood =	-8963.122	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.292895	.1639314	11.61	0.000	1.993091 2.637795
zsnx9	.902198	.0361035	-2.57	0.010	.8341403 .9758085
_infectionburXzsnx9_000	1.122309	.0803074	1.61	0.107	.9754483 1.29128
AGE	1.034297	.0130299	2.68	0.007	1.009072 1.060153
SEX	.7527184	.0490657	-4.36	0.000	.6624411 .8552986
NonWhite	1.014143	.1794492	0.08	0.937	.7169383 1.434552
householdsize	.9271792	.0398489	-1.76	0.079	.8522759 1.008665
SES	.8254902	.0408022	-3.88	0.000	.749271 .9094628
LE8_TOTALSCORE	.9990094	.0003563	-2.78	0.005	.9983113 .9997081

-> Model for the mediator

Iteration 0: Log likelihood =	-51569.24	Number of obs =	36,441
Iteration 1: Log likelihood =	-51569.24	Wald chi2(7) =	276.64
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-51569.24		

	zsnx9	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0273653	.0152248	1.80	0.072	-.0024748 .0572054
AGE		.0009826	.0009944	0.99	0.323	-.0009663 .0029315
SEX		.012521	.0105502	1.19	0.235	-.0081569 .033199
NonWhite		.0975235	.0252618	3.86	0.000	.0480113 .1470357
householdsize		-.0013371	.0048012	-0.28	0.781	-.0107473 .0080731
SES		-.0248218	.007917	-3.14	0.002	-.0403389 -.0093048
LE8_TOTALSCORE		-.0007951	.0000562	-14.14	0.000	-.0009053 -.0006848
_cons		.3123674	.0718665	4.35	0.000	.1715118 .4532231
sigma2						
_cons		.9924385	.0073523	134.98	0.000	.9780282 1.006849

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.280827	.162816	7.87	0.000	.9617137 1.599941
ereri_cde	1.285613	.1628011	7.90	0.000	.966529 1.604697
ereri_intref	-.0055641	.004439	-1.25	0.210	-.0142643 .0031362
ereri_intmed	.0035905	.0043497	0.83	0.409	-.0049348 .0121158
ereri_pie	-.0028125	.0019063	-1.48	0.140	-.0065488 .0009238

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsod1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.53 .04626 2.216 -.07489 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8861.5809**
 Iteration 1: Log likelihood = **-8779.3656**
 Iteration 2: Log likelihood = **-8770.8131**
 Iteration 3: Log likelihood = **-8770.7609**
 Iteration 4: Log likelihood = **-8770.7609**
 Refining estimates:
 Iteration 0: Log likelihood = **-8770.7609**

Cox regression with Breslow method for ties

No. of subjects =	35,714	Number of obs =	35,714
No. of failures =	949		
Time at risk =	433,830.367	LR chi2(9) =	181.64
Log likelihood =	-8770.7609	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.194803	.1597432	10.80	0.000	1.903019 2.531327
zsod1		.9222114	.0370225	-2.02	0.044	.8524299 .9977054
_infectionburXzsod1_000		1.137584	.0820822	1.79	0.074	.9875635 1.310393
AGE		1.032568	.0131653	2.51	0.012	1.007084 1.058697
SEX		.7611699	.0502989	-4.13	0.000	.668703 .8664228
NonWhite		1.124301	.1915636	0.69	0.492	.8051018 1.570052
householdszie		.9398098	.039719	-1.47	0.142	.8650989 1.020973
SES		.827709	.0413017	-3.79	0.000	.7505917 .9127495
LE8_TOTALSCORE		.9989328	.0003612	-2.95	0.003	.998225 .999641

-> Model for the mediator

Iteration 0: Log likelihood = **-50088.001**
 Iteration 1: Log likelihood = **-50088.001**

Linear regression (Maximum Likelihood)	Number of obs =	35,714
	Wald chi2(7) =	1194.48
Log likelihood =	Prob > chi2 =	0.0000

	zsod1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0059738	.0151916	-0.39	0.694	-.0357489 .0238012
AGE		-.0018857	.000992	-1.90	0.057	-.0038299 .0000586
SEX		-.2250863	.010523	-21.39	0.000	-.245711 -.2044616
NonWhite		.2749444	.0252566	10.89	0.000	.2254424 .3244465
householdszie		.0022692	.0048004	0.47	0.636	-.0071394 .0116778
SES		-.0063389	.0079055	-0.80	0.423	-.0218334 .0091555
LE8_TOTALSCORE		-.0012179	.0000562	-21.69	0.000	-.001328 -.0011078
_cons		1.050216	.0716711	14.65	0.000	.9097434 1.190689
sigma2						
_cons		.9676096	.007241	133.63	0.000	.9534176 .9818016

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.189891	.1592024	7.47	0.000	.8778597 1.501922
ereri_cde	1.191099	.1591547	7.48	0.000	.8791612 1.503036
ereri_intref	-.0005809	.0070951	-0.08	0.935	-.014487 .0133252
ereri_intmed	-.0011109	.0029435	-0.38	0.706	-.00688 .0046582
ereri_pie	.0004839	.001254	0.39	0.700	-.0019739 .0029417

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsod2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.19 1.531 .04638 2.215 -.07464 500.5**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9121.8147**

Iteration 1: Log likelihood = **-9034.2934**

Iteration 2: Log likelihood = **-9025.6111**

Iteration 3: Log likelihood = **-9025.5785**

Iteration 4: Log likelihood = **-9025.5785**

Refining estimates:

Iteration 0: Log likelihood = **-9025.5785**

Cox regression with Breslow method for ties

No. of subjects = **36,459** Number of obs = **36,459**

No. of failures = **974**

Time at risk = **442,828.345**

LR chi2(9) = **192.47**

Log likelihood = **-9025.5785** Prob > chi2 = **0.0000**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.235536	.1596973	11.26	0.000	1.943459 2.571508
zsod2	.9833817	.039216	-0.42	0.674	.9094468 1.063327
_infectionburXzsod2_000	1.035596	.0706409	0.51	0.608	.9059986 1.183732
AGE	1.035159	.0130154	2.75	0.006	1.009961 1.060986
SEX	.7513427	.0493105	-4.36	0.000	.6606536 .8544808
NonWhite	1.090195	.1855042	0.51	0.612	.7810274 1.521745
householdsize	.9392952	.0393271	-1.50	0.135	.8652933 1.019626
SES	.8241349	.0405719	-3.93	0.000	.7483312 .9076172
LE8_TOTALSCORE	.9990195	.0003542	-2.77	0.006	.9983255 .999714

-> Model for the mediator

Iteration 0: Log likelihood = **-51011.178**
 Iteration 1: Log likelihood = **-51011.178**

Linear regression (Maximum Likelihood) Number of obs = **36,459**
 Wald chi2(7) = **1471.73**
 Log likelihood = **-51011.178** Prob > chi2 = **0.0000**

zsod2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0587232	.0149829	3.92	0.000	.0293573 .0880892
AGE	-.0106573	.0009806	-10.87	0.000	-.0125793 -.0087353
SEX	-.3285055	.0103824	-31.64	0.000	-.3488546 -.3081565
NonWhite	.2863251	.0248917	11.50	0.000	.2375383 .3351119
householdsize	-.0087689	.0049337	-1.78	0.076	-.0184387 .0009009
SES	-.0591672	.0077981	-7.59	0.000	-.0744513 -.0438831
LE8_TOTALSCORE	-.0004745	.0000553	-8.58	0.000	-.0005829 -.0003662
_cons	1.375513	.0711158	19.34	0.000	1.236128 1.514897
sigma2					
_cons	.9611731	.0071189	135.02	0.000	.9472203 .9751259

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.237345	.159867	7.74	0.000	.9240118 1.550679
ereri_cde	1.2352	.1596253	7.74	0.000	.9223403 1.54806
ereri_intref	-.0002473	.001557	-0.16	0.874	-.003299 .0028044
ereri_intmed	.003376	.0077195	0.44	0.662	-.011754 .0185061
ereri_pie	-.0009836	.0023529	-0.42	0.676	-.0055952 .003628

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsorcs2
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8882.1967
 Iteration 1: Log likelihood = -8798.0751
 Iteration 2: Log likelihood = -8788.7012
 Iteration 3: Log likelihood = -8788.6467
 Iteration 4: Log likelihood = -8788.6467
 Refining estimates:
 Iteration 0: Log likelihood = -8788.6467

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	187.10
Log likelihood =	-8788.6467	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.226296	.1693216	10.52	0.000	1.917982 2.584171
zsorcs2	1.018383	.041308	0.45	0.653	.9405558 1.102651
_infectionburXzsorcs2_000	1.018917	.0675613	0.28	0.777	.8947433 1.160325
AGE	1.036406	.0132792	2.79	0.005	1.010703 1.062762
SEX	.7460262	.0490681	-4.45	0.000	.6557953 .848672
NonWhite	1.114291	.1897503	0.64	0.525	.7980855 1.555779
householdsize	.9399338	.0396007	-1.47	0.141	.8654361 1.020844
SES	.8305869	.0414726	-3.72	0.000	.7531529 .9159822
LE8_TOTALSCORE	.9992426	.0003597	-2.11	0.035	.9985379 .9999478

-> Model for the mediator

Iteration 0: Log likelihood = -49099.394
 Iteration 1: Log likelihood = -49099.394

Linear regression (Maximum Likelihood)
 Number of obs = 35,573
 Wald chi2(7) = 2861.26
 Log likelihood = -49099.394 Prob > chi2 = 0.0000

	zsorcs2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1804148	.0149026	12.11	0.000	.1512062 .2096235
AGE		.0400313	.0009718	41.19	0.000	.0381267 .0419359
SEX		-.0114451	.0103118	-1.11	0.267	-.0316559 .0087657
NonWhite		-.2593042	.0246443	-10.52	0.000	-.3076062 -.2110022
householdsize		.0026421	.0046933	0.56	0.573	-.0065566 .0118407
SES		-.0810222	.0077342	-10.48	0.000	-.0961808 -.0658635
LE8_TOTALSCORE		-.0007387	.0000549	-13.45	0.000	-.0008463 -.0006311
_cons		-2.046996	.0702312	-29.15	0.000	-2.184647 -1.909345
sigma2						
_cons		.9255283	.0069398	133.37	0.000	.9119267 .93913

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.241212	.1654063	7.50	0.000	.9170211 1.565402
ereri_cde	1.226667	.1694191	7.24	0.000	.8946113 1.558722
ereri_intref	-.0003489	.0012094	-0.29	0.773	-.0027193 .0020216
ereri_intmed	.0116019	.0223021	0.52	0.603	-.0321095 .0553133
ereri_pie	.0032919	.0073472	0.45	0.654	-.0111083 .0176921

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsord
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04671 2.218 -.07452 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9158.1293**
 Iteration 1: Log likelihood = **-9060.7919**
 Iteration 2: Log likelihood = **-9052.2964**
 Iteration 3: Log likelihood = **-9052.2743**
 Iteration 4: Log likelihood = **-9052.2743**
 Refining estimates:
 Iteration 0: Log likelihood = **-9052.2743**

Cox regression with Breslow method for ties

No. of subjects =	36,568	Number of obs =	36,568
No. of failures =	978		
Time at risk =	444,223.991	LR chi2(9) =	211.71
Log likelihood =	-9052.2743	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.262028	.1617868	11.41	0.000	1.966154 2.602426
zsord		.8468403	.0323441	-4.35	0.000	.7857616 .9126666
_infectionburXzsord_000		1.118233	.0782453	1.60	0.110	.9749266 1.282605
AGE		1.034392	.0129745	2.70	0.007	1.009272 1.060136
SEX		.74642	.0485147	-4.50	0.000	.6571403 .8478293
NonWhite		1.052909	.179097	0.30	0.762	.754404 1.469529
householdszie		.9313882	.0393494	-1.68	0.092	.8573714 1.011795
SES		.8243819	.0404926	-3.93	0.000	.7487184 .9076919
LE8_TOTALSCORE		.998839	.0003583	-3.24	0.001	.9981369 .9995416

-> Model for the mediator

Iteration 0: Log likelihood = **-50701.32**
 Iteration 1: Log likelihood = **-50701.32**

Linear regression (Maximum Likelihood)	Number of obs =	36,568
	Wald chi2(7) =	2450.46
Log likelihood =	Prob > chi2 =	0.0000

	zsord	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.016137	.0147963	-1.09	0.275	-.0451371 .0128632
AGE		-.0011693	.0009645	-1.21	0.225	-.0030597 .0007212
SEX		-.2337966	.0102339	-22.85	0.000	-.2538547 -.2137385
NonWhite		-.1096931	.0244577	-4.49	0.000	-.1576292 -.0617569
householdszie		-.0070726	.0046561	-1.52	0.129	-.0161983 .0020532
SES		.0244996	.0076765	3.19	0.001	.0094539 .0395454
LE8_TOTALSCORE		-.0022583	.0000545	-41.42	0.000	-.0023652 -.0021515
_cons		1.583607	.0697453	22.71	0.000	1.446909 1.720305
sigma2						
_cons		.9371718	.0069308	135.22	0.000	.9235877 .9507559

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.238558	.1597551	7.75	0.000	.9254438 1.551672
ereri_cde	1.246252	.1594998	7.81	0.000	.9336385 1.558866
ereri_intref	-.009662	.0086187	-1.12	0.262	-.0265542 .0072302
ereri_intmed	-.0007186	.0023186	-0.31	0.757	-.005263 .0038258
ereri_pie	.0026863	.0025426	1.06	0.291	-.0022972 .0076697

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsort1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.531 .04653 2.218 -.07587 500.5**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9043.1078**

Iteration 1: Log likelihood = **-8952.7793**

Iteration 2: Log likelihood = **-8934.9356**

Iteration 3: Log likelihood = **-8934.6768**

Iteration 4: Log likelihood = **-8934.6767**

Refining estimates:

Iteration 0: Log likelihood = **-8934.6767**

Cox regression with Breslow method for ties

No. of subjects = **36,384** Number of obs = **36,384**

No. of failures = **966**

Time at risk = **442,032.251**

LR chi2(9) = **216.86**

Log likelihood = **-8934.6767** Prob > chi2 = **0.0000**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.260232	.1622768	11.36	0.000	1.96354 2.601755
zsort1	.9053102	.0359409	-2.51	0.012	.8375382 .9785663
_infectionburXzsort1_000	.8869192	.0641904	-1.66	0.097	.7696242 1.022091
AGE	1.034817	.013063	2.71	0.007	1.009528 1.060739
SEX	.7602437	.0497367	-4.19	0.000	.6687526 .8642516
NonWhite	.9798114	.1735942	-0.12	0.908	.6923635 1.386599
householdsize	.9233455	.0398675	-1.85	0.065	.8484216 1.004886
SES	.8199088	.040557	-4.01	0.000	.7441502 .9033801
LE8_TOTALSCORE	.9988046	.0003603	-3.32	0.001	.9980987 .9995111

-> Model for the mediator

Iteration 0: Log likelihood = -50946.054
 Iteration 1: Log likelihood = -50946.054

Linear regression (Maximum Likelihood)
 Number of obs = 36,384
 Wald chi2(7) = 1385.96
 Prob > chi2 = 0.0000
 Log likelihood = -50946.054

zsort1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0290074	.0150125	1.93	0.053	-.0004166 .0584314
AGE	.0072613	.0009804	7.41	0.000	.0053397 .0091828
SEX	.0964398	.0104024	9.27	0.000	.0760516 .1168281
NonWhite	-.303335	.0248965	-12.18	0.000	-.3521312 -.2545388
householdsize	-.012503	.0047325	-2.64	0.008	-.0217786 -.0032274
SES	-.0231694	.0078057	-2.97	0.003	-.0384683 -.0078706
LE8_TOTALSCORE	-.0017344	.0000554	-31.28	0.000	-.0018431 -.0016258
_cons	.3194502	.0708533	4.51	0.000	.1805802 .4583202
sigma2					
_cons	.9632789	.0071419	134.88	0.000	.9492811 .9772767

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.288782	.1638382	7.87	0.000	.9676645 1.609899
ereri_cde	1.253737	.1614512	7.77	0.000	.937299 1.570176
ereri_intref	.0496622	.0304784	1.63	0.103	-.0100744 .1093987
ereri_intmed	-.0117366	.0074938	-1.57	0.117	-.0264243 .002951
ereri_pie	-.0028814	.0018804	-1.53	0.125	-.006567 .0008041

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsost
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04653 2.218 -.07587 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9043.1078
 Iteration 1: Log likelihood = -8953.4054
 Iteration 2: Log likelihood = -8944.1588
 Iteration 3: Log likelihood = -8944.13
 Iteration 4: Log likelihood = -8944.13
 Refining estimates:
 Iteration 0: Log likelihood = -8944.13

Cox regression with Breslow method for ties

No. of subjects =	36,384	Number of obs =	36,384
No. of failures =	966		
Time at risk =	442,032.251	LR chi2(9) =	197.96
Log likelihood =	-8944.13	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.286921	.1657668	11.41	0.000	1.984048 2.63603
zsost	1.020685	.0403729	0.52	0.605	.9445456 1.102963
_infectionburXzsost_000	.9725022	.0665343	-0.41	0.684	.8504625 1.112054
AGE	1.034204	.0130831	2.66	0.008	1.008877 1.060167
SEX	.7519132	.0509949	-4.20	0.000	.658323 .8588086
NonWhite	1.011266	.1790035	0.06	0.950	.7148164 1.430658
householdsize	.9260865	.0399673	-1.78	0.075	.8509735 1.007829
SES	.8249436	.0408473	-3.89	0.000	.7486464 .9090165
LE8_TOTALSCORE	.9990544	.0003579	-2.64	0.008	.9983531 .9997561

-> Model for the mediator

Iteration 0: Log likelihood = -49977.097
 Iteration 1: Log likelihood = -49977.097

Linear regression (Maximum Likelihood)
 Number of obs = 36,384
 Wald chi2(7) = 3452.23
 Log likelihood = -49977.097 Prob > chi2 = 0.0000

	zsost	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.015747	.014618	1.08	0.281	-.0129037 .0443977
AGE		.0202492	.0009547	21.21	0.000	.0183781 .0221203
SEX		-.4398795	.010129	-43.43	0.000	-.459732 -.420027
NonWhite		-.0882592	.0242422	-3.64	0.000	-.135773 -.0407454
householdsize		.0048848	.0046082	1.06	0.289	-.004147 .0139166
SES		.0132908	.0076005	1.75	0.080	-.001606 .0281876
LE8_TOTALSCORE		-.0013902	.000054	-25.75	0.000	-.001496 -.0012844
_cons		.1427578	.0689913	2.07	0.039	.0075373 .2779783
sigma2						
_cons		.9133143	.0067714	134.88	0.000	.9000426 .9265861

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.286414	.1654805	7.77	0.000	.9620777 1.610749
ereri_cde	1.286733	.1656697	7.77	0.000	.9620258 1.611439
ereri_intref	-.0000522	.0013875	-0.04	0.970	-.0027717 .0026672
ereri_intmed	-.0005892	.0022103	-0.27	0.790	-.0049214 .003743
ereri_pie	.0003225	.0006913	0.47	0.641	-.0010324 .0016773

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zspark
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04641 2.217 -.0748 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9132.2436**
 Iteration 1: Log likelihood = **-9051.1034**
 Iteration 2: Log likelihood = **-9028.3763**
 Iteration 3: Log likelihood = **-9027.6033**
 Iteration 4: Log likelihood = **-9027.6014**
 Refining estimates:
 Iteration 0: Log likelihood = **-9027.6014**

Cox regression with Breslow method for ties

No. of subjects =	36,540	Number of obs =	36,540
No. of failures =	975		
Time at risk =	443,893.259	LR chi2(9) =	209.28
Log likelihood =	-9027.6014	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.21231	.1595965	11.01	0.000	1.920614 2.548308
zsparc		.9345648	.0350084	-1.81	0.071	.8684079 1.005762
_infectionburXzsparc_000		.869113	.0577195	-2.11	0.035	.7630382 .9899339
AGE		1.032996	.0129779	2.58	0.010	1.007871 1.058748
SEX		.7693601	.0499164	-4.04	0.000	.6774907 .8736872
NonWhite		1.064249	.1833759	0.36	0.718	.7592355 1.491798
householdszie		.9294417	.0393741	-1.73	0.084	.8553868 1.009908
SES		.8195244	.0403595	-4.04	0.000	.744119 .9025711
LE8_TOTALSCORE		.9989298	.0003553	-3.01	0.003	.9982336 .9996265

-> Model for the mediator

Iteration 0: Log likelihood =	-51627.595	Number of obs =	36,540
Iteration 1: Log likelihood =	-51627.595	Wald chi2(7) =	442.50
Log likelihood =	-51627.595	Prob > chi2 =	0.0000

	zsparc	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0106218	.0151877	-0.70	0.484	-.0403892 .0191457
AGE		-.0001274	.0009905	-0.13	0.898	-.0020686 .0018139
SEX		-.0286577	.0105122	-2.73	0.006	-.0492612 -.0080542
NonWhite		-.1620992	.0251944	-6.43	0.000	-.2114793 -.1127191
householdszie		-.0179435	.0047866	-3.75	0.000	-.0273251 -.0085619
SES		-.0241993	.0078911	-3.07	0.002	-.0396655 -.0087331
LE8_TOTALSCORE		-.0009985	.000056	-17.84	0.000	-.0011082 -.0008888
_cons		.5984184	.0716207	8.36	0.000	.4580444 .7387923
sigma2						
_cons		.9880079	.0073096	135.17	0.000	.9736815 1.002334

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.259493	.1611615	7.82	0.000	.9436228 1.575364
ereri_cde	1.209691	.1592335	7.60	0.000	.897599 1.521783
ereri_intref	.0448171	.0252079	1.78	0.075	-.0045893 .0942236
ereri_intmed	.0042663	.0062701	0.68	0.496	-.0080229 .0165556
ereri_pie	.0007191	.0011029	0.65	0.514	-.0014426 .0028808

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsparcl1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04642 2.216 -.07524 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9110.3392

Iteration 1: Log likelihood = -9022.3357

Iteration 2: Log likelihood = -9013.7479

Iteration 3: Log likelihood = -9013.7291

Iteration 4: Log likelihood = -9013.7291

Refining estimates:

Iteration 0: Log likelihood = -9013.7291

Cox regression with Breslow method for ties

No. of subjects = 36,473

Number of obs = 36,473

No. of failures = 973

Time at risk = 443,098.25

LR chi2(9) = 193.22

Log likelihood = -9013.7291 Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.257461	.1611968	11.40	0.000	1.962634 2.596578
zsparc11		.9912217	.0384491	-0.23	0.820	.9186561 1.069519
_infectionburXzsparc11_000		1.013665	.0724559	0.19	0.849	.881153 1.166105
AGE		1.034081	.0130162	2.66	0.008	1.008882 1.05991
SEX		.7607974	.0498165	-4.18	0.000	.6691646 .8649781
NonWhite		1.096782	.1872824	0.54	0.589	.7848245 1.53274
householdsize		.9355971	.0394158	-1.58	0.114	.8614469 1.01613
SES		.8239474	.040659	-3.92	0.000	.7479897 .9076186
LE8_TOTALSCORE		.9990603	.0003547	-2.65	0.008	.9983654 .9997558

-> Model for the mediator

Iteration 0: Log likelihood = **-51257.072**
 Iteration 1: Log likelihood = **-51257.072**

Linear regression (Maximum Likelihood) Number of obs = 36,473
 Wald chi2(7) = 1004.33
 Log likelihood = **-51257.072** Prob > chi2 = 0.0000

	zsparc11	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0270901	.0150916	1.80	0.073	-.0024889 .0566691
AGE		.0139003	.000984	14.13	0.000	.0119717 .015829
SEX		.2224196	.0104423	21.30	0.000	.201953 .2428862
NonWhite		.4539962	.0250185	18.15	0.000	.4049609 .5030315
householdsize		-.0107203	.0047533	-2.26	0.024	-.0200365 -.001404
SES		.0059532	.0078381	0.76	0.448	-.0094092 .0213156
LE8_TOTALSCORE		.0003341	.0000557	6.00	0.000	.0002249 .0004432
_cons		-1.344977	.0711172	-18.91	0.000	-1.484364 -1.205589
sigma2						
_cons		.9731751	.0072064	135.04	0.000	.9590507 .9872994

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257577	.1611107	7.81	0.000	.9418054 1.573348
ereri_cde	1.257372	.1611951	7.80	0.000	.9414355 1.573309
ereri_intref	-.0000864	.0005062	-0.17	0.865	-.0010785 .0009058
ereri_intmed	.0005296	.003844	0.14	0.890	-.0070045 .0080638
ereri_pie	-.0002388	.001059	-0.23	0.822	-.0023143 .0018367

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zspink1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9121.8147
 Iteration 1: Log likelihood = -9033.1997
 Iteration 2: Log likelihood = -9019.3462
 Iteration 3: Log likelihood = -9019.0278
 Iteration 4: Log likelihood = -9019.0273
 Refining estimates:
 Iteration 0: Log likelihood = -9019.0273

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	205.57
Log likelihood =	-9019.0273	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.205806	.164411	10.61	0.000	1.905999 2.552773
zspink1	1.130906	.0423015	3.29	0.001	1.050963 1.21693
_infectionburXzspink1_000	.9627187	.0573416	-0.64	0.524	.8566433 1.081929
AGE	1.031706	.0129984	2.48	0.013	1.006542 1.0575
SEX	.7460929	.0484937	-4.51	0.000	.6568519 .8474583
NonWhite	1.098962	.1868033	0.56	0.579	.7875788 1.533456
householdsize	.9413189	.0392046	-1.45	0.147	.8675319 1.021382
SES	.8378313	.0413327	-3.59	0.000	.7606139 .9228878
LE8_TOTALSCORE	.9991202	.0003544	-2.48	0.013	.9984257 .9998151

-> Model for the mediator

Iteration 0: Log likelihood = -50834.943
 Iteration 1: Log likelihood = -50834.943

Linear regression (Maximum Likelihood)
 Number of obs = 36,459
 Wald chi2(7) = 1840.21
 Log likelihood = -50834.943 Prob > chi2 = 0.0000

	zspink1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.2446153	.0149107	16.41	0.000	.215391 .2738397
AGE		.0207911	.0009759	21.30	0.000	.0188783 .0227038
SEX		.0915591	.0103323	8.86	0.000	.0713081 .11181
NonWhite		-.2042157	.0247716	-8.24	0.000	-.2527672 -.1556642
householdsize		-.0125507	.0049099	-2.56	0.011	-.0221739 -.0029275
SES		-.1358934	.0077605	-17.51	0.000	-.1511037 -.120683
LE8_TOTALSCORE		-.0006483	.000055	-11.79	0.000	-.0007561 -.0005405
_cons		-1.073903	.0707728	-15.17	0.000	-1.212615 -.9351911
sigma2						
_cons		.9519257	.0070504	135.02	0.000	.9381071 .9657443

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.246606	.161401	7.72	0.000	.9302655 1.562946
ereri_cde	1.202167	.1635813	7.35	0.000	.8815536 1.522781
ereri_intref	-.0018049	.0057027	-0.32	0.752	-.0129819 .0093722
ereri_intmed	.0156936	.026697	0.59	0.557	-.0366316 .0680188
ereri_pie	.0305497	.009617	3.18	0.001	.0117008 .0493986

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zspink4
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8953.5312**
 Iteration 2: Log likelihood = **-8934.5713**
 Iteration 3: Log likelihood = **-8934.0222**
 Iteration 4: Log likelihood = **-8934.0211**
 Iteration 5: Log likelihood = **-8934.0211**
 Refining estimates:
 Iteration 0: Log likelihood = **-8934.0211**

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	204.83
Log likelihood =	-8934.0211	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.19811	.164564	10.52	0.000	1.898118 2.545515
zspink4		1.098799	.0413185	2.51	0.012	1.020729 1.182841
_infectionburXzspink4_000		1.032835	.0651697	0.51	0.609	.9126876 1.1688
AGE		1.029508	.0130024	2.30	0.021	1.004336 1.05531
SEX		.7617798	.0496785	-4.17	0.000	.6703775 .8656442
NonWhite		.9979075	.1729102	-0.01	0.990	.7105591 1.401459
householdsize		.9354803	.0396866	-1.57	0.116	.8608421 1.01659
SES		.8283843	.0409549	-3.81	0.000	.7518806 .9126721
LE8_TOTALSCORE		.9990921	.0003555	-2.55	0.011	.9983956 .9997891

-> Model for the mediator

Iteration 0: Log likelihood = **-50837.068**
 Iteration 1: Log likelihood = **-50837.068**

Linear regression (Maximum Likelihood)	Number of obs =	36,352
	Wald chi2(7) =	1518.22
Log likelihood =	Prob > chi2 =	0.0000

	zspink4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1661341	.0150087	11.07	0.000	.1367175 .1955507
AGE		.0219633	.0009797	22.42	0.000	.0200431 .0238835
SEX		-.0427713	.0103879	-4.12	0.000	-.0631313 -.0224114
NonWhite		.4319524	.0248929	17.35	0.000	.3831631 .4807416
householdsize		-.0146872	.0048078	-3.05	0.002	-.0241104 -.005264
SES		-.0901455	.0077914	-11.57	0.000	-.1054164 -.0748746
LE8_TOTALSCORE		-.0004458	.0000553	-8.06	0.000	-.0005543 -.0003374
_cons		-1.05051	.070875	-14.82	0.000	-1.189422 -.9115972
sigma2						
_cons		.9598835	.0071198	134.82	0.000	.9459289 .9738381

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.250826	.1624343	7.70	0.000	.9324602 1.569191
ereri_cde	1.195608	.1639621	7.29	0.000	.8742482 1.516968
ereri_intref	.0083985	.0112094	0.75	0.454	-.0135716 .0303685
ereri_intmed	.0310431	.0198234	1.57	0.117	-.00781 .0698962
ereri_pie	.015776	.0065063	2.42	0.015	.0030238 .0285281

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zspink5
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9121.8147**

Iteration 1: Log likelihood = **-9036.2291**

Iteration 2: Log likelihood = **-9024.5609**

Iteration 3: Log likelihood = **-9024.4159**

Iteration 4: Log likelihood = **-9024.4158**

Refining estimates:

Iteration 0: Log likelihood = **-9024.4158**

Cox regression with Breslow method for ties

No. of subjects = 36,459 Number of obs = 36,459

No. of failures = 974

Time at risk = 442,828.345

LR chi2(9) = 194.80

Log likelihood = -9024.4158

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.2245	.1594268	11.16	0.000	1.932983 2.559981
zspink5		1.033972	.0399032	0.87	0.387	.9586483 1.115215
_infectionburXzspink5_000		1.045416	.0699577	0.66	0.507	.9169124 1.191929
AGE		1.035132	.0130099	2.75	0.006	1.009944 1.060947
SEX		.7695349	.0513552	-3.93	0.000	.6751855 .8770685
NonWhite		1.092793	.1858922	0.52	0.602	.7829648 1.525224
householdszie		.9401671	.0393444	-1.47	0.140	.8661312 1.020531
SES		.8245794	.0405699	-3.92	0.000	.7487774 .9080552
LE8_TOTALSCORE		.9990255	.0003541	-2.75	0.006	.9983318 .9997197

-> Model for the mediator

Iteration 0: Log likelihood = **-50947.876**
 Iteration 1: Log likelihood = **-50947.876**

Linear regression (Maximum Likelihood) Number of obs = 36,459
 Wald chi2(7) = 1603.68
 Prob > chi2 = 0.0000

Log likelihood = **-50947.876**

	zspink5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0156761	.0149569	1.05	0.295	-.0136389 .0449911
AGE		-.0080208	.0009789	-8.19	0.000	-.0099395 -.0061022
SEX		-.4003747	.0103644	-38.63	0.000	-.4206884 -.3800609
NonWhite		-.2171716	.0248485	-8.74	0.000	-.2658737 -.1684694
householdszie		-.004905	.0049251	-1.00	0.319	-.0145581 .004748
SES		-.0109456	.0077846	-1.41	0.160	-.0262032 .004312
LE8_TOTALSCORE		.0000959	.0000552	1.74	0.082	-.0000123 .000204
_cons		1.065725	.0709924	15.01	0.000	.9265825 1.204868
sigma2						
_cons		.9578412	.0070942	135.02	0.000	.9439368 .9717457

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.232275	.1594165	7.73	0.000	.9198246 1.544726
ereri_cde	1.223935	.1593327	7.68	0.000	.9116481 1.536221
ereri_intref	.005619	.0090237	0.62	0.533	-.0120671 .0233052
ereri_intmed	.0021978	.0029177	0.75	0.451	-.0035207 .0079163
ereri_pie	.0005238	.0007851	0.67	0.505	-.0010148 .0020625

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zspink6
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04659 2.218 -.07483 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9201.1117
 Iteration 1: Log likelihood = -9110.948
 Iteration 2: Log likelihood = -9101.9714
 Iteration 3: Log likelihood = -9101.9452
 Iteration 4: Log likelihood = -9101.9452
 Refining estimates:
 Iteration 0: Log likelihood = -9101.9452

Cox regression with Breslow method for ties

No. of subjects =	36,726	Number of obs =	36,726
No. of failures =	982		
Time at risk =	446,105.322	LR chi2(9) =	198.33
Log likelihood =	-9101.9452	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.24901	.1615848	11.28	0.000	1.953597 2.589093
zspink6	.9282726	.0369172	-1.87	0.061	.8586643 1.003524
_infectionburXzspink6_000	1.058034	.0752687	0.79	0.428	.9203327 1.216338
AGE	1.034749	.0129668	2.73	0.006	1.009644 1.060478
SEX	.741369	.0488169	-4.54	0.000	.6516066 .8434968
NonWhite	1.083768	.1842943	0.47	0.636	.7765864 1.512456
householdsize	.9339038	.0393259	-1.62	0.104	.8599213 1.014251
SES	.8162611	.0401085	-4.13	0.000	.7413167 .8987821
LE8_TOTALSCORE	.9990476	.0003548	-2.68	0.007	.9983524 .9997433

-> Model for the mediator

Iteration 0: Log likelihood = -50698.829
 Iteration 1: Log likelihood = -50698.829

Linear regression (Maximum Likelihood)
 Number of obs = 36,726
 Wald chi2(7) = 2936.72
 Log likelihood = -50698.829 Prob > chi2 = 0.0000

	zspink6	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0593654	.014668	4.05	0.000	.0306167 .0881142
AGE		.0137669	.0009566	14.39	0.000	.0118919 .0156418
SEX		-.3959747	.0101506	-39.01	0.000	-.4158694 -.37608
NonWhite		.1922634	.0242861	7.92	0.000	.1446634 .2398634
householdsize		.0048064	.0046217	1.04	0.298	-.0042519 .0138647
SES		-.1247008	.0076132	-16.38	0.000	-.1396224 -.1097792
LE8_TOTALSCORE		-.0009757	.0000541	-18.05	0.000	-.0010817 -.0008698
_cons		.2288985	.0691818	3.31	0.001	.0933047 .3644923
sigma2						
_cons		.9259324	.0068329	135.51	0.000	.9125401 .9393247

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.240147	.160725	7.72	0.000	.9251323 1.555163
ereri_cde	1.245048	.161233	7.72	0.000	.9290367 1.561059
ereri_intref	-.0025027	.004491	-0.56	0.577	-.011305 .0062995
ereri_intmed	.0020114	.00831	0.24	0.809	-.0142759 .0182987
ereri_pie	-.0044088	.0025897	-1.70	0.089	-.0094845 .0006669

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zspint1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .0464 2.215 -.07519 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9080.448**
 Iteration 1: Log likelihood = **-8993.1892**
 Iteration 2: Log likelihood = **-8982.7374**
 Iteration 3: Log likelihood = **-8982.6334**
 Iteration 4: Log likelihood = **-8982.6333**
 Refining estimates:
 Iteration 0: Log likelihood = **-8982.6333**

Cox regression with Breslow method for ties

No. of subjects =	36,338	Number of obs =	36,338
No. of failures =	970		
Time at risk =	441,378.228	LR chi2(9) =	195.63
Log likelihood =	-8982.6333	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.237249	.1612602	11.17	0.000	1.942495 2.576728
zspint1	1.041411	.0410321	1.03	0.303	.9640159 1.125019
_infectionburXzspint1_000	1.011703	.0674017	0.17	0.861	.88786 1.152821
AGE	1.035046	.0130411	2.73	0.006	1.009799 1.060924
SEX	.7584746	.0493813	-4.25	0.000	.6676097 .8617066
NonWhite	1.081891	.1840352	0.46	0.644	.7751569 1.510001
householdszie	.9418006	.0393297	-1.44	0.151	.8677861 1.022128
SES	.8262226	.0407823	-3.87	0.000	.7500354 .9101487
LE8_TOTALSCORE	.9990573	.0003559	-2.65	0.008	.99836 .9997551

-> Model for the mediator

Iteration 0: Log likelihood = **-51046.544**
 Iteration 1: Log likelihood = **-51046.544**

Linear regression (Maximum Likelihood)	Number of obs =	36,338
	Wald chi2(7) =	1043.39
Log likelihood =	Prob > chi2 =	0.0000

<u>zspint1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1276528	.0150884	8.46	0.000	.0980801 .1572255
AGE	.0007888	.0009875	0.80	0.424	-.0011468 .0027243
SEX	-.0371701	.0104588	-3.55	0.000	-.057669 -.0166713
NonWhite	.1536784	.0250681	6.13	0.000	.104546 .2028109
householdszie	-.0179288	.0049678	-3.61	0.000	-.0276656 -.008192
SES	-.1256055	.0078529	-15.99	0.000	-.1409969 -.110214
LE8_TOTALSCORE	-.0010105	.0000557	-18.15	0.000	-.0011196 -.0009014
_cons	.5206321	.0716251	7.27	0.000	.3802494 .6610147
sigma2					
_cons	.9720613	.0072115	134.79	0.000	.9579269 .9861957

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.252927	.1610603	7.78	0.000	.9372545 1.568599
ereri_cde	1.23715	.1612222	7.67	0.000	.92116 1.55314
ereri_intref	.0008114	.004093	0.20	0.843	-.0072108 .0088336
ereri_intmed	.0097726	.0162792	0.60	0.548	-.022134 .0416792
ereri_pie	.0051931	.005093	1.02	0.308	-.0047891 .0151752

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zspint2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.531 .04635 2.216 -.07488 500.5**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9125.8833**

Iteration 1: Log likelihood = **-9039.8042**

Iteration 2: Log likelihood = **-9026.6923**

Iteration 3: Log likelihood = **-9026.4282**

Iteration 4: Log likelihood = **-9026.4279**

Refining estimates:

Iteration 0: Log likelihood = **-9026.4279**

Cox regression with Breslow method for ties

No. of subjects = **36,595** Number of obs = **36,595**

No. of failures = **974**

Time at risk = **444,506.48**

Log likelihood = **-9026.4279**

LR chi2(9) = **198.91**

Prob > chi2 = **0.0000**

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.26927	.1619962	11.48	0.000	1.972975 2.610062
zspint2		.9769131	.0384795	-0.59	0.553	.9043325 1.055319
_infectionburXzspint2_000		.8671268	.0605243	-2.04	0.041	.7562579 .9942494
AGE		1.036469	.01302	2.85	0.004	1.011262 1.062305
SEX		.750742	.0488828	-4.40	0.000	.660795 .8529326
NonWhite		1.097268	.1868253	0.55	0.586	.7859293 1.53194
householdsize		.9352916	.0393434	-1.59	0.112	.8612733 1.015671
SES		.8248355	.0406455	-3.91	0.000	.7488979 .9084733
LE8_TOTALSCORE		.9989537	.0003563	-2.94	0.003	.9982557 .9996523

-> Model for the mediator

Iteration 0: Log likelihood = **-51288.747**
 Iteration 1: Log likelihood = **-51288.747**

Linear regression (Maximum Likelihood) Number of obs = 36,595
 Wald chi2(7) = 1296.04
 Log likelihood = **-51288.747** Prob > chi2 = 0.0000

	zspint2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0915115	.0149905	6.10	0.000	.0621307 .1208922
AGE		.01378	.0009783	14.09	0.000	.0118625 .0156975
SEX		-.1765315	.0103867	-17.00	0.000	-.1968891 -.156174
NonWhite		-.1913322	.0249021	-7.68	0.000	-.2401393 -.142525
householdsize		-.0097863	.0047291	-2.07	0.039	-.0190552 -.0005175
SES		-.0636572	.0077962	-8.17	0.000	-.0789373 -.048377
LE8_TOTALSCORE		-.0009987	.0000553	-18.05	0.000	-.0011071 -.0008903
_cons		-.0460904	.0706649	-0.65	0.514	-.1845911 .0924104
sigma2						
_cons		.9657693	.0071397	135.27	0.000	.9517758 .9797627

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.268499	.1626476	7.80	0.000	.9497159 1.587283
ereri_cde	1.268559	.1619975	7.83	0.000	.9510497 1.586068
ereri_intref	.0346488	.0233985	1.48	0.139	-.0112113 .080509
ereri_intmed	-.0325732	.0141999	-2.29	0.022	-.0604044 -.004742
ereri_pie	-.0021352	.0036138	-0.59	0.555	-.009218 .0049476

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zspock1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8985.4467
 Iteration 1: Log likelihood = -8896.3857
 Iteration 2: Log likelihood = -8883.4219
 Iteration 3: Log likelihood = -8883.2596
 Iteration 4: Log likelihood = -8883.2596
 Refining estimates:
 Iteration 0: Log likelihood = -8883.2596

Cox regression with Breslow method for ties

No. of subjects =	36,164	Number of obs =	36,164
No. of failures =	960		
Time at risk =	439,440.668	LR chi2(9) =	204.37
Log likelihood =	-8883.2596	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.178894	.1587445	10.69	0.000	1.888954 2.513338
zspock1	.907184	.0349638	-2.53	0.011	.8411804 .9783665
_infectionburXzspock1_000	.9636214	.0664531	-0.54	0.591	.8417943 1.10308
AGE	1.037505	.0131064	2.91	0.004	1.012132 1.063513
SEX	.7370569	.0482385	-4.66	0.000	.6483239 .8379344
NonWhite	1.044451	.1824177	0.25	0.803	.7416896 1.470801
householdsize	.9437038	.0390238	-1.40	0.161	.8702359 1.023374
SES	.8140358	.0402971	-4.16	0.000	.7387654 .8969752
LE8_TOTALSCORE	.9990522	.0003557	-2.66	0.008	.9983553 .9997495

-> Model for the mediator

Iteration 0: Log likelihood = -51115.061
 Iteration 1: Log likelihood = -51115.061

Linear regression (Maximum Likelihood)
 Number of obs = 36,164
 Wald chi2(7) = 400.06
 Log likelihood = -51115.061 Prob > chi2 = 0.0000

	zspock1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.057526	.0152748	-3.77	0.000	-.087464 -.027588
AGE		.007683	.0009994	7.69	0.000	.0057242 .0096418
SEX		-.1233029	.0105732	-11.66	0.000	-.144026 -.1025797
NonWhite		.3227536	.0253531	12.73	0.000	.2730625 .3724447
householdsize		-.0118894	.0050143	-2.37	0.018	-.0217172 -.0020615
SES		.0580474	.0079481	7.30	0.000	.0424695 .0736253
LE8_TOTALSCORE		.0000429	.0000563	0.76	0.446	-.0000674 .0001531
_cons		-.2712627	.0724331	-3.75	0.000	-.413229 -.1292964
sigma2						
_cons		.9890313	.0073551	134.47	0.000	.9746156 1.003447

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.204513	.1589798	7.58	0.000	.892918 1.516107
ereri_cde	1.174288	.1580218	7.43	0.000	.8645707 1.484005
ereri_intref	.0132381	.0159356	0.83	0.406	-.017995 .0444712
ereri_intmed	.0113675	.0082237	1.38	0.167	-.0047507 .0274857
ereri_pie	.0056193	.0026851	2.09	0.036	.0003566 .0108821

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zspock1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.532 .04635 2.216 -.07454 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9083.3359
 Iteration 1: Log likelihood = -8995.2603
 Iteration 2: Log likelihood = -8985.2275
 Iteration 3: Log likelihood = -8985.1193
 Iteration 4: Log likelihood = -8985.1192
 Refining estimates:
 Iteration 0: Log likelihood = -8985.1192

Cox regression with Breslow method for ties

No. of subjects =	36,480	Number of obs =	36,480
No. of failures =	970		
Time at risk =	443,094.176	LR chi2(9) =	196.43
Log likelihood =	-8985.1192	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.230082	.1664249	10.75	0.000	1.926629 2.581331
zspon1		1.102435	.0424751	2.53	0.011	1.022251 1.188909
_infectionburXzspon1_000		.9617553	.0625662	-0.60	0.549	.8466235 1.092544
AGE		1.032298	.0130735	2.51	0.012	1.00699 1.058242
SEX		.7341397	.0483476	-4.69	0.000	.645241 .8352866
NonWhite		1.083909	.1845364	0.47	0.636	.7763813 1.51325
householdszie		.9401969	.039243	-1.48	0.140	.8663442 1.020345
SES		.8375545	.0414977	-3.58	0.000	.7600447 .9229687
LE8_TOTALSCORE		.9991351	.0003567	-2.42	0.015	.9984362 .9998345

-> Model for the mediator

Iteration 0: Log likelihood = -50000.037
 Iteration 1: Log likelihood = -50000.037

Linear regression (Maximum Likelihood)	Number of obs =	36,480
	Wald chi2(7) =	3700.58
Log likelihood =	-50000.037	Prob > chi2 = 0.0000

	<u>zspon1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1591662	.0145594	10.93	0.000	.1306302 .1877021
AGE		.0336808	.00095	35.45	0.000	.0318188 .0355429
SEX		.3093858	.0100863	30.67	0.000	.289617 .3291546
NonWhite		.059051	.0241799	2.44	0.015	.0116593 .1064427
householdszie		-.0078415	.0045903	-1.71	0.088	-.0168384 .0011553
SES		-.1342162	.0075712	-17.73	0.000	-.1490555 -.1193768
LE8_TOTALSCORE		-.0011119	.0000537	-20.69	0.000	-.0012172 -.0010066
_cons		-1.961894	.0686462	-28.58	0.000	-2.096438 -1.82735
sigma2						
_cons		.9078765	.0067222	135.06	0.000	.8947011 .9210518

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.24668	.1627409	7.66	0.000	.9277142 1.565647
ereri_cde	1.227427	.1657356	7.41	0.000	.9025912 1.552263
ereri_intref	-.0015781	.0044248	-0.36	0.721	-.0102506 .0070944
ereri_intmed	.0051883	.019644	0.26	0.792	-.0333132 .0436898
ereri_pie	.0156432	.0063931	2.45	0.014	.0031129 .0281735

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zspont2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04662 2.218 -.07623 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9012.4247

Iteration 1: Log likelihood = -8926.7855

Iteration 2: Log likelihood = -8910.6678

Iteration 3: Log likelihood = -8910.36

Iteration 4: Log likelihood = -8910.3597

Refining estimates:

Iteration 0: Log likelihood = -8910.3597

Cox regression with Breslow method for ties

No. of subjects = 36,274

Number of obs = 36,274

No. of failures = 963

Time at risk = 440,700.791

LR chi2(9) = 204.13

Log likelihood = -8910.3597 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.225474	.1690645	10.53	0.000	1.917602 2.582775
zspont2	1.072889	.0427118	1.77	0.077	.9923581 1.159955
_infectionburXzspont2_000	1.025799	.0681611	0.38	0.701	.9005389 1.168482
AGE	1.031517	.0130979	2.44	0.015	1.006162 1.05751
SEX	.7538349	.0492614	-4.32	0.000	.6632117 .8568411
NonWhite	.992921	.1758729	-0.04	0.968	.7016881 1.405029
householdsize	.9281571	.0398924	-1.73	0.083	.8531722 1.009732
SES	.83316	.0415599	-3.66	0.000	.7555594 .9187307
LE8_TOTALSCORE	.9991546	.0003601	-2.35	0.019	.9984491 .9998606

-> Model for the mediator

Iteration 0: Log likelihood = -50057.923
 Iteration 1: Log likelihood = -50057.923

Linear regression (Maximum Likelihood)
 Number of obs = 36,274
 Wald chi2(7) = 2937.17
 Log likelihood = -50057.923 Prob > chi2 = 0.0000

zspont2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.2458817	.0147254	16.70	0.000	.2170205 .2747429
AGE	.0234248	.0009623	24.34	0.000	.0215387 .025311
SEX	.0204224	.0102098	2.00	0.045	.0004115 .0404334
NonWhite	.166619	.0244152	6.82	0.000	.118766 .214472
householdsize	.0020251	.0046439	0.44	0.663	-.0070768 .011127
SES	-.1554949	.0076623	-20.29	0.000	-.1705128 -.140477
LE8_TOTALSCORE	-.0015005	.0000544	-27.57	0.000	-.0016072 -.0013938
_cons	-.7483427	.0695536	-10.76	0.000	-.8846653 -.61202
sigma2					
_cons	.9250681	.006869	134.67	0.000	.9116052 .938531

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.28101	.1650069	7.76	0.000	.9576027 1.604418
ereri_cde	1.225618	.1689397	7.25	0.000	.8945022 1.556734
ereri_intref	.0022753	.0066594	0.34	0.733	-.0107768 .0153274
ereri_intmed	.0356675	.0309034	1.15	0.248	-.0249021 .0962371
ereri_pie	.0174495	.010015	1.74	0.081	-.0021795 .0370786

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zspp1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04646 2.216 -.07521 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9213.6345
 Iteration 1: Log likelihood = -9120.9664
 Iteration 2: Log likelihood = -9103.2239
 Iteration 3: Log likelihood = -9102.7316
 Iteration 4: Log likelihood = -9102.7308
 Iteration 5: Log likelihood = -9102.7308
 Refining estimates:
 Iteration 0: Log likelihood = -9102.7308

Cox regression with Breslow method for ties

No. of subjects = 36,845	Number of obs = 36,845
No. of failures = 983	
Time at risk = 447,583.608	
Log likelihood = -9102.7308	LR chi2(9) = 221.81 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.18385	.1630647	10.46	0.000	1.886536 2.528021
zspp1	1.196988	.0463212	4.65	0.000	1.109558 1.291308
_infectionburXzspp1_000	.985528	.0645599	-0.22	0.824	.8667792 1.120545
AGE	1.030196	.0129324	2.37	0.018	1.005159 1.055858
SEX	.7277617	.0473326	-4.89	0.000	.6406608 .8267043
NonWhite	1.097554	.1866417	0.55	0.584	.786461 1.531704
householdsize	.9431443	.039106	-1.41	0.158	.8695297 1.022991
SES	.8375981	.0410866	-3.61	0.000	.7608198 .9221245
LE8_TOTALSCORE	.9989764	.0003514	-2.91	0.004	.9982878 .9996654

-> Model for the mediator

Iteration 0: Log likelihood = -51465.909	Number of obs = 36,845
Iteration 1: Log likelihood = -51465.909	Wald chi2(7) = 1665.30
Log likelihood = -51465.909	Prob > chi2 = 0.0000

	zspp1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1487743	.0148684	10.01	0.000	.1196328 .1779159
AGE		.0235621	.0009707	24.27	0.000	.0216596 .0254645
SEX		.2423193	.0103015	23.52	0.000	.2221286 .2625099
NonWhite		-.1805643	.0246735	-7.32	0.000	-.2289234 -.1322051
householdsize		-.0099178	.004697	-2.11	0.035	-.0191237 -.0007118
SES		-.0741259	.0077309	-9.59	0.000	-.0892783 -.0589735
LE8_TOTALSCORE		.0004596	.0000549	8.38	0.000	.0003521 .0005672
_cons		-2.014881	.070167	-28.72	0.000	-2.152405 -1.877356
sigma2						
_cons		.9567311	.0070488	135.73	0.000	.9429157 .9705465

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.233493	.1596825	7.72	0.000	.9205215 1.546465
ereri_cde	1.170024	.1604732	7.29	0.000	.8555022 1.484545
ereri_intref	.009235	.0165778	0.56	0.577	-.0232568 .0417268
ereri_intmed	.0271227	.0184751	1.47	0.142	-.0090879 .0633333
ereri_pie	.0271119	.0065198	4.16	0.000	.0143332 .0398905

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zspry2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8913.3312**
 Iteration 1: Log likelihood = **-8825.2271**
 Iteration 2: Log likelihood = **-8816.9203**
 Iteration 3: Log likelihood = **-8816.8921**
 Iteration 4: Log likelihood = **-8816.8921**
 Refining estimates:
 Iteration 0: Log likelihood = **-8816.8921**

Cox regression with Breslow method for ties

No. of subjects =	35,761	Number of obs =	35,761
No. of failures =	953		
Time at risk =	434,427.923	LR chi2(9) =	192.88
Log likelihood =	-8816.8921	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.221408	.1614908	10.98	0.000	1.926407 2.561584
zspry2	.9111898	.0362205	-2.34	0.019	.8428939 .9850194
_infectionburXzspry2_000	1.018703	.0747621	0.25	0.801	.8822234 1.176297
AGE	1.036938	.0131543	2.86	0.004	1.011474 1.063043
SEX	.7478341	.049136	-4.42	0.000	.6574724 .8506149
NonWhite	1.062011	.1854218	0.34	0.730	.7542466 1.495355
householdszie	.9347589	.0397814	-1.59	0.113	.8599521 1.016073
SES	.8246754	.0410312	-3.87	0.000	.7480524 .9091468
LE8_TOTALSCORE	.999007	.0003588	-2.77	0.006	.998304 .9997105

-> Model for the mediator

Iteration 0: Log likelihood = **-50615.173**
 Iteration 1: Log likelihood = **-50615.173**

Linear regression (Maximum Likelihood)	Number of obs =	35,761
	Wald chi2(7) =	254.88
Log likelihood =	Prob > chi2 =	0.0000

zspry2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0003342	.015398	0.02	0.983	-.0298454 .0305138
AGE	-.0053487	.0010029	-5.33	0.000	-.0073143 -.003383
SEX	-.0300316	.0106507	-2.82	0.005	-.0509067 -.0091566
NonWhite	.0992713	.025484	3.90	0.000	.0493236 .149219
householdszie	-.0033008	.0048445	-0.68	0.496	-.0127957 .0061942
SES	-.0336819	.0079855	-4.22	0.000	-.0493331 -.0180307
LE8_TOTALSCORE	-.0006851	.0000567	-12.07	0.000	-.0007963 -.0005739
_cons	.7108755	.0724409	9.81	0.000	.568894 .852857
sigma2					
_cons	.9928954	.0074253	133.72	0.000	.978342 1.007449

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.217931	.1605086	7.59	0.000	.9033401 1.532522
ereri_cde	1.216169	.1606264	7.57	0.000	.9013474 1.530991
ereri_intref	.0018171	.0107546	0.17	0.866	-.0192616 .0228957
ereri_intmed	-.0000241	.0011125	-0.02	0.983	-.0022046 .0021563
ereri_pie	-.0000311	.0014321	-0.02	0.983	-.002838 .0027758

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsrc
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04636 2.217 -.07486 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9111.5261

Iteration 1: Log likelihood = -9022.0133

Iteration 2: Log likelihood = -9011.4116

Iteration 3: Log likelihood = -9011.3429

Iteration 4: Log likelihood = -9011.3429

Refining estimates:

Iteration 0: Log likelihood = -9011.3429

Cox regression with Breslow method for ties

No. of subjects = 36,476 Number of obs = 36,476

No. of failures = 973

Time at risk = 443,126.069

Log likelihood = -9011.3429

LR chi2(9) = 200.37

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.248322	.1617861	11.26	0.000	1.952573 2.588868
zsrc		.9315624	.0356364	-1.85	0.064	.8642706 1.004094
_infectionburXzsrc_000		.9722695	.0693814	-0.39	0.694	.8453658 1.118223
AGE		1.034145	.0129987	2.67	0.008	1.008979 1.059938
SEX		.7715119	.0501539	-3.99	0.000	.6792167 .8763487
NonWhite		1.070595	.1844179	0.40	0.692	.7638352 1.500552
householdsize		.9319274	.0394979	-1.66	0.096	.8576411 1.012648
SES		.8168521	.0402702	-4.10	0.000	.7416172 .8997192
LE8_TOTALSCORE		.9990206	.000354	-2.77	0.006	.9983271 .9997146

-> Model for the mediator

Iteration 0: Log likelihood = **-51656.402**
 Iteration 1: Log likelihood = **-51656.402**

Linear regression (Maximum Likelihood)
 Number of obs = 36,476
 Wald chi2(7) = 201.15
 Prob > chi2 = 0.0000
 Log likelihood = **-51656.402**

	zsrc	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0283347	.0152526	-1.86	0.063	-.0582292 .0015598
AGE		-.006096	.0009946	-6.13	0.000	-.0080453 -.0041467
SEX		.0804886	.0105559	7.63	0.000	.0597995 .1011776
NonWhite		.0998863	.025312	3.95	0.000	.0502758 .1494968
householdsize		-.0005619	.0048038	-0.12	0.907	-.0099773 .0088534
SES		-.0187445	.0079233	-2.37	0.018	-.034274 -.003215
LE8_TOTALSCORE		-.0004572	.0000562	-8.14	0.000	-.0005673 -.0003471
_cons		.4716842	.0719051	6.56	0.000	.3307529 .6126156
sigma2						
_cons		.9944883	.007364	135.05	0.000	.9800552 1.008921

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.259753	.1612778	7.81	0.000	.9436538 1.575851
ereri_cde	1.245554	.1612846	7.72	0.000	.9294416 1.561666
ereri_intref	.007868	.0130552	0.60	0.547	-.0177196 .0334557
ereri_intmed	.0043202	.0046419	0.93	0.352	-.0047777 .0134181
ereri_pie	.0020107	.0015341	1.31	0.190	-.0009961 .0050175

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsrp14
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9057.6167
 Iteration 1: Log likelihood = -8968.7248
 Iteration 2: Log likelihood = -8957.9384
 Iteration 3: Log likelihood = -8957.842
 Iteration 4: Log likelihood = -8957.8419
 Refining estimates:
 Iteration 0: Log likelihood = -8957.8419

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	199.55
Log likelihood =	-8957.8419	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.235856	.1615169	11.14	0.000	1.940678 2.57593
zsrp14	.9148302	.035537	-2.29	0.022	.8477644 .9872014
_infectionburXzsrp14_000	1.155422	.08122	2.06	0.040	1.006713 1.326097
AGE	1.032457	.0130057	2.54	0.011	1.007278 1.058264
SEX	.7441707	.0486513	-4.52	0.000	.6546723 .8459042
NonWhite	1.087813	.1850682	0.49	0.621	.7793644 1.518337
householdsize	.9369043	.0392602	-1.56	0.120	.863031 1.017101
SES	.8158547	.040212	-4.13	0.000	.7407278 .8986012
LE8_TOTALSCORE	.9990036	.0003584	-2.78	0.005	.9983014 .9997063

-> Model for the mediator

Iteration 0: Log likelihood = -50677.986
 Iteration 1: Log likelihood = -50677.986

Linear regression (Maximum Likelihood)

Number of obs =	36,264
Wald chi2(7) =	1589.66
Prob > chi2 =	0.0000

Log likelihood = -50677.986

	zsrp14	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.04435	.0149998	2.96	0.003	.0149509 .073749
AGE		.0052312	.0009795	5.34	0.000	.0033115 .0071509
SEX		-.2196524	.0103902	-21.14	0.000	-.2400168 -.1992881
NonWhite		.0853922	.0248621	3.43	0.001	.0366634 .1341209
householdsize		-.0025324	.0047253	-0.54	0.592	-.0117939 .0067291
SES		-.0238847	.0077925	-3.07	0.002	-.0391577 -.0086116
LE8_TOTALSCORE		-.0015936	.0000553	-28.80	0.000	-.001702 -.0014851
_cons		.8132421	.0707864	11.49	0.000	.6745034 .9519808
sigma2						
_cons		.9579788	.0071143	134.66	0.000	.944035 .9719226

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.234171	.1603894	7.69	0.000	.9198138 1.548529
ereri_cde	1.230499	.1608068	7.65	0.000	.9153232 1.545674
ereri_intref	-.001815	.0072618	-0.25	0.803	-.0160478 .0124178
ereri_intmed	.0094275	.0068471	1.38	0.169	-.0039925 .0228475
ereri_pie	-.0039401	.0021711	-1.81	0.070	-.0081953 .0003151

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsrpk2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8945.9782**
 Iteration 2: Log likelihood = **-8937.428**
 Iteration 3: Log likelihood = **-8937.4077**
 Iteration 4: Log likelihood = **-8937.4077**
 Refining estimates:
 Iteration 0: Log likelihood = **-8937.4077**

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	198.06
Log likelihood =	-8937.4077	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.263909	.1623028	11.40	0.000	1.967139 2.60545
zsrpk2	.9192435	.0373774	-2.07	0.038	.8488282 .9955002
_infectionburXzsrpk2_000	1.034372	.0748191	0.47	0.640	.8976497 1.191919
AGE	1.03296	.0130122	2.57	0.010	1.007769 1.058781
SEX	.7581091	.049454	-4.25	0.000	.6671216 .8615062
NonWhite	1.06238	.1830951	0.35	0.726	.7578443 1.489291
householdszie	.933011	.0396874	-1.63	0.103	.8583794 1.014131
SES	.8177876	.0403834	-4.07	0.000	.7423473 .9008945
LE8_TOTALSCORE	.9989401	.0003571	-2.97	0.003	.9982403 .9996403

-> Model for the mediator

Iteration 0: Log likelihood = **-51310.406**
 Iteration 1: Log likelihood = **-51310.406**

Linear regression (Maximum Likelihood)	Number of obs =	36,352	
	Wald chi2(7) =	544.74	
Log likelihood =	-51310.406	Prob > chi2 =	0.0000

zsrpk2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0174309	.0152055	1.15	0.252	-.0123713 .047233
AGE	-.0011661	.0009926	-1.17	0.240	-.0031115 .0007793
SEX	-.0345477	.0105241	-3.28	0.001	-.0551744 -.0139209
NonWhite	.106784	.0252192	4.23	0.000	.0573553 .1562126
householdszie	-.0048459	.0048708	-0.99	0.320	-.0143926 .0047008
SES	-.0289312	.0078936	-3.67	0.000	-.0444023 -.0134602
LE8_TOTALSCORE	-.0011401	.000056	-20.35	0.000	-.0012499 -.0010303
_cons	.6950413	.0718039	9.68	0.000	.5543083 .8357744
sigma2					
_cons	.9852091	.0073077	134.82	0.000	.9708863 .9995319

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.256673	.1616023	7.78	0.000	.9399386 1.573408
ereri_cde	1.259246	.1615778	7.79	0.000	.9425593 1.575933
ereri_intref	-.0005891	.0078494	-0.08	0.940	-.0159736 .0147955
ereri_intmed	-.0005171	.0025107	-0.21	0.837	-.005438 .0044038
ereri_pie	-.0014667	.0014613	-1.00	0.316	-.0043308 .0013974

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zssb
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8819.5642

Iteration 1: Log likelihood = -8734.4407

Iteration 2: Log likelihood = -8726.48

Iteration 3: Log likelihood = -8726.4495

Iteration 4: Log likelihood = -8726.4495

Refining estimates:

Iteration 0: Log likelihood = -8726.4495

Cox regression with Breslow method for ties

No. of subjects = 35,601 Number of obs = 35,601

No. of failures = 943

Time at risk = 432,443.367

Log likelihood = -8726.4495

LR chi2(9) = 186.23

Prob > chi2 = 0.0000

-> Model for the mediator

Iteration 0: Log likelihood = -50504.416
Iteration 1: Log likelihood = -50504.416

Linear regression (Maximum Likelihood) Number of obs = 35,601
Log likelihood = -50504.416 Wald chi2(7) = 21.44
Prob > chi2 = 0.0032

	zssb	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0280393	.0154611	1.81	0.070	-.0022639 .0583424
AGE		-.0016347	.0010123	-1.61	0.106	-.0036187 .0003494
SEX		-.0117986	.0107108	-1.10	0.271	-.0327915 .0091942
NonWhite		.0128755	.0255571	0.50	0.614	-.0372154 .0629665
householdsiz		-.0004311	.0050813	-0.08	0.932	-.0103902 .0095279
SES		-.0031741	.0080461	-0.39	0.693	-.0189443 .012596
LE8_TOTALSCORE		-.0001937	.0000571	-3.39	0.001	-.0003056 -.0000818
_cons		.209624	.0733877	2.86	0.004	.0657867 .3534614
sigma2						
_cons		.9993702	.0074905	133.42	0.000	.9846891 1.014051

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.215176	.1612774	7.53	0.000	.899078 1.531274
ereri_cde	1.211949	.1610288	7.53	0.000	.8963387 1.52756
ereri_intref	.0004957	.0057746	0.09	0.932	- .0108223 .0118136
ereri_intmed	.0040362	.0045028	0.90	0.370	- .0047892 .0128616
ereri_pie	-.0013051	.0013442	-0.97	0.332	- .0039397 .0013294

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zssc4d
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04653 2.218 -.07587 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9043.1078
 Iteration 1: Log likelihood = -8942.2614
 Iteration 2: Log likelihood = -8932.3414
 Iteration 3: Log likelihood = -8932.2995
 Iteration 4: Log likelihood = -8932.2995
 Refining estimates:
 Iteration 0: Log likelihood = -8932.2995

Cox regression with Breslow method for ties

No. of subjects =	36,384	Number of obs =	36,384
No. of failures =	966		
Time at risk =	442,032.251	LR chi2(9) =	221.62
Log likelihood =	-8932.2995	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.28165	.1634397	11.52	0.000	1.982784 2.625563
zssc4d	.8296905	.0353524	-4.38	0.000	.7632155 .9019554
_infectionburXzssc4d_000	1.047679	.0772325	0.63	0.527	.9067333 1.210534
AGE	1.032929	.0130327	2.57	0.010	1.007699 1.058791
SEX	.6942862	.0463672	-5.46	0.000	.6091047 .7913802
NonWhite	1.020238	.1804581	0.11	0.910	.7213435 1.442981
householdsize	.9313613	.0398605	-1.66	0.097	.8564231 1.012857
SES	.8329489	.0412037	-3.70	0.000	.7559824 .9177513
LE8_TOTALSCORE	.9985763	.0003671	-3.87	0.000	.997857 .9992962

-> Model for the mediator

Iteration 0: Log likelihood = -48535.778
 Iteration 1: Log likelihood = -48535.778

Linear regression (Maximum Likelihood)

Number of obs =	36,384
Wald chi2(7) =	6736.78
Prob > chi2 =	0.0000

Log likelihood = -48535.778

	zssc4d	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0239718	.0140502	-1.71	0.088	-.0515097 .0035661
AGE		-.0024567	.0009176	-2.68	0.007	-.0042551 -.0006583
SEX		-.5250444	.0097356	-53.93	0.000	-.5441258 -.505963
NonWhite		.1353327	.0233006	5.81	0.000	.0896643 .1810011
householdsize		.0218475	.0044292	4.93	0.000	.0131665 .0305286
SES		.0471939	.0073053	6.46	0.000	.0328757 .0615121
LE8_TOTALSCORE		-.0028885	.0000519	-55.67	0.000	-.0029902 -.0027868
_cons		2.349579	.0663117	35.43	0.000	2.219611 2.479548
sigma2						
_cons		.8437464	.0062556	134.88	0.000	.8314855 .8560072

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.275025	.1631474	7.82	0.000	.9552616 1.594788
ereri_cde	1.263726	.1609623	7.85	0.000	.9482454 1.579206
ereri_intref	.0036697	.017201	0.21	0.831	-.0300436 .0373831
ereri_intmed	.0031435	.0040235	0.78	0.435	-.0047425 .0110295
ereri_pie	.0044856	.0028277	1.59	0.113	-.0010565 .0100278

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zssc5d
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04645 2.216 -.0751 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9132.7834**
 Iteration 1: Log likelihood = **-9045.4222**
 Iteration 2: Log likelihood = **-9036.3624**
 Iteration 3: Log likelihood = **-9036.3297**
 Iteration 4: Log likelihood = **-9036.3297**
 Refining estimates:
 Iteration 0: Log likelihood = **-9036.3297**

Cox regression with Breslow method for ties

No. of subjects =	36,596	Number of obs =	36,596
No. of failures =	975		
Time at risk =	444,571.57	LR chi2(9) =	192.91
Log likelihood =	-9036.3297	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.229206	.1609616	11.10	0.000	1.935034 2.5681
zssc5d	.940941	.0375305	-1.53	0.127	.8701844 1.017451
_infectionburXzssc5d_000	1.072706	.0757869	0.99	0.321	.9339923 1.232022
AGE	1.034103	.0130019	2.67	0.008	1.008931 1.059902
SEX	.7567002	.0491885	-4.29	0.000	.6661813 .8595186
NonWhite	1.088901	.1852726	0.50	0.617	.7801169 1.519908
householdszie	.9343146	.0394487	-1.61	0.108	.8601092 1.014922
SES	.8267226	.0407667	-3.86	0.000	.7505611 .9106125
LE8_TOTALSCORE	.9989483	.0003672	-2.86	0.004	.998229 .9996682

-> Model for the mediator

Iteration 0: Log likelihood = **-49773.87**
 Iteration 1: Log likelihood = **-49773.87**

Linear regression (Maximum Likelihood)	Number of obs =	36,596	
	Wald chi2(7) =	4569.80	
Log likelihood =	-49773.87	Prob > chi2 =	0.0000

zssc5d	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0458306	.0143945	3.18	0.001	.0176178 .0740434
AGE	.0133828	.0009387	14.26	0.000	.0115429 .0152227
SEX	-.1733903	.0099636	-17.40	0.000	-.1929186 -.153862
NonWhite	-.1722435	.0238641	-7.22	0.000	-.2190163 -.1254708
householdszie	-.0007501	.0045395	-0.17	0.869	-.0096473 .0081472
SES	-.0304454	.0074796	-4.07	0.000	-.0451052 -.0157857
LE8_TOTALSCORE	-.0030821	.0000531	-58.00	0.000	-.0031863 -.0029779
_cons	1.003848	.0678546	14.79	0.000	.8708556 1.136841
sigma2					
_cons	.8889661	.0065718	135.27	0.000	.8760857 .9018466

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.22558	.1602492	7.65	0.000	.9114979 1.539663
ereri_cde	1.226709	.1607911	7.63	0.000	.9115641 1.541854
ereri_intref	-.0020778	.0024681	-0.84	0.400	-.0069152 .0027596
ereri_intmed	.0037355	.0063999	0.58	0.559	-.0088082 .0162791
ereri_pie	-.002786	.0020215	-1.38	0.168	-.0067482 .0011761

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zst3gal1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8968.7774

Iteration 2: Log likelihood = -8959.6764

Iteration 3: Log likelihood = -8959.6364

Iteration 4: Log likelihood = -8959.6363

Refining estimates:

Iteration 0: Log likelihood = -8959.6363

Cox regression with Breslow method for ties

No. of subjects = 36,264 Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 195.96

Log likelihood = -8959.6363

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.244082	.1610855	11.26	0.000	1.949564 2.583093
zst3gal1		1.034031	.0400029	0.87	0.387	.9585258 1.115485
_infectionburXzst3gal1_000		1.05156	.0733663	0.72	0.471	.9171628 1.205651
AGE		1.031323	.0129898	2.45	0.014	1.006175 1.057099
SEX		.7358281	.0490659	-4.60	0.000	.6456798 .8385627
NonWhite		1.08719	.1849656	0.49	0.623	.7789134 1.517477
householdsize		.9377352	.0393931	-1.53	0.126	.8636192 1.018212
SES		.8159678	.0402523	-4.12	0.000	.7407687 .8988007
LE8_TOTALSCORE		.9990238	.0003559	-2.74	0.006	.9983264 .9997217

-> Model for the mediator

Iteration 0: Log likelihood = **-50242.701**
 Iteration 1: Log likelihood = **-50242.701**

Linear regression (Maximum Likelihood) Number of obs = 36,264
 Wald chi2(7) = 2509.39
 Prob > chi2 = 0.0000
 Log likelihood = **-50242.701**

	zst3gal1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0351144	.0148208	2.37	0.018	.0060662 .0641627
AGE		.0094392	.0009678	9.75	0.000	.0075424 .011336
SEX		.4407327	.0102662	42.93	0.000	.4206113 .4608541
NonWhite		-.0156469	.0245654	-0.64	0.524	-.0637942 .0325004
householdsize		-.0178786	.004669	-3.83	0.000	-.0270296 -.0087276
SES		.0288119	.0076995	3.74	0.000	.0137211 .0439027
LE8_TOTALSCORE		.0010402	.0000547	19.03	0.000	.000933 .0011473
_cons		-1.726273	.0699418	-24.68	0.000	-1.863357 -1.58919
sigma2						
_cons		.9352549	.0069456	134.66	0.000	.9216419 .948868

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.256348	.1614974	7.78	0.000	.9398187 1.572877
ereri_cde	1.243634	.1610258	7.72	0.000	.9280292 1.559239
ereri_intref	.0060887	.0097896	0.62	0.534	-.0130986 .025276
ereri_intmed	.0054492	.0053716	1.01	0.310	-.0050791 .0159774
ereri_pie	.0011758	.0014479	0.81	0.417	-.001662 .0040135

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zst6gal1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04648 2.216 -.0752 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9225.1762
Iteration 1: Log likelihood = -9134.6728
Iteration 2: Log likelihood = -9125.9389
Iteration 3: Log likelihood = -9125.9107
Iteration 4: Log likelihood = -9125.9107
Refining estimates:
Iteration 0: Log likelihood = -9125.9107

```

Cox regression with Breslow method for ties

No. of subjects =	36,896	Number of obs =	36,896
No. of failures =	984		
Time at risk =	448,211.761	LR chi2(9) =	198.53
Log likelihood =	-9125.9107	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.255297	.1608416	11.40	0.000	1.961094 2.593637
zst6gal1	.9274663	.0368954	-1.89	0.058	.8578998 1.002674
_infectionburXzst6gal1_000	.9956948	.0692674	-0.06	0.951	.8687821 1.141147
AGE	1.035592	.01296	2.79	0.005	1.0105 1.061308
SEX	.7668875	.0499306	-4.08	0.000	.675012 .8712681
NonWhite	1.080109	.1836274	0.45	0.650	.7740272 1.507227
householdsize	.9358237	.0391451	-1.59	0.113	.8621616 1.015779
SES	.8188947	.0401333	-4.08	0.000	.7438947 .9014562
LE8_TOTALSCORE	.9988982	.0003601	-3.06	0.002	.9981926 .9996043

-> Model for the mediator

Iteration 0: Log likelihood = -50863.056	Number of obs = 36,896
Iteration 1: Log likelihood = -50863.056	Wald chi2(7) = 3102.78
Log likelihood = -50863.056	Prob > chi2 = 0.0000

		Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1062537	.014587	7.28	0.000	.0776636 .1348437
AGE		.0149191	.0009523	15.67	0.000	.0130526 .0167856
SEX		.2224198	.0101082	22.00	0.000	.2026081 .2422314
NonWhite		.0783246	.0242059	3.24	0.001	.0308819 .1257673
householdsize		-.0144171	.0046085	-3.13	0.002	-.0234495 -.0053846
SES		-.0765314	.0075857	-10.09	0.000	-.0913991 -.0616637
LE8_TOTALSCORE		-.0022718	.0000538	-42.19	0.000	-.0023773 -.0021663
_cons		-.0935816	.0688506	-1.36	0.174	-.2285264 .0413632
sigma2						
_cons		.922403	.0067912	135.82	0.000	.9090925 .9357135

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.237132	.1596049	7.75	0.000	.924312 1.549952
ereri_cde	1.250627	.1603275	7.80	0.000	.9363913 1.564863
ereri_intref	.0055091	.0120738	0.46	0.648	-.0181551 .0291733
ereri_intmed	-.0110358	.0147281	-0.75	0.454	-.0399023 .0178307
ereri_pie	-.0079689	.0043324	-1.84	0.066	-.0164603 .0005226

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zstambp
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.531 .04636 2.216 -.07448 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8964.5425**
 Iteration 1: Log likelihood = **-8871.235**
 Iteration 2: Log likelihood = **-8863.6439**
 Iteration 3: Log likelihood = **-8863.6284**
 Refining estimates:
 Iteration 0: Log likelihood = **-8863.6284**

Cox regression with Breslow method for ties

No. of subjects =	36,107	Number of obs =	36,107
No. of failures =	958		
Time at risk =	438,744.714	LR chi2(9) =	201.83
Log likelihood =	-8863.6284	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.221427	.1605221	11.05	0.000	1.928074 2.559415
zstambp		.8948243	.0352333	-2.82	0.005	.8283657 .9666149
_infectionburXzstambp_000		1.101088	.0795021	1.33	0.182	.9557901 1.268474
AGE		1.039099	.0131477	3.03	0.002	1.013647 1.06519
SEX		.7335024	.0480872	-4.73	0.000	.645057 .8340747
NonWhite		1.030455	.1799586	0.17	0.864	.731771 1.451051
householdsize		.9441868	.0393611	-1.38	0.168	.870108 1.024572
SES		.8107119	.040187	-4.23	0.000	.7356521 .8934303
LE8_TOTALSCORE		.9989459	.0003576	-2.95	0.003	.9982453 .9996469

-> Model for the mediator

Iteration 0: Log likelihood = **-51008.656**
 Iteration 1: Log likelihood = **-51008.656**

Linear regression (Maximum Likelihood)	Number of obs =	36,107
	Wald chi2(7) =	451.72
Log likelihood =	-51008.656	Prob > chi2 = 0.0000

	zstambp	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0009049	.0152709	-0.06	0.953	-.0308353 .0290255
AGE		-.0014255	.0009995	-1.43	0.154	-.0033845 .0005334
SEX		-.0895048	.0105736	-8.46	0.000	-.1102286 -.068781
NonWhite		.1450579	.0253655	5.72	0.000	.0953425 .1947733
householdsize		.0011412	.0050138	0.23	0.820	-.0086857 .010968
SES		-.0132506	.0079498	-1.67	0.096	-.028832 .0023308
LE8_TOTALSCORE		-.0009405	.0000563	-16.71	0.000	-.0010508 -.0008302
_cons		.6836157	.0724376	9.44	0.000	.5416407 .8255908
sigma2						
_cons		.9876167	.0073503	134.36	0.000	.9732103 1.002023

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.208218	.1592798	7.59	0.000	.8960353 1.520401
ereri_cde	1.214019	.1593314	7.62	0.000	.9017348 1.526302
ereri_intref	-.0058301	.0047224	-1.23	0.217	-.0150859 .0034256
ereri_intmed	-.0000709	.0012038	-0.06	0.953	-.0024303 .0022884
ereri_pie	.0001006	.0016976	0.06	0.953	-.0032267 .0034278

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zstat5b
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8965.621

Iteration 2: Log likelihood = -8957.0274

Iteration 3: Log likelihood = -8957.0036

Iteration 4: Log likelihood = -8957.0036

Refining estimates:

Iteration 0: Log likelihood = -8957.0036

Cox regression with Breslow method for ties

No. of subjects = 36,264 Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 201.23

Log likelihood = -8957.0036

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.262002	.1623656	11.37	0.000	1.965143 2.603706
zstat5b		.9027687	.0346912	-2.66	0.008	.8372727 .9733881
_infectionburXzstat5b_000		1.048813	.0750673	0.67	0.505	.9115371 1.206761
AGE		1.032119	.0129889	2.51	0.012	1.006973 1.057894
SEX		.7503072	.0488707	-4.41	0.000	.6603844 .8524746
NonWhite		1.087423	.1849469	0.49	0.622	.7791615 1.517641
householdsize		.9374392	.0393305	-1.54	0.124	.863437 1.017784
SES		.8160889	.0402436	-4.12	0.000	.7409048 .8989023
LE8_TOTALSCORE		.9989938	.0003554	-2.83	0.005	.9982975 .9996906

-> Model for the mediator

Iteration 0: Log likelihood = -51329.242
 Iteration 1: Log likelihood = -51329.242

Linear regression (Maximum Likelihood)
 Number of obs = 36,264
 Wald chi2(7) = 254.18
 Log likelihood = -51329.242 Prob > chi2 = 0.0000

	zstat5b	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0162793	.0152716	-1.07	0.286	-.0462111 .0136524
AGE		-.0023997	.0009972	-2.41	0.016	-.0043542 -.0004453
SEX		-.0357271	.0105784	-3.38	0.001	-.0564605 -.0149938
NonWhite		.0259383	.0253126	1.02	0.305	-.0236734 .0755501
householdsize		.0033798	.004811	0.70	0.482	-.0060495 .0128091
SES		-.0138733	.0079337	-1.75	0.080	-.0294231 .0016765
LE8_TOTALSCORE		-.0008059	.0000563	-14.31	0.000	-.0009163 -.0006955
_cons		.5952053	.0720691	8.26	0.000	.4539525 .7364581
sigma2						
_cons		.9930123	.0073745	134.66	0.000	.9785586 1.007466

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.255867	.1614538	7.78	0.000	.9394234 1.572311
ereri_cde	1.255754	.1613724	7.78	0.000	.9394697 1.572038
ereri_intref	-.0018921	.0080249	-0.24	0.814	-.0176206 .0138365
ereri_intmed	.0003388	.0023312	0.15	0.884	-.0042304 .0049079
ereri_pie	.0016666	.0016855	0.99	0.323	-.001637 .0049702

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zstc1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04637 2.216 -.07448 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9160.406
Iteration 1: Log likelihood = -9077.2625
Iteration 2: Log likelihood = -9062.3621
Iteration 3: Log likelihood = -9062.0238
Iteration 4: Log likelihood = -9062.0233
Refining estimates:
Iteration 0: Log likelihood = -9062.0233

```

Cox regression with Breslow method for ties

No. of subjects =	36,751	Number of obs =	36,751
No. of failures =	977		
Time at risk =	446,451.479	LR chi2(9) =	196.77
Log likelihood =	-9062.0233	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.186482	.1612034	10.61	0.000	1.892296 2.526403
zstc1	1.035927	.0409453	0.89	0.372	.9587055 1.119368
_infectionburXzstc1_000	1.055941	.0695801	0.83	0.409	.9280052 1.201513
AGE	1.03338	.0129632	2.62	0.009	1.008283 1.059102
SEX	.766862	.0503538	-4.04	0.000	.6742571 .8721855
NonWhite	1.072185	.1825158	0.41	0.682	.7680186 1.496815
householdsize	.9348309	.0394027	-1.60	0.110	.8607069 1.015339
SES	.8205294	.0403418	-4.02	0.000	.745151 .9035329
LE8_TOTALSCORE	.9991468	.0003611	-2.36	0.018	.9984393 .9998547

-> Model for the mediator

Iteration 0: Log likelihood = -49983.946	Number of obs = 36,751
Iteration 1: Log likelihood = -49983.946	Wald chi2(7) = 4590.82
Log likelihood = -49983.946	Prob > chi2 = 0.0000

	zstc1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.124471	.0143553	8.67	0.000	.096335 .1526069
AGE		.0128479	.0009394	13.68	0.000	.0110068 .014689
SEX		-.3250745	.009944	-32.69	0.000	-.3445644 -.3055845
NonWhite		.2740661	.0238559	11.49	0.000	.2273095 .3208228
householdsize		-.0114537	.0047235	-2.42	0.015	-.0207116 -.0021959
SES		-.089321	.0074679	-11.96	0.000	-.1039578 -.0746842
LE8_TOTALSCORE		-.0023687	.000053	-44.72	0.000	-.0024725 -.0022649
_cons		.8989786	.0681121	13.20	0.000	.7654813 1.032476
sigma2						
_cons		.8889304	.0065576	135.56	0.000	.8760776 .9017832

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.215652	.1595358	7.62	0.000	.9029673 1.528336
ereri_cde	1.186549	.1611609	7.36	0.000	.870679 1.502418
ereri_intref	.0044951	.007393	0.61	0.543	-.0099949 .0189851
ereri_intmed	.020205	.0154722	1.31	0.192	-.0101199 .0505299
ereri_pie	.0044031	.0049675	0.89	0.375	-.0053331 .0141393

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zstc2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

```
Model for the outcome (yreg): cox
Model for the mediator (mreg): linear
```

```
Referent exposure level (a0): 0
Actual exposure level (a1): 1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c): 60.19 1.531 .04636 2.215 -.07462 500.6
```

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9100.8752**
 Iteration 1: Log likelihood = **-9013.7367**
 Iteration 2: Log likelihood = **-9004.3499**
 Iteration 3: Log likelihood = **-9004.3015**
 Iteration 4: Log likelihood = **-9004.3015**
 Refining estimates:
 Iteration 0: Log likelihood = **-9004.3015**

Cox regression with Breslow method for ties

No. of subjects =	36,407	Number of obs =	36,407
No. of failures =	972		
Time at risk =	442,200.227	LR chi2(9) =	193.15
Log likelihood =	-9004.3015	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.230454	.1597758	11.20	0.000	1.938289 2.566658
zstc2		1.037998	.0423464	0.91	0.361	.958232 1.124404
_infectionburXzstc2_000		.9927739	.0721545	-0.10	0.921	.8609645 1.144763
AGE		1.036135	.0130412	2.82	0.005	1.010887 1.062013
SEX		.7662454	.0517081	-3.95	0.000	.6713157 .8745991
NonWhite		1.097669	.1867071	0.55	0.584	.7864788 1.53199
householdszie		.9369094	.039474	-1.55	0.122	.8626501 1.017561
SES		.8236204	.0405795	-3.94	0.000	.7478056 .9071215
LE8_TOTALSCORE		.9990907	.0003584	-2.54	0.011	.9983884 .9997935

-> Model for the mediator

Iteration 0: Log likelihood = **-50180.095**
 Iteration 1: Log likelihood = **-50180.095**

Linear regression (Maximum Likelihood)	Number of obs =	36,407
	Wald chi2(7) =	3080.84
Log likelihood =	Prob > chi2 =	0.0000

	zstc2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0854535	.0146891	5.82	0.000	.0566635 .1142436
AGE		-.0117663	.0009612	-12.24	0.000	-.0136503 -.0098824
SEX		-.4667981	.010175	-45.88	0.000	-.4867408 -.4468554
NonWhite		-.131214	.0243997	-5.38	0.000	-.1790365 -.0833915
householdszie		-.0051282	.0048343	-1.06	0.289	-.0146032 .0043467
SES		-.0018602	.0076437	-0.24	0.808	-.0168415 .0131211
LE8_TOTALSCORE		-.0013289	.0000542	-24.53	0.000	-.0014351 -.0012227
_cons		2.093568	.0697017	30.04	0.000	1.956955 2.23018
sigma2						
_cons		.9219548	.0068333	134.92	0.000	.9085617 .9353478

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.235876	.1599375	7.73	0.000	.9224048 1.549348
ereri_cde	1.23021	.1597232	7.70	0.000	.917158 1.543261
ereri_intref	-.0000657	.0023407	-0.03	0.978	-.0046534 .0045221
ereri_intmed	.0025405	.0121937	0.21	0.835	-.0213588 .0264398
ereri_pie	.003192	.0035402	0.90	0.367	-.0037467 .0101307

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zstip1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04637 2.214 -.07492 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9101.6071

Iteration 1: Log likelihood = -9011.2286

Iteration 2: Log likelihood = -9002.8362

Iteration 3: Log likelihood = -9002.8136

Iteration 4: Log likelihood = -9002.8136

Refining estimates:

Iteration 0: Log likelihood = -9002.8136

Cox regression with Breslow method for ties

No. of subjects = 36,399	Number of obs = 36,399
No. of failures = 972	
Time at risk = 442,131.414	LR chi2(9) = 197.59
Log likelihood = -9002.8136	Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.249727	.1609617	11.33	0.000	1.955369 2.588397
zstip1	.9139855	.0359867	-2.28	0.022	.8461057 .9873112
_infectionburXzstip1_000	1.100283	.0778409	1.35	0.177	.9578226 1.263932
AGE	1.035023	.013013	2.74	0.006	1.00983 1.060845
SEX	.7512368	.0489015	-4.39	0.000	.6612538 .8534646
NonWhite	1.098029	.1867381	0.55	0.582	.7867793 1.53241
householdsize	.940686	.0392703	-1.46	0.143	.8667824 1.020891
SES	.8245503	.0405814	-3.92	0.000	.748728 .9080511
LE8_TOTALSCORE	.9989283	.0003561	-3.01	0.003	.9982305 .9996265

-> Model for the mediator

Iteration 0: Log likelihood = -51301.653
 Iteration 1: Log likelihood = -51301.653

Linear regression (Maximum Likelihood)
 Number of obs = 36,399
 Wald chi2(7) = 698.19
 Log likelihood = -51301.653 Prob > chi2 = 0.0000

	zstip1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.0014835	.0151469	0.10	0.922	-.0282039	.0311709
AGE	-.0028181	.0009914	-2.84	0.004	-.0047611	-.0008751
SEX	-.1157716	.0104986	-11.03	0.000	-.1363485	-.0951946
NonWhite	.2037937	.0251711	8.10	0.000	.1544592	.2531282
householdsize	.0006968	.0049884	0.14	0.889	-.0090803	.010474
SES	-.015079	.0078849	-1.91	0.056	-.030533	.0003751
LE8_TOTALSCORE	-.0011238	.0000559	-20.11	0.000	-.0012333	-.0010142
_cons	.8970853	.0718949	12.48	0.000	.7561738	1.037997
sigma2						
_cons	.9811524	.0072729	134.91	0.000	.9668978	.995407

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.240826	.1601334	7.75	0.000	.9269704 1.554682
ereri_cde	1.244754	.1601626	7.77	0.000	.9308413 1.558667
ereri_intref	-.0039468	.0035913	-1.10	0.272	-.0109856 .003092
ereri_intmed	.0001521	.0015666	0.10	0.923	-.0029183 .0032225
ereri_pie	-.0001334	.0013634	-0.10	0.922	-.0028056 .0025388

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zstk11
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8905.4114
 Iteration 1: Log likelihood = -8818.3771
 Iteration 2: Log likelihood = -8811.0278
 Iteration 3: Log likelihood = -8811.0108
 Iteration 4: Log likelihood = -8811.0108
 Refining estimates:
 Iteration 0: Log likelihood = -8811.0108

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	188.80
Log likelihood =	-8811.0108	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.200779	.1600457	10.85	0.000	1.908425 2.537919
zstk11	.9079701	.0356203	-2.46	0.014	.8407722 .9805388
_infectionburXzstk11_000	1.047392	.0755826	0.64	0.521	.909252 1.206519
AGE	1.037706	.0131765	2.91	0.004	1.012199 1.063855
SEX	.7471229	.0491295	-4.43	0.000	.6567778 .8498956
NonWhite	1.124856	.1914023	0.69	0.489	.8058585 1.570127
householdsize	.9380469	.039681	-1.51	0.131	.8634104 1.019135
SES	.8327744	.0414065	-3.68	0.000	.7554482 .9180156
LE8_TOTALSCORE	.9989047	.0003596	-3.04	0.002	.9982002 .9996098

-> Model for the mediator

Iteration 0: Log likelihood = -50397.331
 Iteration 1: Log likelihood = -50397.331

Linear regression (Maximum Likelihood)
 Number of obs = 35,755
 Wald chi2(7) = 679.00
 Log likelihood = -50397.331 Prob > chi2 = 0.0000

	zstk11	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0113358	.0152947	-0.74	0.459	-.0413128 .0186412
AGE		-.0023036	.0009983	-2.31	0.021	-.0042602 -.000347
SEX		-.1107533	.0105912	-10.46	0.000	-.1315116 -.0899949
NonWhite		.0811083	.0253608	3.20	0.001	.0314021 .1308145
householdsize		.0001004	.0048298	0.02	0.983	-.0093657 .0095666
SES		-.0219741	.007953	-2.76	0.006	-.0375616 -.0063866
LE8_TOTALSCORE		-.0012051	.0000564	-21.36	0.000	-.0013157 -.0010945
_cons		.9073209	.0721763	12.57	0.000	.7658579 1.048784
sigma2						
	_cons	.9813361	.0073395	133.71	0.000	.9669511 .9957212

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.194861	.1592291	7.50	0.000	.882778 1.506945
ereri_cde	1.195481	.1592034	7.51	0.000	.8834486 1.507514
ereri_intref	-.0018698	.0073088	-0.26	0.798	-.0161948 .0124552
ereri_intmed	.0001547	.0015904	0.10	0.923	-.0029625 .0032718
ereri_pie	.001095	.0015438	0.71	0.478	-.0019308 .0041208

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zstk24
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8819.5642**
 Iteration 1: Log likelihood = **-8733.3254**
 Iteration 2: Log likelihood = **-8725.7442**
 Iteration 3: Log likelihood = **-8725.7266**
 Iteration 4: Log likelihood = **-8725.7266**
 Refining estimates:
 Iteration 0: Log likelihood = **-8725.7266**

Cox regression with Breslow method for ties

No. of subjects =	35,601	Number of obs =	35,601
No. of failures =	943		
Time at risk =	432,443.367	LR chi2(9) =	187.68
Log likelihood =	-8725.7266	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.218884	.1617674	10.93	0.000	1.923436 2.559713
zstk24	.9331269	.0368865	-1.75	0.080	.8635604 1.008298
_infectionburXzstk24_000	1.039014	.0751629	0.53	0.597	.9016646 1.197286
AGE	1.037492	.0132043	2.89	0.004	1.011932 1.063698
SEX	.7494649	.0494974	-4.37	0.000	.6584683 .8530369
NonWhite	1.094885	.1886447	0.53	0.599	.7811051 1.534714
householdszie	.9299206	.0401319	-1.68	0.092	.8544982 1.012
SES	.8146389	.040655	-4.11	0.000	.7387296 .8983484
LE8_TOTALSCORE	.9991622	.0003608	-2.32	0.020	.9984553 .9998697

-> Model for the mediator

Iteration 0: Log likelihood = **-50427.921**
 Iteration 1: Log likelihood = **-50427.921**

Linear regression (Maximum Likelihood)	Number of obs =	35,601
	Wald chi2(7) =	174.85
Log likelihood =	-50427.921	Prob > chi2 = 0.0000

<u>zstk24</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.015711	.0154279	1.02	0.309	-.0145272 .0459491
AGE	-.0041789	.0010101	-4.14	0.000	-.0061587 -.0021991
SEX	.0069377	.0106878	0.65	0.516	-.0140101 .0278855
NonWhite	.0444966	.0255022	1.74	0.081	-.0054869 .0944801
householdszie	.0004758	.0050704	0.09	0.925	-.0094619 .0104135
SES	-.0222847	.0080289	-2.78	0.006	-.038021 -.0065485
LE8_TOTALSCORE	-.0006334	.000057	-11.12	0.000	-.000745 -.0005217
_cons	.5508815	.0732302	7.52	0.000	.4073529 .6944101
sigma2					
_cons	.9950848	.0074584	133.42	0.000	.9804666 1.009703

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.213395	.161158	7.53	0.000	.8975307 1.529259
ereri_cde	1.215798	.1612454	7.54	0.000	.899763 1.531833
ereri_intref	-.0013273	.0052343	-0.25	0.800	-.0115864 .0089318
ereri_intmed	.0000106	.0021988	0.00	0.996	-.0042989 .0043201
ereri_pie	-.0010868	.001234	-0.88	0.378	-.0035053 .0013317

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zstk4
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.531 .04649 2.218 -.07578 500.5**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9064.8284**

Iteration 1: Log likelihood = **-8973.0683**

Iteration 2: Log likelihood = **-8963.4893**

Iteration 3: Log likelihood = **-8963.4541**

Iteration 4: Log likelihood = **-8963.4541**

Refining estimates:

Iteration 0: Log likelihood = **-8963.4541**

Cox regression with Breslow method for ties

No. of subjects = **36,441** Number of obs = **36,441**

No. of failures = **968**

Time at risk = **442,700.115**

LR chi2(9) = **202.75**

Log likelihood = **-8963.4541**

Prob > chi2 = **0.0000**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.28351	.1635254	11.53	0.000	1.984482 2.627597
zstk4	.9182533	.0357749	-2.19	0.029	.850746 .9911175
_infectionburXzstk4_000	1.016385	.0733159	0.23	0.822	.8823837 1.170735
AGE	1.033449	.013015	2.61	0.009	1.008252 1.059275
SEX	.7516356	.0489947	-4.38	0.000	.6614889 .8540674
NonWhite	1.009288	.1785625	0.05	0.958	.7135448 1.427608
householdsize	.9270264	.039885	-1.76	0.078	.8520585 1.00859
SES	.8241817	.0407664	-3.91	0.000	.7480319 .9080837
LE8_TOTALSCORE	.9990163	.0003556	-2.76	0.006	.9983195 .9997136

-> Model for the mediator

Iteration 0: Log likelihood = -51633.515
 Iteration 1: Log likelihood = -51633.515

Linear regression (Maximum Likelihood)
 Number of obs = 36,441
 Wald chi2(7) = 147.35
 Log likelihood = -51633.515 Prob > chi2 = 0.0000

zstk4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0116226	.0152517	-0.76	0.446	-.0415154 .0182702
AGE	-.0035508	.0009961	-3.56	0.000	-.0055031 -.0015984
SEX	.0139255	.0105688	1.32	0.188	-.0067889 .03464
NonWhite	.0076501	.0253064	0.30	0.762	-.0419495 .0572498
householdsize	.0020599	.0048097	0.43	0.668	-.007367 .0114867
SES	-.0317163	.007931	-4.00	0.000	-.0472608 -.0161719
LE8_TOTALSCORE	-.0005599	.0000563	-9.94	0.000	-.0006703 -.0004494
_cons	.4668629	.0719933	6.48	0.000	.3257585 .6079672
sigma2					
_cons	.9959456	.0073783	134.98	0.000	.9814844 1.010407

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.282551	.1628663	7.87	0.000	.9633385 1.601763
ereri_cde	1.279046	.162802	7.86	0.000	.9599601 1.598132
ereri_intref	.0016739	.0098365	0.17	0.865	-.0176053 .0209532
ereri_intmed	.0008389	.0020064	0.42	0.676	-.0030936 .0047714
ereri_pie	.0009917	.0013786	0.72	0.472	-.0017104 .0036937

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zstx16
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04669 2.217 -.07551 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -8882.1967
Iteration 1: Log likelihood = -8795.2929
Iteration 2: Log likelihood = -8786.9778
Iteration 3: Log likelihood = -8786.956
Iteration 4: Log likelihood = -8786.956
Refining estimates:
Iteration 0: Log likelihood = -8786.956

```

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	190.48
Log likelihood =	-8786.956	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.251491	.1632044	11.20	0.000	1.9533 2.595204
zstx16	.9273074	.0383079	-1.83	0.068	.8551846 1.005513
_infectionburXzstx16_000	1.025498	.0802174	0.32	0.748	.8797341 1.195414
AGE	1.038001	.0131974	2.93	0.003	1.012454 1.064192
SEX	.747192	.0491535	-4.43	0.000	.6568051 .8500177
NonWhite	1.118456	.190337	0.66	0.511	.8012399 1.561259
householdsize	.9394849	.0395799	-1.48	0.138	.8650261 1.020353
SES	.828842	.041336	-3.76	0.000	.7516586 .9139508
LE8_TOTALSCORE	.9991981	.000359	-2.23	0.026	.9984948 .9999019

-> Model for the mediator

Iteration 0: Log likelihood = -50431.87	Number of obs = 35,573
Iteration 1: Log likelihood = -50431.87	Wald chi2(7) = 87.17
Log likelihood = -50431.87	Prob > chi2 = 0.0000

	zstx16	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0097698	.0154714	-0.63	0.528	-.0400932
AGE		-.001463	.0010089	-1.45	0.147	-.0034403
SEX		.0165701	.0107054	1.55	0.122	-.0044122
NonWhite		.0840569	.0255849	3.29	0.001	.0339113
householdsize		.0045901	.0048724	0.94	0.346	-.0049597
SES		-.0101022	.0080294	-1.26	0.208	-.0258394
LE8_TOTALSCORE		-.0004394	.000057	-7.71	0.000	-.0005511
_cons		.269134	.0729118	3.69	0.000	.1262295
sigma2						
_cons		.9975276	.0074796	133.37	0.000	.9828678
						1.012187

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.249119	.1624456	7.69	0.000	.9307317
ereri_cde	1.248068	.1626268	7.67	0.000	.9293254
ereri_intref	-.0000537	.0078925	-0.01	0.995	-.0155227
ereri_intmed	.0003672	.0016225	0.23	0.821	-.0028129
ereri_pie	.0007376	.0012363	0.60	0.551	-.0016856

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zstx4
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9057.6167**
 Iteration 1: Log likelihood = **-8970.4062**
 Iteration 2: Log likelihood = **-8960.4042**
 Iteration 3: Log likelihood = **-8960.3161**
 Iteration 4: Log likelihood = **-8960.316**
 Refining estimates:
 Iteration 0: Log likelihood = **-8960.316**

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	194.60
Log likelihood =	-8960.316	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.245055	.161367	11.25	0.000	1.950049	2.58469
zstx4	.9692382	.0390507	-0.78	0.438	.8956442	1.048879
_infectionburXzstx4_000	1.083022	.0784388	1.10	0.271	.9396983	1.248206
AGE	1.032027	.0130067	2.50	0.012	1.006846	1.057837
SEX	.7519478	.0489721	-4.38	0.000	.6618378	.8543265
NonWhite	1.084607	.1846045	0.48	0.633	.7769528	1.514086
householdszie	.9370973	.0393493	-1.55	0.122	.8630624	1.017483
SES	.8166361	.0402797	-4.11	0.000	.7413853	.899525
LE8_TOTALSCORE	.999056	.0003564	-2.65	0.008	.9983577	.9997548

-> Model for the mediator

Iteration 0: Log likelihood = **-51181.976**
 Iteration 1: Log likelihood = **-51181.976**

Linear regression (Maximum Likelihood)	Number of obs =	36,264
	Wald chi2(7) =	551.98
Log likelihood =	-51181.976	Prob > chi2 = 0.0000

	zstx4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0444996	.0152097	2.93	0.003	.0146892
AGE		.0041462	.0009932	4.17	0.000	.0021996
SEX		-.0346887	.0105356	-3.29	0.001	-.055338
NonWhite		.132104	.02521	5.24	0.000	.0826933
householdszie		-.0070028	.0047915	-1.46	0.144	-.0163939
SES		-.0414182	.0079016	-5.24	0.000	-.056905
LE8_TOTALSCORE		-.0010238	.0000561	-18.25	0.000	-.0011337
_cons		.3163315	.071777	4.41	0.000	.1756511
sigma2						
_cons		.9849799	.0073148	134.66	0.000	.970643
						.9993167

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.250323	.1611612	7.76	0.000	.9344532 1.566193
ereri_cde	1.244216	.1612624	7.72	0.000	.9281477 1.560285
ereri_intref	.0012546	.0058943	0.21	0.831	-.010298 .0128073
ereri_intmed	.006242	.0066441	0.94	0.347	-.0067802 .0192641
ereri_pie	-.0013894	.0018522	-0.75	0.453	-.0050197 .0022409

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zstx6
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8882.1967

Iteration 1: Log likelihood = -8797.6049

Iteration 2: Log likelihood = -8788.3685

Iteration 3: Log likelihood = -8788.3092

Iteration 4: Log likelihood = -8788.3092

Refining estimates:

Iteration 0: Log likelihood = -8788.3092

Cox regression with Breslow method for ties

No. of subjects = 35,573 Number of obs = 35,573

No. of failures = 951

Time at risk = 432,088.637

LR chi2(9) = 187.78

Log likelihood = -8788.3092

Prob > chi2 = 0.0000

-> Model for the mediator

Iteration 0: Log likelihood = -50421.915
Iteration 1: Log likelihood = -50421.915

Linear regression (Maximum Likelihood) Number of obs = 35,573
Log likelihood = -50421.915 Wald chi2(7) = 107.13
Prob > chi2 = 0.0000

	zstx6	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0242435	.0154671	1.57	0.117	-.0060715 .0545585
AGE		-.004243	.0010086	-4.21	0.000	-.0062198 -.0022663
SEX		-.0150608	.0107024	-1.41	0.159	-.0360372 .0059155
NonWhite		.0826102	.0255778	3.23	0.001	.0324787 .1327418
householdsiz		.0005556	.004871	0.11	0.909	-.0089915 .0101027
SES		-.0253061	.0080271	-3.15	0.002	-.041039 -.0095733
LE8_TOTALSCORE		-.0003851	.000057	-6.76	0.000	-.0004968 -.0002734
_cons		.4608902	.0728914	6.32	0.000	.3180258 .6037547
sigma2						
_cons		.9969694	.0074754	133.37	0.000	.9823178 1.011621

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.256387	.1630458	7.71	0.000	.9368234 1.575951
ereri_cde	1.250166	.1625792	7.69	0.000	.9315168 1.568816
ereri_intref	.0030033	.0076897	0.39	0.696	-.0120682 .0180749
ereri_intmed	.0038611	.0042508	0.91	0.364	-.0044703 .0121924
ereri_pie	-.0006432	.0010743	-0.60	0.549	-.0027488 .0014623

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zstx8
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04646 2.216 -.07503 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9036.4379
Iteration 1: Log likelihood = -8948.2385
Iteration 2: Log likelihood = -8939.6766
Iteration 3: Log likelihood = -8939.6565
Iteration 4: Log likelihood = -8939.6565
Refining estimates:
Iteration 0: Log likelihood = -8939.6565

```

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	193.56
Log likelihood =	-8939.6565	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.259366	.1617329	11.39	0.000	1.963608 2.599671
zstx8	.9935636	.0392834	-0.16	0.870	.9194772 1.07362
_infectionburXzstx8_000	.9601175	.0711664	-0.55	0.583	.8302924 1.110242
AGE	1.032547	.0130157	2.54	0.011	1.007349 1.058375
SEX	.7577932	.0494322	-4.25	0.000	.6668457 .8611447
NonWhite	1.057663	.1823074	0.33	0.745	.7544442 1.482748
householdsize	.9330285	.0396997	-1.63	0.103	.8583747 1.014175
SES	.8192332	.0404736	-4.04	0.000	.7436261 .9025276
LE8_TOTALSCORE	.9989996	.0003567	-2.80	0.005	.9983007 .999699

-> Model for the mediator

Iteration 0: Log likelihood = -51379.435	Number of obs = 36,352
Iteration 1: Log likelihood = -51379.435	Wald chi2(7) = 404.88
Linear regression (Maximum Likelihood)	Prob > chi2 = 0.0000
Log likelihood = -51379.435	

	zstx8	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0442974	.0152344	2.91	0.004	.0144386 .0741562
AGE		-.000114	.0009945	-0.11	0.909	-.0020631 .0018351
SEX		-.021181	.0105441	-2.01	0.045	-.041847 -.0005151
NonWhite		.01052	.0252671	0.42	0.677	-.0390026 .0600426
householdsize		-.0041829	.0048801	-0.86	0.391	-.0137477 .0053819
SES		-.0351688	.0079086	-4.45	0.000	-.0506693 -.0196683
LE8_TOTALSCORE		-.0009685	.0000561	-17.25	0.000	-.0010786 -.0008585
_cons		.5241773	.0719404	7.29	0.000	.3831768 .6651778
sigma2						
_cons		.9889578	.0073355	134.82	0.000	.9745806 1.003335

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.25765	.1616166	7.78	0.000	.9408871 1.574413
ereri_cde	1.25929	.1617215	7.79	0.000	.9423222 1.576259
ereri_intref	.0030804	.0075479	0.41	0.683	-.0117133 .017874
ereri_intmed	-.004435	.0067192	-0.66	0.509	-.0176044 .0087344
ereri_pie	-.000286	.0017537	-0.16	0.870	-.0037232 .0031512

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zstxbp3
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8796.5148**
 Iteration 2: Log likelihood = **-8788.5011**
 Iteration 3: Log likelihood = **-8788.4845**
 Iteration 4: Log likelihood = **-8788.4845**
 Refining estimates:
 Iteration 0: Log likelihood = **-8788.4845**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	187.42
Log likelihood =	-8788.4845	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.252148	.162723	11.24	0.000	1.954769 2.594766
zstxbp3		.9614074	.0387934	-0.98	0.329	.8883027 1.040528
_infectionburXzstxbp3_000		1.029934	.0759522	0.40	0.689	.8913288 1.190094
AGE		1.037714	.0131961	2.91	0.004	1.01217 1.063903
SEX		.7458906	.0490687	-4.46	0.000	.6556597 .848539
NonWhite		1.108874	.188663	0.61	0.544	.794437 1.547765
householdszie		.939364	.0396144	-1.48	0.138	.8648433 1.020306
SES		.8290386	.0413479	-3.76	0.000	.7518332 .9141723
LE8_TOTALSCORE		.9992146	.0003589	-2.19	0.029	.9985113 .9999183

-> Model for the mediator

Iteration 0: Log likelihood = **-50453.358**
 Iteration 1: Log likelihood = **-50453.358**

Linear regression (Maximum Likelihood)	Number of obs =	35,573
	Wald chi2(7) =	44.11
Log likelihood =	-50453.358	Prob > chi2 = 0.0000

	zstxbp3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0123464	.0154808	-0.80	0.425	-.0426882 .0179954
AGE		-.0012685	.0010095	-1.26	0.209	-.0032471 .00071
SEX		-.0070216	.0107119	-0.66	0.512	-.0280165 .0139733
NonWhite		.0098127	.0256004	0.38	0.701	-.0403632 .0599886
householdszie		-.0028494	.0048753	-0.58	0.559	-.0124049 .0067061
SES		-.0023027	.0080342	-0.29	0.774	-.0180495 .013444
LE8_TOTALSCORE		-.0003534	.000057	-6.20	0.000	-.0004652 -.0002416
_cons		.271433	.0729558	3.72	0.000	.1284422 .4144238
sigma2						
_cons		.9987334	.0074887	133.37	0.000	.9840559 1.013411

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.250903	.1625327	7.70	0.000	.932345 1.569461
ereri_cde	1.251264	.1625711	7.70	0.000	.9326301 1.569897
ereri_intref	-.0006346	.0018932	-0.34	0.737	-.0043452 .0030761
ereri_intmed	-.000212	.0018061	-0.12	0.907	-.0037518 .0033279
ereri_pie	.000486	.0007874	0.62	0.537	-.0010573 .0020293

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsugt1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.19 1.531 .04669 2.217 -.07551 500.6**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**

Iteration 1: Log likelihood = **-8794.4613**

Iteration 2: Log likelihood = **-8786.506**

Iteration 3: Log likelihood = **-8786.4895**

Iteration 4: Log likelihood = **-8786.4895**

Refining estimates:

Iteration 0: Log likelihood = **-8786.4895**

Cox regression with Breslow method for ties

No. of subjects = **35,573** Number of obs = **35,573**

No. of failures = **951**

Time at risk = **432,088.637**

LR chi2(9) = **191.41**

Log likelihood = **-8786.4895** Prob > chi2 = **0.0000**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.260386	.1636813	11.26	0.000	1.961302 2.605077
zsugt1	.9170683	.0355684	-2.23	0.026	.8499393 .9894992
_infectionburXzsugt1_000	1.081016	.0776534	1.08	0.278	.9390463 1.244449
AGE	1.03787	.0131969	2.92	0.003	1.012325 1.064061
SEX	.7493948	.0493155	-4.38	0.000	.658712 .8525616
NonWhite	1.110062	.1888773	0.61	0.539	.7952712 1.549457
householdsize	.9391208	.0396461	-1.49	0.137	.8645437 1.020131
SES	.8293576	.0413566	-3.75	0.000	.7521353 .9145083
LE8_TOTALSCORE	.9991828	.0003593	-2.27	0.023	.9984788 .9998872

-> Model for the mediator

Iteration 0: Log likelihood = -50386.924
 Iteration 1: Log likelihood = -50386.924

Linear regression (Maximum Likelihood)
 Number of obs = 35,573
 Wald chi2(7) = 177.39
 Prob > chi2 = 0.0000
 Log likelihood = -50386.924

zsugt1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0338114	.0154519	-2.19	0.029	-.0640966 -.0035262
AGE	-.0027743	.0010076	-2.75	0.006	-.0047491 -.0007995
SEX	.051088	.0106919	4.78	0.000	.0301323 .0720437
NonWhite	.0307353	.0255526	1.20	0.229	-.019347 .0808175
householdsize	-.0056643	.0048663	-1.16	0.244	-.015202 .0038733
SES	-.0031483	.0080192	-0.39	0.695	-.0188657 .0125691
LE8_TOTALSCORE	-.000673	.0000569	-11.82	0.000	-.0007846 -.0005614
_cons	.4412776	.0728197	6.06	0.000	.2985536 .5840016
sigma2					
_cons	.99501	.0074607	133.37	0.000	.9803872 1.009633

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.253541	.162781	7.70	0.000	.9344956 1.572585
ereri_cde	1.256205	.1629768	7.71	0.000	.936776 1.575633
ereri_intref	-.0033247	.0032156	-1.03	0.301	-.0096272 .0029777
ereri_intmed	-.0022708	.0049048	-0.46	0.643	-.0118839 .0073424
ereri_pie	.0029315	.0018788	1.56	0.119	-.0007509 .0066138

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsult1a1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04637 2.216 -.07448 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9160.406
Iteration 1: Log likelihood = -9071.4551
Iteration 2: Log likelihood = -9062.9388
Iteration 3: Log likelihood = -9062.912
Iteration 4: Log likelihood = -9062.912
Refining estimates:
Iteration 0: Log likelihood = -9062.912

```

Cox regression with Breslow method for ties

No. of subjects =	36,751	Number of obs =	36,751
No. of failures =	977		
Time at risk =	446,451.479	LR chi2(9) =	194.99
Log likelihood =	-9062.912	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.223381	.1591914	11.16	0.000	1.932275 2.558344
zsult1a1	.9672571	.0366976	-0.88	0.380	.8979402 1.041925
_infectionburXzsult1a1_000	.9795417	.0693593	-0.29	0.770	.8526113 1.125368
AGE	1.034069	.0129585	2.67	0.008	1.00898 1.059782
SEX	.7547437	.0489594	-4.34	0.000	.6646346 .8570694
NonWhite	1.091579	.1856523	0.52	0.606	.7821415 1.523438
householdsize	.9329377	.0394517	-1.64	0.101	.8587315 1.013556
SES	.8161848	.0400969	-4.13	0.000	.7412612 .8986813
LE8_TOTALSCORE	.9990297	.0003534	-2.74	0.006	.9983373 .9997225

-> Model for the mediator

Iteration 0: Log likelihood =	-52101.206	Number of obs =	36,751
Iteration 1: Log likelihood =	-52101.206	Wald chi2(7) =	91.52
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-52101.206		

zsult1a1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0157126	.0152066	-1.03	0.301	-.0455171 .0140919
AGE	-.0035585	.0009951	-3.58	0.000	-.0055088 -.0016081
SEX	.0245878	.0105337	2.33	0.020	.003942 .0452335
NonWhite	.1808715	.0252706	7.16	0.000	.1313421 .2304009
householdsize	-.0022394	.0050036	-0.45	0.654	-.0120463 .0075674
SES	-.0244518	.0079108	-3.09	0.002	-.0399566 -.008947
LE8_TOTALSCORE	2.20e-06	.0000561	0.04	0.969	-.0001078 .0001122
_cons	.172338	.0721514	2.39	0.017	.030924 .3137521
sigma2					
_cons	.9974887	.0073585	135.56	0.000	.9830664 1.011911

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.227169	.1589593	7.72	0.000	.9156146 1.538724
ereri_cde	1.222794	.1590787	7.69	0.000	.9110053 1.534582
ereri_intref	.0024878	.0069759	0.36	0.721	-.0111847 .0161602
ereri_intmed	.0013643	.0025447	0.54	0.592	-.0036231 .0063518
ereri_pie	.0005232	.0007825	0.67	0.504	-.0010104 .0020569

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsult2a1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8946.1976**
 Iteration 2: Log likelihood = **-8937.5249**
 Iteration 3: Log likelihood = **-8937.5014**
 Iteration 4: Log likelihood = **-8937.5014**
 Refining estimates:
 Iteration 0: Log likelihood = **-8937.5014**

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	197.87
Log likelihood =	-8937.5014	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.25676	.162123	11.33	0.000	1.960361 2.597973
zsult2a1		.9123572	.0388925	-2.15	0.031	.8392268 .9918602
_infectionburXzsult2a1_000		1.075592	.0799568	0.98	0.327	.929761 1.244296
AGE		1.03257	.0130139	2.54	0.011	1.007376 1.058394
SEX		.7476902	.04905	-4.43	0.000	.6574779 .8502805
NonWhite		1.06126	.1829556	0.34	0.730	.756971 1.487868
householdsize		.9319666	.039696	-1.65	0.098	.857323 1.013109
SES		.8170889	.0403995	-4.09	0.000	.741623 .9002341
LE8_TOTALSCORE		.9988827	.0003621	-3.08	0.002	.9981732 .9995927

-> Model for the mediator

Iteration 0: Log likelihood = **-50381.663**
 Iteration 1: Log likelihood = **-50381.663**

Linear regression (Maximum Likelihood)	Number of obs =	36,352
	Wald chi2(7) =	2479.05
Log likelihood =	Prob > chi2 =	0.0000

	zsult2a1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0801272	.0148219	5.41	0.000	.0510768 .1091776
AGE		.0014219	.0009675	1.47	0.142	-.0004744 .0033182
SEX		-.2274879	.0102586	-22.18	0.000	-.2475944 -.2073815
NonWhite		.0225352	.024583	0.92	0.359	-.0256467 .070717
householdsize		-.0169095	.004748	-3.56	0.000	-.0262154 -.0076037
SES		-.0389209	.0076944	-5.06	0.000	-.0540017 -.0238401
LE8_TOTALSCORE		-.0021311	.0000546	-39.02	0.000	-.0022381 -.002024
_cons		1.352039	.0699926	19.32	0.000	1.214855 1.489222
sigma2						
_cons		.9361322	.0069437	134.82	0.000	.9225229 .9497415

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.243055	.1609448	7.72	0.000	.9276085 1.5585
ereri_cde	1.250546	.161346	7.75	0.000	.9343135 1.566778
ereri_intref	-.0041005	.0056806	-0.72	0.470	-.0152342 .0070332
ereri_intmed	.0039317	.0116094	0.34	0.735	-.0188223 .0266857
ereri_pie	-.0073226	.0036494	-2.01	0.045	-.0144753 -.0001699

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zsumf2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9160.406

Iteration 1: Log likelihood = -9067.834

Iteration 2: Log likelihood = -9058.0863

Iteration 3: Log likelihood = -9058.023

Iteration 4: Log likelihood = -9058.023

Refining estimates:

Iteration 0: Log likelihood = -9058.023

Cox regression with Breslow method for ties

No. of subjects = 36,751 Number of obs = 36,751

No. of failures = 977

Time at risk = 446,451.479

Log likelihood = -9058.023

LR chi2(9) = 204.77

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.229288	.1592653	11.22	0.000	1.938003 2.564353
zsumf2	.8968201	.0338927	-2.88	0.004	.8327922 .9657705
_infectionburXzsumf2_000	.9983399	.0697325	-0.02	0.981	.8706093 1.14481
AGE	1.034227	.0129634	2.68	0.007	1.009129 1.059949
SEX	.7531917	.0488555	-4.37	0.000	.6632736 .8552998
NonWhite	1.063	.1809038	0.36	0.720	.7615065 1.483859
householdsize	.9309646	.0394534	-1.69	0.091	.8567617 1.011594
SES	.8131297	.0399317	-4.21	0.000	.7385135 .8952847
LE8_TOTALSCORE	.9988191	.0003591	-3.29	0.001	.9981155 .9995233

-> Model for the mediator

Iteration 0: Log likelihood = -51396.268
 Iteration 1: Log likelihood = -51396.268

Linear regression (Maximum Likelihood)
 Number of obs = 36,751
 Wald chi2(7) = 1532.37
 Log likelihood = -51396.268 Prob > chi2 = 0.0000

	zsumf2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.0395887	.0149177	2.65	0.008	.0103504	.0688269
AGE	.0006587	.0009762	0.67	0.500	-.0012546	.0025719
SEX	-.0601821	.0103336	-5.82	0.000	-.0804356	-.0399286
NonWhite	-.2112074	.0247905	-8.52	0.000	-.2597958	-.162619
householdsize	-.0021171	.0049085	-0.43	0.666	-.0117377	.0075034
SES	-.056854	.0077605	-7.33	0.000	-.0720642	-.0416438
LE8_TOTALSCORE	-.0018742	.000055	-34.05	0.000	-.0019821	-.0017664
_cons	.9954539	.0707806	14.06	0.000	.8567265	1.134181
sigma2						
_cons	.9599468	.0070815	135.56	0.000	.9460673	.9738264

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.21996	.1585492	7.69	0.000	.9092095 1.530711
ereri_cde	1.221579	.1582137	7.72	0.000	.9114857 1.531672
ereri_intref	.0081193	.0152978	0.53	0.596	-.0218638 .0381024
ereri_intmed	-.0054361	.0058547	-0.93	0.353	-.0169112 .006039
ereri_pie	-.0043019	.002199	-1.96	0.050	-.0086119 8.07e-06

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zsusd1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8905.4114
 Iteration 1: Log likelihood = -8819.9398
 Iteration 2: Log likelihood = -8811.3233
 Iteration 3: Log likelihood = -8811.2766
 Iteration 4: Log likelihood = -8811.2766
 Refining estimates:
 Iteration 0: Log likelihood = -8811.2766

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	188.27
Log likelihood =	-8811.2766	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.190525	.1596469	10.76	0.000	1.898944 2.526879
zsusd1	.9245331	.0350683	-2.07	0.039	.8582933 .9958851
_infectionburXzsusd1_000	.9947182	.0699035	-0.08	0.940	.8667266 1.14161
AGE	1.036967	.0131718	2.86	0.004	1.011469 1.063107
SEX	.7531766	.0494819	-4.31	0.000	.6621784 .8566801
NonWhite	1.115335	.1897222	0.64	0.521	.7991222 1.556674
householdsize	.937875	.0397326	-1.51	0.130	.8631459 1.019074
SES	.8334758	.0414333	-3.66	0.000	.7560988 .9187714
LE8_TOTALSCORE	.9989244	.0003585	-3.00	0.003	.998222 .9996273

-> Model for the mediator

Iteration 0: Log likelihood = -50587.967
 Iteration 1: Log likelihood = -50587.967

Linear regression (Maximum Likelihood)

Number of obs =	35,755
Wald chi2(7) =	292.55
Prob > chi2 =	0.0000

Log likelihood = -50587.967

zsusd1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0220254	.0153765	-1.43	0.152	-.0521627 .0081119
AGE	-.0041321	.0010036	-4.12	0.000	-.0060991 -.002165
SEX	-.0153357	.0106478	-1.44	0.150	-.0362051 .0055336
NonWhite	.0020455	.0254963	0.08	0.936	-.0479264 .0520174
householdsize	.0027319	.0048556	0.56	0.574	-.0067848 .0122487
SES	-.0062232	.0079955	-0.78	0.436	-.0218941 .0094476
LE8_TOTALSCORE	-.0009038	.0000567	-15.93	0.000	-.001015 -.0007926
_cons	.7209864	.0725622	9.94	0.000	.5787672 .8632057
sigma2					
_cons	.9918565	.0074181	133.71	0.000	.9773172 1.006396

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.19547	.1592686	7.51	0.000	.883309 1.507631
ereri_cde	1.18718	.1591079	7.46	0.000	.8753345 1.499026
ereri_intref	.0042428	.0107489	0.39	0.693	-.0168246 .0253102
ereri_intmed	.0023169	.0034011	0.68	0.496	-.0043492 .008983
ereri_pie	.0017298	.0014701	1.18	0.239	-.0011516 .0046111

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zsusd2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9121.8147**
 Iteration 1: Log likelihood = **-9032.6546**
 Iteration 2: Log likelihood = **-9022.6179**
 Iteration 3: Log likelihood = **-9022.5352**
 Iteration 4: Log likelihood = **-9022.5351**
 Refining estimates:
 Iteration 0: Log likelihood = **-9022.5351**

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	198.56
Log likelihood =	-9022.5351	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.236103	.1627267	11.06	0.000	1.938866 2.578908
zsusd2	1.089996	.0410833	2.29	0.022	1.012377 1.173567
_infectionburXzsusd2_000	.9826312	.0682821	-0.25	0.801	.8575143 1.126003
AGE	1.033166	.0130046	2.59	0.010	1.007989 1.058972
SEX	.7491807	.0486823	-4.44	0.000	.6595913 .8509386
NonWhite	1.103618	.1876822	0.58	0.562	.7907932 1.540192
householdszie	.9408393	.0393458	-1.46	0.145	.8667988 1.021204
SES	.8271994	.0406879	-3.86	0.000	.7511761 .9109168
LE8_TOTALSCORE	.9990309	.0003534	-2.74	0.006	.9983385 .9997238

-> Model for the mediator

Iteration 0: Log likelihood = **-51249.493**
 Iteration 1: Log likelihood = **-51249.493**

Linear regression (Maximum Likelihood)	Number of obs =	36,459	
	Wald chi2(7) =	979.09	
Log likelihood =	-51249.493	Prob > chi2 =	0.0000

<u>zsusd2</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0430031	.0150812	2.85	0.004	.0134445 .0725616
AGE	.0222307	.0009871	22.52	0.000	.0202961 .0241654
SEX	.0206095	.0104505	1.97	0.049	.0001269 .041092
NonWhite	-.2756265	.0250549	-11.00	0.000	-.3247332 -.2265198
householdszie	-.0276938	.004966	-5.58	0.000	-.0374271 -.0179606
SES	-.0466828	.0078493	-5.95	0.000	-.0620671 -.0312985
LE8_TOTALSCORE	-.0001043	.0000556	-1.87	0.061	-.0002133 4.75e-06
_cons	-1.252701	.0715821	-17.50	0.000	-1.393 -1.112403
sigma2					
_cons	.973821	.0072126	135.02	0.000	.9596846 .9879575

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.239989	.1608072	7.71	0.000	.9248126 1.555165
ereri_cde	1.232276	.1619124	7.61	0.000	.9149338 1.549619
ereri_intref	.0011093	.0084295	0.13	0.895	-.0154123 .0176308
ereri_intmed	.0028907	.0059073	0.49	0.625	-.0086875 .0144688
ereri_pie	.0037126	.0020852	1.78	0.075	-.0003744 .0077996

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztacc3
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8968.885

Iteration 2: Log likelihood = -8958.6867

Iteration 3: Log likelihood = -8958.6252

Iteration 4: Log likelihood = -8958.6252

Refining estimates:

Iteration 0: Log likelihood = -8958.6252

Cox regression with Breslow method for ties

No. of subjects = 36,264 Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 197.98

Log likelihood = -8958.6252

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.243778	.161473	11.23	0.000	1.948603 2.583666
ztacc3	.9445122	.0361819	-1.49	0.136	.8761937 1.018158
_infectionburXztacc3_000	.9639397	.0688081	-0.51	0.607	.8380873 1.108691
AGE	1.031764	.0129839	2.48	0.013	1.006628 1.057529
SEX	.7525853	.0490164	-4.36	0.000	.6623939 .8550571
NonWhite	1.079404	.1836497	0.45	0.653	.7733225 1.506632
householdsize	.9366654	.0393447	-1.56	0.119	.8626401 1.017043
SES	.8165464	.0402654	-4.11	0.000	.7413214 .8994049
LE8_TOTALSCORE	.9990235	.000355	-2.75	0.006	.998328 .9997195

-> Model for the mediator

Iteration 0: Log likelihood = **-51384.768**
 Iteration 1: Log likelihood = **-51384.768**

Linear regression (Maximum Likelihood) Number of obs = 36,264
 Wald chi2(7) = 142.52
 Log likelihood = **-51384.768** Prob > chi2 = 0.0000

	ztacc3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	-.0217418	.015295	-1.42	0.155	-.0517194	.0082359
AGE	-.0031076	.0009987	-3.11	0.002	-.005065	-.0011501
SEX	.0033017	.0105947	0.31	0.755	-.0174635	.0240668
NonWhite	-.145095	.0253514	-5.72	0.000	-.1947828	-.0954072
householdsize	-.0039192	.0048183	-0.81	0.416	-.0133629	.0055246
SES	-.0066599	.0079459	-0.84	0.402	-.0222335	.0089138
LE8_TOTALSCORE	-.0005623	.0000564	-9.97	0.000	-.0006729	-.004517
_cons	.4815058	.0721795	6.67	0.000	.3400366	.6229751
sigma2						
_cons	.9960579	.0073971	134.66	0.000	.9815599	1.010556

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.254324	.1613333	7.77	0.000	.9381161 1.570531
ereri_cde	1.241975	.1611697	7.71	0.000	.9260884 1.557862
ereri_intref	.007755	.012414	0.62	0.532	-.016576 .032086
ereri_intmed	.0033514	.0038786	0.86	0.388	-.0042505 .0109534
ereri_pie	.0012419	.0012082	1.03	0.304	-.001126 .0036099

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztacstd2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.532 .047 2.211 -.07562 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -7932.2443
Iteration 1: Log likelihood = -7854.5654
Iteration 2: Log likelihood = -7847.1796
Iteration 3: Log likelihood = -7847.1637
Iteration 4: Log likelihood = -7847.1637
Refining estimates:
Iteration 0: Log likelihood = -7847.1637

```

Cox regression with Breslow method for ties

No. of subjects =	32,213	Number of obs =	32,213
No. of failures =	859		
Time at risk =	391,428.851	LR chi2(9) =	170.16
Log likelihood =	-7847.1637	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.235741	.1703773	10.56	0.000	1.925549 2.595902
ztacstd2	1.007223	.0416197	0.17	0.862	.9288655 1.09219
_infectionburXztacstd2_000	.9882736	.0759369	-0.15	0.878	.8501052 1.148899
AGE	1.03416	.0138784	2.50	0.012	1.007313 1.061722
SEX	.7671948	.0530278	-3.83	0.000	.6699947 .8784963
NonWhite	1.125726	.2000884	0.67	0.505	.7945821 1.594875
householdsize	.9281706	.0428461	-1.61	0.106	.8478807 1.016064
SES	.8170337	.0427492	-3.86	0.000	.7373998 .9052676
LE8_TOTALSCORE	.9990085	.0003772	-2.63	0.009	.9982694 .9997481

-> Model for the mediator

Iteration 0: Log likelihood = -45533.297	Number of obs = 32,213
Iteration 1: Log likelihood = -45533.297	Wald chi2(7) = 350.84
Log likelihood = -45533.297	Prob > chi2 = 0.0000

ztacstd2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0091969	.016205	-0.57	0.570	-.0409582 .0225644
AGE	.002648	.0010601	2.50	0.012	.0005703 .0047258
SEX	.0201503	.0112009	1.80	0.072	-.001803 .0421036
NonWhite	-.2052342	.0267252	-7.68	0.000	-.2576146 -.1528538
householdsize	-.0190175	.0054729	-3.47	0.001	-.0297443 -.0082907
SES	.0382349	.008424	4.54	0.000	.0217242 .0547456
LE8_TOTALSCORE	.0008044	.0000596	13.50	0.000	.0006876 .0009211
_cons	-.5369439	.0770917	-6.96	0.000	-.688041 -.3858469
sigma2					
_cons	.9891955	.0077944	126.91	0.000	.9739188 1.004472

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.235768	.1703632	7.25	0.000	.9018624 1.569674
ereri_cde	1.235698	.170375	7.25	0.000	.9017693 1.569627
ereri_intref	-.0000245	.000598	-0.04	0.967	-.0011964 .0011475
ereri_intmed	.0001607	.0014145	0.11	0.910	-.0026116 .0029331
ereri_pie	-.0000662	.0003975	-0.17	0.868	-.0008453 .0007129

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztafa5
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9057.6167**
 Iteration 1: Log likelihood = **-8969.3718**
 Iteration 2: Log likelihood = **-8959.8789**
 Iteration 3: Log likelihood = **-8959.8283**
 Iteration 4: Log likelihood = **-8959.8283**
 Refining estimates:
 Iteration 0: Log likelihood = **-8959.8283**

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	195.58
Log likelihood =	-8959.8283	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.254533	.1669915	10.98	0.000	1.949884 2.60678
ztafa5		1.056031	.0410389	1.40	0.161	.9785832 1.139608
_infectionburXztafa5_000		.9741687	.0624365	-0.41	0.683	.8591696 1.10456
AGE		1.030422	.0130065	2.37	0.018	1.005243 1.056232
SEX		.7500237	.0488476	-4.42	0.000	.6601427 .8521422
NonWhite		1.086913	.1848873	0.49	0.624	.7787583 1.517004
householdszie		.9373773	.0393067	-1.54	0.123	.8634185 1.017671
SES		.8214332	.0406275	-3.98	0.000	.7455425 .9050491
LE8_TOTALSCORE		.9991283	.0003582	-2.43	0.015	.9984264 .9998306

-> Model for the mediator

Iteration 0: Log likelihood = **-50345.839**
 Iteration 1: Log likelihood = **-50345.839**

Linear regression (Maximum Likelihood)	Number of obs =	36,264
	Wald chi2(7) =	2289.46
Log likelihood =	Prob > chi2 =	0.0000

	ztafa5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.177507	.014863	11.94	0.000	.148376 .206638
AGE		.0234361	.0009705	24.15	0.000	.0215339 .0253382
SEX		.0702902	.0102954	6.83	0.000	.0501116 .0904689
NonWhite		-.0456074	.0246354	-1.85	0.064	-.0938919 .0026771
householdszie		-.002915	.0046823	-0.62	0.534	-.0120921 .006262
SES		-.1117676	.0077215	-14.47	0.000	-.1269014 -.0966338
LE8_TOTALSCORE		-.0014788	.0000548	-26.97	0.000	-.0015863 -.0013714
_cons		-.8020172	.070141	-11.43	0.000	-.939491 -.6645434
sigma2						
_cons		.94059	.0069852	134.66	0.000	.9268993 .9542807

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.265057	.1638232	7.72	0.000	.9439695 1.586145
ereri_cde	1.254466	.1668616	7.52	0.000	.927423 1.581508
ereri_intref	-.0007772	.0010662	-0.73	0.466	-.0028669 .0013125
ereri_intmed	.0016444	.0216017	0.08	0.939	-.0406942 .0439829
ereri_pie	.0097242	.0070131	1.39	0.166	-.0040213 .0234697

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztank
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.53 .04656 2.215 -.07626 500.6**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8913.3312**

Iteration 1: Log likelihood = **-8826.4679**

Iteration 2: Log likelihood = **-8817.9639**

Iteration 3: Log likelihood = **-8817.9317**

Iteration 4: Log likelihood = **-8817.9317**

Refining estimates:

Iteration 0: Log likelihood = **-8817.9317**

Cox regression with Breslow method for ties

No. of subjects = **35,761** Number of obs = **35,761**

No. of failures = **953**

Time at risk = **434,427.923**

LR chi2(9) = **190.80**

Log likelihood = **-8817.9317** Prob > chi2 = **0.0000**

-> Model for the mediator

Iteration 0: Log likelihood = -50597.584
Iteration 1: Log likelihood = -50597.584

Linear regression (Maximum Likelihood) Number of obs = 35,761
Log likelihood = -50597.584 Wald chi2(7) = 290.33
Prob > chi2 = 0.0000

	ztank	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0032883	.0153905	-0.21	0.831	-.033453 .0268765
AGE		-.0045196	.0010024	-4.51	0.000	-.0064843 -.0025549
SEX		-.0271007	.0106455	-2.55	0.011	-.0479655 -.0062359
NonWhite		-.0670929	.0254714	-2.63	0.008	-.117016 -.0171698
householdszie		-.009292	.0048421	-1.92	0.055	-.0187823 .0001983
SES		-.0264033	.0079815	-3.31	0.001	-.0420468 -.0107598
LE8_TOTALSCORE		-.0008341	.0000567	-14.71	0.000	-.0009452 -.0007229
_cons		.753158	.0724053	10.40	0.000	.6112464 .8950697
sigma2						
_cons		.9919191	.007418	133.72	0.000	.9773801 1.006458

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.22318	.1608539	7.60	0.000	.9079126 1.538448
ereri_cde	1.218406	.1607228	7.58	0.000	.9033954 1.533417
ereri_intref	.0042001	.0109609	0.38	0.702	-.0172829 .0256832
ereri_intmed	.0003385	.001653	0.20	0.838	-.0029013 .0035783
ereri_pie	.0002353	.0011093	0.21	0.832	-.0019388 .0024095

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztarbp2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04688 2.215 -.07424 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8819.5642
Iteration 1: Log likelihood = -8732.0576
Iteration 2: Log likelihood = -8724.571
Iteration 3: Log likelihood = -8724.5548
Iteration 4: Log likelihood = -8724.5548
Refining estimates:
Iteration 0: Log likelihood = -8724.5548

```

Cox regression with Breslow method for ties

No. of subjects =	35,601	Number of obs =	35,601
No. of failures =	943		
Time at risk =	432,443.367	LR chi2(9) =	190.02
Log likelihood =	-8724.5548	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.223108	.1621315	10.95	0.000	1.927003 2.564713
ztarbp2	.9121357	.0361986	-2.32	0.020	.8438769 .9859158
_infectionburXztarbp2_000	1.060576	.0780694	0.80	0.424	.9180888 1.225178
AGE	1.038024	.0132079	2.93	0.003	1.012457 1.064237
SEX	.7494518	.0495008	-4.37	0.000	.6584494 .8530315
NonWhite	1.098109	.1892097	0.54	0.587	.7833916 1.539259
householdsize	.9302129	.0401033	-1.68	0.093	.8548412 1.01223
SES	.8150589	.0406874	-4.10	0.000	.7390899 .8988364
LE8_TOTALSCORE	.9991214	.0003619	-2.43	0.015	.9984124 .9998309

-> Model for the mediator

Iteration 0: Log likelihood =	-50291.05	Number of obs =	35,601
Iteration 1: Log likelihood =	-50291.05	Wald chi2(7) =	450.99
Log likelihood =	-50291.05	Prob > chi2 =	0.0000

ztarbp2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0115549	.0153687	0.75	0.452	-.0185672 .041677
AGE	-.001725	.0010062	-1.71	0.086	-.0036972 .0002472
SEX	-.0195533	.0106468	-1.84	0.066	-.0404207 .0013141
NonWhite	.0998531	.0254044	3.93	0.000	.0500614 .1496447
householdsize	-.001902	.0050509	-0.38	0.707	-.0118015 .0079976
SES	-.0195653	.0079981	-2.45	0.014	-.0352412 -.0038894
LE8_TOTALSCORE	-.0010837	.0000568	-19.10	0.000	-.0011949 -.0009724
_cons	.6725753	.0729492	9.22	0.000	.5295974 .8155531
sigma2					
_cons	.9874627	.0074012	133.42	0.000	.9729566 1.001969

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.213988	.1611937	7.53	0.000	.8980541 1.529922
ereri_cde	1.217831	.1612591	7.55	0.000	.901769 1.533893
ereri_intref	-.0029947	.005961	-0.50	0.615	-.0146781 .0086887
ereri_intmed	.0002138	.0016792	0.13	0.899	-.0030774 .003505
ereri_pie	-.0010621	.0014844	-0.72	0.474	-.0039714 .0018472

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztbc1d17
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8819.5642**
 Iteration 1: Log likelihood = **-8739.9119**
 Iteration 2: Log likelihood = **-8725.6214**
 Iteration 3: Log likelihood = **-8725.0683**
 Iteration 4: Log likelihood = **-8725.0652**
 Iteration 5: Log likelihood = **-8725.0652**
 Refining estimates:
 Iteration 0: Log likelihood = **-8725.0652**

Cox regression with Breslow method for ties

No. of subjects =	35,601	Number of obs =	35,601
No. of failures =	943		
Time at risk =	432,443.367	LR chi2(9) =	189.00
Log likelihood =	-8725.0652	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.195615	.1607005	10.75	0.000	1.902197 2.534294
ztbc1d17		.9789111	.0380998	-0.55	0.584	.907014 1.056507
_infectionburXztbc1d17_000		1.154451	.0790222	2.10	0.036	1.00951 1.320201
AGE		1.037461	.0132185	2.89	0.004	1.011874 1.063695
SEX		.7495034	.049606	-4.36	0.000	.6583195 .8533173
NonWhite		1.081747	.1868168	0.45	0.649	.7711231 1.517495
householdsize		.929172	.04014	-1.70	0.089	.8537377 1.011272
SES		.815752	.0407073	-4.08	0.000	.7397447 .899569
LE8_TOTALSCORE		.9992206	.0003611	-2.16	0.031	.9985131 .9999286

-> Model for the mediator

Iteration 0: Log likelihood = **-50156.55**
 Iteration 1: Log likelihood = **-50156.55**

Linear regression (Maximum Likelihood)	Number of obs =	35,601
	Wald chi2(7) =	724.43
Log likelihood =	-50156.55	Prob > chi2 = 0.0000

	<u>ztbc1d17</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.015595	.0153107	1.02	0.308	-.0144135 .0456035
AGE		.0022424	.0010024	2.24	0.025	.0002777 .0042072
SEX		-.1652839	.0106067	-15.58	0.000	-.1860726 -.1444951
NonWhite		.3462864	.0253086	13.68	0.000	.2966824 .3958903
householdsize		.0025144	.0050319	0.50	0.617	-.0073478 .0123767
SES		-.0065778	.0079679	-0.83	0.409	-.0221946 .009039
LE8_TOTALSCORE		-.0007954	.0000565	-14.07	0.000	-.0009063 -.0006846
_cons		.4916852	.0726742	6.77	0.000	.3492465 .6341239
sigma2						
_cons		.9800296	.0073455	133.42	0.000	.9656326 .9944266

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.21481	.1613313	7.53	0.000	.8986064 1.531013
ereri_cde	1.195294	.1606564	7.44	0.000	.8804132 1.510175
ereri_intref	.0152954	.0147782	1.03	0.301	-.0136693 .0442601
ereri_intmed	.0045529	.0049248	0.92	0.355	-.0050995 .0142054
ereri_pie	-.0003323	.0006889	-0.48	0.630	-.0016826 .0010179

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztbc1d23
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8968.6307

Iteration 2: Log likelihood = -8959.7788

Iteration 3: Log likelihood = -8959.7512

Iteration 4: Log likelihood = -8959.7512

Refining estimates:

Iteration 0: Log likelihood = -8959.7512

Cox regression with Breslow method for ties

No. of subjects = 36,264 Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 195.73

Log likelihood = -8959.7512

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.251162	.1616462	11.30	0.000	1.955625	2.59136
ztbc1d23	.9553431	.037109	-1.18	0.240	.8853105	1.030916
_infectionburXztbc1d23_000	.9851362	.0712263	-0.21	0.836	.8549753	1.135113
AGE	1.031917	.012987	2.50	0.013	1.006775	1.057688
SEX	.752068	.0489968	-4.37	0.000	.6619144	.8545007
NonWhite	1.094223	.1861626	0.53	0.597	.7839508	1.527294
householdsize	.9362466	.0393464	-1.57	0.117	.8622196	1.016629
SES	.8163971	.0402618	-4.11	0.000	.7411792	.8992484
LE8_TOTALSCORE	.9990293	.0003552	-2.73	0.006	.9983332	.9997257

-> Model for the mediator

Iteration 0: Log likelihood = -51350.667
 Iteration 1: Log likelihood = -51350.667

Linear regression (Maximum Likelihood)
 Number of obs = 36,264
 Wald chi2(7) = 211.05
 Prob > chi2 = 0.0000
 Log likelihood = -51350.667

	ztbc1d23	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	-.0115557	.0152806	-0.76	0.450	-.0415052	.0183937
AGE	-.0039468	.0009978	-3.96	0.000	-.0059024	-.0019912
SEX	.0235284	.0105847	2.22	0.026	.0027828	.0442741
NonWhite	.125578	.0253275	4.96	0.000	.0759369	.1752191
householdsize	-.0039755	.0048138	-0.83	0.409	-.0134104	.0054594
SES	-.0179941	.0079384	-2.27	0.023	-.0335531	-.002435
LE8_TOTALSCORE	-.0006589	.0000564	-11.69	0.000	-.0007694	-.0005484
_cons	.5346568	.0721117	7.41	0.000	.3933206	.6759931
sigma2						
_cons	.9941864	.0073832	134.66	0.000	.9797156	1.008657

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
tereri	1.25447	.161362	7.77	0.000	.9382062	1.570734
ereri_cde	1.249956	.161428	7.74	0.000	.9335627	1.566349
ereri_intref	.0029344	.0082499	0.36	0.722	-.013235	.0191039
ereri_intmed	.0010517	.0021605	0.49	0.626	-.0031829	.0052863
ereri_pie	.0005281	.0008304	0.64	0.525	-.0010995	.0021556

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztbc1d5
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04646 2.216 -.07503 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9036.4379
Iteration 1: Log likelihood = -8948.8065
Iteration 2: Log likelihood = -8939.8325
Iteration 3: Log likelihood = -8939.8008
Iteration 4: Log likelihood = -8939.8008
Refining estimates:
Iteration 0: Log likelihood = -8939.8008

```

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	193.27
Log likelihood =	-8939.8008	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.255969	.1616096	11.36	0.000	1.960451 2.596033
ztbc1d5	1.003276	.0387206	0.08	0.932	.9301846 1.082111
_infectionburXztbc1d5_000	1.029445	.0721624	0.41	0.679	.8972953 1.181058
AGE	1.032301	.0130171	2.52	0.012	1.007101 1.058132
SEX	.7583442	.0494865	-4.24	0.000	.6672988 .8618117
NonWhite	1.055036	.1818821	0.31	0.756	.7525326 1.479141
householdsize	.933291	.0397281	-1.62	0.105	.8585852 1.014497
SES	.8194572	.0404743	-4.03	0.000	.7438479 .902752
LE8_TOTALSCORE	.9990278	.0003562	-2.73	0.006	.9983299 .9997262

-> Model for the mediator

Iteration 0: Log likelihood = -51440.983	Number of obs = 36,352
Iteration 1: Log likelihood = -51440.983	Wald chi2(7) = 280.62
Log likelihood = -51440.983	Prob > chi2 = 0.0000

ztbc1d5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0155187	.0152602	1.02	0.309	-.0143907 .0454281
AGE	-.0021422	.0009961	-2.15	0.032	-.0040946 -.0001898
SEX	.0643247	.0105619	6.09	0.000	.0436237 .0850257
NonWhite	.101279	.0253099	4.00	0.000	.0516725 .1508855
householdsize	-.005082	.0048884	-1.04	0.299	-.0146631 .004499
SES	-.0208041	.007922	-2.63	0.009	-.0363309 -.0052773
LE8_TOTALSCORE	-.0007685	.0000562	-13.67	0.000	-.0008787 -.0006583
_cons	.4180331	.0720623	5.80	0.000	.2767936 .5592725
sigma2					
_cons	.9923123	.0073604	134.82	0.000	.9778863 1.006738

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.258115	.1617173	7.78	0.000	.9411544 1.575075
ereri_cde	1.255971	.1616107	7.77	0.000	.9392198 1.572722
ereri_intref	.0010124	.0039766	0.25	0.799	-.0067816 .0088063
ereri_intmed	.0010805	.0023902	0.45	0.651	-.0036041 .0057652
ereri_pie	.0000508	.000601	0.08	0.933	-.0011272 .0012288

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztbc
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8985.4467**
 Iteration 1: Log likelihood = **-8894.5454**
 Iteration 2: Log likelihood = **-8886.9794**
 Iteration 3: Log likelihood = **-8886.9635**
 Iteration 4: Log likelihood = **-8886.9635**
 Refining estimates:
 Iteration 0: Log likelihood = **-8886.9635**

Cox regression with Breslow method for ties

No. of subjects =	36,164	Number of obs =	36,164
No. of failures =	960		
Time at risk =	439,440.668	LR chi2(9) =	196.97
Log likelihood =	-8886.9635	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.20937	.1594778	10.98	0.000	1.917903 2.545132
ztbcb		.9237718	.035183	-2.08	0.037	.8573253 .9953682
_infectionburXztbcb_000		1.051422	.0755393	0.70	0.485	.9133188 1.210407
AGE		1.037752	.0131141	2.93	0.003	1.012365 1.063776
SEX		.7416416	.0485423	-4.57	0.000	.6523503 .8431548
NonWhite		1.019364	.1779584	0.11	0.913	.7239831 1.435259
householdszie		.94333	.0394148	-1.40	0.163	.8691569 1.023833
SES		.8088668	.0400633	-4.28	0.000	.7340352 .8913271
LE8_TOTALSCORE		.998981	.0003567	-2.86	0.004	.9982821 .9996804

-> Model for the mediator

Iteration 0: Log likelihood = **-51208.761**
 Iteration 1: Log likelihood = **-51208.761**

Linear regression (Maximum Likelihood)	Number of obs =	36,164
	Wald chi2(7) =	211.08
Log likelihood =	-51208.761	Prob > chi2 = 0.0000

	ztbcb	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0089924	.0153144	-0.59	0.557	-.0390081 .0210233
AGE		-.0011058	.001002	-1.10	0.270	-.0030697 .0008581
SEX		.013266	.0106007	1.25	0.211	-.007511 .0340429
NonWhite		.0269603	.0254188	1.06	0.289	-.0228598 .0767803
householdszie		-.0003901	.0050273	-0.08	0.938	-.0102434 .0094632
SES		-.025098	.0079687	-3.15	0.002	-.0407163 -.0094797
LE8_TOTALSCORE		-.000737	.0000564	-13.07	0.000	-.0008476 -.0006265
_cons		.4142207	.072621	5.70	0.000	.2718861 .5565553
sigma2						
_cons		.9941697	.0073933	134.47	0.000	.9796791 1.00866

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.204122	.1588882	7.58	0.000	.8927068 1.515537
ereri_cde	1.205716	.1588916	7.59	0.000	.894294 1.517137
ereri_intref	-.0021714	.0047452	-0.46	0.647	-.0114719 .0071291
ereri_intmed	-.0001356	.0012777	-0.11	0.915	-.0026399 .0023687
ereri_pie	.0007133	.0012626	0.56	0.572	-.0017613 .0031878

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztbcc
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.17 1.532 .0464 2.216 -.07458 500.7**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8985.4467**

Iteration 1: Log likelihood = **-8894.3581**

Iteration 2: Log likelihood = **-8886.2457**

Iteration 3: Log likelihood = **-8886.2182**

Iteration 4: Log likelihood = **-8886.2182**

Refining estimates:

Iteration 0: Log likelihood = **-8886.2182**

Cox regression with Breslow method for ties

No. of subjects = **36,164** Number of obs = **36,164**

No. of failures = **960**

Time at risk = **439,440.668**

Log likelihood = **-8886.2182**

LR chi2(9) = **198.46**

Prob > chi2 = **0.0000**

-> Model for the mediator

Iteration 0: Log likelihood = -51159.15
Iteration 1: Log likelihood = -51159.15

Linear regression (Maximum Likelihood) Number of obs = 36,164
Log likelihood = -51159.15 Wald chi2(7) = 311.02
Prob > chi2 = 0.0000

	ztbcc	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0055475	.0152934	-0.36	0.717	-.035522 .024427
AGE		-.0024225	.0010006	-2.42	0.015	-.0043837 -.0004613
SEX		.0476881	.0105861	4.50	0.000	.0269396 .0684365
NonWhite		.0059715	.025384	0.24	0.814	-.0437802 .0557232
householdsiz		.0019206	.0050204	0.38	0.702	-.0079192 .0117604
SES		-.019091	.0079578	-2.40	0.016	-.0346879 -.0034941
LE8_TOTALSCORE		-.0009095	.0000563	-16.14	0.000	-.0010199 -.0007991
_cons		.5229048	.0725215	7.21	0.000	.3807653 .6650443
sigma2						
_cons		.9914458	.007373	134.47	0.000	.9769949 1.005897

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.204996	.1589443	7.58	0.000	.8934713 1.516521
ereri_cde	1.203271	.1589324	7.57	0.000	.8917695 1.514773
ereri_intref	.0009314	.0091373	0.10	0.919	-.0169773 .0188401
ereri_intmed	.000319	.0011747	0.27	0.786	-.0019833 .0026213
ereri_pie	.0004746	.0013262	0.36	0.720	-.0021248 .003074

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztbl1x
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04669 2.217 -.07551 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -8882.1967
Iteration 1: Log likelihood = -8795.1178
Iteration 2: Log likelihood = -8785.5805
Iteration 3: Log likelihood = -8785.5272
Iteration 4: Log likelihood = -8785.5271
Refining estimates:
Iteration 0: Log likelihood = -8785.5271

```

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	193.34
Log likelihood =	-8785.5271	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.24662	.1634584	11.13	0.000	1.948042 2.590961
ztbl1x	.9179758	.035561	-2.21	0.027	.8508577 .9903884
_infectionburXztbl1x_000	.9981865	.0719358	-0.03	0.980	.8666996 1.149621
AGE	1.037526	.013186	2.90	0.004	1.012001 1.063695
SEX	.7519149	.0495179	-4.33	0.000	.6608642 .8555102
NonWhite	1.120056	.1905948	0.67	0.505	.8024074 1.563453
householdszie	.9386165	.0396057	-1.50	0.133	.8641139 1.019543
SES	.8284349	.041313	-3.77	0.000	.7512942 .9134962
LE8_TOTALSCORE	.999171	.0003591	-2.31	0.021	.9984675 .9998749

-> Model for the mediator

Iteration 0: Log likelihood = -50368.823	Number of obs = 35,573
Iteration 1: Log likelihood = -50368.823	Wald chi2(7) = 213.79
Log likelihood = -50368.823	Prob > chi2 = 0.0000

ztbl1x	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.017332	.015444	-1.12	0.262	-.0476018 .0129378
AGE	-.0048446	.0010071	-4.81	0.000	-.0068184 -.0028708
SEX	.075776	.0106865	7.09	0.000	.054831 .0967211
NonWhite	.0738045	.0255396	2.89	0.004	.0237477 .1238613
householdsize	-.003309	.0048638	-0.68	0.496	-.0128418 .0062238
SES	-.0085058	.0080151	-1.06	0.289	-.0242152 .0072035
LE8_TOTALSCORE	-.0006304	.0000569	-11.08	0.000	-.0007419 -.0005188
_cons	.4968194	.0727827	6.83	0.000	.354168 .6394708
sigma2					
_cons	.9939979	.0074532	133.37	0.000	.97939 1.008606

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.250367	.1625666	7.69	0.000	.9317426 1.568992
ereri_cde	1.242346	.1627121	7.64	0.000	.9234359 1.561256
ereri_intref	.0046152	.0119476	0.39	0.699	-.0188016 .028032
ereri_intmed	.0019218	.0030051	0.64	0.522	-.0039681 .0078117
ereri_pie	.0014844	.0014847	1.00	0.317	-.0014256 .0043944

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztcl1a
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .0464 2.216 -.07447 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8965.001**
 Iteration 1: Log likelihood = **-8868.9027**
 Iteration 2: Log likelihood = **-8861.1134**
 Iteration 3: Log likelihood = **-8861.0909**
 Iteration 4: Log likelihood = **-8861.0909**
 Refining estimates:
 Iteration 0: Log likelihood = **-8861.0909**

Cox regression with Breslow method for ties

No. of subjects =	36,123	Number of obs =	36,123
No. of failures =	958		
Time at risk =	438,930.97	LR chi2(9) =	207.82
Log likelihood =	-8861.0909	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.235922	.1618375	11.12	0.000	1.940198 2.57672
ztcl1a		.860593	.0332277	-3.89	0.000	.7978712 .9282456
_infectionburXztcl1a_000		1.118667	.0757111	1.66	0.098	.9796967 1.27735
AGE		1.037124	.0131211	2.88	0.004	1.011724 1.063163
SEX		.7551121	.0496415	-4.27	0.000	.663824 .8589541
NonWhite		1.088914	.1908165	0.49	0.627	.7723832 1.535163
householdszie		.9460544	.0392718	-1.34	0.182	.8721311 1.026244
SES		.8123058	.0402736	-4.19	0.000	.737085 .8952031
LE8_TOTALSCORE		.9989238	.0003572	-3.01	0.003	.9982239 .9996242

-> Model for the mediator

Iteration 0: Log likelihood = **-50616.777**
 Iteration 1: Log likelihood = **-50616.777**

Linear regression (Maximum Likelihood)	Number of obs =	36,123
	Wald chi2(7) =	1300.96
Log likelihood =	Prob > chi2 =	0.0000

	<u>ztcl1a</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0194034	.0151003	-1.28	0.199	-.0489995 .0101927
AGE		.0001965	.0009879	0.20	0.842	-.0017397 .0021326
SEX		.1179035	.010451	11.28	0.000	.0974199 .1383871
NonWhite		.6563665	.0250604	26.19	0.000	.607249 .7054839
householdszie		-.0082057	.004955	-1.66	0.098	-.0179173 .0015059
SES		-.0296195	.0078568	-3.77	0.000	-.0450185 -.0142206
LE8_TOTALSCORE		-.0010448	.0000556	-18.79	0.000	-.0011538 -.0009358
_cons		.318918	.0715949	4.45	0.000	.1785945 .4592415
sigma2						
_cons		.9652106	.007182	134.39	0.000	.9511341 .979287

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.215574	.1598724	7.60	0.000	.9022295 1.528918
ereri_cde	1.223044	.159777	7.65	0.000	.9098873 1.536202
ereri_intref	-.0091036	.0068514	-1.33	0.184	-.022532 .0043249
ereri_intmed	-.0012845	.0027082	-0.47	0.635	-.0065924 .0040234
ereri_pie	.0029174	.0023946	1.22	0.223	-.001776 .0076107

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztcl1b
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8905.4114**

Iteration 1: Log likelihood = **-8820.6697**

Iteration 2: Log likelihood = **-8812.8421**

Iteration 3: Log likelihood = **-8812.8214**

Iteration 4: Log likelihood = **-8812.8214**

Refining estimates:

Iteration 0: Log likelihood = **-8812.8214**

Cox regression with Breslow method for ties

No. of subjects = 35,755 Number of obs = 35,755

No. of failures = 953

Time at risk = 434,342.674

LR chi2(9) = 185.18

Log likelihood = -8812.8214

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.197469	.1597061	10.83	0.000	1.905723 2.533879
ztcl1b	.9406994	.0393311	-1.46	0.144	.8666858 1.021034
_infectionburXztcl1b_000	1.001182	.0788689	0.02	0.988	.8579444 1.168335
AGE	1.03711	.0131748	2.87	0.004	1.011607 1.063257
SEX	.7544152	.0495721	-4.29	0.000	.663252 .8581086
NonWhite	1.115119	.1897551	0.64	0.522	.79887 1.556563
householdsize	.9375221	.0396602	-1.53	0.127	.8629248 1.018568
SES	.8347319	.0415414	-3.63	0.000	.757157 .9202547
LE8_TOTALSCORE	.9989795	.0003581	-2.85	0.004	.9982778 .9996817

-> Model for the mediator

Iteration 0: Log likelihood = **-50723.728**
 Iteration 1: Log likelihood = **-50723.728**

Linear regression (Maximum Likelihood) Number of obs = 35,755
 Wald chi2(7) = 19.84
 Log likelihood = **-50723.728** Prob > chi2 = 0.0059

ztcl1b	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0009661	.015435	0.06	0.950	-.0292858 .0312181
AGE	-.0012551	.0010074	-1.25	0.213	-.0032297 .0007194
SEX	.0377996	.0106883	3.54	0.000	.0168508 .0587483
NonWhite	-.0434986	.0255933	-1.70	0.089	-.0936607 .0066634
householdsize	-.0026578	.0048741	-0.55	0.586	-.0122107 .0068952
SES	-.0018702	.0080259	-0.23	0.816	-.0176007 .0138602
LE8_TOTALSCORE	-.0000962	.0000569	-1.69	0.091	-.0002078 .0000154
_cons	.0734886	.0728382	1.01	0.313	-.0692717 .2162488
sigma2					
_cons	.9994174	.0074747	133.71	0.000	.9847672 1.014067

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.197184	.1593548	7.51	0.000	.8848548 1.509514
ereri_cde	1.195225	.159327	7.50	0.000	.8829501 1.5075
ereri_intref	.0020865	.0091723	0.23	0.820	-.0158908 .0200638
ereri_intmed	-.0000682	.0010996	-0.06	0.951	-.0022233 .0020869
ereri_pie	-.0000591	.0009444	-0.06	0.950	-.00191 .0017919

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztcn2
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04646 2.216 -.07521 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9213.6345
 Iteration 1: Log likelihood = -9124.7032
 Iteration 2: Log likelihood = -9115.56
 Iteration 3: Log likelihood = -9115.4996
 Iteration 4: Log likelihood = -9115.4996
 Refining estimates:
 Iteration 0: Log likelihood = -9115.4996

Cox regression with Breslow method for ties

No. of subjects =	36,845	Number of obs =	36,845
No. of failures =	983		
Time at risk =	447,583.608	LR chi2(9) =	196.27
Log likelihood =	-9115.4996	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.217743	.1596045	11.07	0.000	1.925985 2.553699
ztcn2	1.070727	.0389636	1.88	0.060	.997019 1.149883
_infectionburXztcn2_000	.9925721	.0628335	-0.12	0.906	.8767542 1.123689
AGE	1.034439	.0129692	2.70	0.007	1.009329 1.060173
SEX	.7343891	.0484229	-4.68	0.000	.6453588 .8357017
NonWhite	1.044762	.1780146	0.26	0.797	.7481404 1.458988
householdsize	.9399197	.0391067	-1.49	0.136	.8663138 1.019779
SES	.8292438	.0406726	-3.82	0.000	.7532389 .912918
LE8_TOTALSCORE	.9991002	.0003531	-2.55	0.011	.9984083 .9997925

-> Model for the mediator

Iteration 0: Log likelihood =	-50920.396	Number of obs =	36,845
Iteration 1: Log likelihood =	-50920.396	Wald chi2(7) =	2822.69
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-50920.396		

	ztcn2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0884033	.0146499	6.03	0.000	.0596901 .1171166
AGE		.0125571	.0009564	13.13	0.000	.0106826 .0144316
SEX		.438335	.0101501	43.19	0.000	.4184411 .4582289
NonWhite		.3103547	.0243109	12.77	0.000	.2627062 .3580031
householdsize		-.0065207	.004628	-1.41	0.159	-.0155913 .00255
SES		-.0884101	.0076173	-11.61	0.000	-.1033398 -.0734804
LE8_TOTALSCORE		-.0008845	.0000541	-16.36	0.000	-.0009905 -.0007786
_cons		-1.002941	.0691358	-14.51	0.000	-1.138445 -.8674378
sigma2						
_cons		.9288164	.0068431	135.73	0.000	.9154041 .9422287

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.228919	.1588043	7.74	0.000	.9176679 1.540169
ereri_cde	1.216126	.1592932	7.63	0.000	.903917 1.528335
ereri_intref	.0008285	.0054438	0.15	0.879	-.0098412 .0114982
ereri_intmed	.0059046	.0107808	0.55	0.584	-.0152254 .0270346
ereri_pie	.0060595	.0033896	1.79	0.074	-.0005839 .012703

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztdgf1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8819.5642**
 Iteration 1: Log likelihood = **-8733.7663**
 Iteration 2: Log likelihood = **-8725.5499**
 Iteration 3: Log likelihood = **-8725.5202**
 Iteration 4: Log likelihood = **-8725.5202**
 Refining estimates:
 Iteration 0: Log likelihood = **-8725.5202**

Cox regression with Breslow method for ties

No. of subjects =	35,601	Number of obs =	35,601
No. of failures =	943		
Time at risk =	432,443.367	LR chi2(9) =	188.09
Log likelihood =	-8725.5202	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.218657	.1616836	10.94	0.000	1.923354 2.559299
zt dgf1	1.063138	.0404289	1.61	0.107	.9867802 1.145405
_infectionburXzt dgf1_000	.881245	.0628655	-1.77	0.076	.7662569 1.013489
AGE	1.037335	.0132101	2.88	0.004	1.011764 1.063552
SEX	.7491462	.0494734	-4.37	0.000	.6581932 .8526675
NonWhite	1.099728	.1897221	0.55	0.582	.7842208 1.54217
householdszie	.9289278	.0401371	-1.71	0.088	.8534994 1.011022
SES	.8150067	.0407116	-4.10	0.000	.738995 .8988368
LE8_TOTALSCORE	.9991918	.0003604	-2.24	0.025	.9984856 .9998985

-> Model for the mediator

Iteration 0: Log likelihood = **-50435.196**
 Iteration 1: Log likelihood = **-50435.196**

Linear regression (Maximum Likelihood)	Number of obs =	35,601
	Wald chi2(7) =	160.23
Log likelihood =	-50435.196	Prob > chi2 = 0.0000

<u>zt dgf1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0244024	.015431	1.58	0.114	-.0058419 .0546467
AGE	.005324	.0010103	5.27	0.000	.0033438 .0073042
SEX	-.0266599	.01069	-2.49	0.013	-.047612 -.0057078
NonWhite	-.2608305	.0255075	-10.23	0.000	-.3108242 -.2108368
householdszie	.0109661	.0050714	2.16	0.031	.0010264 .0209059
SES	.0044387	.0080305	0.55	0.580	-.0113008 .0201782
LE8_TOTALSCORE	-.0001309	.000057	-2.30	0.022	-.0002425 -.0000192
_cons	-.2292244	.0732452	-3.13	0.002	-.3727823 -.0856664
sigma2					
_cons	.9954915	.0074614	133.42	0.000	.9808674 1.010116

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.216633	.1613317	7.54	0.000	.9004286 1.532837
ereri_cde	1.216638	.1613289	7.54	0.000	.900439 1.532836
ereri_intref	.0035244	.0094846	0.37	0.710	-.0150651 .0221139
ereri_intmed	-.0050244	.004662	-1.08	0.281	-.0141617 .0041129
ereri_pie	.0014952	.0013263	1.13	0.260	-.0011043 .0040946

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztdrkh
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8819.5642

Iteration 1: Log likelihood = -8733.9832

Iteration 2: Log likelihood = -8726.4242

Iteration 3: Log likelihood = -8726.4072

Iteration 4: Log likelihood = -8726.4072

Refining estimates:

Iteration 0: Log likelihood = -8726.4072

Cox regression with Breslow method for ties

No. of subjects = 35,601 Number of obs = 35,601

No. of failures = 943

Time at risk = 432,443.367

Log likelihood = -8726.4072

LR chi2(9) = 186.31

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.218059	.1615851	10.94	0.000	1.922929 2.558485
ztdrkh	.9455459	.0378979	-1.40	0.162	.87411 1.02282
_infectionburXztdrkh_000	1.06041	.0788871	0.79	0.430	.9165373 1.226866
AGE	1.037813	.0132125	2.92	0.004	1.012237 1.064035
SEX	.7497445	.0495181	-4.36	0.000	.6587101 .8533599
NonWhite	1.09803	.1892455	0.54	0.587	.7832668 1.539284
householdsize	.9303742	.0401198	-1.67	0.094	.8549722 1.012426
SES	.815072	.0406948	-4.10	0.000	.73909 .8988653
LE8_TOTALSCORE	.9991668	.0003613	-2.31	0.021	.998459 .9998752

-> Model for the mediator

Iteration 0: Log likelihood = **-50338.076**
 Iteration 1: Log likelihood = **-50338.076**

Linear regression (Maximum Likelihood) Number of obs = 35,601
 Wald chi2(7) = 355.88
 Log likelihood = **-50338.076** Prob > chi2 = 0.0000

ztdrkh	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0326545	.015389	2.12	0.034	.0024926 .0628164
AGE	-.0015249	.0010076	-1.51	0.130	-.0034997 .0004499
SEX	.0051308	.0106609	0.48	0.630	-.0157641 .0260258
NonWhite	.1869334	.025438	7.35	0.000	.1370759 .2367909
householdsize	-.002199	.0050576	-0.43	0.664	-.0121117 .0077136
SES	-.0272101	.0080086	-3.40	0.001	-.0429067 -.0115134
LE8_TOTALSCORE	-.000849	.0000568	-14.94	0.000	-.0009604 -.0007377
_cons	.4984055	.0730457	6.82	0.000	.3552386 .6415724
sigma2					
_cons	.9900749	.0074208	133.42	0.000	.9755303 1.004619

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.214231	.161224	7.53	0.000	.8982373 1.530224
ereri_cde	1.215861	.161216	7.54	0.000	.8998838 1.531839
ereri_intref	-.0018233	.0024384	-0.75	0.455	-.0066024 .0029558
ereri_intmed	.0020192	.0048166	0.42	0.675	-.0074211 .0114596
ereri_pie	-.0018268	.0015641	-1.17	0.243	-.0048924 .0012389

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztek
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04641 2.217 -.0748 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9132.2436
 Iteration 1: Log likelihood = -9044.9729
 Iteration 2: Log likelihood = -9035.8514
 Iteration 3: Log likelihood = -9035.8194
 Iteration 4: Log likelihood = -9035.8194
 Refining estimates:
 Iteration 0: Log likelihood = -9035.8194

Cox regression with Breslow method for ties

No. of subjects =	36,540	Number of obs =	36,540
No. of failures =	975		
Time at risk =	443,893.259	LR chi2(9) =	192.85
Log likelihood =	-9035.8194	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.252985	.1607233	11.39	0.000	1.959004 2.591082
ztek	1.005054	.0388392	0.13	0.896	.9317423 1.084135
_infectionburXztek_000	1.027799	.0711816	0.40	0.692	.8973404 1.177225
AGE	1.033965	.0129971	2.66	0.008	1.008802 1.059755
SEX	.7674953	.0497899	-4.08	0.000	.675858 .8715574
NonWhite	1.061029	.1828219	0.34	0.731	.7569377 1.487287
householdsize	.9320085	.0395026	-1.66	0.097	.8577135 1.012739
SES	.8222941	.0405162	-3.97	0.000	.7465977 .9056652
LE8_TOTALSCORE	.9990667	.0003545	-2.63	0.008	.9983722 .9997617

-> Model for the mediator

Iteration 0: Log likelihood = -51705.757
 Iteration 1: Log likelihood = -51705.757

Linear regression (Maximum Likelihood)
 Number of obs = 36,540
 Wald chi2(7) = 284.62
 Log likelihood = -51705.757 Prob > chi2 = 0.0000

	ztek	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0382382	.0152203	2.51	0.012	.008407 .0680693
AGE		-.0046571	.0009926	-4.69	0.000	-.0066025 -.0027117
SEX		-.0913866	.0105347	-8.67	0.000	-.1120342 -.0707389
NonWhite		.083726	.0252483	3.32	0.001	.0342402 .1332119
householdsize		-.0062549	.0047969	-1.30	0.192	-.0156565 .0031468
SES		-.0186922	.007908	-2.36	0.018	-.0341915 -.0031928
LE8_TOTALSCORE		-.0006326	.0000561	-11.28	0.000	-.0007426 -.0005227
_cons		.7402281	.0717741	10.31	0.000	.5995536 .8809027
sigma2						
_cons		.9922438	.0073409	135.17	0.000	.9778559 1.006632

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.256606	.1610205	7.80	0.000	.9410119 1.5722
ereri_cde	1.253003	.1607254	7.80	0.000	.9379866 1.568019
ereri_intref	.0008043	.0035139	0.23	0.819	-.0060829 .0076915
ereri_intmed	.0026065	.0052884	0.49	0.622	-.0077586 .0129716
ereri_pie	.0001928	.0014799	0.13	0.896	-.0027078 .0030934

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztff1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04626 2.214 -.07479 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9046.239**
 Iteration 1: Log likelihood = **-8962.856**
 Iteration 2: Log likelihood = **-8942.4399**
 Iteration 3: Log likelihood = **-8941.7846**
 Iteration 4: Log likelihood = **-8941.7831**
 Iteration 5: Log likelihood = **-8941.7831**
 Refining estimates:
 Iteration 0: Log likelihood = **-8941.7831**

Cox regression with Breslow method for ties

No. of subjects =	36,293	Number of obs =	36,293
No. of failures =	966		
Time at risk =	440,814.461	LR chi2(9) =	208.91
Log likelihood =	-8941.7831	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.170666	.166867	10.08	0.000	1.867059 2.523643
ztff1	1.10028	.0404285	2.60	0.009	1.023827 1.182441
_infectionburXztff1_000	1.045837	.0670483	0.70	0.485	.9223459 1.185862
AGE	1.032197	.0130705	2.50	0.012	1.006894 1.058135
SEX	.7371626	.0481468	-4.67	0.000	.6485869 .8378349
NonWhite	1.078912	.1838334	0.45	0.656	.7725942 1.506677
householdsize	.9370271	.0393357	-1.55	0.121	.863017 1.017384
SES	.841889	.0419844	-3.45	0.001	.7634946 .9283327
LE8_TOTALSCORE	.9991433	.0003565	-2.40	0.016	.9984449 .9998423

-> Model for the mediator

Iteration 0: Log likelihood = **-49910.739**
 Iteration 1: Log likelihood = **-49910.739**

Linear regression (Maximum Likelihood)	Number of obs =	36,293	
	Wald chi2(7) =	3315.39	
Log likelihood =	-49910.739	Prob > chi2 =	0.0000

	ztff1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1828014	.0146623	12.47	0.000	.1540639 .2115389
AGE		.0304131	.0009594	31.70	0.000	.0285327 .0322935
SEX		.1053811	.0101601	10.37	0.000	.0854677 .1252945
NonWhite		.2271822	.0243891	9.31	0.000	.1793804 .274984
householdsize		.0049622	.0048275	1.03	0.304	-.0044995 .0144239
SES		-.2173086	.0076283	-28.49	0.000	-.2322598 -.2023574
LE8_TOTALSCORE		-.0008587	.0000541	-15.87	0.000	-.0009648 -.0007527
_cons		-1.625028	.0695786	-23.36	0.000	-1.761399 -1.488656
sigma2						
_cons		.9162705	.0068019	134.71	0.000	.9029391 .9296019

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.23536	.1630117	7.58	0.000	.915863 1.554857
ereri_cde	1.168611	.1662561	7.03	0.000	.8427546 1.494467
ereri_intref	.0101154	.0119649	0.85	0.398	-.0133353 .0335661
ereri_intmed	.0390113	.0221214	1.76	0.078	-.0043459 .0823685
ereri_pie	.0176228	.0069823	2.52	0.012	.0039377 .0313079

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztff2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04634 2.216 -.07461 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9114.2295

Iteration 1: Log likelihood = -9032.1218

Iteration 2: Log likelihood = -9013.7703

Iteration 3: Log likelihood = -9013.2803

Iteration 4: Log likelihood = -9013.2795

Refining estimates:

Iteration 0: Log likelihood = -9013.2795

Cox regression with Breslow method for ties

No. of subjects = 36,537 Number of obs = 36,537

No. of failures = 973

Time at risk = 443,808.024

LR chi2(9) = 201.90

Log likelihood = -9013.2795

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.158941	.1638952	10.14	0.000	1.860468 2.505298
ztff2	1.097922	.0424179	2.42	0.016	1.017854 1.184288
_infectionburXztff2_000	1.047331	.0685816	0.71	0.480	.9211822 1.190756
AGE	1.03211	.0130116	2.51	0.012	1.006921 1.05793
SEX	.7395111	.0483128	-4.62	0.000	.6506315 .8405322
NonWhite	1.088234	.185281	0.50	0.619	.7794674 1.51931
householdsize	.9389645	.0390867	-1.51	0.130	.8653978 1.018785
SES	.8417187	.0417023	-3.48	0.001	.7638267 .9275537
LE8_TOTALSCORE	.9991811	.0003554	-2.30	0.021	.9984848 .9998778

-> Model for the mediator

Iteration 0: Log likelihood = **-50305.291**
 Iteration 1: Log likelihood = **-50305.291**

Linear regression (Maximum Likelihood) Number of obs = **36,537**
 Wald chi2(7) = **3209.12**
 Log likelihood = **-50305.291** Prob > chi2 = **0.0000**

	ztff2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.1873756	.0146364	12.80	0.000	.1586888	.2160624
AGE	.0285575	.0009552	29.90	0.000	.0266853	.0304296
SEX	.2371284	.0101413	23.38	0.000	.2172518	.257005
NonWhite	.0279464	.0243151	1.15	0.250	-.0197103	.0756031
householdsize	-.0146347	.0046163	-3.17	0.002	-.0236824	-.0055869
SES	-.1555324	.0076125	-20.43	0.000	-.1704526	-.1406122
LE8_TOTALSCORE	-.0011158	.000054	-20.66	0.000	-.0012217	-.0010099
_cons	-1.529844	.0690106	-22.17	0.000	-1.665103	-1.394586
sigma2						
_cons	.9192344	.006801	135.16	0.000	.9059046	.9325642

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.224512	.1609598	7.61	0.000	.9090369 1.539988
ereri_cde	1.157114	.1633676	7.08	0.000	.8369189 1.477308
ereri_intref	.0099388	.011915	0.83	0.404	-.0134141 .0332918
ereri_intmed	.0398013	.022937	1.74	0.083	-.0051544 .0847569
ereri_pie	.0176586	.0074973	2.36	0.019	.0029642 .0323531

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztff3
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04643 2.216 -.07516 500.7

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9088.8375
Iteration 1: Log likelihood = -9000.1199
Iteration 2: Log likelihood = -8983.3651
Iteration 3: Log likelihood = -8982.6221
Iteration 4: Log likelihood = -8982.6166
Iteration 5: Log likelihood = -8982.6166
Refining estimates:
Iteration 0: Log likelihood = -8982.6166

```

Cox regression with Breslow method for ties

No. of subjects = 36,400	Number of obs = 36,400
No. of failures = 971	
Time at risk = 442,198.42	
Log likelihood = -8982.6166	LR chi2(9) = 212.44 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.232191	.1670827	10.73	0.000	1.927603 2.584907
ztff3	1.141805	.0382355	3.96	0.000	1.069271 1.219259
_infectionburXztff3_000	.9728939	.0579812	-0.46	0.645	.8656388 1.093438
AGE	1.030861	.0130067	2.41	0.016	1.005681 1.056671
SEX	.7429745	.0484405	-4.56	0.000	.6538486 .8442491
NonWhite	1.097798	.186615	0.55	0.583	.786731 1.531858
householdsize	.9381442	.0393644	-1.52	0.128	.8640786 1.018558
SES	.8391232	.0415384	-3.54	0.000	.7615342 .9246174
LE8_TOTALSCORE	.9991793	.0003555	-2.31	0.021	.9984827 .9998763

-> Model for the mediator

Iteration 0: Log likelihood = -50686.872	Number of obs = 36,400
Iteration 1: Log likelihood = -50686.872	Wald chi2(7) = 1975.74
Log likelihood = -50686.872	Prob > chi2 = 0.0000

ztff3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.2519596	.0149173	16.89	0.000	.2227222 .2811971
AGE	.0214938	.0009721	22.11	0.000	.0195885 .0233991
SEX	.1842633	.0103188	17.86	0.000	.1640388 .2044877
NonWhite	-.051979	.0247215	-2.10	0.036	-.1004323 -.0035257
householdsize	-.0139838	.004695	-2.98	0.003	-.0231857 -.0047818
SES	-.1170421	.007744	-15.11	0.000	-.13222 -.1018642
LE8_TOTALSCORE	-.0007119	.000055	-12.93	0.000	-.0008197 -.000604
_cons	-1.229545	.0702551	-17.50	0.000	-1.367242 -1.091847
sigma2					
_cons	.9484899	.0070307	134.91	0.000	.9347101 .9622698

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.287209	.1641188	7.84	0.000	.9655421 1.608876
ereri_cde	1.227623	.1661347	7.39	0.000	.9020045 1.553241
ereri_intref	-.000203	.0077123	-0.03	0.979	-.0153189 .0149129
ereri_intmed	.0258125	.0291123	0.89	0.375	-.0312465 .0828716
ereri_pie	.0339769	.0089606	3.79	0.000	.0164145 .0515394

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztfpi
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04659 2.216 -.07597 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9039.3083**
 Iteration 1: Log likelihood = **-8948.7735**
 Iteration 2: Log likelihood = **-8939.0238**
 Iteration 3: Log likelihood = **-8938.9694**
 Iteration 4: Log likelihood = **-8938.9694**
 Refining estimates:
 Iteration 0: Log likelihood = **-8938.9694**

Cox regression with Breslow method for ties

No. of subjects =	36,360	Number of obs =	36,360
No. of failures =	966		
Time at risk =	441,795.583	LR chi2(9) =	200.68
Log likelihood =	-8938.9694	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.234409	.1602507	11.21	0.000	1.941399 2.571641
ztfp <i>i</i>		.8994298	.0374618	-2.54	0.011	.8289231 .9759337
_infectionburXztfp <i>i</i> _000		1.002618	.0745163	0.04	0.972	.8667076 1.15984
AGE		1.03507	.0130897	2.73	0.006	1.00973 1.061046
SEX		.7625999	.0498435	-4.15	0.000	.6709069 .8668246
NonWhite		1.059929	.182641	0.34	0.736	.7561403 1.485768
householdsize		.9329985	.039651	-1.63	0.103	.8584325 1.014041
SES		.8224554	.0406533	-3.95	0.000	.7465143 .9061219
LE8_TOTALSCORE		.9988218	.0003638	-3.24	0.001	.9981089 .9995351

-> Model for the mediator

Iteration 0: Log likelihood = **-50492.193**
 Iteration 1: Log likelihood = **-50492.193**

Linear regression (Maximum Likelihood)	Number of obs =	36,360
	Wald chi2(7) =	2267.73
Log likelihood =	Prob > chi2 =	0.0000

	ztfp <i>i</i>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.022737	.0148502	-1.53	0.126	-.051843 .0063689
AGE		.0086039	.0009691	8.88	0.000	.0067046 .0105032
SEX		-.0208303	.0102866	-2.03	0.043	-.0409916 -.000669
NonWhite		-.1265337	.0246012	-5.14	0.000	-.1747511 -.0783163
householdsize		-.0166177	.0046809	-3.55	0.000	-.025792 -.0074433
SES		.0010789	.0077205	0.14	0.889	-.0140531 .0162108
LE8_TOTALSCORE		-.0024344	.0000549	-44.38	0.000	-.0025419 -.0023269
_cons		.7784749	.0700466	11.11	0.000	.6411861 .9157637
sigma2						
_cons		.9412667	.006981	134.83	0.000	.9275843 .9549492

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.239109	.1610196	7.70	0.000	.9235162 1.554701
ereri_cde	1.22831	.1595007	7.70	0.000	.9156945 1.540926
ereri_intref	.0055417	.0136758	0.41	0.685	-.0212624 .0323458
ereri_intmed	.0028441	.0038249	0.74	0.457	-.0046526 .0103407
ereri_pie	.0024129	.0018414	1.31	0.190	-.0011962 .006022

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztfpi2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04642 2.216 -.0752 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9081.3272

Iteration 1: Log likelihood = -8993.2849

Iteration 2: Log likelihood = -8984.6892

Iteration 3: Log likelihood = -8984.6709

Iteration 4: Log likelihood = -8984.6709

Refining estimates:

Iteration 0: Log likelihood = -8984.6709

Cox regression with Breslow method for ties

No. of subjects = 36,430 Number of obs = 36,430

No. of failures = 970

Time at risk = 442,585.897

Log likelihood = -8984.6709

LR chi2(9) = 193.31

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.258348	.1624465	11.33	0.000	1.961383 2.600274
ztfp12	1.011795	.0386455	0.31	0.759	.9388173 1.090446
_infectionburXztfp12_000	.9890114	.0683424	-0.16	0.873	.8637375 1.132455
AGE	1.032753	.0130323	2.55	0.011	1.007524 1.058615
SEX	.7609129	.0513299	-4.05	0.000	.6666752 .8684716
NonWhite	1.067833	.1839946	0.38	0.703	.7617907 1.496825
householdsize	.9300086	.0396767	-1.70	0.089	.8554062 1.011117
SES	.821694	.0406884	-3.97	0.000	.7456938 .90544
LE8_TOTALSCORE	.9990333	.0003563	-2.71	0.007	.9983352 .9997319

-> Model for the mediator

Iteration 0: Log likelihood = **-49848.946**
 Iteration 1: Log likelihood = **-49848.946**

Linear regression (Maximum Likelihood) Number of obs = 36,430
 Wald chi2(7) = 3877.79
 Log likelihood = **-49848.946** Prob > chi2 = 0.0000

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1080919	.0145472	7.43	0.000	.0795799 .1366039
AGE	.015191	.0009486	16.01	0.000	.0133318 .0170503
SEX	.5339136	.0100692	53.02	0.000	.5141784 .5536488
NonWhite	-.1008878	.0241318	-4.18	0.000	-.1481852 -.0535903
householdsize	-.0119355	.0045831	-2.60	0.009	-.0209183 -.0029527
SES	-.0900518	.0075611	-11.91	0.000	-.1048713 -.0752324
LE8_TOTALSCORE	-.0010733	.0000536	-20.02	0.000	-.0011784 -.0009682
_cons	-1.185077	.0685923	-17.28	0.000	-1.319515 -1.050639
sigma2					
_cons	.9037708	.0066964	134.96	0.000	.890646 .9168956

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.258747	.1616065	7.79	0.000	.9420041 1.57549
ereri_cde	1.258491	.1624721	7.75	0.000	.9400511 1.57693
ereri_intref	.0000912	.0019228	0.05	0.962	-.0036774 .0038597
ereri_intmed	-.0011031	.0148627	-0.07	0.941	-.0302334 .0280273
ereri_pie	.0012683	.0041373	0.31	0.759	-.0068407 .0093773

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztfrc
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04645 2.216 -.07503 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9104.5997
 Iteration 1: Log likelihood = -9014.5983
 Iteration 2: Log likelihood = -9006.429
 Iteration 3: Log likelihood = -9006.4043
 Iteration 4: Log likelihood = -9006.4043
 Refining estimates:
 Iteration 0: Log likelihood = -9006.4043

Cox regression with Breslow method for ties

No. of subjects =	36,599	Number of obs =	36,599
No. of failures =	972		
Time at risk =	444,612.588	LR chi2(9) =	196.39
Log likelihood =	-9006.4043	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.243072	.1612973	11.23	0.000	1.948202 2.582571
ztfrc	1.123609	.0428487	3.06	0.002	1.042689 1.210809
_infectionburXztfrc_000	.910909	.0623036	-1.36	0.172	.7966273 1.041585
AGE	1.032427	.0129926	2.54	0.011	1.007274 1.058209
SEX	.7655171	.0497489	-4.11	0.000	.6739654 .8695053
NonWhite	1.017089	.1752442	0.10	0.922	.7255999 1.425676
householdsize	.9376436	.0395983	-1.52	0.127	.8631576 1.018557
SES	.8320214	.0411444	-3.72	0.000	.7551647 .9167003
LE8_TOTALSCORE	.9991047	.0003555	-2.52	0.012	.9984081 .9998017

-> Model for the mediator

Iteration 0: Log likelihood = -51297.788
 Iteration 1: Log likelihood = -51297.788

Linear regression (Maximum Likelihood)

Number of obs =	36,599
Wald chi2(7) =	1289.07
Prob > chi2 =	0.0000

Log likelihood = -51297.788

ztfrc	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1101461	.0150048	7.34	0.000	.0807372 .139555
AGE	.0025989	.0009784	2.66	0.008	.0006812 .0045166
SEX	.0017798	.0103859	0.17	0.864	-.0185762 .0221358
NonWhite	.769748	.0248784	30.94	0.000	.7209873 .8185087
householdsize	.0126917	.0047475	2.67	0.008	.0033867 .0219967
SES	-.0460971	.0077993	-5.91	0.000	-.0613834 -.0308108
LE8_TOTALSCORE	-.0004538	.0000554	-8.19	0.000	-.0005623 -.0003452
_cons	-.0146009	.0707396	-0.21	0.836	-.153248 .1240461
sigma2					
_cons	.9659505	.0071406	135.28	0.000	.9519552 .9799459

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.237884	.1599816	7.74	0.000	.9243258 1.551442
ereri_cde	1.237143	.1603333	7.72	0.000	.922896 1.551391
ereri_intref	-.0049791	.0038097	-1.31	0.191	-.0124459 .0024877
ereri_intmed	-.0072002	.0147051	-0.49	0.624	-.0360216 .0216211
ereri_pie	.0129198	.0046087	2.80	0.005	.0038869 .0219526

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztgfa
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8944.4436**
 Iteration 2: Log likelihood = **-8931.5983**
 Iteration 3: Log likelihood = **-8931.3874**
 Iteration 4: Log likelihood = **-8931.3872**
 Refining estimates:
 Iteration 0: Log likelihood = **-8931.3872**

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	210.10
Log likelihood =	-8931.3872	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.241312	.1676705	10.79	0.000	1.935641 2.595255
ztgfa		1.157956	.0433649	3.92	0.000	1.076006 1.246146
_infectionburXztgfa_000		.9489889	.0622534	-0.80	0.425	.8344928 1.079194
AGE		1.029362	.012987	2.29	0.022	1.00422 1.055133
SEX		.7474104	.0488196	-4.46	0.000	.6575974 .8494899
NonWhite		1.082245	.1866237	0.46	0.647	.7718683 1.517427
householdszie		.9366712	.039696	-1.54	0.123	.8620121 1.017797
SES		.8295572	.0410551	-3.78	0.000	.7528701 .9140556
LE8_TOTALSCORE		.9992976	.0003618	-1.94	0.052	.9985887 1.000007

-> Model for the mediator

Iteration 0: Log likelihood = **-50103.035**
 Iteration 1: Log likelihood = **-50103.035**

Linear regression (Maximum Likelihood)	Number of obs =	36,352	
	Wald chi2(7) =	3078.90	
Log likelihood =	-50103.035	Prob > chi2 =	0.0000

	ztgfa	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1882846	.0147087	12.80	0.000	.1594561 .2171132
AGE		.0129215	.0009601	13.46	0.000	.0110396 .0148033
SEX		.1284199	.0101803	12.61	0.000	.1084669 .1483728
NonWhite		-.1793486	.0243953	-7.35	0.000	-.2271626 -.1315347
householdszie		-.0104099	.0047117	-2.21	0.027	-.0196447 -.0011751
SES		-.1096781	.0076357	-14.36	0.000	-.1246438 -.0947125
LE8_TOTALSCORE		-.0022464	.0000542	-41.44	0.000	-.0023526 -.0021402
_cons		.147383	.0694582	2.12	0.034	.0112474 .2835187
sigma2						
_cons		.9218912	.006838	134.82	0.000	.908489 .9352935

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.271335	.1635647	7.77	0.000	.950754 1.591916
ereri_cde	1.23378	.1661926	7.42	0.000	.9080489 1.559512
ereri_intref	-.0024167	.0083272	-0.29	0.772	-.0187377 .0139043
ereri_intmed	.0119734	.0238758	0.50	0.616	-.0348222 .0587691
ereri_pie	.0279978	.0075802	3.69	0.000	.0131409 .0428548

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztgfb1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04665 2.217 -.07575 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9146.3164

Iteration 1: Log likelihood = -9054.8631

Iteration 2: Log likelihood = -9045.9994

Iteration 3: Log likelihood = -9045.976

Iteration 4: Log likelihood = -9045.976

Refining estimates:

Iteration 0: Log likelihood = -9045.976

Cox regression with Breslow method for ties

No. of subjects = 36,760 Number of obs = 36,760

No. of failures = 976

Time at risk = 446,584.651

Log likelihood = -9045.976

LR chi2(9) = 200.68

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.2742	.1626595	11.49	0.000	1.97673 2.616435
ztgfb1	.9352013	.0374363	-1.67	0.094	.8646321 1.01153
_infectionburXztgfb1_000	.9962321	.0716168	-0.05	0.958	.8653058 1.146968
AGE	1.036446	.0130162	2.85	0.004	1.011246 1.062274
SEX	.7536979	.0489041	-4.36	0.000	.663692 .8559098
NonWhite	1.036616	.1787588	0.21	0.835	.7393205 1.453459
householdsize	.9351451	.0393186	-1.59	0.111	.8611719 1.015473
SES	.8150641	.0400687	-4.16	0.000	.7401956 .8975053
LE8_TOTALSCORE	.9989525	.0003591	-2.92	0.004	.9982489 .9996566

-> Model for the mediator

Iteration 0: Log likelihood = -51225.199
 Iteration 1: Log likelihood = -51225.199

Linear regression (Maximum Likelihood) Number of obs = 36,760
 Wald chi2(7) = 1917.29
 Log likelihood = -51225.199 Prob > chi2 = 0.0000

	ztgfb1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.1082798	.0148475	7.29	0.000	.0791792	.1373804
AGE	.0129526	.0009685	13.37	0.000	.0110543	.0148509
SEX	-.0206088	.0102795	-2.00	0.045	-.0407563	-.0004612
NonWhite	-.2266044	.0245788	-9.22	0.000	-.2747781	-.1784308
householdsize	-.0122421	.0046847	-2.61	0.009	-.0214239	-.0030603
SES	-.0741842	.0077085	-9.62	0.000	-.0892925	-.0590759
LE8_TOTALSCORE	-.0018005	.0000547	-32.90	0.000	-.0019077	-.0016932
_cons	.1702804	.0699956	2.43	0.015	.0330916	.3074693
sigma2						
_cons	.9504027	.0070103	135.57	0.000	.9366628	.9641426

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257526	.1615048	7.79	0.000	.9409822 1.574069
ereri_cde	1.270207	.1622834	7.83	0.000	.9521371 1.588276
ereri_intref	.0046845	.0117712	0.40	0.691	-.0183866 .0277555
ereri_intmed	-.0101376	.0156411	-0.65	0.517	-.0407936 .0205183
ereri_pie	-.0072278	.004415	-1.64	0.102	-.015881 .0014254

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztgfbi
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04652 2.216 -.07593 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -9025.9309
Iteration 1: Log likelihood = -8933.1092
Iteration 2: Log likelihood = -8923.461
Iteration 3: Log likelihood = -8923.4042
Iteration 4: Log likelihood = -8923.4042
Refining estimates:
Iteration 0: Log likelihood = -8923.4042

```

Cox regression with Breslow method for ties

No. of subjects =	36,243	Number of obs =	36,243
No. of failures =	965		
Time at risk =	440,355.063	LR chi2(9) =	205.05
Log likelihood =	-8923.4042	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.226716	.1609758	11.07	0.000	1.932542 2.565669
ztgfbi	.8776256	.0344824	-3.32	0.001	.8125781 .9478802
_infectionburXztgfbi_000	1.019509	.0719991	0.27	0.784	.8877242 1.170858
AGE	1.0352	.0131132	2.73	0.006	1.009815 1.061223
SEX	.7320714	.0481474	-4.74	0.000	.6435333 .8327907
NonWhite	1.082764	.1864939	0.46	0.644	.7725448 1.517552
householdsize	.9338759	.0395528	-1.62	0.106	.8594843 1.014706
SES	.8234592	.0407165	-3.93	0.000	.7474013 .9072569
LE8_TOTALSCORE	.9988703	.0003597	-3.14	0.002	.9981654 .9995756

-> Model for the mediator

Iteration 0: Log likelihood =	-50595.162	Number of obs =	36,243
Iteration 1: Log likelihood =	-50595.162	Wald chi2(7) =	1700.54
Log likelihood =	-50595.162	Prob > chi2 =	0.0000

ztgfbri	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0289428	.0149912	-1.93	0.054	-.0583251 .0004394
AGE	-.003978	.0009775	-4.07	0.000	-.0058938 -.0020621
SEX	-.2785205	.0103793	-26.83	0.000	-.2988635 -.2581775
NonWhite	.0833579	.0248386	3.36	0.001	.0346751 .1320407
householdsize	-.0116524	.0047189	-2.47	0.014	-.0209013 -.0024035
SES	.0031837	.0077881	0.41	0.683	-.0120807 .0184482
LE8_TOTALSCORE	-.0015579	.0000554	-28.14	0.000	-.0016665 -.0014494
_cons	1.471728	.0706627	20.83	0.000	1.333231 1.610224
sigma2					
_cons	.9551559	.0070954	134.62	0.000	.9412492 .9690626

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.22909	.1600656	7.68	0.000	.915367 1.542813
ereri_cde	1.217411	.1595781	7.63	0.000	.9046437 1.530179
ereri_intref	.0045151	.0141512	0.32	0.750	-.0232207 .0322509
ereri_intmed	.0033784	.0043653	0.77	0.439	-.0051774 .0119341
ereri_pie	.0037852	.0022719	1.67	0.096	-.0006676 .008238

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztgfbri
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04641 2.217 -.0748 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9132.2436**
 Iteration 1: Log likelihood = **-9042.703**
 Iteration 2: Log likelihood = **-9033.4012**
 Iteration 3: Log likelihood = **-9033.3517**
 Iteration 4: Log likelihood = **-9033.3516**
 Refining estimates:
 Iteration 0: Log likelihood = **-9033.3516**

Cox regression with Breslow method for ties

No. of subjects =	36,540	Number of obs =	36,540
No. of failures =	975		
Time at risk =	443,893.259	LR chi2(9) =	197.78
Log likelihood =	-9033.3516	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.284036	.1713977	11.01	0.000	1.97164 2.645931
ztgfbr2	1.09289	.0419778	2.31	0.021	1.013636 1.178341
_infectionburXztgfbr2_000	.9311372	.0579089	-1.15	0.251	.8242826 1.051844
AGE	1.030767	.0130249	2.40	0.016	1.005552 1.056614
SEX	.7666603	.0497281	-4.10	0.000	.675136 .8705922
NonWhite	1.076543	.1855219	0.43	0.669	.7679674 1.509107
householdszie	.9325422	.0394765	-1.65	0.099	.8582926 1.013215
SES	.8270894	.0408265	-3.85	0.000	.7508198 .9111066
LE8_TOTALSCORE	.9991872	.0003595	-2.26	0.024	.9984829 .9998921

-> Model for the mediator

Iteration 0: Log likelihood = **-49837.088**
 Iteration 1: Log likelihood = **-49837.088**

Linear regression (Maximum Likelihood)	Number of obs =	36,540
	Wald chi2(7) =	4250.42
Log likelihood =	Prob > chi2 =	0.0000

<u>ztgfbr2</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.246802	.0144615	17.07	0.000	.218458 .2751459
AGE	.0353487	.0009431	37.48	0.000	.0335003 .0371971
SEX	.011967	.0100095	1.20	0.232	-.0076513 .0315852
NonWhite	-.1784526	.0239896	-7.44	0.000	-.2254714 -.1314339
householdszie	.0034651	.0045577	0.76	0.447	-.0054679 .0123981
SES	-.1077093	.0075137	-14.34	0.000	-.1224359 -.0929827
LE8_TOTALSCORE	-.0019224	.0000533	-36.07	0.000	-.0020268 -.0018179
_cons	-1.225145	.0681958	-17.97	0.000	-1.358807 -1.091484
sigma2					
_cons	.895774	.0066272	135.17	0.000	.882785 .9087631

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.291719	.1660134	7.78	0.000	.9663392 1.6171
ereri_cde	1.283402	.1710348	7.50	0.000	.9481803 1.618625
ereri_intref	-.0015467	.0027842	-0.56	0.579	-.0070036 .0039103
ereri_intmed	-.0123007	.0294334	-0.42	0.676	-.069989 .0453876
ereri_pie	.0221644	.0097783	2.27	0.023	.0029993 .0413295

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztgfb3
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.216 -.0752 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9225.1762

Iteration 1: Log likelihood = -9136.849

Iteration 2: Log likelihood = -9128.5397

Iteration 3: Log likelihood = -9128.5209

Iteration 4: Log likelihood = -9128.5209

Refining estimates:

Iteration 0: Log likelihood = -9128.5209

Cox regression with Breslow method for ties

No. of subjects = 36,896 Number of obs = 36,896

No. of failures = 984

Time at risk = 448,211.761

Log likelihood = -9128.5209 LR chi2(9) = 193.31

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.233121	.160002	11.21	0.000	1.940546 2.569806
ztgfbr3		1.008628	.0395065	0.22	0.826	.9340946 1.089109
_infectionburXztgfbr3_000		1.008478	.0708065	0.12	0.904	.8788249 1.157258
AGE		1.03437	.0129556	2.70	0.007	1.009286 1.060077
SEX		.7534081	.0487054	-4.38	0.000	.6637474 .8551803
NonWhite		1.068691	.1816597	0.39	0.696	.7658821 1.491222
householdsize		.9376342	.0391549	-1.54	0.123	.8639485 1.017604
SES		.823363	.0403476	-3.97	0.000	.747962 .9063651
LE8_TOTALSCORE		.9990665	.0003522	-2.65	0.008	.9983764 .999757

-> Model for the mediator

Iteration 0: Log likelihood = -52127.443
 Iteration 1: Log likelihood = -52127.443

Linear regression (Maximum Likelihood)
 Number of obs = 36,896
 Wald chi2(7) = 453.19
 Log likelihood = -52127.443 Prob > chi2 = 0.0000

	ztgfbr3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1013062	.0150956	6.71	0.000	.0717194 .130893
AGE		.0157392	.0009855	15.97	0.000	.0138076 .0176708
SEX		.0198227	.0104606	1.89	0.058	-.0006797 .040325
NonWhite		-.091846	.0250498	-3.67	0.000	-.1409427 -.0427493
householdsize		-.0071965	.0047692	-1.51	0.131	-.0165439 .0021508
SES		-.0275736	.0078502	-3.51	0.000	-.0429597 -.0121876
LE8_TOTALSCORE		.0003909	.0000557	7.02	0.000	.0002817 .0005001
_cons		-1.169125	.071251	-16.41	0.000	-1.308774 -1.029476
sigma2						
_cons		.9878394	.007273	135.82	0.000	.9735847 1.002094

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.236951	.1591845	7.77	0.000	.9249546 1.548947
ereri_cde	1.233225	.1600256	7.71	0.000	.9195807 1.546869
ereri_intref	-.0001311	.0004522	-0.29	0.772	-.0010175 .0007552
ereri_intmed	.002986	.0137733	0.22	0.828	-.0240091 .029981
ereri_pie	.0008707	.0039736	0.22	0.827	-.0069174 .0086588

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztgm2
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .0465 2.218 -.07572 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9053.6686
 Iteration 1: Log likelihood = -8972.887
 Iteration 2: Log likelihood = -8949.4801
 Iteration 3: Log likelihood = -8948.9091
 Iteration 4: Log likelihood = -8948.9085
 Refining estimates:
 Iteration 0: Log likelihood = -8948.9085

Cox regression with Breslow method for ties

No. of subjects = 36,391	Number of obs = 36,391
No. of failures = 967	
Time at risk = 442,096.101	LR chi2(9) = 209.52
Log likelihood = -8948.9085	Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.241833	.1621666	11.16	0.000	1.945495 2.583308
ztgm2	1.021978	.0393095	0.57	0.572	.9477655 1.102002
_infectionburXztgm2_000	1.202509	.084533	2.62	0.009	1.047735 1.380147
AGE	1.03183	.0130225	2.48	0.013	1.00662 1.057672
SEX	.762541	.0499777	-4.14	0.000	.6706171 .8670653
NonWhite	.990337	.1752692	-0.05	0.956	.7000642 1.400968
householdsize	.9277107	.0398114	-1.75	0.080	.8528732 1.009115
SES	.8223648	.0407017	-3.95	0.000	.7463381 .9061361
LE8_TOTALSCORE	.9990962	.0003561	-2.54	0.011	.9983984 .9997944

-> Model for the mediator

Iteration 0: Log likelihood = -51296.604
 Iteration 1: Log likelihood = -51296.604

Linear regression (Maximum Likelihood)

Number of obs = 36,391	
Wald chi2(7) = 685.35	
Log likelihood = -51296.604	Prob > chi2 = 0.0000

ztgm2	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
mu						
infectionburdenhospbr	-.0000257	.0151501	-0.00	0.999	-.0297194	.029668
AGE	.0015199	.0009897	1.54	0.125	-.0004198	.0034597
SEX	-.2297095	.0104995	-21.88	0.000	-.2502882	-.2091308
NonWhite	.1548328	.0251391	6.16	0.000	.1055611	.2041045
householdsize	.0035755	.0047788	0.75	0.454	-.0057908	.0129418
SES	.035562	.0078818	4.51	0.000	.020114	.05101
LE8_TOTALSCORE	-.0005672	.000056	-10.13	0.000	-.0006769	-.0004575
_cons	.5317071	.0715314	7.43	0.000	.3915082	.6719061
sigma2						
_cons	.9814882	.0072762	134.89	0.000	.9672272	.9957493

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
tereri	1.288537	.1635135	7.88	0.000	.9680566	1.609018
ereri_cde	1.241545	.162123	7.66	0.000	.9237895	1.5593
ereri_intref	.0470046	.0271663	1.73	0.084	-.0062404	.1002496
ereri_intmed	-.0000116	.0068152	-0.00	0.999	-.0133692	.0133461
ereri_pie	-5.58e-07	.0003293	-0.00	0.999	-.000646	.0006449

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zthbd
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9064.8284**
 Iteration 1: Log likelihood = **-8973.881**
 Iteration 2: Log likelihood = **-8964.9327**
 Iteration 3: Log likelihood = **-8964.9093**
 Iteration 4: Log likelihood = **-8964.9093**
 Refining estimates:
 Iteration 0: Log likelihood = **-8964.9093**

Cox regression with Breslow method for ties

No. of subjects =	36,441	Number of obs =	36,441
No. of failures =	968		
Time at risk =	442,700.115	LR chi2(9) =	199.84
Log likelihood =	-8964.9093	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.312412	.1679121	11.54	0.000	2.005656 2.666084
zthbd		1.071079	.0413543	1.78	0.075	.9930172 1.155278
_infectionburXzthbd_000		.9227495	.0604526	-1.23	0.220	.8115561 1.049178
AGE		1.032406	.0130257	2.53	0.011	1.00719 1.058255
SEX		.7602776	.0500354	-4.16	0.000	.6682716 .8649509
NonWhite		1.014137	.1794755	0.08	0.937	.7168967 1.43462
householdszie		.9281195	.039887	-1.74	0.083	.8531444 1.009683
SES		.8286868	.0410349	-3.79	0.000	.7520395 .9131459
LE8_TOTALSCORE		.999082	.0003567	-2.57	0.010	.9983831 .9997814

-> Model for the mediator

Iteration 0: Log likelihood = **-50575.098**
 Iteration 1: Log likelihood = **-50575.098**

Linear regression (Maximum Likelihood)	Number of obs =	36,441
	Wald chi2(7) =	2335.68
Log likelihood =	Prob > chi2 =	0.0000

	zthbd	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.136206	.0148151	9.19	0.000	.107169 .165243
AGE		.0202136	.0009676	20.89	0.000	.0183171 .02211
SEX		-.3228596	.0102662	-31.45	0.000	-.342981 -.3027381
NonWhite		-.1194563	.0245819	-4.86	0.000	-.167636 -.0712765
householdszie		-.0021529	.004672	-0.46	0.645	-.0113098 .0070041
SES		-.0832543	.0077039	-10.81	0.000	-.0983538 -.0681549
LE8_TOTALSCORE		-.0007841	.0000547	-14.33	0.000	-.0008914 -.0006769
_cons		-.3446052	.0699324	-4.93	0.000	-.4816702 -.2075403
sigma2						
_cons		.93974	.0069619	134.98	0.000	.926095 .9533851

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.307268	.1655986	7.89	0.000	.9827008 1.631835
ereri_cde	1.31121	.1675459	7.83	0.000	.9828265 1.639594
ereri_intref	-.0002529	.0041618	-0.06	0.952	-.0084099 .0079041
ereri_intmed	-.0130862	.0176686	-0.74	0.459	-.047716 .0215436
ereri_pie	.0093967	.0054067	1.74	0.082	-.0012003 .0199937

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zthbs2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9121.8147**

Iteration 1: Log likelihood = **-9040.4965**

Iteration 2: Log likelihood = **-9024.0207**

Iteration 3: Log likelihood = **-9023.4505**

Iteration 4: Log likelihood = **-9023.4484**

Iteration 5: Log likelihood = **-9023.4484**

Refining estimates:

Iteration 0: Log likelihood = **-9023.4484**

Cox regression with Breslow method for ties

No. of subjects = 36,459 Number of obs = 36,459

No. of failures = 974

Time at risk = 442,828.345

LR chi2(9) = 196.73

Log likelihood = -9023.4484 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.189247	.1590134	10.79	0.000	1.898754 2.524183
zthbs2	1.01198	.0403558	0.30	0.765	.9358965 1.094249
_infectionburXzthbs2_000	1.103054	.0703623	1.54	0.124	.9734187 1.249953
AGE	1.035152	.0130135	2.75	0.006	1.009958 1.060975
SEX	.7495983	.0488114	-4.43	0.000	.6597829 .85164
NonWhite	1.090405	.1854892	0.51	0.611	.7812488 1.521899
householdszie	.9402161	.0393559	-1.47	0.141	.8661592 1.020605
SES	.8269558	.0407115	-3.86	0.000	.7508915 .9107254
LE8_TOTALSCORE	.9991073	.0003587	-2.49	0.013	.9984046 .9998106

-> Model for the mediator

Iteration 0: Log likelihood = **-50906.474**
 Iteration 1: Log likelihood = **-50906.474**

Linear regression (Maximum Likelihood) Number of obs = **36,459**
 Wald chi2(7) = **1690.22**
 Log likelihood = **-50906.474** Prob > chi2 = **0.0000**

	zthbs2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1777706	.0149399	11.90	0.000	.1484889 .2070524
AGE		-.0007717	.0009778	-0.79	0.430	-.0026882 .0011448
SEX		.1972663	.0103526	19.05	0.000	.1769756 .217557
NonWhite		-.1847656	.0248203	-7.44	0.000	-.2334125 -.1361188
householdszie		-.0130193	.0049195	-2.65	0.008	-.0226614 -.0033772
SES		-.0497179	.0077758	-6.39	0.000	-.0649582 -.0344777
LE8_TOTALSCORE		-.0016949	.0000551	-30.75	0.000	-.0018029 -.0015869
_cons		.601786	.0709118	8.49	0.000	.4628014 .7407706
sigma2						
_cons		.9556683	.0070782	135.02	0.000	.9417954 .9695412

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.239834	.1601327	7.74	0.000	.9259801 1.553689
ereri_cde	1.189517	.1590518	7.48	0.000	.8777808 1.501252
ereri_intref	.0069471	.0089642	0.77	0.438	-.0106224 .0245167
ereri_intmed	.0412513	.0213504	1.93	0.053	-.0005946 .0830973
ereri_pie	.0021193	.0071064	0.30	0.766	-.011809 .0160476

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zthbs4
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04656 2.216 -.07551 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

```

```

Iteration 0: Log likelihood = -9080.3817
Iteration 1: Log likelihood = -8993.6165
Iteration 2: Log likelihood = -8985.3899
Iteration 3: Log likelihood = -8985.3727
Iteration 4: Log likelihood = -8985.3727
Refining estimates:
Iteration 0: Log likelihood = -8985.3727

```

Cox regression with Breslow method for ties

No. of subjects =	36,468	Number of obs =	36,468
No. of failures =	970		
Time at risk =	443,055.507	LR chi2(9) =	190.02
Log likelihood =	-8985.3727	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.244428	.1617875	11.22	0.000	1.948711 2.585019
zthbs4	.9978815	.0395385	-0.05	0.957	.9233202 1.078464
_infectionburXzthbs4_000	.9966722	.0689594	-0.05	0.962	.870278 1.141423
AGE	1.034095	.0130682	2.65	0.008	1.008796 1.060028
SEX	.7585484	.0495891	-4.23	0.000	.6673245 .8622426
NonWhite	1.094797	.1861664	0.53	0.594	.7844944 1.527839
householdsize	.9339174	.0395851	-1.61	0.107	.8594673 1.014817
SES	.8238985	.040721	-3.92	0.000	.7478307 .9077037
LE8_TOTALSCORE	.9990844	.0003588	-2.55	0.011	.9983814 .9997879

-> Model for the mediator

Iteration 0: Log likelihood =	-50933.27	Number of obs =	36,468
Iteration 1: Log likelihood =	-50933.27	Wald chi2(7) =	1660.87
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-50933.27		

	zthbs4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0485893	.0149552	3.25	0.001	.0192778 .0779009
AGE		.0184748	.0009754	18.94	0.000	.016563 .0203866
SEX		.1977556	.0103537	19.10	0.000	.1774627 .2180485
NonWhite		.0044455	.0247681	0.18	0.858	-.044099 .0529901
householdsize		-.0020071	.0047139	-0.43	0.670	-.0112463 .007232
SES		-.0249087	.0077726	-3.20	0.001	-.0401427 -.0096748
LE8_TOTALSCORE		-.0015819	.0000552	-28.65	0.000	-.0016901 -.0014736
_cons		-.6271398	.0705076	-8.89	0.000	-.7653323 -.4889474
sigma2						
_cons		.9564144	.0070828	135.03	0.000	.9425323 .9702964

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.24391	.1613621	7.71	0.000	.9276464 1.560174
ereri_cde	1.244407	.1618113	7.69	0.000	.9272627 1.561551
ereri_intref	.000098	.0015735	0.06	0.950	-.0029859 .0031819
ereri_intmed	-.0004917	.0065188	-0.08	0.940	-.0132682 .0122848
ereri_pie	-.000103	.0019253	-0.05	0.957	-.0038766 .0036705

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zthop1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04644 2.218 -.07524 500.4

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8991.5244**
 Iteration 1: Log likelihood = **-8896.6117**
 Iteration 2: Log likelihood = **-8887.907**
 Iteration 3: Log likelihood = **-8887.8878**
 Iteration 4: Log likelihood = **-8887.8878**
 Refining estimates:
 Iteration 0: Log likelihood = **-8887.8878**

Cox regression with Breslow method for ties

No. of subjects =	36,258	Number of obs =	36,258
No. of failures =	961		
Time at risk =	440,526.261	LR chi2(9) =	207.27
Log likelihood =	-8887.8878	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.281176	.1640677	11.47	0.000	1.981245 2.626511
zthop1	.8837363	.0366822	-2.98	0.003	.8146873 .9586376
_infectionburXzthop1_000	1.076543	.0772471	1.03	0.304	.9353061 1.239108
AGE	1.032887	.0130743	2.56	0.011	1.007577 1.058833
SEX	.7259689	.0479023	-4.85	0.000	.6378997 .8261972
NonWhite	1.019862	.1805144	0.11	0.912	.7209075 1.442789
householdszie	.9251283	.0399924	-1.80	0.072	.8499735 1.006928
SES	.8188993	.0406281	-4.03	0.000	.7430188 .9025291
LE8_TOTALSCORE	.9988368	.0003606	-3.22	0.001	.9981302 .9995439

-> Model for the mediator

Iteration 0: Log likelihood = **-50145.921**
 Iteration 1: Log likelihood = **-50145.921**

Linear regression (Maximum Likelihood)	Number of obs =	36,258
	Wald chi2(7) =	2698.61
Log likelihood =	Prob > chi2 =	0.0000

<u>zthop1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0235603	.0147785	1.59	0.111	-.0054051 .0525256
AGE	-.008116	.0009652	-8.41	0.000	-.0100078 -.0062242
SEX	-.3191353	.0102433	-31.16	0.000	-.3392117 -.2990588
NonWhite	.1135313	.0245328	4.63	0.000	.065448 .1616146
householdszie	-.0079648	.0046601	-1.71	0.087	-.0170985 .0011688
SES	-.0351269	.0076913	-4.57	0.000	-.0502017 -.0200522
LE8_TOTALSCORE	-.0019668	.0000546	-36.02	0.000	-.0020738 -.0018598
_cons	1.967737	.0697694	28.20	0.000	1.830992 2.104483
sigma2					
_cons	.9307021	.0069123	134.64	0.000	.9171542 .94425

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.264428	.1624072	7.79	0.000	.946116 1.582741
ereri_cde	1.271585	.1625426	7.82	0.000	.9530078 1.590163
ereri_intref	-.0044965	.0081893	-0.55	0.583	-.0205473 .0115542
ereri_intmed	.0002471	.0033045	0.07	0.940	-.0062296 .0067238
ereri_pie	-.0029077	.0020659	-1.41	0.159	-.0069568 .0011413

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zthpo
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.18 1.531 .04648 2.218 -.07459 500.6**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8905.4114**

Iteration 1: Log likelihood = **-8822.8648**

Iteration 2: Log likelihood = **-8812.2277**

Iteration 3: Log likelihood = **-8812.1379**

Iteration 4: Log likelihood = **-8812.1379**

Refining estimates:

Iteration 0: Log likelihood = **-8812.1379**

Cox regression with Breslow method for ties

No. of subjects = **35,755** Number of obs = **35,755**

No. of failures = **953**

Time at risk = **434,342.674**

LR chi2(9) = **186.55**

Log likelihood = **-8812.1379** Prob > chi2 = **0.0000**

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.190331	.1592319	10.79	0.000	1.899457
	zthpo	.9649782	.0373174	-0.92	0.357	.8945405
<u>infectionburXzthpo_000</u>		.9247902	.0652624	-1.11	0.268	.8053301
	AGE	1.036869	.0131709	2.85	0.004	1.011374
	SEX	.7656866	.0508539	-4.02	0.000	.6722295
	NonWhite	1.114869	.1896621	0.64	0.523	.7987609
	householdsize	.9369934	.0396488	-1.54	0.124	.8624183
	SES	.8343476	.0414848	-3.64	0.000	.756875
	LE8_TOTALSCORE	.9989297	.0003592	-2.98	0.003	.9982259
						.999634

-> Model for the mediator

Iteration 0: Log likelihood = -50320.728
Iteration 1: Log likelihood = -50320.728

Linear regression (Maximum Likelihood)
Number of obs = 35,755
Log likelihood = -50320.728 Wald chi2(7) = 835.45
Prob > chi2 = 0.0000

	zthpo	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0221419	.015262	1.45	0.147	-.007771 .0520548
AGE		.0019309	.0009962	1.94	0.053	-.0000215 .0038833
SEX		.241897	.0105685	22.89	0.000	.2211831 .262611
NonWhite		-.1260464	.0253065	-4.98	0.000	-.1756462 -.0764466
householdsiz		-.0087672	.0048194	-1.82	0.069	-.0182131 .0006787
SES		-.0164969	.0079359	-2.08	0.038	-.032051 -.0009427
LE8_TOTALSCORE		-.0009466	.0000563	-16.81	0.000	-.001057 -.0008362
_cons		.0083914	.0720218	0.12	0.907	-.1327688 .1495516
sigma2						
_cons		.9771402	.0073081	133.71	0.000	.9628166 .9914638

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
tereri	1.197858	.1593998	7.51	0.000	.88544	1.510276
ereri_cde	1.189462	.159105	7.48	0.000	.8776221	1.501302
ereri_intref	.0139425	.0150669	0.93	0.355	-.0155881	.0434731
ereri_intmed	-.0047579	.0044739	-1.06	0.288	-.0135266	.0040109
ereri_pie	-.000789	.0010137	-0.78	0.436	-.0027759	.0011978

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zthy1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04637 2.216 -.07448 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9160.406
Iteration 1: Log likelihood = -9071.313
Iteration 2: Log likelihood = -9062.972
Iteration 3: Log likelihood = -9062.9497
Iteration 4: Log likelihood = -9062.9497
Refining estimates:
Iteration 0: Log likelihood = -9062.9497

```

Cox regression with Breslow method for ties

No. of subjects =	36,751	Number of obs =	36,751
No. of failures =	977		
Time at risk =	446,451.479	LR chi2(9) =	194.91
Log likelihood =	-9062.9497	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.249815	.1623697	11.24	0.000	1.953059 2.591662
zthy1	.9703696	.0381176	-0.77	0.444	.898464 1.04803
_infectionburXzthy1_000	.9775719	.0646129	-0.34	0.731	.8587926 1.11278
AGE	1.034976	.0129998	2.74	0.006	1.009808 1.060771
SEX	.7631149	.0500507	-4.12	0.000	.6710607 .8677968
NonWhite	1.092845	.185933	0.52	0.602	.7829573 1.525384
householdsize	.9325658	.0394551	-1.65	0.099	.8583545 1.013193
SES	.8139707	.04007	-4.18	0.000	.7391046 .8964201
LE8_TOTALSCORE	.9989668	.0003576	-2.89	0.004	.9982661 .999668

-> Model for the mediator

Iteration 0: Log likelihood =	-50657.22	Number of obs =	36,751
Iteration 1: Log likelihood =	-50657.22	Wald chi2(7) =	3103.48
Log likelihood =	-50657.22	Prob > chi2 =	0.0000

	zthy1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1836794	.0146207	12.56	0.000	.1550233 .2123356
AGE		.018786	.0009567	19.64	0.000	.0169108 .0206611
SEX		.3060967	.0101279	30.22	0.000	.2862464 .325947
NonWhite		.247296	.0242969	10.18	0.000	.1996749 .2949171
householdsize		-.005933	.0048108	-1.23	0.217	-.015362 .003496
SES		-.1028303	.007606	-13.52	0.000	-.1177377 -.0879229
LE8_TOTALSCORE		-.001622	.0000539	-30.07	0.000	-.0017277 -.0015162
_cons		-.818746	.0693714	-11.80	0.000	-.9547115 -.6827805
sigma2						
_cons		.9221046	.0068024	135.56	0.000	.9087722 .935437

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.231339	.1598617	7.70	0.000	.9180156 1.544662
ereri_cde	1.248336	.1622895	7.69	0.000	.9302548 1.566418
ereri_intref	.0047318	.0093399	0.51	0.612	-.013574 .0230376
ereri_intmed	-.01622	.0236071	-0.69	0.492	-.0624891 .0300491
ereri_pie	-.0055095	.0071888	-0.77	0.443	-.0195993 .0085802

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztia1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.53 .04664 2.22 -.07506 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8787.104**
 Iteration 1: Log likelihood = **-8700.9841**
 Iteration 2: Log likelihood = **-8693.3815**
 Iteration 3: Log likelihood = **-8693.3557**
 Iteration 4: Log likelihood = **-8693.3557**
 Refining estimates:
 Iteration 0: Log likelihood = **-8693.3557**

Cox regression with Breslow method for ties

No. of subjects =	35,355	Number of obs =	35,355
No. of failures =	941		
Time at risk =	429,381.754	LR chi2(9) =	187.50
Log likelihood =	-8693.3557	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.183194	.1600724	10.65	0.000	1.890959 2.520593
ztia1		.9048835	.0358804	-2.52	0.012	.8372225 .9780127
_infectionburXztia1_000		1.024473	.0748549	0.33	0.741	.8877816 1.182212
AGE		1.036724	.0132315	2.83	0.005	1.011112 1.062984
SEX		.759631	.0502103	-4.16	0.000	.6673286 .8647003
NonWhite		1.132481	.1928473	0.73	0.465	.8111144 1.581175
householdszie		.9401716	.0398129	-1.46	0.145	.8652903 1.021533
SES		.8241852	.0412017	-3.87	0.000	.7472614 .9090275
LE8_TOTALSCORE		.9988847	.0003611	-3.09	0.002	.9981772 .9995927

-> Model for the mediator

Iteration 0: Log likelihood = **-50018.767**
 Iteration 1: Log likelihood = **-50018.767**

Linear regression (Maximum Likelihood)	Number of obs =	35,355	
	Wald chi2(7) =	295.84	
Log likelihood =	-50018.767	Prob > chi2 =	0.0000

	ztia1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0126122	.0154432	-0.82	0.414	-.0428802 .0176559
AGE		-.0024154	.0010091	-2.39	0.017	-.0043932 -.0004375
SEX		-.0174794	.0107071	-1.63	0.103	-.0384649 .0035061
NonWhite		.0493385	.0256022	1.93	0.054	-.0008409 .0995179
householdszie		.00043	.0048795	0.09	0.930	-.0091337 .0099937
SES		-.0241726	.0080362	-3.01	0.003	-.0399232 -.0084219
LE8_TOTALSCORE		-.0008778	.000057	-15.39	0.000	-.0009896 -.000766
_cons		.6082049	.0729727	8.33	0.000	.4651811 .7512286
sigma2						
_cons		.9916736	.0074586	132.96	0.000	.977055 1.006292

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.180775	.1593308	7.41	0.000	.8684929 1.493058
ereri_cde	1.177555	.1591547	7.40	0.000	.8656174 1.489492
ereri_intref	.0011377	.0105337	0.11	0.914	-.0195081 .0217834
ereri_intmed	.0008216	.0020346	0.40	0.686	-.003166 .0048093
ereri_pie	.0012614	.0016246	0.78	0.437	-.0019227 .0044455

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztie1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.216 -.0752 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9225.1762

Iteration 1: Log likelihood = -9137.0444

Iteration 2: Log likelihood = -9128.2616

Iteration 3: Log likelihood = -9128.2274

Iteration 4: Log likelihood = -9128.2274

Refining estimates:

Iteration 0: Log likelihood = -9128.2274

Cox regression with Breslow method for ties

No. of subjects = 36,896 Number of obs = 36,896

No. of failures = 984

Time at risk = 448,211.761

Log likelihood = -9128.2274

LR chi2(9) = 193.90

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.23698	.1589541	11.33	0.000	1.946157 2.571262
ztie1	1.004241	.0384081	0.11	0.912	.9317145 1.082413
_infectionburXztie1_000	.9487763	.06477	-0.77	0.441	.8299558 1.084608
AGE	1.034511	.0129428	2.71	0.007	1.009452 1.060192
SEX	.7540634	.0487657	-4.36	0.000	.6642937 .8559642
NonWhite	1.072029	.1823244	0.41	0.683	.7681378 1.496146
householdsize	.9375641	.0391166	-1.55	0.122	.8639478 1.017453
SES	.8229398	.0403286	-3.98	0.000	.7475745 .9059029
LE8_TOTALSCORE	.9990613	.0003522	-2.66	0.008	.9983711 .9997519

-> Model for the mediator

Iteration 0: Log likelihood = -52272.399
 Iteration 1: Log likelihood = -52272.399

Linear regression (Maximum Likelihood)
 Number of obs = 36,896
 Wald chi2(7) = 160.86
 Log likelihood = -52272.399 Prob > chi2 = 0.0000

ztie1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0367419	.015155	2.42	0.015	.0070386 .0664451
AGE	.0017729	.0009894	1.79	0.073	-.0001663 .003712
SEX	.0656638	.0105017	6.25	0.000	.0450807 .0862468
NonWhite	.1799709	.0251484	7.16	0.000	.1306809 .2292608
householdsize	-.0149898	.0047879	-3.13	0.002	-.024374 -.0056056
SES	-.0242166	.0078811	-3.07	0.002	-.0396632 -.0087699
LE8_TOTALSCORE	-.000223	.0000559	-3.99	0.000	-.0003326 -.0001133
_cons	-.0776926	.0715315	-1.09	0.277	-.2178916 .0625065
sigma2					
_cons	.995632	.0073303	135.82	0.000	.9812648 1.009999

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.23619	.1588697	7.78	0.000	.9248112 1.547569
ereri_cde	1.236996	.1589563	7.78	0.000	.925447 1.548544
ereri_intref	.0031707	.0067796	0.47	0.640	-.010117 .0164585
ereri_intmed	-.0041316	.0051591	-0.80	0.423	-.0142432 .0059801
ereri_pie	.0001555	.0014069	0.11	0.912	-.002602 .002913

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztigar
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.53 .04684 2.216 -.07414 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8798.6991
Iteration 1: Log likelihood = -8713.4138
Iteration 2: Log likelihood = -8705.83
Iteration 3: Log likelihood = -8705.8138
Iteration 4: Log likelihood = -8705.8138
Refining estimates:
Iteration 0: Log likelihood = -8705.8138

```

Cox regression with Breslow method for ties

No. of subjects =	35,544	Number of obs =	35,544
No. of failures =	941		
Time at risk =	431,747.414	LR chi2(9) =	185.77
Log likelihood =	-8705.8138	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.221352	.1619095	10.95	0.000	1.92564 2.562475
ztigar	.9983152	.0389352	-0.04	0.966	.9248472 1.077619
_infectionburXztigar_000	.9761722	.0721164	-0.33	0.744	.8445833 1.128263
AGE	1.038485	.0132427	2.96	0.003	1.012852 1.064768
SEX	.7454539	.049297	-4.44	0.000	.6548332 .8486153
NonWhite	1.092196	.1882146	0.51	0.609	.7791409 1.531036
householdsize	.930754	.0401534	-1.66	0.096	.8552901 1.012876
SES	.8168787	.0408369	-4.05	0.000	.740636 .9009699
LE8_TOTALSCORE	.9991784	.0003615	-2.27	0.023	.9984702 .9998871

-> Model for the mediator

Iteration 0: Log likelihood =	-50294.87	Number of obs =	35,544
Iteration 1: Log likelihood =	-50294.87	Wald chi2(7) =	279.86
Log likelihood =	-50294.87	Prob > chi2 =	0.0000

ztigar	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0391674	.0154124	2.54	0.011	.0089597 .0693751
AGE	.0032928	.0010094	3.26	0.001	.0013144 .0052712
SEX	-.0330188	.0106802	-3.09	0.002	-.0539516 -.012086
NonWhite	.0238476	.0254956	0.94	0.350	-.0261228 .073818
householdsize	-.0064831	.0050661	-1.28	0.201	-.0164124 .0034461
SES	-.0308378	.0080247	-3.84	0.000	-.0465659 -.0151096
LE8_TOTALSCORE	-.000741	.0000569	-13.02	0.000	-.0008526 -.0006295
_cons	.2287826	.0731803	3.13	0.002	.0853519 .3722133
sigma2					
_cons	.99216	.0074424	133.31	0.000	.9775732 1.006747

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.220129	.1617837	7.54	0.000	.903039 1.537219
ereri_cde	1.221339	.1619127	7.54	0.000	.9039957 1.538682
ereri_intref	.0010353	.0043599	0.24	0.812	-.0075099 .0095806
ereri_intmed	-.0021788	.0057494	-0.38	0.705	-.0134474 .0090898
ereri_pie	-.000066	.0015277	-0.04	0.966	-.0030602 .0029281

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztimd4
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04645 2.216 -.0751 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9132.7834**
 Iteration 1: Log likelihood = **-9045.7623**
 Iteration 2: Log likelihood = **-9035.6742**
 Iteration 3: Log likelihood = **-9035.6095**
 Iteration 4: Log likelihood = **-9035.6095**
 Refining estimates:
 Iteration 0: Log likelihood = **-9035.6095**

Cox regression with Breslow method for ties

No. of subjects =	36,596	Number of obs =	36,596
No. of failures =	975		
Time at risk =	444,571.57	LR chi2(9) =	194.35
Log likelihood =	-9035.6095	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.230893	.1608429	11.13	0.000	1.936907 2.5695
ztimd4	1.053862	.0413777	1.34	0.181	.9758052 1.138163
_infectionburXztimd4_000	1.031358	.0710238	0.45	0.654	.9011393 1.180393
AGE	1.032894	.0129805	2.58	0.010	1.007764 1.058651
SEX	.7454006	.0490582	-4.46	0.000	.6551915 .84803
NonWhite	1.08561	.1846416	0.48	0.629	.7778586 1.51512
householdszie	.9352	.0393437	-1.59	0.111	.8611814 1.015581
SES	.8307243	.0409984	-3.76	0.000	.754133 .9150944
LE8_TOTALSCORE	.9991287	.0003556	-2.45	0.014	.998432 .9998259

-> Model for the mediator

Iteration 0: Log likelihood = **-51054.486**
 Iteration 1: Log likelihood = **-51054.486**

Linear regression (Maximum Likelihood)	Number of obs =	36,596
	Wald chi2(7) =	1787.25
Log likelihood =	Prob > chi2 =	0.0000

ztimd4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0823711	.0149072	5.53	0.000	.0531535 .1115886
AGE	.0077879	.0009722	8.01	0.000	.0058825 .0096933
SEX	.3052052	.0103184	29.58	0.000	.2849814 .3254289
NonWhite	.0734491	.024714	2.97	0.003	.0250106 .1218876
householdszie	.0097984	.0047012	2.08	0.037	.0005842 .0190125
SES	-.1016383	.007746	-13.12	0.000	-.1168202 -.0864564
LE8_TOTALSCORE	-.0011999	.000055	-21.80	0.000	-.0013078 -.001092
_cons	-.3794349	.0702711	-5.40	0.000	-.5171636 -.2417061
sigma2					
_cons	.9534107	.0070482	135.27	0.000	.9395965 .9672249

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.24996	.1605722	7.78	0.000	.9352447 1.564676
ereri_cde	1.230016	.1606566	7.66	0.000	.9151345 1.544897
ereri_intref	.0045526	.0087956	0.52	0.605	-.0126864 .0217916
ereri_intmed	.0110616	.0111824	0.99	0.323	-.0108555 .0329786
ereri_pie	.0043307	.0033417	1.30	0.195	-.002219 .0108804

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztimp1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04646 2.216 -.07554 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8983.7501

Iteration 1: Log likelihood = -8894.7804

Iteration 2: Log likelihood = -8886.1749

Iteration 3: Log likelihood = -8886.1555

Iteration 4: Log likelihood = -8886.1555

Refining estimates:

Iteration 0: Log likelihood = -8886.1555

Cox regression with Breslow method for ties

No. of subjects = 36,050

Number of obs = 36,050

No. of failures = 961

Time at risk = 438,049.27

LR chi2(9) = 195.19

Log likelihood = -8886.1555 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.290584	.1673664	11.34	0.000	1.984958 2.643267
ztimp1	.965962	.0398185	-0.84	0.401	.8909885 1.047244
_infectionburXztimp1_000	.9694251	.0683575	-0.44	0.660	.8442928 1.113103
AGE	1.036358	.0131779	2.81	0.005	1.010849 1.062511
SEX	.752528	.0493075	-4.34	0.000	.6618351 .8556488
NonWhite	1.067472	.1839418	0.38	0.705	.7615198 1.496344
householdsize	.9360021	.0397412	-1.56	0.119	.8612637 1.017226
SES	.8154149	.0404878	-4.11	0.000	.7397993 .8987593
LE8_TOTALSCORE	.998988	.0003638	-2.78	0.005	.9982753 .9997013

-> Model for the mediator

Iteration 0: Log likelihood = **-49427.638**
 Iteration 1: Log likelihood = **-49427.638**

Linear regression (Maximum Likelihood) Number of obs = 36,050
 Wald chi2(7) = 3619.59
 Log likelihood = **-49427.638** Prob > chi2 = 0.0000

	ztimp1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.2004891	.0146653	13.67	0.000	.1717456	.2292326
AGE	.0236142	.0009565	24.69	0.000	.0217395	.0254889
SEX	-.1507392	.0101497	-14.85	0.000	-.1706323	-.1308461
NonWhite	-.1522122	.0243045	-6.26	0.000	-.1998482	-.1045763
householdsize	-.0127612	.0046158	-2.76	0.006	-.021808	-.0037144
SES	-.0986031	.0076183	-12.94	0.000	-.1135347	-.0836715
LE8_TOTALSCORE	-.0020635	.0000541	-38.11	0.000	-.0021697	-.0019574
_cons	-.157295	.0691311	-2.28	0.023	-.2927894	-.0218006
sigma2						
_cons	.9087314	.0067686	134.26	0.000	.8954652	.9219976

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.265773	.1640514	7.72	0.000	.9442379 1.587307
ereri_cde	1.28864	.1673549	7.70	0.000	.9606306 1.61665
ereri_intref	.0071671	.0120514	0.59	0.552	-.0164531 .0307873
ereri_intmed	-.0231156	.0282377	-0.82	0.413	-.0784604 .0322293
ereri_pie	-.0069191	.0082228	-0.84	0.400	-.0230354 .0091973

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztimp3
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04635 2.216 -.07488 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9125.8833
 Iteration 1: Log likelihood = -9037.2801
 Iteration 2: Log likelihood = -9027.2564
 Iteration 3: Log likelihood = -9027.2021
 Iteration 4: Log likelihood = -9027.2021
 Refining estimates:
 Iteration 0: Log likelihood = -9027.2021

Cox regression with Breslow method for ties

No. of subjects = 36,595	Number of obs = 36,595
No. of failures = 974	
Time at risk = 444,506.48	LR chi2(9) = 197.36
Log likelihood = -9027.2021	Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.235509	.1597463	11.26	0.000	1.943349 2.571593
ztimp3	.9303222	.0365872	-1.84	0.066	.8613065 1.004868
_infectionburXztimp3_000	.9643958	.0698508	-0.50	0.617	.8367642 1.111495
AGE	1.035823	.0130012	2.80	0.005	1.010652 1.061621
SEX	.7668125	.0499214	-4.08	0.000	.6749535 .8711733
NonWhite	1.074705	.1830922	0.42	0.672	.7696162 1.500736
householdsize	.9356896	.0392851	-1.58	0.113	.8617751 1.015944
SES	.8261272	.0406665	-3.88	0.000	.7501466 .9098036
LE8_TOTALSCORE	.9989337	.0003562	-2.99	0.003	.9982357 .999632

-> Model for the mediator

Iteration 0: Log likelihood = -51427.619
 Iteration 1: Log likelihood = -51427.619

Linear regression (Maximum Likelihood)

Number of obs = 36,595
Wald chi2(7) = 1009.55
Prob > chi2 = 0.0000

Log likelihood = -51427.619

	ztmp3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.016643	.0150474	1.11	0.269	-.0128494 .0461355
AGE		.0054736	.0009821	5.57	0.000	.0035488 .0073984
SEX		.1312049	.0104262	12.58	0.000	.1107699 .1516398
NonWhite		-.3213777	.0249967	-12.86	0.000	-.3703705 -.272385
householdsize		-.0058647	.0047471	-1.24	0.217	-.0151688 .0034394
SES		-.0250624	.0078258	-3.20	0.001	-.0404007 -.0097241
LE8_TOTALSCORE		-.001369	.0000555	-24.66	0.000	-.0014778 -.0012602
_cons		.1785162	.0709336	2.52	0.012	.0394889 .3175435
sigma2						
_cons		.973127	.0071941	135.27	0.000	.9590269 .9872271

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.238789	.1599589	7.74	0.000	.9252754 1.552303
ereri_cde	1.232172	.1593207	7.73	0.000	.919909 1.544435
ereri_intref	.0106629	.0150675	0.71	0.479	-.0188688 .0401946
ereri_intmed	-.0028443	.0035141	-0.81	0.418	-.0097318 .0040433
ereri_pie	-.0012013	.0012671	-0.95	0.343	-.0036849 .0012823

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztmp4
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9121.8147**
 Iteration 1: Log likelihood = **-9038.9188**
 Iteration 2: Log likelihood = **-9015.0675**
 Iteration 3: Log likelihood = **-9013.9463**
 Iteration 4: Log likelihood = **-9013.9412**
 Iteration 5: Log likelihood = **-9013.9412**
 Refining estimates:
 Iteration 0: Log likelihood = **-9013.9412**

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	215.75
Log likelihood =	-9013.9412	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.131813	.1614352	10.00	0.000	1.837766 2.472907
ztimp4	1.139178	.0435894	3.41	0.001	1.056869 1.227897
_infectionburXztimp4_000	1.062797	.0670324	0.97	0.334	.9392117 1.202644
AGE	1.029942	.0129928	2.34	0.019	1.004789 1.055725
SEX	.7055323	.0469007	-5.25	0.000	.6193451 .8037131
NonWhite	1.071966	.1823076	0.41	0.683	.7681016 1.496041
householdsize	.9439963	.0391432	-1.39	0.165	.8703118 1.023919
SES	.8346675	.0409934	-3.68	0.000	.7580679 .9190072
LE8_TOTALSCORE	.9991133	.0003548	-2.50	0.012	.998418 .999809

-> Model for the mediator

Iteration 0: Log likelihood = **-50036.034**
 Iteration 1: Log likelihood = **-50036.034**

Linear regression (Maximum Likelihood)	Number of obs =	36,459	
	Wald chi2(7) =	3556.00	
Log likelihood =	-50036.034	Prob > chi2 =	0.0000

<u>ztimp4</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1442644	.0145875	9.89	0.000	.1156734 .1728553
AGE	.0270574	.0009548	28.34	0.000	.0251861 .0289287
SEX	.4728901	.0101084	46.78	0.000	.4530781 .4927022
NonWhite	.0655099	.0242347	2.70	0.007	.0180107 .1130091
householdsize	-.0217592	.0048035	-4.53	0.000	-.0311739 -.0123446
SES	-.0661084	.0075923	-8.71	0.000	-.0809891 -.0512277
LE8_TOTALSCORE	-.0005157	.0000538	-9.58	0.000	-.0006212 -.0004102
_cons	-2.074268	.0692389	-29.96	0.000	-2.209974 -1.938563
sigma2					
_cons	.9111084	.0067481	135.02	0.000	.8978823 .9243345

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.208376	.1593489	7.58	0.000	.8960578 1.520694
ereri_cde	1.126028	.1602492	7.03	0.000	.8119456 1.440111
ereri_intref	.0222623	.0168074	1.32	0.185	-.0106797 .0552042
ereri_intmed	.0411088	.0172199	2.39	0.017	.0073585 .0748592
ereri_pie	.0189764	.005949	3.19	0.001	.0073165 .0306363

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztinagl1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04643 2.218 -.0761 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9041.6455

Iteration 1: Log likelihood = -8954.5444

Iteration 2: Log likelihood = -8934.1256

Iteration 3: Log likelihood = -8933.5703

Iteration 4: Log likelihood = -8933.5695

Refining estimates:

Iteration 0: Log likelihood = -8933.5695

Cox regression with Breslow method for ties

No. of subjects = 36,331 Number of obs = 36,331

No. of failures = 966

Time at risk = 441,406.527

Log likelihood = -8933.5695

LR chi2(9) = 216.15

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.213831	.167181	10.52	0.000	1.909258 2.566991
ztinagl1		1.13234	.0445894	3.16	0.002	1.048234 1.223194
_infectionburXztinagl1_000		1.042293	.0704617	0.61	0.540	.9129487 1.189962
AGE		1.030012	.0130519	2.33	0.020	1.004746 1.055914
SEX		.7514306	.0490348	-4.38	0.000	.6612162 .8539535
NonWhite		.9855236	.1746089	-0.08	0.934	.6963964 1.39469
householdsize		.9282249	.0399848	-1.73	0.084	.8530732 1.009997
SES		.830933	.0411881	-3.74	0.000	.7540032 .9157117
LE8_TOTALSCORE		.9990511	.0003566	-2.66	0.008	.9983524 .9997503

-> Model for the mediator

Iteration 0: Log likelihood = **-50925.484**
 Iteration 1: Log likelihood = **-50925.484**

Linear regression (Maximum Likelihood) Number of obs = 36,331
 Wald chi2(7) = 1272.73
 Log likelihood = **-50925.484** Prob > chi2 = 0.0000

	ztinagl1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1159011	.0150493	7.70	0.000	.086405 .1453971
AGE		.0290225	.0009827	29.53	0.000	.0270965 .0309485
SEX		-.0742543	.0104256	-7.12	0.000	-.094688 -.0538205
NonWhite		.2033246	.0249774	8.14	0.000	.1543697 .2522794
householdsize		-.0035359	.0047425	-0.75	0.456	-.0128311 .0057593
SES		-.036664	.0078239	-4.69	0.000	-.0519985 -.0213294
LE8_TOTALSCORE		-.0000721	.0000556	-1.30	0.195	-.000181 .0000368
_cons		-1.617324	.0710098	-22.78	0.000	-1.756501 -1.478148
sigma2						
_cons		.9661276	.0071682	134.78	0.000	.9520782 .980177

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.268381	.1637601	7.75	0.000	.9474176 1.589345
ereri_cde	1.20722	.1657152	7.28	0.000	.882424 1.532015
ereri_intref	.0180112	.0177237	1.02	0.310	-.0167266 .0527489
ereri_intmed	.0286414	.0153347	1.87	0.062	-.001414 .0586968
ereri_pie	.0145091	.0050039	2.90	0.004	.0047016 .0243167

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztjap1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04641 2.217 -.0748 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9132.2436
Iteration 1: Log likelihood = -9042.4979
Iteration 2: Log likelihood = -9033.1677
Iteration 3: Log likelihood = -9033.1324
Iteration 4: Log likelihood = -9033.1324
Refining estimates:
Iteration 0: Log likelihood = -9033.1324

```

Cox regression with Breslow method for ties

No. of subjects =	36,540	Number of obs =	36,540
No. of failures =	975		
Time at risk =	443,893.259	LR chi2(9) =	198.22
Log likelihood =	-9033.1324	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.252331	.161322	11.34	0.000	1.957336 2.591786
ztjap1	.9249428	.036118	-2.00	0.046	.8567939 .9985122
_infectionburXztjap1_000	.999233	.0716819	-0.01	0.991	.8681687 1.150083
AGE	1.034233	.0129829	2.68	0.007	1.009097 1.059994
SEX	.7643041	.0495966	-4.14	0.000	.6730242 .8679638
NonWhite	1.06911	.1841505	0.39	0.698	.7627916 1.498439
householdsize	.9315479	.0394706	-1.67	0.094	.8573121 1.012212
SES	.8216027	.0404711	-3.99	0.000	.7459895 .90488
LE8_TOTALSCORE	.9989881	.0003547	-2.85	0.004	.9982932 .9996835

-> Model for the mediator

Iteration 0: Log likelihood = -51663.526	Number of obs = 36,540
Iteration 1: Log likelihood = -51663.526	Wald chi2(7) = 369.84
Log likelihood = -51663.526	Prob > chi2 = 0.0000

ztjap1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0081372	.0152027	-0.54	0.592	-.0379339 .0216595
AGE	-.0028835	.0009914	-2.91	0.004	-.0048267 -.0009404
SEX	-.0625395	.0105225	-5.94	0.000	-.0831633 -.0419158
NonWhite	.0701345	.0252192	2.78	0.005	.0207059 .1195632
householdsize	-.0034273	.0047913	-0.72	0.474	-.0128181 .0059635
SES	-.0156715	.0078988	-1.98	0.047	-.0311529 -.00019
LE8_TOTALSCORE	-.0009184	.000056	-16.39	0.000	-.0010282 -.0008085
_cons	.7333823	.0716912	10.23	0.000	.5928702 .8738944
sigma2					
_cons	.9899529	.0073239	135.17	0.000	.9755982 1.004308

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.253908	.1607574	7.80	0.000	.9388295 1.568987
ereri_cde	1.248674	.1607212	7.77	0.000	.9336657 1.563681
ereri_intref	.0037902	.0108371	0.35	0.727	-.0174502 .0250305
ereri_intmed	.0008095	.0019023	0.43	0.670	-.0029189 .0045379
ereri_pie	.0006351	.0012288	0.52	0.605	-.0017732 .0030434

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztlr3
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .0466 2.218 -.07544 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9166.3755
 Iteration 1: Log likelihood = -9072.8091
 Iteration 2: Log likelihood = -9062.8522
 Iteration 3: Log likelihood = -9062.8039
 Iteration 4: Log likelihood = -9062.8039
 Refining estimates:
 Iteration 0: Log likelihood = -9062.8039

Cox regression with Breslow method for ties

No. of subjects =	36,824	Number of obs =	36,824
No. of failures =	978		
Time at risk =	447,356.911	LR chi2(9) =	207.14
Log likelihood =	-9062.8039	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.278247	.162117	11.57	0.000	1.981666	2.619215
ztlr3	.9099082	.0343291	-2.50	0.012	.845052	.9797421
_infectionburXztlr3_000	1.025936	.0701434	0.37	0.708	.8972706	1.173051
AGE	1.035715	.0129873	2.80	0.005	1.01057	1.061485
SEX	.76483	.0497472	-4.12	0.000	.6732863	.8688204
NonWhite	1.081104	.1864679	0.45	0.651	.7709974	1.51594
householdsize	.9354089	.0392659	-1.59	0.112	.8615299	1.015623
SES	.8166601	.040057	-4.13	0.000	.7418055	.8990681
LE8_TOTALSCORE	.9990081	.0003545	-2.80	0.005	.9983137	.9997031

-> Model for the mediator

Iteration 0: Log likelihood = -51928.237
 Iteration 1: Log likelihood = -51928.237

Linear regression (Maximum Likelihood)	Number of obs =	36,824	
	Wald chi2(7) =	650.19	
Log likelihood =	-51928.237	Prob > chi2 =	0.0000

	ztlr3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0084517	.0150828	-0.56	0.575	-.0380134
AGE		.003971	.0009838	4.04	0.000	.0020429
SEX		.1585144	.0104436	15.18	0.000	.1380454
NonWhite		.3359496	.0249825	13.45	0.000	.2869848
householdsize		-.0043724	.0047612	-0.92	0.358	-.0137042
SES		-.0187831	.0078313	-2.40	0.016	-.0341322
LE8_TOTALSCORE		-.0007692	.0000556	-13.84	0.000	-.0008782
_cons		-.1028302	.071111	-1.45	0.148	-.2422052
sigma2						
_cons		.9826231	.0072416	135.69	0.000	.9684298
						.9968164

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.274965	.1616775	7.89	0.000	.9580831 1.591847
ereri_cde	1.272803	.1613469	7.89	0.000	.9565685 1.589037
ereri_intref	.0008398	.0092889	0.09	0.928	-.017366 .0190457
ereri_intmed	.0005243	.0014821	0.35	0.724	-.0023806 .0034293
ereri_pie	.0007983	.0014604	0.55	0.585	-.0020641 .0036606

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztmprss15
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9057.6167

Iteration 1: Log likelihood = -8969.3425

Iteration 2: Log likelihood = -8958.3929

Iteration 3: Log likelihood = -8958.3096

Iteration 4: Log likelihood = -8958.3096

Refining estimates:

Iteration 0: Log likelihood = -8958.3096

Cox regression with Breslow method for ties

No. of subjects = 36,264 Number of obs = 36,264

No. of failures = 968

Time at risk = 440,524.906

LR chi2(9) = 198.61

Log likelihood = -8958.3096

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.234783	.1611043	11.15	0.000	1.940317 2.573938
ztmprss15		.9460738	.0364363	-1.44	0.150	.8772887 1.020252
_infectionburXztmprss15_000		1.172626	.0818703	2.28	0.023	1.022658 1.344586
AGE		1.031947	.012998	2.50	0.013	1.006783 1.057739
SEX		.7526143	.0494613	-4.32	0.000	.6616557 .8560771
NonWhite		1.088348	.1851913	0.50	0.619	.7797021 1.519171
householdsize		.93527	.0393036	-1.59	0.111	.8613236 1.015565
SES		.8183378	.0403331	-4.07	0.000	.7429844 .9013335
LE8_TOTALSCORE		.9990618	.0003573	-2.62	0.009	.9983618 .9997622

-> Model for the mediator

Iteration 0: Log likelihood = -51011.975
 Iteration 1: Log likelihood = -51011.975

Linear regression (Maximum Likelihood)
 Number of obs = 36,264
 Wald chi2(7) = 898.78
 Prob > chi2 = 0.0000
 Log likelihood = -51011.975

	ztmprss15	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.028298	.0151386	1.87	0.062	-.001373 .0579691
AGE		.0069621	.0009885	7.04	0.000	.0050247 .0088996
SEX		.2207145	.0104863	21.05	0.000	.2001617 .2412672
NonWhite		.1245914	.0250921	4.97	0.000	.0754118 .173771
householdsize		-.0117982	.0047691	-2.47	0.013	-.0211454 -.0024511
SES		.0352236	.0078646	4.48	0.000	.0198092 .050638
LE8_TOTALSCORE		-.0011547	.0000558	-20.68	0.000	-.0012642 -.0010453
_cons		-.1597112	.0714413	-2.24	0.025	-.2997336 -.0196888
sigma2						
_cons		.9757881	.0072466	134.66	0.000	.9615851 .9899911

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.24839	.1610933	7.75	0.000	.9326529 1.564127
ereri_cde	1.232664	.160809	7.67	0.000	.9174846 1.547844
ereri_intref	.0091303	.0130931	0.70	0.486	-.0165318 .0347924
ereri_intmed	.0081627	.0058509	1.40	0.163	-.0033049 .0196303
ereri_pie	-.0015675	.0013734	-1.14	0.254	-.0042592 .0011243

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztmprss5
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.532 .04639 2.216 -.07454 500.7

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8925.5599
Iteration 1: Log likelihood = -8837.8661
Iteration 2: Log likelihood = -8829.4675
Iteration 3: Log likelihood = -8829.4353
Iteration 4: Log likelihood = -8829.4353
Refining estimates:
Iteration 0: Log likelihood = -8829.4353

```

Cox regression with Breslow method for ties

No. of subjects =	35,997	Number of obs =	35,997
No. of failures =	954		
Time at risk =	437,423.433	LR chi2(9) =	192.25
Log likelihood =	-8829.4353	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.211358	.1598165	10.98	0.000	1.919297 2.547863
ztmprss5	.9624108	.0375603	-0.98	0.326	.891539 1.038916
_infectionburXztmprss5_000	1.016957	.0727917	0.24	0.814	.8839964 1.169915
AGE	1.037275	.01316	2.88	0.004	1.0118 1.063391
SEX	.7519703	.0499053	-4.30	0.000	.6602521 .8564294
NonWhite	1.039928	.1820153	0.22	0.823	.7379388 1.465502
householdsize	.9404584	.0395991	-1.46	0.145	.8659619 1.021364
SES	.8146823	.0404922	-4.12	0.000	.7390621 .8980399
LE8_TOTALSCORE	.9990367	.0003595	-2.68	0.007	.9983323 .9997416

-> Model for the mediator

Iteration 0: Log likelihood =	-50182.1	Number of obs =	35,997
Iteration 1: Log likelihood =	-50182.1	Wald chi2(7) =	1835.11
Log likelihood =	-50182.1	Prob > chi2 =	0.0000

	ztmprss5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0348876	.0150191	-2.32	0.020	-.0643246 -.0054506
AGE		.0168708	.0009825	17.17	0.000	.0149452 .0187964
SEX		.2825057	.0103946	27.18	0.000	.2621327 .3028786
NonWhite		.3520643	.0249244	14.13	0.000	.3032134 .4009152
householdsize		-.0031084	.0049283	-0.63	0.528	-.0127677 .0065509
SES		.0049584	.0078119	0.63	0.526	-.0103525 .0202694
LE8_TOTALSCORE		.001306	.0000553	23.61	0.000	.0011976 .0014144
_cons		-2.106009	.0712097	-29.57	0.000	-2.245578 -1.966441
sigma2						
_cons		.951467	.0070921	134.16	0.000	.9375667 .9653673

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.212139	.159865	7.58	0.000	.8988089 1.525468
ereri_cde	1.210737	.1597382	7.58	0.000	.8976555 1.523818
ereri_intref	-.0002567	.0024102	-0.11	0.915	-.0049807 .0044673
ereri_intmed	.000321	.0048545	0.07	0.947	-.0091936 .0098357
ereri_pie	.0013376	.0014802	0.90	0.366	-.0015635 .0042386

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztmsb10
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9121.8147**
 Iteration 1: Log likelihood = **-9031.9641**
 Iteration 2: Log likelihood = **-9022.9129**
 Iteration 3: Log likelihood = **-9022.8756**
 Iteration 4: Log likelihood = **-9022.8756**
 Refining estimates:
 Iteration 0: Log likelihood = **-9022.8756**

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	197.88
Log likelihood =	-9022.8756	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.253615	.1610671	11.37	0.000	1.959043 2.592481
ztmsb10	.9330327	.0373785	-1.73	0.084	.8625746 1.009246
_infectionburXztmsb10_000	.9684179	.0702876	-0.44	0.658	.8400066 1.116459
AGE	1.036583	.0130403	2.86	0.004	1.011337 1.06246
SEX	.757705	.0492672	-4.27	0.000	.6670427 .8606899
NonWhite	1.089507	.1851769	0.50	0.614	.78083 1.52021
householdszie	.9382831	.0393501	-1.52	0.129	.864243 1.018666
SES	.8203141	.0403849	-4.02	0.000	.74486 .9034117
LE8_TOTALSCORE	.9988925	.0003582	-3.09	0.002	.9981907 .9995948

-> Model for the mediator

Iteration 0: Log likelihood = **-50976.547**
 Iteration 1: Log likelihood = **-50976.547**

Linear regression (Maximum Likelihood)	Number of obs =	36,459
	Wald chi2(7) =	1543.86
Log likelihood =	Prob > chi2 =	0.0000

<u>ztmsb10</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0882282	.0149687	5.89	0.000	.0588901 .1175662
AGE	.011794	.0009797	12.04	0.000	.0098738 .0137142
SEX	.0808683	.0103725	7.80	0.000	.0605385 .101198
NonWhite	.0581073	.024868	2.34	0.019	.0093669 .1068478
householdszie	-.0034343	.004929	-0.70	0.486	-.0130949 .0062264
SES	-.0656661	.0077907	-8.43	0.000	-.0809356 -.0503965
LE8_TOTALSCORE	-.0016976	.0000552	-30.74	0.000	-.0018058 -.0015893
_cons	.0037935	.0710482	0.05	0.957	-.1354585 .1430455
sigma2					
_cons	.9593489	.0071054	135.02	0.000	.9454225 .9732752

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.240301	.1605262	7.73	0.000	.925675 1.554926
ereri_cde	1.249667	.1606284	7.78	0.000	.9348412 1.564493
ereri_intref	.0107672	.0155386	0.69	0.488	-.019688 .0412224
ereri_intmed	-.0140369	.0130583	-1.07	0.282	-.0396306 .0115569
ereri_pie	-.0060969	.0036612	-1.67	0.096	-.0132727 .001079

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnc
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04645 2.216 -.0751 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9132.7834

Iteration 1: Log likelihood = -9040.8361

Iteration 2: Log likelihood = -9031.9646

Iteration 3: Log likelihood = -9031.9316

Iteration 4: Log likelihood = -9031.9316

Refining estimates:

Iteration 0: Log likelihood = -9031.9316

Cox regression with Breslow method for ties

No. of subjects = 36,596

Number of obs = 36,596

No. of failures = 975

Time at risk = 444,571.57

LR chi2(9) = 201.70

Log likelihood = -9031.9316 Prob > chi2 = 0.0000

-> Model for the mediator

Iteration 0: Log likelihood = -51536.623
Iteration 1: Log likelihood = -51536.623

Linear regression (Maximum Likelihood) Number of obs = 36,596
Log likelihood = -51536.623 Wald chi2(7) = 789.09
Prob > chi2 = 0.0000

	ztnс	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1194402	.0151049	7.91	0.000	.0898352 .1490452
AGE		.0134432	.0009851	13.65	0.000	.0115126 .0153739
SEX		.0962244	.0104553	9.20	0.000	.0757324 .1167163
NonWhite		-.3420857	.0250417	-13.66	0.000	-.3911666 -.2930048
householdsizе		-.0064503	.0047635	-1.35	0.176	-.0157866 .0028861
SES		-.0807504	.0078487	-10.29	0.000	-.0961336 -.0653672
LE8_TOTALSCORE		.0004067	.0000558	7.29	0.000	.0002974 .000516
_cons		-1.152465	.071203	-16.19	0.000	-1.29202 -1.012909
sigma2						
_cons		.9788662	.0072364	135.27	0.000	.9646831 .9930492

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.256842	.1611943	7.80	0.000	.9409068 1.572777
ereri_cde	1.249445	.1623333	7.70	0.000	.9312773 1.567612
ereri_intref	-.0048283	.0052642	-0.92	0.359	-.015146 .0054894
ereri_intmed	-.0026403	.0157729	-0.17	0.867	-.0335547 .028274
ereri_pie	.0148658	.0049573	3.00	0.003	.0051496 .0245819

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnf
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.53 .04652 2.218 -.07455 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8866.7174
Iteration 1: Log likelihood = -8782.3544
Iteration 2: Log likelihood = -8774.9765
Iteration 3: Log likelihood = -8774.9604
Iteration 4: Log likelihood = -8774.9604
Refining estimates:
Iteration 0: Log likelihood = -8774.9604

```

Cox regression with Breslow method for ties

No. of subjects =	35,705	Number of obs =	35,705
No. of failures =	949		
Time at risk =	433,721.527	LR chi2(9) =	183.51
Log likelihood =	-8774.9604	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.228491	.1642063	10.88	0.000	1.928813 2.57473
ztnf	1.027516	.0407339	0.68	0.494	.9507017 1.110536
_infectionburXztnf_000	.935934	.0619265	-1.00	0.317	.8221008 1.065529
AGE	1.037821	.0132286	2.91	0.004	1.012215 1.064075
SEX	.7493209	.0494117	-4.38	0.000	.6584728 .852703
NonWhite	1.120208	.1906303	0.67	0.505	.8025022 1.563691
householdsize	.9384077	.0397716	-1.50	0.134	.8636065 1.019688
SES	.8357557	.0417625	-3.59	0.000	.7577832 .9217511
LE8_TOTALSCORE	.9989935	.000361	-2.79	0.005	.9982863 .9997013

-> Model for the mediator

Iteration 0: Log likelihood = -49803.545	Number of obs = 35,705
Iteration 1: Log likelihood = -49803.545	Wald chi2(7) = 1760.33
Log likelihood = -49803.545	Prob > chi2 = 0.0000

	ztnf	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1721787	.0150886	11.41	0.000	.1426056 .2017518
AGE		.0189911	.0009847	19.29	0.000	.0170612 .020921
SEX		.0985449	.0104445	9.44	0.000	.078074 .1190158
NonWhite		-.053103	.0250011	-2.12	0.034	-.1021043 -.0041017
householdsize		-.0027866	.004762	-0.59	0.558	-.01212 .0065468
SES		-.1015396	.0078432	-12.95	0.000	-.1169121 -.0861672
LE8_TOTALSCORE		-.0013316	.0000557	-23.93	0.000	-.0014406 -.0012225
_cons		-.6499101	.0711903	-9.13	0.000	-.7894404 -.5103797
sigma2						
_cons		.9529877	.0071324	133.61	0.000	.9390084 .9669671

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.217889	.1618999	7.52	0.000	.9005707 1.535206
ereri_cde	1.228856	.1642488	7.48	0.000	.9069347 1.550778
ereri_intref	.0040009	.0073805	0.54	0.588	-.0104646 .0184663
ereri_intmed	-.0196532	.0217981	-0.90	0.367	-.0623767 .0230703
ereri_pie	.0046846	.00687	0.68	0.495	-.0087804 .0181495

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztnfaip8
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8913.3312**
 Iteration 1: Log likelihood = **-8827.7533**
 Iteration 2: Log likelihood = **-8817.9851**
 Iteration 3: Log likelihood = **-8817.9039**
 Iteration 4: Log likelihood = **-8817.9038**
 Refining estimates:
 Iteration 0: Log likelihood = **-8817.9038**

Cox regression with Breslow method for ties

No. of subjects =	35,761	Number of obs =	35,761
No. of failures =	953		
Time at risk =	434,427.923	LR chi2(9) =	190.85
Log likelihood =	-8817.9038	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.226796	.1613767	11.05	0.000	1.931939 2.566654
ztnfaip8		.9353116	.0366132	-1.71	0.088	.8662349 1.009897
_infectionburXztnfaip8_000		1.163916	.0829055	2.13	0.033	1.012257 1.338297
AGE		1.037219	.0131635	2.88	0.004	1.011737 1.063342
SEX		.7511026	.0493638	-4.35	0.000	.6603235 .8543616
NonWhite		1.053839	.1839537	0.30	0.764	.7485004 1.483735
householdsize		.9349293	.0397891	-1.58	0.114	.8601079 1.016259
SES		.8262717	.0410915	-3.84	0.000	.7495344 .9108654
LE8_TOTALSCORE		.999071	.0003589	-2.59	0.010	.9983679 .9997747

-> Model for the mediator

Iteration 0: Log likelihood = **-50710.05**
 Iteration 1: Log likelihood = **-50710.05**

Linear regression (Maximum Likelihood)	Number of obs =	35,761
	Wald chi2(7) =	64.28
Log likelihood =	-50710.05	Prob > chi2 = 0.0000

	ztnfaip8	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0351279	.0154389	-2.28	0.023	-.0653877 -.0048681
AGE		-.0018725	.0010056	-1.86	0.063	-.0038433 .0000984
SEX		.0334906	.010679	3.14	0.002	.0125601 .0544211
NonWhite		.0394325	.0255517	1.54	0.123	-.0106479 .0895128
householdsize		.0031489	.0048573	0.65	0.517	-.0063713 .012669
SES		-.0109027	.0080067	-1.36	0.173	-.0265955 .0047901
LE8_TOTALSCORE		-.0003526	.0000569	-6.20	0.000	-.0004641 -.0002411
_cons		.2331737	.0726333	3.21	0.001	.090815 .3755324
sigma2						
_cons		.9981778	.0074648	133.72	0.000	.9835471 1.012809

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.224842	.1610256	7.61	0.000	.909238 1.540447
ereri_cde	1.224459	.1609762	7.61	0.000	.9089514 1.539966
ereri_intref	.0070297	.0122375	0.57	0.566	-.0169555 .0310148
ereri_intmed	-.0089983	.0062919	-1.43	0.153	-.0213302 .0033336
ereri_pie	.002352	.0017236	1.36	0.172	-.0010263 .0057302

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfrsf10a
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8985.4467**

Iteration 1: Log likelihood = **-8899.9762**

Iteration 2: Log likelihood = **-8888.2959**

Iteration 3: Log likelihood = **-8888.1342**

Iteration 4: Log likelihood = **-8888.1341**

Refining estimates:

Iteration 0: Log likelihood = **-8888.1341**

Cox regression with Breslow method for ties

No. of subjects = 36,164 Number of obs = 36,164

No. of failures = 960

Time at risk = 439,440.668

Log likelihood = -8888.1341

LR chi2(9) = 194.63

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.149675	.1653818	9.95	0.000	1.848788 2.499532
ztnfrsf10a	1.030603	.0401765	0.77	0.439	.9547921 1.112434
_infectionburXztnfrsf10a_000	1.044098	.070394	0.64	0.522	.9148552 1.191598
AGE	1.035822	.0131575	2.77	0.006	1.010352 1.061934
SEX	.735724	.0482644	-4.68	0.000	.6469564 .8366711
NonWhite	1.005746	.1758281	0.03	0.974	.7139673 1.416767
householdsize	.9443938	.0393423	-1.37	0.170	.8703483 1.024739
SES	.8158737	.0406044	-4.09	0.000	.7400487 .8994677
LE8_TOTALSCORE	.9991182	.0003624	-2.43	0.015	.9984082 .9998287

-> Model for the mediator

Iteration 0: Log likelihood = **-49007.146**
 Iteration 1: Log likelihood = **-49007.146**

Linear regression (Maximum Likelihood) Number of obs = 36,164
 Wald chi2(7) = 4920.92
 Log likelihood = **-49007.146** Prob > chi2 = 0.0000

ztnfrsf10a	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.2553937	.0144099	17.72	0.000	.2271508 .2836366
AGE	.0303468	.0009428	32.19	0.000	.0284989 .0321948
SEX	.1474308	.0099746	14.78	0.000	.127881 .1669806
NonWhite	.2691724	.0239175	11.25	0.000	.2222949 .3160499
householdsize	-.0058876	.0047304	-1.24	0.213	-.015159 .0033837
SES	-.1604074	.007498	-21.39	0.000	-.1751032 -.1457115
LE8_TOTALSCORE	-.0020858	.0000531	-39.29	0.000	-.0021898 -.0019817
_cons	-1.054467	.0683319	-15.43	0.000	-1.188395 -.920539
sigma2					
_cons	.8802013	.0065457	134.47	0.000	.8673719 .8930307

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.191251	.1604484	7.42	0.000	.876778 1.505724
ereri_cde	1.150443	.1655284	6.95	0.000	.8260134 1.474873
ereri_intref	.00017	.003642	0.05	0.963	-.0069682 .0073083
ereri_intmed	.0329097	.0319716	1.03	0.303	-.0297534 .0955728
ereri_pie	.0077284	.0100426	0.77	0.442	-.0119548 .0274116

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfrsf10b
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.17 1.532 .0464 2.216 -.07458 500.7

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8985.4467
Iteration 1: Log likelihood = -8898.4282
Iteration 2: Log likelihood = -8887.6032
Iteration 3: Log likelihood = -8887.0478
Iteration 4: Log likelihood = -8887.0299
Iteration 5: Log likelihood = -8887.0299
Refining estimates:
Iteration 0: Log likelihood = -8887.0299

```

Cox regression with Breslow method for ties

No. of subjects =	36,164	Number of obs =	36,164
No. of failures =	960		
Time at risk =	439,440.668	LR chi2(9) =	196.83
Log likelihood =	-8887.0299	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.21133	.1682013	10.43	0.000	1.905059 2.566841
ztnfrsf10b	1.077892	.0364017	2.22	0.026	1.008856 1.151653
_infectionburXztnfrsf10b_000	.957894	.0570686	-0.72	0.470	.8523252 1.076539
AGE	1.034742	.0131234	2.69	0.007	1.009338 1.060786
SEX	.7466434	.0489731	-4.45	0.000	.6565717 .8490717
NonWhite	1.034823	.1808093	0.20	0.845	.7347503 1.457444
householdszie	.9431843	.0393652	-1.40	0.161	.8691012 1.023582
SES	.8188401	.0407652	-4.01	0.000	.7427161 .9027663
LE8_TOTALSCORE	.9991437	.0003601	-2.38	0.017	.9984381 .9998497

-> Model for the mediator

Iteration 0: Log likelihood =	-48956.751	Number of obs =	36,164
Iteration 1: Log likelihood =	-48956.751	Wald chi2(7) =	5035.58
Log likelihood =	-48956.751	Prob > chi2 =	0.0000

	ztnfrsf10b	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.2404719	.0143898	16.71	0.000	.2122683	.2686754
AGE	.032355	.0009415	34.36	0.000	.0305096	.0342003
SEX	-.122674	.0099607	-12.32	0.000	-.1421966	-.1031515
NonWhite	-.2454544	.0238842	-10.28	0.000	-.2922666	-.1986422
householdsize	-.0041074	.0047238	-0.87	0.385	-.0133659	.005151
SES	-.1743829	.0074876	-23.29	0.000	-.1890583	-.1597075
LE8_TOTALSCORE	-.00194	.000053	-36.60	0.000	-.0020439	-.0018361
_cons	-.813669	.0682367	-11.92	0.000	-.9474104	-.6799275
sigma2						
_cons	.8777516	.0065275	134.47	0.000	.8649579	.8905453

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.227102	.1632366	7.52	0.000	.9071645 1.54704
ereri_cde	1.211369	.168067	7.21	0.000	.8819639 1.540774
ereri_intref	-.0013333	.0012576	-1.06	0.289	-.0037981 .0011315
ereri_intmed	-.0011344	.0274639	-0.04	0.967	-.0549627 .0526938
ereri_pie	.0182009	.0083415	2.18	0.029	.0018518 .03455

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztnfrsf10c
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04625 2.214 -.07547 500.4

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9108.185**
 Iteration 1: Log likelihood = **-9017.0184**
 Iteration 2: Log likelihood = **-9008.1959**
 Iteration 3: Log likelihood = **-9008.1609**
 Iteration 4: Log likelihood = **-9008.1609**
 Refining estimates:
 Iteration 0: Log likelihood = **-9008.1609**

Cox regression with Breslow method for ties

No. of subjects =	36,538	Number of obs =	36,538
No. of failures =	973		
Time at risk =	443,819.003	LR chi2(9) =	200.05
Log likelihood =	-9008.1609	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.244205	.1618598	11.21	0.000	1.948367 2.584961
ztnfrsf10c		1.112513	.0438621	2.70	0.007	1.029782 1.201889
_infectionburXztnfrsf10c_000		.9422666	.0677123	-0.83	0.408	.8184753 1.084781
AGE		1.035789	.0130741	2.79	0.005	1.010479 1.061733
SEX		.7565177	.0491782	-4.29	0.000	.6660177 .8593149
NonWhite		1.079845	.1836395	0.45	0.651	.7737582 1.507015
householdszie		.93949	.0394104	-1.49	0.137	.8653372 1.019997
SES		.8309481	.0409885	-3.75	0.000	.7543735 .9152957
LE8_TOTALSCORE		.9990857	.0003555	-2.57	0.010	.9983892 .9997826

-> Model for the mediator

Iteration 0: Log likelihood = **-51520.14**
 Iteration 1: Log likelihood = **-51520.14**

Linear regression (Maximum Likelihood)	Number of obs =	36,538
	Wald chi2(7) =	654.87
Log likelihood =	Prob > chi2 =	0.0000

	<u>ztnfrsf10c</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0396873	.0151143	2.63	0.009	.0100639 .0693108
AGE		.0071651	.0009882	7.25	0.000	.0052282 .009102
SEX		-.0168092	.0104834	-1.60	0.109	-.0373563 .0037378
NonWhite		.0818928	.0251694	3.25	0.001	.0325617 .1312239
householdszie		.0031566	.0048452	0.65	0.515	-.0063398 .0126531
SES		-.0781935	.007875	-9.93	0.000	-.0936282 -.0627588
LE8_TOTALSCORE		-.0009821	.0000559	-17.58	0.000	-.0010915 -.0008726
_cons		.0637431	.0714904	0.89	0.373	-.0763755 .2038617
sigma2						
_cons		.9823657	.007268	135.16	0.000	.9681206 .9966107

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.239068	.1601408	7.74	0.000	.925198 1.552938
ereri_cde	1.238006	.1606939	7.70	0.000	.9230522 1.552961
ereri_intref	-.0031245	.0067047	-0.47	0.641	-.0162654 .0100165
ereri_intmed	-.0000542	.0055592	-0.01	0.992	-.0109499 .0108416
ereri_pie	.0042405	.0022557	1.88	0.060	-.0001806 .0086615

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfrsf11a
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .0466 2.218 -.07544 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9166.3755

Iteration 1: Log likelihood = -9080.1879

Iteration 2: Log likelihood = -9064.5497

Iteration 3: Log likelihood = -9064.2085

Iteration 4: Log likelihood = -9064.208

Refining estimates:

Iteration 0: Log likelihood = -9064.208

Cox regression with Breslow method for ties

No. of subjects = 36,824 Number of obs = 36,824

No. of failures = 978

Time at risk = 447,356.911

LR chi2(9) = 204.33

Log likelihood = -9064.208 Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.212018	.166951	10.52	0.000	1.907852 2.564677
ztnfrsf11a		1.052322	.04129	1.30	0.194	.9744289 1.136442
_infectionburXztnfrsf11a_000		1.040565	.0655227	0.63	0.528	.9197517 1.177248
AGE		1.033164	.0130183	2.59	0.010	1.007961 1.058997
SEX		.7500933	.0486309	-4.44	0.000	.6605858 .8517287
NonWhite		1.040595	.1793058	0.23	0.817	.7423531 1.458657
householdsize		.9375612	.0390983	-1.55	0.122	.8639781 1.017411
SES		.8238827	.0405203	-3.94	0.000	.7481722 .9072548
LE8_TOTALSCORE		.9992104	.0003584	-2.20	0.028	.9985083 .9999131

-> Model for the mediator

```
Iteration 0: Log likelihood = -50581.275
Iteration 1: Log likelihood = -50581.275
```

Linear regression (Maximum Likelihood)
Number of obs = 36,824
Log likelihood = -50581.275 Wald chi2(7) = 3494.44
Prob > chi2 = 0.0000

	ztnfrsf11a	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.2600976	.014541	17.89	0.000	.2315977	.2885974
AGE	.0284429	.0009484	29.99	0.000	.026584	.0303018
SEX	.0576294	.0100685	5.72	0.000	.0378955	.0773632
NonWhite	.1460975	.0240852	6.07	0.000	.0988914	.1933035
householdsize	-.0023746	.0045902	-0.52	0.605	-.0113712	.0066221
SES	-.1021191	.00755	-13.53	0.000	-.1169169	-.0873213
LE8_TOTALSCORE	-.0018549	.0000536	-34.61	0.000	-.0019599	-.0017498
_cons	-.9168387	.0685569	-13.37	0.000	-1.051208	-.7824696
sigma2						
_cons	.9133041	.0067308	135.69	0.000	.900112	.9264962

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.267441	.1632938	7.76	0.000	.9473909
ereri_cde	1.212809	.1670138	7.26	0.000	.8854681
ereri_intref	.0017302	.0052585	0.33	0.742	-.0085762
ereri_intmed	.0395483	.0302682	1.31	0.191	-.0197763
ereri_pie	.0133532	.010369	1.29	0.198	-.0069697

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfrsf11b
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.532 .04636 2.216 -.0746 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9073.1164
Iteration 1: Log likelihood = -8986.912
Iteration 2: Log likelihood = -8973.2647
Iteration 3: Log likelihood = -8973.0283
Iteration 4: Log likelihood = -8973.0281
Iteration 5: Log likelihood = -8973.0281
Refining estimates:
Iteration 0: Log likelihood = -8973.0281

Cox regression with Breslow method for ties

No. of subjects = 36,432                               Number of obs = 36,432
No. of failures = 969
Time at risk = 442,512.06
Log likelihood = -8973.0281                            LR chi2(9)      = 200.18
                                                       Prob > chi2 = 0.0000

```

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.20931	.1707481	10.26	0.000	1.898764 2.570647
ztnfrsf11b	1.1134	.0449793	2.66	0.008	1.028642 1.205142
_infectionburXztnfrsf11b_000	1.005541	.069332	0.08	0.936	.8784347 1.151039
AGE	1.029392	.0131051	2.28	0.023	1.004024 1.055401
SEX	.7359305	.0483193	-4.67	0.000	.6470668 .836998
NonWhite	1.080698	.1839818	0.46	0.648	.7740924 1.508745
householdszie	.9413618	.0391965	-1.45	0.147	.8675892 1.021407
SES	.8364473	.0414506	-3.60	0.000	.7590263 .9217653
LE8_TOTALSCORE	.9991927	.0003575	-2.26	0.024	.9984923 .9998936

-> Model for the mediator

```

Iteration 0: Log likelihood = -49208.381
Iteration 1: Log likelihood = -49208.381

Linear regression (Maximum Likelihood)                         Number of obs = 36,432
                                                               Wald chi2(7) = 5326.99
                                                               Prob > chi2 = 0.0000
Log likelihood = -49208.381

```

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1141258	.0142862	7.99	0.000	.0861253 .1421263
AGE	.0477165	.000932	51.20	0.000	.0458899 .0495431
SEX	.2993003	.0098937	30.25	0.000	.2799091 .3186916
NonWhite	.0645201	.0237165	2.72	0.007	.0180367 .1110036
householdsize	-.0163621	.0045014	-3.63	0.000	-.0251846 -.0075396
SES	-.109209	.0074261	-14.71	0.000	-.1237639 -.0946542
LE8_TOTALSCORE	-.001346	.0000527	-25.54	0.000	-.0014493 -.0012427
_cons	-2.64724	.0673337	-39.32	0.000	-2.779211 -2.515268
sigma2					
_cons	.8724109	.0064639	134.97	0.000	.8597419 .88508

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.238965	.1653469	7.49	0.000	.914891 1.563039
ereri_cde	1.205288	.1695876	7.11	0.000	.8729024 1.537674
ereri_intref	.0050021	.0106549	0.47	0.639	-.0158812 .0258854
ereri_intmed	.0163401	.0148562	1.10	0.271	-.0127776 .0454578
ereri_pie	.0123347	.0049191	2.51	0.012	.0026934 .021976

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztnfrsf12a
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04641 2.217 -.0748 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9132.2436
 Iteration 1: Log likelihood = -9046.1557
 Iteration 2: Log likelihood = -9032.4487
 Iteration 3: Log likelihood = -9032.2154
 Iteration 4: Log likelihood = -9032.2152
 Refining estimates:
 Iteration 0: Log likelihood = -9032.2152

Cox regression with Breslow method for ties

No. of subjects =	36,540	Number of obs =	36,540
No. of failures =	975		
Time at risk =	443,893.259	LR chi2(9) =	200.06
Log likelihood =	-9032.2152	Prob > chi2 =	0.0000

	$-t$	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.224911	.1707658	10.42	0.000	1.914174 2.586091
ztnfrsf12a		1.101451	.044406	2.40	0.017	1.017766 1.192016
_infectionburXztnfrsf12a_000		.982232	.0646933	-0.27	0.785	.8632784 1.117576
AGE		1.030019	.013012	2.34	0.019	1.004829 1.05584
SEX		.7771606	.0505465	-3.88	0.000	.6841459 .8828214
NonWhite		1.069779	.1843153	0.39	0.695	.7631998 1.499513
householdsize		.9343914	.0393783	-1.61	0.107	.8603129 1.014849
SES		.8283215	.0408689	-3.82	0.000	.7519712 .912424
LE8_TOTALSCORE		.9992329	.0003591	-2.14	0.033	.9985292 .999937

-> Model for the mediator

Iteration 0: Log likelihood = -49593.947
 Iteration 1: Log likelihood = -49593.947 (backed up)

Linear regression (Maximum Likelihood)	Number of obs =	36,540
	Wald chi2(7) =	4796.90
Log likelihood =	Prob > chi2 =	0.0000

	ztnfrsf12a	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.2363465	.0143656	16.45	0.000	.2081905 .2645024
AGE		.0349946	.0009368	37.35	0.000	.0331585 .0368308
SEX		-.2117684	.0099431	-21.30	0.000	-.2312565 -.1922802
NonWhite		-.1277389	.0238305	-5.36	0.000	-.1744458 -.081032
householdsize		-.0164123	.0045275	-3.63	0.000	-.025286 -.0075385
SES		-.0987942	.0074639	-13.24	0.000	-.1134231 -.0841653
LE8_TOTALSCORE		-.0018214	.0000529	-34.40	0.000	-.0019252 -.0017177
_cons		-.8679334	.0677435	-12.81	0.000	-1.000708 -.7351586
sigma2						
_cons		.8839318	.0065396	135.17	0.000	.8711145 .8967492

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.264866	.1649196	7.67	0.000	.9416298 1.588103
ereri_cde	1.223736	.1702764	7.19	0.000	.8900001 1.557472
ereri_intref	-.0006078	.0048008	-0.13	0.899	-.0100172 .0088015
ereri_intmed	.0186379	.0289915	0.64	0.520	-.0381845 .0754603
ereri_pie	.0231005	.0098515	2.34	0.019	.0037918 .0424091

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfrsf13b
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.532 .04635 2.216 -.07454 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9083.3359

Iteration 1: Log likelihood = -8996.3353

Iteration 2: Log likelihood = -8988.3653

Iteration 3: Log likelihood = -8988.3485

Iteration 4: Log likelihood = -8988.3485

Refining estimates:

Iteration 0: Log likelihood = -8988.3485

Cox regression with Breslow method for ties

No. of subjects = 36,480 Number of obs = 36,480

No. of failures = 970

Time at risk = 443,094.176

Log likelihood = -8988.3485

LR chi2(9) = 189.97

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenhospbr		2.254469	.163459	11.21	0.000	1.955818	2.598724
zttnfrsf13b		1.005272	.0404755	0.13	0.896	.928991	1.087817
_infectionburXzttnfrsf13b_000		.9534604	.0621567	-0.73	0.465	.8390973	1.08341
AGE		1.036447	.0130881	2.83	0.005	1.01111	1.06242
SEX		.7543693	.0491256	-4.33	0.000	.6639762	.8570685
NonWhite		1.097362	.1872151	0.54	0.586	.7854724	1.533094
householdsize		.9384691	.0393258	-1.52	0.130	.8644723	1.0188
SES		.8287555	.0409681	-3.80	0.000	.7522267	.9130701
LE8_TOTALSCORE		.9990071	.0003577	-2.77	0.006	.9983062	.9997085

-> Model for the mediator

```
Iteration 0: Log likelihood = -50733.703  
Iteration 1: Log likelihood = -50733.703
```

Linear regression (Maximum Likelihood)
Number of obs = 36,480
Log likelihood = -50733.703 Wald chi2(7) = 2116.47
Prob > chi2 = 0.0000

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1470459	.0148552	9.90	0.000	.1179302 .1761615
AGE	.0220745	.0009693	22.77	0.000	.0201747 .0239744
SEX	-.0346521	.0102912	-3.37	0.001	-.0548225 -.0144817
NonWhite	.3859931	.0246711	15.65	0.000	.3376386 .4343476
householdsize	.0144067	.0046836	3.08	0.002	.0052271 .0235864
SES	-.1000401	.0077251	-12.95	0.000	-.1151809 -.0848992
LE8_TOTALSCORE	-.0013131	.0000548	-23.95	0.000	-.0014205 -.0012056
_cons	-.6959893	.0700407	-9.94	0.000	-.8332666 -.5587121
sigma2					
_cons	.9451383	.0069981	135.06	0.000	.9314222 .9588544

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.244516	.1616948	7.70	0.000	.9276001 1.561432
ereri_cde	1.254588	.1635299	7.67	0.000	.9340748 1.5751
ereri_intref	.003966	.0071874	0.55	0.581	-.010121 .018053
ereri_intmed	-.0148109	.0183462	-0.81	0.419	-.0507689 .021147
ereri_pie	.0007735	.0059256	0.13	0.896	-.0108405 .0123875

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztnfrsf13c
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8913.3312
 Iteration 1: Log likelihood = -8829.0052
 Iteration 2: Log likelihood = -8819.1811
 Iteration 3: Log likelihood = -8819.1208
 Iteration 4: Log likelihood = -8819.1208
 Refining estimates:
 Iteration 0: Log likelihood = -8819.1208

Cox regression with Breslow method for ties

No. of subjects =	35,761	Number of obs =	35,761
No. of failures =	953		
Time at risk =	434,427.923	LR chi2(9) =	188.42
Log likelihood =	-8819.1208	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.222818	.1608717	11.04	0.000	1.928857 2.561579
ztnfrsf13c	.9808404	.0388792	-0.49	0.626	.9075234 1.06008
_infectionburXztnfrsf13c_000	.9335608	.0656213	-0.98	0.328	.8134117 1.071457
AGE	1.037087	.0131588	2.87	0.004	1.011615 1.063201
SEX	.7558697	.0499775	-4.23	0.000	.663997 .8604542
NonWhite	1.070353	.1875414	0.39	0.698	.7592491 1.508933
householdsize	.9345358	.0398091	-1.59	0.112	.8596798 1.01591
SES	.827562	.0411951	-3.80	0.000	.7506348 .9123728
LE8_TOTALSCORE	.9990373	.0003591	-2.68	0.007	.9983338 .9997413

-> Model for the mediator

Iteration 0: Log likelihood = -50233.492	Number of obs = 35,761
Iteration 1: Log likelihood = -50233.492	Wald chi2(7) = 1031.95
Linear regression (Maximum Likelihood)	Prob > chi2 = 0.0000
Log likelihood = -50233.492	

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0298174	.0152346	1.96	0.050	-.0000418 .0596767
AGE	.0028663	.0009923	2.89	0.004	.0009215 .0048111
SEX	.1998645	.0105377	18.97	0.000	.179211 .2205179
NonWhite	.4936669	.0252134	19.58	0.000	.4442495 .5430843
householdsize	.0026106	.004793	0.54	0.586	-.0067836 .0120047
SES	-.0299927	.0079007	-3.80	0.000	-.0454778 -.0145077
LE8_TOTALSCORE	-.0007923	.0000561	-14.11	0.000	-.0009024 -.0006823
_cons	-.116821	.0716718	-1.63	0.103	-.2572952 .0236532
sigma2					
_cons	.9719254	.0072685	133.72	0.000	.9576795 .9861714

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.225591	.1610213	7.61	0.000	.9099952 1.541187
ereri_cde	1.222498	.1608207	7.60	0.000	.9072953 1.537701
ereri_intref	.0089469	.0117702	0.76	0.447	-.0141223 .032016
ereri_intmed	-.0052771	.0048898	-1.08	0.280	-.0148609 .0043067
ereri_pie	-.0005767	.0012174	-0.47	0.636	-.0029628 .0018094

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztnfrsf14
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.532 .04635 2.216 -.07454 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9083.3359**
 Iteration 1: Log likelihood = **-8996.4157**
 Iteration 2: Log likelihood = **-8987.9724**
 Iteration 3: Log likelihood = **-8987.9399**
 Iteration 4: Log likelihood = **-8987.9399**
 Refining estimates:
 Iteration 0: Log likelihood = **-8987.9399**

Cox regression with Breslow method for ties

No. of subjects =	36,480	Number of obs =	36,480
No. of failures =	970		
Time at risk =	443,094.176	LR chi2(9) =	190.79
Log likelihood =	-8987.9399	Prob > chi2 =	0.0000

	<i>t</i>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.252558	.1668999	10.96	0.000	1.948083 2.604621
ztnfrsf14		1.050301	.0416454	1.24	0.216	.9717689 1.13518
_infectionburXztnfrsf14_000		.9475121	.0629068	-0.81	0.417	.831902 1.079189
AGE		1.035082	.0130724	2.73	0.006	1.009775 1.061023
SEX		.7591341	.0495554	-4.22	0.000	.6679639 .8627481
NonWhite		1.102164	.1876651	0.57	0.568	.7894274 1.538792
householdsize		.9392018	.0392776	-1.50	0.134	.8652897 1.019427
SES		.8317163	.0411749	-3.72	0.000	.7548066 .9164626
LE8_TOTALSCORE		.9990746	.0003591	-2.58	0.010	.998371 .9997788

-> Model for the mediator

Iteration 0: Log likelihood = **-50271.878**
 Iteration 1: Log likelihood = **-50271.878**

Linear regression (Maximum Likelihood)	Number of obs =	36,480
	Wald chi2(7) =	3106.18
Log likelihood =	Prob > chi2 =	0.0000

		Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.2201622	.0146683	15.01	0.000	.1914128 .2489116
AGE		.0218945	.0009571	22.87	0.000	.0200185 .0237705
SEX		-.1608406	.0101617	-15.83	0.000	-.1807573 -.140924
NonWhite		-.1676605	.0243608	-6.88	0.000	-.2154067 -.1199142
householdsize		.0002355	.0046247	0.05	0.959	-.0088287 .0092996
SES		-.1263973	.0076279	-16.57	0.000	-.1413476 -.1114469
LE8_TOTALSCORE		-.0016628	.0000541	-30.72	0.000	-.0017689 -.0015567
_cons		-.2718903	.0691596	-3.93	0.000	-.4074406 -.13634
sigma2						
_cons		.9215084	.0068232	135.06	0.000	.9081352 .9348816

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.251398	.1627498	7.69	0.000	.9324143 1.570382
ereri_cde	1.253048	.1668992	7.51	0.000	.9259319 1.580165
ereri_intref	.0007492	.0043582	0.17	0.864	-.0077927 .0092911
ereri_intmed	-.0132631	.02816	-0.47	0.638	-.0684557 .0419296
ereri_pie	.0108635	.0088544	1.23	0.220	-.0064908 .0282179

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfrsf19
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04659 2.218 -.07483 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9201.1117

Iteration 1: Log likelihood = -9111.4604

Iteration 2: Log likelihood = -9101.7066

Iteration 3: Log likelihood = -9101.6442

Iteration 4: Log likelihood = -9101.6442

Refining estimates:

Iteration 0: Log likelihood = -9101.6442

Cox regression with Breslow method for ties

No. of subjects = 36,726 Number of obs = 36,726

No. of failures = 982

Time at risk = 446,105.322

LR chi2(9) = 198.94

Log likelihood = -9101.6442

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.281017	.169481	11.10	0.000	1.971895
ztnfrsf19		1.082126	.0420072	2.03	0.042	1.002848
_infectionburXztnfrsf19_000		.9418111	.058907	-0.96	0.338	.8331518
AGE		1.031351	.0129947	2.45	0.014	1.006194
SEX		.7736133	.0507485	-3.91	0.000	.6802769
NonWhite		1.069344	.1818313	0.39	0.693	.7662654
householdsize		.9341365	.039235	-1.62	0.105	.8603175
SES		.8269145	.040605	-3.87	0.000	.7510399
LE8_TOTALSCORE		.9991405	.0003536	-2.43	0.015	.9984477

-> Model for the mediator

```
Iteration 0: Log likelihood = -50400.529  
Iteration 1: Log likelihood = -50400.529
```

Linear regression (Maximum Likelihood)
Number of obs = 36,726
Log likelihood = -50400.529 Wald chi2(7) = 3586.29
Prob > chi2 = 0.0000

	ztnfrsf19	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.2085722	.0145494	14.34	0.000	.180056 .2370884
AGE		.0335321	.0009489	35.34	0.000	.0316723 .0353919
SEX		-.3285463	.0100684	-32.63	0.000	-.3482801 -.3088125
NonWhite		.1223611	.0240897	5.08	0.000	.0751462 .169576
householdsize		-.0029759	.0045843	-0.65	0.516	-.0119609 .0060091
SES		-.1034761	.0075516	-13.70	0.000	-.118277 -.0886752
LE8_TOTALSCORE		-.0005298	.0000536	-9.88	0.000	-.0006349 -.0004246
_cons		-1.285706	.0686222	-18.74	0.000	-1.420203 -1.151209
sigma2						
_cons		.9110125	.0067228	135.51	0.000	.897836 .924189

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.287911	.1650846	7.80	0.000	.9643514 1.611471
ereri_cde	1.280305	.1691271	7.57	0.000	.9488223 1.611788
ereri_intref	-.0014322	.002165	-0.66	0.508	-.0056755 .0028111
ereri_intmed	-.0075604	.0249002	-0.30	0.761	-.0563639 .0412432
ereri_pie	.0165984	.0083134	2.00	0.046	.0003046 .0328923

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfrsf1a
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.531 .04638 2.215 -.07464 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9121.8147
Iteration 1: Log likelihood = -9033.8205
Iteration 2: Log likelihood = -9022.1315
Iteration 3: Log likelihood = -9021.9549
Iteration 4: Log likelihood = -9021.9548
Refining estimates:
Iteration 0: Log likelihood = -9021.9548

```

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	199.72
Log likelihood =	-9021.9548	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.231996	.1707292	10.50	0.000	1.921249 2.593005
ztnfrsf1a	1.106791	.0431663	2.60	0.009	1.025339 1.194713
_infectionburXztnfrsf1a_000	.9542428	.0593734	-0.75	0.452	.8446888 1.078006
AGE	1.031229	.0130385	2.43	0.015	1.005988 1.057104
SEX	.7635498	.0497573	-4.14	0.000	.6719983 .8675741
NonWhite	1.114205	.1896083	0.64	0.525	.7982027 1.555311
householdsize	.9408851	.0391945	-1.46	0.144	.8671177 1.020928
SES	.834238	.0411766	-3.67	0.000	.7573141 .9189753
LE8_TOTALSCORE	.9992141	.0003609	-2.18	0.030	.9985069 .9999218

-> Model for the mediator

Iteration 0: Log likelihood = -49056.542	Number of obs = 36,459
Iteration 1: Log likelihood = -49056.542	Wald chi2(7) = 5764.86
Log likelihood = -49056.542	Prob > chi2 = 0.0000

	ztnfrsf1a	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.2877382	.0142008	20.26	0.000	.2599051	.3155712
AGE	.032521	.0009294	34.99	0.000	.0306993	.0343427
SEX	-.1545706	.0098404	-15.71	0.000	-.1738575	-.1352838
NonWhite	-.2760975	.0235923	-11.70	0.000	-.3223376	-.2298574
householdsize	-.0036297	.0046761	-0.78	0.438	-.0127947	.0055354
SES	-.1437154	.0073911	-19.44	0.000	-.1582017	-.1292292
LE8_TOTALSCORE	-.0022455	.0000524	-42.86	0.000	-.0023482	-.0021428
_cons	-.6265572	.0674035	-9.30	0.000	-.7586657	-.4944488
sigma2						
_cons	.8634455	.0063951	135.02	0.000	.8509113	.8759797

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.264448	.1647229	7.68	0.000	.9415966 1.587298
ereri_cde	1.231518	.1703684	7.23	0.000	.8976016 1.565434
ereri_intref	-.0023853	.0020385	-1.17	0.242	-.0063807 .00161
ereri_intmed	.0056897	.0333118	0.17	0.864	-.0596002 .0709796
ereri_pie	.0296256	.0116495	2.54	0.011	.006793 .0524582

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztnfrsf1b
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9121.8147**
 Iteration 1: Log likelihood = **-9034.6123**
 Iteration 2: Log likelihood = **-9021.9903**
 Iteration 3: Log likelihood = **-9021.3683**
 Iteration 4: Log likelihood = **-9021.3569**
 Iteration 5: Log likelihood = **-9021.3569**
 Refining estimates:
 Iteration 0: Log likelihood = **-9021.3569**

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	200.92
Log likelihood =	-9021.3569	Prob > chi2 =	0.0000

	<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.226706	.1665541	10.70	0.000	1.923067 2.578288
ztnfrsf1b		1.105836	.0391804	2.84	0.005	1.03165 1.185358
_infectionburXztnfrsf1b_000		.9602349	.0544008	-0.72	0.474	.8593178 1.073004
AGE		1.031871	.0130141	2.49	0.013	1.006677 1.057696
SEX		.7590481	.0493364	-4.24	0.000	.6682564 .862175
NonWhite		1.105736	.1880619	0.59	0.555	.7922831 1.543201
householdsize		.9400708	.0392788	-1.48	0.139	.8661537 1.020296
SES		.8346923	.0411904	-3.66	0.000	.7577419 .9194571
LE8_TOTALSCORE		.9991413	.0003561	-2.41	0.016	.9984436 .9998394

-> Model for the mediator

Iteration 0: Log likelihood = **-50109.483**
 Iteration 1: Log likelihood = **-50109.483**

Linear regression (Maximum Likelihood)	Number of obs =	36,459
	Wald chi2(7) =	3395.09
Log likelihood =	Prob > chi2 =	0.0000

	<u>ztnfrsf1b</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.2676656	.0146169	18.31	0.000	.239017 .2963142
AGE		.0285858	.0009567	29.88	0.000	.0267107 .0304608
SEX		-.0827453	.0101287	-8.17	0.000	-.1025973 -.0628933
NonWhite		-.1649292	.0242836	-6.79	0.000	-.2125241 -.1173342
householdsize		.0025892	.0048132	0.54	0.591	-.0068445 .0120228
SES		-.1479491	.0076076	-19.45	0.000	-.1628599 -.1330384
LE8_TOTALSCORE		-.0014398	.0000539	-26.70	0.000	-.0015455 -.0013341
_cons		-.9194388	.0693785	-13.25	0.000	-1.055418 -.7834595
sigma2						
_cons		.9147868	.0067754	135.02	0.000	.9015073 .9280663

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.259441	.1630341	7.73	0.000	.9399003 1.578982
ereri_cde	1.225617	.1661381	7.38	0.000	.8999922 1.551242
ereri_intref	-.0021869	.0026352	-0.83	0.407	-.0073518 .002978
ereri_intmed	.0087178	.0280002	0.31	0.756	-.0461615 .0635971
ereri_pie	.0272935	.0098588	2.77	0.006	.0079706 .0466164

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfrsf21
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9160.406

Iteration 1: Log likelihood = -9071.9241

Iteration 2: Log likelihood = -9061.985

Iteration 3: Log likelihood = -9061.9142

Iteration 4: Log likelihood = -9061.9141

Refining estimates:

Iteration 0: Log likelihood = -9061.9141

Cox regression with Breslow method for ties

No. of subjects = 36,751 Number of obs = 36,751

No. of failures = 977

Time at risk = 446,451.479

Log likelihood = -9061.9141

LR chi2(9) = 196.98

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.209514	.1608329	10.89	0.000	1.915741
ztnfrsf21		1.056023	.0405099	1.42	0.155	.979536
_infectionburXztnfrsf21_000		1.014906	.0671506	0.22	0.823	.8914693
AGE		1.032832	.0129678	2.57	0.010	1.007726
SEX		.7443478	.0485686	-4.52	0.000	.6549907
NonWhite		1.095874	.1864512	0.54	0.591	.7851234
householdsize		.9348559	.0393495	-1.60	0.110	.8608278
SES		.8197617	.0402763	-4.05	0.000	.7445032
LE8_TOTALSCORE		.9990738	.0003538	-2.62	0.009	.9983806

-> Model for the mediator

```
Iteration 0: Log likelihood = -51362.303  
Iteration 1: Log likelihood = -51362.303
```

Linear regression (Maximum Likelihood) Number of obs = 36,751
Log likelihood = -51362.303 Wald chi2(7) = 1603.20
Prob > chi2 = 0.0000

	ztnfrsf21	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.136958	.014904	9.19	0.000	.1077468 .1661692
AGE		.019708	.0009753	20.21	0.000	.0177965 .0216195
SEX		.2309045	.0103241	22.37	0.000	.2106698 .2511393
NonWhite		-.2713759	.0247676	-10.96	0.000	-.3199194 -.2228323
householdsizE		-.0085424	.004904	-1.74	0.082	-.018154 .0010693
SES		-.0782695	.0077533	-10.10	0.000	-.0934657 -.0630733
LE8_TOTALSCORE		-.0006586	.000055	-11.98	0.000	-.0007664 -.0005508
_cons		-1.20321	.0707152	-17.01	0.000	-1.341809 -1.064611
sigma2						
_cons		.9581741	.0070685	135.56	0.000	.9443202 .9720281

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.231917	.1596993	7.71	0.000	.918912 1.544922
ereri_cde	1.209046	.1606733	7.52	0.000	.894132 1.52396
ereri_intref	.0017861	.0058165	0.31	0.759	-.0096141 .0131863
ereri_intmed	.0135914	.0172617	0.79	0.431	-.0202409 .0474238
ereri_pie	.0074935	.0053561	1.40	0.162	-.0030043 .0179912

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztnfrsf4
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04665 2.217 -.07575 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9146.3164
 Iteration 1: Log likelihood = -9052.833
 Iteration 2: Log likelihood = -9044.0571
 Iteration 3: Log likelihood = -9044.0282
 Iteration 4: Log likelihood = -9044.0282
 Refining estimates:
 Iteration 0: Log likelihood = -9044.0282

Cox regression with Breslow method for ties

No. of subjects =	36,760	Number of obs =	36,760
No. of failures =	976		
Time at risk =	446,584.651	LR chi2(9) =	204.58
Log likelihood =	-9044.0282	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.296343	.1694372	11.27	0.000	1.987148 2.653647
ztnfrsf4	1.117139	.0431993	2.86	0.004	1.035599 1.205099
_infectionburXztnfrsf4_000	.9074796	.0576218	-1.53	0.126	.8012879 1.027745
AGE	1.032542	.0129937	2.54	0.011	1.007386 1.058325
SEX	.7510846	.0487507	-4.41	0.000	.6613629 .8529781
NonWhite	1.094545	.189208	0.52	0.601	.7799935 1.535947
householdsize	.9364997	.0393232	-1.56	0.118	.8625138 1.016832
SES	.8275701	.0407743	-3.84	0.000	.7513913 .9114722
LE8_TOTALSCORE	.9991573	.0003553	-2.37	0.018	.9984613 .9998539

-> Model for the mediator

Iteration 0: Log likelihood = -50869.408
 Iteration 1: Log likelihood = -50869.408

Linear regression (Maximum Likelihood)
 Number of obs = 36,760
 Wald chi2(7) = 2673.28
 Log likelihood = -50869.408 Prob > chi2 = 0.0000

ztnfrsf4	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.2375563	.0147045	16.16	0.000	.208736 .2663766
AGE	.0247151	.0009592	25.77	0.000	.0228351 .0265951
SEX	.0624955	.0101805	6.14	0.000	.042542 .082449
NonWhite	-.4446434	.0243421	-18.27	0.000	-.492353 -.3969337
householdsize	-.0036501	.0046396	-0.79	0.431	-.0127434 .0054433
SES	-.1419657	.0076342	-18.60	0.000	-.1569285 -.1270029
LE8_TOTALSCORE	-.0010536	.0000542	-19.44	0.000	-.0011599 -.0009474
_cons	-1.070526	.0693214	-15.44	0.000	-1.206393 -.9346582
sigma2					
_cons	.9321822	.0068759	135.57	0.000	.9187057 .9456587

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.298224	.1647779	7.88	0.000	.9752648 1.621182
ereri_cde	1.293663	.1687175	7.67	0.000	.9629832 1.624344
ereri_intref	-.0029001	.0036478	-0.80	0.427	-.0100497 .0042495
ereri_intmed	-.0192034	.0291475	-0.66	0.510	-.0763315 .0379248
ereri_pie	.0266636	.0095783	2.78	0.005	.0078906 .0454367

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztnfrsf6b
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8985.4467**
 Iteration 1: Log likelihood = **-8895.8688**
 Iteration 2: Log likelihood = **-8885.3796**
 Iteration 3: Log likelihood = **-8885.2458**
 Iteration 4: Log likelihood = **-8885.2457**
 Refining estimates:
 Iteration 0: Log likelihood = **-8885.2457**

Cox regression with Breslow method for ties

No. of subjects =	36,164	Number of obs =	36,164
No. of failures =	960		
Time at risk =	439,440.668	LR chi2(9) =	200.40
Log likelihood =	-8885.2457	Prob > chi2 =	0.0000

	<i>t</i>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.204427	.1652026	10.55	0.000	1.903293 2.553207
ztnfrsf6b		1.108844	.0419595	2.73	0.006	1.029581 1.19421
_infectionburXztnfrsf6b_000		.9518349	.0630575	-0.75	0.456	.8359319 1.083808
AGE		1.035355	.0130989	2.75	0.006	1.009998 1.06135
SEX		.7504264	.04925	-4.37	0.000	.6598485 .8534379
NonWhite		1.023935	.1787857	0.14	0.892	.7271886 1.441776
householdsize		.9440306	.0393713	-1.38	0.167	.8699338 1.024439
SES		.8178168	.0405891	-4.05	0.000	.7420104 .9013679
LE8_TOTALSCORE		.9992118	.0003626	-2.17	0.030	.9985014 .9999227

-> Model for the mediator

Iteration 0: Log likelihood = **-49619.104**
 Iteration 1: Log likelihood = **-49619.104**

Linear regression (Maximum Likelihood)	Number of obs =	36,164
	Wald chi2(7) =	3553.73
Log likelihood =	Prob > chi2 =	0.0000

	ztnfrsf6b	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.2016606	.0146558	13.76	0.000	.1729357 .2303855
AGE		.0156833	.0009589	16.36	0.000	.0138039 .0175627
SEX		-.1661428	.0101448	-16.38	0.000	-.1860262 -.1462594
NonWhite		-.0537749	.0243257	-2.21	0.027	-.1014524 -.0060974
householdsize		-.0092459	.0048111	-1.92	0.055	-.0186755 .0001837
SES		-.1161493	.007626	-15.23	0.000	-.131096 -.1012027
LE8_TOTALSCORE		-.0022054	.000054	-40.85	0.000	-.0023112 -.0020996
_cons		.401209	.069498	5.77	0.000	.2649954 .5374225
sigma2						
_cons		.9105002	.0067711	134.47	0.000	.8972292 .9237712

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.223749	.1613959	7.58	0.000	.9074188 1.540079
ereri_cde	1.202057	.1645997	7.30	0.000	.8794473 1.524666
ereri_intref	-.0023722	.0035484	-0.67	0.504	-.0093269 .0045825
ereri_intmed	.0030106	.0254586	0.12	0.906	-.0468874 .0529086
ereri_pie	.0210538	.0079436	2.65	0.008	.0054847 .0366229

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfrsf8
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9160.406

Iteration 1: Log likelihood = -9069.521

Iteration 2: Log likelihood = -9061.5349

Iteration 3: Log likelihood = -9061.5182

Iteration 4: Log likelihood = -9061.5182

Refining estimates:

Iteration 0: Log likelihood = -9061.5182

Cox regression with Breslow method for ties

No. of subjects = 36,751 Number of obs = 36,751

No. of failures = 977

Time at risk = 446,451.479

Log likelihood = -9061.5182

LR chi2(9) = 197.78

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.248885	.1633512	11.16	0.000	1.950469 2.592959
ztnfrsf8		1.083671	.0411512	2.12	0.034	1.005944 1.167403
_infectionburXztnfrsf8_000		.9232782	.0621707	-1.19	0.236	.8091243 1.053537
AGE		1.032792	.0129665	2.57	0.010	1.007688 1.058521
SEX		.7492608	.0486867	-4.44	0.000	.6596632 .8510279
NonWhite		1.093025	.1858819	0.52	0.601	.783201 1.525412
householdsize		.9338887	.0394699	-1.62	0.106	.8596466 1.014543
SES		.821669	.0404272	-3.99	0.000	.7461336 .9048512
LE8_TOTALSCORE		.9990213	.0003535	-2.77	0.006	.9983286 .9997144

-> Model for the mediator

Iteration 0: Log likelihood = **-51587.085**
 Iteration 1: Log likelihood = **-51587.085**

Linear regression (Maximum Likelihood) Number of obs = 36,751
 Wald chi2(7) = 1136.88
 Prob > chi2 = 0.0000
 Log likelihood = **-51587.085**

	ztnfrsf8	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1584129	.0149954	10.56	0.000	.1290225 .1878034
AGE		.0197049	.0009813	20.08	0.000	.0177817 .0216282
SEX		.1411129	.0103874	13.58	0.000	.1207539 .1614718
NonWhite		-.101867	.0249195	-4.09	0.000	-.1507084 -.0530256
householdsize		.0016127	.0049341	0.33	0.744	-.0080579 .0112833
SES		-.1138706	.0078009	-14.60	0.000	-.12916 -.0985812
LE8_TOTALSCORE		.0000393	.0000553	0.71	0.478	-.0000692 .0001477
_cons		-1.450876	.071149	-20.39	0.000	-1.590325 -1.311426
sigma2						
_cons		.9699672	.0071555	135.56	0.000	.9559427 .9839916

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.245982	.1607733	7.75	0.000	.9308717 1.561092
ereri_cde	1.247183	.1629418	7.65	0.000	.9278224 1.566543
ereri_intref	-.0013892	.0034681	-0.40	0.689	-.0081865 .0054081
ereri_intmed	-.0126221	.0207806	-0.61	0.544	-.0533514 .0281072
ereri_pie	.0128105	.0062136	2.06	0.039	.000632 .024989

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfrsf9
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.17 1.532 .0464 2.216 -.07458 500.7

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8985.4467
Iteration 1: Log likelihood = -8893.6658
Iteration 2: Log likelihood = -8885.9112
Iteration 3: Log likelihood = -8885.883
Iteration 4: Log likelihood = -8885.883
Refining estimates:
Iteration 0: Log likelihood = -8885.883

```

Cox regression with Breslow method for ties

No. of subjects =	36,164	Number of obs =	36,164
No. of failures =	960		
Time at risk =	439,440.668	LR chi2(9) =	199.13
Log likelihood =	-8885.883	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.238039	.1681767	10.72	0.000	1.931543 2.593169
ztnfrsf9	1.103715	.0411166	2.65	0.008	1.025999 1.187317
_infectionburXztnfrsf9_000	.9157516	.0553919	-1.46	0.146	.813374 1.031015
AGE	1.034402	.0131316	2.66	0.008	1.008982 1.060462
SEX	.7399034	.0484242	-4.60	0.000	.6508288 .8411691
NonWhite	1.046165	.1829847	0.26	0.796	.7425345 1.473954
householdsize	.9435209	.039386	-1.39	0.164	.8693993 1.023962
SES	.8169028	.0405066	-4.08	0.000	.7412473 .9002801
LE8_TOTALSCORE	.9990872	.0003572	-2.55	0.011	.9983874 .9997876

-> Model for the mediator

Iteration 0: Log likelihood =	-49952.441	Number of obs =	36,164
Iteration 1: Log likelihood =	-49952.441	Wald chi2(7) =	2828.25
Log likelihood =	-49952.441	Prob > chi2 =	0.0000

	ztnfrsf9	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.2547261	.0147915	17.22	0.000	.2257353 .283717
AGE		.0308136	.0009678	31.84	0.000	.0289168 .0327105
SEX		.0268237	.0102387	2.62	0.009	.0067562 .0468913
NonWhite		-.331829	.024551	-13.52	0.000	-.379948 -.28371
householdsize		.0031857	.0048556	0.66	0.512	-.0063312 .0127026
SES		-.1350321	.0076966	-17.54	0.000	-.1501171 -.119947
LE8_TOTALSCORE		-.0009566	.0000545	-17.56	0.000	-.0010634 -.0008498
_cons		-1.45342	.0701415	-20.72	0.000	-1.590895 -1.315945
sigma2						
_cons		.9274407	.006897	134.47	0.000	.9139228 .9409587

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.241094	.1632567	7.60	0.000	.9211166 1.561071
ereri_cde	1.236764	.167719	7.37	0.000	.9080409 1.565487
ereri_intref	-.001754	.0034858	-0.50	0.615	-.0085861 .0050781
ereri_intmed	-.0193717	.0289419	-0.67	0.503	-.0760968 .0373534
ereri_pie	.0254554	.0098453	2.59	0.010	.006159 .0447518

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztnfsf10
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .0466 2.218 -.07544 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9166.3755
 Iteration 1: Log likelihood = -9075.6903
 Iteration 2: Log likelihood = -9056.8523
 Iteration 3: Log likelihood = -9056.4833
 Iteration 4: Log likelihood = -9056.483
 Refining estimates:
 Iteration 0: Log likelihood = -9056.483

Cox regression with Breslow method for ties

No. of subjects =	36,824	Number of obs =	36,824
No. of failures =	978		
Time at risk =	447,356.911	LR chi2(9) =	219.78
Log likelihood =	-9056.483	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.247598	.1629088	11.17	0.000	1.949945 2.590686
ztnfsf10		.8744763	.0339596	-3.45	0.001	.8103866 .9436345
_infectionburXztnfsf10_000		.9663455	.0668971	-0.49	0.621	.8437357 1.106773
AGE		1.03367	.0129601	2.64	0.008	1.008578 1.059386
SEX		.7769233	.0506312	-3.87	0.000	.6837641 .8827748
NonWhite		1.067955	.1838903	0.38	0.703	.7620535 1.496652
householdsize		.937893	.0390549	-1.54	0.124	.8643872 1.01765
SES		.8216664	.0402356	-4.01	0.000	.7464722 .904435
LE8_TOTALSCORE		.9989417	.0003546	-2.98	0.003	.998247 .9996369

-> Model for the mediator

Iteration 0: Log likelihood = -51929.185
 Iteration 1: Log likelihood = -51929.185

Linear regression (Maximum Likelihood)	Number of obs =	36,824	
	Wald chi2(7) =	648.26	
Log likelihood =	-51929.185	Prob > chi2 =	0.0000

	ztnfsf10	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0350639	.0150831	-2.32	0.020	-.0646263 -.0055014
AGE		-.0037328	.0009838	-3.79	0.000	-.005661 -.0018047
SEX		.1526489	.0104438	14.62	0.000	.1321793 .1731184
NonWhite		.0948312	.0249831	3.80	0.000	.0458652 .1437972
householdsize		.0009366	.0047613	0.20	0.844	-.0083954 .0102687
SES		.0037212	.0078315	0.48	0.635	-.0116284 .0190707
LE8_TOTALSCORE		-.0011375	.0000556	-20.46	0.000	-.0012465 -.0010285
_cons		.5589294	.0711128	7.86	0.000	.4195507 .698308
sigma2						
_cons		.9826737	.007242	135.69	0.000	.9684796 .9968678

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.27206	.1616121	7.87	0.000	.9553063 1.588814
ereri_cde	1.237425	.1612473	7.67	0.000	.9213864 1.553464
ereri_intref	.0212613	.0212009	1.00	0.316	-.0202917 .0628143
ereri_intmed	.0086594	.0061008	1.42	0.156	-.0032979 .0206166
ereri_pie	.0047142	.0024502	1.92	0.054	-.000088 .0095164

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfsf11
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**

Iteration 1: Log likelihood = **-8948.6796**

Iteration 2: Log likelihood = **-8932.4267**

Iteration 3: Log likelihood = **-8932.1824**

Iteration 4: Log likelihood = **-8932.1823**

Refining estimates:

Iteration 0: Log likelihood = **-8932.1823**

Cox regression with Breslow method for ties

No. of subjects = 36,352 Number of obs = 36,352

No. of failures = 965

Time at risk = 441,650.762

Log likelihood = -8932.1823

LR chi2(9) = 208.51

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.219825	.1646283	10.75	0.000	1.919514	2.56712
ztnfsf11	.8912379	.035121	-2.92	0.003	.8249931	.9628019
_infectionburXztnfsf11_000	.9541407	.069045	-0.65	0.517	.8279736	1.099533
AGE	1.029282	.0129852	2.29	0.022	1.004143	1.055049
SEX	.7597716	.0495482	-4.21	0.000	.668609	.8633639
NonWhite	1.04829	.1806533	0.27	0.784	.747812	1.469502
householdsize	.9371591	.0396156	-1.54	0.125	.8626435	1.018111
SES	.8297709	.0410314	-3.77	0.000	.7531249	.9142171
LE8_TOTALSCORE	.9989676	.0003551	-2.91	0.004	.9982718	.9996639

-> Model for the mediator

Iteration 0: Log likelihood = **-51249.242**
 Iteration 1: Log likelihood = **-51249.242**

Linear regression (Maximum Likelihood) Number of obs = 36,352
 Wald chi2(7) = 669.11
 Log likelihood = **-51249.242** Prob > chi2 = 0.0000

	ztnfsf11	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	-.0574843	.0151799	-3.79	0.000	-.0872363	-.0277322
AGE	-.0171047	.0009909	-17.26	0.000	-.0190468	-.0151626
SEX	-.0334875	.0105064	-3.19	0.001	-.0540796	-.0128954
NonWhite	-.0044542	.0251768	-0.18	0.860	-.0537998	.0448913
householdsize	.0175028	.0048627	3.60	0.000	.0079722	.0270334
SES	.0868759	.0078803	11.02	0.000	.0714308	.102321
LE8_TOTALSCORE	-.0005099	.0000559	-9.11	0.000	-.0006195	-.0004002
_cons	1.311916	.0716832	18.30	0.000	1.171419	1.452412
sigma2						
_cons	.9818993	.0072831	134.82	0.000	.9676247	.996174

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
tereri	1.254124	.1621412	7.73	0.000	.9363327	1.571915
ereri_cde	1.213023	.1632521	7.43	0.000	.8930552	1.532992
ereri_intref	.020195	.0206272	0.98	0.328	-.0202335	.0606235
ereri_intmed	.0142644	.008991	1.59	0.113	-.0033577	.0318864
ereri_pie	.0066409	.0028802	2.31	0.021	.0009958	.012286

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfsf12
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .0466 2.218 -.07544 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9166.3755
Iteration 1: Log likelihood = -9077.5017
Iteration 2: Log likelihood = -9059.6784
Iteration 3: Log likelihood = -9059.3767
Iteration 4: Log likelihood = -9059.3765
Refining estimates:
Iteration 0: Log likelihood = -9059.3765

Cox regression with Breslow method for ties

No. of subjects =      36,824                               Number of obs = 36,824
No. of failures =       978
Time at risk      = 447,356.911
Log likelihood = -9059.3765
                                         LR chi2(9)      = 214.00
                                         Prob > chi2 = 0.0000

```

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.237603	.161922	11.13	0.000	1.941721 2.578574
ztnfsf12	.8919953	.0351176	-2.90	0.004	.8257546 .9635498
_infectionburXztnfsf12_000	.9677332	.0686955	-0.46	0.644	.8420391 1.11219
AGE	1.035928	.0129928	2.81	0.005	1.010773 1.061709
SEX	.7840223	.0514802	-3.71	0.000	.6893457 .891702
NonWhite	1.011234	.1745541	0.06	0.948	.7209774 1.418345
householdsize	.9358864	.0391444	-1.58	0.113	.8622253 1.01584
SES	.823515	.0403832	-3.96	0.000	.74805 .906593
LE8_TOTALSCORE	.9991282	.0003531	-2.47	0.014	.9984365 .9998204

-> Model for the mediator

```

Iteration 0: Log likelihood = -51739.239
Iteration 1: Log likelihood = -51739.239

Linear regression (Maximum Likelihood)
Number of obs = 36,824
Wald chi2(7) = 1036.84
Prob > chi2 = 0.0000
Log likelihood = -51739.239

```

	ztnfsf12	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0921664	.0150055	-6.14	0.000	-.1215767 -.0627561
AGE		.0049884	.0009787	5.10	0.000	.0030701 .0069067
SEX		.2582309	.0103901	24.85	0.000	.2378666 .2785951
NonWhite		-.3641869	.0248546	-14.65	0.000	-.412901 -.3154729
householdsize		-.0045299	.0047368	-0.96	0.339	-.0138139 .0047541
SES		.0278154	.0077912	3.57	0.000	.0125448 .0430859
LE8_TOTALSCORE		.0003664	.0000553	6.62	0.000	.000258 .0004748
_cons		-.8369702	.070747	-11.83	0.000	-.9756318 -.6983087
sigma2						
_cons		.9725881	.0071677	135.69	0.000	.9585398 .9866365

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.276666	.1618765	7.89	0.000	.9593941 1.593938
ereri_cde	1.231565	.1609875	7.65	0.000	.9160353 1.547095
ereri_intref	.0144445	.017667	0.82	0.414	-.0201823 .0490712
ereri_intmed	.0200668	.0134279	1.49	0.135	-.0062514 .046385
ereri_pie	.0105898	.004056	2.61	0.009	.0026402 .0185393

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztnfsf13
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04635 2.216 -.07488 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9125.8833**
 Iteration 1: Log likelihood = **-9038.512**
 Iteration 2: Log likelihood = **-9029.5914**
 Iteration 3: Log likelihood = **-9029.5545**
 Iteration 4: Log likelihood = **-9029.5545**
 Refining estimates:
 Iteration 0: Log likelihood = **-9029.5545**

Cox regression with Breslow method for ties

No. of subjects =	36,595	Number of obs =	36,595
No. of failures =	974		
Time at risk =	444,506.48	LR chi2(9) =	192.66
Log likelihood =	-9029.5545	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.246952	.1662978	10.94	0.000	1.943551 2.597715
ztnfsf13		1.052097	.0415681	1.29	0.199	.9736998 1.136807
_infectionburXztnfsf13_000		.9755697	.0665587	-0.36	0.717	.8534631 1.115146
AGE		1.03372	.0130484	2.63	0.009	1.00846 1.059614
SEX		.756286	.0491057	-4.30	0.000	.665913 .8589238
NonWhite		1.098079	.1869005	0.55	0.583	.7865992 1.532901
householdsize		.9382021	.0392937	-1.52	0.128	.864264 1.018466
SES		.8299402	.040905	-3.78	0.000	.7535186 .9141126
LE8_TOTALSCORE		.9990781	.0003548	-2.60	0.009	.998383 .9997737

-> Model for the mediator

Iteration 0: Log likelihood = **-50687.968**
 Iteration 1: Log likelihood = **-50687.968**

Linear regression (Maximum Likelihood)	Number of obs =	36,595
	Wald chi2(7) =	2560.80
Log likelihood =	Prob > chi2 =	0.0000

	ztnfsf13	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1342872	.0147464	9.11	0.000	.1053849 .1631896
AGE		.0370012	.0009624	38.45	0.000	.0351149 .0388875
SEX		.0488536	.0102176	4.78	0.000	.0288276 .0688797
NonWhite		-.1527893	.0244966	-6.24	0.000	-.2008017 -.1047768
householdsize		-.0258542	.0046521	-5.56	0.000	-.0349721 -.0167362
SES		-.0526015	.0076692	-6.86	0.000	-.0676329 -.0375701
LE8_TOTALSCORE		-.0008712	.0000544	-16.01	0.000	-.0009779 -.0007646
_cons		-1.823898	.0695143	-26.24	0.000	-1.960144 -1.687653
sigma2						
_cons		.9345741	.006909	135.27	0.000	.9210327 .9481156

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.253865	.1633168	7.68	0.000	.9337701 1.57396
ereri_cde	1.246631	.1660846	7.51	0.000	.9211112 1.572151
ereri_intref	-.0006371	.001343	-0.47	0.635	-.0032694 .0019951
ereri_intmed	.0010281	.0176197	0.06	0.953	-.0335059 .035562
ereri_pie	.0068431	.0053949	1.27	0.205	-.0037307 .017417

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfsf13b
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04645 2.216 -.07553 500.4

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9195.2898

Iteration 1: Log likelihood = -9104.866

Iteration 2: Log likelihood = -9096.7503

Iteration 3: Log likelihood = -9096.7326

Iteration 4: Log likelihood = -9096.7326

Refining estimates:

Iteration 0: Log likelihood = -9096.7326

Cox regression with Breslow method for ties

No. of subjects = 36,835 Number of obs = 36,835

No. of failures = 981

Time at risk = 447,504.254

LR chi2(9) = 197.11

Log likelihood = -9096.7326

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.235969	.1599341	11.25	0.000	1.943485 2.572471
ztnfsf13b		1.070404	.0416704	1.75	0.081	.9917691 1.155273
_infectionburXztnfsf13b_000		.9481918	.0626105	-0.81	0.420	.8330864 1.079201
AGE		1.034383	.0129743	2.70	0.007	1.009264 1.060127
SEX		.7321252	.048841	-4.67	0.000	.6423927 .834392
NonWhite		1.081955	.1839974	0.46	0.643	.7752718 1.509958
householdsize		.937427	.0392774	-1.54	0.123	.8635209 1.017658
SES		.8261369	.0406762	-3.88	0.000	.7501389 .9098343
LE8_TOTALSCORE		.9991141	.0003552	-2.49	0.013	.9984182 .9998105

-> Model for the mediator

Iteration 0: Log likelihood = -50262.655
 Iteration 1: Log likelihood = -50262.655

Linear regression (Maximum Likelihood) Number of obs = 36,835
 Wald chi2(7) = 4232.95
 Prob > chi2 = 0.0000
 Log likelihood = -50262.655

	ztnfsf13b	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.1377137	.0143914	9.57	0.000	.1095071 .1659204
AGE		.0082455	.0009397	8.77	0.000	.0064037 .0100873
SEX		.4994783	.0099761	50.07	0.000	.4799255 .5190311
NonWhite		-.1637647	.0238949	-6.85	0.000	-.2105979 -.1169316
householdsize		-.0131965	.0045471	-2.90	0.004	-.0221087 -.0042843
SES		-.1295312	.0074865	-17.30	0.000	-.1442043 -.114858
LE8_TOTALSCORE		-.0015809	.0000531	-29.75	0.000	-.0016851 -.0014768
_cons		-.4618075	.067944	-6.80	0.000	-.5949752 -.3286398
sigma2						
_cons		.8969038	.0066089	135.71	0.000	.8839506 .9098571

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.238397	.1592636	7.78	0.000	.9262463 1.550548
ereri_cde	1.235015	.159738	7.73	0.000	.9219342 1.548096
ereri_intref	-.0011866	.0018152	-0.65	0.513	-.0047443 .0023711
ereri_intmed	-.0048445	.017544	-0.28	0.782	-.0392301 .0295412
ereri_pie	.0094135	.0055011	1.71	0.087	-.0013685 .0201955

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnfsf14
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.17 1.532 .0464 2.216 -.07458 500.7

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8985.4467
Iteration 1: Log likelihood = -8895.8426
Iteration 2: Log likelihood = -8885.7764
Iteration 3: Log likelihood = -8885.7104
Iteration 4: Log likelihood = -8885.7104
Refining estimates:
Iteration 0: Log likelihood = -8885.7104

Cox regression with Breslow method for ties

No. of subjects =      36,164                      Number of obs = 36,164
No. of failures =       960
Time at risk      = 439,440.668
Log likelihood = -8885.7104                         LR chi2(9)      = 199.47
                                                               Prob > chi2 = 0.0000

```

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.204451	.1589323	10.96	0.000	1.913957 2.539035
ztnfsf14	.9400055	.0371607	-1.57	0.118	.8699221 1.015735
_infectionburXztnfsf14_000	.9314149	.068112	-0.97	0.331	.8070437 1.074953
AGE	1.037748	.0131176	2.93	0.003	1.012354 1.063779
SEX	.7466042	.0489273	-4.46	0.000	.6566115 .8489309
NonWhite	1.005933	.1757729	0.03	0.973	.714222 1.416787
householdsize	.9420589	.039437	-1.43	0.154	.8678498 1.022614
SES	.8084715	.0400419	-4.29	0.000	.7336796 .8908877
LE8_TOTALSCORE	.9988756	.0003611	-3.11	0.002	.9981682 .9995835

-> Model for the mediator

```

Iteration 0: Log likelihood = -50719.664
Iteration 1: Log likelihood = -50719.664

Linear regression (Maximum Likelihood)                      Number of obs = 36,164
                                                               Wald chi2(7) = 1208.41
                                                               Prob > chi2 = 0.0000
Log likelihood = -50719.664

```

	ztnfsf14	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0391022	.0151087	2.59	0.010	.0094898 .0687147
AGE		.0043361	.0009885	4.39	0.000	.0023986 .0062736
SEX		.0503208	.0104583	4.81	0.000	.029823 .0708187
NonWhite		-.1848783	.0250774	-7.37	0.000	-.2340291 -.1357275
householdsize		-.0055484	.0049598	-1.12	0.263	-.0152693 .0041726
SES		-.0406007	.0078616	-5.16	0.000	-.0560092 -.0251922
LE8_TOTALSCORE		-.0017125	.0000557	-30.77	0.000	-.0018216 -.0016034
_cons		.5318111	.0716455	7.42	0.000	.3913885 .6722336
sigma2						
_cons		.967639	.007196	134.47	0.000	.9535351 .9817429

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.208608	.1593149	7.59	0.000	.8963561 1.520859
ereri_cde	1.201819	.1586051	7.58	0.000	.8909588 1.512679
ereri_intref	.0182975	.0186757	0.98	0.327	-.0183061 .0549012
ereri_intmed	-.0090927	.0066783	-1.36	0.173	-.0221819 .0039965
ereri_pie	-.0024163	.0018021	-1.34	0.180	-.0059484 .0011157

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztnni3
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8905.4114**
 Iteration 1: Log likelihood = **-8821.6396**
 Iteration 2: Log likelihood = **-8812.2242**
 Iteration 3: Log likelihood = **-8812.1591**
 Iteration 4: Log likelihood = **-8812.1591**
 Refining estimates:
 Iteration 0: Log likelihood = **-8812.1591**

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	186.50
Log likelihood =	-8812.1591	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.18374	.1600745	10.65	0.000	1.891495 2.521137
ztnni3		1.065255	.0428194	1.57	0.116	.9845509 1.152574
_infectionburXztnni3_000		1.02184	.0746045	0.30	0.767	.8855983 1.179042
AGE		1.036715	.0131711	2.84	0.005	1.011219 1.062854
SEX		.7631734	.0504334	-4.09	0.000	.6704596 .8687081
NonWhite		1.110421	.1889047	0.62	0.538	.7955759 1.549866
householdszie		.9387889	.039661	-1.50	0.135	.864186 1.019832
SES		.8323574	.0414199	-3.69	0.000	.7550092 .9176296
LE8_TOTALSCORE		.9990075	.0003581	-2.77	0.006	.9983059 .9997097

-> Model for the mediator

Iteration 0: Log likelihood = **-50471.323**
 Iteration 1: Log likelihood = **-50471.323**

Linear regression (Maximum Likelihood)	Number of obs =	35,755
	Wald chi2(7) =	528.52
Log likelihood =	-50471.323	Prob > chi2 = 0.0000

	ztnni3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0261642	.0153264	1.71	0.088	-.0038749 .0562034
AGE		.0069217	.0010004	6.92	0.000	.004961 .0088824
SEX		-.2196911	.0106131	-20.70	0.000	-.2404924 -.1988897
NonWhite		.0441176	.0254133	1.74	0.083	-.0056916 .0939268
householdszie		-.0036017	.0048398	-0.74	0.457	-.0130875 .005884
SES		.0042918	.0079694	0.54	0.590	-.011328 .0199116
LE8_TOTALSCORE		-.0001307	.0000565	-2.31	0.021	-.0002416 -.0000199
_cons		-.0121968	.0723258	-0.17	0.866	-.1539528 .1295592
sigma2						
_cons		.9854061	.0073699	133.71	0.000	.9709614 .9998509

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.191871	.1592179	7.49	0.000	.8798092 1.503932
ereri_cde	1.181683	.1596808	7.40	0.000	.868714 1.494651
ereri_intref	.0053292	.0109026	0.49	0.625	-.0160396 .0266979
ereri_intmed	.0032035	.0041043	0.78	0.435	-.0048407 .0112478
ereri_pie	.0016553	.0014323	1.16	0.248	-.001152 .0044626

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztnr
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8985.4467**

Iteration 1: Log likelihood = **-8900.4156**

Iteration 2: Log likelihood = **-8888.2157**

Iteration 3: Log likelihood = **-8888.0752**

Iteration 4: Log likelihood = **-8888.0751**

Refining estimates:

Iteration 0: Log likelihood = **-8888.0751**

Cox regression with Breslow method for ties

No. of subjects = 36,164

Number of obs = 36,164

No. of failures = 960

Time at risk = 439,440.668

LR chi2(9) = 194.74

Log likelihood = -8888.0751 Prob > chi2 = 0.0000

-> Model for the mediator

Iteration 0: Log likelihood = -49788.818
Iteration 1: Log likelihood = -49788.818

Linear regression (Maximum Likelihood) Number of obs = 36,164
Log likelihood = -49788.818 Wald chi2(7) = 3182.69
Prob > chi2 = 0.0000

	ztnr	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0699326	.0147248	-4.75	0.000	-.0987926
AGE		-.001084	.0009634	-1.13	0.261	-.0029723
SEX		.5136586	.0101925	50.40	0.000	.4936817
NonWhite		.3403406	.0244401	13.93	0.000	.2924388
householdsiz		.0113992	.0048337	2.36	0.018	.0019252
SES		.07617	.0076619	9.94	0.000	.061153
LE8_TOTALSCORE		.0006055	.0000542	11.16	0.000	.0004992
_cons		-1.050278	.0698249	-15.04	0.000	-1.187132
sigma2						
_cons		.9190862	.0068349	134.47	0.000	.90569
						.9324824

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.195505	.1586404	7.54	0.000	.8845754 1.506434
ereri_cde	1.175642	.1591058	7.39	0.000	.8638001 1.487483
ereri_intref	.0061721	.0094393	0.65	0.513	-.0123287 .0246729
ereri_intmed	.0129749	.0098357	1.32	0.187	-.0063027 .0322525
ereri_pie	.000716	.0027995	0.26	0.798	-.0047709 .0062029

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztnxb
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9121.8147
 Iteration 1: Log likelihood = -9029.7664
 Iteration 2: Log likelihood = -9019.2783
 Iteration 3: Log likelihood = -9019.0811
 Iteration 4: Log likelihood = -9019.0806
 Refining estimates:
 Iteration 0: Log likelihood = -9019.0806

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	205.47
Log likelihood =	-9019.0806	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.248538	.1650986	11.04	0.000	1.947157 2.596568
ztnxb	.8742733	.0341306	-3.44	0.001	.8098737 .9437938
_infectionburXztnxb_000	1.063573	.0714164	0.92	0.359	.9324189 1.213175
AGE	1.032628	.0130007	2.55	0.011	1.007459 1.058426
SEX	.7763346	.0509098	-3.86	0.000	.6826994 .8828122
NonWhite	1.137662	.1937662	0.76	0.449	.8147734 1.588509
householdsize	.9391434	.0393667	-1.50	0.134	.8650705 1.019559
SES	.8254052	.0405872	-3.90	0.000	.7495688 .9089143
LE8_TOTALSCORE	.9990194	.0003546	-2.76	0.006	.9983246 .9997147

-> Model for the mediator

Iteration 0: Log likelihood = -51121.165
 Iteration 1: Log likelihood = -51121.165

Linear regression (Maximum Likelihood)

Number of obs =	36,459
Wald chi2(7) =	1243.57
Prob > chi2 =	0.0000

Log likelihood = -51121.165

	ztnxb	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0690922	.0150282	-4.60	0.000	-.0985469 -.0396375
AGE		-.0180969	.0009836	-18.40	0.000	-.0200247 -.0161691
SEX		.227504	.0104137	21.85	0.000	.2070934 .2479145
NonWhite		.3888769	.0249669	15.58	0.000	.3399428 .4378111
householdsize		-.0043744	.0049486	-0.88	0.377	-.0140734 .0053247
SES		-.0085487	.0078217	-1.09	0.274	-.023879 .0067816
LE8_TOTALSCORE		.0000237	.0000554	0.43	0.669	-.000085 .0001324
_cons		.7296265	.0713306	10.23	0.000	.5898211 .869432
sigma2						
	_cons	.9669898	.007162	135.02	0.000	.9529526 .9810271

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.247291	.1616289	7.72	0.000	.9305045 1.564078
ereri_cde	1.239285	.1632771	7.59	0.000	.9192677 1.559302
ereri_intref	-.0032577	.0087156	-0.37	0.709	-.0203399 .0138244
ereri_intmed	.0019376	.0088659	0.22	0.827	-.0154392 .0193145
ereri_pie	.0093266	.0034008	2.74	0.006	.0026612 .015992

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztp53
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**
 Iteration 1: Log likelihood = **-8795.0834**
 Iteration 2: Log likelihood = **-8787.0684**
 Iteration 3: Log likelihood = **-8787.0513**
 Iteration 4: Log likelihood = **-8787.0513**
 Refining estimates:
 Iteration 0: Log likelihood = **-8787.0513**

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	190.29
Log likelihood =	-8787.0513	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.252909	.1628252	11.24	0.000	1.95535	2.595749
ztp53	.9273034	.03675	-1.90	0.057	.8580011	1.002203
_infectionburXztp53_000	1.049209	.0752022	0.67	0.503	.9117001	1.207458
AGE	1.037784	.0131975	2.92	0.004	1.012237	1.063975
SEX	.7451441	.0490186	-4.47	0.000	.6550053	.8476875
NonWhite	1.114051	.1896099	0.63	0.526	.798053	1.555172
householdszie	.939078	.0396254	-1.49	0.136	.8645386	1.020044
SES	.8281521	.0412747	-3.78	0.000	.7510807	.9131321
LE8_TOTALSCORE	.9991677	.0003601	-2.31	0.021	.9984621	.9998738

-> Model for the mediator

Iteration 0: Log likelihood = **-50326.274**
 Iteration 1: Log likelihood = **-50326.274**

Linear regression (Maximum Likelihood)	Number of obs =	35,573
	Wald chi2(7) =	299.51
Log likelihood =	Prob > chi2 =	0.0000

	ztp53	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	-.0043247	.0154256	-0.28	0.779	-.0345583	.0259089
AGE	-.0021493	.0010059	-2.14	0.033	-.0041207	-.0001778
SEX	-.044944	.0106737	-4.21	0.000	-.065864	-.024024
NonWhite	.0670727	.0255091	2.63	0.009	.0170757	.1170696
householdszie	.0005271	.004858	0.11	0.914	-.0089943	.0100486
SES	-.0161967	.0080056	-2.02	0.043	-.0318873	-.0005061
LE8_TOTALSCORE	-.0008569	.0000568	-15.08	0.000	-.0009683	-.0007455
_cons	.6222226	.0726957	8.56	0.000	.4797418	.7647035
sigma2						
_cons	.9916229	.0074353	133.37	0.000	.9770499	1.006196

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.247725	.1623292	7.69	0.000	.9295654 1.565884
ereri_cde	1.249432	.1623008	7.70	0.000	.9313279 1.567535
ereri_intref	-.0019734	.0046203	-0.43	0.669	-.0110291 .0070822
ereri_intmed	-.0000598	.000643	-0.09	0.926	-.00132 .0012005
ereri_pie	.0003265	.0011772	0.28	0.782	-.0019808 .0026337

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztp53inp1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8905.4114**

Iteration 1: Log likelihood = **-8822.1922**

Iteration 2: Log likelihood = **-8812.3263**

Iteration 3: Log likelihood = **-8812.0981**

Iteration 4: Log likelihood = **-8812.0966**

Iteration 5: Log likelihood = **-8812.0966**

Refining estimates:

Iteration 0: Log likelihood = **-8812.0966**

Cox regression with Breslow method for ties

No. of subjects = 35,755 Number of obs = 35,755

No. of failures = 953

Time at risk = 434,342.674

LR chi2(9) = 186.63

Log likelihood = -8812.0966 Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.196584	.1597043	10.82	0.000	1.904849 2.532999
ztp53inp1		.935222	.0408049	-1.53	0.125	.8585702 1.018717
_infectionburXztp53inp1_000		1.162404	.0820901	2.13	0.033	1.012149 1.334964
AGE		1.037514	.0131867	2.90	0.004	1.011988 1.063684
SEX		.753105	.0495545	-4.31	0.000	.6619822 .8567711
NonWhite		1.109821	.1888788	0.61	0.540	.7950385 1.549236
householdsize		.9380296	.0397301	-1.51	0.131	.8633046 1.019223
SES		.8344116	.0414989	-3.64	0.000	.7569138 .9198441
LE8_TOTALSCORE		.9989997	.0003579	-2.79	0.005	.9982985 .9997015

-> Model for the mediator

Iteration 0: Log likelihood = **-50667.763**
 Iteration 1: Log likelihood = **-50667.763**

Linear regression (Maximum Likelihood)
 Number of obs = 35,755
 Wald chi2(7) = 132.01
 Prob > chi2 = 0.0000
 Log likelihood = **-50667.763**

	ztp53inp1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0037697	.0154108	0.24	0.807	-.0264349 .0339743
AGE		.0013067	.0010059	1.30	0.194	-.0006648 .0032781
SEX		.1141999	.0106716	10.70	0.000	.093284 .1351159
NonWhite		-.0930724	.0255533	-3.64	0.000	-.1431559 -.0429888
householdsize		-.0025188	.0048664	-0.52	0.605	-.0120568 .0070192
SES		.0009199	.0080133	0.11	0.909	-.0147859 .0166257
LE8_TOTALSCORE		-.000368	.0000569	-0.65	0.517	-.0001483 .0000746
_cons		-.2255226	.0727243	-3.10	0.002	-.3680596 -.0829857
sigma2						
_cons		.9962936	.0074513	133.71	0.000	.9816893 1.010898

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.19983	.1595913	7.52	0.000	.8870365 1.512623
ereri_cde	1.193872	.1592496	7.50	0.000	.8817482 1.505995
ereri_intref	.0052657	.010611	0.50	0.620	-.0155315 .0260628
ereri_intmed	.0009449	.0038942	0.24	0.808	-.0066876 .0085774
ereri_pie	-.0002524	.0010448	-0.24	0.809	-.0023003 .0017954

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztpmt
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04669 2.217 -.07551 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8882.1967
 Iteration 1: Log likelihood = -8793.8853
 Iteration 2: Log likelihood = -8785.8983
 Iteration 3: Log likelihood = -8785.8816
 Iteration 4: Log likelihood = -8785.8816
 Refining estimates:
 Iteration 0: Log likelihood = -8785.8816

Cox regression with Breslow method for ties

No. of subjects =	35,573	Number of obs =	35,573
No. of failures =	951		
Time at risk =	432,088.637	LR chi2(9) =	192.63
Log likelihood =	-8785.8816	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.269155	.1645566	11.30	0.000	1.968503 2.615727
ztpmt	.9056711	.0364416	-2.46	0.014	.8369907 .9799872
_infectionburXztpmt_000	1.102038	.0802669	1.33	0.182	.9554308 1.271141
AGE	1.037606	.0131947	2.90	0.004	1.012065 1.063792
SEX	.7490456	.0492992	-4.39	0.000	.6583935 .8521792
NonWhite	1.102421	.1876116	0.57	0.567	.7897483 1.538885
householdsize	.9393013	.0396592	-1.48	0.138	.8647 1.020339
SES	.8310251	.041441	-3.71	0.000	.7536452 .9163498
LE8_TOTALSCORE	.9991954	.0003589	-2.24	0.025	.9984923 .999899

-> Model for the mediator

Iteration 0: Log likelihood = -50411.334
 Iteration 1: Log likelihood = -50411.334

Linear regression (Maximum Likelihood)

Number of obs =	35,573
Wald chi2(7) =	128.36
Prob > chi2 =	0.0000

Log likelihood = -50411.334

ztpmt	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0472623	.0154625	-3.06	0.002	-.0775682 -.0169563
AGE	-.0059574	.0010083	-5.91	0.000	-.0079336 -.0039813
SEX	.0509239	.0106992	4.76	0.000	.0299538 .071894
NonWhite	-.0543681	.0255702	-2.13	0.033	-.1044847 -.0042515
householdsize	-.0049249	.0048696	-1.01	0.312	-.0144691 .0046194
SES	.0181697	.0080247	2.26	0.024	.0024415 .0338979
LE8_TOTALSCORE	-.0004293	.000057	-7.53	0.000	-.0005409 -.0003176
_cons	.5168975	.0728697	7.09	0.000	.3740755 .6597195
sigma2					
_cons	.9963765	.007471	133.37	0.000	.9817336 1.011019

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.259732	.1632442	7.72	0.000	.9397791 1.579685
ereri_cde	1.263784	.1635868	7.73	0.000	.9431595 1.584408
ereri_intref	-.0042566	.0037874	-1.12	0.261	-.0116797 .0031665
ereri_intmed	-.0044888	.0069214	-0.65	0.517	-.0180545 .0090768
ereri_pie	.0046937	.0024535	1.91	0.056	-.0001151 .0095024

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztpm1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04637 2.215 -.0758 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9004.857**
 Iteration 1: Log likelihood = **-8915.1311**
 Iteration 2: Log likelihood = **-8906.8506**
 Iteration 3: Log likelihood = **-8906.8328**
 Iteration 4: Log likelihood = **-8906.8328**
 Refining estimates:
 Iteration 0: Log likelihood = **-8906.8328**

Cox regression with Breslow method for ties

No. of subjects =	36,191	Number of obs =	36,191
No. of failures =	962		
Time at risk =	439,562.576	LR chi2(9) =	196.05
Log likelihood =	-8906.8328	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.256646	.1621921	11.32	0.000	1.960131 2.598017
ztpp1	.9410689	.0390338	-1.46	0.143	.8675912 1.02077
_infectionburXztpp1_000	.9884245	.0715898	-0.16	0.872	.8576152 1.139186
AGE	1.035296	.0130637	2.75	0.006	1.010006 1.06122
SEX	.7379998	.0487097	-4.60	0.000	.6484477 .8399193
NonWhite	1.113923	.189548	0.63	0.526	.7980176 1.554883
householdsize	.9380702	.039383	-1.52	0.128	.8639713 1.018524
SES	.8183457	.0405823	-4.04	0.000	.7425491 .9018793
LE8_TOTALSCORE	.9988895	.0003635	-3.05	0.002	.9981772 .9996023

-> Model for the mediator

Iteration 0: Log likelihood = **-49850.382**
 Iteration 1: Log likelihood = **-49850.382**

Linear regression (Maximum Likelihood)	Number of obs =	36,191
	Wald chi2(7) =	3132.03
Log likelihood =	Prob > chi2 =	0.0000

	ztpp1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0783839	.0147192	5.33	0.000	.0495347 .1072331
AGE		.0012461	.0009603	1.30	0.194	-.0006359 .0031282
SEX		-.2823263	.0101957	-27.69	0.000	-.3023095 -.2623431
NonWhite		.0496529	.0244389	2.03	0.042	.0017535 .0975523
householdsize		-.020206	.0046386	-4.36	0.000	-.0292975 -.0111146
SES		-.0911099	.0076529	-11.91	0.000	-.1061092 -.0761105
LE8_TOTALSCORE		-.002151	.0000543	-39.59	0.000	-.0022575 -.0020445
_cons		1.458622	.069391	21.02	0.000	1.322619 1.594626
sigma2						
_cons		.9203259	.0068416	134.52	0.000	.9069167 .9337351

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.245765	.1616145	7.71	0.000	.9290063 1.562524
ereri_cde	1.253685	.1618886	7.74	0.000	.9363896 1.570981
ereri_intref	.0048572	.010959	0.44	0.658	-.016622 .0263364
ereri_intmed	-.0080281	.0113235	-0.71	0.478	-.0302218 .0141656
ereri_pie	-.0047496	.0033559	-1.42	0.157	-.0113271 .0018278

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztppp3
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04688 2.215 -.07424 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8819.5642

Iteration 1: Log likelihood = -8734.3405

Iteration 2: Log likelihood = -8726.6503

Iteration 3: Log likelihood = -8726.6319

Iteration 4: Log likelihood = -8726.6319

Refining estimates:

Iteration 0: Log likelihood = -8726.6319

Cox regression with Breslow method for ties

No. of subjects = 35,601 Number of obs = 35,601

No. of failures = 943

Time at risk = 432,443.367

Log likelihood = -8726.6319

LR chi2(9) = 185.86

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.214686	.1612155	10.92	0.000	1.920215 2.554315
ztppp3	.9543698	.0396206	-1.12	0.261	.8797901 1.035272
_infectionburXztppp3_000	1.017248	.0779407	0.22	0.823	.8754042 1.182076
AGE	1.037526	.013209	2.89	0.004	1.011957 1.063741
SEX	.7510641	.0496441	-4.33	0.000	.6598026 .8549487
NonWhite	1.086686	.1873043	0.48	0.630	.7751547 1.52342
householdszie	.9300266	.0401712	-1.68	0.093	.8545331 1.012189
SES	.8157881	.0407186	-4.08	0.000	.7397605 .8996292
LE8_TOTALSCORE	.9991743	.0003608	-2.29	0.022	.9984673 .9998817

-> Model for the mediator

Iteration 0: Log likelihood = -50452.356
 Iteration 1: Log likelihood = -50452.356

Linear regression (Maximum Likelihood)
 Number of obs = 35,601
 Wald chi2(7) = 125.77
 Log likelihood = -50452.356 Prob > chi2 = 0.0000

	ztppp3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.0214899	.0154385	1.39	0.164	-.008769	.0517488
AGE	.0019528	.0010108	1.93	0.053	-.0000283	.003934
SEX	.0684667	.0106952	6.40	0.000	.0475045	.0894288
NonWhite	-.1097068	.0255197	-4.30	0.000	-.1597246	-.059689
householdszie	.0032835	.0050738	0.65	0.518	-.0066611	.013228
SES	-.012372	.0080344	-1.54	0.124	-.0281191	.0033751
LE8_TOTALSCORE	-.0004335	.000057	-7.60	0.000	-.0005453	-.0003218
_cons	-.0113789	.0732805	-0.16	0.877	-.1550061	.1322482
sigma2						
_cons	.9964516	.0074686	133.42	0.000	.9818134	1.01109

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.211726	.1610143	7.53	0.000	.8961438 1.527308
ereri_cde	1.213197	.1610026	7.54	0.000	.8976382 1.528757
ereri_intref	-.0000639	.0050685	-0.01	0.990	-.0099979 .0098701
ereri_intmed	-.0004043	.0032079	-0.13	0.900	-.0066917 .0058831
ereri_pie	-.0010032	.0011459	-0.88	0.381	-.0032492 .0012429

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztpsab1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04657 2.218 -.07532 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9164.772
Iteration 1: Log likelihood = -9073.0608
Iteration 2: Log likelihood = -9063.6613
Iteration 3: Log likelihood = -9063.6315
Iteration 4: Log likelihood = -9063.6315
Refining estimates:
Iteration 0: Log likelihood = -9063.6315

```

Cox regression with Breslow method for ties

No. of subjects =	36,758	Number of obs =	36,758
No. of failures =	978		
Time at risk =	446,563.611	LR chi2(9) =	202.28
Log likelihood =	-9063.6315	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.288997	.1633306	11.61	0.000	1.990252 2.632586
ztpsab1	.9494636	.036044	-1.37	0.172	.8813828 1.022803
_infectionburXztpsab1_000	.9921791	.0720655	-0.11	0.914	.8605266 1.143973
AGE	1.036419	.0130139	2.85	0.004	1.011223 1.062242
SEX	.7511025	.0487028	-4.41	0.000	.6614634 .8528892
NonWhite	1.042203	.1795946	0.24	0.810	.7434841 1.460943
householdsize	.9361396	.039312	-1.57	0.116	.8621752 1.016449
SES	.8180462	.0401349	-4.09	0.000	.743047 .9006154
LE8_TOTALSCORE	.9990442	.000354	-2.70	0.007	.9983506 .9997383

-> Model for the mediator

Iteration 0: Log likelihood =	-51924.009	Number of obs =	36,758
Iteration 1: Log likelihood =	-51924.009	Wald chi2(7) =	468.63
Linear regression (Maximum Likelihood)		Prob > chi2 =	0.0000
Log likelihood =	-51924.009		

	ztpsab1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0659834	.0151323	4.36	0.000	.0363247 .0956421
AGE		.0131759	.0009872	13.35	0.000	.0112411 .0151107
SEX		-.0550428	.0104783	-5.25	0.000	-.0755799 -.0345056
NonWhite		-.1586792	.0250717	-6.33	0.000	-.2078188 -.1095396
householdsize		.0012438	.0047754	0.26	0.795	-.0081158 .0106034
SES		-.021463	.0078576	-2.73	0.006	-.0368636 -.0060625
LE8_TOTALSCORE		-.0005509	.0000558	-9.88	0.000	-.0006602 -.0004416
_cons		-.4390712	.0713563	-6.15	0.000	-.578927 -.2992153
sigma2						
_cons		.9873846	.0072833	135.57	0.000	.9731097 1.00166

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.281147	.1629507	7.86	0.000	.9617695 1.600525
ereri_cde	1.286676	.1630947	7.89	0.000	.9670164 1.606336
ereri_intref	.0034761	.0099973	0.35	0.728	-.0161182 .0230704
ereri_intmed	-.0055892	.0098682	-0.57	0.571	-.0249305 .0137522
ereri_pie	-.0034159	.002616	-1.31	0.192	-.0085431 .0017113

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztp1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.53 .04656 2.215 -.07626 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8913.3312**
 Iteration 1: Log likelihood = **-8827.7519**
 Iteration 2: Log likelihood = **-8819.8343**
 Iteration 3: Log likelihood = **-8819.8153**
 Iteration 4: Log likelihood = **-8819.8153**
 Refining estimates:
 Iteration 0: Log likelihood = **-8819.8153**

Cox regression with Breslow method for ties

No. of subjects =	35,761	Number of obs =	35,761
No. of failures =	953		
Time at risk =	434,427.923	LR chi2(9) =	187.03
Log likelihood =	-8819.8153	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.22243	.1609952	11.02	0.000	1.928263	2.561475
ztpt1	.9631903	.0394984	-0.91	0.360	.8888042	1.043802
_infectionburXztpt1_000	1.004632	.0748601	0.06	0.951	.86812	1.162611
AGE	1.037017	.01316	2.86	0.004	1.011542	1.063134
SEX	.749905	.0492783	-4.38	0.000	.6592823	.8529843
NonWhite	1.05248	.1837904	0.29	0.770	.7474321	1.482026
householdsize	.9350851	.0397947	-1.58	0.115	.8602532	1.016427
SES	.8279415	.0411999	-3.79	0.000	.7510041	.912761
LE8_TOTALSCORE	.9990652	.0003583	-2.61	0.009	.9983632	.9997678

-> Model for the mediator

Iteration 0: Log likelihood = **-50723.5**
 Iteration 1: Log likelihood = **-50723.5**

Linear regression (Maximum Likelihood)	Number of obs =	35,761
	Wald chi2(7) =	37.34
Log likelihood =	-50723.5	Prob > chi2 = 0.0000

	ztpt1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0007704	.0154448	-0.05	0.960	-.0310415
AGE		-.0036975	.0010059	-3.68	0.000	-.0056691
SEX		.0333387	.010683	3.12	0.002	.0124004
NonWhite		-.0696322	.0255613	-2.72	0.006	-.1197314
householdsize		.007019	.0048592	1.44	0.149	-.0025047
SES		.0020758	.0080097	0.26	0.796	-.0136229
LE8_TOTALSCORE		.0000265	.0000569	0.46	0.642	-.0000851
_cons		.1462258	.0726606	2.01	0.044	.0038136
sigma2						
_cons		.998929	.0074704	133.72	0.000	.9842872
						1.013571

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.222126	.1607802	7.60	0.000	.9070031 1.53725
ereri_cde	1.221577	.1608284	7.60	0.000	.9063587 1.536794
ereri_intref	.0004937	.00478	0.10	0.918	-.008875 .0098623
ereri_intmed	.0000274	.0005604	0.05	0.961	-.0010711 .0011258
ereri_pie	.0000289	.0005801	0.05	0.960	-.0011081 .0011659

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztraf2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9036.4379

Iteration 1: Log likelihood = -8949.3875

Iteration 2: Log likelihood = -8938.608

Iteration 3: Log likelihood = -8938.525

Iteration 4: Log likelihood = -8938.525

Refining estimates:

Iteration 0: Log likelihood = -8938.525

Cox regression with Breslow method for ties

No. of subjects = 36,352 Number of obs = 36,352

No. of failures = 965

Time at risk = 441,650.762

LR chi2(9) = 195.83

Log likelihood = -8938.525

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.257361	.1619264	11.35	0.000	1.961291 2.598124
ztraf2	.9643823	.0375936	-0.93	0.352	.8934447 1.040952
_infectionburXztraf2_000	1.128279	.0803118	1.70	0.090	.9813575 1.297196
AGE	1.032412	.0130141	2.53	0.011	1.007217 1.058237
SEX	.7596814	.0495497	-4.21	0.000	.668517 .8632777
NonWhite	1.059848	.1826595	0.34	0.736	.7560376 1.485744
householdsize	.9325064	.039753	-1.64	0.101	.8577582 1.013768
SES	.8191628	.0404533	-4.04	0.000	.7435921 .9024137
LE8_TOTALSCORE	.9990265	.0003559	-2.73	0.006	.9983291 .9997243

-> Model for the mediator

Iteration 0: Log likelihood = -51522.464
 Iteration 1: Log likelihood = -51522.464

Linear regression (Maximum Likelihood)
 Number of obs = 36,352
 Wald chi2(7) = 116.77
 Log likelihood = -51522.464 Prob > chi2 = 0.0000

	ztraf2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	-.0026964	.0152944	-0.18	0.860	-.0326729	.0272801
AGE	-9.06e-06	.0009984	-0.01	0.993	-.0019658	.0019477
SEX	-.0332608	.0105856	-3.14	0.002	-.0540082	-.0125133
NonWhite	.0648106	.0253667	2.55	0.011	.0150928	.1145284
householdsize	-.000602	.0048993	-0.12	0.902	-.0102045	.0090006
SES	.0149467	.0079397	1.88	0.060	-.0006149	.0305083
LE8_TOTALSCORE	-.0005428	.0000564	-9.63	0.000	-.0006533	-.0004324
_cons	.3230586	.072224	4.47	0.000	.1815022	.464615
sigma2						
_cons	.9967708	.0073934	134.82	0.000	.9822799	1.011262

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.263496	.1621586	7.79	0.000	.9456712 1.581321
ereri_cde	1.256554	.1617779	7.77	0.000	.939475 1.573633
ereri_intref	.0074577	.0115635	0.64	0.519	-.0152062 .0301216
ereri_intmed	-.0006131	.0034984	-0.18	0.861	-.00747 .0062437
ereri_pie	.0000978	.0005646	0.17	0.862	-.0010088 .0012044

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztrem2
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.19 1.532 .04636 2.216 -.0746 500.5

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9073.1164
Iteration 1: Log likelihood = -8986.0338
Iteration 2: Log likelihood = -8977.1537
Iteration 3: Log likelihood = -8977.1185
Iteration 4: Log likelihood = -8977.1185
Refining estimates:
Iteration 0: Log likelihood = -8977.1185

```

Cox regression with Breslow method for ties

No. of subjects =	36,432	Number of obs =	36,432
No. of failures =	969		
Time at risk =	442,512.06	LR chi2(9) =	192.00
Log likelihood =	-8977.1185	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.292251	.1685991	11.28	0.000	1.984517 2.647705
ztrem2	.991775	.0402868	-0.20	0.839	.9158758 1.073964
_infectionburXztrem2_000	.9274355	.0641684	-1.09	0.276	.8098226 1.06213
AGE	1.036836	.0131364	2.86	0.004	1.011406 1.062905
SEX	.7605969	.0496398	-4.19	0.000	.6692702 .8643858
NonWhite	1.08599	.1851471	0.48	0.628	.7775122 1.516857
householdszie	.9387343	.0392289	-1.51	0.130	.8649117 1.018858
SES	.8235833	.040854	-3.91	0.000	.7472803 .9076774
LE8_TOTALSCORE	.9989753	.0003596	-2.85	0.004	.9982707 .9996804

-> Model for the mediator

Iteration 0: Log likelihood = -49380.783	Number of obs = 36,432
Iteration 1: Log likelihood = -49380.783	Wald chi2(7) = 4933.63
Log likelihood = -49380.783	Prob > chi2 = 0.0000

zтrem2	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1594308	.014354	11.11	0.000	.1312974 .1875641
AGE	.0364744	.0009364	38.95	0.000	.0346391 .0383096
SEX	.1838035	.0099406	18.49	0.000	.1643203 .2032867
NonWhite	-.3215781	.023829	-13.50	0.000	-.3682821 -.2748742
householdsize	.0045377	.0045227	1.00	0.316	-.0043267 .013402
SES	-.1499729	.0074613	-20.10	0.000	-.1645968 -.135349
LE8_TOTALSCORE	-.0019895	.000053	-37.57	0.000	-.0020933 -.0018857
_cons	-1.509417	.0676531	-22.31	0.000	-1.642015 -1.376819
sigma2					
_cons	.8807069	.0065254	134.97	0.000	.8679174 .8934964

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.272594	.1659995	7.67	0.000	.9472405 1.597947
ereri_cde	1.291976	.1687339	7.66	0.000	.9612636 1.622689
ereri_intref	.011107	.0129028	0.86	0.389	-.014182 .036396
ereri_intmed	-.0291737	.0224966	-1.30	0.195	-.0732661 .0149188
ereri_pie	-.0013159	.0064688	-0.20	0.839	-.0139945 .0113627

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztrem12
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9121.8147**
 Iteration 1: Log likelihood = **-9033.8664**
 Iteration 2: Log likelihood = **-9025.1498**
 Iteration 3: Log likelihood = **-9025.1212**
 Iteration 4: Log likelihood = **-9025.1212**
 Refining estimates:
 Iteration 0: Log likelihood = **-9025.1212**

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	193.39
Log likelihood =	-9025.1212	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.238142	.1597488	11.29	0.000	1.945954 2.574203
ztrem12	1.020817	.0393715	0.53	0.593	.9464951 1.100976
_infectionburXztrem12_000	.9296762	.0624675	-1.09	0.278	.8149616 1.060538
AGE	1.035064	.0130085	2.74	0.006	1.009879 1.060876
SEX	.7527596	.0491207	-4.35	0.000	.6623871 .855462
NonWhite	1.090366	.1863467	0.51	0.613	.7800091 1.524211
householdszie	.938807	.0393551	-1.51	0.132	.8647561 1.019199
SES	.8242278	.0405827	-3.93	0.000	.7484046 .9077329
LE8_TOTALSCORE	.9990125	.0003551	-2.78	0.005	.9983167 .9997089

-> Model for the mediator

Iteration 0: Log likelihood = **-51189.606**
 Iteration 1: Log likelihood = **-51189.606**

Linear regression (Maximum Likelihood)	Number of obs =	36,459
	Wald chi2(7) =	1102.28
Log likelihood =	Prob > chi2 =	0.0000

<u>ztrem12</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0719285	.0150564	4.78	0.000	.0424184 .1014385
AGE	-.0004596	.0009855	-0.47	0.641	-.002391 .0014719
SEX	.2004799	.0104333	19.22	0.000	.180031 .2209288
NonWhite	-.5194075	.0250138	-20.76	0.000	-.5684336 -.4703814
householdszie	.0096072	.0049579	1.94	0.053	-.00011 .0193245
SES	-.069126	.0078364	-8.82	0.000	-.0844851 -.0537669
LE8_TOTALSCORE	-.0008143	.0000555	-14.66	0.000	-.0009231 -.0007054
_cons	.1159385	.0714646	1.62	0.105	-.0241297 .2560066
sigma2					
_cons	.9706271	.0071889	135.02	0.000	.956537 .9847172

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.233867	.1594542	7.74	0.000	.9213422 1.546391
ereri_cde	1.238142	.1597438	7.75	0.000	.92505 1.551234
ereri_intref	.0041465	.0076159	0.54	0.586	-.0107804 .0190735
ereri_intmed	-.0099049	.0095772	-1.03	0.301	-.0286759 .0088661
ereri_pie	.0014831	.0027956	0.53	0.596	-.0039962 .0069624

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztriapi1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04659 2.218 -.07483 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9201.1117

Iteration 1: Log likelihood = -9111.6008

Iteration 2: Log likelihood = -9102.9739

Iteration 3: Log likelihood = -9102.9554

Iteration 4: Log likelihood = -9102.9554

Refining estimates:

Iteration 0: Log likelihood = -9102.9554

Cox regression with Breslow method for ties

No. of subjects = 36,726 Number of obs = 36,726

No. of failures = 982

Time at risk = 446,105.322

Log likelihood = -9102.9554

LR chi2(9) = 196.31

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.261419	.1608261	11.47	0.000	1.967188 2.599658
ztriap1		.9580986	.0377124	-1.09	0.277	.8869629 1.03494
_infectionburXztriap1_000		1.006364	.0733927	0.09	0.931	.8723247 1.160999
AGE		1.034549	.0129589	2.71	0.007	1.009459 1.060262
SEX		.7579143	.0490238	-4.29	0.000	.6676705 .8603556
NonWhite		1.080433	.1836976	0.46	0.649	.7742383 1.507721
householdszie		.9327981	.039275	-1.65	0.098	.8589112 1.013041
SES		.8203421	.0402108	-4.04	0.000	.7451977 .9030639
LE8_TOTALSCORE		.9990521	.0003552	-2.67	0.008	.9983562 .9997486

-> Model for the mediator

Iteration 0: Log likelihood = **-51723.162**
 Iteration 1: Log likelihood = **-51723.162**

Linear regression (Maximum Likelihood) Number of obs = 36,726
 Wald chi2(7) = 784.82
 Log likelihood = **-51723.162** Prob > chi2 = 0.0000

	ztriap1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0535886	.0150829	3.55	0.000	.0240267 .0831505
AGE		.0044521	.0009837	4.53	0.000	.0025241 .0063801
SEX		.0010318	.0104376	0.10	0.921	-.0194256 .0214892
NonWhite		.1356791	.0249731	5.43	0.000	.0867328 .1846253
householdszie		-.0045407	.0047524	-0.96	0.339	-.0138552 .0047739
SES		-.0460121	.0078285	-5.88	0.000	-.0613557 -.0306684
LE8_TOTALSCORE		-.0012792	.0000556	-23.01	0.000	-.0013882 -.0011703
_cons		.3636859	.0711385	5.11	0.000	.224257 .5031149
sigma2						
_cons		.9790509	.0072249	135.51	0.000	.9648903 .9932115

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.256343	.1604585	7.83	0.000	.9418504 1.570836
ereri_cde	1.259888	.160638	7.84	0.000	.9450431 1.574732
ereri_intref	.0008684	.006319	0.14	0.891	-.0115166 .0132535
ereri_intmed	-.0021217	.0077911	-0.27	0.785	-.0173921 .0131486
ereri_pie	-.0022912	.0022009	-1.04	0.298	-.0066048 .0020224

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztrim21
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9036.4379
 Iteration 1: Log likelihood = -8947.6028
 Iteration 2: Log likelihood = -8939.1211
 Iteration 3: Log likelihood = -8939.1024
 Iteration 4: Log likelihood = -8939.1024
 Refining estimates:
 Iteration 0: Log likelihood = -8939.1024

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	194.67
Log likelihood =	-8939.1024	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.257275	.1618268	11.36	0.000	1.961376 2.597815
ztrim21	.950788	.0367409	-1.31	0.192	.8814366 1.025596
_infectionburXztrim21_000	1.043298	.0706162	0.63	0.531	.9136801 1.191303
AGE	1.032645	.0130121	2.55	0.011	1.007454 1.058465
SEX	.7537261	.0493572	-4.32	0.000	.6629386 .8569468
NonWhite	1.057119	.1821859	0.32	0.747	.7540951 1.481909
householdsize	.9331615	.0396819	-1.63	0.104	.8585394 1.01427
SES	.8197798	.0404835	-4.02	0.000	.7441526 .9030927
LE8_TOTALSCORE	.9989916	.0003562	-2.83	0.005	.9982937 .9996901

-> Model for the mediator

Iteration 0: Log likelihood = -51287.805
 Iteration 1: Log likelihood = -51287.805

Linear regression (Maximum Likelihood)
 Number of obs = 36,352
 Wald chi2(7) = 590.64
 Log likelihood = -51287.805 Prob > chi2 = 0.0000

	ztrim21	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.081114	.015196	-5.34	0.000	-.1108976 -.0513304
AGE		-.0006474	.000992	-0.65	0.514	-.0025916 .0012968
SEX		-.1903707	.0105175	-18.10	0.000	-.2109846 -.1697567
NonWhite		.0420591	.0252035	1.67	0.095	-.0073389 .091457
householdsize		-.0038683	.0048678	-0.79	0.427	-.0134091 .0056724
SES		.0120048	.0078887	1.52	0.128	-.0034567 .0274663
LE8_TOTALSCORE		-.0007741	.000056	-13.82	0.000	-.0008838 -.0006643
_cons		.736736	.0717593	10.27	0.000	.5960904 .8773815
sigma2						
_cons		.9839848	.0072986	134.82	0.000	.9696798 .9982898

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.257074	.1616258	7.78	0.000	.9402935 1.573855
ereri_cde	1.256414	.161695	7.77	0.000	.9394973 1.57333
ereri_intref	-.0008177	.0015535	-0.53	0.599	-.0038626 .0022271
ereri_intmed	-.0026234	.0106826	-0.25	0.806	-.0235608 .0183141
ereri_pie	.0041017	.0032401	1.27	0.206	-.0022488 .0104523

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztrim5
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8946.6261**
 Iteration 2: Log likelihood = **-8938.1494**
 Iteration 3: Log likelihood = **-8938.1303**
 Iteration 4: Log likelihood = **-8938.1303**
 Refining estimates:
 Iteration 0: Log likelihood = **-8938.1303**

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	196.62
Log likelihood =	-8938.1303	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.262346	.162256	11.38	0.000	1.96567 2.603799
ztrim5		.9322921	.0360861	-1.81	0.070	.8641809 1.005771
_infectionburXztrim5_000		1.034219	.0740382	0.47	0.638	.8988275 1.190005
AGE		1.032722	.0130094	2.56	0.011	1.007537 1.058538
SEX		.7577805	.0494375	-4.25	0.000	.666824 .8611438
NonWhite		1.061788	.1830084	0.35	0.728	.7574007 1.488503
householdszie		.9327483	.0397173	-1.64	0.102	.8580637 1.013933
SES		.8183926	.0404201	-4.06	0.000	.7428844 .9015757
LE8_TOTALSCORE		.9989868	.0003558	-2.85	0.004	.9982898 .9996843

-> Model for the mediator

Iteration 0: Log likelihood = **-51489.01**
 Iteration 1: Log likelihood = **-51489.01**

Linear regression (Maximum Likelihood)	Number of obs =	36,352
	Wald chi2(7) =	183.95
Log likelihood =	-51489.01	Prob > chi2 = 0.0000

	ztrim5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0006766	.0152803	-0.04	0.965	-.0306256 .0292723
AGE		-.0024237	.0009975	-2.43	0.015	-.0043787 -.0004687
SEX		-.0433394	.0105759	-4.10	0.000	-.0640678 -.0226111
NonWhite		.0945085	.0253434	3.73	0.000	.0448364 .1441806
householdszie		-.0035218	.0048948	-0.72	0.472	-.0131155 .0060719
SES		-.0212743	.0079324	-2.68	0.007	-.0368216 -.005727
LE8_TOTALSCORE		-.0005911	.0000563	-10.50	0.000	-.0007014 -.0004807
_cons		.5100612	.0721576	7.07	0.000	.368635 .6514874
sigma2						
_cons		.9949378	.0073798	134.82	0.000	.9804736 1.009402

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.258377	.1617134	7.78	0.000	.9414243 1.575329
ereri_cde	1.259271	.1617505	7.79	0.000	.9422461 1.576296
ereri_intref	-.0009502	.0056066	-0.17	0.865	-.0119391 .0100386
ereri_intmed	8.28e-06	.00021	0.04	0.969	-.0004034 .0004199
ereri_pie	.0000474	.0010717	0.04	0.965	-.002053 .0021479

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztshb
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9064.8284

Iteration 1: Log likelihood = -8971.8333

Iteration 2: Log likelihood = -8962.9654

Iteration 3: Log likelihood = -8962.9464

Iteration 4: Log likelihood = -8962.9464

Refining estimates:

Iteration 0: Log likelihood = -8962.9464

Cox regression with Breslow method for ties

No. of subjects = 36,441 Number of obs = 36,441

No. of failures = 968

Time at risk = 442,700.115

Log likelihood = -8962.9464 LR chi2(9) = 203.76

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.285447	.1632666	11.57	0.000	1.986842 2.628929
ztshb	.903084	.0347695	-2.65	0.008	.8374447 .9738681
_infectionburXztshb_000	1.084301	.0758445	1.16	0.247	.9453878 1.243625
AGE	1.033674	.0130241	2.63	0.009	1.00846 1.059518
SEX	.7403498	.0484477	-4.59	0.000	.6512313 .8416638
NonWhite	1.001018	.1771475	0.01	0.995	.7076309 1.416044
householdsize	.9282412	.0399349	-1.73	0.083	.8531794 1.009907
SES	.827056	.0408412	-3.85	0.000	.7507605 .911105
LE8_TOTALSCORE	.9990363	.0003558	-2.71	0.007	.9983391 .9997339

-> Model for the mediator

Iteration 0: Log likelihood = **-51584.045**
 Iteration 1: Log likelihood = **-51584.045**

Linear regression (Maximum Likelihood) Number of obs = 36,441
 Wald chi2(7) = 246.82
 Log likelihood = **-51584.045** Prob > chi2 = 0.0000

ztshb	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0721787	.015231	-4.74	0.000	-.1020309 -.0423265
AGE	.001406	.0009948	1.41	0.158	-.0005438 .0033557
SEX	-.1341876	.0105544	-12.71	0.000	-.1548739 -.1135013
NonWhite	-.1122062	.0252721	-4.44	0.000	-.1617385 -.0626738
householdsize	.0098793	.0048032	2.06	0.040	.0004653 .0192934
SES	.0216535	.0079202	2.73	0.006	.0061302 .0371769
LE8_TOTALSCORE	-.0001956	.0000563	-3.48	0.001	-.0003059 -.0000854
_cons	.213747	.0718957	2.97	0.003	.0728341 .3546599
sigma2					
_cons	.9932451	.0073583	134.98	0.000	.9788232 1.007667

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.279481	.1627518	7.86	0.000	.9604933 1.598469
ereri_cde	1.280138	.1624778	7.88	0.000	.9616876 1.598589
ereri_intref	-.0041106	.0037907	-1.08	0.278	-.0115401 .003319
ereri_intmed	-.0039318	.0100545	-0.39	0.696	-.0236382 .0157746
ereri_pie	.007385	.0032068	2.30	0.021	.0010998 .0136702

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztslp
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04648 2.218 -.07459 500.6

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -8905.4114
Iteration 1: Log likelihood = -8821.3377
Iteration 2: Log likelihood = -8814.0048
Iteration 3: Log likelihood = -8813.9889
Iteration 4: Log likelihood = -8813.9889
Refining estimates:
Iteration 0: Log likelihood = -8813.9889

```

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	182.84
Log likelihood =	-8813.9889	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.198594	.1594718	10.86	0.000	1.907236 2.534461
ztslp	1.031347	.037835	0.84	0.400	.9597948 1.108233
_infectionburXztslp_000	.9505635	.0693285	-0.70	0.487	.8239475 1.096637
AGE	1.037376	.0131809	2.89	0.004	1.011861 1.063534
SEX	.7528131	.0494536	-4.32	0.000	.6618662 .8562569
NonWhite	1.11335	.1894171	0.63	0.528	.7976543 1.553992
householdsize	.9380173	.039681	-1.51	0.130	.8633809 1.019106
SES	.8340148	.0414978	-3.65	0.000	.7565207 .919447
LE8_TOTALSCORE	.9989965	.000358	-2.80	0.005	.9982952 .9996984

-> Model for the mediator

Iteration 0: Log likelihood = -50723.978	Number of obs = 35,755
Iteration 1: Log likelihood = -50723.978	Wald chi2(7) = 19.34
Log likelihood = -50723.978	Prob > chi2 = 0.0072

	ztslp	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0200385	.0154351	1.30	0.194	-.0102136 .0502907
AGE		-.0006291	.0010075	-0.62	0.532	-.0026037 .0013454
SEX		-.031032	.0106884	-2.90	0.004	-.0519808 -.0100831
NonWhite		-.0174738	.0255935	-0.68	0.495	-.0676362 .0326886
householdsize		.007873	.0048741	1.62	0.106	-.0016801 .017426
SES		-.0020421	.0080259	-0.25	0.799	-.0177726 .0136885
LE8_TOTALSCORE		-.0001094	.0000569	-1.92	0.055	-.000221 2.20e-06
_cons		.1205383	.0728387	1.65	0.098	-.022223 .2632995
sigma2						
_cons		.9994313	.0074748	133.71	0.000	.984781 1.014082

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.197416	.1593741	7.51	0.000	.8850487 1.509784
ereri_cde	1.198126	.159397	7.52	0.000	.8857142 1.510539
ereri_intref	.0001633	.0033249	0.05	0.961	-.0063535 .00668
ereri_intmed	-.0014922	.0030951	-0.48	0.630	-.0075585 .004574
ereri_pie	.0006187	.0008765	0.71	0.480	-.0010993 .0023367

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztspan1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8905.4114**
 Iteration 1: Log likelihood = **-8821.1202**
 Iteration 2: Log likelihood = **-8811.7215**
 Iteration 3: Log likelihood = **-8811.616**
 Iteration 4: Log likelihood = **-8811.6159**
 Refining estimates:
 Iteration 0: Log likelihood = **-8811.6159**

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	187.59
Log likelihood =	-8811.6159	Prob > chi2 =	0.0000

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.150609	.1592841	10.34	0.000	1.860019 2.486597
ztspan1	.921198	.0338784	-2.23	0.026	.8571342 .9900501
_infectionburXztspan1_000	1.097631	.0633259	1.61	0.106	.9802748 1.229037
AGE	1.039852	.01328	3.06	0.002	1.014147 1.066209
SEX	.7113225	.0514132	-4.71	0.000	.6173666 .8195774
NonWhite	1.119859	.1906905	0.66	0.506	.8020841 1.563531
householdsize	.939177	.0396791	-1.49	0.137	.8645403 1.020257
SES	.8357696	.0415878	-3.61	0.000	.7581077 .9213873
LE8_TOTALSCORE	.9989704	.000358	-2.87	0.004	.9982689 .9996724

-> Model for the mediator

Iteration 0: Log likelihood = **-47125.535**
 Iteration 1: Log likelihood = **-47125.535**

Linear regression (Maximum Likelihood)	Number of obs =	35,755
	Wald chi2(7) =	7995.99
Log likelihood =	Prob > chi2 =	0.0000

<u>ztspan1</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0464181	.0139573	3.33	0.001	.0190623 .0737738
AGE	.0357113	.000911	39.20	0.000	.0339258 .0374968
SEX	-.7352984	.0096651	-76.08	0.000	-.7542416 -.7163553
NonWhite	.0918755	.0231431	3.97	0.000	.0465158 .1372351
householdsize	.0058027	.0044074	1.32	0.188	-.0028356 .0144411
SES	.0173323	.0072575	2.39	0.017	.0031079 .0315568
LE8_TOTALSCORE	-.0001258	.0000515	-2.44	0.015	-.0002267 -.0000249
_cons	-.9828563	.0658649	-14.92	0.000	-1.111949 -.8537634
sigma2					
_cons	.8172157	.006112	133.71	0.000	.8052364 .829195

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.144619	.1585625	7.22	0.000	.8338421 1.455396
ereri_cde	1.146839	.1590184	7.21	0.000	.8351685 1.458509
ereri_intref	-.003322	.0027877	-1.19	0.233	-.0087858 .0021418
ereri_intmed	.0049049	.005129	0.96	0.339	-.0051477 .0149575
ereri_pie	-.0038028	.0020481	-1.86	0.063	-.0078169 .0002113

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztst
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04693 2.215 -.07398 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8808.2439

Iteration 1: Log likelihood = -8720.1266

Iteration 2: Log likelihood = -8712.5747

Iteration 3: Log likelihood = -8712.557

Iteration 4: Log likelihood = -8712.557

Refining estimates:

Iteration 0: Log likelihood = -8712.557

Cox regression with Breslow method for ties

No. of subjects = 35,544 Number of obs = 35,544

No. of failures = 942

Time at risk = 431,749.552

Log likelihood = -8712.557

LR chi2(9) = 191.37

Prob > chi2 = 0.0000

-> Model for the mediator

Iteration 0: Log likelihood = -50402.411
Iteration 1: Log likelihood = -50402.411

Linear regression (Maximum Likelihood) Number of obs = 35,544
Log likelihood = -50402.411 Wald chi2(7) = 63.74
Prob > chi2 = 0.0000

	ztst	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0012449	.0154599	0.08	0.936	-.029056 .0315457
AGE		-.0045005	.0010122	-4.45	0.000	-.0064844 -.0025167
SEX		.0103089	.010713	0.96	0.336	-.0106882 .0313061
NonWhite		-.0515625	.0255512	-2.02	0.044	-.1016419 -.0014831
householdsiz		-.003161	.0050808	-0.62	0.534	-.0131191 .0067971
SES		-.0165022	.0080486	-2.05	0.040	-.0322771 -.0007272
LE8_TOTALSCORE		-.0003309	.0000571	-5.80	0.000	-.0004428 -.000219
	_cons	.4286897	.0733876	5.84	0.000	.2848527 .5725268
sigma2						
	_cons	.9981819	.0074876	133.31	0.000	.9835065 1.012857

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.21725	.1614743	7.54	0.000	.9007657 1.533733
ereri_cde	1.221404	.1616333	7.56	0.000	.9046089 1.5382
ereri_intref	-.0040617	.0062153	-0.65	0.513	-.0162435 .0081202
ereri_intmed	.0000355	.000476	0.07	0.941	-.0008975 .0009685
ereri_pie	-.0001287	.0015984	-0.08	0.936	-.0032614 .0030041

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztxlna
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8985.4467
 Iteration 1: Log likelihood = -8893.3441
 Iteration 2: Log likelihood = -8885.1895
 Iteration 3: Log likelihood = -8885.1612
 Iteration 4: Log likelihood = -8885.1612
 Refining estimates:
 Iteration 0: Log likelihood = -8885.1612

Cox regression with Breslow method for ties

No. of subjects = 36,164	Number of obs = 36,164
No. of failures = 960	
Time at risk = 439,440.668	
Log likelihood = -8885.1612	LR chi2(9) = 200.57 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.209626	.1595105	10.98	0.000	1.918101 2.545459
ztxlna	.9076953	.0353251	-2.49	0.013	.8410341 .9796401
_infectionburXztxlna_000	1.011101	.0727419	0.15	0.878	.8781249 1.164214
AGE	1.038119	.0131117	2.96	0.003	1.012736 1.064138
SEX	.7332754	.0480541	-4.73	0.000	.6448889 .8337758
NonWhite	1.02133	.1783087	0.12	0.904	.7253692 1.438046
householdsize	.9437475	.0393238	-1.39	0.165	.8697374 1.024055
SES	.80821	.0400206	-4.30	0.000	.7334573 .8905814
LE8_TOTALSCORE	.9989154	.0003579	-3.03	0.002	.9982141 .9996171

-> Model for the mediator

Iteration 0: Log likelihood = -50935.491
 Iteration 1: Log likelihood = -50935.491

Linear regression (Maximum Likelihood)

Log likelihood = -50935.491	Number of obs = 36,164
	Wald chi2(7) = 764.98
	Prob > chi2 = 0.0000

ztxlna	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0202258	.0151991	1.33	0.183	-.009564 .0500155
AGE	.0003384	.0009945	0.34	0.734	-.0016107 .0022875
SEX	-.1148091	.0105209	-10.91	0.000	-.1354296 -.0941885
NonWhite	.054472	.0252275	2.16	0.031	.005027 .1039169
householdsize	.0003519	.0049895	0.07	0.944	-.0094273 .010131
SES	-.0310714	.0079087	-3.93	0.000	-.0465722 -.0155707
LE8_TOTALSCORE	-.0012504	.000056	-22.33	0.000	-.0013602 -.0011407
_cons	.7730796	.0720744	10.73	0.000	.6318165 .9143427
sigma2					
_cons	.979258	.0072824	134.47	0.000	.9649848 .9935312

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.20355	.1588815	7.58	0.000	.8921476 1.514951
ereri_cde	1.203757	.1586188	7.59	0.000	.8928696 1.514644
ereri_intref	.0036205	.0122348	0.30	0.767	-.0203593 .0276003
ereri_intmed	-.0018707	.0031685	-0.59	0.555	-.0080809 .0043395
ereri_pie	-.0019569	.001666	-1.17	0.240	-.0052221 .0013083

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztxndc15
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04641 2.217 -.0748 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9132.2436**
 Iteration 1: Log likelihood = **-9044.8718**
 Iteration 2: Log likelihood = **-9035.8884**
 Iteration 3: Log likelihood = **-9035.8601**
 Iteration 4: Log likelihood = **-9035.8601**
 Refining estimates:
 Iteration 0: Log likelihood = **-9035.8601**

Cox regression with Breslow method for ties

No. of subjects =	36,540	Number of obs =	36,540
No. of failures =	975		
Time at risk =	443,893.259	LR chi2(9) =	192.77
Log likelihood =	-9035.8601	Prob > chi2 =	0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.247488	.1609814	11.31	0.000	1.953117 2.586227
ztxndc15		.9926092	.0384985	-0.19	0.848	.9199502 1.071007
_infectionburXztxndc15_000		1.035284	.0728338	0.49	0.622	.9019374 1.188346
AGE		1.033822	.0129935	2.65	0.008	1.008666 1.059605
SEX		.7668174	.04977	-4.09	0.000	.6752195 .8708411
NonWhite		1.062352	.1831357	0.35	0.726	.7577615 1.489377
householdsize		.9316032	.03949	-1.67	0.095	.8573323 1.012308
SES		.8223621	.0405749	-3.96	0.000	.746561 .9058596
LE8_TOTALSCORE		.9990583	.0003546	-2.65	0.008	.9983636 .9997535

-> Model for the mediator

Iteration 0: Log likelihood = **-51515.952**
 Iteration 1: Log likelihood = **-51515.952**

Linear regression (Maximum Likelihood)	Number of obs =	36,540
	Wald chi2(7) =	669.18
Log likelihood =	-51515.952	Prob > chi2 = 0.0000

	ztxndc15	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0827844	.0151414	5.47	0.000	.0531077 .112461
AGE		.0049445	.0009874	5.01	0.000	.0030092 .0068799
SEX		.0641435	.0104801	6.12	0.000	.0436028 .0846841
NonWhite		-.2811901	.0251175	-11.19	0.000	-.3304196 -.2319607
householdsize		.0025268	.004772	0.53	0.596	-.0068262 .0118798
SES		-.0834166	.007867	-10.60	0.000	-.0988356 -.0679976
LE8_TOTALSCORE		-.0008502	.0000558	-15.24	0.000	-.0009595 -.0007408
_cons		.0195386	.0714022	0.27	0.784	-.1204071 .1594843
sigma2						
_cons		.9819889	.007265	135.17	0.000	.9677497 .9962281

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.25243	.1607296	7.79	0.000	.9374055 1.567454
ereri_cde	1.247348	.1609822	7.75	0.000	.9318289 1.562868
ereri_intref	4.45e-06	.0021881	0.00	0.998	-.0042841 .004293
ereri_intmed	.0056909	.0114488	0.50	0.619	-.0167483 .02813
ereri_pie	-.0006139	.0032108	-0.19	0.848	-.006907 .0056791

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztxndc5
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04637 2.216 -.07448 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9160.406

Iteration 1: Log likelihood = -9070.7756

Iteration 2: Log likelihood = -9062.431

Iteration 3: Log likelihood = -9062.4087

Iteration 4: Log likelihood = -9062.4087

Refining estimates:

Iteration 0: Log likelihood = -9062.4087

Cox regression with Breslow method for ties

No. of subjects = 36,751 Number of obs = 36,751

No. of failures = 977

Time at risk = 446,451.479

Log likelihood = -9062.4087

LR chi2(9) = 195.99

Prob > chi2 = 0.0000

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.235412	.1594742	11.28	0.000	1.943716 2.570883
ztxndc5		.9560521	.0373653	-1.15	0.250	.8855521 1.032165
_infectionburXztxndc5_000		.9765564	.0707215	-0.33	0.743	.8473326 1.125488
AGE		1.034649	.0129705	2.72	0.007	1.009537 1.060386
SEX		.754474	.0489324	-4.34	0.000	.6644136 .8567419
NonWhite		1.086766	.1847621	0.49	0.625	.7787939 1.516525
householdszie		.9327039	.0394696	-1.65	0.100	.8584661 1.013361
SES		.8146312	.0400417	-4.17	0.000	.7398128 .8970162
LE8_TOTALSCORE		.9989744	.0003552	-2.89	0.004	.9982786 .9996708

-> Model for the mediator

Iteration 0: Log likelihood = **-51828.151**
 Iteration 1: Log likelihood = **-51828.151**

Linear regression (Maximum Likelihood) Number of obs = 36,751
 Wald chi2(7) = 643.08
 Prob > chi2 = 0.0000

Log likelihood = **-51828.151**

	ztxndc5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0634902	.0150941	4.21	0.000	.0339064 .0930741
AGE		.0054622	.0009877	5.53	0.000	.0035263 .0073981
SEX		.0052288	.0104558	0.50	0.617	-.0152641 .0257218
NonWhite		.0077169	.0250835	0.31	0.758	-.0414458 .0568797
householdszie		-.000888	.0049666	-0.18	0.858	-.0106223 .0088462
SES		-.0548333	.0078522	-6.98	0.000	-.0702233 -.0394433
LE8_TOTALSCORE		-.0011186	.0000557	-20.09	0.000	-.0012278 -.0010095
_cons		.2119592	.0716173	2.96	0.003	.0715919 .3523264
sigma2						
_cons		.9827759	.0072499	135.56	0.000	.9685662 .9969855

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.229103	.1591231	7.72	0.000	.9172277 1.540979
ereri_cde	1.233698	.1592608	7.75	0.000	.9215521 1.545843
ereri_intref	.0051449	.0106881	0.48	0.630	-.0158034 .0260931
ereri_intmed	-.0068898	.0092301	-0.75	0.455	-.0249805 .0112008
ereri_pie	-.0028494	.0025651	-1.11	0.267	-.0078769 .0021782

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): ztxnrd1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.19 1.531 .04638 2.215 -.07464 500.5

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9121.8147
 Iteration 1: Log likelihood = -9028.8222
 Iteration 2: Log likelihood = -9020.4554
 Iteration 3: Log likelihood = -9020.4324
 Iteration 4: Log likelihood = -9020.4324
 Refining estimates:
 Iteration 0: Log likelihood = -9020.4324

Cox regression with Breslow method for ties

No. of subjects =	36,459	Number of obs =	36,459
No. of failures =	974		
Time at risk =	442,828.345	LR chi2(9) =	202.76
Log likelihood =	-9020.4324	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.243598	.16059	11.29	0.000	1.949928 2.581497
ztxnrd1	.884267	.035731	-3.04	0.002	.8169369 .9571463
_infectionburXztxnrd1_000	1.058611	.0767913	0.79	0.432	.9183127 1.220344
AGE	1.035946	.0130145	2.81	0.005	1.010749 1.061771
SEX	.7490174	.0486754	-4.45	0.000	.6594411 .8507615
NonWhite	1.11323	.189377	0.63	0.528	.7975962 1.553771
householdsize	.9389104	.0393096	-1.51	0.132	.8649413 1.019205
SES	.8232074	.0404833	-3.96	0.000	.7475655 .906503
LE8_TOTALSCORE	.9988942	.0003565	-3.10	0.002	.9981957 .9995931

-> Model for the mediator

Iteration 0: Log likelihood = -51311.019
 Iteration 1: Log likelihood = -51311.019

Linear regression (Maximum Likelihood)
 Number of obs = 36,459
 Wald chi2(7) = 852.95
 Log likelihood = -51311.019 Prob > chi2 = 0.0000

ztxnr1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.0037338	.0151066	0.25	0.805	-.0258747 .0333422
AGE	.0006922	.0009887	0.70	0.484	-.0012456 .0026301
SEX	-.0657142	.0104681	-6.28	0.000	-.0862313 -.0451971
NonWhite	.2702411	.0250972	10.77	0.000	.2210515 .3194308
householdsize	-.0032062	.0049744	-0.64	0.519	-.0129559 .0065435
SES	-.0232285	.0078625	-2.95	0.003	-.0386388 -.0078182
LE8_TOTALSCORE	-.0013199	.0000557	-23.68	0.000	-.0014292 -.0012107
_cons	.7119613	.071703	9.93	0.000	.5714259 .8524966
sigma2					
_cons	.9771133	.007237	135.02	0.000	.9629291 .9912976

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.231211	.1593929	7.72	0.000	.9188068 1.543616
ereri_cde	1.234362	.1591877	7.75	0.000	.92236 1.546364
ereri_intref	-.0026007	.0100009	-0.26	0.795	-.0222022 .0170007
ereri_intmed	-.0000911	.0006438	-0.14	0.887	-.0013529 .0011707
ereri_pie	-.0004591	.0018633	-0.25	0.805	-.0041112 .0031929

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): ztymp
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04634 2.218 -.0755 500.4

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9013.3855
 Iteration 1: Log likelihood = -8921.4333
 Iteration 2: Log likelihood = -8910.8008
 Iteration 3: Log likelihood = -8910.7465
 Iteration 4: Log likelihood = -8910.7465
 Refining estimates:
 Iteration 0: Log likelihood = -8910.7465

Cox regression with Breslow method for ties

No. of subjects =	36,207	Number of obs =	36,207
No. of failures =	963		
Time at risk =	439,846.269	LR chi2(9) =	205.28
Log likelihood =	-8910.7465	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.29076	.1639936	11.58	0.000	1.990869 2.635824
ztymp		.934299	.0371096	-1.71	0.087	.8643245 1.009939
_infectionburXztymp_000		.9636893	.0704642	-0.51	0.613	.8350219 1.112183
AGE		1.033186	.0130487	2.59	0.010	1.007925 1.059081
SEX		.7444438	.048667	-4.51	0.000	.6549163 .8462098
NonWhite		1.018368	.1802066	0.10	0.918	.719912 1.440556
householdszie		.925845	.040018	-1.78	0.075	.8506417 1.007697
SES		.8177389	.0405798	-4.05	0.000	.7419494 .9012703
LE8_TOTALSCORE		.9990195	.0003568	-2.75	0.006	.9983203 .9997191

-> Model for the mediator

Iteration 0: Log likelihood = -51243.839
 Iteration 1: Log likelihood = -51243.839

Linear regression (Maximum Likelihood)	Number of obs =	36,207	
	Wald chi2(7) =	263.29	
Log likelihood =	-51243.839	Prob > chi2 =	0.0000

	ztymp	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0273723	.0152732	1.79	0.073	-.0025627 .0573073
AGE		-.0003385	.000998	-0.34	0.734	-.0022946 .0016176
SEX		-.0053568	.0105863	-0.51	0.613	-.0261055 .015392
NonWhite		.1003169	.0253801	3.95	0.000	.0505728 .150061
householdszie		-.0084959	.0048133	-1.77	0.078	-.0179299 .000938
SES		-.0500743	.0079452	-6.30	0.000	-.0656466 -.0345021
LE8_TOTALSCORE		-.0006534	.0000564	-11.58	0.000	-.000764 -.0005428
_cons		.3621331	.0721141	5.02	0.000	.2207921 .5034741
sigma2						
_cons		.9927533	.0073784	134.55	0.000	.978292 1.007215

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.291774	.1636616	7.89	0.000	.9710031 1.612545
ereri_cde	1.287471	.1634982	7.87	0.000	.9670207 1.607922
ereri_intref	.0108954	.0155178	0.70	0.483	-.019519 .0413098
ereri_intmed	-.0047343	.0048298	-0.98	0.327	-.0142006 .0047319
ereri_pie	-.0018585	.0015003	-1.24	0.215	-.004799 .0010821

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): ztyro3
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04649 2.218 -.07578 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9064.8284

Iteration 1: Log likelihood = -8975.1486

Iteration 2: Log likelihood = -8965.962

Iteration 3: Log likelihood = -8965.9368

Iteration 4: Log likelihood = -8965.9368

Refining estimates:

Iteration 0: Log likelihood = -8965.9368

Cox regression with Breslow method for ties

No. of subjects = 36,441 Number of obs = 36,441

No. of failures = 968

Time at risk = 442,700.115

LR chi2(9) = 197.78

Log likelihood = -8965.9368

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.282574	.1630321	11.55	0.000	1.984395 2.625559
ztyro3	.9660798	.0375302	-0.89	0.374	.8952526 1.04251
_infectionburXztyro3_000	1.000916	.0690499	0.01	0.989	.8743314 1.145827
AGE	1.033166	.0130209	2.59	0.010	1.007958 1.059004
SEX	.7555263	.0494995	-4.28	0.000	.6644798 .8590481
NonWhite	1.012221	.1791308	0.07	0.945	.7155499 1.431894
householdszie	.9268655	.0398921	-1.76	0.078	.8518854 1.008445
SES	.8248816	.0408176	-3.89	0.000	.7486377 .9088905
LE8_TOTALSCORE	.9990338	.0003562	-2.71	0.007	.998336 .999732

-> Model for the mediator

Iteration 0: Log likelihood = -51443.507
 Iteration 1: Log likelihood = -51443.507

Linear regression (Maximum Likelihood)
 Number of obs = 36,441
 Wald chi2(7) = 530.90
 Log likelihood = -51443.507 Prob > chi2 = 0.0000

	ztyro3	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr	.0355467	.0151724	2.34	0.019	.0058094	.065284
AGE	-.0044273	.0009909	-4.47	0.000	-.0063695	-.0024851
SEX	.1612115	.0105138	15.33	0.000	.1406048	.1818182
NonWhite	.0430154	.0251748	1.71	0.088	-.0063263	.0923571
householdszie	-.0057099	.0047847	-1.19	0.233	-.0150877	.0036679
SES	-.05746	.0078897	-7.28	0.000	-.0729236	-.0419964
LE8_TOTALSCORE	-.000717	.0000561	-12.79	0.000	-.0008269	-.0006071
_cons	.3798245	.0716189	5.30	0.000	.239454	.520195
sigma2						
_cons	.9856135	.0073017	134.98	0.000	.9713024	.9999247

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.27977	.1627507	7.86	0.000	.9607843 1.598755
ereri_cde	1.281603	.1628584	7.87	0.000	.9624066 1.6008
ereri_intref	.0008905	.0051945	0.17	0.864	-.0092905 .0110715
ereri_intmed	-.001498	.0048802	-0.31	0.759	-.0110631 .008067
ereri_pie	-.0012259	.001475	-0.83	0.406	-.0041169 .0016651

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdszie SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zubac1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9057.6167
 Iteration 1: Log likelihood = -8971.5908
 Iteration 2: Log likelihood = -8959.1333
 Iteration 3: Log likelihood = -8959.0031
 Iteration 4: Log likelihood = -8959.0031
 Refining estimates:
 Iteration 0: Log likelihood = -8959.0031

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	197.23
Log likelihood =	-8959.0031	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.23763	.1609852	11.19	0.000	1.943341 2.576485
zubac1	.9757716	.0379125	-0.63	0.528	.9042233 1.052981
_infectionburXzubac1_000	1.144215	.0806502	1.91	0.056	.9965762 1.313726
AGE	1.031434	.0129957	2.46	0.014	1.006275 1.057222
SEX	.7530189	.0494214	-4.32	0.000	.6621259 .856389
NonWhite	1.079251	.1836395	0.45	0.654	.773191 1.506463
householdsize	.9363613	.0393169	-1.57	0.117	.8623872 1.016681
SES	.8153199	.0402422	-4.14	0.000	.7401416 .8981343
LE8_TOTALSCORE	.9990646	.0003548	-2.63	0.008	.9983694 .9997603

-> Model for the mediator

Iteration 0: Log likelihood = -51045.053	Number of obs = 36,264
Iteration 1: Log likelihood = -51045.053	Wald chi2(7) = 831.05
Linear regression (Maximum Likelihood)	Prob > chi2 = 0.0000
Log likelihood = -51045.053	

	zubac1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.011697	.0151524	0.77	0.440	-.0180011 .0413951
AGE		.0036442	.0009894	3.68	0.000	.0017049 .0055834
SEX		-.2678416	.0104959	-25.52	0.000	-.2884131 -.2472701
NonWhite		.1680098	.025115	6.69	0.000	.1187854 .2172343
householdsize		-.0046577	.0047734	-0.98	0.329	-.0140134 .004698
SES		.0435867	.0078718	5.54	0.000	.0281583 .0590151
LE8_TOTALSCORE		-.0004153	.0000559	-7.43	0.000	-.0005248 -.0003057
_cons		.4029849	.0715065	5.64	0.000	.2628347 .5431351
sigma2						
_cons		.9775698	.0072598	134.66	0.000	.9633409 .9917988

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.252697	.1612421	7.77	0.000	.9366686 1.568726
ereri_cde	1.237217	.1609243	7.69	0.000	.921811 1.552623
ereri_intref	.0125787	.0141905	0.89	0.375	-.0152342 .0403916
ereri_intmed	.0031885	.0044419	0.72	0.473	-.0055174 .0118944
ereri_pie	-.0002868	.0005869	-0.49	0.625	-.0014372 .0008635

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zulbp2
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.17 1.532 .0464 2.216 -.07458 500.7

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8985.4467**
 Iteration 1: Log likelihood = **-8896.0928**
 Iteration 2: Log likelihood = **-8888.1461**
 Iteration 3: Log likelihood = **-8888.1202**
 Iteration 4: Log likelihood = **-8888.1202**
 Refining estimates:
 Iteration 0: Log likelihood = **-8888.1202**

Cox regression with Breslow method for ties

No. of subjects =	36,164	Number of obs =	36,164
No. of failures =	960		
Time at risk =	439,440.668	LR chi2(9) =	194.65
Log likelihood =	-8888.1202	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.212698	.1640287	10.71	0.000	1.913471 2.558716
zulbp2		1.059975	.0418907	1.47	0.141	.98097 1.145343
_infectionburXzulbp2_000		.9562833	.0638762	-0.67	0.503	.8389372 1.090043
AGE		1.035905	.0131319	2.78	0.005	1.010484 1.061966
SEX		.7349821	.0482113	-4.69	0.000	.6463117 .8358176
NonWhite		1.050293	.1846103	0.28	0.780	.7442088 1.482267
householdszie		.9434361	.0393626	-1.40	0.163	.8693569 1.023828
SES		.8137032	.0403879	-4.15	0.000	.7382728 .8968404
LE8_TOTALSCORE		.9990609	.0003573	-2.63	0.009	.9983609 .9997614

-> Model for the mediator

Iteration 0: Log likelihood = **-50057.505**
 Iteration 1: Log likelihood = **-50057.505**

Linear regression (Maximum Likelihood)	Number of obs =	36,164
	Wald chi2(7) =	2602.35
Log likelihood =	Prob > chi2 =	0.0000

	<u>zulbp2</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.2211595	.0148346	14.91	0.000	.1920843 .2502347
AGE		.0224561	.0009706	23.14	0.000	.0205537 .0243584
SEX		.1450011	.0102685	14.12	0.000	.1248752 .1651271
NonWhite		-.6682264	.0246224	-27.14	0.000	-.7164854 -.6199673
householdszie		.0013567	.0048698	0.28	0.781	-.0081879 .0109013
SES		-.1189215	.007719	-15.41	0.000	-.1340505 -.1037926
LE8_TOTALSCORE		-.0008539	.0000546	-15.63	0.000	-.000961 -.0007468
_cons		-1.15737	.0703456	-16.45	0.000	-1.295245 -1.019495
sigma2						
_cons		.9328452	.0069372	134.47	0.000	.9192485 .9464419

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.219056	.1607481	7.58	0.000	.9039956 1.534117
ereri_cde	1.212945	.1639737	7.40	0.000	.8915623 1.534328
ereri_intref	-.0005258	.0023789	-0.22	0.825	-.0051884 .0041367
ereri_intmed	-.0063277	.02793	-0.23	0.821	-.0610696 .0484142
ereri_pie	.0129648	.0088968	1.46	0.145	-.0044726 .0304022

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zumod
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04652 2.216 -.07543 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -9193.1173

Iteration 1: Log likelihood = -9107.2567

Iteration 2: Log likelihood = -9095.3531

Iteration 3: Log likelihood = -9095.2129

Iteration 4: Log likelihood = -9095.2129

Refining estimates:

Iteration 0: Log likelihood = -9095.2129

Cox regression with Breslow method for ties

No. of subjects = 36,782 Number of obs = 36,782

No. of failures = 981

Time at risk = 446,830.869

LR chi2(9) = 195.81

Log likelihood = -9095.2129

Prob > chi2 = 0.0000

-> Model for the mediator

Iteration 0: Log likelihood = -50163.584
Iteration 1: Log likelihood = -50163.584

Linear regression (Maximum Likelihood) Number of obs = 36,782
Log likelihood = -50163.584 Wald chi2(7) = 4286.55
Prob > chi2 = 0.0000

	zumod	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.1907252	.0143993	-13.25	0.000	-.2189472
AGE		-.0091871	.00094	-9.77	0.000	-.0110294
SEX		.4764212	.0099755	47.76	0.000	.4568696
NonWhite		-.0272078	.0238803	-1.14	0.255	-.0740123
householdsiz		.003696	.0045457	0.81	0.416	-.0052135
SES		.051864	.0074838	6.93	0.000	.0371961
LE8_TOTALSCORE		.0016878	.0000531	31.77	0.000	.0015837
_cons		-.9976348	.0679572	-14.68	0.000	-.1.130829
sigma2						
_cons		.8956002	.0066041	135.61	0.000	.8826565
						.9085439

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.242986	.1607071	7.73	0.000	.9280062 1.557966
ereri_cde	1.219963	.163766	7.45	0.000	.8989877 1.540939
ereri_intref	.0000935	.0027376	0.03	0.973	-.005272 .0054591
ereri_intmed	.0161656	.0244545	0.66	0.509	-.0317643 .0640955
ereri_pie	.006764	.0076649	0.88	0.378	-.008259 .0217869

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```

Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zuso1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
Model for the mediator (mreg): linear

Referent exposure level (a0):          0
Actual exposure level (a1):           1
Mediator level for the decomposition (m): 0
Fixed values of the covariates (c):    60.18 1.531 .04658 2.216 -.07524 500.8

```

-> Model for the outcome

```

Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid

Iteration 0: Log likelihood = -9057.6167
Iteration 1: Log likelihood = -8966.3761
Iteration 2: Log likelihood = -8957.9867
Iteration 3: Log likelihood = -8957.9679
Iteration 4: Log likelihood = -8957.9679
Refining estimates:
Iteration 0: Log likelihood = -8957.9679

```

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	199.30
Log likelihood =	-8957.9679	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.261271	.162142	11.38	0.000	1.964799 2.602478
zuso1	.9127061	.0351517	-2.37	0.018	.8463461 .9842691
_infectionburXzuso1_000	1.057859	.0749862	0.79	0.427	.9206411 1.215528
AGE	1.032257	.0129915	2.52	0.012	1.007106 1.058037
SEX	.7534403	.0490755	-4.35	0.000	.6631408 .856036
NonWhite	1.090746	.1855226	0.51	0.610	.7815278 1.522308
householdsize	.9372397	.0393233	-1.54	0.122	.8632513 1.01757
SES	.8153615	.0402164	-4.14	0.000	.740229 .8981199
LE8_TOTALSCORE	.9989896	.0003561	-2.84	0.005	.9982919 .9996877

-> Model for the mediator

Iteration 0: Log likelihood = -51258.259	Number of obs = 36,264
Iteration 1: Log likelihood = -51258.259	Wald chi2(7) = 397.42
Log likelihood = -51258.259	Prob > chi2 = 0.0000

	zusol	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0106301	.0152417	-0.70	0.486	-.0405033
AGE		-.0014048	.0009953	-1.41	0.158	-.0033554
SEX		.0199279	.0105578	1.89	0.059	-.0007649
NonWhite		.0504209	.0252631	2.00	0.046	.0009062
householdsize		.0030217	.0048016	0.63	0.529	-.0063892
SES		-.0288569	.0079182	-3.64	0.000	-.0443764
LE8_TOTALSCORE		-.001021	.0000562	-18.16	0.000	-.0011312
_cons		.5555478	.0719282	7.72	0.000	.4145713
sigma2						
_cons		.9891325	.0073457	134.66	0.000	.9747353
						1.00353

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.25436	.1613634	7.77	0.000	.9380933
ereri_cde	1.256247	.1613542	7.79	0.000	.9399984
ereri_intref	-.0027279	.005608	-0.49	0.627	-.0137193
ereri_intmed	-.0001306	.0014987	-0.09	0.931	-.0030679
ereri_pie	.0009714	.0014526	0.67	0.504	-.0018755

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zusp8
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8905.4114**
 Iteration 1: Log likelihood = **-8816.7243**
 Iteration 2: Log likelihood = **-8809.4956**
 Iteration 3: Log likelihood = **-8809.481**
 Refining estimates:
 Iteration 0: Log likelihood = **-8809.481**

Cox regression with Breslow method for ties

No. of subjects = **35,755** Number of obs = **35,755**
 No. of failures = **953**
 Time at risk = **434,342.674**
 Log likelihood = **-8809.481** LR chi2(9) = **191.86**
 Prob > chi2 = **0.0000**

<u>_t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.210154	.1608238	10.90	0.000	1.916391 2.548948
zusp8	.8833869	.0357003	-3.07	0.002	.8161151 .956204
_infectionburXzusp8_000	1.098928	.0804972	1.29	0.198	.9519585 1.268587
AGE	1.03774	.0131749	2.92	0.004	1.012236 1.063886
SEX	.7452097	.0490509	-4.47	0.000	.6550148 .8478244
NonWhite	1.121238	.1907228	0.67	0.501	.803356 1.564902
householdszie	.9382834	.0396638	-1.51	0.132	.8636771 1.019334
SES	.8330286	.0414166	-3.67	0.000	.7556832 .9182903
LE8_TOTALSCORE	.9989144	.0003589	-3.02	0.003	.9982112 .9996181

-> Model for the mediator

Iteration 0: Log likelihood = **-50481.015**
 Iteration 1: Log likelihood = **-50481.015**

Linear regression (Maximum Likelihood) Number of obs = **35,755**
 Log likelihood = **-50481.015** Wald chi2(7) = **508.85**
 Prob > chi2 = **0.0000**

<u>zusp8</u>	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	-.0115821	.0153305	-0.76	0.450	-.0416294 .0184652
AGE	-.0033512	.0010006	-3.35	0.001	-.0053124 -.00139
SEX	-.1191388	.010616	-11.22	0.000	-.1399458 -.0983318
NonWhite	.0744072	.0254202	2.93	0.003	.0245846 .1242299
householdszie	.0006116	.0048411	0.13	0.899	-.0088767 .0101
SES	-.0144841	.0079716	-1.82	0.069	-.0301081 .0011399
LE8_TOTALSCORE	-.0009773	.0000566	-17.28	0.000	-.0010881 -.0008664
_cons	.8689125	.0723454	12.01	0.000	.7271181 1.010707
sigma2					
_cons	.9859405	.0073739	133.71	0.000	.9714879 1.000393

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.195505	.159307	7.50	0.000	.8832688 1.507741
ereri_cde	1.201256	.1593839	7.54	0.000	.8888698 1.513643
ereri_intref	-.0065056	.0060933	-1.07	0.286	-.0184483 .0054371
ereri_intmed	-.0006831	.0018611	-0.37	0.714	-.0043308 .0029646
ereri_pie	.0014371	.0019605	0.73	0.464	-.0024053 .0052795

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zuxs1
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): **cox**

Model for the mediator (mreg): **linear**

Referent exposure level (a0): **0**

Actual exposure level (a1): **1**

Mediator level for the decomposition (m): **0**

Fixed values of the covariates (c): **60.19 1.531 .04669 2.217 -.07551 500.6**

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-8882.1967**

Iteration 1: Log likelihood = **-8796.8311**

Iteration 2: Log likelihood = **-8787.5268**

Iteration 3: Log likelihood = **-8787.4854**

Iteration 4: Log likelihood = **-8787.4854**

Refining estimates:

Iteration 0: Log likelihood = **-8787.4854**

Cox regression with Breslow method for ties

No. of subjects = **35,573** Number of obs = **35,573**

No. of failures = **951**

Time at risk = **432,088.637**

LR chi2(9) = **189.42**

Log likelihood = **-8787.4854** Prob > chi2 = **0.0000**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.24052	.1622814	11.14	0.000	1.943999 2.582269
zuxs1	.9878614	.0388927	-0.31	0.756	.9145 1.067108
_infectionburXzuxs1_000	.9092756	.0678442	-1.27	0.202	.7855691 1.052463
AGE	1.037112	.0131968	2.86	0.004	1.011567 1.063303
SEX	.7376286	.049128	-4.57	0.000	.6473595 .840485
NonWhite	1.105562	.1881372	0.59	0.555	.7920115 1.543246
householdsize	.9378201	.0396758	-1.52	0.129	.8631937 1.018898
SES	.8286901	.0413378	-3.77	0.000	.7515043 .9138036
LE8_TOTALSCORE	.9992041	.0003595	-2.21	0.027	.9984996 .999909

-> Model for the mediator

Iteration 0: Log likelihood = **-49974.436**
 Iteration 1: Log likelihood = **-49974.436**

Linear regression (Maximum Likelihood) Number of obs = 35,573
 Wald chi2(7) = 1016.17
 Log likelihood = **-49974.436** Prob > chi2 = 0.0000

	zuxs1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.0451937	.0152738	2.96	0.003	.0152577 .0751298
AGE		-.0091477	.000996	-9.18	0.000	-.0110998 -.0071957
SEX		-.3085392	.0105686	-29.19	0.000	-.3292534 -.2878251
NonWhite		-.174334	.0252581	-6.90	0.000	-.2238389 -.1248291
householdsize		-.0134324	.0048102	-2.79	0.005	-.0228601 -.0040046
SES		-.0070241	.0079268	-0.89	0.376	-.0225603 .0085121
LE8_TOTALSCORE		-.0003199	.0000563	-5.68	0.000	-.0004302 -.0002096
_cons		1.214187	.0719802	16.87	0.000	1.073109 1.355266
sigma2						
_cons		.9722002	.0072897	133.37	0.000	.9579126 .9864878

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.243371	.1620449	7.67	0.000	.9257693 1.560973
ereri_cde	1.240335	.1622531	7.64	0.000	.9223246 1.558345
ereri_intref	.0139437	.0159277	0.88	0.381	-.017274 .0451613
ereri_intmed	-.0103554	.0076021	-1.36	0.173	-.0252553 .0045445
ereri_pie	-.0005518	.0017881	-0.31	0.758	-.0040563 .0029528

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
 Warning: this analysis assumes a rare outcome.
 Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zvamp5
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04648 2.218 -.07459 500.6

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -8905.4114
 Iteration 1: Log likelihood = -8820.5151
 Iteration 2: Log likelihood = -8813.033
 Iteration 3: Log likelihood = -8813.0155
 Iteration 4: Log likelihood = -8813.0155
 Refining estimates:
 Iteration 0: Log likelihood = -8813.0155

Cox regression with Breslow method for ties

No. of subjects =	35,755	Number of obs =	35,755
No. of failures =	953		
Time at risk =	434,342.674	LR chi2(9) =	184.79
Log likelihood =	-8813.0155	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.199092	.1595355	10.86	0.000	1.907621 2.535098
zvamp5	.944075	.0398676	-1.36	0.173	.8690822 1.025539
_infectionburXzvamp5_000	1.002187	.0765051	0.03	0.977	.8629184 1.163933
AGE	1.037505	.0131811	2.90	0.004	1.011989 1.063664
SEX	.7499829	.0493024	-4.38	0.000	.6593182 .8531151
NonWhite	1.113948	.1895032	0.63	0.526	.7981048 1.554784
householdsize	.9381095	.0396285	-1.51	0.130	.8635676 1.019086
SES	.8326054	.0414314	-3.68	0.000	.7552357 .9179013
LE8_TOTALSCORE	.998966	.0003583	-2.88	0.004	.998264 .9996685

-> Model for the mediator

Iteration 0: Log likelihood = -50613.539
 Iteration 1: Log likelihood = -50613.539

Linear regression (Maximum Likelihood)
 Number of obs = 35,755
 Wald chi2(7) = 241.02
 Log likelihood = -50613.539 Prob > chi2 = 0.0000

	zvamp5	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.039086	.0153875	2.54	0.011	.0089272 .0692449
AGE		.0032564	.0010043	3.24	0.001	.0012879 .0052249
SEX		-.0586828	.0106554	-5.51	0.000	-.079567 -.0377985
NonWhite		-.0073991	.0255146	-0.29	0.772	-.0574068 .0426086
householdsize		-.000316	.0048591	-0.07	0.948	-.0098396 .0092076
SES		-.0243866	.0080012	-3.05	0.002	-.0400687 -.0087046
LE8_TOTALSCORE		-.0006521	.0000568	-11.49	0.000	-.0007634 -.0005409
_cons		.2141047	.0726141	2.95	0.003	.0717837 .3564256
sigma2						
_cons		.9932763	.0074288	133.71	0.000	.9787162 1.007836

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.194044	.1591609	7.50	0.000	.8820941 1.505994
ereri_cde	1.196748	.159197	7.52	0.000	.8847274 1.508768
ereri_intref	.002049	.0088668	0.23	0.817	-.0153296 .0194276
ereri_intmed	-.0025062	.00581	-0.43	0.666	-.0138936 .0088813
ereri_pie	-.0022469	.0018689	-1.20	0.229	-.0059099 .0014161

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zvash1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .04646 2.216 -.07503 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9036.4379**
 Iteration 1: Log likelihood = **-8947.601**
 Iteration 2: Log likelihood = **-8937.6938**
 Iteration 3: Log likelihood = **-8937.6463**
 Iteration 4: Log likelihood = **-8937.6463**
 Refining estimates:
 Iteration 0: Log likelihood = **-8937.6463**

Cox regression with Breslow method for ties

No. of subjects =	36,352	Number of obs =	36,352
No. of failures =	965		
Time at risk =	441,650.762	LR chi2(9) =	197.58
Log likelihood =	-8937.6463	Prob > chi2 =	0.0000

	<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr		2.249	.1618094	11.27	0.000	1.953205 2.58959
zvash1		.9441271	.0369669	-1.47	0.142	.8743837 1.019433
_infectionburXzvash1_000		.9625324	.0701144	-0.52	0.600	.8344699 1.110248
AGE		1.03203	.0130063	2.50	0.012	1.00685 1.057839
SEX		.761098	.0496618	-4.18	0.000	.6697296 .8649314
NonWhite		1.058633	.1824661	0.33	0.741	.7551479 1.484084
householdszie		.9332098	.0397397	-1.62	0.105	.8584833 1.014441
SES		.8179968	.0404045	-4.07	0.000	.742518 .9011483
LE8_TOTALSCORE		.9989689	.0003558	-2.90	0.004	.9982718 .9996664

-> Model for the mediator

Iteration 0: Log likelihood = **-51465.751**
 Iteration 1: Log likelihood = **-51465.751**

Linear regression (Maximum Likelihood)	Number of obs =	36,352	
	Wald chi2(7) =	230.73	
Log likelihood =	-51465.751	Prob > chi2 =	0.0000

	zvash1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0150352	.0152706	-0.98	0.325	-.044965 .0148945
AGE		-.0054586	.0009968	-5.48	0.000	-.0074123 -.0035048
SEX		.0436013	.0105691	4.13	0.000	.0228862 .0643164
NonWhite		.0191308	.0253272	0.76	0.450	-.0305096 .0687711
householdszie		-.0007469	.0048917	-0.15	0.879	-.0103345 .0088406
SES		-.0250286	.0079274	-3.16	0.002	-.040566 -.0094913
LE8_TOTALSCORE		-.0007034	.0000563	-12.50	0.000	-.0008137 -.0005931
_cons		.6148851	.0721114	8.53	0.000	.4735494 .7562209
sigma2						
_cons		.9936655	.0073704	134.82	0.000	.9792198 1.008111

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.258613	.1617072	7.78	0.000	.9416728 1.575553
ereri_cde	1.2471	.1614852	7.72	0.000	.9305949 1.563605
ereri_intref	.0082662	.0130596	0.63	0.527	-.0173302 .0338626
ereri_intmed	.0023821	.0032567	0.73	0.465	-.0040009 .008765
ereri_pie	.0008648	.001058	0.82	0.414	-.0012088 .0029384

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome      (yvar): Age_dementia
Exposure     (avar): infectionburdenhospbr
Mediator     (mvar): zvasn
Covariates   (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.18 1.531 .04628 2.216 -.07517 500.5

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = -8971.199

Iteration 1: Log likelihood = -8885.0637

Iteration 2: Log likelihood = -8876.8816

Iteration 3: Log likelihood = -8876.8618

Iteration 4: Log likelihood = -8876.8618

Refining estimates:

Iteration 0: Log likelihood = -8876.8618

Cox regression with Breslow method for ties

No. of subjects = 35,892 Number of obs = 35,892

No. of failures = 960

Time at risk = 436,065.122

LR chi2(9) = 188.67

Log likelihood = -8876.8618

Prob > chi2 = 0.0000

-> Model for the mediator

Iteration 0: Log likelihood = -50706.399
Iteration 1: Log likelihood = -50706.399

Linear regression (Maximum Likelihood)
Number of obs = 35,892
Log likelihood = -50706.399 Wald chi2(7) = 446.03
Prob > chi2 = 0.0000

	zvasn	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		.04378	.0153167	2.86	0.004	.0137598 .0738002
AGE		.0103334	.0009996	10.34	0.000	.0083741 .0122926
SEX		-.0445765	.0106049	-4.20	0.000	-.0653618 -.0237912
NonWhite		-.1416284	.0254449	-5.57	0.000	-.1914995 -.0917573
householdsiz		.0024428	.0048282	0.51	0.613	-.0070203 .0119059
SES		-.0477807	.0079648	-6.00	0.000	-.0633915 -.0321699
LE8_TOTALSCORE		-.0006709	.0000566	-11.86	0.000	-.0007818 -.00056
_cons		-.2264152	.0722365	-3.13	0.002	-.3679962 -.0848343
sigma2						
	_cons	.9876979	.0073729	133.96	0.000	.9732472 1.002149

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.236351	.1610462	7.68	0.000	.9207061 1.551996
ereri_cde	1.23945	.1611224	7.69	0.000	.9236559 1.555244
ereri_intref	.0002596	.0056372	0.05	0.963	-.0107892 .0113084
ereri_intmed	-.001197	.0059873	-0.20	0.842	-.0129319 .0105379
ereri_pie	-.0021617	.0018653	-1.16	0.246	-.0058177 .0014942

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intre to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.
Warning: this analysis assumes a rare outcome.
Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

Outcome (yvar): Age_dementia
 Exposure (avar): infectionburdenhospbr
 Mediator (mvar): zvat1
 Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE

Model for the outcome (yreg): cox
 Model for the mediator (mreg): linear

Referent exposure level (a0): 0
 Actual exposure level (a1): 1
 Mediator level for the decomposition (m): 0
 Fixed values of the covariates (c): 60.18 1.531 .04658 2.216 -.07524 500.8

-> Model for the outcome

Failure _d: dem_diag==1
 Analysis time _t: Age_dementia
 Enter on or after: time baselineage
 ID variable: n_eid

Iteration 0: Log likelihood = -9057.6167
 Iteration 1: Log likelihood = -8970.1168
 Iteration 2: Log likelihood = -8960.1045
 Iteration 3: Log likelihood = -8960.0503
 Iteration 4: Log likelihood = -8960.0503
 Refining estimates:
 Iteration 0: Log likelihood = -8960.0503

Cox regression with Breslow method for ties

No. of subjects =	36,264	Number of obs =	36,264
No. of failures =	968		
Time at risk =	440,524.906	LR chi2(9) =	195.13
Log likelihood =	-8960.0503	Prob > chi2 =	0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.263437	.1620921	11.41	0.000	1.96703 2.604508
zvat1	1.022798	.039906	0.58	0.563	.9474991 1.10408
_infectionburXzvat1_000	.9116566	.0639761	-1.32	0.188	.7945068 1.04608
AGE	1.031921	.0130043	2.49	0.013	1.006745 1.057726
SEX	.7517531	.0490193	-4.38	0.000	.6615631 .8542386
NonWhite	1.08598	.1847317	0.48	0.628	.7780858 1.515711
householdsize	.9366681	.0393619	-1.56	0.119	.8626118 1.017082
SES	.8172278	.0403095	-4.09	0.000	.7419213 .900178
LE8_TOTALSCORE	.9990644	.0003552	-2.63	0.008	.9983684 .9997609

-> Model for the mediator

Iteration 0: Log likelihood = -51301.928
 Iteration 1: Log likelihood = -51301.928

Linear regression (Maximum Likelihood)
 Number of obs = 36,264
 Wald chi2(7) = 309.23
 Log likelihood = -51301.928 Prob > chi2 = 0.0000

	zvat1	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu						
infectionburdenhospbr		-.0113618	.0152601	-0.74	0.457	-.041271
AGE		.0130251	.0009965	13.07	0.000	.0110721
SEX		.0835736	.0105705	7.91	0.000	.0628558
NonWhite		-.0296927	.0252935	-1.17	0.240	-.0792671
householdsize		-.0032855	.0048073	-0.68	0.494	-.0127077
SES		-.0263928	.0079278	-3.33	0.001	-.0419309
LE8_TOTALSCORE		.000342	.0000563	6.08	0.000	.0002317
_cons		-1.074887	.0720148	-14.93	0.000	-.216034
sigma2						
	_cons	.9915176	.0073634	134.66	0.000	.9770856
						1.00595

-> 4-way decomposition: delta method

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
tereri	1.269835	.1628208	7.80	0.000	.950712
ereri_cde	1.263074	.1620028	7.80	0.000	.9455542
ereri_intref	.0049578	.0091076	0.54	0.586	-.0128927
ereri_intmed	.0020593	.0031876	0.65	0.518	-.0041882
ereri_pie	-.0002561	.000561	-0.46	0.648	-.0013555

tereri=total excess relative risk; ereri_cde=excess relative risk due to controlled direct effect; ereri_intref=excess relative risk due to mediated interaction; ereri_pie=excess relative risk due to pure indirect effect.

Warning: this analysis assumes a rare outcome.

Warning: fixed values for the covariates AGE SEX NonWhite householdsize SES LE8_TOTALSCORE were not provided. All

-> Summary

```
Outcome (yvar): Age_dementia
Exposure (avar): infectionburdenhospbr
Mediator (mvar): zvcam1
Covariates (cvars): AGE SEX NonWhite householdsize SES LE8_TOTALSCORE
```

Model for the outcome (yreg): cox

Model for the mediator (mreg): linear

Referent exposure level (a0): 0

Actual exposure level (a1): 1

Mediator level for the decomposition (m): 0

Fixed values of the covariates (c): 60.19 1.531 .0465 2.216 -.07519 500.6

-> Model for the outcome

```
Failure _d: dem_diag==1
Analysis time _t: Age_dementia
Enter on or after: time baselineage
ID variable: n_eid
```

Iteration 0: Log likelihood = **-9110.8828**
 Iteration 1: Log likelihood = **-9021.3343**
 Iteration 2: Log likelihood = **-9012.4183**
 Iteration 3: Log likelihood = **-9012.3791**
 Iteration 4: Log likelihood = **-9012.3791**
 Refining estimates:
 Iteration 0: Log likelihood = **-9012.3791**

Cox regression with Breslow method for ties

No. of subjects =	36,534	Number of obs =	36,534
No. of failures =	973		
Time at risk =	443,839.498	LR chi2(9) =	197.01
Log likelihood =	-9012.3791	Prob > chi2 =	0.0000

<u>t</u>	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]
infectionburdenhospbr	2.256962	.1659781	11.07	0.000	1.954009 2.606886
zvcam1	1.093738	.0422213	2.32	0.020	1.014039 1.179701
_infectionburXzvcam1_000	.9438083	.0636116	-0.86	0.391	.8270158 1.077094
AGE	1.031954	.0130383	2.49	0.013	1.006713 1.057828
SEX	.7614908	.0495338	-4.19	0.000	.6703403 .8650357
NonWhite	1.116899	.1901414	0.65	0.516	.8000276 1.559276
householdszie	.9343418	.0395564	-1.60	0.109	.8599421 1.015178
SES	.8312718	.041102	-3.74	0.000	.7544936 .9158629
LE8_TOTALSCORE	.9990374	.0003543	-2.72	0.007	.9983432 .9997321

-> Model for the mediator

Iteration 0: Log likelihood = **-51075.766**
 Iteration 1: Log likelihood = **-51075.766**

Linear regression (Maximum Likelihood)	Number of obs =	36,534	
	Wald chi2(7) =	1558.81	
Log likelihood =	-51075.766	Prob > chi2 =	0.0000

	Coefficient	Std. err.	z	P> z	[95% conf. interval]
mu					
infectionburdenhospbr	.1798912	.0149643	12.02	0.000	.1505617 .2092207
AGE	.0259852	.0009759	26.63	0.000	.0240725 .027898
SEX	-.0582257	.010358	-5.62	0.000	-.078527 -.0379244
NonWhite	-.3539757	.0247955	-14.28	0.000	-.4025741 -.3053773
householdszie	.0045456	.0047176	0.96	0.335	-.0047008 .013792
SES	-.1007533	.0077752	-12.96	0.000	-.1159925 -.0855142
LE8_TOTALSCORE	.0002039	.0000552	3.69	0.000	.0000956 .0003122
_cons	-1.60301	.0705368	-22.73	0.000	-1.741259 -1.46476
sigma2					
_cons	.9590524	.0070959	135.16	0.000	.9451447 .9729602

-> 4-way decomposition: delta method