

# Event Study (Logged HPPD) Results

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## Results

Table 1: Event-Study with Logged Outcomes

	log(RN HPPD)	log(LPN HPPD)	log(CNA HPPD)	log(Total HPPD)
Government	0.002 (0.032)	-0.026 (0.016)	-0.037 (0.010)	-0.030 (0.007)
Non-profit	0.076 (0.034)	-0.023 (0.029)	0.026 (0.012)	0.026 (0.011)
Chain	0.009 (0.013)	-0.008 (0.008)	-0.020 (0.005)	-0.014 (0.004)
CCRC	-0.022 (0.014)	0.006 (0.011)	0.003 (0.006)	-0.004 (0.006)
SFF	0.108 (0.013)	0.007 (0.008)	-0.000 (0.005)	0.007 (0.004)
Case-mix Q2 (state×mth)	0.011 (0.005)	0.009 (0.003)	0.010 (0.002)	0.009 (0.002)
Case-mix Q3 (state×mth)	0.025 (0.006)	0.018 (0.004)	0.022 (0.002)	0.020 (0.002)
Case-mix Q4 (state×mth)	0.050 (0.008)	0.035 (0.005)	0.030 (0.003)	0.032 (0.003)
Urban	0.003 (0.028)	-0.010 (0.018)	-0.002 (0.010)	0.001 (0.007)
Num.Obs.	620402	621660	626174	626480
R2	0.688	0.659	0.627	0.625
Facility FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
SE type	2-way clustered	2-way clustered	2-way clustered	2-way clustered

## Raw Model Summaries

```
summary(m_rn)
```

```
## OLS estimation, Dep. Var.: log(rn_hppd)
## Observations: 620,402
## Fixed-effects: cms_certification_number: 7,735, year_month: 90
## Standard-errors: Clustered (cms_certification_number & year_month)
##
##               Estimate Std. Error t value
## event_time_capped::-24:treatment  0.096440    0.02250  4.28633
## event_time_capped::-23:treatment  0.073586    0.02629  2.79935
## event_time_capped::-22:treatment  0.064828    0.02772  2.33844
```

## event_time_capped::-21:treatment	0.069607	0.02777	2.50654
## event_time_capped::-20:treatment	0.087961	0.02473	3.55644
## event_time_capped::-19:treatment	0.063710	0.02391	2.66472
## event_time_capped::-18:treatment	0.057878	0.02776	2.08465
## event_time_capped::-17:treatment	0.060820	0.02572	2.36494
## event_time_capped::-16:treatment	0.064884	0.02250	2.88384
## event_time_capped::-15:treatment	0.067956	0.02221	3.05945
## event_time_capped::-14:treatment	0.061684	0.02720	2.26798
## event_time_capped::-13:treatment	0.083874	0.02398	3.49706
## event_time_capped::-12:treatment	0.090572	0.02313	3.91538
## event_time_capped::-11:treatment	0.087903	0.02097	4.19288
## event_time_capped::-10:treatment	0.079563	0.01932	4.11816
## event_time_capped::-9:treatment	0.067937	0.02024	3.35618
## event_time_capped::-8:treatment	0.078626	0.02241	3.50839
## event_time_capped::-7:treatment	0.071042	0.01937	3.66681
## event_time_capped::-6:treatment	0.073888	0.02060	3.58606
## event_time_capped::-5:treatment	0.077883	0.02166	3.59655
## event_time_capped::-4:treatment	0.075569	0.02167	3.48676
## event_time_capped::-3:treatment	0.045888	0.02127	2.15786
## event_time_capped::-2:treatment	0.035444	0.01724	2.05542
## event_time_capped::0:treatment	-0.025462	0.02008	-1.26805
## event_time_capped::1:treatment	-0.027850	0.02467	-1.12903
## event_time_capped::2:treatment	-0.014025	0.02215	-0.63312
## event_time_capped::3:treatment	-0.005637	0.02366	-0.23819
## event_time_capped::4:treatment	-0.009797	0.02447	-0.40032
## event_time_capped::5:treatment	-0.000241	0.03174	-0.00759
## event_time_capped::6:treatment	-0.001277	0.03093	-0.04129
## event_time_capped::7:treatment	-0.003947	0.03821	-0.10329
## event_time_capped::8:treatment	-0.026150	0.02279	-1.14732
## event_time_capped::9:treatment	-0.007727	0.02708	-0.28539
## event_time_capped::10:treatment	-0.004678	0.02801	-0.16697
## event_time_capped::11:treatment	-0.009337	0.02447	-0.38153
## event_time_capped::12:treatment	-0.022227	0.02844	-0.78165
## event_time_capped::13:treatment	-0.021433	0.02722	-0.78733
## event_time_capped::14:treatment	-0.025019	0.02760	-0.90641
## event_time_capped::15:treatment	-0.012229	0.02668	-0.45829
## event_time_capped::16:treatment	-0.003429	0.02582	-0.13282
## event_time_capped::17:treatment	-0.006656	0.02515	-0.26463
## event_time_capped::18:treatment	-0.009038	0.02617	-0.34538
## event_time_capped::19:treatment	-0.007338	0.02397	-0.30612
## event_time_capped::20:treatment	-0.008766	0.02694	-0.32542
## event_time_capped::21:treatment	-0.019459	0.02845	-0.68407
## event_time_capped::22:treatment	-0.007920	0.02944	-0.26899
## event_time_capped::23:treatment	-0.016199	0.02956	-0.54810
## event_time_capped::24:treatment	-0.030842	0.02460	-1.25392
## government	0.001590	0.03189	0.04985
## non_profit	0.075933	0.03378	2.24777
## chain	0.008686	0.01330	0.65315

## ccrc_facility	-0.022233	0.01436	-1.54793
## sff_facility	0.107702	0.01274	8.45252
## cm_q_state_2	0.011162	0.00511	2.18553
## cm_q_state_3	0.025393	0.00645	3.93723
## cm_q_state_4	0.049536	0.00796	6.22676
## urban	0.002570	0.02817	0.09121
##	Pr(> t )		
## event_time_capped::-24:treatment	0.00004589812941481	***	
## event_time_capped::-23:treatment	0.00627840267788147	**	
## event_time_capped::-22:treatment	0.02160540560406685	*	
## event_time_capped::-21:treatment	0.01400826703454694	*	
## event_time_capped::-20:treatment	0.00060485882986930	***	
## event_time_capped::-19:treatment	0.00914813206162140	**	
## event_time_capped::-18:treatment	0.03996616973810221	*	
## event_time_capped::-17:treatment	0.02020620477597621	*	
## event_time_capped::-16:treatment	0.00492598609253584	**	
## event_time_capped::-15:treatment	0.00292996853940915	**	
## event_time_capped::-14:treatment	0.02575066409555107	*	
## event_time_capped::-13:treatment	0.00073620371090151	***	
## event_time_capped::-12:treatment	0.00017649408657498	***	
## event_time_capped::-11:treatment	0.00006487351476518	***	
## event_time_capped::-10:treatment	0.00008527853912309	***	
## event_time_capped::-9:treatment	0.00116358348410008	**	
## event_time_capped::-8:treatment	0.00070923957530296	***	
## event_time_capped::-7:treatment	0.00041743659757793	***	
## event_time_capped::-6:treatment	0.00054793292969317	***	
## event_time_capped::-5:treatment	0.00052901622733561	***	
## event_time_capped::-4:treatment	0.00076158501684916	***	
## event_time_capped::-3:treatment	0.03363161952720323	*	
## event_time_capped::-2:treatment	0.04276932581341374	*	
## event_time_capped:::0:treatment	0.20808628663649970		
## event_time_capped:::1:treatment	0.26191918674507170		
## event_time_capped:::2:treatment	0.52827657728553290		
## event_time_capped:::3:treatment	0.81228018941605518		
## event_time_capped:::4:treatment	0.68987799790261417		
## event_time_capped:::5:treatment	0.99396440947808484		
## event_time_capped:::6:treatment	0.96715882288525679		
## event_time_capped:::7:treatment	0.91796690389700597		
## event_time_capped:::8:treatment	0.25432263935864713		
## event_time_capped:::9:treatment	0.77600654095465238		
## event_time_capped:::10:treatment	0.86777222600315340		
## event_time_capped:::11:treatment	0.70371658765555567		
## event_time_capped:::12:treatment	0.43649366269188627		
## event_time_capped:::13:treatment	0.43318223923665100		
## event_time_capped:::14:treatment	0.36716649841564575		
## event_time_capped:::15:treatment	0.64786181187264891		
## event_time_capped:::16:treatment	0.89463395500007858		
## event_time_capped:::17:treatment	0.79190867820341371		

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## event_time_capped::18:treatment 0.73061993799621217
## event_time_capped::19:treatment 0.76022710004425109
## event_time_capped::20:treatment 0.74562957453285628
## event_time_capped::21:treatment 0.49571118516800061
## event_time_capped::22:treatment 0.78856259955667696
## event_time_capped::23:treatment 0.58499309390201937
## event_time_capped::24:treatment 0.21315432204481491
## government 0.96035768683859279
## non_profit 0.02706182502877325 *
## chain 0.51534102046024155
## ccrc_facility 0.12518758968274760
## sff_facility 0.00000000000050905 ***
## cm_q_state_2 0.03147619418571720 *
## cm_q_state_3 0.00016336588109714 ***
## cm_q_state_4 0.00000001534684605 ***
## urban 0.92752886038374938
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.449105      Adj. R2: 0.684456
##                      Within R2: 0.002656

```

```
summary(m_lpn)
```

```

## OLS estimation, Dep. Var.: log(lpn_hppd)
## Observations: 621,660
## Fixed-effects: cms_certification_number: 7,722,  year_month: 90
## Standard-errors: Clustered (cms_certification_number & year_month)
##
##              Estimate Std. Error t value      Pr(>|t|)
## event_time_capped::-24:treatment 0.01646    0.01780   0.924 0.357786957707218
## event_time_capped::-23:treatment 0.03138    0.01950   1.609 0.111093346685974
## event_time_capped::-22:treatment 0.03311    0.01743   1.899 0.060818642120714
## event_time_capped::-21:treatment 0.02424    0.02042   1.187 0.238206323366777
## event_time_capped::-20:treatment 0.03558    0.01817   1.958 0.053372830657872
## event_time_capped::-19:treatment 0.03593    0.01813   1.982 0.050619442480061
## event_time_capped::-18:treatment 0.04632    0.01789   2.589 0.011229770995974
## event_time_capped::-17:treatment 0.04920    0.01743   2.822 0.005881177394072
## event_time_capped::-16:treatment 0.04284    0.01685   2.542 0.012737660709139
## event_time_capped::-15:treatment 0.04645    0.01700   2.732 0.007591429781422
## event_time_capped::-14:treatment 0.04917    0.01684   2.919 0.004442327918137
## event_time_capped::-13:treatment 0.05662    0.01745   3.245 0.001656680174805
## event_time_capped::-12:treatment 0.05577    0.01743   3.200 0.001905837085409
## event_time_capped::-11:treatment 0.04318    0.01719   2.511 0.013828108353650
## event_time_capped::-10:treatment 0.04181    0.01787   2.339 0.021560724655937
## event_time_capped::-9:treatment  0.03382    0.01781   1.899 0.060815895392172
## event_time_capped::-8:treatment  0.03174    0.01662   1.910 0.059337687570808
## event_time_capped::-7:treatment  0.02133    0.01667   1.279 0.204178864589176
## event_time_capped::-6:treatment  0.02584    0.01787   1.446 0.151700146944857
## event_time_capped::-5:treatment  0.02570    0.01549   1.659 0.100612234250801

```

## event_time_capped::-4:treatment	0.02358	0.01611	1.464	0.146750969716381
## event_time_capped::-3:treatment	0.02307	0.01360	1.697	0.093262656040892
## event_time_capped::-2:treatment	0.02036	0.01636	1.245	0.216433769442150
## event_time_capped::-0:treatment	-0.00506	0.01531	-0.331	0.741769967967432
## event_time_capped::-1:treatment	0.00969	0.01772	0.547	0.585779542651719
## event_time_capped::-2:treatment	0.02387	0.01472	1.621	0.108460566900407
## event_time_capped::-3:treatment	0.01686	0.01735	0.971	0.333953881308792
## event_time_capped::-4:treatment	0.01175	0.01640	0.716	0.475813847449809
## event_time_capped::-5:treatment	0.00687	0.01703	0.404	0.687479946830714
## event_time_capped::-6:treatment	0.01424	0.01745	0.816	0.416824803406966
## event_time_capped::-7:treatment	0.03536	0.01918	1.844	0.068547487946008
## event_time_capped::-8:treatment	0.02485	0.01738	1.430	0.156175792987865
## event_time_capped::-9:treatment	0.03116	0.01816	1.716	0.089676514199697
## event_time_capped::-10:treatment	0.03412	0.01837	1.857	0.066564660618128
## event_time_capped::-11:treatment	0.02858	0.01829	1.563	0.121651280774713
## event_time_capped::-12:treatment	0.03235	0.01690	1.914	0.058851967154036
## event_time_capped::-13:treatment	0.03020	0.01782	1.694	0.093673207777656
## event_time_capped::-14:treatment	0.01959	0.01842	1.063	0.290536985473299
## event_time_capped::-15:treatment	0.02301	0.01904	1.209	0.230038363982254
## event_time_capped::-16:treatment	0.03925	0.01712	2.293	0.024234262297247
## event_time_capped::-17:treatment	0.03901	0.01965	1.985	0.050206041000485
## event_time_capped::-18:treatment	0.03080	0.01773	1.737	0.085806020011134
## event_time_capped::-19:treatment	0.02446	0.01920	1.274	0.205918324464698
## event_time_capped::-20:treatment	0.02161	0.01760	1.228	0.222595668087065
## event_time_capped::-21:treatment	0.02382	0.01894	1.257	0.211879497364220
## event_time_capped::-22:treatment	0.02388	0.01886	1.266	0.208765051892707
## event_time_capped::-23:treatment	0.02029	0.01902	1.067	0.288891122864515
## event_time_capped::-24:treatment	0.02742	0.01753	1.564	0.121447568907792
## government	-0.02603	0.01647	-1.580	0.117600323749312
## non_profit	-0.02262	0.02905	-0.778	0.438355618983720
## chain	-0.00848	0.00787	-1.077	0.284209463989287
## ccrc_facility	0.00597	0.01105	0.540	0.590347237630271
## sff_facility	0.00663	0.00771	0.860	0.391909952545630
## cm_q_state_2	0.00927	0.00323	2.872	0.005091457718642
## cm_q_state_3	0.01818	0.00381	4.764	0.000007338886380
## cm_q_state_4	0.03539	0.00463	7.637	0.000000000023978
## urban	-0.01035	0.01835	-0.564	0.574408590664410
##				
## event_time_capped::-24:treatment				
## event_time_capped::-23:treatment				
## event_time_capped::-22:treatment	.			
## event_time_capped::-21:treatment				
## event_time_capped::-20:treatment	.			
## event_time_capped::-19:treatment	.			
## event_time_capped::-18:treatment	*			
## event_time_capped::-17:treatment	**			
## event_time_capped::-16:treatment	*			
## event_time_capped::-15:treatment	**			

```

## event_time_capped::-14:treatment **
## event_time_capped::-13:treatment **
## event_time_capped::-12:treatment **
## event_time_capped::-11:treatment *
## event_time_capped::-10:treatment *
## event_time_capped::-9:treatment .
## event_time_capped::-8:treatment .
## event_time_capped::-7:treatment
## event_time_capped::-6:treatment
## event_time_capped::-5:treatment
## event_time_capped::-4:treatment
## event_time_capped::-3:treatment .
## event_time_capped::-2:treatment
## event_time_capped::0:treatment
## event_time_capped::1:treatment
## event_time_capped::2:treatment
## event_time_capped::3:treatment
## event_time_capped::4:treatment
## event_time_capped::5:treatment
## event_time_capped::6:treatment
## event_time_capped::7:treatment .
## event_time_capped::8:treatment
## event_time_capped::9:treatment .
## event_time_capped::10:treatment .
## event_time_capped::11:treatment
## event_time_capped::12:treatment .
## event_time_capped::13:treatment .
## event_time_capped::14:treatment
## event_time_capped::15:treatment
## event_time_capped::16:treatment *
## event_time_capped::17:treatment .
## event_time_capped::18:treatment .
## event_time_capped::19:treatment
## event_time_capped::20:treatment
## event_time_capped::21:treatment
## event_time_capped::22:treatment
## event_time_capped::23:treatment
## event_time_capped::24:treatment
## government
## non_profit
## chain
## ccrc_facility
## sff_facility
## cm_q_state_2 **
## cm_q_state_3 ***
## cm_q_state_4 ***
## urban
## ---

```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.283377      Adj. R2: 0.654602
##                      Within R2: 0.001283
```

```
summary(m_cna)
```

```
## OLS estimation, Dep. Var.: log(cna_hppd)
## Observations: 626,174
## Fixed-effects: cms_certification_number: 7,737,  year_month: 90
## Standard-errors: Clustered (cms_certification_number & year_month)
##
```

	Estimate	Std. Error	t value
## event_time_capped::-24:treatment	0.043010	0.01784	2.4107
## event_time_capped::-23:treatment	0.049285	0.01799	2.7400
## event_time_capped::-22:treatment	0.046860	0.01865	2.5126
## event_time_capped::-21:treatment	0.043755	0.01887	2.3183
## event_time_capped::-20:treatment	0.050762	0.01918	2.6470
## event_time_capped::-19:treatment	0.047130	0.01813	2.5990
## event_time_capped::-18:treatment	0.049867	0.01766	2.8232
## event_time_capped::-17:treatment	0.051405	0.01847	2.7831
## event_time_capped::-16:treatment	0.040609	0.01808	2.2459
## event_time_capped::-15:treatment	0.049233	0.01821	2.7036
## event_time_capped::-14:treatment	0.045544	0.01718	2.6516
## event_time_capped::-13:treatment	0.052324	0.01766	2.9622
## event_time_capped::-12:treatment	0.052702	0.01715	3.0728
## event_time_capped::-11:treatment	0.048942	0.01843	2.6552
## event_time_capped::-10:treatment	0.048014	0.01831	2.6222
## event_time_capped::-9:treatment	0.046045	0.01799	2.5599
## event_time_capped::-8:treatment	0.044088	0.01999	2.2057
## event_time_capped::-7:treatment	0.041129	0.01658	2.4802
## event_time_capped::-6:treatment	0.045397	0.01767	2.5692
## event_time_capped::-5:treatment	0.043977	0.01676	2.6239
## event_time_capped::-4:treatment	0.037468	0.01838	2.0384
## event_time_capped::-3:treatment	0.038057	0.01732	2.1968
## event_time_capped::-2:treatment	0.026553	0.01870	1.4202
## event_time_capped::0:treatment	-0.004133	0.01901	-0.2174
## event_time_capped::1:treatment	0.006846	0.01845	0.3711
## event_time_capped::2:treatment	0.011196	0.01994	0.5614
## event_time_capped::3:treatment	0.019432	0.01796	1.0820
## event_time_capped::4:treatment	0.017592	0.01864	0.9435
## event_time_capped::5:treatment	0.029220	0.01958	1.4922
## event_time_capped::6:treatment	0.027766	0.01865	1.4886
## event_time_capped::7:treatment	0.030860	0.01861	1.6580
## event_time_capped::8:treatment	0.012969	0.01764	0.7353
## event_time_capped::9:treatment	0.017326	0.01851	0.9359
## event_time_capped::10:treatment	0.014017	0.01859	0.7542
## event_time_capped::11:treatment	0.013379	0.01938	0.6904
## event_time_capped::12:treatment	0.015658	0.01801	0.8697
## event_time_capped::13:treatment	0.015697	0.02059	0.7623

## event_time_capped::14:treatment	0.012093	0.01871	0.6464
## event_time_capped::15:treatment	0.011182	0.01867	0.5991
## event_time_capped::16:treatment	0.020238	0.01847	1.0955
## event_time_capped::17:treatment	0.021400	0.01929	1.1093
## event_time_capped::18:treatment	0.025808	0.01841	1.4017
## event_time_capped::19:treatment	0.021996	0.01735	1.2674
## event_time_capped::20:treatment	0.014229	0.01799	0.7910
## event_time_capped::21:treatment	0.012233	0.01851	0.6610
## event_time_capped::22:treatment	0.014670	0.01883	0.7792
## event_time_capped::23:treatment	0.010140	0.01927	0.5261
## event_time_capped::24:treatment	0.012898	0.01767	0.7298
## government	-0.036892	0.01049	-3.5180
## non_profit	0.025502	0.01203	2.1202
## chain	-0.019623	0.00461	-4.2556
## ccrc_facility	0.002638	0.00639	0.4129
## sff_facility	-0.000241	0.00493	-0.0489
## cm_q_state_2	0.009556	0.00179	5.3517
## cm_q_state_3	0.021973	0.00231	9.5301
## cm_q_state_4	0.030418	0.00293	10.3884
## urban	-0.002036	0.00967	-0.2105
##		Pr(> t )	
## event_time_capped::-24:treatment	0.0179790039402936176	*	
## event_time_capped::-23:treatment	0.0074224544174282744	**	
## event_time_capped::-22:treatment	0.0137857244422800816	*	
## event_time_capped::-21:treatment	0.0227255934767190589	*	
## event_time_capped::-20:treatment	0.0096028628440392987	**	
## event_time_capped::-19:treatment	0.0109421729817859009	*	
## event_time_capped::-18:treatment	0.0058660200263147208	**	
## event_time_capped::-17:treatment	0.0065755537399266100	**	
## event_time_capped::-16:treatment	0.0271835791603308556	*	
## event_time_capped::-15:treatment	0.0082166314751309713	**	
## event_time_capped::-14:treatment	0.0094835789751648546	**	
## event_time_capped::-13:treatment	0.0039165448257433722	**	
## event_time_capped::-12:treatment	0.0028144315126656127	**	
## event_time_capped::-11:treatment	0.0093898045449858688	**	
## event_time_capped::-10:treatment	0.0102748617923628400	*	
## event_time_capped::-9:treatment	0.0121573914724074864	*	
## event_time_capped::-8:treatment	0.0299793211686156143	*	
## event_time_capped::-7:treatment	0.0150115297194325908	*	
## event_time_capped::-6:treatment	0.0118590539617588614	*	
## event_time_capped::-5:treatment	0.0102284037261511414	*	
## event_time_capped::-4:treatment	0.0444813276038451347	*	
## event_time_capped::-3:treatment	0.0306335571846083551	*	
## event_time_capped::-2:treatment	0.1590315006616895843		
## event_time_capped::0:treatment	0.8283991966689880915		
## event_time_capped::1:treatment	0.7114711562727804584		
## event_time_capped::2:treatment	0.5759180283848828186		
## event_time_capped::3:treatment	0.2821670660285279242		



```

## event_time_capped::4:treatment 0.3479597634736711909
## event_time_capped::5:treatment 0.1391861665545406079
## event_time_capped::6:treatment 0.1401389063092930154
## event_time_capped::7:treatment 0.1008427999990643698
## event_time_capped::8:treatment 0.4640716820814527743
## event_time_capped::9:treatment 0.3518451625775674829
## event_time_capped::10:treatment 0.4527046033293778970
## event_time_capped::11:treatment 0.4917636300919892012
## event_time_capped::12:treatment 0.3868292688939551915
## event_time_capped::13:treatment 0.4478913101256839502
## event_time_capped::14:treatment 0.5196829465148694593
## event_time_capped::15:treatment 0.5506515414254467000
## event_time_capped::16:treatment 0.2762368944876133492
## event_time_capped::17:treatment 0.2702802429833448539
## event_time_capped::18:treatment 0.1644698811229697299
## event_time_capped::19:treatment 0.2083099803313656628
## event_time_capped::20:treatment 0.4310463152979436829
## event_time_capped::21:treatment 0.5103150647091005965
## event_time_capped::22:treatment 0.4379450683457103422
## event_time_capped::23:treatment 0.6001167367219867321
## event_time_capped::24:treatment 0.4674271684339104116
## government 0.0006870874238995998 ***
## non_profit 0.0367723791087668436 *
## chain 0.0000514448636954961 ***
## ccrc_facility 0.6806673044952028517
## sff_facility 0.9610951073652855836
## cm_q_state_2 0.0000006715627927565 ***
## cm_q_state_3 0.0000000000000029994 ***
## cm_q_state_4 < 2.2e-16 ***
## urban 0.8337531759219228844
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.176624 Adj. R2: 0.622275
## Within R2: 0.00351

```

```
summary(m_tot)
```

```

## OLS estimation, Dep. Var.: log(total_hppd)
## Observations: 626,480
## Fixed-effects: cms_certification_number: 7,738, year_month: 90
## Standard-errors: Clustered (cms_certification_number & year_month)
##
## Estimate Std. Error t value
## event_time_capped::-24:treatment 0.05314 0.02004 2.652
## event_time_capped::-23:treatment 0.06257 0.01998 3.131
## event_time_capped::-22:treatment 0.06239 0.02161 2.887
## event_time_capped::-21:treatment 0.06003 0.02102 2.856
## event_time_capped::-20:treatment 0.06599 0.02141 3.082
## event_time_capped::-19:treatment 0.06240 0.02020 3.089

```

## event_time_capped::-18:treatment	0.06756	0.02003	3.374
## event_time_capped::-17:treatment	0.06638	0.02029	3.272
## event_time_capped::-16:treatment	0.05381	0.02056	2.617
## event_time_capped::-15:treatment	0.06394	0.02035	3.142
## event_time_capped::-14:treatment	0.06292	0.01929	3.262
## event_time_capped::-13:treatment	0.07139	0.02001	3.568
## event_time_capped::-12:treatment	0.07312	0.01954	3.743
## event_time_capped::-11:treatment	0.06818	0.02061	3.308
## event_time_capped::-10:treatment	0.06701	0.02049	3.270
## event_time_capped::-9:treatment	0.05595	0.02244	2.493
## event_time_capped::-8:treatment	0.06389	0.02168	2.946
## event_time_capped::-7:treatment	0.05806	0.01934	3.002
## event_time_capped::-6:treatment	0.06360	0.02022	3.146
## event_time_capped::-5:treatment	0.05939	0.01907	3.114
## event_time_capped::-4:treatment	0.05651	0.01999	2.827
## event_time_capped::-3:treatment	0.05584	0.01920	2.908
## event_time_capped::-2:treatment	0.04252	0.02170	1.960
## event_time_capped::0:treatment	0.01373	0.02116	0.649
## event_time_capped::1:treatment	0.02488	0.02105	1.182
## event_time_capped::2:treatment	0.02579	0.02367	1.089
## event_time_capped::3:treatment	0.02927	0.02086	1.403
## event_time_capped::4:treatment	0.03104	0.01943	1.598
## event_time_capped::5:treatment	0.03775	0.02277	1.658
## event_time_capped::6:treatment	0.03928	0.02033	1.932
## event_time_capped::7:treatment	0.04391	0.02163	2.030
## event_time_capped::8:treatment	0.02696	0.01984	1.359
## event_time_capped::9:treatment	0.03309	0.02059	1.607
## event_time_capped::10:treatment	0.03196	0.02090	1.529
## event_time_capped::11:treatment	0.02992	0.02091	1.431
## event_time_capped::12:treatment	0.03029	0.02019	1.501
## event_time_capped::13:treatment	0.02979	0.02135	1.396
## event_time_capped::14:treatment	0.02289	0.02069	1.106
## event_time_capped::15:treatment	0.02507	0.02023	1.239
## event_time_capped::16:treatment	0.03251	0.02030	1.601
## event_time_capped::17:treatment	0.03552	0.02099	1.692
## event_time_capped::18:treatment	0.03737	0.01990	1.877
## event_time_capped::19:treatment	0.03236	0.01955	1.655
## event_time_capped::20:treatment	0.02662	0.01982	1.343
## event_time_capped::21:treatment	0.02421	0.02065	1.172
## event_time_capped::22:treatment	0.02619	0.01955	1.339
## event_time_capped::23:treatment	0.02310	0.02156	1.072
## event_time_capped::24:treatment	0.02686	0.01981	1.355
## government	-0.03001	0.00734	-4.089
## non_profit	0.02560	0.01125	2.274
## chain	-0.01446	0.00405	-3.566
## ccrc_facility	-0.00443	0.00551	-0.804
## sff_facility	0.00666	0.00427	1.560
## cm_q_state_2	0.00863	0.00165	5.229

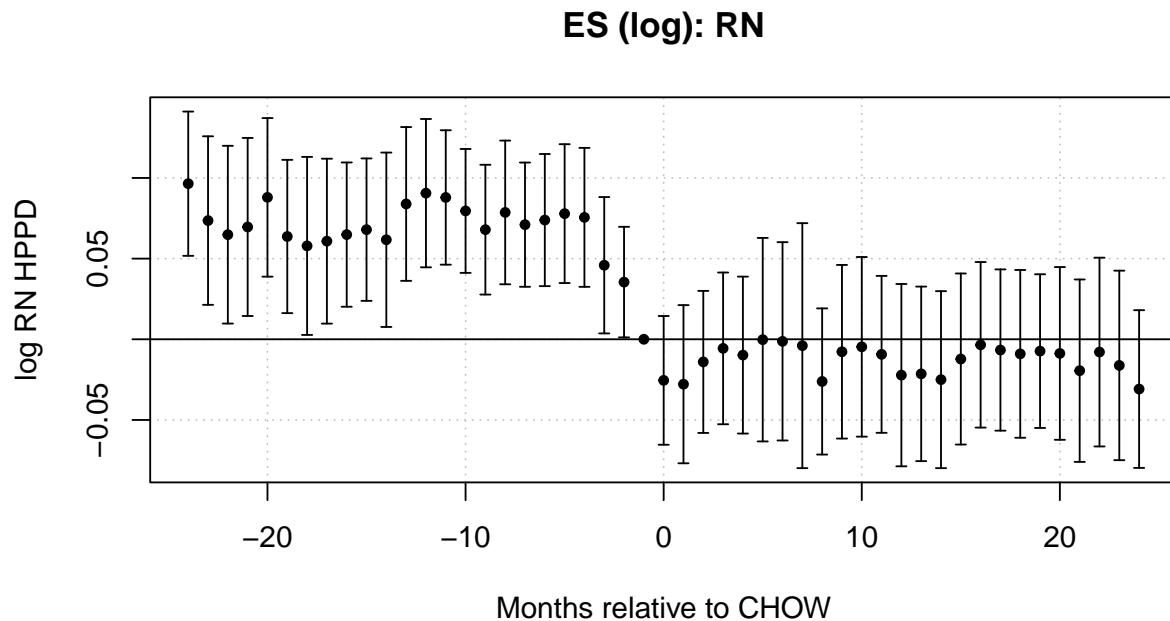
## cm_q_state_3	0.01995	0.00210	9.519
## cm_q_state_4	0.03236	0.00275	11.782
## urban	0.00130	0.00743	0.174
##	Pr(> t )		
## event_time_capped::-24:treatment	0.0094852224588977251	**	
## event_time_capped::-23:treatment	0.0023558511943677909	**	
## event_time_capped::-22:treatment	0.0048757280751657115	**	
## event_time_capped::-21:treatment	0.0053376461477061118	**	
## event_time_capped::-20:treatment	0.0027345781996383875	**	
## event_time_capped::-19:treatment	0.0026830857284528440	**	
## event_time_capped::-18:treatment	0.0011000985342388323	**	
## event_time_capped::-17:treatment	0.0015209076372625118	**	
## event_time_capped::-16:treatment	0.0104091815855573960	*	
## event_time_capped::-15:treatment	0.0022807188767513943	**	
## event_time_capped::-14:treatment	0.0015707827070489933	**	
## event_time_capped::-13:treatment	0.0005818746563170466	***	
## event_time_capped::-12:treatment	0.0003220870059902359	***	
## event_time_capped::-11:treatment	0.0013575936597945151	**	
## event_time_capped::-10:treatment	0.0015311594588344806	**	
## event_time_capped::-9:treatment	0.0145223184090393122	*	
## event_time_capped::-8:treatment	0.0041039232428060866	**	
## event_time_capped::-7:treatment	0.0034825977073683987	**	
## event_time_capped::-6:treatment	0.0022536190724118462	**	
## event_time_capped::-5:treatment	0.0024864727863506491	**	
## event_time_capped::-4:treatment	0.0058039816718362990	**	
## event_time_capped::-3:treatment	0.0045855633812251946	**	
## event_time_capped::-2:treatment	0.0531677522051894128	.	
## event_time_capped::0:treatment	0.5182445658823776613		
## event_time_capped::1:treatment	0.2402506046284483832		
## event_time_capped::2:treatment	0.2788899210175874166		
## event_time_capped::3:treatment	0.1639494233289744141		
## event_time_capped::4:treatment	0.1136552791466867995		
## event_time_capped::5:treatment	0.1008347858094696681		
## event_time_capped::6:treatment	0.0565605127180281303	.	
## event_time_capped::7:treatment	0.0453721630873936202	*	
## event_time_capped::8:treatment	0.1776426886235540903		
## event_time_capped::9:treatment	0.1116168347936266902		
## event_time_capped::10:treatment	0.1297317238966028408		
## event_time_capped::11:treatment	0.1559722782690126930		
## event_time_capped::12:treatment	0.1369655028210395864		
## event_time_capped::13:treatment	0.1663133411799131711		
## event_time_capped::14:treatment	0.2715997426435161066		
## event_time_capped::15:treatment	0.2185751718809249011		
## event_time_capped::16:treatment	0.1128118868789582951		
## event_time_capped::17:treatment	0.0941976152727828503	.	
## event_time_capped::18:treatment	0.0637339898367202118	.	
## event_time_capped::19:treatment	0.1014485716186106640		
## event_time_capped::20:treatment	0.1826494010605446416		

```

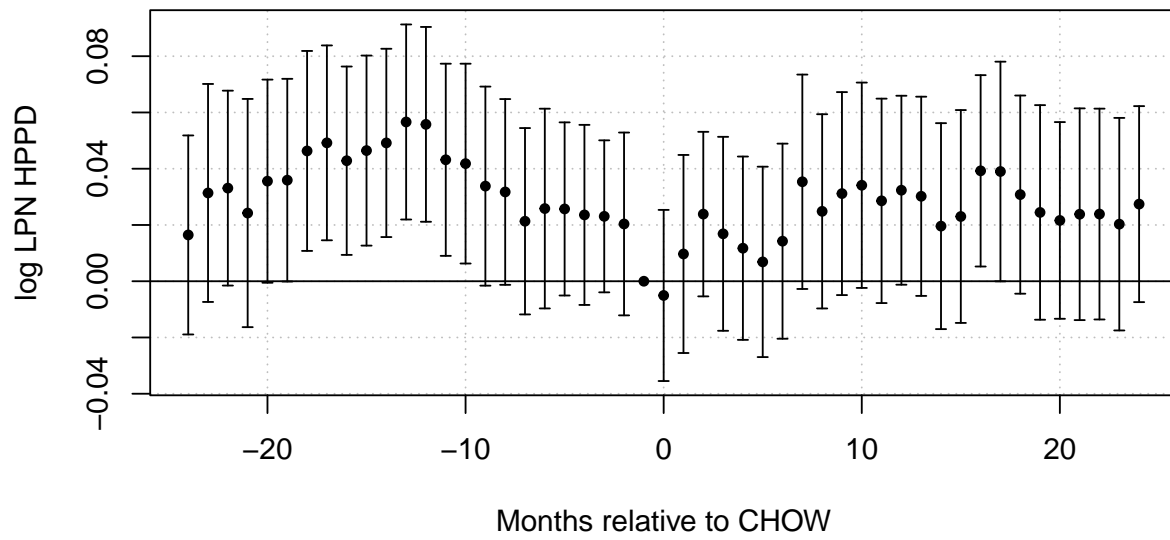
## event_time_capped::21:treatment 0.2443113298996141824
## event_time_capped::22:treatment 0.1838460888196893628
## event_time_capped::23:treatment 0.2867865442572823387
## event_time_capped::24:treatment 0.1787080140214569457
## government 0.0000947748109083197 ***
## non_profit 0.0253470524933526176 *
## chain 0.0005850930143197365 ***
## ccrc_facility 0.4236160914615147988
## sff_facility 0.1222187207461131325
## cm_q_state_2 0.0000011169675732812 ***
## cm_q_state_3 0.00000000000000031672 ***
## cm_q_state_4 < 2.2e-16 ***
## urban 0.8619668622029008631
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.159886      Adj. R2: 0.620037
##                      Within R2: 0.004348

```

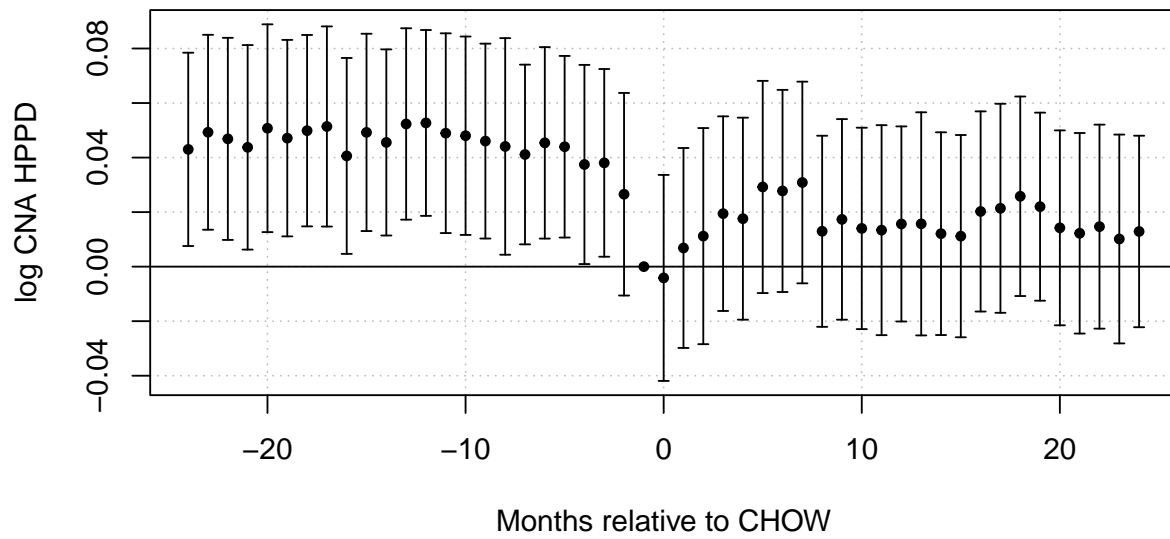
## Event-Study Plots



### ES (log): LPN



### ES (log): CNA



### ES (log): Total

