

Supplementary Table 2: Obesity and Essential Primary Hypertension -related Mortality, Stratified by Place of Death, in Adults in the United States, 1999 to 2020

Deaths				
Year	Medical Facility	Nursing Home/Long-term Care Facility	Hospice Facility	Home
1999	118	31	-	73
2000	371	70	-	174
2001	342	84	-	179
2002	430	97	-	232
2003	487	99	-	259
2004	522	103	-	286
2005	581	137	-	354
2006	564	133	-	402
2007	571	129	-	384
2008	639	138	-	428
2009	699	159	-	492
2010	738	183	-	517
2011	805	208	10	635
2012	834	253	24	694
2013	759	188	21	749
2014	828	217	18	795
2015	869	253	18	900
2016	896	234	29	906
2017	897	233	53	1057
2018	1000	279	39	1125
2019	1017	299	45	1229
2020	1804	391	48	1766
Totals	15771	3918	305	13636

Supplementary Table 3: Obesity and Essential Primary Hypertension -related Age-Adjusted Mortality Rates per 100,000, in Adults with in the United States, 1999 to 2020

Year Interval	APC (95% CI)	P-value
Overall		
1999–2018	5.07%* (3.40 to 6.50)	0.002799
2018–2020	26.50%* (12.88 to 34.65)	< 0.000001
Female		
1999–2012	6.01%* (4.77 to 42.78)	0.000400
2012–2018	0.76% (-8.58 to 3.87)	0.792641
2018–2020	33.32%* (20.71 to 45.65)	< 0.000001
Male		
1999–2018	6.10%* (1.68 to 31.46)	0.037992
2018–2020	20.39%* (6.73 to 28.96)	< 0.000001
American Indian		
2000–2009	12.05%* (7.87 to 34.58)	0.001200
2009–2018	1.66% (-13.30 to 4.55)	0.582284
2018–2020	42.98%* (18.63 to 61.25)	< 0.000001
Asian or Pacific Islander		
2000–2018	4.13% (-1.48 to 6.46)	0.080384
2018–2020	39.94%* (8.66 to 61.01)	< 0.000001
Black		
1999–2001	45.49%* (4.79 to 104.28)	< 0.000001
2001–2018	2.94% (-7.51 to 4.09)	0.135173
2018–2020	36.63%* (17.48 to 49.50)	< 0.000001
White		
1999–2012	7.38%* (6.28 to 39.55)	0.000400
2012–2018	3.04% (-4.42 to 5.54)	0.424715
2018–2020	24.26%* (14.20 to 32.89)	< 0.000001
Hispanic		
1999–2013	8.40%* (6.29 to 82.81)	0.000800
2013–2018	-2.43% (-18.86 to 4.57)	0.447510
2018–2020	76.99%* (46.43 to 112.50)	< 0.000001
Urban Areas		
1999–2012	6.72%* (5.74 to 12.07)	< 0.000001
2012–2019	2.94% (-1.01 to 4.67)	0.071186
Rural Areas		
1999–2002	23.11%* (7.35 to 60.04)	< 0.000001

2002–2019	5.70%* (2.74 to 6.73)	0.030794
Northeast		
1999–2018	5.53%* (3.81 to 6.70)	0.013197
2018–2020	23.85%* (7.70 to 32.97)	< 0.000001
Midwest		
1999–2018	5.93%* (4.08 to 7.09)	0.009198
2018–2020	24.48%* (8.79 to 33.46)	< 0.000001
South		
1999–2018	4.98%* (3.20 to 6.33)	0.012398
2018–2020	25.62%* (7.79 to 35.03)	< 0.000001
West		
1999–2002	18.58%* (5.91 to 51.27)	< 0.000001
2002–2018	4.28% (-4.36 to 4.92)	0.156369
2018–2020	20.44%* (7.10 to 30.06)	< 0.000001

Supplementary Table 4: Obesity and Essential Primary Hypertension -related Age-Adjusted Mortality Rates per 100,000, in Adults with in the United States, 1999 to 2020

Age-Adjusted Rate (95% CI)			
Year	Men	Women	Overall
1999	1.2 (1.1 to 1.3)	1.5 (1.4 to 1.6)	1.4 (1.3 to 1.4)
2000	3 (2.8 to 3.1)	3 (2.9 to 3.2)	3 (2.9 to 3.2)
2001	3 (2.9 to 3.2)	3.1 (3 to 3.3)	3.1 (3 to 3.2)
2002	3.4 (3.2 to 3.6)	3.5 (3.3 to 3.6)	3.5 (3.4 to 3.6)
2003	3.9 (3.7 to 4)	3.8 (3.7 to 4)	3.9 (3.8 to 4)
2004	4.1 (4 to 4.3)	3.9 (3.8 to 4.1)	4.1 (4 to 4.2)
2005	4.6 (4.4 to 4.8)	4.4 (4.2 to 4.5)	4.5 (4.4 to 4.6)
2006	4.7 (4.5 to 4.9)	4.4 (4.3 to 4.6)	4.6 (4.5 to 4.8)
2007	5 (4.8 to 5.2)	4.5 (4.3 to 4.6)	4.7 (4.6 to 4.8)
2008	5.3 (5.1 to 5.5)	4.7 (4.5 to 4.9)	5 (4.9 to 5.2)
2009	5.7 (5.5 to 5.9)	5 (4.8 to 5.2)	5.3 (5.2 to 5.5)
2010	6.1 (5.9 to 6.3)	5 (4.8 to 5.1)	5.5 (5.4 to 5.7)
2011	7 (6.7 to 7.2)	5.8 (5.6 to 6)	6.4 (6.2 to 6.5)
2012	7.4 (7.2 to 7.6)	6.3 (6.1 to 6.5)	6.9 (6.7 to 7)
2013	7.2 (7 to 7.4)	5.9 (5.7 to 6.1)	6.6 (6.4 to 6.7)
2014	7.7 (7.5 to 7.9)	5.9 (5.7 to 6.1)	6.8 (6.6 to 6.9)
2015	8.3 (8.1 to 8.5)	6.3 (6.2 to 6.5)	7.3 (7.1 to 7.4)
2016	8.3 (8 to 8.5)	6.5 (6.3 to 6.7)	7.4 (7.2 to 7.5)
2017	8.9 (8.7 to 9.1)	6.5 (6.3 to 6.7)	7.7 (7.5 to 7.8)
2018	9.7 (9.5 to 9.9)	6.8 (6.6 to 7)	8.2 (8.1 to 8.4)
2019	9.8 (9.6 to 10)	6.9 (6.8 to 7.1)	8.3 (8.2 to 8.5)
2020	15.8 (15.5 to 16.1)	11.7 (11.5 to 12)	13.7 (13.5 to 13.9)
Totals	6.8 (6.7 to 6.8)	5.5 (5.4 to 5.5)	6.1 (6.1 to 6.1)

Supplementary Table 5: Race-Stratified Obesity and Essential Primary Hypertension -related Age-Adjusted Mortality Rates per 100,000 in Adults in the United States, 1999 to 2020.

Year	White	Black or African American	Asian or Pacific Islander	Hispanic	American Indian or Alaska Native
1999	1.3 (1.2 to 1.4)	3 (2.6 to 3.4)	-	0.9 (0.7 to 1.2)	-
2000	2.9 (2.8 to 3)	6 (5.5 to 6.5)	0.6 (0.3 to 0.9)	1.9 (1.6 to 2.3)	3.9 (2 to 5.8)
2001	2.9 (2.8 to 3)	6.4 (5.9 to 6.9)	0.4 (0.2 to 0.6)	1.9 (1.5 to 2.2)	3.4 (2 to 5.3)
2002	3.3 (3.1 to 3.4)	7 (6.5 to 7.6)	0.6 (0.4 to 0.9)	2 (1.7 to 2.4)	4.4 (2.7 to 6.7)
2003	3.7 (3.6 to 3.8)	7.3 (6.7 to 7.8)	0.6 (0.4 to 1)	2.9 (2.5 to 3.3)	4.1 (2.5 to 6.4)
2004	3.9 (3.8 to 4)	8.3 (7.7 to 8.9)	0.7 (0.5 to 1)	2.3 (1.9 to 2.6)	4.2 (2.7 to 6.4)
2005	4.3 (4.2 to 4.5)	8.7 (8.1 to 9.3)	1 (0.7 to 1.4)	2.5 (2.1 to 2.9)	6.8 (4.9 to 9.3)
2006	4.4 (4.3 to 4.6)	8.6 (8.1 to 9.2)	0.9 (0.6 to 1.2)	3 (2.6 to 3.4)	6.3 (4.4 to 8.7)
2007	4.6 (4.5 to 4.8)	8.6 (8.1 to 9.2)	1.2 (0.9 to 1.6)	2.8 (2.5 to 3.2)	6.3 (4.5 to 8.5)
2008	4.9 (4.8 to 5.1)	8.5 (8 to 9.1)	1.4 (1.1 to 1.8)	3.1 (2.7 to 3.5)	7.6 (5.6 to 10.1)
2009	5.3 (5.1 to 5.4)	9.3 (8.8 to 9.9)	0.9 (0.7 to 1.2)	3.4 (3 to 3.8)	10.8 (8.4 to 13.7)
2010	5.5 (5.3 to 5.6)	9.3 (8.7 to 9.8)	1.1 (0.9 to 1.5)	3.6 (3.2 to 4)	8.7 (6.7 to 11)
2011	6.4 (6.2 to 6.5)	10.3 (9.7 to 10.8)	1.5 (1.2 to 1.8)	4.4 (4 to 4.8)	8.5 (6.6 to 10.9)
2012	6.8 (6.6 to 6.9)	12 (11.4 to 12.6)	1.3 (1 to 1.7)	4.5 (4 to 4.9)	9.5 (7.5 to 12)
2013	6.6 (6.4 to 6.7)	10.4 (9.8 to 10.9)	1.1 (0.9 to 1.4)	4.9 (4.5 to 5.4)	8.5 (6.7 to 10.7)
2014	6.9 (6.7 to 7.1)	10.1 (9.6 to 10.6)	1.4 (1.2 to 1.8)	4.1 (3.8 to 4.5)	11.7 (9.3 to 14.1)
2015	7.4 (7.2 to 7.6)	11.3 (10.8 to 11.9)	1.5 (1.2 to 1.8)	4.7 (4.3 to 5.1)	10.5 (8.4 to 12.9)
2016	7.4 (7.3 to 7.6)	11.6 (11 to 12.1)	1.2 (0.9 to 1.5)	4.9 (4.5 to 5.3)	10.7 (8.6 to 13.2)
2017	7.9 (7.7 to 8)	11.5 (10.9 to 12)	1.5 (1.2 to 1.8)	4.9 (4.5 to 5.3)	9.7 (7.8 to 11.9)
2018	8.5 (8.3 to 8.7)	12.7 (12.1 to 13.3)	1.4 (1.1 to 1.6)	4.8 (4.4 to 5.2)	11.1 (9 to 13.3)
2019	8.5 (8.3 to 8.7)	12.9 (12.3 to 13.5)	1.6 (1.3 to 1.9)	5.1 (4.8 to 5.5)	13.1 (10.8 to 15.4)
2020	12.7 (12.4 to 12.9)	24 (23.2 to 24.8)	3.1 (2.7 to 3.5)	14.3 (13.7 to 14.9)	22.4 (19.4 to 25.4)
Total	5.73 (5.57 to 5.88)	9.9 (9.34 to 10.46)	1.26 (0.92 to 1.52)	4.6 (4.5 to 4.7)	8.68 (6.69 to 11.03)

Supplementary Table 6: Obesity and Essential Primary Hypertension -related Age-Adjusted Mortality Rates per 100,000, Stratified by Census Region, in Adults in the United States, 1999 to 2020.

Year	Age-Adjusted Rate (95% CI) - Northeast	Age-Adjusted Rate (95% CI) - Midwest	Age-Adjusted Rate (95% CI) - South	Age-Adjusted Rate (95% CI) - West
1999	1.3 (1.1 to 1.4)	1.5 (1.3 to 1.6)	1.1 (1 to 1.2)	1.9 (1.7 to 2.1)
2000	2.5 (2.2 to 2.7)	3.2 (2.9 to 3.4)	3.1 (2.9 to 3.2)	3.6 (3.3 to 3.9)
2001	2.6 (2.3 to 2.8)	3.2 (2.9 to 3.4)	3.2 (3 to 3.4)	3.5 (3.2 to 3.8)
2002	2.7 (2.5 to 3)	3.5 (3.3 to 3.8)	3.4 (3.3 to 3.6)	4.2 (3.9 to 4.5)
2003	3.1 (2.9 to 3.3)	3.9 (3.6 to 4.1)	4 (3.8 to 4.2)	4.4 (4.2 to 4.7)
2004	3.2 (3 to 3.5)	4.2 (3.9 to 4.4)	4.3 (4.1 to 4.5)	4.5 (4.2 to 4.8)
2005	3.5 (3.2 to 3.7)	4.8 (4.6 to 5.1)	4.7 (4.5 to 4.9)	4.8 (4.5 to 5.1)
2006	3.4 (3.2 to 3.7)	4.9 (4.7 to 5.2)	4.8 (4.5 to 5)	5.2 (4.9 to 5.5)
2007	3.7 (3.4 to 3.9)	5 (4.7 to 5.2)	4.7 (4.5 to 4.9)	5.5 (5.2 to 5.7)
2008	3.9 (3.6 to 4.2)	5.6 (5.3 to 5.9)	5 (4.8 to 5.2)	5.6 (5.3 to 5.9)
2009	4.1 (3.9 to 4.4)	5.6 (5.3 to 5.9)	5.5 (5.3 to 5.7)	5.8 (5.5 to 6.1)
2010	4.4 (4.1 to 4.7)	5.8 (5.5 to 6.1)	5.6 (5.4 to 5.8)	6.1 (5.8 to 6.4)
2011	5.1 (4.8 to 5.4)	7.1 (6.8 to 7.4)	6.1 (5.9 to 6.3)	7.2 (6.9 to 7.5)
2012	5.7 (5.4 to 6)	7.5 (7.2 to 7.8)	6.9 (6.6 to 7.1)	7.2 (6.9 to 7.5)
2013	5.2 (4.9 to 5.5)	7.1 (6.8 to 7.4)	6.6 (6.4 to 6.8)	7.1 (6.8 to 7.4)
2014	5.5 (5.2 to 5.8)	7.5 (7.2 to 7.8)	6.6 (6.4 to 6.8)	7.3 (7 to 7.6)
2015	5.9 (5.6 to 6.2)	8.4 (8.1 to 8.7)	7.2 (7 to 7.4)	7.5 (7.2 to 7.8)
2016	5.8 (5.5 to 6.1)	8 (7.7 to 8.3)	7.5 (7.3 to 7.8)	7.8 (7.5 to 8.1)
2017	5.9 (5.6 to 6.2)	8.5 (8.2 to 8.8)	7.8 (7.5 to 8)	8 (7.7 to 8.3)
2018	6.3 (6 to 6.7)	9.2 (8.8 to 9.5)	8.4 (8.2 to 8.7)	8.5 (8.1 to 8.8)
2019	6.5 (6.2 to 6.8)	9.3 (8.9 to 9.6)	8.7 (8.5 to 9)	8.1 (7.8 to 8.5)
2020	10.8 (10.4 to 11.2)	15.2 (14.7 to 15.6)	14.7 (14.4 to 15)	12.9 (12.5 to 13.3)
Total	4.7 (4.7 to 4.8)	6.6 (6.5 to 6.7)	6.3 (6.2 to 6.3)	6.5 (6.5 to 6.6)

Supplementary Table 7: Obesity and Essential Primary Hypertension -related Age-Adjusted Mortality Rates per 100,000

State	Age Adjusted Rate
Alabama	4.2 (4–4.4)
Alaska	7.1 (6.3–8)
Arizona	5.2 (5–5.4)
Arkansas	5.7 (5.4–6)
California	6.8 (6.7–6.9)
Colorado	7.3 (7–7.6)
Connecticut	3.5 (3.3–3.7)
Delaware	7.2 (6.6–7.8)
District of Columbia	5.8 (5.1–6.5)
Florida	4.8 (4.7–4.9)
Georgia	7.3 (7.1–7.5)
Hawaii	4.7 (4.3–5.1)
Idaho	7.7 (7.2–8.2)
Illinois	4.9 (4.7–5)
Indiana	7.6 (7.4–7.8)
Iowa	9.1 (8.7–9.4)
Kansas	5.9 (5.6–6.2)
Kentucky	6.3 (6.1–6.6)
Louisiana	6.4 (6.1–6.6)
Maine	6.1 (5.6–6.5)
Maryland	6.3 (6.1–6.5)
Massachusetts	3.5 (3.3–3.6)
Michigan	5.4 (5.3–5.6)
Minnesota	8.8 (8.5–9.1)
Mississippi	8.5 (8.2–8.9)
Missouri	4.5 (4.3–4.7)
Montana	6.5 (6–7.1)
Nebraska	6.5 (6.1–6.9)
Nevada	3.3 (3.1–3.6)
New Hampshire	5.9 (5.4–6.3)
New Jersey	4.9 (4.8–5.1)
New Mexico	5 (4.7–5.4)
New York	4.2 (4.1–4.3)
North Carolina	8 (7.8–8.2)
North Dakota	9.5 (8.7–10.2)
Ohio	7.1 (7–7.3)
Oklahoma	12 (11.6–12.3)

Oregon	9.1 (8.8–9.4)
Pennsylvania	5.8 (5.7–6)
Rhode Island	5.8 (5.3–6.2)
South Carolina	7.5 (7.2–7.8)
South Dakota	7.3 (6.7–8)
Tennessee	6.5 (6.3–6.7)
Texas	5.9 (5.8–6.1)
Utah	4 (3.7–4.3)
Vermont	10.5 (9.7–11.3)
Virginia	4.4 (4.2–4.5)
Washington	7.3 (7–7.5)
West Virginia	8.5 (8.1–8.9)
Wisconsin	8.5 (8.3–8.8)
Wyoming	10 (9.1–10.9)

Supplementary Table 8: Obesity and Essential Primary Hypertension -related Age-Adjusted Mortality Rates per 100,000, Stratified by Urban-Rural Classification, in Adults in the United States, 1999 to 2020.

Year	Urban Age-Adjusted Rate (95% CI)	Rural Age-Adjusted Rate (95% CI)
1999	1.4 (1.3 to 1.5)	1.3 (1.2 to 1.5)
2000	3 (2.8 to 3.1)	3.6 (3.3 to 3.9)
2001	3 (2.9 to 3.1)	3.5 (3.3 to 3.8)
2002	3.3 (3.2 to 3.4)	4.3 (4 to 4.7)
2003	3.7 (3.6 to 3.8)	4.7 (4.4 to 5)
2004	3.9 (3.8 to 4)	5 (4.7 to 5.4)
2005	4.2 (4.1 to 4.4)	5.8 (5.5 to 6.1)
2006	4.4 (4.2 to 4.5)	5.8 (5.5 to 6.2)
2007	4.5 (4.4 to 4.7)	5.6 (5.3 to 6)
2008	4.8 (4.6 to 4.9)	6.3 (6 to 6.7)
2009	5 (4.9 to 5.2)	7 (6.6 to 7.3)
2010	5.2 (5.1 to 5.3)	7.1 (6.8 to 7.5)
2011	6 (5.9 to 6.2)	8.2 (7.8 to 8.6)
2012	6.5 (6.3 to 6.7)	8.7 (8.3 to 9.1)
2013	6.2 (6.1 to 6.4)	8.4 (8 to 8.7)
2014	6.3 (6.2 to 6.5)	9 (8.6 to 9.4)
2015	6.8 (6.7 to 7)	9.7 (9.3 to 10.2)
2016	6.9 (6.7 to 7)	9.7 (9.3 to 10.1)
2017	7.1 (7 to 7.3)	10.5 (10.1 to 11)
2018	7.7 (7.5 to 7.8)	11.2 (10.8 to 11.7)
2019	7.7 (7.5 to 7.8)	11.9 (11.4 to 12.4)
2020	12.8 (12.6 to 13)	18.1 (17.6 to 18.7)
Total	5.8 (5.7 to 5.8)	7.8 (7.7 to 7.8)