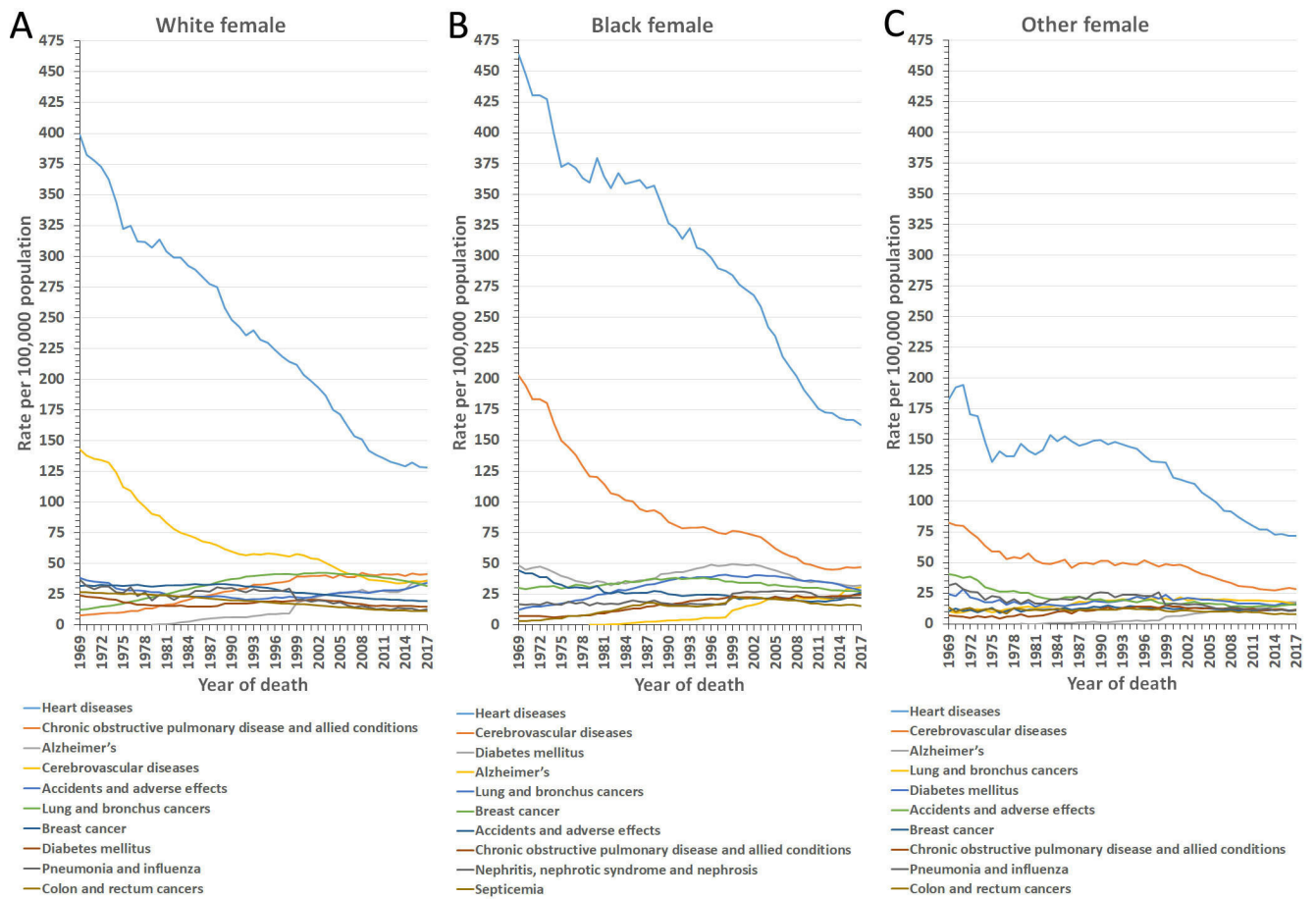


**Figure S1** Trends in the mortality rate for the 10 leading causes of death in males by race and ethnicity, United States, 1969 to 2017. Rates are age-adjusted to the 2000 United States standard population. Male, white (A). Male, black (B). Male, other races and ethnicities (C).

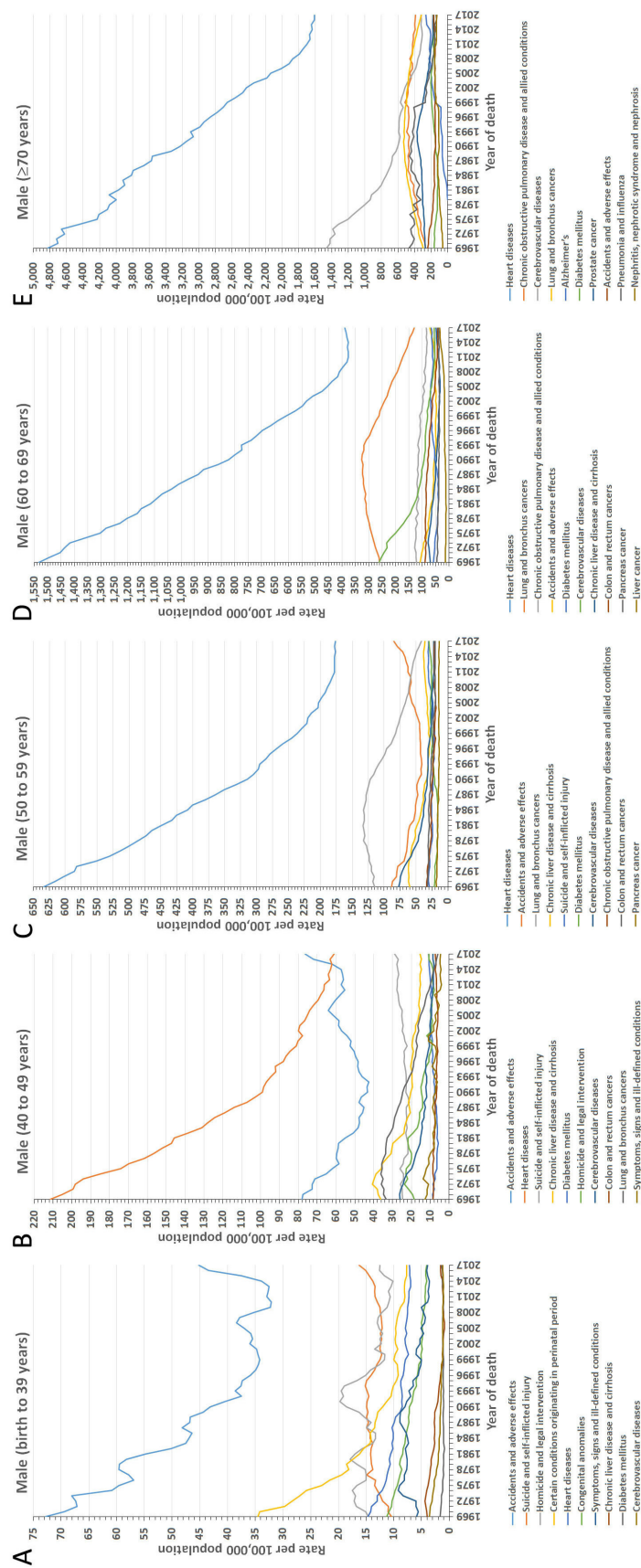


**Figure S2** Trends in mortality rate for the 10 leading causes of death in females by race and ethnicity, United States, 1969–2017. Rates are age-adjusted to the 2000 United States standard population. Female, white (A). Female, black (B). Female, other races and ethnicities (C).

**Table S1** Mortality rate changes from 1969 to 2017 for the leading 10 causes of death in male by age intervals, United States

| All causes  | Mortality rank |      | Age-adjusted mortality rate (95% CI) |                           | Death count |         | Relative change in mortality (2017 vs. 1969) |
|---|----------------|------|--------------------------------------|---------------------------|-------------|---------|--|
|   | 1969           | 2017 | 1969                                 | 2017                      | 1969        | 2017    |  |
| <b>Male (birth to 39 years)</b>                             |                |      |                                      |                           |             |         |  |
| All causes of death   |                |      | 226.9 (225.6–228.1)                  | 123.4 (122.6–124.1)       | 136,744     | 107,726 | –45.6%                                       |
| Accidents and adverse effects                               | 1              | 1    | 72.8 (72.1–73.5)                     | 45.2 (44.7–45.6)          | 44,076      | 40,174  | –37.9%                                       |
| Suicide and self-inflicted injury                           | 6              | 2    | 10.4 (10.1–10.7)                     | 16.3 (16.1–16.6)          | 5,438       | 14,614  | 56.7%  |
| Homicide and legal intervention                             | 4              | 3    | 14.6 (14.3–14.9)                     | 12.5 (12.3–12.7)          | 7,848       | 11,320  | –14.4%                                       |
| Certain conditions originating in perinatal period          | 2              | 4    | 34.5 (34.1–34.9)                     | 7.7 (7.5–7.9)             | 25,343      | 6,291   | –77.7%                                       |
| Heart diseases  | 3              | 5    | 14.7 (14.3–15.1)                     | 7.2 (7.0–7.4)             | 6,483       | 6,003   | –51.0%                                       |
| Congenital anomalies  | 5              | 6    | 11.3 (11.1–11.6)                     | 4.1 (4.0–4.2)             | 8,143       | 3,415   | –63.7%                                       |
| Symptoms, signs and ill-defined conditions                  | 8              | 7    | 5.9 (5.7–6.1)                        | 3.9 (3.8–4.1)             | 3,615       | 3,331   | –33.9%                                       |
| Chronic liver disease and cirrhosis                         | 9              | 8    | 4.0 (3.8–4.2)                        | 1.6 (1.5–1.7)             | 1,703       | 1,320   | –60.0%                                       |
| Diabetes mellitus   | 14             | 9    | 1.7 (1.5–1.8)                        | 1.4 (1.3–1.4)             | 774         | 1,145   | –17.6%                                       |
| Cerebrovascular diseases                                    | 10             | 10   | 3.6 (3.4–3.7)                        | 1.2 (1.1–1.2)             | 1,753       | 973     | –66.7%                                       |
| <b>Male (40 to 49 years)</b>                                |                |      |                                      |                           |             |         |  |
| All causes of death   |                |      | 616.7 (612.2–621.2)                  | 327.7 (325.3–330.3)       | 73,411      | 66,910  | 53.1%  |
| Accidents and adverse effects                               | 2              | 1    | 78.0 (76.4–79.6)                     | 76.4 (75.2–77.7)          | 9,158       | 15,372  | 97.9%  |
| Heart diseases  | 1              | 2    | 211.4 (208.8–214.0)                  | 60.9 (59.9–62.0)          | 25,341      | 12,541  | 28.8%  |
| Suicide and self-inflicted injury                           | 6              | 3    | 24.6 (23.7–25.5)                     | 28.9 (28.2–29.7)          | 2,902       | 5,831   | 117.5%                                       |
| Chronic liver disease and cirrhosis                         | 3              | 4    | 36.2 (35.1–37.3)                     | 15.5 (15.0–16.0)          | 4,294       | 3,196   | 42.8%  |
| Diabetes mellitus   | 10             | 5    | 8.7 (8.2–9.2)                        | 11.0 (10.6–11.5)          | 1,034       | 2,275   | 126.4%                                       |
| Homicide and legal intervention                             | 7              | 6    | 18.4 (17.6–19.2)                     | 10.8 (10.3–11.3)          | 2,138       | 2,148   | 58.7%  |
| Cerebrovascular diseases                                    | 5              | 7    | 26.0 (25.1–26.9)                     | 8.5 (8.1–8.9)             | 3,101       | 1,746   | 32.7%  |
| Colon and rectum cancers                                    | 11             | 8    | 8.6 (8.0–9.1)                        | 7.4 (7.0–7.8)             | 1,025       | 1,532   | 86.0%  |
| Lung and bronchus cancers                                   | 4              | 9    | 33.5 (32.5–34.6)                     | 5.9 (5.6–6.2)             | 4,022       | 1,235   | 17.6%  |
| Symptoms, signs and ill-defined conditions                  | 9              | 10   | 12.8 (12.1–13.4)                     | 4.5 (4.2–4.8)             | 1,517       | 913     | 35.2%  |
| <b>Male (50 to 59 years)</b>                                |                |      |                                      |                           |             |         |  |
| All causes of death   |                |      | 1,488.5 (1,481.0–1,496.1)            | 743.4 (739.8–747.1)       | 151,450     | 161,968 | –50.1%                                       |
| Heart diseases  | 1              | 1    | 633.8 (628.9–638.7)                  | 176.3 (174.6–178.1)       | 64,568      | 38,530  | –72.2%                                       |
| Accidents and adverse effects                               | 3              | 2    | 88.4 (86.6–90.2)                     | 84.9 (83.6–86.2)          | 8,882       | 17,996  | –4.0%  |
| Lung and bronchus cancers                                   | 2              | 3    | 114.7 (112.6–116.8)                  | 41.4 (40.5–42.2)          | 11,703      | 9,263   | –63.9%                                       |
| Chronic liver disease and cirrhosis                         | 5              | 4    | 59.6 (58.1–61.2)                     | 36.4 (35.6–37.2)          | 6,014       | 7,867   | –38.9%                                       |
| Suicide and self-inflicted injury                           | 9              | 5    | 29.3 (28.3–30.4)                     | 30.8 (30.1–31.6)          | 2,944       | 6,536   | 5.1%   |
| Diabetes mellitus   | 11             | 6    | 21.3 (20.4–22.2)                     | 29.9 (29.2–30.6)          | 2,168       | 6,520   | 40.4%  |
| Cerebrovascular diseases                                    | 4              | 7    | 77.3 (75.6–79.0)                     | 22.4 (21.8–23.0)          | 7,893       | 4,881   | –71.0%                                       |
| Chronic obstructive pulmonary disease and allied conditions | 7              | 8    | 33.5 (32.4–34.7)                     | 21.0 (20.4–21.6)          | 3,451       | 4,710   | –37.3%                                       |
| Colon and rectum cancers                                    | 8              | 9    | 32.1 (31.0–33.2)                     | 20.3 (19.7–20.9)          | 3,279       | 4,407   | –36.8%                                       |
| Pancreas cancer   | 12             | 10   | 17.9 (17.1–18.7)                     | 13.5 (13.0–13.9)          | 1,827       | 2,979   | –24.6%                                       |
| <b>Male (60 to 69 years)</b>                                |                |      |                                      |                           |             |         |  |
| All causes of death   |                |      | 3,456.0, (3442.2–3469.9)             | 1,567.8 (1561.9–1573.7)   | 239,330     | 272,206 | –54.6%                                       |
| Heart diseases  | 1              | 1    | 1,533.0 (1523.7–1542.2)              | 388.7 (385.8–391.6)       | 106,147     | 67,490  | –74.6%                                       |
| Lung and bronchus cancers                                   | 3              | 2    | 259.0 (255.2–262.8)                  | 130.5 (128.8–132.2)       | 18,004      | 22,618  | –49.6%                                       |
| Chronic obstructive pulmonary disease and allied conditions | 4              | 3    | 121.9 (119.3–124.5)                  | 84.7 (83.4–86.1)          | 8,409       | 14,666  | –30.5%                                       |
| Accidents and adverse effects                               | 5              | 4    | 108.1 (105.7–110.6)                  | 71.6 (70.3–72.8)          | 7,561       | 12,503  | –33.8%                                       |
| Diabetes mellitus   | 9              | 5    | 58.2 (56.4–60.0)                     | 65.9 (64.7–67.1)          | 4,013       | 11,440  | 13.2%  |
| Cerebrovascular diseases                                    | 2              | 6    | 260.6 (256.8–264.5)                  | 55.6 (54.5–56.8)          | 17,894      | 9,649   | –78.7%                                       |
| Chronic liver disease and cirrhosis                         | 8              | 7    | 69.5 (67.5–71.5)                     | 47.5 (46.5–48.6)          | 4,891       | 8,303   | –31.7%                                       |
| Colon and rectum cancers                                    | 6              | 8    | 89.4 (87.2–91.6)                     | 41.6 (40.7–42.6)          | 6,180       | 7,228   | –53.5%                                       |
| Pancreas cancer   | 13             | 9    | 44.1 (42.5–45.7)                     | 39.3 (38.3–40.2)          | 3,052       | 6,805   | –10.9%                                       |
| Liver cancer  | 26             | 10   | 14.1 (13.3–15.0)                     | 34.5 (33.6–35.4)          | 980         | 6,005   | 144.7%                                       |
| <b>Male (≥70 years)</b>                                     |                |      |                                      |                           |             |         |  |
| All causes of death   |                |      | 10,505.6 (10474.3–10537.0)           | 5,962.2 (5,949.3–5,975.1) | 479,584     | 830,210 | –43.2%                                       |
| Heart diseases  | 1              | 1    | 4,828.4 (4,807.1–4,849.7)            | 1,608.3 (1,601.6–1,615.0) | 219,190     | 223,290 | –66.7%                                       |
| Chronic obstructive pulmonary disease and allied conditions | 7              | 2    | 269.1 (264.4–273.8)                  | 389.3 (386.0–392.6)       | 13,642      | 54,417  | 44.7%  |
| Cerebrovascular diseases                                    | 2              | 3    | 1462.2 (1450.3–1474.3)               | 321.6 (318.6–324.6)       | 63,562      | 44,395  | –78.0%                                       |
| Lung and bronchus cancers                                   | 5              | 4    | 296.5 (291.8–301.3)                  | 318.0 (315.1–321.0)       | 16,043      | 45,362  | 7.3%   |
| Alzheimer's   | -              | 5    | -                                    | 264.5 (261.7–267.2)       | -           | 35,836  | -  |
| Diabetes mellitus   | 10             | 6    | 160.9 (157.2–164.7)                  | 176.5 (174.3–178.7)       | 7,693       | 24,921  | 9.7%   |
| Prostate cancer   | 6              | 7    | 269.2 (264.3–274.3)                  | 174.4 (172.2–176.6)       | 12,348      | 24,149  | –35.2%                                       |
| Accidents and adverse effects                               | 8              | 8    | 244.4 (239.6–249.3)                  | 170.1 (167.9–172.3)       | 10,962      | 23,663  | –30.4%                                       |
| Pneumonia and influenza                                     | 3              | 9    | 468.0 (461.1–474.9)                  | 141.9 (140.0–144.0)       | 19,857      | 19,546  | –69.7%                                       |
| Nephritis, nephrotic syndrome and nephrosis                 | 18             | 10   | 63.3 (60.9–65.8)                     | 130.5 (128.6–132.4)       | 2,857       | 18,081  | 106.2%                                       |

Rank is based on the age-adjusted mortality rate. Age-adjusted mortality rates are per 100,000 population and age-adjusted to the 2000 United States standard population. Death count is the number of deaths. CI, confidence interval.

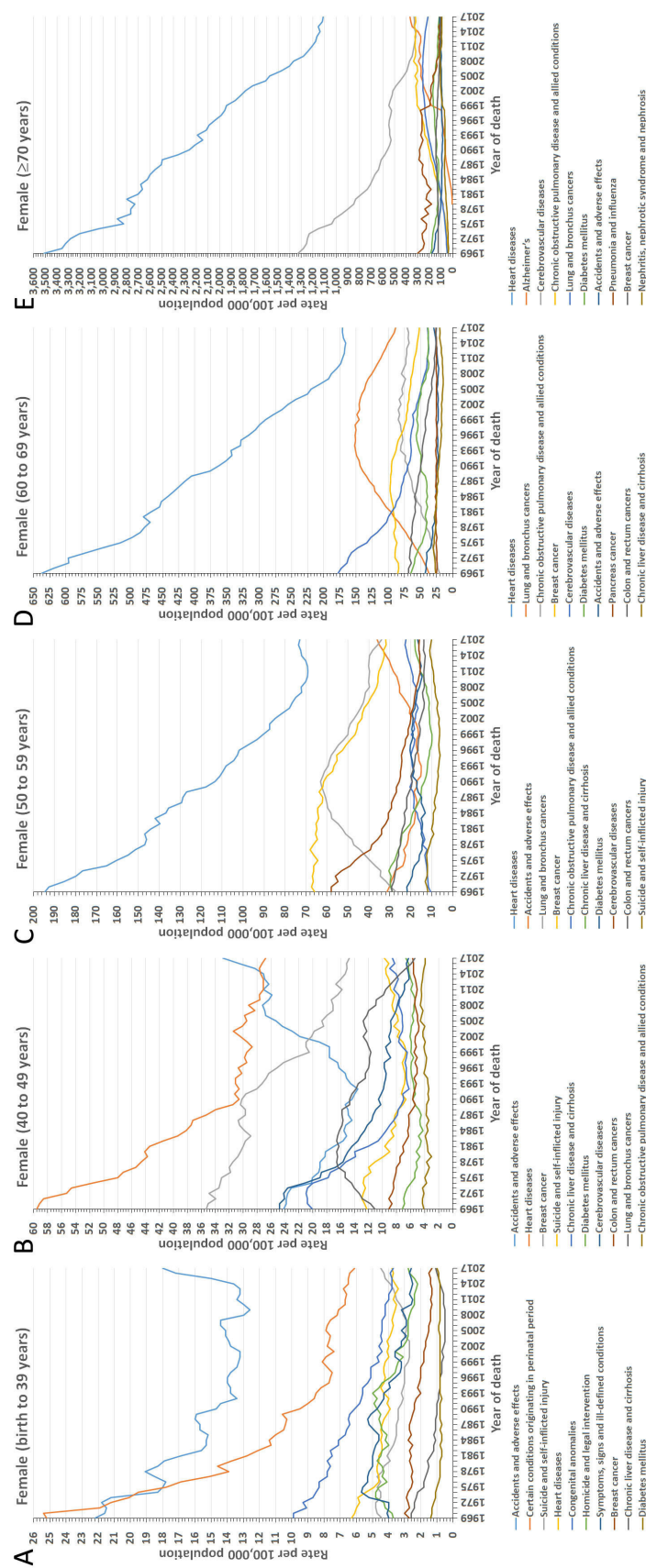


**Figure S3** Trends in the mortality rate for the 10 leading causes of death in males by age intervals, United States, 1969–2017. Rates are age-adjusted to the 2000 United States standard population. Birth to 39 years (A); 40–49 years (B); 50–59 years (C); 60–69 years (D); ≥70 years (E).

**Table S2** Mortality rate changes from 1969 to 2017 for the leading 10 causes of death in female by age intervals, United States

| All causes  | Mortality rank |      | Age-adjusted mortality rate (95% CI) |                           | Death count |         | Relative change in mortality (2017 vs. 1969) |
|---|----------------|------|--------------------------------------|---------------------------|-------------|---------|--|
|   | 1969           | 2017 | 1969                                 | 2017                      | 1969        | 2017    |  |
| <b>Female (birth to 39 years)</b>                           |                |      |                                      |                           |             |         |  |
| All causes of death   |                |      | 129.9 (129.0–130.8)                  | 63.8 (63.3–64.4)          | 79,400      | 53,201  | –50.9%                                       |
| Accidents and adverse effects                               | 2              | 1    | 22.2 (21.8–22.6)                     | 18.0 (17.7–18.3)          | 14,150      | 15,449  | –18.9%                                       |
| Certain conditions originating in perinatal period          | 1              | 2    | 25.2 (24.8–25.6)                     | 6.1 (5.9–6.3)             | 17,773      | 4,795   | –75.8%                                       |
| Suicide and self-inflicted injury                           | 6              | 3    | 4.4 (4.2–4.6)                        | 4.5 (4.3–4.6)             | 2,298       | 3,830   | 2.3%   |
| Heart diseases  | 5              | 4    | 6.3 (6.1–6.6)                        | 3.8 (3.6–3.9)             | 3,142       | 3,110   | –39.7%                                       |
| Congenital anomalies  | 3              | 5    | 9.9 (9.7–10.2)                       | 3.7 (3.6–3.9)             | 6,906       | 2,977   | –62.6%                                       |
| Homicide and legal intervention                             | 9              | 6    | 3.7 (3.5–3.8)                        | 2.8 (2.7–2.9)             | 2,099       | 2,369   | –24.3%                                       |
| Symptoms, signs and ill-defined conditions                  | 7              | 7    | 4.0 (3.8–4.2)                        | 2.6 (2.5–2.7)             | 2,481       | 2,097   | –35.0%                                       |
| Breast cancer   | 10             | 8    | 2.7 (2.5–2.8)                        | 1.3 (1.3–1.4)             | 1,162       | 1,063   | –51.9%                                       |
| Chronic liver disease and cirrhosis                         | 11             | 9    | 2.6 (2.4–2.7)                        | 1.1 (1.0–1.1)             | 1,171       | 853     | –57.7%                                       |
| Diabetes mellitus   | 14             | 10   | 1.4 (1.3–1.5)                        | 1.0 (0.9–1.0)             | 720         | 801     | –28.6%                                       |
| <b>Female (40 to 49 years)</b>                              |                |      |                                      |                           |             |         |  |
| All causes of death   |                |      | 345.5 (342.3–348.8)                  | 200.4 (198.4–202.3)       | 43,823      | 41,683  | –42.0%                                       |
| Accidents and adverse effects                               | 4              | 1    | 24.2 (23.3–25.1)                     | 32.9 (32.1–33.7)          | 3,034       | 6,738   | 36.0%  |
| Heart diseases  | 1              | 2    | 59.6 (58.2–60.9)                     | 26.8 (26.1–27.5)          | 7,601       | 5,598   | –55.0%                                       |
| Breast cancer   | 2              | 3    | 35.3 (34.3–36.4)                     | 14.8 (14.3–15.3)          | 4,492       | 3,076   | –58.1%                                       |
| Suicide and self-inflicted injury                           | 6              | 4    | 12.3 (11.7–12.9)                     | 9.8 (9.4–10.2)            | 1,538       | 2,012   | –20.3%                                       |
| Chronic liver disease and cirrhosis                         | 5              | 5    | 20.1 (19.3–20.9)                     | 8.6 (8.2–9.0)             | 2,538       | 1,799   | –57.2%                                       |
| Diabetes mellitus   | 12             | 6    | 7.2 (6.7–7.6)                        | 6.7 (6.4–7.1)             | 911         | 1,407   | –6.9%  |
| Cerebrovascular diseases                                    | 3              | 7    | 24.8 (23.9–25.6)                     | 6.3 (6.0–6.7)             | 3,148       | 1,326   | –74.6%                                       |
| Colon and rectum cancers                                    | 11             | 8    | 9.1 (8.6–9.7)                        | 5.7 (5.4–6.1)             | 1,166       | 1,207   | –37.4%                                       |
| Lung and bronchus cancers                                   | 7              | 9    | 11.1 (10.5–11.7)                     | 5.4 (5.1–5.7)             | 1,415       | 1,159   | –51.4%                                       |
| Chronic obstructive pulmonary disease and allied conditions | 15             | 10   | 4.1 (3.8–4.5)                        | 3.9 (3.6–4.1)             | 525         | 814     | –4.9%  |
| <b>Female (50 to 59 years)</b>                              |                |      |                                      |                           |             |         |  |
| All causes of death   |                |      | 741.0 (735.9–746.1)                  | 458.5 (455.7–461.3)       | 81,512      | 104,574 | –38.1%                                       |
| Heart diseases  | 1              | 1    | 194.5 (191.9–197.1)                  | 72.9 (71.8–74.1)          | 21,568      | 16,709  | –62.5%                                       |
| Accidents and adverse effects                               | 4              | 2    | 31.3 (30.2–32.3)                     | 36.1 (35.3–36.9)          | 3,402       | 7,974   | 15.3%  |
| Lung and bronchus cancers                                   | 7              | 3    | 27.0 (26.1–28.0)                     | 33.9 (33.1–34.7)          | 2,969       | 7,929   | 25.6%  |
| Breast cancer   | 2              | 4    | 65.9 (64.4–67.5)                     | 31.9 (31.2–32.7)          | 7,200       | 7,207   | –51.6%                                       |
| Chronic obstructive pulmonary disease and allied conditions | 13             | 5    | 10.6 (10.0–11.3)                     | 22.3 (21.7–22.9)          | 1,174       | 5,211   | 110.4%                                       |
| Chronic liver disease and cirrhosis                         | 6              | 6    | 28.8 (27.8–29.9)                     | 18.1 (17.6–18.7)          | 3,123       | 4,074   | –37.2%                                       |
| Diabetes mellitus   | 9              | 7    | 21.7 (20.9–22.6)                     | 16.8 (16.3–17.4)          | 2,404       | 3,847   | –22.6%                                       |
| Cerebrovascular diseases                                    | 3              | 8    | 58.0 (56.6–59.5)                     | 15.8 (15.3–16.3)          | 6,399       | 3,614   | –72.8%                                       |
| Colon and rectum cancers                                    | 5              | 9    | 29.0 (28.0–30.0)                     | 13.7 (13.3–14.2)          | 3,198       | 3,122   | –52.8%                                       |
| Suicide and self-inflicted injury                           | 12             | 10   | 11.9 (11.3–12.6)                     | 10.1 (9.6–10.5)           | 1,284       | 2,214   | –15.1%                                       |
| <b>Female (60 to 69 years)</b>                              |                |      |                                      |                           |             |         |  |
| All causes of death   |                |      | 1,679.6 (1,670.8–1,688.5)            | 965.8 (961.4–970.2)       | 138,649     | 185,789 | –42.5%                                       |
| Heart diseases  | 1              | 1    | 637.1 (631.7–642.6)                  | 170.8 (169.0–172.7)       | 52,493      | 32,853  | –73.2%                                       |
| Lung and bronchus cancers                                   | 8              | 2    | 37.4 (36.1–38.8)                     | 88.8 (87.5–90.1)          | 3,102       | 17,074  | 137.4%                                       |
| Chronic obstructive pulmonary disease and allied conditions | 12             | 3    | 20.2 (19.2–21.2)                     | 70.6 (69.4–71.8)          | 1,673       | 13,569  | 249.5%                                       |
| Breast cancer   | 3              | 4    | 85.5 (83.5–87.5)                     | 51.7 (50.7–52.8)          | 7,097       | 9,963   | –39.5%                                       |
| Cerebrovascular diseases                                    | 2              | 5    | 177.9 (175.0–180.8)                  | 39.1 (38.2–40.0)          | 14,647      | 7,517   | –78.0%                                       |
| Diabetes mellitus   | 5              | 6    | 64.8 (63.1–66.5)                     | 38.4 (37.5–39.3)          | 5,346       | 7,383   | –40.7%                                       |
| Accidents and adverse effects                               | 6              | 7    | 42.6 (41.2–44.1)                     | 29.8 (29.0–30.5)          | 3,529       | 5,745   | –30.0%                                       |
| Pancreas cancer   | 11             | 8    | 25.2 (24.2–26.3)                     | 26.0 (25.3–26.7)          | 2,085       | 4,996   | 3.2%   |
| Colon and rectum cancers                                    | 4              | 9    | 68.7 (66.9–70.5)                     | 25.6 (24.9–26.3)          | 5,673       | 4,918   | –62.7%                                       |
| Chronic liver disease and cirrhosis                         | 10             | 10   | 26.4 (25.3–27.5)                     | 20.5 (19.9–21.2)          | 2,191       | 3,963   | –22.3%                                       |
| <b>Female (≥70 years)</b>                                   |                |      |                                      |                           |             |         |  |
| All causes of death   |                |      | 7,457.6 (7,436.4–7,478.8)            | 4,673.1 (4,663.7–4,682.4) | 497,421     | 989,107 | –37.3%                                       |
| Heart diseases  | 1              | 1    | 3,511.1 (3,496.5–3,525.7)            | 1,112.8 (1,108.3–1,117.4) | 232,537     | 241,293 | –68.3%                                       |
| Alzheimer's   | –              | 2    | –                                    | 368.3 (365.8–370.9)       | –           | 82,155  | –  |
| Cerebrovascular diseases                                    | 2              | 3    | 1,329.6 (1320.6–1338.6)              | 331.2 (328.8–333.7)       | 86,840      | 71,557  | –75.1%                                       |
| Chronic obstructive pulmonary disease and allied conditions | 14             | 4    | 44.4 (42.8–46.0)                     | 322.2 (319.6–324.7)       | 3,140       | 65,191  | 625.7%                                       |
| Lung and bronchus cancers                                   | 13             | 5    | 47.4 (45.8–49.0)                     | 211.1 (209.0–213.2)       | 3,530       | 40,841  | 345.4%                                       |
| Diabetes mellitus   | 5              | 6    | 188.1 (184.8–191.3)                  | 117.5 (116.0–119.0)       | 13,467      | 23,824  | –37.5%                                       |
| Accidents and adverse effects                               | 7              | 7    | 175.8 (172.6–179.1)                  | 113.5 (112.0–114.9)       | 11,543      | 24,306  | –35.4%                                       |
| Pneumonia and influenza                                     | 3              | 8    | 300.3 (295.9–304.7)                  | 108.6 (107.2–110.0)       | 18,970      | 23,476  | –63.8%                                       |
| Breast cancer   | 8              | 9    | 122.2 (119.6–124.8)                  | 103.3 (101.8–104.7)       | 8,877       | 20,691  | –15.5%                                       |
| Nephritis, nephrotic syndrome and nephrosis                 | 18             | 10   | 38.4 (36.9–39.9)                     | 91.2 (89.8–92.5)          | 2,618       | 18,978  | 137.5%                                       |

Rank is based on the age-adjusted mortality rate. Age-adjusted mortality rates are per 100,000 population and age-adjusted to the 2000 United States standard population. Death count is the number of deaths. CI, confidence interval.



**Figure S4** Trends in the mortality rate for the 10 leading causes of death in females by age intervals, United States, 1969–2017. Rates are age-adjusted to the 2000 United States standard population. Birth to 39 years (A); 40–49 years (B); 50–59 years (C); 60–69 years (D); ≥70 years (E).