

Supplementary Table 1: Cardiogenic Shock related mortalities in Older Adults with Essential Hypertension and Type 2 Diabetes Mellitus, Stratified by Sex and Race in the United States, 1999 to 2023

| Deaths | | | | | | | | |
|--------|---------|--------|--------|----------|----------|----------------------------------|----------|------------|
| Year | Overall | Women | Men | NH White | NH Black | American Indian or Alaska Native | Hispanic | Population |
| 1999 | 3,485 | 1,318 | 2,167 | 2,785 | 448 | 21 | 150 | 34,797,841 |
| 2000 | 10,075 | 3,893 | 6,182 | 8,148 | 1,221 | 41 | 473 | 34,991,753 |
| 2001 | 11,329 | 4,512 | 6,817 | 9,069 | 1,363 | 58 | 605 | 35,290,291 |
| 2002 | 12,612 | 5,239 | 7,373 | 10,038 | 1,546 | 82 | 681 | 35,522,207 |
| 2003 | 13,584 | 5,691 | 7,893 | 10,848 | 1,637 | 96 | 738 | 35,863,529 |
| 2004 | 14,783 | 6,144 | 8,639 | 11,842 | 1,743 | 95 | 781 | 36,203,319 |
| 2005 | 16,146 | 6,810 | 9,336 | 12,755 | 1,965 | 113 | 982 | 36,649,798 |
| 2006 | 16,937 | 7,290 | 9,647 | 13,245 | 2,123 | 92 | 1,099 | 37,164,107 |
| 2007 | 18,057 | 7,741 | 10,316 | 14,119 | 2,143 | 127 | 1,236 | 37,825,711 |
| 2008 | 19,098 | 8,269 | 10,829 | 14,921 | 2,170 | 100 | 1,385 | 38,777,621 |
| 2009 | 19,669 | 8,802 | 10,867 | 15,158 | 2,316 | 141 | 1,520 | 39,623,175 |
| 2010 | 20,729 | 9,241 | 11,488 | 15,855 | 2,460 | 140 | 1,700 | 40,267,984 |
| 2011 | 22,308 | 10,128 | 12,180 | 16,846 | 2,697 | 127 | 1,928 | 41,394,141 |
| 2012 | 23,771 | 10,937 | 12,834 | 17,730 | 2,894 | 186 | 2,164 | 43,145,356 |
| 2013 | 22,502 | 10,541 | 11,961 | 16,686 | 2,589 | 176 | 2,193 | 44,704,074 |
| 2014 | 22,609 | 10,686 | 11,923 | 16,498 | 2,595 | 203 | 2,359 | 46,243,211 |
| 2015 | 24,803 | 11,919 | 12,884 | 18,019 | 2,784 | 213 | 2,598 | 47,760,852 |
| 2016 | 28,918 | 14,126 | 14,792 | 20,821 | 3,349 | 216 | 3,182 | 49,244,195 |
| 2017 | 32,291 | 15,697 | 16,594 | 23,081 | 3,671 | 292 | 3,642 | 50,858,679 |
| 2018 | 35,124 | 17,621 | 17,503 | 24,926 | 3,985 | 311 | 4,009 | 52,431,193 |
| 2019 | 37,250 | 18,874 | 18,376 | 26,429 | 4,166 | 324 | 4,278 | 54,058,263 |
| 2020 | 52,018 | 26,517 | 25,501 | 34,732 | 6,317 | 527 | 7,354 | 55,659,365 |
| 2021 | 54,738 | 28,357 | 26,381 | 37,025 | 6,097 | 493 | 7,658 | 55,847,953 |
| 2022 | 53,326 | 27,594 | 25,732 | 37,082 | 5,923 | 418 | 6,613 | 57,794,852 |
| 2023 | 50,629 | 26,408 | 24,221 | 35,138 | 5,591 | 401 | 6,270 | 59,248,361 |
| 2024 | 52,518 | 27,468 | 25,050 | 36,422 | 5,919 | 407 | 6,495 | 59,248,361 |

Supplementary Table 2: Place-of-death counts (1999-2024)

| Year | Medical facility | Nursing home / LTCF | Hospice | Home |
|------|------------------|---------------------|---------|--------|
| 1999 | 1,464 | 996 | — | 919 |
| 2000 | 4,561 | 3,050 | — | 2,240 |
| 2001 | 4,949 | 3,529 | — | 2,514 |
| 2002 | 5,255 | 4,021 | — | 2,985 |
| 2003 | 5,553 | 4,230 | 14 | 3,310 |
| 2004 | 5,758 | 4,769 | 34 | 3,657 |
| 2005 | 6,174 | 5,182 | 132 | 4,099 |
| 2006 | 6,355 | 5,312 | 187 | 4,454 |
| 2007 | 6,648 | 5,693 | 295 | 4,705 |
| 2008 | 6,827 | 5,792 | 401 | 5,195 |
| 2009 | 6,561 | 5,813 | 512 | 5,688 |
| 2010 | 7,064 | 6,234 | 541 | 6,061 |
| 2011 | 7,298 | 6,789 | 669 | 6,640 |
| 2012 | 7,553 | 7,165 | 857 | 7,185 |
| 2013 | 6,886 | 6,655 | 797 | 7,153 |
| 2014 | 6,707 | 6,647 | 891 | 7,464 |
| 2015 | 7,440 | 7,031 | 866 | 8,563 |
| 2016 | 8,215 | 8,115 | 1,367 | 10,010 |
| 2017 | 8,899 | 9,159 | 1,556 | 11,209 |
| 2018 | 9,413 | 9,843 | 1,488 | 12,836 |
| 2019 | 9,944 | 9,945 | 1,735 | 13,932 |
| 2020 | 15,414 | 12,342 | 1,873 | 20,195 |
| 2021 | 17,417 | 10,890 | 2,266 | 21,619 |
| 2022 | 14,725 | 11,260 | 2,565 | 21,857 |
| 2023 | 13,217 | 11,635 | 2,649 | 20,771 |
| 2024 | 13,368 | 11,964 | 2,727 | 21,502 |

Supplementary Table 3: Joinpoint regression – Annual Percent Change (APC)

| Annual Percentag e Change (APC) | Annual Percent age Change (APC) |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Cohort | Segment | Lower Endpoin t | Upper Endpoin t | APC | Lower CI | Upper CI | Test Statistic | P-Value |
| Overall - 3 Joinpoint s | 1 | 1999 | 2001 | 59.9904 * | 18.945 | 103.688 8 | -- | < 0.00000 1 |
| Overall - 3 Joinpoint s | 2 | 2001 | 2016 | 2.8355* | 0.7817 | 3.8228 | -- | 0.02679 5 |
| Overall - 3 Joinpoint s | 3 | 2016 | 2021 | 12.5707 * | 8.5744 | 20.2583 | -- | 0.0004 |
| Overall - 3 Joinpoint s | 4 | 2021 | 2024 | -3.5358 | - 10.2783 | 1.3515 | -- | 0.18076 4 |
| Female - 3 Joinpoint s | 1 | 1999 | 2001 | 65.2691 * | 25.2811 | 105.661 7 | -- | < 0.00000 1 |
| Female - 3 Joinpoint s | 2 | 2001 | 2017 | 2.4656* | 0.763 | 3.4018 | -- | 0.01919 6 |
| Female - 3 Joinpoint s | 3 | 2017 | 2021 | 13.4100 * | 7.8238 | 20.5137 | -- | 0.002 |
| Female - 3 Joinpoint s | 4 | 2021 | 2024 | -4.312 | - 11.8777 | 0.8614 | -- | 0.11837 6 |
| Male - 3 Joinpoint s | 1 | 1999 | 2001 | 66.5376 * | 24.3465 | 106.151 | -- | < 0.00000 1 |
| Male - 3 Joinpoint s | 2 | 2001 | 2017 | 3.9243* | 2.6245 | 4.805 | -- | 0.0016 |
| Male - 3 Joinpoint s | 3 | 2017 | 2021 | 14.9295 * | 10.1685 | 20.6672 | -- | < 0.00000 1 |

| | | | | | | | | |
|----------------------------|---|------|------|---------|---------|--------|----|--------------|
| Male - 3 Joinpoint s | 4 | 2021 | 2024 | -3.7423 | -9.3355 | 0.8924 | -- | 0.11957 6 |
|----------------------------|---|------|------|---------|---------|--------|----|--------------|

| Annual Percentag e Change (APC) | Annual Percent age Change (APC) |
|--|---|---|---|---|---|---|---|---|
| Cohort | Segmen t | Lower Endpoin t | Upper Endpoin t | APC | Lower CI | Upper CI | Test Statistic | P-Value |
| Northeast - 3 Joinpoint s | 1 | 1999 | 2001 | 43.2263 * | 10.5049 | 72.7205 | -- | < 0.00000 1 |
| Northeast - 3 Joinpoint s | 2 | 2001 | 2017 | 1.5291 | -0.3165 | 2.3378 | -- | 0.06718 7 |
| Northeast - 3 Joinpoint s | 3 | 2017 | 2020 | 19.7637 * | 10.6799 | 24.8543 | -- | < 0.00000 1 |
| Northeast - 3 Joinpoint s | 4 | 2020 | 2024 | -3.2579 | -8.9955 | 0.0658 | -- | 0.05239 |
| Midwest - 3 Joinpoint s | 1 | 1999 | 2001 | 62.5535 * | 19.3922 | 112.040 4 | -- | < 0.00000 1 |
| Midwest - 3 Joinpoint s | 2 | 2001 | 2018 | 2.3338 | -0.4052 | 3.2701 | -- | 0.06038 8 |
| Midwest - 3 Joinpoint s | 3 | 2018 | 2021 | 15.5503 * | 6.3414 | 20.5961 | -- | 0.01319 7 |
| Midwest - 3 Joinpoint s | 4 | 2021 | 2024 | -4.9841 | - 14.6085 | 0.8808 | -- | 0.08358 3 |
| South - 4 Joinpoint s | 1 | 1999 | 2001 | 61.0508 * | 26.0889 | 99.0719 | -- | < 0.00000 1 |
| South - 4 Joinpoint s | 2 | 2001 | 2010 | 4.1398* | 2.2523 | 8.0513 | -- | 0.01159 8 |

| | | | | | | | | |
|-----------------------------|---|------|------|--------------|--------------|---------|----|-------------------|
| South - 4 Joinpoint s | 3 | 2010 | 2015 | -2.3295 | -9.3293 | 1.4318 | -- | 0.21915 6 |
| South - 4 Joinpoint s | 4 | 2015 | 2021 | 12.4108 * | 9.7934 | 20.302 | -- | 0.0004 |
| South - 4 Joinpoint s | 5 | 2021 | 2024 | -2.4712 | - 10.3789 | 2.5435 | -- | 0.30194 |
| West - 3 Joinpoint s | 1 | 1999 | 2001 | 62.6711 * | 10.1789 | 132.9 | -- | < 0.00000 1 |
| West - 3 Joinpoint s | 2 | 2001 | 2018 | 6.569 | -1.7618 | 7.4628 | -- | 0.07078 6 |
| West - 3 Joinpoint s | 3 | 2018 | 2021 | 17.1132 * | 9.7167 | 21.4578 | -- | < 0.00000 1 |
| West - 3 Joinpoint s | 4 | 2021 | 2024 | - 4.4429* | - 11.3613 | -0.097 | -- | 0.04599 1 |

| Annual Percentag e Change (APC) | Annual Percent age Change (APC) |
|---|---|---|---|---|---|---|---|---|
| Cohort | Segmen t | Lower Endpoin t | Upper Endpoin t | APC | Lower CI | Upper CI | Test Statistic | P-Value |
| American Indian or Alaska Native - 3 Joinpoint s | 1 | 1999 | 2002 | 50.9823 * | 18.5776 | 141.913 2 | -- | < 0.00000 1 |
| American Indian or Alaska Native - 3 Joinpoint s | 2 | 2002 | 2016 | 2.1764 | -3.2464 | 3.7776 | -- | 0.19036 2 |
| American Indian or Alaska Native - 3 Joinpoint s | 3 | 2016 | 2021 | 12.6129 * | 7.4944 | 21.8071 | -- | < 0.00000 1 |

| | | | | | | | | |
|---|---|------|------|------------|-----------|---------|----|------------|
| American Indian or Alaska Native - 3 Joinpoints | 4 | 2021 | 2024 | - 12.1191* | - 21.2249 | -5.3706 | -- | < 0.000001 |
| Black or African American - 3 Joinpoints | 1 | 1999 | 2001 | 63.4719* | 9.6341 | 129.547 | -- | < 0.000001 |
| Black or African American - 3 Joinpoints | 2 | 2001 | 2018 | 2.2375 | -5.6686 | 3.2737 | -- | 0.155169 |
| Black or African American - 3 Joinpoints | 3 | 2018 | 2021 | 15.6388* | 6.1031 | 21.4845 | -- | 0.010798 |
| Black or African American - 3 Joinpoints | 4 | 2021 | 2024 | -5.4802 | - 16.0261 | 1.0117 | -- | 0.077984 |
| White - 3 Joinpoints | 1 | 1999 | 2001 | 55.8527* | 20.0917 | 86.5789 | -- | < 0.000001 |
| White - 3 Joinpoints | 2 | 2001 | 2018 | 3.2950* | 2.1607 | 3.9815 | -- | 0.003199 |
| White - 3 Joinpoints | 3 | 2018 | 2021 | 16.4237* | 9.6763 | 20.3292 | -- | 0.0016 |
| White - 3 Joinpoints | 4 | 2021 | 2024 | -3.0617 | - 10.5442 | 1.5504 | -- | 0.15037 |
| Hispanics - 2 Joinpoints | 1 | 1999 | 2018 | 5.8228* | 3.5242 | 7.2613 | -- | 0.019996 |
| Hispanics - 2 Joinpoints | 2 | 2018 | 2021 | 19.7043* | 10.1572 | 25.333 | -- | < 0.000001 |

| | | | | | | | | |
|--------------------------|---|------|------|-------------|-----------|---------|----|--------|
| Hispanics - 2 Joinpoints | 3 | 2021 | 2024 | - 10.0175 * | - 19.5366 | -4.1578 | -- | 0.0012 |
|--------------------------|---|------|------|-------------|-----------|---------|----|--------|

| Annual Percentage Change (APC) | Annual Percentage Change (APC) | Annual Percentage Change (APC) | Annual Percentage Change (APC) | Annual Percentage Change (APC) | Annual Percentage Change (APC) | Annual Percentage Change (APC) | Annual Percentage Change (APC) | Annual Percentage Change (APC) |
|---------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Cohort | Segment | Lower Endpoint | Upper Endpoint | APC | Lower CI | Upper CI | Test Statistic | P-Value |
| Metropolitan - 2 Joinpoints | 1 | 1999 | 2001 | 53.6957 * | 18.0437 | 83.2161 | -- | < 0.000001 |
| Metropolitan - 2 Joinpoints | 2 | 2001 | 2018 | 3.8209* | 2.5303 | 4.5272 | -- | 0.009598 |
| Metropolitan - 2 Joinpoints | 3 | 2018 | 2020 | 20.0591 * | 9.02 | 27.1014 | -- | < 0.000001 |
| Non-Metropolitan - 2 Joinpoints | 1 | 1999 | 2001 | 71.9437 * | 23.4709 | 121.011 | -- | < 0.000001 |
| Non-Metropolitan - 2 Joinpoints | 2 | 2001 | 2018 | 2.3601 | -0.0386 | 3.2729 | -- | 0.05159 |
| Non-Metropolitan - 2 Joinpoints | 3 | 2018 | 2020 | 23.0206 * | 7.0504 | 32.0056 | -- | < 0.000001 |

Supplementary Table 4: Overall & sex-stratified age-adjusted mortality rates

| Age-Adjusted Rate (95% CI) | Age-Adjusted Rate (95% CI) | Age-Adjusted Rate (95% CI) | Age-Adjusted Rate (95% CI) |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Year | Men | Women | Overall |
| 1999 | 10.1 (9.5 to 10.6) | 10.1 (9.7 to 10.5) | 10.1 (9.8 to 10.4) |
| 2000 | 29.3 (28.4 to 30.2) | 28.5 (27.8 to 29.2) | 28.9 (28.3 to 29.5) |
| 2001 | 33.3 (32.4 to 34.3) | 31.0 (30.2 to 31.7) | 32.1 (31.5 to 32.7) |
| 2002 | 38.3 (37.3 to 39.4) | 33.3 (32.6 to 34.1) | 35.4 (34.8 to 36.0) |
| 2003 | 40.7 (39.7 to 41.8) | 35.3 (34.6 to 36.1) | 37.6 (37.0 to 38.2) |
| 2004 | 43.5 (42.4 to 44.6) | 38.3 (37.5 to 39.1) | 40.5 (39.8 to 41.1) |
| 2005 | 47.1 (45.9 to 48.2) | 40.8 (40.0 to 41.7) | 43.5 (42.8 to 44.1) |
| 2006 | 49.3 (48.1 to 50.4) | 41.6 (40.7 to 42.4) | 44.9 (44.2 to 45.6) |
| 2007 | 51.2 (50.1 to 52.4) | 43.8 (42.9 to 44.6) | 47.0 (46.3 to 47.7) |
| 2008 | 53.4 (52.2 to 54.5) | 45.2 (44.3 to 46.1) | 48.7 (48.0 to 49.4) |
| 2009 | 55.3 (54.1 to 56.5) | 44.7 (43.8 to 45.5) | 49.2 (48.6 to 49.9) |
| 2010 | 57.2 (56.0 to 58.4) | 46.6 (45.7 to 47.5) | 51.1 (50.4 to 51.8) |
| 2011 | 60.5 (59.3 to 61.7) | 48.4 (47.5 to 49.2) | 53.5 (52.8 to 54.2) |
| 2012 | 63.1 (61.9 to 64.3) | 49.5 (48.6 to 50.4) | 55.3 (54.6 to 56.0) |
| 2013 | 58.7 (57.5 to 59.8) | 45.3 (44.5 to 46.1) | 51.0 (50.3 to 51.7) |
| 2014 | 57.2 (56.1 to 58.3) | 44.2 (43.4 to 45.0) | 49.8 (49.2 to 50.5) |
| 2015 | 61.9 (60.8 to 63.0) | 46.8 (46.0 to 47.6) | 53.2 (52.6 to 53.9) |
| 2016 | 71.3 (70.1 to 72.5) | 52.6 (51.8 to 53.5) | 60.6 (59.9 to 61.3) |
| 2017 | 76.8 (75.6 to 78.0) | 57.6 (56.7 to 58.5) | 65.9 (65.2 to 66.6) |
| 2018 | 83.2 (81.9 to 84.4) | 59.3 (58.5 to 60.2) | 69.6 (68.9 to 70.3) |
| 2019 | 86.4 (85.1 to 87.6) | 60.9 (60.0 to 61.8) | 72.0 (71.3 to 72.7) |
| 2020 | 117.7 (116.3 to 119.2) | 83.1 (82.0 to 84.1) | 98.1 (97.3 to 99.0) |
| 2021 | 127.8 (126.3 to 129.3) | 89.5 (88.4 to 90.6) | 106.1 (105.2 to 107.0) |
| 2022 | 120.0 (118.6 to 121.4) | 81.7 (80.7 to 82.7) | 98.0 (97.2 to 98.9) |
| 2023 | 111.9 (110.6 to 113.3) | 77.2 (76.2 to 78.2) | 92.3 (91.5 to 93.1) |
| 2024 | 116.5 (115.1 to 117.9) | 80.0 (79.0 to 81.0) | 95.9 (95.0 to 96.7) |

Supplementary Table 5: Age-adjusted mortality rates by U.S. Census Region

| Year | Census Region 1: Northeast | Census Region 2: Midwest | Census Region 3: South | Census Region 4: West |
|------|-------------------------------|-----------------------------|---------------------------|--------------------------|
| 1999 | 9.9 (9.1 to 10.6) | 13.3 (12.5 to 14.0) | 8.4 (7.9 to 8.9) | 9.6 (8.9 to 10.4) |
| 2000 | 25.4 (24.2 to 26.5) | 36.8 (35.5 to 38.1) | 28.3 (27.3 to 29.2) | 24.2 (23.1 to 25.4) |
| 2001 | 26.1 (24.9 to 27.2) | 40.3 (39.0 to 41.7) | 32.5 (31.5 to 33.5) | 27.9 (26.7 to 29.2) |
| 2002 | 27.5 (26.3 to 28.7) | 44.5 (43.0 to 45.9) | 35.9 (34.9 to 37.0) | 31.7 (30.4 to 33.0) |
| 2003 | 28.5 (27.3 to 29.7) | 48.5 (47.0 to 50.0) | 37.7 (36.6 to 38.7) | 34.2 (32.9 to 35.6) |
| 2004 | 31.2 (29.9 to 32.4) | 51.1 (49.6 to 52.6) | 39.9 (38.8 to 41.0) | 38.5 (37.1 to 39.9) |
| 2005 | 31.5 (30.3 to 32.8) | 54.0 (52.5 to 55.6) | 44.4 (43.3 to 45.6) | 41.9 (40.4 to 43.3) |
| 2006 | 30.7 (29.5 to 32.0) | 54.6 (53.1 to 56.2) | 46.6 (45.5 to 47.8) | 44.8 (43.3 to 46.3) |
| 2007 | 30.7 (29.5 to 32.0) | 58.3 (56.8 to 59.9) | 47.2 (46.0 to 48.3) | 49.9 (48.3 to 51.4) |
| 2008 | 31.8 (30.5 to 33.0) | 59.6 (58.0 to 61.2) | 45.9 (44.7 to 47.0) | 57.8 (56.2 to 59.5) |
| 2009 | 32.3 (31.0 to 33.5) | 58.4 (56.8 to 60.0) | 48.7 (47.6 to 49.9) | 56.3 (54.7 to 57.9) |
| 2010 | 34.5 (33.3 to 35.8) | 58.3 (56.7 to 59.8) | 49.7 (48.5 to 50.8) | 61.4 (59.7 to 63.1) |
| 2011 | 35.0 (33.7 to 36.3) | 62.2 (60.6 to 63.8) | 50.5 (49.3 to 51.6) | 66.6 (64.8 to 68.3) |
| 2012 | 37.6 (36.3 to 38.9) | 62.8 (61.2 to 64.3) | 51.5 (50.4 to 52.7) | 69.9 (68.2 to 71.6) |
| 2013 | 32.2 (31.0 to 33.4) | 55.7 (54.2 to 57.2) | 47.0 (46.0 to 48.1) | 69.7 (68.0 to 71.4) |
| 2014 | 31.3 (30.1 to 32.5) | 54.6 (53.2 to 56.1) | 45.1 (44.1 to 46.1) | 69.4 (67.7 to 71.0) |
| 2015 | 34.5 (33.2 to 35.7) | 59.3 (57.8 to 60.8) | 46.6 (45.5 to 47.6) | 74.7 (73.0 to 76.4) |
| 2016 | 37.5 (36.2 to 38.8) | 67.0 (65.4 to 68.6) | 55.1 (54.0 to 56.2) | 83.4 (81.7 to 85.2) |
| 2017 | 39.8 (38.5 to 41.1) | 71.9 (70.3 to 73.5) | 58.7 (57.6 to 59.9) | 94.3 (92.5 to 96.2) |
| 2018 | 43.7 (42.4 to 45.0) | 73.8 (72.1 to 75.4) | 62.7 (61.6 to 63.9) | 99.0 (97.1 to 100.8) |
| 2019 | 44.8 (43.5 to 46.2) | 75.8 (74.2 to 77.4) | 65.0 (63.9 to 66.2) | 102.7 (100.8 to 104.5) |
| 2020 | 65.4 (63.8 to 67.0) | 102.2 (100.3 to 104.0) | 87.4 (86.1 to 88.7) | 139.3 (137.2 to 141.5) |
| 2021 | 64.4 (62.7 to 66.0) | 108.3 (106.3 to 110.2) | 94.9 (93.5 to 96.3) | 158.3 (156.0 to 160.7) |
| 2022 | 57.6 (56.1 to 59.1) | 98.3 (96.4 to 100.1) | 89.5 (88.2 to 90.8) | 145.9 (143.7 to 148.0) |
| 2023 | 55.2 (53.7 to 56.6) | 93.1 (91.4 to 94.9) | 84.8 (83.5 to 86.0) | 135.0 (133.0 to 137.1) |

Supplementary Table 6: Race-stratified age-adjusted mortality rates

| Year | American Indian or Alaska Native | Black or African American | Hispanics | White |
|------|----------------------------------|---------------------------|----------------------|---------------------|
| 1999 | 17.6 (10.8 to 27.2) | 16.6 (15.1 to 18.2) | 8.7 (12.1 to 0.9) | 9.4 (9.1 to 9.8) |
| 2000 | 32.0 (22.9 to 43.6) | 44.7 (42.2 to 47.2) | 28.0 (33.7 to 1.4) | 27.4 (26.8 to 28.0) |
| 2001 | 44.0 (33.2 to 57.1) | 49.7 (47.1 to 52.4) | 34.5 (40.6 to 1.6) | 30.2 (29.6 to 30.9) |
| 2002 | 62.6 (49.5 to 78.2) | 55.6 (52.8 to 58.4) | 36.7 (42.8 to 1.6) | 33.2 (32.6 to 33.9) |
| 2003 | 73.7 (59.5 to 90.2) | 58.2 (55.4 to 61.0) | 37.7 (43.7 to 1.5) | 35.6 (34.9 to 36.3) |
| 2004 | 67.9 (54.6 to 83.4) | 61.5 (58.6 to 64.4) | 38.6 (44.6 to 1.5) | 38.5 (37.8 to 39.2) |
| 2005 | 77.7 (62.9 to 92.4) | 67.8 (64.8 to 70.8) | 45.7 (51.9 to 1.6) | 41.0 (40.3 to 41.7) |
| 2006 | 64.4 (51.6 to 79.3) | 71.7 (68.7 to 74.8) | 49.2 (55.5 to 1.6) | 42.0 (41.3 to 42.7) |
| 2007 | 82.0 (67.3 to 96.6) | 71.4 (68.3 to 74.4) | 53.3 (59.7 to 1.6) | 44.1 (43.4 to 44.8) |
| 2008 | 61.7 (49.2 to 74.1) | 70.4 (67.4 to 73.4) | 56.9 (63.3 to 1.6) | 45.9 (45.2 to 46.6) |
| 2009 | 84.1 (69.8 to 98.4) | 72.8 (69.9 to 75.8) | 59.4 (65.7 to 1.6) | 46.0 (45.3 to 46.8) |
| 2010 | 82.5 (68.5 to 96.5) | 75.6 (72.6 to 78.6) | 64.3 (70.7 to 1.7) | 47.5 (46.7 to 48.2) |
| 2011 | 67.3 (55.3 to 79.3) | 80.3 (77.3 to 83.4) | 67.3 (73.7 to 1.6) | 49.5 (48.7 to 50.2) |
| 2012 | 93.5 (79.7 to 107.4) | 82.8 (79.7 to 85.8) | 72.1 (78.5 to 1.6) | 50.7 (49.9 to 51.4) |
| 2013 | 85.0 (72.1 to 97.9) | 71.4 (68.6 to 74.2) | 68.6 (74.6 to 1.5) | 46.8 (46.1 to 47.6) |
| 2014 | 89.6 (76.9 to 102.3) | 68.4 (65.8 to 71.1) | 69.2 (75.1 to 1.5) | 45.4 (44.7 to 46.1) |
| 2015 | 90.1 (77.7 to 102.6) | 70.5 (67.8 to 73.1) | 71.3 (77.1 to 1.5) | 48.8 (48.0 to 49.5) |
| 2016 | 85.2 (73.5 to 96.9) | 81.9 (79.1 to 84.7) | 83.7 (89.8 to 1.6) | 55.3 (54.5 to 56.0) |
| 2017 | 110.2 (97.2 to 123.2) | 86.1 (83.3 to 88.9) | 90.9 (97.0 to 1.6) | 60.0 (59.3 to 60.8) |
| 2018 | 110.0 (97.4 to 122.5) | 89.8 (87.0 to 92.7) | 94.9 (101.0 to 1.6) | 63.3 (62.5 to 64.1) |
| 2019 | 109.5 (97.3 to 121.7) | 90.6 (87.8 to 93.4) | 97.4 (103.5 to 1.6) | 65.7 (64.9 to 66.5) |
| 2020 | 167.2 (152.6 to 181.9) | 131.6 (128.3 to 134.9) | 159.5 (167.1 to 1.9) | 85.1 (84.2 to 86.0) |
| 2021 | 168.5 (153.3 to 183.8) | 130.1 (126.7 to 133.4) | 163.7 (171.4 to 1.9) | 94.7 (93.8 to 95.7) |
| 2022 | 129.9 (117.2 to 142.6) | 121.8 (118.6 to 125.0) | 135.3 (142.1 to 1.7) | 89.9 (88.9 to 90.8) |
| 2023 | 119.8 (107.9 to 131.7) | 112.1 (109.1 to 115.1) | 124.3 (130.7 to 1.6) | 85.1 (84.2 to 86.0) |
| 2024 | 119.6 (107.7 to 131.4) | 118 (115.7 to 121) | 128.9 (135.5 to 1.7) | 88.3 (87.4 to 89.2) |

Supplementary Table 7: Urban-rural age-adjusted mortality rates

| Year | Urban | Rural |
|------|---------------------|------------------------|
| 1999 | 9.8 (9.5 to 10.2) | 11.4 (10.6 to 12.2) |
| 2000 | 27.1 (26.5 to 27.7) | 36.3 (34.9 to 37.7) |
| 2001 | 30.0 (29.4 to 30.7) | 40.9 (39.4 to 42.4) |
| 2002 | 32.5 (31.8 to 33.1) | 47.7 (46.0 to 49.3) |
| 2003 | 34.7 (34.1 to 35.4) | 49.9 (48.2 to 51.5) |
| 2004 | 37.6 (36.9 to 38.3) | 52.7 (51.0 to 54.4) |
| 2005 | 40.3 (39.6 to 41.0) | 57.4 (55.6 to 59.1) |
| 2006 | 42.3 (41.5 to 43.0) | 56.3 (54.6 to 58.1) |
| 2007 | 43.7 (43.0 to 44.5) | 61.4 (59.6 to 63.2) |
| 2008 | 45.7 (45.0 to 46.5) | 62.0 (60.1 to 63.8) |
| 2009 | 46.4 (45.7 to 47.2) | 62.0 (60.2 to 63.8) |
| 2010 | 48.8 (48.0 to 49.5) | 61.4 (59.6 to 63.2) |
| 2011 | 50.9 (50.1 to 51.7) | 65.5 (63.7 to 67.4) |
| 2012 | 53.0 (52.3 to 53.8) | 65.9 (64.1 to 67.8) |
| 2013 | 49.3 (48.6 to 50.0) | 59.0 (57.3 to 60.8) |
| 2014 | 48.3 (47.6 to 49.0) | 57.2 (55.5 to 58.9) |
| 2015 | 51.4 (50.7 to 52.1) | 62.0 (60.3 to 63.7) |
| 2016 | 59.0 (58.3 to 59.8) | 68.5 (66.7 to 70.3) |
| 2017 | 63.7 (62.9 to 64.5) | 76.3 (74.4 to 78.1) |
| 2018 | 67.3 (66.5 to 68.1) | 80.9 (78.9 to 82.8) |
| 2019 | 69.5 (68.7 to 70.3) | 84.3 (82.4 to 86.3) |
| 2020 | 94.9 (94.0 to 95.8) | 114.0 (111.7 to 116.2) |

Supplementary Table 8: State-specific age-adjusted mortality rates

| State | AAMR | Upper 95 % CI | Lower 95 % CI |
|----------------------|------|---------------|---------------|
| Alabama | 42.8 | 43.9 | 41.7 |
| Alaska | 50.2 | 54.6 | 45.8 |
| Arizona | 34.5 | 35.3 | 33.7 |
| Arkansas | 36.2 | 37.4 | 34.9 |
| California | 82.9 | 83.5 | 82.3 |
| Colorado | 49.1 | 50.3 | 47.8 |
| Connecticut | 26.1 | 27.1 | 25.2 |
| Delaware | 40.4 | 42.7 | 38.0 |
| District of Columbia | 35.4 | 38.3 | 32.5 |
| Florida | 32.1 | 32.5 | 31.7 |
| Georgia | 29.5 | 30.3 | 28.8 |
| Hawaii | 42.2 | 44.1 | 40.3 |
| Idaho | 61.1 | 63.5 | 58.8 |
| Illinois | 37.9 | 38.6 | 37.3 |
| Indiana | 66.3 | 67.4 | 65.1 |
| Iowa | 69.7 | 71.3 | 68.1 |
| Kansas | 49.0 | 50.5 | 47.6 |
| Kentucky | 60.4 | 61.7 | 59.0 |
| Louisiana | 23.0 | 23.8 | 22.2 |
| Maine | 42.0 | 43.9 | 40.2 |
| Maryland | 48.5 | 49.6 | 47.4 |
| Massachusetts | 18.7 | 19.2 | 18.1 |
| Michigan | 45.8 | 46.5 | 45.0 |
| Minnesota | 73.6 | 74.9 | 72.2 |
| Mississippi | 40.3 | 41.6 | 38.9 |
| Missouri | 44.4 | 45.4 | 43.5 |
| Montana | 46.8 | 49.1 | 44.5 |
| Nebraska | 73.2 | 75.4 | 71.0 |
| Nevada | 20.9 | 22.0 | 19.8 |
| New Hampshire | 45.0 | 47.0 | 42.9 |
| New Jersey | 29.3 | 30.0 | 28.7 |
| New Mexico | 45.7 | 47.4 | 43.9 |
| New York | 29.5 | 29.9 | 29.0 |
| North Carolina | 55.6 | 56.5 | 54.7 |
| North Dakota | 74.5 | 77.9 | 71.0 |
| Ohio | 84.2 | 85.1 | 83.3 |
| Oklahoma | 75.5 | 77.1 | 73.8 |
| Oregon | 71.8 | 73.3 | 70.3 |
| Pennsylvania | 49.8 | 50.5 | 49.2 |
| Rhode Island | 38.9 | 40.9 | 36.9 |
| South Carolina | 53.5 | 54.8 | 52.3 |
| South Dakota | 66.1 | 69.1 | 63.1 |
| Tennessee | 71.5 | 72.7 | 70.3 |
| Texas | 69.5 | 70.2 | 68.8 |
| Utah | 35.3 | 36.8 | 33.7 |
| Vermont | 68.9 | 72.5 | 65.3 |
| Virginia | 43.4 | 44.3 | 42.5 |

| | | | |
|---------------|------|------|------|
| Washington | 63.4 | 64.6 | 62.3 |
| West Virginia | 88.1 | 90.4 | 85.9 |
| Wisconsin | 54.9 | 56.0 | 53.8 |
| Wyoming | 67.6 | 71.7 | 63.5 |