

Supplementary Table. Age-adjusted COPD mortality rates*and average annual percentage change in mortality rates among adults aged ≥25 years, by sex and state — United States, 1999–2019

State	Women			Men		
	Deaths per 100,000 population (95% CI)		AAPC 1999–2019 (95% CI) [†]	Deaths per 100,000 population (95% CI)		AAPC 1999–2019 (95% CI) [†]
	1999	2019		1999	2019	
Alabama	50.8 (47.5 to 54.2)	75.3 (71.8 to 78.9)	2.0 (1.6 to 2.3) [§]	109.1 (102.7 to 115.5)	96.4 (91.6 to 101.1)	-0.1 (-0.4 to 0.2)
Alaska	69.3 (52.7 to 89.6)	50.5 (40.7 to 60.2)	-1.2 (-2.0 to -0.4) [§]	95.2 (72.1 to 123.3)	36.5 (28.4 to 46.3)	-4.2 (-7.4 to -0.8) [§]
Arizona	63.2 (59.5 to 66.8)	53.0 (50.6 to 55.5)	-0.4 (-0.8 to -0.1) [§]	92.1 (86.9 to 97.4)	60.8 (58 to 63.7)	-2.0 (-2.7 to -1.3) [§]
Arkansas	50.9 (46.7 to 55.1)	83.9 (79.1 to 88.7)	2.9 (2.4 to 3.5) [§]	97.3 (90.1 to 104.5)	100.2 (94.2 to 106.1)	0.5 (0.2 to 0.8) [§]
California	60.2 (58.7 to 61.7)	39.0 (38.1 to 40.0)	-1.9 (-2.2 to -1.7) [§]	83.1 (80.9 to 85.2)	48.4 (47.2 to 49.7)	-2.4 (-2.6 to -2.3) [§]
Colorado	69.0 (64.4 to 73.7)	55.9 (52.8 to 59.1)	-0.6 (-0.9 to -0.2) [§]	112.3 (104.9 to 119.7)	69.1 (65 to 73.1)	-2.3 (-2.9 to -1.7) [§]
Connecticut	49.4 (45.8 to 52.9)	39.8 (36.9 to 42.7)	-1.3 (-1.6 to -0.9) [§]	67.6 (62.2 to 73.1)	43.6 (40 to 47.2)	-2.2 (-2.5 to -1.8) [§]
Delaware	51.5 (43.3 to 59.6)	54.6 (48.0 to 61.2)	0.3 (-0.3 to 1.0)	86.2 (72.4 to 100)	50.2 (43 to 57.4)	-1.3 (-2.1 to -0.4) [§]
District of Columbia	29.5 (22.9 to 37.5)	24.9 (19.2 to 31.7)	0.1 (-0.8 to 0.9)	63.3 (50.1 to 78.8)	30.4 (23 to 39.5)	-2.9 (-3.8 to -2.1) [§]
Florida	55.3 (53.6 to 56.9)	49.3 (48.0 to 50.5)	-0.4 (-1.1 to 0.2)	76.7 (74.4 to 78.9)	56.4 (54.9 to 57.9)	-0.9 (-1.2 to -0.7) [§]
Georgia	54.3 (51.4 to 57.2)	59.2 (56.8 to 61.5)	0.5 (0.3 to 0.7) [§]	104.7 (99.3 to 110.1)	69.0 (65.9 to 72.0)	-1.8 (-2.7 to -0.8) [§]
Hawaii	24.0 (19.4 to 28.6)	16.7 (13.7 to 19.6)	-0.9 (-1.6 to -0.2) [§]	41.9 (35.1 to 48.7)	33.1 (28.4 to 37.9)	-1.2 (-1.8 to -0.6) [§]
Idaho	59.5 (52.1 to 66.9)	67.7 (61.6 to 73.7)	0.6 (0.1 to 1.0) [§]	95.3 (84.2 to 106.3)	76.4 (69.4 to 83.4)	-1.3 (-1.6 to -0.9) [§]
Illinois	52.2 (50.1 to 54.3)	48.0 (46.2 to 49.8)	0.3 (-0.1 to 0.7)	81.8 (78.5 to 85.2)	58.1 (55.8 to 60.4)	-1.3 (-1.6 to -0.9) [§]
Indiana	62.9 (59.6 to 66.1)	77.8 (74.6 to 80.9)	1.2 (0.8 to 1.6) [§]	99.9 (94.7 to 105.2)	93.2 (89.1 to 97.2)	-0.3 (-0.6 to -0.1) [§]
Iowa	51.0 (47.1 to 54.9)	57.5 (53.7 to 61.3)	0.7 (-0.2 to 1.6)	101.1 (94.4 to 107.8)	75.2 (70.3 to 80.2)	-0.8 (-1.2 to -0.4) [§]

Kansas	55.5 (51.0 to 60.0)	68.8 (64.3 to 73.3)	0.9 (0.6 to 1.2) [§]	99.1 (91.8 to 106.4)	77.4 (71.9 to 82.8)	-0.9 (-1.3 to -0.5) [§]
Kentucky	68.8 (64.6 to 72.9)	89.1 (84.9 to 93.2)	1.6 (1.0 to 2.2) [§]	123.2 (116 to 130.3)	103.5 (98.4 to 108.7)	-0.4 (-0.8 to -0.1) [§]
Louisiana	46.1 (42.7 to 49.5)	53.6 (50.4 to 56.8)	0.7 (-0.5 to 1.9)	81.3 (75.5 to 87.1)	65.3 (61.1 to 69.4)	-0.6 (-1.1 to -0.1) [§]
Maine	66.0 (59.2 to 72.7)	62.2 (56.5 to 67.8)	-0.3 (-0.8 to 0.2)	101.3 (90.6 to 112)	85.6 (78.0 to 93.2)	-1.0 (-1.5 to -0.5) [§]
Maryland	51.4 (48.1 to 54.7)	40.9 (38.4 to 43.3)	-1.4 (-1.7 to -1.1) [§]	78.4 (73 to 83.7)	46.3 (43.3 to 49.4)	-2.4 (-3.7 to -1.0) [§]
Massachusetts	53.5 (50.7 to 56.3)	44.7 (42.4 to 47.0)	-1.0 (-1.3 to -0.7) [§]	77 (72.7 to 81.3)	48.8 (46.0 to 51.7)	-2.3 (-2.8 to -1.8) [§]
Michigan	54.9 (52.5 to 57.3)	61.4 (59.2 to 63.6)	0.8 (0.5 to 1.1) [§]	88.5 (84.6 to 92.4)	71.4 (68.7 to 74.2)	-0.9 (-2.1 to 0.3)
Minnesota	48.2 (45.0 to 51.4)	41.2 (38.7 to 43.7)	-0.4 (-1.8 to 1.1)	81.9 (76.8 to 87.1)	55.0 (51.7 to 58.3)	-1.4 (-1.8 to -1.0) [§]
Mississippi	49.6 (45.4 to 53.9)	77.3 (72.6 to 82.0)	2.5 (2.1 to 2.9) [§]	104.5 (96.5 to 112.4)	97.1 (90.8 to 103.4)	-0.2 (-0.5 to 0.1)
Missouri	62.7 (59.5 to 66.0)	67.1 (64.1 to 70.1)	1.1 (0.6 to 1.6) [§]	101.9 (96.7 to 107.2)	75.6 (72.0 to 79.3)	-0.7 (-1.1 to -0.2) [§]
Montana	73.6 (64.6 to 82.6)	74.6 (67.1 to 82.0)	0 (-0.5 to 0.5)	109.4 (96.4 to 122.3)	80.9 (72.3 to 89.4)	-1.7 (-2.2 to -1.2) [§]
Nebraska	54.9 (49.4 to 60.4)	61.0 (55.7 to 66.2)	1.3 (0.8 to 1.8) [§]	107.9 (98.4 to 117.4)	79.3 (72.5 to 86.1)	-0.6 (-1.1 to -0.2) [§]
Nevada	89.6 (81.7 to 97.5)	69.4 (64.6 to 74.1)	-1.0 (-1.5 to -0.6) [§]	105.7 (95.5 to 115.9)	73.9 (68.6 to 79.1)	-2.1 (-3.9 to -0.3) [§]
New Hampshire	64.5 (57.1 to 72.0)	57.3 (51.6 to 63.1)	-0.6 (-1.1 to -0.2) [§]	100.1 (88.3 to 112)	62.6 (55.7 to 69.5)	-1.9 (-2.4 to -1.4) [§]
New Jersey	45.5 (43.3 to 47.8)	37.0 (35.2 to 38.9)	-0.4 (-0.8 to -0.1) [§]	66 (62.5 to 69.5)	40.3 (38.0 to 42.5)	-2.0 (-2.4 to -1.7) [§]
New Mexico	59.9 (53.7 to 66.1)	54.6 (49.9 to 59.2)	-0.2 (-0.7 to 0.3)	106.2 (96.2 to 116.3)	67.0 (61.2 to 72.8)	-1.3 (-1.8 to -0.8) [§]
New York	44.1 (42.6 to 45.6)	37.1 (35.9 to 38.3)	-0.7 (-1.0 to -0.5) [§]	70.3 (67.9 to 72.8)	44.7 (43.2 to 46.3)	-1.9 (-2.1 to -1.6) [§]
North Carolina	54.7 (52.0 to 57.3)	59.0 (56.8 to 61.2)	0.5 (-0 to 1.1)	99.0 (94.3 to 103.8)	67.4 (64.7 to 70.2)	-1.7 (-1.9 to -1.4) [§]
North Dakota	33.5 (27.0 to 41.0)	45.0 (37.8 to 52.2)	1.2 (-2.3 to 4.7)	79.6 (67.2 to 92.0)	62.4 (52.8 to 71.9)	-1.3 (-2.0 to -0.7) [§]
Ohio	59.9 (57.7 to 62.2)	64.9 (62.8 to 67.0)	0.3 (-0.1 to 0.8)	100.6 (96.9 to 104.4)	75.0 (72.4 to 77.6)	-1.1 (-1.3 to -0.8) [§]

Oklahoma	60.9 (56.8 to 65.1)	87.6 (83.2 to 92.0)	1.8 (1.1 to 2.5) [§]	94.7 (88.3 to 101.2)	104.0 (98.5 to 109.5)	0.1 (-0.6 to 0.8)
Oregon	61.8 (57.5 to 66.1)	53.1 (49.8 to 56.3)	-0.8 (-1.2 to -0.5) [§]	91.5 (85.3 to 97.7)	62.2 (58.3 to 66.1)	-2.1 (-2.4 to -1.7) [§]
Pennsylvania	48.0 (46.2 to 49.8)	46.7 (45.1 to 48.3)	0.1 (-0.2 to 0.4)	84.3 (81.2 to 87.3)	57.8 (55.6 to 59.9)	-1.7 (-2.6 to -0.7) [§]
Rhode Island	52.8 (46.3 to 59.4)	49.1 (43.1 to 55.1)	-0.6 (-1.2 to -0.1)	73.8 (63.8 to 83.7)	52.4 (45.1 to 59.6)	-1.7 (-2.3 to -1.1) [§]
South Carolina	51.8 (48.1 to 55.5)	60.5 (57.4 to 63.6)	1.0 (0.3 to 1.6) [§]	100.6 (93.7 to 107.4)	70.2 (66.3 to 74)	-1.1 (-1.5 to -0.8) [§]
South Dakota	36.1 (29.5 to 42.6)	56.5 (49.1 to 63.8)	1.3 (0.6 to 2.0) [§]	87.8 (75.4 to 100.2)	85.4 (75.0 to 95.7)	-0.8 (-1.5 to -0.1) [§]
Tennessee	54.6 (51.5 to 57.7)	76.3 (73.2 to 79.4)	1.6 (1.3 to 1.9) [§]	108.8 (103.1 to 114.6)	86.4 (82.6 to 90.2)	-1.0 (-1.5 to -0.6) [§]
Texas	55.2 (53.4 to 57.1)	53.7 (52.3 to 55.1)	0 (-0.3 to 0.2)	92.8 (89.7 to 95.9)	64.6 (62.8 to 66.5)	-1.5 (-1.8 to -1.3) [§]
Utah	37.7 (32.5 to 42.8)	41.9 (37.8 to 46.0)	0.6 (0 to 1.1) [§]	78.8 (69.9 to 87.6)	51.7 (46.7 to 56.8)	-1.3 (-1.8 to -0.7) [§]
Vermont	65.5 (55.1 to 75.9)	54.2 (46.2 to 62.2)	-0.6 (-1.2 to -0.1) [§]	87.9 (72.7 to 103.1)	54.2 (45.2 to 63.3)	-2.1 (-3.0 to -1.1) [§]
Virginia	51.9 (49.1 to 54.8)	51.0 (48.7 to 53.3)	-0.5 (-0.9 to -0.2) [§]	86.8 (81.9 to 91.8)	56.9 (54.0 to 59.7)	-2.2 (-2.5 to -1.9) [§]
Washington	66.6 (63.0 to 70.2)	46.8 (44.4 to 49.2)	-1.5 (-2.0 to -1.1) [§]	92.5 (87.4 to 97.7)	55.8 (52.8 to 58.7)	-2.1 (-2.5 to -1.8) [§]
West Virginia	67.9 (62.3 to 73.5)	89.8 (83.7 to 95.9)	1.2 (0.8 to 1.6) [§]	123.2 (113.4 to 132.9)	101.4 (94.1 to 108.6)	-0.5 (-0.9 to -0.1) [§]
Wisconsin	47.1 (44.2 to 50.0)	49.3 (46.7 to 51.9)	0.4 (0.2 to 0.7) [§]	81.9 (77.1 to 86.7)	62.4 (59.0 to 65.8)	-1.3 (-1.5 to -1.1) [§]
Wyoming	93.9 (79.2 to 108.6)	73.5 (62.9 to 84.1)	-0.5 (-1.2 to 0.2)	143.2 (121.1 to 165.4)	84.4 (71.9 to 97.0)	-1.7 (-2.4 to -1.0) [§]

Abbreviations: AAPC = average annual percent change; COPD = chronic obstructive pulmonary disease.

* Age-adjusted using the 2000 U.S. Census Bureau projected population and 10-year age groups.

† Trends were assessed as the AAPC from 1999 to 2019.

§ Significantly different from zero at $p \leq 0.05$. For AAPCs within one segment (e.g., no joinpoint), the t-distribution is used. For AAPCs within multiple segments, the normal (z) distribution is used.