



```

1 .
2 .
3 . use "E:\16GBBACKUPUSB\BACKUP_USB_SEPTEMBER2014\May Baydoun_folder\UK_BIOBANK_PROJECT\UKB_PAPER3_LE8INFECTDEM\DATA\
4 .
5 .
6 . *****TABLE 2*****
7 .
8 .
9 . *****STSET FOR DEMENTIA*****
10 . stset Age_dementia if sample_final2==1, failure(dem_diag==1) enter(baselineage) id(n_eid) scale(1)

```

Survival-time data settings

```

      ID variable: n_eid
      Failure event: dem_diag==1
Observed time interval: (Age_dementia[_n-1], Age_dementia]
      Enter on or after: time baselineage
      Exit on or before: failure
      Keep observations
      if exp: sample_final2==1

```

502,389 total observations

151,052 ignored at outset because of if exp

351,337 observations remaining, representing

351,337 subjects

6,129 failures in single-failure-per-subject data

4,349,876 total analysis time at risk and under observation

At risk from t = 0

Earliest observed entry t = 50.00137

Last observed exit t = 87.63313

```

11 .
12 .
13 . *****OVERALL*****
14 .
15 . **Model 1**
16 .
17 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES LE8_TOTALSCORE if sample_final2==1

```

```

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

```

Iteration 0: log likelihood = -70796.811

Iteration 1: log likelihood = -70406.197

Iteration 2: log likelihood = -70405.096

Iteration 3: log likelihood = -70405.096

Refining estimates:

Iteration 0: log likelihood = -70405.096

Cox regression with Breslow method for ties

No. of subjects = 351,337

No. of failures = 6,129

Time at risk = 4,349,875.9

Log likelihood = -70405.096

Number of obs = 351,337

LR chi2(7) = 783.43

Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.07118	.0284158	2.59	0.010	1.016909	1.128347
AGE	.9240181	.0048691	-15.00	0.000	.914524	.9336107
SEX	.7563185	.01954	-10.81	0.000	.7189742	.7956024
NonWhite	1.123788	.0765123	1.71	0.087	.9834014	1.284215
householdsize	.9572518	.0147888	-2.83	0.005	.9287007	.9866805
SES	.710052	.013736	-17.70	0.000	.683634	.7374909
LE8_TOTALSCORE	.9987974	.0001389	-8.66	0.000	.9985253	.9990696

```

18 .
19 . **Model 2: Interaction with LE8 TOTAL SCORE**
20 . stcox c.infectionburdenbr##c.LE8_TOTALSCOREtert AGE SEX NonWhite householdsize SES if sample_final2==1

```

```

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

```

```

Iteration 0:  log likelihood = -70796.811
Iteration 1:  log likelihood = -70418.428
Iteration 2:  log likelihood = -70417.423
Iteration 3:  log likelihood = -70417.423
Refining estimates:
Iteration 0:  log likelihood = -70417.423

```

Cox regression with Breslow method for ties

```

No. of subjects =      351,337                Number of obs = 351,337
No. of failures =        6,129
Time at risk    = 4,349,875.9

LR chi2(8)      = 758.78
Prob > chi2     = 0.0000

Log likelihood = -70417.423

```

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.196636	.0799968	2.69	0.007	1.049683	1.364162
LE8_TOTALSCOREtert	.9139502	.0186028	-4.42	0.000	.8782071	.951148
c.infectionburdenbr#c.LE8_TOTALSCOREtert	.9425955	.0315893	-1.76	0.078	.8826713	1.006588
AGE	.923738	.0048673	-15.06	0.000	.9142475	.9333271
SEX	.754691	.0194995	-10.89	0.000	.7174244	.7938935
NonWhite	1.12702	.0767396	1.76	0.079	.9862176	1.287925
householdsize	.9572971	.0147978	-2.82	0.005	.9287289	.986744
SES	.7028461	.0135327	-18.31	0.000	.6768167	.7298766

```

21 .
22 . **Stratified analysis by LE8 TERTILES**

```

```

23 .
24 . **LOWEST TERTILE**
25 .
26 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES if sample_final2==1 & LE8_TOTALSCOREtert==1

```

```

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

```

```

Iteration 0: log likelihood = -26270.126
Iteration 1: log likelihood = -26092.539
Iteration 2: log likelihood = -26091.894
Iteration 3: log likelihood = -26091.893
Refining estimates:
Iteration 0: log likelihood = -26091.893

```

Cox regression with Breslow method for ties

```

No. of subjects =      123,145      Number of obs = 123,145
No. of failures =        2,495
Time at risk    = 1,509,919.6

LR chi2(6)      = 356.47
Prob > chi2     = 0.0000
Log likelihood = -26091.893

```

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.152965	.047267	3.47	0.001	1.063948	1.24943
AGE	.9145042	.007433	-11.00	0.000	.9000513	.9291892
SEX	.7625308	.0308549	-6.70	0.000	.7043923	.825468
NonWhite	1.147401	.1139731	1.38	0.166	.9444179	1.394012
householdsize	.9317127	.023534	-2.80	0.005	.88671	.9789994
SES	.6775199	.019726	-13.37	0.000	.6399401	.7173066

```

27 .
28 . **MIDDLE TERTILE**
29 .
30 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES if sample_final2==1 & LE8_TOTALSCOREtert==2

```

```

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

```

```

Iteration 0: log likelihood = -21661.663
Iteration 1: log likelihood = -21554.485
Iteration 2: log likelihood = -21554.334
Iteration 3: log likelihood = -21554.334
Refining estimates:
Iteration 0: log likelihood = -21554.334

```

Cox regression with Breslow method for ties

```

No. of subjects =      119,710      Number of obs = 119,710
No. of failures =        2,063
Time at risk    = 1,484,772.9

LR chi2(6)      = 214.66
Prob > chi2     = 0.0000
Log likelihood = -21554.334

```

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	.9962748	.0461247	-0.08	0.936	.9098524	1.090906
AGE	.921919	.008433	-8.89	0.000	.9055379	.9385964
SEX	.7787055	.034692	-5.61	0.000	.7135945	.8497575
NonWhite	.9460063	.1202806	-0.44	0.662	.7373393	1.213726
householdsize	.9770062	.0239076	-0.95	0.342	.931254	1.025006
SES	.6883473	.0230654	-11.15	0.000	.6445924	.7350722

```

31 .
32 . **HIGHEST TERTILE**
33 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES if sample_final2==1 & LE8_TOTALSCOREtert==3

```

```

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

```

```

Iteration 0:  log likelihood = -16181.35
Iteration 1:  log likelihood = -16130.499
Iteration 2:  log likelihood = -16130.337
Iteration 3:  log likelihood = -16130.337
Refining estimates:
Iteration 0:  log likelihood = -16130.337

```

Cox regression with Breslow method for ties

```

No. of subjects =    108,482
No. of failures =     1,571
Time at risk    = 1,355,183.4

```

Number of obs = 108,482

Log likelihood = -16130.337

```

LR chi2(6)      = 102.03
Prob > chi2     = 0.0000

```

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.046886	.0554204	0.87	0.387	.9437089	1.161343
AGE	.9426099	.0099909	-5.58	0.000	.9232301	.9623966
SEX	.7241298	.0370292	-6.31	0.000	.6550723	.8004672
NonWhite	1.355549	.1872869	2.20	0.028	1.033976	1.777133
householdsize	.9758105	.0290952	-0.82	0.412	.9204193	1.034535
SES	.7851226	.031519	-6.03	0.000	.7257144	.849394

```

34 .
35 .
36 .
37 . *****AMONG MEN*****
38 .
39 .
40 .

```

```

41 .
42 . **Model 1**
43 .
44 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES LE8_TOTALSCORE if SEX==1 & sample_final2==1

```

```

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

```

note: **SEX** omitted because of collinearity.

Iteration 0: log likelihood = -35909.287

Iteration 1: log likelihood = -35705.872

Iteration 2: log likelihood = -35705.222

Iteration 3: log likelihood = -35705.222

Refining estimates:

Iteration 0: log likelihood = -35705.222

Cox regression with Breslow method for ties

No. of subjects = 162,530

Number of obs = 162,530

No. of failures = 3,315

Time at risk = 1,995,864.6

LR chi2(6) = 408.13

Prob > chi2 = 0.0000

Log likelihood = -35705.222

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.107833	.0400316	2.83	0.005	1.032086	1.189138
AGE	.9258795	.0065393	-10.90	0.000	.9131511	.9387853
SEX	1 (omitted)					
NonWhite	1.14822	.103623	1.53	0.126	.9620707	1.370387
householdsize	.9555246	.0197925	-2.20	0.028	.9175088	.9951154
SES	.6905013	.0175887	-14.54	0.000	.6568746	.7258495
LE8_TOTALSCORE	.9989548	.0001914	-5.46	0.000	.9985796	.9993301

```

45 .
46 . **Model 2: Interaction with LE8 TOTAL SCORE**
47 . stcox c.infectionburdenbr#c.LE8_TOTALSCOREttert AGE SEX NonWhite householdsize SES if SEX==1 & sample_final2==1

```

```

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

```

note: **SEX** omitted because of collinearity.

Iteration 0: log likelihood = -35909.287

Iteration 1: log likelihood = -35711.711

Iteration 2: log likelihood = -35711.053

Iteration 3: log likelihood = -35711.053

Refining estimates:

Iteration 0: log likelihood = -35711.053

Cox regression with Breslow method for ties

No. of subjects = 162,530

Number of obs = 162,530

No. of failures = 3,315

Time at risk = 1,995,864.6

LR chi2(7) = 396.47

Prob > chi2 = 0.0000

Log likelihood = -35711.053

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.286151	.1174708	2.76	0.006	1.075344	1.538284
LE8_TOTALSCOREtert	.9442766	.0262473	-2.06	0.039	.8942091	.9971475
c.infectionburdenbr#c.LE8_TOTALSCOREtert	.9223956	.0425404	-1.75	0.080	.8426753	1.009658
AGE	.9252724	.006532	-11.00	0.000	.9125581	.9381638
SEX	1	(omitted)				
NonWhite	1.151768	.103953	1.57	0.117	.9650276	1.374644
householdsize	.955338	.0198176	-2.20	0.028	.9172752	.9949802
SES	.6838044	.0173415	-14.99	0.000	.6506465	.7186521

```

48 .
49 . **Stratification by LE8 TERTILES**
50 .
51 . **LOWEST TERTILE**
52 .
53 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES if SEX==1 & sample_final2==1 & LE8_TOTALSCOREtert==1

```

```

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

```

```

note: SEX omitted because of collinearity.
Iteration 0: log likelihood = -13432.092
Iteration 1: log likelihood = -13328.656
Iteration 2: log likelihood = -13328.465
Iteration 3: log likelihood = -13328.465
Refining estimates:
Iteration 0: log likelihood = -13328.465

```

Cox regression with Breslow method for ties

```

No. of subjects =      61,810                Number of obs = 61,810
No. of failures =       1,362
Time at risk    = 751,539.348

LR chi2(5)      = 207.25
Prob > chi2     = 0.0000

Log likelihood = -13328.465

```

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.187586	.0661077	3.09	0.002	1.064836	1.324487
AGE	.9178415	.0098793	-7.96	0.000	.8986812	.9374103
SEX	1	(omitted)				
NonWhite	1.017863	.1446211	0.12	0.901	.7704563	1.344716
householdsize	.9476301	.03086	-1.65	0.099	.8890354	1.010087
SES	.6456312	.0246847	-11.44	0.000	.5990184	.6958712

```

54 .
55 . **MIDDLE TERTILE**
56 .
57 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES if SEX==1 & sample_final2==1 & LE8_TOTALSCOREtert==2

```

```

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

```

note: **SEX** omitted because of collinearity.

Iteration 0: log likelihood = **-11014.892**

Iteration 1: log likelihood = **-10949.936**

Iteration 2: log likelihood = **-10949.839**

Iteration 3: log likelihood = **-10949.839**

Refining estimates:

Iteration 0: log likelihood = **-10949.839**

Cox regression with Breslow method for ties

No. of subjects = **57,334**

Number of obs = **57,334**

No. of failures = **1,126**

Time at risk = **706,646.333**

LR chi2(5) = **130.11**

Prob > chi2 = **0.0000**

Log likelihood = **-10949.839**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.081868	.0674389	1.26	0.207	.9574456	1.22246
AGE	.9112316	.011182	-7.58	0.000	.8895767	.9334137
SEX	1	(omitted)				
NonWhite	.9629703	.1625091	-0.22	0.823	.6917763	1.340479
householdsize	.9676534	.0318948	-1.00	0.318	.9071172	1.03223
SES	.6775211	.0296507	-8.90	0.000	.6218294	.7382006

```

58 .
59 . **HIGHEST TERTILE**
60 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES if SEX==1 & sample_final2==1 & LE8_TOTALSCOREtert==3

```

```

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

```

note: **SEX** omitted because of collinearity.

Iteration 0: log likelihood = **-7869.8693**

Iteration 1: log likelihood = **-7851.6578**

Iteration 2: log likelihood = **-7851.0421**

Iteration 3: log likelihood = **-7851.0392**

Iteration 4: log likelihood = **-7851.0392**

Refining estimates:

Iteration 0: log likelihood = **-7851.0392**

Cox regression with Breslow method for ties

No. of subjects = **43,386**

Number of obs = **43,386**

No. of failures = **827**

Time at risk = **537,678.938**

LR chi2(5) = **37.66**

Prob > chi2 = **0.0000**

Log likelihood = **-7851.0392**

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.015601	.0747942	0.21	0.834	.8790955	1.173303
AGE	.9613255	.0139581	-2.72	0.007	.9343536	.989076
SEX	1	(omitted)				
NonWhite	1.709053	.2769407	3.31	0.001	1.244011	2.347941
householdsize	.9573146	.0422928	-0.99	0.323	.8779097	1.043902
SES	.7844071	.0422822	-4.50	0.000	.705763	.8718147

```

61 .
62 .
63 .
64 . *****AMONG WOMEN*****
65 .
66 .
67 .
68 .
69 . **Model 1**
70 .
71 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES LE8_TOTALSCORE if SEX==2 & sample_final2==1

```

```

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

```

```

note: SEX omitted because of collinearity.
Iteration 0:  log likelihood = -30609.58
Iteration 1:  log likelihood = -30465.071
Iteration 2:  log likelihood = -30464.733
Iteration 3:  log likelihood = -30464.733
Refining estimates:
Iteration 0:  log likelihood = -30464.733

```

Cox regression with Breslow method for ties

```

No. of subjects =      188,807                Number of obs = 188,807
No. of failures =        2,814
Time at risk    = 2,354,011.3

Log likelihood = -30464.733                LR chi2(6)    = 289.69
                                           Prob > chi2   = 0.0000

```

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.031378	.0402744	0.79	0.429	.9553871	1.113414
AGE	.9206526	.0072942	-10.43	0.000	.9064667	.9350606
SEX	1	(omitted)				
NonWhite	1.099411	.1141735	0.91	0.361	.8969397	1.347588
householdsize	.960006	.0221673	-1.77	0.077	.9175273	1.004451
SES	.7371175	.0219278	-10.25	0.000	.6953688	.7813728
LE8_TOTALSCORE	.9986399	.0002023	-6.72	0.000	.9982435	.9990365


```

72 .
73 . **Model 2: Interaction with LE8 TOTAL SCORE**
74 . stcox c.infectionburdenbr#c.LE8_TOTALSCOREtert AGE SEX NonWhite householdsize SES if SEX==2 & sample_final2==1

```

```

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

```

```

note: SEX omitted because of collinearity.
Iteration 0: log likelihood = -30609.58
Iteration 1: log likelihood = -30470.515
Iteration 2: log likelihood = -30470.245
Iteration 3: log likelihood = -30470.245
Refining estimates:
Iteration 0: log likelihood = -30470.245

```

Cox regression with Breslow method for ties

```

No. of subjects =      188,807          Number of obs = 188,807
No. of failures =       2,814
Time at risk    = 2,354,011.3

LR chi2(7)      = 278.67
Prob > chi2     = 0.0000
Log likelihood = -30470.245

```

	_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
	infectionburdenbr	1.095533	.1075289	0.93	0.353	.903812	1.327922
	LE8_TOTALSCOREtert	.8811954	.0263638	-4.23	0.000	.8310092	.9344126
c.infectionburdenbr#c.LE8_TOTALSCOREtert		.9692137	.0473111	-0.64	0.522	.8807832	1.066523
	AGE	.9206921	.0072957	-10.43	0.000	.9065032	.935103
	SEX	1	(omitted)				
	NonWhite	1.101257	.1143873	0.93	0.353	.8984104	1.349904
	householdsize	.960315	.0221612	-1.75	0.079	.9178475	1.004747
	SES	.7295292	.0215924	-10.65	0.000	.6884129	.7731012

```

75 .
76 . **Stratif SEX==2 by LE8 TERTILES**
77 .
78 . **LOWEST TERTILE**
79 .
80 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES if SEX==2 & sample_final2==1 & LE8_TOTALSCOREtert==1

```

```

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

```

```

note: SEX omitted because of collinearity.
Iteration 0: log likelihood = -11106.178
Iteration 1: log likelihood = -11044.194
Iteration 2: log likelihood = -11043.564
Iteration 3: log likelihood = -11043.558
Iteration 4: log likelihood = -11043.558
Refining estimates:
Iteration 0: log likelihood = -11043.558

```

Cox regression with Breslow method for ties

No. of subjects = 61,335
 No. of failures = 1,133
 Time at risk = 758,380.258

Number of obs = 61,335

Log likelihood = -11043.558

LR chi2(5) = 125.24
 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.114905	.067513	1.80	0.072	.9901324	1.2554
AGE	.9096748	.0112842	-7.63	0.000	.8878249	.9320625
SEX	1 (omitted)					
NonWhite	1.314454	.1827514	1.97	0.049	1.000924	1.726195
householdsize	.9139019	.0364043	-2.26	0.024	.845265	.9881123
SES	.7239577	.0325561	-7.18	0.000	.66288	.790663

81 .
 82 . **MIDDLE TERTILE**
 83 .
 84 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES if SEX==2 & sample_final2==1 & LE8_TOTALSCOREtert==2

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

note: SEX omitted because of collinearity.
 Iteration 0: log likelihood = -9212.595
 Iteration 1: log likelihood = -9178.727
 Iteration 2: log likelihood = -9178.6977
 Iteration 3: log likelihood = -9178.6977
 Refining estimates:
 Iteration 0: log likelihood = -9178.6977

Cox regression with Breslow method for ties

No. of subjects = 62,376
 No. of failures = 937
 Time at risk = 778,126.536

Number of obs = 62,376

Log likelihood = -9178.6977

LR chi2(5) = 67.79
 Prob > chi2 = 0.0000

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	.9049478	.0625627	-1.44	0.149	.7902718	1.036264
AGE	.935606	.0128222	-4.86	0.000	.9108094	.9610776
SEX	1 (omitted)					
NonWhite	.9326574	.1806111	-0.36	0.719	.6380946	1.363199
householdsize	.9912231	.0363423	-0.24	0.810	.9224926	1.065074
SES	.7017709	.0365916	-6.79	0.000	.6335957	.7772818

```

85 .
86 . **HIGHEST TERTILE**
87 . stcox infectionburdenbr AGE SEX NonWhite householdsize SES if SEX==2 & sample_final2==1 & LE8_TOTALSCOREtert==3

```

```

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

```

```

note: SEX omitted because of collinearity.
Iteration 0: log likelihood = -7208.9888
Iteration 1: log likelihood = -7187.2352
Iteration 2: log likelihood = -7187.2234
Iteration 3: log likelihood = -7187.2234
Refining estimates:
Iteration 0: log likelihood = -7187.2234

```

Cox regression with Breslow method for ties

```

No. of subjects =      65,096
No. of failures =       744
Time at risk    = 817,504.486

```

Number of obs = 65,096

```

LR chi2(5)      = 43.53
Prob > chi2     = 0.0000

```

Log likelihood = -7187.2234

_t	Haz. ratio	Std. err.	z	P> z	[95% conf. interval]	
infectionburdenbr	1.081056	.0823837	1.02	0.306	.9310675	1.255208
AGE	.9190139	.0143931	-5.39	0.000	.8912326	.9476612
SEX	1	(omitted)				
NonWhite	.8531878	.2307888	-0.59	0.557	.5021033	1.44976
householdsize	.990615	.0401661	-0.23	0.816	.9149378	1.072552
SES	.7876972	.0474009	-3.97	0.000	.7000627	.8863017

```

88 .
89 .
90 . capture log close

```