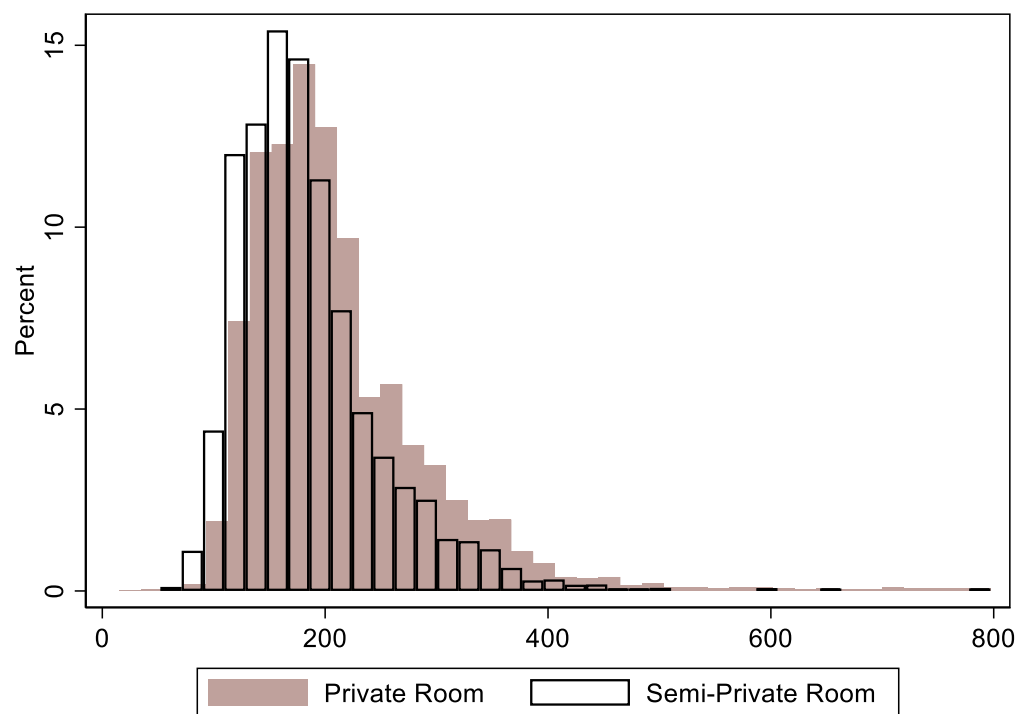


**Appendix Figure 1:** Distribution of Caregiverlist private and semi-private room per day prices



**Appendix Table 1.** Sensitivity analysis including Minnesota and North Dakota

| Model Outcome     | (7)                |        | (8)                |         | (9)                     |        | (10)                    |        | (11)                            |        | (12)                            |        |
|-------------------|--------------------|--------|--------------------|---------|-------------------------|--------|-------------------------|--------|---------------------------------|--------|---------------------------------|--------|
|                   | Private Room Price |        | Private Room Price |         | Semi-Private Room Price |        | Semi-Private Room Price |        | Private-semi private difference |        | Private-semi private difference |        |
|                   | Coef.              | SE     | Coef.              | SE      | Coef.                   | SE     | Coef.                   | SE     | Coef.                           | SE     | Coef.                           | SE     |
| Ownership type    |                    |        |                    |         |                         |        |                         |        |                                 |        |                                 |        |
| For-Profit        | Ref.               |        | Ref.               |         | Ref.                    |        | Ref.                    |        | Ref.                            |        | Ref.                            |        |
| Non-Profit        | 6.14***            | (1.65) | 6.85***            | (1.60)  | 6.40***                 | (1.17) | 7.84***                 | (1.13) | -1.02*                          | (0.58) | -0.63                           | (0.67) |
| Government        | 4.95               | (3.74) | 6.43               | (4.27)  | 4.41*                   | (2.40) | 7.12**                  | (3.00) | -2.52**                         | (1.12) | -2.15                           | (1.53) |
| Urban             | 13.77***           | (1.55) |                    |         | 10.69***                | (1.08) |                         |        | 3.71***                         | (0.63) |                                 |        |
| Hospital-Based    | 54.49***           | (7.08) | 59.10***           | (8.48)  | 30.33***                | (4.66) | 34.10***                | (5.76) | 0.90                            | (1.53) | 1.98                            | (2.26) |
| Special Care Unit | 2.54**             | (1.28) | 3.22**             | (1.32)  | 1.41                    | (0.93) | 2.55**                  | (1.00) | 0.44                            | (0.65) | 1.13                            | (0.72) |
| Chain             | 3.67***            | (1.16) | 5.03***            | (1.30)  | 3.33***                 | (0.75) | 4.37***                 | (0.85) | -0.14                           | (0.51) | 0.22                            | (0.59) |
| County HHI        | -17.88***          | (3.02) | 11.18              | (11.73) | -11.37***               | (2.01) | 11.86                   | (9.17) | -5.39***                        | (1.11) | -0.94                           | (3.45) |
| CMS Overall       |                    |        |                    |         |                         |        |                         |        |                                 |        |                                 |        |
| Rating            |                    |        |                    |         |                         |        |                         |        |                                 |        |                                 |        |
| 1 Star            | Ref.               |        | Ref.               |         | Ref.                    |        | Ref.                    |        | Ref.                            |        | Ref.                            |        |
| 2 Star            | 2.77*              | (1.46) | 1.00               | (1.62)  | 1.39                    | (0.98) | 0.69                    | (1.01) | -0.63                           | (0.72) | -0.81                           | (0.83) |
| 3 Star            | 1.41               | (1.69) | -0.86              | (1.91)  | 1.34                    | (1.10) | -0.04                   | (1.11) | -0.94                           | (0.70) | -0.87                           | (0.78) |
| 4 Star            | 4.08**             | (1.59) | 2.50               | (1.64)  | 3.52***                 | (1.09) | 2.19**                  | (1.08) | -1.34*                          | (0.69) | -1.08                           | (0.76) |
| 5 Star            | 8.49***            | (2.27) | 5.13**             | (2.41)  | 5.45***                 | (1.54) | 3.19**                  | (1.52) | -0.75                           | (0.92) | -0.83                           | (1.03) |
| Occupancy %       | 0.09*              | (0.05) | 0.06               | (0.05)  | 0.11***                 | (0.03) | 0.09***                 | (0.03) | 0.01                            | (0.02) | -0.04                           | (0.03) |
| Number of Beds    |                    |        |                    |         |                         |        |                         |        |                                 |        |                                 |        |
| 0-60              | Ref.               |        | Ref.               |         | Ref.                    |        | Ref.                    |        | Ref.                            |        | Ref.                            |        |
| 61-120            | 0.17               | (1.47) | 0.60               | (1.73)  | 1.48                    | (0.95) | 2.40**                  | (1.08) | -0.40                           | (0.63) | -0.88                           | (0.73) |
| 120-180           | 8.81***            | (1.72) | 6.77***            | (1.89)  | 8.06***                 | (1.20) | 7.13***                 | (1.35) | 1.84**                          | (0.83) | 0.88                            | (0.97) |
| 181+              | 21.23***           | (2.40) | 10.51***           | (2.60)  | 19.51***                | (1.94) | 10.70***                | (1.72) | 4.60***                         | (1.33) | 2.24                            | (1.42) |
| % Medicaid Share  | -0.33***           | (0.05) | -0.40***           | (0.05)  | -0.20***                | (0.03) | -0.24***                | (0.04) | -0.18***                        | (0.02) | -0.19***                        | (0.02) |
| % Medicare Share  | 0.84***            | (0.09) | 0.64***            | (0.09)  | 0.57***                 | (0.07) | 0.48***                 | (0.07) | 0.09***                         | (0.03) | 0.06*                           | (0.03) |
| Acuity Index      | 2.63***            | (0.72) | 2.58***            | (0.83)  | 2.36***                 | (0.55) | 2.64***                 | (0.65) | 0.40                            | (0.26) | 0.10                            | (0.30) |
| Constant          | 164.13***          | (9.86) | 181.96***          | (10.87) | 137.58***               | (7.44) | 145.85***               | (8.29) | 27.72***                        | (4.35) | 38.66***                        | (4.68) |
| State FE          | Y                  |        | N                  |         | Y                       |        | N                       |        | Y                               |        | N                               |        |
| County FE         | N                  |        | Y                  |         | N                       |        | Y                       |        | N                               |        | Y                               |        |
| N                 | 10402              |        | 9554               |         | 11314                   |        | 10454                   |        | 9350                            |        | 8482                            |        |
| R <sup>2</sup>    | 0.56               |        | 0.69               |         | 0.70                    |        | 0.79                    |        | 0.21                            |        | 0.37                            |        |

Notes: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Excluding Outliers below 1<sup>st</sup> and above 99% and facilities from Alaska and Hawaii. Standard errors (SE) in parentheses were clustered at the county-level. HHI (Herfindahl-Hirschman Index) is measured at the county-level and ranges from 0 to 1. In Models 2 and 4, singleton counties are omitted. Occupancy %, % Medicaid, % Medicare measured from 0-100. Centers for Medicaid and Medicare Services (CMS) Star Rating is a 2010 snapshot of overall rating.

**Appendix Table 2:** Sensitivity analysis excluding government owned-nursing homes

| Model Outcome      | (13)               |         | (14)               |         | (15)                    |        | (16)                    |        | (17)                            |        | (18)                            |        |
|--------------------|--------------------|---------|--------------------|---------|-------------------------|--------|-------------------------|--------|---------------------------------|--------|---------------------------------|--------|
|                    | Private Room Price |         | Private Room Price |         | Semi-Private Room Price |        | Semi-Private Room Price |        | Private-semi private difference |        | Private-semi private difference |        |
|                    | Coef.              | SE      | Coef.              | SE      | Coef.                   | SE     | Coef.                   | SE     | Coef.                           | SE     | Coef.                           | SE     |
| Ownership type     |                    |         |                    |         |                         |        |                         |        |                                 |        |                                 |        |
| For-Profit         | Ref.               |         | Ref.               |         | Ref.                    |        | Ref.                    |        | Ref.                            |        | Ref.                            |        |
| Non-Profit         | 6.09***            | (1.66)  | 7.12***            | (1.62)  | 6.26***                 | (1.17) | 7.83***                 | (1.12) | -1.05*                          | (0.60) | -0.58                           | (0.68) |
| Urban              | 14.49***           | (1.56)  |                    |         | 10.69***                | (1.08) |                         |        | 3.97***                         | (0.65) |                                 |        |
| Hospital-Based     | 50.88***           | (8.48)  | 53.36***           | (9.91)  | 27.60***                | (5.68) | 31.50***                | (6.63) | 1.12                            | (1.91) | 1.80                            | (2.68) |
| Special Care Unit  | 1.90               | (1.30)  | 2.87**             | (1.35)  | 1.29                    | (0.89) | 2.41**                  | (0.95) | 0.31                            | (0.68) | 1.10                            | (0.74) |
| Chain              | 3.85***            | (1.17)  | 5.28***            | (1.31)  | 3.55***                 | (0.76) | 4.54***                 | (0.86) | -0.20                           | (0.52) | 0.22                            | (0.60) |
| County HHI         | -16.96***          | (3.10)  | 15.60              | (12.47) | -11.98***               | (2.03) | 15.62                   | (9.64) | -5.16***                        | (1.17) | -1.13                           | (3.67) |
| CMS Overall Rating |                    |         |                    |         |                         |        |                         |        |                                 |        |                                 |        |
| 1 Star             | Ref.               |         | Ref.               |         | Ref.                    |        | Ref.                    |        | Ref.                            |        | Ref.                            |        |
| 2 Star             | 2.92**             | (1.46)  | 1.56               | (1.63)  | 1.60                    | (0.98) | 0.61                    | (1.02) | -0.46                           | (0.74) | -0.74                           | (0.85) |
| 3 Star             | 0.58               | (1.74)  | -1.23              | (1.97)  | 1.00                    | (1.12) | -0.47                   | (1.14) | -0.99                           | (0.72) | -0.90                           | (0.80) |
| 4 Star             | 3.62**             | (1.62)  | 1.93               | (1.68)  | 3.19***                 | (1.10) | 1.34                    | (1.10) | -1.17                           | (0.72) | -0.95                           | (0.78) |
| 5 Star             | 7.08***            | (2.26)  | 4.26*              | (2.44)  | 4.88***                 | (1.52) | 2.77*                   | (1.50) | -0.58                           | (0.96) | -0.72                           | (1.06) |
| Occupancy %        | 0.11**             | (0.05)  | 0.10*              | (0.05)  | 0.11***                 | (0.03) | 0.09***                 | (0.03) | 0.01                            | (0.03) | -0.04                           | (0.03) |
| Number of Beds     |                    |         |                    |         |                         |        |                         |        |                                 |        |                                 |        |
| 0-60               | Ref.               |         | Ref.               |         | Ref.                    |        | Ref.                    |        | Ref.                            |        | Ref.                            |        |
| 61-120             | 0.80               | (1.50)  | 1.56               | (1.75)  | 1.79*                   | (0.94) | 2.75**                  | (1.08) | -0.18                           | (0.65) | -0.72                           | (0.75) |
| 120-180            | 9.13***            | (1.76)  | 7.19***            | (1.94)  | 8.23***                 | (1.19) | 7.34***                 | (1.36) | 2.06**                          | (0.87) | 1.08                            | (0.99) |
| 181+               | 23.20***           | (2.44)  | 13.03***           | (2.61)  | 19.96***                | (1.98) | 11.58***                | (1.74) | 5.23***                         | (1.40) | 2.79*                           | (1.47) |
| % Medicaid Share   | -0.39***           | (0.05)  | -0.44***           | (0.05)  | -0.22***                | (0.03) | -0.26***                | (0.04) | -0.19***                        | (0.02) | -0.20***                        | (0.02) |
| % Medicare Share   | 0.72***            | (0.09)  | 0.56***            | (0.09)  | 0.54***                 | (0.06) | 0.45***                 | (0.07) | 0.08***                         | (0.03) | 0.06                            | (0.03) |
| Acuity Index       | 2.60***            | (0.74)  | 2.69***            | (0.85)  | 2.57***                 | (0.56) | 2.84***                 | (0.66) | 0.28                            | (0.27) | 0.00                            | (0.31) |
| Constant           | 167.24***          | (10.01) | 181.09***          | (11.10) | 137.32***               | (7.35) | 144.61***               | (8.24) | 29.34***                        | (4.52) | 39.95***                        | (4.88) |
| State FE           | Y                  |         | N                  |         | Y                       |        | N                       |        | Y                               |        | N                               |        |
| County FE          | N                  |         | Y                  |         | N                       |        | Y                       |        | N                               |        | Y                               |        |
| N                  | 9,831              |         | 9,044              |         | 10,695                  |        | 9,906                   |        | 8,913                           |        | 8,113                           |        |
| R <sup>2</sup>     | 0.58               |         | 0.70               |         | 0.72                    |        | 0.80                    |        | 0.21                            |        | 0.36                            |        |

Notes: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Excluding Outliers below 1<sup>st</sup> and above 99%, facilities from Alaska, Hawaii, Minnesota and North Dakota and government-owned. Standard errors (SE) in parentheses were clustered at the county-level. HHI (Herfindahl-Hirschman Index) is measured at the county-level and ranges from 0 to 1. In Models 2 and 4, singleton counties are omitted. Occupancy %, % Medicaid, % Medicare measured from 0-100. Centers for Medicaid and Medicare Services (CMS) Star Rating is a 2010 snapshot of overall rating.

**Appendix Table 3:** Sensitivity analysis excluding hospital-based nursing homes

| Model Outcome      | (19)               |        | (20)               |         | (21)                    |        | (22)                    |        | (23)                            |        | (24)                            |        |
|--------------------|--------------------|--------|--------------------|---------|-------------------------|--------|-------------------------|--------|---------------------------------|--------|---------------------------------|--------|
|                    | Private Room Price |        | Private Room Price |         | Semi-Private Room Price |        | Semi-Private Room Price |        | Private-semi private difference |        | Private-semi private difference |        |
|                    | Coef.              | SE     | Coef.              | SE      | Coef.                   | SE     | Coef.                   | SE     | Coef.                           | SE     | Coef.                           | SE     |
| Ownership type     |                    |        |                    |         |                         |        |                         |        |                                 |        |                                 |        |
| For-Profit         | Ref.               |        | Ref.               |         | Ref.                    |        | Ref.                    |        | Ref.                            |        | Ref.                            |        |
| Non-Profit         | 6.87***            | (1.53) | 7.93***            | (1.46)  | 6.93***                 | (1.14) | 8.29***                 | (1.12) | -1.09*                          | (0.58) | -0.73                           | (0.67) |
| Government         | -2.32              | (2.96) | -0.88              | (3.44)  | 1.99                    | (2.14) | 3.95                    | (2.67) | -3.13**                         | (1.26) | -2.52                           | (1.74) |
| Urban              | 13.80***           | (1.39) |                    |         | 10.46***                | (1.00) |                         |        | 3.84***                         | (0.65) |                                 |        |
| Special Care Unit  | 2.35*              | (1.26) | 3.31***            | (1.28)  | 1.27                    | (0.92) | 2.45**                  | (0.99) | 0.56                            | (0.67) | 1.24*                           | (0.73) |
| Chain              | 3.23***            | (1.09) | 4.47***            | (1.25)  | 3.38***                 | (0.74) | 4.11***                 | (0.85) | -0.16                           | (0.52) | 0.21                            | (0.59) |
| County HHI         | -16.93***          | (2.73) | -5.39              | (5.59)  | -10.86***               | (1.88) | -2.39                   | (4.61) | -5.50***                        | (1.14) | -1.14                           | (3.03) |
| CMS Overall Rating |                    |        |                    |         |                         |        |                         |        |                                 |        |                                 |        |
| 1 Star             | Ref.               |        | Ref.               |         | Ref.                    |        | Ref.                    |        | Ref.                            |        | Ref.                            |        |
| 2 Star             | 4.16***            | (1.40) | 2.77*              | (1.51)  | 2.08**                  | (0.97) | 0.97                    | (1.00) | -0.44                           | (0.73) | -0.70                           | (0.83) |
| 3 Star             | 1.04               | (1.64) | -0.18              | (1.83)  | 1.35                    | (1.09) | 0.25                    | (1.10) | -1.00                           | (0.71) | -0.99                           | (0.79) |
| 4 Star             | 3.98***            | (1.54) | 3.66**             | (1.55)  | 3.45***                 | (1.06) | 2.41**                  | (1.07) | -1.22*                          | (0.72) | -1.02                           | (0.79) |
| 5 Star             | 8.30***            | (2.09) | 5.11**             | (2.16)  | 5.88***                 | (1.47) | 3.81***                 | (1.46) | -0.52                           | (0.96) | -0.85                           | (1.06) |
| Occupancy %        | 0.15***            | (0.04) | 0.09*              | (0.05)  | 0.15***                 | (0.02) | 0.13***                 | (0.03) | 0.01                            | (0.02) | -0.04                           | (0.03) |
| Number of Beds     |                    |        |                    |         |                         |        |                         |        |                                 |        |                                 |        |
| 0-60               | Ref.               |        | Ref.               |         | Ref.                    |        | Ref.                    |        | Ref.                            |        | Ref.                            |        |
| 61-120             | 2.97**             | (1.28) | 3.60**             | (1.53)  | 3.66***                 | (0.87) | 4.45***                 | (1.02) | -0.05                           | (0.65) | -0.62                           | (0.76) |
| 120-180            | 11.83***           | (1.55) | 9.99***            | (1.71)  | 10.33***                | (1.13) | 9.40***                 | (1.28) | 2.31***                         | (0.85) | 1.25                            | (0.99) |
| 181+               | 24.28***           | (2.23) | 13.76***           | (2.44)  | 21.40***                | (1.79) | 12.85***                | (1.60) | 5.06***                         | (1.31) | 2.60*                           | (1.38) |
| % Medicaid Share   | -0.38***           | (0.05) | -0.42***           | (0.05)  | -0.21***                | (0.03) | -0.25***                | (0.04) | -0.18***                        | (0.02) | -0.20***                        | (0.02) |
| % Medicare Share   | 0.62***            | (0.07) | 0.51***            | (0.08)  | 0.48***                 | (0.05) | 0.39***                 | (0.06) | 0.08***                         | (0.03) | 0.05                            | (0.04) |
| Acuity Index       | 2.53***            | (0.71) | 2.44***            | (0.85)  | 2.36***                 | (0.44) | 2.67***                 | (0.53) | 0.35                            | (0.26) | 0.06                            | (0.29) |
| Constant           | 162.89***          | (9.65) | 183.93***          | (10.72) | 134.40***               | (6.40) | 144.73***               | (7.08) | 28.35***                        | (4.51) | 39.45***                        | (4.90) |
| State FE           | Y                  |        | N                  |         | Y                       |        | N                       |        | Y                               |        | N                               |        |
| County FE          | N                  |        | Y                  |         | N                       |        | Y                       |        | N                               |        | Y                               |        |
| N                  | 9,905              |        | 9,121              |         | 10,838                  |        | 10,052                  |        | 8,951                           |        | 8,158                           |        |
| R <sup>2</sup>     | 0.61               |        | 0.72               |         | 0.74                    |        | 0.81                    |        | 0.21                            |        | 0.37                            |        |

Notes: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Excluding Outliers below 1<sup>st</sup> and above 99%, facilities from Alaska, Hawaii, Minnesota and North Dakota and hospital-base. Standard errors (SE) in parentheses were clustered at the county-level. HHI (Herfindahl-Hirschman Index) is measured at the county-level and ranges from 0 to 1. In Models 2 and 4, singleton counties are omitted. Occupancy %, % Medicaid, % Medicare measured from 0-100. Centers for Medicaid and Medicare Services (CMS) Star Rating is a 2010 snapshot of overall rating.

**Appendix Table 4:** Caregiverlist private and semi-private room prices per day at the state-level

| Private Room Price |     |      |        |     |      |        | Semi-Private Room Price |     |      |        |     |      |        |
|--------------------|-----|------|--------|-----|------|--------|-------------------------|-----|------|--------|-----|------|--------|
| State              | N   | Mean | Median | N   | Mean | Median | State                   | N   | Mean | Median | N   | Mean | Median |
| AK                 | 1   | 1250 | 1250   | 5   | 765  | 714    | MT                      | 76  | 217  | 174    | 81  | 202  | 163    |
| AL                 | 156 | 173  | 160    | 154 | 152  | 150    | NC                      | 306 | 197  | 180    | 324 | 173  | 165    |
| AR                 | 156 | 163  | 145    | 173 | 140  | 130    | ND                      | 67  | 334  | 217    | 65  | 294  | 199    |
| AZ                 | 109 | 240  | 210    | 119 | 193  | 171    | NE                      | 150 | 185  | 162    | 158 | 193  | 150    |
| CA                 | 446 | 258  | 220    | 701 | 207  | 185    | NH                      | 35  | 296  | 260    | 49  | 271  | 249    |
| CO                 | 155 | 224  | 209    | 166 | 183  | 184    | NJ                      | 259 | 311  | 295    | 259 | 281  | 270    |
| CT                 | 206 | 350  | 355    | 220 | 321  | 325    | NM                      | 35  | 200  | 177    | 43  | 173  | 164    |
| DC                 | 13  | 389  | 300    | 12  | 319  | 250    | NV                      | 31  | 223  | 208    | 42  | 203  | 185    |
| DE                 | 21  | 230  | 235    | 23  | 212  | 217    | NY                      | 528 | 323  | 305    | 529 | 312  | 291    |
| FL                 | 598 | 235  | 211    | 641 | 207  | 194    | OH                      | 733 | 210  | 195    | 792 | 188  | 175    |
| GA                 | 307 | 168  | 159    | 315 | 152  | 146    | OK                      | 230 | 157  | 137    | 244 | 129  | 125    |
| HI                 | 12  | 544  | 383    | 13  | 370  | 320    | OR                      | 96  | 229  | 217    | 105 | 198  | 195    |
| IA                 | 322 | 163  | 144    | 319 | 146  | 132    | PA                      | 354 | 265  | 238    | 410 | 240  | 223    |
| ID                 | 53  | 276  | 199    | 61  | 226  | 180    | RI                      | 69  | 260  | 260    | 76  | 237  | 237    |
| IL                 | 652 | 254  | 167    | 705 | 229  | 143    | SC                      | 138 | 181  | 170    | 137 | 168  | 158    |
| IN                 | 437 | 202  | 187    | 467 | 164  | 155    | SD                      | 85  | 179  | 164    | 82  | 157  | 153    |
| KS                 | 249 | 182  | 146    | 241 | 162  | 135    | TN                      | 196 | 186  | 172    | 239 | 162  | 159    |
| KY                 | 63  | 213  | 182    | 61  | 179  | 169    | TX                      | 779 | 166  | 150    | 926 | 118  | 114    |
| LA                 | 146 | 150  | 132    | 165 | 133  | 125    | UT                      | 56  | 194  | 175    | 60  | 150  | 148    |
| MA                 | 375 | 315  | 309    | 386 | 295  | 289    | VA                      | 195 | 200  | 185    | 210 | 183  | 170    |
| MD                 | 146 | 305  | 226    | 166 | 270  | 211    | VT                      | 36  | 246  | 245    | 35  | 225  | 225    |
| ME                 | 77  | 301  | 260    | 89  | 258  | 230    | WA                      | 179 | 240  | 228    | 195 | 211  | 206    |
| MI                 | 338 | 228  | 210    | 363 | 205  | 195    | WI                      | 306 | 223  | 209    | 304 | 202  | 189    |
| MN                 | 96  | 319  | 210    | 93  | 282  | 191    | WV                      | 102 | 233  | 206    | 104 | 218  | 198    |
| MO                 | 435 | 145  | 134    | 442 | 129  | 124    | WY                      | 30  | 200  | 175    | 31  | 181  | 165    |
| MS                 | 141 | 191  | 180    | 147 | 185  | 175    |                         |     |      |        |     |      |        |

Notes: Data collected from 2008-2010.