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:ever_treated  0.096440     0.02250  4.28633
## event_time_capped::-23:ever_treated  0.073586     0.02629  2.79935
## event_time_capped::-22:ever_treated  0.064828     0.02772  2.33844
```

```
## event_time_capped::-21:ever_treated  0.069607  0.02777  2.50654
## event_time_capped::-20:ever_treated  0.087961  0.02473  3.55644
## event_time_capped::-19:ever_treated  0.063710  0.02391  2.66472
## event_time_capped::-18:ever_treated  0.057878  0.02776  2.08465
## event_time_capped::-17:ever_treated  0.060820  0.02572  2.36494
## event_time_capped::-16:ever_treated  0.064884  0.02250  2.88384
## event_time_capped::-15:ever_treated  0.067956  0.02221  3.05945
## event_time_capped::-14:ever_treated  0.061684  0.02720  2.26798
## event_time_capped::-13:ever_treated  0.083874  0.02398  3.49706
## event_time_capped::-12:ever_treated  0.090572  0.02313  3.91538
## event_time_capped::-11:ever_treated  0.087903  0.02097  4.19288
## event_time_capped::-10:ever_treated  0.079563  0.01932  4.11816
## event_time_capped::-9:ever_treated  0.067937  0.02024  3.35618
## event_time_capped::-8:ever_treated  0.078626  0.02241  3.50839
## event_time_capped::-7:ever_treated  0.071042  0.01937  3.66681
## event_time_capped::-6:ever_treated  0.073888  0.02060  3.58606
## event_time_capped::-5:ever_treated  0.077883  0.02166  3.59655
## event_time_capped::-4:ever_treated  0.075569  0.02167  3.48676
## event_time_capped::-3:ever_treated  0.045888  0.02127  2.15786
## event_time_capped::-2:ever_treated  0.035444  0.01724  2.05542
## event_time_capped::0:ever_treated  -0.025462  0.02008 -1.26805
## event_time_capped::1:ever_treated  -0.027850  0.02467 -1.12903
## event_time_capped::2:ever_treated  -0.014025  0.02215 -0.63312
## event_time_capped::3:ever_treated  -0.005637  0.02366 -0.23819
## event_time_capped::4:ever_treated  -0.009797  0.02447 -0.40032
## event_time_capped::5:ever_treated  -0.000241  0.03174 -0.00759
## event_time_capped::6:ever_treated  -0.001277  0.03093 -0.04129
## event_time_capped::7:ever_treated  -0.003947  0.03821 -0.10329
## event_time_capped::8:ever_treated  -0.026150  0.02279 -1.14732
## event_time_capped::9:ever_treated  -0.007727  0.02708 -0.28539
## event_time_capped::10:ever_treated  -0.004678  0.02801 -0.16697
## event_time_capped::11:ever_treated  -0.009337  0.02447 -0.38153
## event_time_capped::12:ever_treated  -0.022227  0.02844 -0.78165
## event_time_capped::13:ever_treated  -0.021433  0.02722 -0.78733
## event_time_capped::14:ever_treated  -0.025019  0.02760 -0.90641
## event_time_capped::15:ever_treated  -0.012229  0.02668 -0.45829
## event_time_capped::16:ever_treated  -0.003429  0.02582 -0.13282
## event_time_capped::17:ever_treated  -0.006656  0.02515 -0.26463
## event_time_capped::18:ever_treated  -0.009038  0.02617 -0.34538
## event_time_capped::19:ever_treated  -0.007338  0.02397 -0.30612
## event_time_capped::20:ever_treated  -0.008766  0.02694 -0.32542
## event_time_capped::21:ever_treated  -0.019459  0.02845 -0.68407
## event_time_capped::22:ever_treated  -0.007920  0.02944 -0.26899
## event_time_capped::23:ever_treated  -0.016199  0.02956 -0.54810
## event_time_capped::24:ever_treated  -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:ever_treated 0.00004589812941481 ***
## event_time_capped::-23:ever_treated 0.00627840267788151 **
## event_time_capped::-22:ever_treated 0.02160540560406685 *
## event_time_capped::-21:ever_treated 0.01400826703454684 *
## event_time_capped::-20:ever_treated 0.00060485882986930 ***
## event_time_capped::-19:ever_treated 0.00914813206162140 **
## event_time_capped::-18:ever_treated 0.03996616973810215 *
## event_time_capped::-17:ever_treated 0.02020620477597621 *
## event_time_capped::-16:ever_treated 0.00492598609253584 **
## event_time_capped::-15:ever_treated 0.00292996853940915 **
## event_time_capped::-14:ever_treated 0.02575066409555107 *
## event_time_capped::-13:ever_treated 0.00073620371090151 ***
## event_time_capped::-12:ever_treated 0.00017649408657498 ***
## event_time_capped::-11:ever_treated 0.00006487351476517 ***
## event_time_capped::-10:ever_treated 0.00008527853912309 ***
## event_time_capped::-9:ever_treated  0.00116358348410009 **
## event_time_capped::-8:ever_treated  0.00070923957530296 ***
## event_time_capped::-7:ever_treated  0.00041743659757793 ***
## event_time_capped::-6:ever_treated  0.00054793292969317 ***
## event_time_capped::-5:ever_treated  0.00052901622733561 ***
## event_time_capped::-4:ever_treated  0.00076158501684916 ***
## event_time_capped::-3:ever_treated  0.03363161952720298 *
## event_time_capped::-2:ever_treated  0.04276932581341378 *
## event_time_capped::0:ever_treated   0.20808628663649922
## event_time_capped::1:ever_treated   0.26191918674507220
## event_time_capped::2:ever_treated   0.52827657728553290
## event_time_capped::3:ever_treated   0.81228018941605518
## event_time_capped::4:ever_treated   0.68987799790261428
## event_time_capped::5:ever_treated   0.99396440947808484
## event_time_capped::6:ever_treated   0.96715882288525679
## event_time_capped::7:ever_treated   0.91796690389700597
## event_time_capped::8:ever_treated   0.25432263935864674
## event_time_capped::9:ever_treated   0.77600654095465216
## event_time_capped::10:ever_treated  0.86777222600315340
## event_time_capped::11:ever_treated  0.70371658765555567
## event_time_capped::12:ever_treated  0.43649366269188639
## event_time_capped::13:ever_treated  0.43318223923665167
## event_time_capped::14:ever_treated  0.36716649841564575
## event_time_capped::15:ever_treated  0.64786181187264891
## event_time_capped::16:ever_treated  0.89463395500007870
## event_time_capped::17:ever_treated  0.79190867820341371
```

```
## event_time_capped::18:ever_treated  0.73061993799621239
## event_time_capped::19:ever_treated  0.76022710004425131
## event_time_capped::20:ever_treated  0.74562957453285628
## event_time_capped::21:ever_treated  0.49571118516800072
## event_time_capped::22:ever_treated  0.78856259955667696
## event_time_capped::23:ever_treated  0.58499309390201937
## event_time_capped::24:ever_treated  0.21315432204481491
## government                          0.96035768683859279
## non_profit                         0.02706182502877314 *
## chain                              0.51534102046024255
## ccrc_facility                      0.12518758968274823
## sff_facility                       0.00000000000050905 ***
## cm_q_state_2                       0.03147619418571700 *
## 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
## event_time_capped::-24:ever_treated  0.01646    0.01780   0.924
## event_time_capped::-23:ever_treated  0.03138    0.01950   1.609
## event_time_capped::-22:ever_treated  0.03311    0.01743   1.899
## event_time_capped::-21:ever_treated  0.02424    0.02042   1.187
## event_time_capped::-20:ever_treated  0.03558    0.01817   1.958
## event_time_capped::-19:ever_treated  0.03593    0.01813   1.982
## event_time_capped::-18:ever_treated  0.04632    0.01789   2.589
## event_time_capped::-17:ever_treated  0.04920    0.01743   2.822
## event_time_capped::-16:ever_treated  0.04284    0.01685   2.542
## event_time_capped::-15:ever_treated  0.04645    0.01700   2.732
## event_time_capped::-14:ever_treated  0.04917    0.01684   2.919
## event_time_capped::-13:ever_treated  0.05662    0.01745   3.245
## event_time_capped::-12:ever_treated  0.05577    0.01743   3.200
## event_time_capped::-11:ever_treated  0.04318    0.01719   2.511
## event_time_capped::-10:ever_treated  0.04181    0.01787   2.339
## event_time_capped::-9:ever_treated   0.03382    0.01781   1.899
## event_time_capped::-8:ever_treated   0.03174    0.01662   1.910
## event_time_capped::-7:ever_treated   0.02133    0.01667   1.279
## event_time_capped::-6:ever_treated   0.02584    0.01787   1.446
## event_time_capped::-5:ever_treated   0.02570    0.01549   1.659
```

```
## event_time_capped::-4:ever_treated     0.02358    0.01611    1.464
## event_time_capped::-3:ever_treated     0.02307    0.01360    1.697
## event_time_capped::-2:ever_treated     0.02036    0.01636    1.245
## event_time_capped::0:ever_treated     -0.00506    0.01531   -0.331
## event_time_capped::1:ever_treated      0.00969    0.01772    0.547
## event_time_capped::2:ever_treated      0.02387    0.01472    1.621
## event_time_capped::3:ever_treated      0.01686    0.01735    0.971
## event_time_capped::4:ever_treated      0.01175    0.01640    0.716
## event_time_capped::5:ever_treated      0.00687    0.01703    0.404
## event_time_capped::6:ever_treated      0.01424    0.01745    0.816
## event_time_capped::7:ever_treated      0.03536    0.01918    1.844
## event_time_capped::8:ever_treated      0.02485    0.01738    1.430
## event_time_capped::9:ever_treated      0.03116    0.01816    1.716
## event_time_capped::10:ever_treated     0.03412    0.01837    1.857
## event_time_capped::11:ever_treated     0.02858    0.01829    1.563
## event_time_capped::12:ever_treated     0.03235    0.01690    1.914
## event_time_capped::13:ever_treated     0.03020    0.01782    1.694
## event_time_capped::14:ever_treated     0.01959    0.01842    1.063
## event_time_capped::15:ever_treated     0.02301    0.01904    1.209
## event_time_capped::16:ever_treated     0.03925    0.01712    2.293
## event_time_capped::17:ever_treated     0.03901    0.01965    1.985
## event_time_capped::18:ever_treated     0.03080    0.01773    1.737
## event_time_capped::19:ever_treated     0.02446    0.01920    1.274
## event_time_capped::20:ever_treated     0.02161    0.01760    1.228
## event_time_capped::21:ever_treated     0.02382    0.01894    1.257
## event_time_capped::22:ever_treated     0.02388    0.01886    1.266
## event_time_capped::23:ever_treated     0.02029    0.01902    1.067
## event_time_capped::24:ever_treated     0.02742    0.01753    1.564
## government                             -0.02603    0.01647   -1.580
## non_profit                             -0.02262    0.02905   -0.778
## chain                                  -0.00848    0.00787   -1.077
## ccrc_facility                           0.00597    0.01105    0.540
## sff_facility                            0.00663    0.00771    0.860
## cm_q_state_2                            0.00927    0.00323    2.872
## cm_q_state_3                            0.01818    0.00381    4.764
## cm_q_state_4                            0.03539    0.00463    7.637
## urban                                  -0.01035    0.01835   -0.564
##                                                    Pr(>|t|)
## event_time_capped::-24:ever_treated 0.357786957707219
## event_time_capped::-23:ever_treated 0.111093346685974
## event_time_capped::-22:ever_treated 0.060818642120714 .
## event_time_capped::-21:ever_treated 0.238206323366777
## event_time_capped::-20:ever_treated 0.053372830657872 .
## event_time_capped::-19:ever_treated 0.050619442480062 .
## event_time_capped::-18:ever_treated 0.011229770995974 *
## event_time_capped::-17:ever_treated 0.005881177394072 **
## event_time_capped::-16:ever_treated 0.012737660709139 *
## event_time_capped::-15:ever_treated 0.007591429781422 **
```

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```
## event_time_capped::-14:ever_treated 0.004442327918137 **
## event_time_capped::-13:ever_treated 0.001656680174805 **
## event_time_capped::-12:ever_treated 0.001905837085409 **
## event_time_capped::-11:ever_treated 0.013828108353650 *
## event_time_capped::-10:ever_treated 0.021560724655937 *
## event_time_capped::-9:ever_treated  0.060815895392172 .
## event_time_capped::-8:ever_treated  0.059337687570808 .
## event_time_capped::-7:ever_treated  0.204178864589175
## event_time_capped::-6:ever_treated  0.151700146944858
## event_time_capped::-5:ever_treated  0.100612234250801
## event_time_capped::-4:ever_treated  0.146750969716381
## event_time_capped::-3:ever_treated  0.093262656040892 .
## event_time_capped::-2:ever_treated  0.216433769442150
## event_time_capped::0:ever_treated   0.741769967967432
## event_time_capped::1:ever_treated   0.585779542651719
## event_time_capped::2:ever_treated   0.108460566900407
## event_time_capped::3:ever_treated   0.333953881308792
## event_time_capped::4:ever_treated   0.475813847449809
## event_time_capped::5:ever_treated   0.687479946830714
## event_time_capped::6:ever_treated   0.416824803406966
## event_time_capped::7:ever_treated   0.068547487946008 .
## event_time_capped::8:ever_treated   0.156175792987865
## event_time_capped::9:ever_treated   0.089676514199697 .
## event_time_capped::10:ever_treated  0.066564660618128 .
## event_time_capped::11:ever_treated  0.121651280774713
## event_time_capped::12:ever_treated  0.058851967154036 .
## event_time_capped::13:ever_treated  0.093673207777656 .
## event_time_capped::14:ever_treated  0.290536985473299
## event_time_capped::15:ever_treated  0.230038363982254
## event_time_capped::16:ever_treated  0.024234262297247 *
## event_time_capped::17:ever_treated  0.050206041000485 .
## event_time_capped::18:ever_treated  0.085806020011135 .
## event_time_capped::19:ever_treated  0.205918324464698
## event_time_capped::20:ever_treated  0.222595668087065
## event_time_capped::21:ever_treated  0.211879497364220
## event_time_capped::22:ever_treated  0.208765051892707
## event_time_capped::23:ever_treated  0.288891122864514
## event_time_capped::24:ever_treated  0.121447568907792
## government                          0.117600323749312
## non_profit                          0.438355618983720
## chain                               0.284209463989285
## ccrc_facility                       0.590347237630271
## sff_facility                        0.391909952545631
## cm_q_state_2                        0.005091457718641 **
## cm_q_state_3                        0.000007338886380 ***
## cm_q_state_4                        0.000000000023978 ***
## urban                               0.574408590664410
## ---
```

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

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

```
## event_time_capped::14:ever_treated      0.012093   0.01871   0.6464
## event_time_capped::15:ever_treated      0.011182   0.01867   0.5991
## event_time_capped::16:ever_treated      0.020238   0.01847   1.0955
## event_time_capped::17:ever_treated      0.021400   0.01929   1.1093
## event_time_capped::18:ever_treated      0.025808   0.01841   1.4017
## event_time_capped::19:ever_treated      0.021996   0.01735   1.2674
## event_time_capped::20:ever_treated      0.014229   0.01799   0.7910
## event_time_capped::21:ever_treated      0.012233   0.01851   0.6610
## event_time_capped::22:ever_treated      0.014670   0.01883   0.7792
## event_time_capped::23:ever_treated      0.010140   0.01927   0.5261
## event_time_capped::24:ever_treated      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:ever_treated 0.0179790039402935968 *
## event_time_capped::-23:ever_treated 0.0074224544174282476 **
## event_time_capped::-22:ever_treated 0.0137857244422801076 *
## event_time_capped::-21:ever_treated 0.0227255934767190901 *
## event_time_capped::-20:ever_treated 0.0096028628440392987 **
## event_time_capped::-19:ever_treated 0.0109421729817859009 *
## event_time_capped::-18:ever_treated 0.0058660200263147321 **
## event_time_capped::-17:ever_treated 0.0065755537399266161 **
## event_time_capped::-16:ever_treated 0.0271835791603309146 *
## event_time_capped::-15:ever_treated 0.0082166314751309713 **
## event_time_capped::-14:ever_treated 0.0094835789751648546 **
## event_time_capped::-13:ever_treated 0.0039165448257433896 **
## event_time_capped::-12:ever_treated 0.0028144315126656127 **
## event_time_capped::-11:ever_treated 0.0093898045449858809 **
## event_time_capped::-10:ever_treated 0.0102748617923628036 *
## event_time_capped::-9:ever_treated  0.0121573914724074864 *
## event_time_capped::-8:ever_treated  0.0299793211686156143 *
## event_time_capped::-7:ever_treated  0.0150115297194326255 *
## event_time_capped::-6:ever_treated  0.0118590539617588371 *
## event_time_capped::-5:ever_treated  0.0102284037261511414 *
## event_time_capped::-4:ever_treated  0.0444813276038452596 *
## event_time_capped::-3:ever_treated  0.0306335571846082198 *
## event_time_capped::-2:ever_treated  0.1590315006616895843
## event_time_capped::0:ever_treated   0.8283991966689882025
## event_time_capped::1:ever_treated   0.7114711562727802363
## event_time_capped::2:ever_treated   0.5759180283848825965
## event_time_capped::3:ever_treated   0.2821670660285279797
```

```
## event_time_capped::4:ever_treated    0.3479597634736711909
## event_time_capped::5:ever_treated    0.1391861665545407190
## event_time_capped::6:ever_treated    0.1401389063092930154
## event_time_capped::7:ever_treated    0.1008427999990643698
## event_time_capped::8:ever_treated    0.4640716820814527743
## event_time_capped::9:ever_treated    0.3518451625775670388
## event_time_capped::10:ever_treated   0.4527046033293776750
## event_time_capped::11:ever_treated   0.4917636300919893122
## event_time_capped::12:ever_treated   0.3868292688939555246
## event_time_capped::13:ever_treated   0.4478913101256838392
## event_time_capped::14:ever_treated   0.5196829465148693483
## event_time_capped::15:ever_treated   0.5506515414254464780
## event_time_capped::16:ever_treated   0.2762368944876130161
## event_time_capped::17:ever_treated   0.2702802429833448539
## event_time_capped::18:ever_treated   0.1644698811229696467
## event_time_capped::19:ever_treated   0.2083099803313659404
## event_time_capped::20:ever_treated   0.4310463152979437940
## event_time_capped::21:ever_treated   0.5103150647091001524
## event_time_capped::22:ever_treated   0.4379450683457103422
## event_time_capped::23:ever_treated   0.6001167367219867321
## event_time_capped::24:ever_treated   0.4674271684339105226
## government                            0.0006870874238995840 ***
## non_profit                            0.0367723791087667465 *
## chain                                 0.0000514448636954990 ***
## ccrc_facility                         0.6806673044952032958
## sff_facility                          0.9610951073652855836
## cm_q_state_2                          0.0000006715627927565 ***
## cm_q_state_3                          0.0000000000000029994 ***
## cm_q_state_4                                     < 2.2e-16 ***
## urban                                 0.8337531759219233285
## ---
## 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:ever_treated  0.05314    0.02004   2.652
## event_time_capped::-23:ever_treated  0.06257    0.01998   3.131
## event_time_capped::-22:ever_treated  0.06239    0.02161   2.887
## event_time_capped::-21:ever_treated  0.06003    0.02102   2.856
## event_time_capped::-20:ever_treated  0.06599    0.02141   3.082
## event_time_capped::-19:ever_treated  0.06240    0.02020   3.089
```

```
## event_time_capped::-18:ever_treated  0.06756    0.02003    3.374
## event_time_capped::-17:ever_treated  0.06638    0.02029    3.272
## event_time_capped::-16:ever_treated  0.05381    0.02056    2.617
## event_time_capped::-15:ever_treated  0.06394    0.02035    3.142
## event_time_capped::-14:ever_treated  0.06292    0.01929    3.262
## event_time_capped::-13:ever_treated  0.07139    0.02001    3.568
## event_time_capped::-12:ever_treated  0.07312    0.01954    3.743
## event_time_capped::-11:ever_treated  0.06818    0.02061    3.308
## event_time_capped::-10:ever_treated  0.06701    0.02049    3.270
## event_time_capped::-9:ever_treated   0.05595    0.02244    2.493
## event_time_capped::-8:ever_treated   0.06389    0.02168    2.946
## event_time_capped::-7:ever_treated   0.05806    0.01934    3.002
## event_time_capped::-6:ever_treated   0.06360    0.02022    3.146
## event_time_capped::-5:ever_treated   0.05939    0.01907    3.114
## event_time_capped::-4:ever_treated   0.05651    0.01999    2.827
## event_time_capped::-3:ever_treated   0.05584    0.01920    2.908
## event_time_capped::-2:ever_treated   0.04252    0.02170    1.960
## event_time_capped::0:ever_treated    0.01373    0.02116    0.649
## event_time_capped::1:ever_treated    0.02488    0.02105    1.182
## event_time_capped::2:ever_treated    0.02579    0.02367    1.089
## event_time_capped::3:ever_treated    0.02927    0.02086    1.403
## event_time_capped::4:ever_treated    0.03104    0.01943    1.598
## event_time_capped::5:ever_treated    0.03775    0.02277    1.658
## event_time_capped::6:ever_treated    0.03928    0.02033    1.932
## event_time_capped::7:ever_treated    0.04391    0.02163    2.030
## event_time_capped::8:ever_treated    0.02696    0.01984    1.359
## event_time_capped::9:ever_treated    0.03309    0.02059    1.607
## event_time_capped::10:ever_treated   0.03196    0.02090    1.529
## event_time_capped::11:ever_treated   0.02992    0.02091    1.431
## event_time_capped::12:ever_treated   0.03029    0.02019    1.501
## event_time_capped::13:ever_treated   0.02979    0.02135    1.396
## event_time_capped::14:ever_treated   0.02289    0.02069    1.106
## event_time_capped::15:ever_treated   0.02507    0.02023    1.239
## event_time_capped::16:ever_treated   0.03251    0.02030    1.601
## event_time_capped::17:ever_treated   0.03552    0.02099    1.692
## event_time_capped::18:ever_treated   0.03737    0.01990    1.877
## event_time_capped::19:ever_treated   0.03236    0.01955    1.655
## event_time_capped::20:ever_treated   0.02662    0.01982    1.343
## event_time_capped::21:ever_treated   0.02421    0.02065    1.172
## event_time_capped::22:ever_treated   0.02619    0.01955    1.339
## event_time_capped::23:ever_treated   0.02310    0.02156    1.072
## event_time_capped::24:ever_treated   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:ever_treated 0.0094852224588977459 **
## event_time_capped::-23:ever_treated 0.0023558511943679115 **
## event_time_capped::-22:ever_treated 0.0048757280751657488 **
## event_time_capped::-21:ever_treated 0.0053376461477061066 **
## event_time_capped::-20:ever_treated 0.0027345781996383819 **
## event_time_capped::-19:ever_treated 0.0026830857284528497 **
## event_time_capped::-18:ever_treated 0.0011000985342388225 **
## event_time_capped::-17:ever_treated 0.0015209076372625216 **
## event_time_capped::-16:ever_treated 0.0104091815855574688 *
## event_time_capped::-15:ever_treated 0.0022807188767514142 **
## event_time_capped::-14:ever_treated 0.0015707827070489996 **
## event_time_capped::-13:ever_treated 0.0005818746563170476 ***
## event_time_capped::-12:ever_treated 0.0003220870059902369 ***
## event_time_capped::-11:ever_treated 0.0013575936597945209 **
## event_time_capped::-10:ever_treated 0.0015311594588344876 **
## event_time_capped::-9:ever_treated  0.0145223184090393000 *
## event_time_capped::-8:ever_treated  0.0041039232428061031 **
## event_time_capped::-7:ever_treated  0.0034825977073684013 **
## event_time_capped::-6:ever_treated  0.0022536190724118392 **
## event_time_capped::-5:ever_treated  0.0024864727863506599 **
## event_time_capped::-4:ever_treated  0.0058039816718363111 **
## event_time_capped::-3:ever_treated  0.0045855633812252033 **
## event_time_capped::-2:ever_treated  0.0531677522051894128 .
## event_time_capped::0:ever_treated   0.5182445658823777723
## event_time_capped::1:ever_treated   0.2402506046284483832
## event_time_capped::2:ever_treated   0.2788899210175871946
## event_time_capped::3:ever_treated   0.1639494233289743030
## event_time_capped::4:ever_treated   0.1136552791466868551
## event_time_capped::5:ever_treated   0.1008347858094696958
## event_time_capped::6:ever_treated   0.0565605127180282899 .
## event_time_capped::7:ever_treated   0.0453721630873936688 *
## event_time_capped::8:ever_treated   0.1776426886235540070
## event_time_capped::9:ever_treated   0.1116168347936269539
## event_time_capped::10:ever_treated  0.1297317238966030906
## event_time_capped::11:ever_treated  0.1559722782690128873
## event_time_capped::12:ever_treated  0.1369655028210395864
## event_time_capped::13:ever_treated  0.1663133411799134764
## event_time_capped::14:ever_treated  0.2715997426435165507
## event_time_capped::15:ever_treated  0.2185751718809247623
## event_time_capped::16:ever_treated  0.1128118868789582951
## event_time_capped::17:ever_treated  0.0941976152727828503 .
## event_time_capped::18:ever_treated  0.0637339898367203922 .
## event_time_capped::19:ever_treated  0.1014485716186108999
## event_time_capped::20:ever_treated  0.1826494010605449747
```
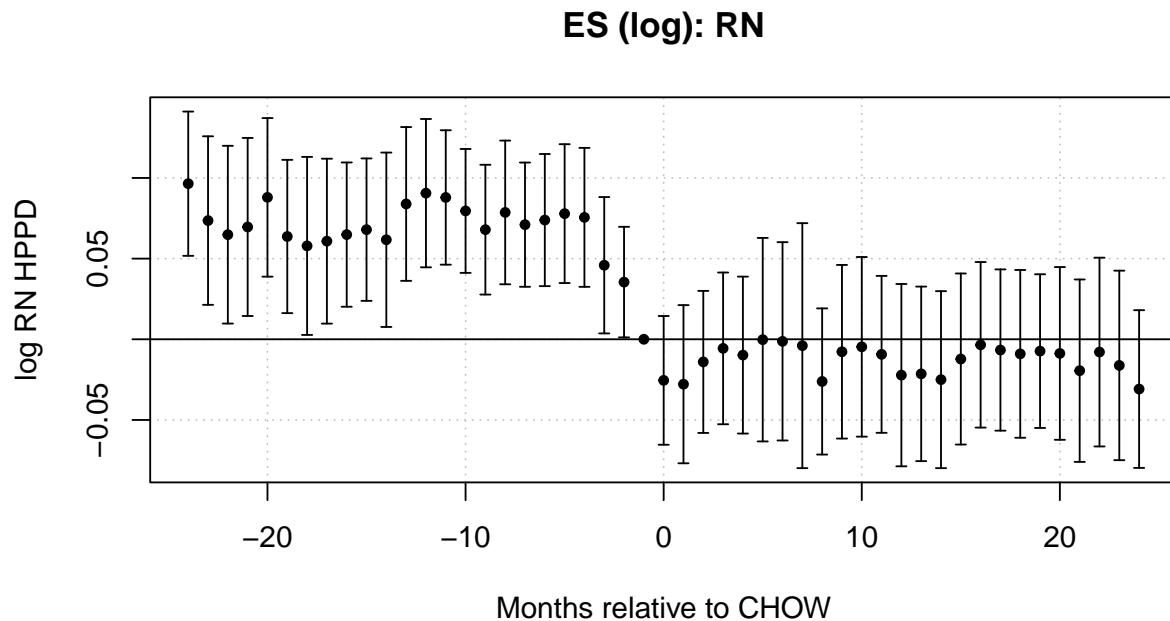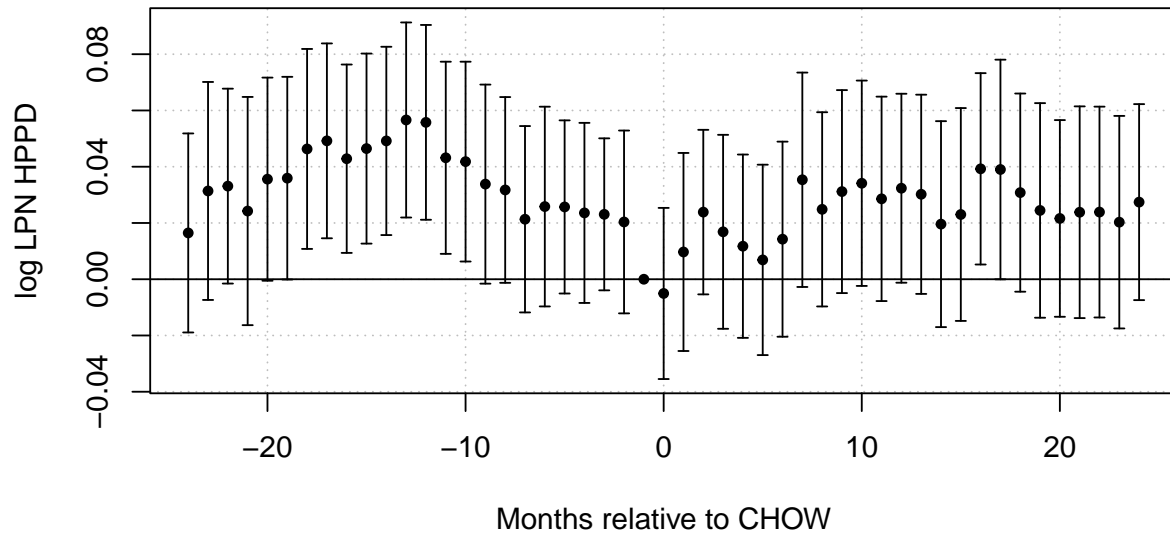
```
## event_time_capped::21:ever_treated   0.2443113298996143212
## event_time_capped::22:ever_treated   0.1838460888196892518
## event_time_capped::23:ever_treated   0.2867865442572822277
## event_time_capped::24:ever_treated   0.1787080140214571122
## government                           0.0000947748109083198 ***
## non_profit                           0.0253470524933526661 *
## chain                                0.0005850930143197045 ***
## ccrc_facility                        0.4236160914615147988
## sff_facility                         0.1222187207461137015
## cm_q_state_2                         0.0000011169675732812 ***
## cm_q_state_3                         0.0000000000000031672 ***
## cm_q_state_4                                   < 2.2e-16 ***
## urban                                0.8619668622029010852
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.159886     Adj. R2: 0.620037
##                   Within R2: 0.004348
```
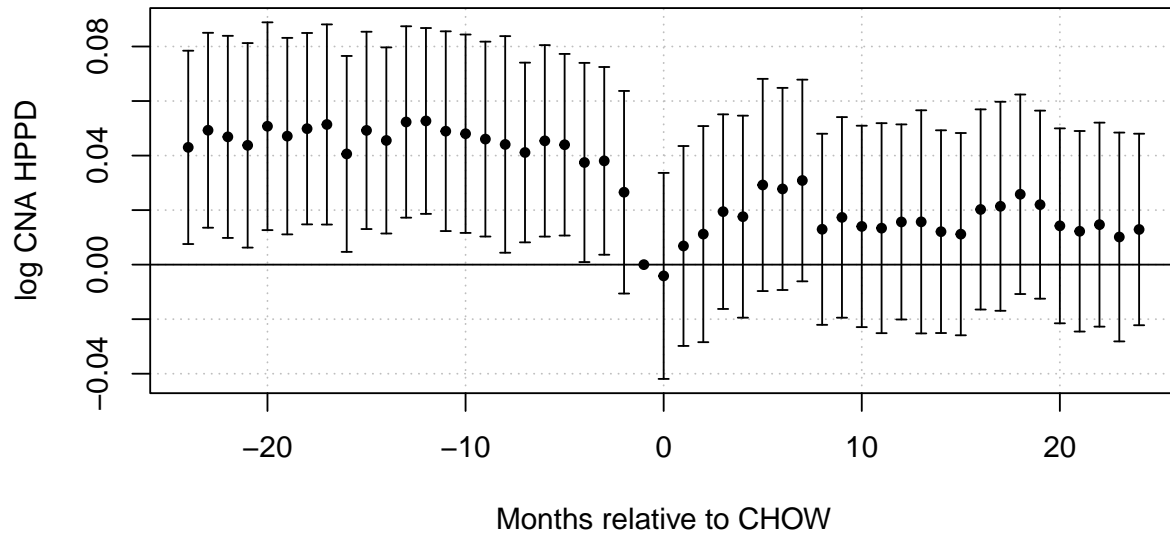
Event-Study Plots

ES (log): RN

Months relative to CHOW

ES (log): LPN

ES (log): CNA

ES (log): Total