Table 1: Age-adjusted trends in proportions of U.S. adults with diagnosed diabetes, overall and by subgroup, who report receiving either none of six recommended care services or all six recommended care services—at least one dental visit, one dilated eye exam, one foot exam, two or more A1C tests, cholesterol level tested, and an influenza vaccine.

|  | Number of services | 2008 (SE) | 2009 (SE) | 2010 (SE) | 2011 (SE) | 2012 (SE) | 2013 (SE) | 2014 (SE) | 2015 (SE) | 2016 (SE) | 2017 (SE) | 2018 (SE) | 2019 (SE) | 2020 (SE) | Percent Change (95% CI)true\*,†false | Joinpoint Yeartrue‡false | APC Period 1 (95% CI)true\*,§false | APC Period 2 (95% CI)true\*,§false | AAPC (95% CI)true\*,||false |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Overall |
| - | Zero services | 5.1 (1.2) | 5.4 (1.3) | 3.0 (0.6) | 3.1 (0.8) | 4.3 (0.8) | 2.9 (0.6) | 3.5 (0.9) | 2.8 (0.8) | 2.3 (0.5) | 7.3 (1.2) | 7.7 (1.3) | 6.1 (1.2) | 8.2 (1.9) | 18.5 (-51.5, 88.4) |  | 3.1 (-4.5, 11.3) |  | 3.1 (-4.5, 11.3) |
| - | All services | 7.1 (1.3) | 7.2 (1.1) | 7.6 (1.0) | 8.7 (1.3) | 7.8 (1.0) | 8.1 (0.9) | 7.5 (1.0) | 6.5 (0.6) | 7.9 (1.6) | 8.0 (1.3) | 7.3 (0.8) | 10.8 (1.7) | 7.9 (1.3) | 51.6 (-19.9, 123.1) |  | 1.4 (-0.9, 3.7) |  | 1.4 (-0.9, 3.7) |
| Age |
| 18 to 44 | Zero services | 7.9 (2.2) | 8.0 (2.3) | 4.0 (1.2) | 4.8 (1.5) | 6.2 (1.5) | 3.4 (1.1) | 4.7 (1.7) | 4.3 (1.5) | 3.4 (1.0) | 10.5 (2.2) | 11.2 (2.4) | 8.5 (2.2) | 9.5 (3.3) | 6.7 (-72.1, 85.5) |  | 2.8 (-5.2, 11.6) |  | 2.8 (-5.2, 11.6) |
| 45 to 64 | Zero services | 2.8 (0.6) | 3.3 (0.7) | 2.3 (0.5) | 1.7 (0.4) | 3.1 (0.6) | 3.0 (0.6) | 3.1 (0.7) | 1.6 (0.4) | 1.4 (0.3) | 4.2 (0.7) | 4.4 (0.8) | 4.3 (1.0) | 8.0 (1.5) | 57.0 (-38.8, 152.7) |  | 3.1 (-4.4, 11.1) |  | 3.1 (-4.4, 11.1) |
| 65 to 74 | Zero services | 0.2 (0.2) | 0.8 (0.5) | 0.5 (0.4) | 0.6 (0.3) | 0.6 (0.3) | 1.0 (0.5) | 0.9 (0.5) | 0.5 (0.3) | 0.4 (0.2) | 3.7 (1.0) | 2.3 (0.6) | 1.2 (0.5) | 1.8 (0.7) | 451.4 (-712.6, 1615.3) |  | 14.4 (1.8, 28.6) |  | 14.4 (1.8, 28.6) |
| 75+ | Zero services | 0.8 (0.4) | 1.0 (0.7) | 1.5 (1.0) | 0.6 (0.6) | 0.3 (0.2) | 0.8 (0.5) | 0.3 (0.2) | 0.1 (0.1) | 0.7 (0.4) | 2.3 (0.8) | 3.1 (1.5) | 2.1 (0.8) | 6.7 (1.7) | 168.2 (-194.9, 531.4) |  | 7.6 (-10.3, 29.0) |  | 7.6 (-10.3, 29.0) |
| 18 to 44 | All services | 5.2 (2.1) | 3.8 (1.8) | 5.5 (1.7) | 7.8 (2.4) | 6.0 (1.6) | 6.7 (1.3) | 4.7 (1.8) | 1.7 (0.8) | 5.9 (2.8) | 4.6 (2.2) | 3.2 (1.4) | 7.7 (3.0) | 3.7 (2.2) | 46.7 (-115.1, 208.4) |  | -1.5 (-9.3, 7.0) |  | -1.5 (-9.3, 7.0) |
| 45 to 64 | All services | 9.1 (1.2) | 11.1 (1.4) | 9.4 (1.4) | 9.1 (1.3) | 8.7 (1.4) | 8.8 (1.4) | 8.9 (1.3) | 10.5 (1.4) | 8.5 (1.3) | 9.9 (1.3) | 10.4 (1.2) | 11.5 (1.5) | 10.8 (1.7) | 26.7 (-20.3, 73.8) |  | 1.0 (-0.9, 2.9) |  | 1.0 (-0.9, 2.9) |
| 65 to 74 | All services | 8.1 (1.9) | 11.9 (1.9) | 12.7 (2.3) | 12.9 (1.9) | 11.4 (1.7) | 12.0 (1.9) | 15.5 (2.2) | 15.3 (2.3) | 17.2 (2.1) | 16.1 (2.0) | 14.4 (1.7) | 20.4 (2.2) | 15.8 (2.0) | 151.7 (26.7, 276.8) |  | 5.8 (3.3, 8.4) |  | 5.8 (3.3, 8.4) |
| 75+ | All services | 11.0 (2.2) | 9.8 (2.1) | 9.0 (1.9) | 8.5 (2.0) | 12.0 (2.4) | 10.8 (2.0) | 11.7 (2.3) | 13.4 (2.1) | 9.2 (2.0) | 13.6 (2.2) | 14.4 (2.1) | 17.8 (2.2) | 16.3 (2.6) | 62.0 (-12.3, 136.3) |  | 4.5 (1.4, 7.7) |  | 4.5 (1.4, 7.7) |
| Highest degree earned |
| Less than high school | Zero services | 10.8 (4.1) | 12.1 (3.8) | 5.7 (1.7) | 4.1 (1.0) | 9.8 (3.9) | 3.5 (1.0) | 4.2 (1.3) | 3.5 (1.9) | 5.5 (2.1) | 8.3 (1.8) | 14.9 (3.8) | 13.4 (3.6) | 21.4 (6.6) | 23.4 (-88.9, 135.6) | 2015 | -14.2 (-26.9, 0.7) | 48.2 (1.3, 116.7) | 4.7 (-9.2, 20.7) |
| High school | Zero services | 4.0 (1.1) | 4.5 (1.6) | 1.6 (0.6) | 2.6 (0.9) | 3.7 (1.5) | 2.5 (0.8) | 2.8 (1.0) | 5.3 (3.0) | 1.5 (0.6) | 9.6 (2.2) | 7.6 (2.2) | 3.4 (1.2) | 7.4 (2.6) | -14.3 (-88.8, 60.2) |  | 5.1 (-5.3, 16.7) |  | 5.1 (-5.3, 16.7) |
| Greater than high school | Zero services | 2.3 (1.0) | 0.8 (0.4) | 3.1 (1.5) | 3.3 (2.1) | 4.3 (2.6) | 2.8 (1.3) | 4.0 (2.4) | 0.6 (0.4) | 1.1 (0.8) | 3.2 (1.3) | 3.2 (1.4) | 3.7 (1.7) | 2.3 (0.7) | 57.9 (-136.9, 252.7) |  | 2.3 (-10.4, 16.7) |  | 2.3 (-10.4, 16.7) |
| Less than high school | All services | 2.4 (0.6) | 1.6 (0.5) | 1.7 (0.6) | 2.7 (1.3) | 4.9 (1.5) | 1.8 (0.6) | 3.0 (1.1) | 1.5 (0.5) | 5.2 (2.6) | 1.7 (0.6) | 5.4 (2.4) | 2.8 (0.7) | 1.9 (0.6) | 15.2 (-62.3, 92.7) |  | 4.6 (-4.2, 14.2) |  | 4.6 (-4.2, 14.2) |
| High school | All services | 7.0 (1.6) | 8.5 (1.9) | 6.2 (1.2) | 6.3 (1.5) | 7.2 (2.0) | 7.8 (1.9) | 8.3 (1.9) | 6.1 (1.4) | 4.9 (0.8) | 5.5 (0.8) | 5.9 (0.8) | 9.8 (2.1) | 7.6 (2.4) | 39.4 (-46.3, 125.2) |  | -0.8 (-4.7, 3.2) |  | -0.8 (-4.7, 3.2) |
| Greater than high school | All services | 11.4 (3.0) | 10.0 (1.6) | 14.3 (2.8) | 18.3 (3.9) | 19.7 (5.4) | 14.2 (3.1) | 9.5 (1.8) | 12.1 (2.6) | 15.3 (4.9) | 16.7 (3.7) | 10.4 (1.8) | 18.0 (4.0) | 11.7 (1.9) | 57.4 (-47.8, 162.6) |  | 1.3 (-3.5, 6.3) |  | 1.3 (-3.5, 6.3) |
| Race/Ethnicity |
| Hispanic | Zero services | 5.2 (3.8) | 18.0 (11.3) | 2.0 (2.1) | 0.0 (0.0) | 7.4 (1.9) | 9.1 (2.5) | 7.4 (1.9) | 4.5 (1.2) | 5.6 (1.6) | 11.3 (2.9) | 13.4 (3.9) | 10.0 (3.5) | 14.6 (5.2) | 91.9 (-211.4, 395.2) |  |  |  |  |
| Black/not Hispanic | Zero services | 5.3 (1.9) | 2.7 (1.1) | 4.1 (2.0) | 2.6 (1.2) | 5.2 (1.8) | 2.4 (1.2) | 0.3 (0.1) | 4.1 (1.8) | 2.6 (1.3) | 7.7 (1.8) | 9.6 (3.0) | 6.7 (2.2) | 9.1 (3.2) | 26.5 (-95.0, 147.9) |  | 5.6 (-11.3, 25.6) |  | 5.6 (-11.3, 25.6) |
| Asian/not Hispanic | Zero services | 0.9 (0.9) | 2.6 (1.3) | 1.1 (0.8) | 0.6 (0.5) | 6.2 (5.2) | 1.6 (1.0) | 3.2 (1.9) | 0.6 (0.4) | 1.0 (0.7) | 5.6 (2.3) | 2.4 (1.8) | 0.6 (0.6) | 1.7 (1.4) | -32.3 (-226.3, 161.7) |  | 0.8 (-14.6, 18.9) |  | 0.8 (-14.6, 18.9) |
| White/not Hispanic | Zero services | 5.5 (1.5) | 6.0 (1.7) | 2.7 (0.7) | 3.1 (0.9) | 2.9 (1.1) | 1.2 (0.4) | 1.8 (0.8) | 2.1 (1.3) | 0.8 (0.5) | 5.4 (1.8) | 5.2 (1.7) | 4.8 (1.5) | 5.5 (2.2) | -13.1 (-83.2, 57.1) |  | -1.7 (-13.3, 11.5) |  | -1.7 (-13.3, 11.5) |
| Hispanic | All services | 0.0 (0.0) | 0.0 (0.0) | 5.7 (5.7) | 0.0 (0.0) | 3.7 (1.1) | 1.9 (0.7) | 6.3 (3.2) | 4.1 (1.5) | 3.2 (0.8) | 3.6 (1.2) | 2.5 (0.7) | 2.7 (1.3) | 3.7 (2.4) | Inf (NaN, NaN) |  |  |  |  |
| Black/not Hispanic | All services | 4.6 (1.5) | 3.5 (1.5) | 4.6 (2.1) | 5.6 (2.3) | 3.7 (1.9) | 5.1 (1.6) | 4.6 (1.9) | 4.1 (1.1) | 2.1 (0.6) | 4.6 (1.5) | 3.6 (1.0) | 5.4 (1.4) | 13.3 (7.2) | 17.5 (-78.6, 113.6) |  | -1.0 (-5.9, 4.3) |  | -1.0 (-5.9, 4.3) |
| Asian/not Hispanic | All services | 8.2 (3.4) | 5.7 (1.8) | 8.0 (3.6) | 3.8 (1.4) | 12.0 (4.5) | 13.5 (4.7) | 6.7 (2.3) | 9.4 (3.0) | 6.1 (2.4) | 3.8 (1.8) | 3.3 (1.5) | 15.2 (9.6) | 4.9 (2.5) | 85.5 (-189.2, 360.2) |  | -0.9 (-10.2, 9.4) |  | -0.9 (-10.2, 9.4) |
| White/not Hispanic | All services | 7.9 (1.7) | 8.1 (1.3) | 8.6 (1.3) | 10.1 (1.7) | 10.7 (1.7) | 11.1 (1.4) | 9.2 (1.4) | 8.0 (1.0) | 11.2 (2.7) | 11.5 (2.3) | 11.6 (1.5) | 15.3 (2.4) | 9.1 (1.0) | 94.3 (-7.7, 196.4) |  | 4.3 (1.7, 6.9) |  | 4.3 (1.7, 6.9) |
| Sex |
| Male | Zero services | 7.2 (2.2) | 8.0 (2.4) | 2.8 (1.0) | 4.0 (1.3) | 5.7 (1.5) | 3.6 (1.0) | 4.3 (1.7) | 1.8 (0.6) | 1.9 (0.7) | 8.6 (2.0) | 9.9 (2.4) | 6.5 (1.8) | 12.6 (3.3) | -10.0 (-83.4, 63.4) |  | 0.5 (-10.2, 12.5) |  | 0.5 (-10.2, 12.5) |
| Female | Zero services | 3.2 (1.0) | 3.1 (0.8) | 3.1 (0.9) | 2.3 (0.8) | 2.9 (0.7) | 2.1 (0.6) | 2.8 (0.8) | 3.7 (1.4) | 2.6 (0.8) | 6.2 (1.3) | 5.6 (1.3) | 5.6 (1.4) | 4.1 (1.1) | 75.1 (-65.6, 215.8) |  | 6.4 (0.8, 12.3) |  | 6.4 (0.8, 12.3) |
| Male | All services | 7.5 (1.8) | 8.0 (1.9) | 8.7 (1.4) | 8.7 (1.6) | 7.3 (1.3) | 9.1 (1.4) | 8.5 (1.8) | 7.4 (1.1) | 8.3 (1.6) | 7.7 (1.1) | 6.9 (1.2) | 9.5 (1.8) | 8.7 (2.2) | 26.6 (-49.7, 102.8) |  | 0.1 (-1.8, 2.0) |  | 0.1 (-1.8, 2.0) |
| Female | All services | 6.8 (1.8) | 6.5 (1.1) | 6.6 (1.5) | 8.7 (2.2) | 8.3 (1.6) | 7.3 (0.9) | 6.6 (1.2) | 5.7 (0.8) | 7.6 (2.5) | 8.2 (2.2) | 7.7 (1.2) | 12.2 (2.3) | 7.2 (1.6) | 79.9 (-34.5, 194.3) |  | 2.7 (-0.7, 6.1) |  | 2.7 (-0.7, 6.1) |
| Insurance coverage |
| Private only | Zero services | 3.2 (1.1) | 2.0 (0.7) | 2.4 (1.0) | 3.4 (1.4) | 1.9 (0.7) | 0.8 (0.3) | 3.3 (1.6) | 2.8 (1.4) | 2.2 (0.8) | 4.0 (1.0) | 2.8 (1.1) | 5.5 (1.6) | 3.5 (1.5) | 71.0 (-74.5, 216.5) |  | 4.6 (-4.3, 14.4) |  | 4.6 (-4.3, 14.4) |
| Medicare only | Zero services | 0.5 (0.2) | 2.1 (1.5) | 1.3 (0.6) | 0.8 (0.4) | 0.7 (0.3) | 1.2 (0.5) | 0.6 (0.3) | 0.3 (0.2) | 0.5 (0.2) | 2.9 (0.9) | 4.0 (1.6) | 1.4 (0.5) | 3.5 (1.0) | 174.6 (-137.8, 487.0) |  | 6.4 (-7.6, 22.5) |  | 6.4 (-7.6, 22.5) |
| Medicaid | Zero services | 1.9 (1.1) | 4.1 (2.4) | 1.0 (0.4) | 0.3 (0.1) | 3.6 (1.3) | 1.7 (0.8) | 4.6 (1.8) | 2.3 (1.3) | 2.5 (1.3) | 9.7 (3.1) | 11.3 (3.1) | 8.4 (2.9) | 15.6 (5.0) | 329.6 (-215.1, 874.4) |  | 19.7 (2.5, 39.7) |  | 19.7 (2.5, 39.7) |
| Uninsured | Zero services | 23.2 (7.0) | 22.5 (6.4) | 9.8 (3.1) | 10.3 (2.5) | 20.0 (4.9) | 14.7 (4.1) | 8.0 (2.8) | 9.7 (3.2) | 6.0 (2.2) | 25.8 (6.8) | 39.0 (10.6) | 12.6 (5.5) | 26.0 (9.8) | -45.8 (-102.2, 10.6) |  | -0.2 (-10.5, 11.3) |  | -0.2 (-10.5, 11.3) |
| Private only | All services | 9.1 (2.2) | 9.9 (2.0) | 11.1 (2.0) | 11.4 (2.4) | 9.7 (2.0) | 10.0 (1.6) | 8.1 (1.8) | 7.0 (1.1) | 10.7 (3.0) | 11.0 (2.6) | 8.6 (1.6) | 13.6 (3.1) | 7.8 (2.2) | 48.6 (-48.0, 145.3) |  | 0.5 (-2.8, 4.0) |  | 0.5 (-2.8, 4.0) |
| Medicare only | All services | 9.1 (1.6) | 10.6 (1.4) | 10.6 (1.6) | 11.4 (1.5) | 12.9 (1.8) | 13.6 (1.7) | 13.8 (1.7) | 13.9 (1.4) | 11.9 (1.7) | 13.0 (1.6) | 13.2 (1.5) | 19.4 (1.7) | 19.3 (3.2) | 114.4 (31.8, 197.0) |  | 4.4 (2.1, 6.7) |  | 4.4 (2.1, 6.7) |
| Medicaid | All services | 2.5 (0.9) | 1.8 (0.7) | 1.8 (0.8) | 4.2 (2.6) | 2.1 (0.8) | 4.3 (1.6) | 3.9 (1.5) | 1.3 (0.3) | 1.5 (0.4) | 2.3 (0.6) | 2.8 (0.6) | 2.4 (0.8) | 3.4 (1.9) | -4.6 (-98.0, 88.8) |  | -0.7 (-8.0, 7.3) |  | -0.7 (-8.0, 7.3) |
| Uninsured | All services | 1.8 (1.2) | 0.0 (0.0) | 0.3 (0.3) | 0.4 (0.3) | 1.9 (0.9) | 1.9 (1.3) | 0.8 (0.6) | 1.3 (0.7) | 1.6 (1.1) | 0.3 (0.2) | 0.5 (0.5) | 0.7 (0.7) | 0.0 (0.0) | -62.3 (-153.0, 28.4) |  |  |  |  |
| Poverty income ratio |
| > 400% | Zero services | 4.9 (2.7) | 2.7 (1.9) | 0.5 (0.2) | 3.4 (1.8) | 2.4 (1.1) | 1.0 (0.4) | 3.6 (2.5) | 2.7 (2.2) | 0.9 (0.7) | 3.6 (1.6) | 2.6 (1.2) | 2.7 (1.2) | 1.4 (0.6) | -45.4 (-120.1, 29.2) |  | 0.9 (-11.9, 15.5) |  | 0.9 (-11.9, 15.5) |
| 200%—399% | Zero services | 3.9 (1.5) | 5.0 (2.6) | 3.7 (1.5) | 2.6 (1.0) | 1.8 (0.8) | 3.0 (1.2) | 2.3 (0.9) | 3.1 (1.3) | 2.9 (1.2) | 6.2 (2.0) | 4.1 (1.4) | 6.0 (2.0) | 11.3 (3.8) | 55.2 (-96.3, 206.6) | 2012 | -19.4 (-38.3, 5.2) | 15.3 (3.0, 29.1) | 1.2 (-8.4, 11.9) |
| 100%—199% | Zero services | 6.4 (2.2) | 7.9 (2.6) | 2.7 (1.5) | 3.5 (1.5) | 6.3 (2.3) | 3.3 (1.3) | 3.1 (1.2) | 2.3 (0.9) | 1.8 (0.8) | 11.7 (3.1) | 17.3 (3.7) | 5.6 (3.1) | 10.6 (3.4) | -13.0 (-122.9, 96.9) |  | 3.3 (-9.4, 17.8) |  | 3.3 (-9.4, 17.8) |
| < 100% | Zero services | 6.1 (2.2) | 7.3 (2.4) | 6.0 (1.9) | 3.3 (1.2) | 8.8 (2.1) | 4.7 (1.9) | 5.5 (2.0) | 3.1 (1.2) | 4.6 (2.1) | 9.3 (2.3) | 9.1 (3.2) | 13.3 (3.7) | 13.6 (5.8) | 116.8 (-76.2, 309.8) |  | 4.4 (-3.6, 13.1) |  | 4.4 (-3.6, 13.1) |
| > 400% | All services | 13.1 (3.0) | 11.5 (1.7) | 14.1 (2.5) | 17.0 (3.5) | 14.1 (2.7) | 18.1 (2.7) | 14.0 (2.9) | 12.4 (1.7) | 16.6 (4.3) | 17.0 (3.5) | 14.7 (2.6) | 17.6 (4.1) | 12.6 (3.0) | 33.9 (-52.7, 120.5) |  | 2.1 (-0.4, 4.7) |  | 2.1 (-0.4, 4.7) |
| 200%—399% | All services | 5.4 (2.1) | 5.9 (1.3) | 4.1 (0.8) | 6.2 (1.2) | 8.8 (2.0) | 4.0 (0.8) | 5.3 (1.2) | 5.4 (1.1) | 4.6 (0.9) | 5.8 (1.4) | 5.6 (1.2) | 12.8 (3.2) | 7.5 (1.9) | 137.9 (-80.7, 356.5) |  | 3.1 (-2.8, 9.4) |  | 3.1 (-2.8, 9.4) |
| 100%—199% | All services | 4.0 (1.5) | 7.1 (3.4) | 7.3 (3.0) | 5.1 (2.4) | 3.9 (1.1) | 4.4 (1.2) | 5.1 (1.6) | 3.7 (1.2) | 3.6 (1.6) | 3.6 (1.1) | 3.8 (0.9) | 4.6 (1.2) | 2.4 (0.6) | 14.1 (-87.9, 116.1) |  | -3.7 (-7.5, 0.3) |  | -3.7 (-7.5, 0.3) |
| < 100% | All services | 2.8 (1.1) | 2.7 (1.1) | 4.3 (1.3) | 2.1 (0.6) | 1.9 (0.8) | 4.9 (1.8) | 4.2 (1.8) | 1.4 (0.4) | 1.9 (0.7) | 1.2 (0.4) | 3.9 (0.9) | 2.3 (0.7) | 4.9 (3.1) | -16.2 (-96.3, 64.0) |  | -3.1 (-11.1, 5.7) |  | -3.1 (-11.1, 5.7) |
| *\**Values in these columns were estimated excluding data from 2020. |
| *†*Percent change: the percent change in the proportion from 2008 to 2019. |
| *‡*Years identified as Joinpoint years. |
| *§*Annual percent change: the slope of the line in each period demarcated by a Joinpoint year. If two Joinpoint years are identified, there will be three different annual percent changes. Joinpoint years are identified by permutation test, whereas the test of significance for APC is an asymptotic t-test. Due to the omnibus nature of the permutation test and the use of all the data in identifying the Joinpoints, the permutation tests are more powerful. In some cases, Joinpoint years are identified but the corresponding intervals for the APC will overlap zero due to this power difference. |
| *||*Average annual percent change: the slope of the line over the entire study period. |