

## **SUPPLEMENTARY TABLES:**

**Supplementary Table 1:** Obesity and Essential Primary Hypertension-related mortalities in adults stratified by Sex and Race, in the United States, 1999 to 2020

Deaths								
Year	Overall	Women	Men	White	Black or African American	American Indian or Alaska Native	Hispanic	Asian or Pacific Islander
1999	1325	786	539	987	266	-	53	-
2000	2974	1644	1330	2275	543	18	113	18
2001	3076	1694	1382	2321	598	20	117	12
2002	3525	1927	1598	2668	676	23	131	21
2003	4061	2182	1879	3086	718	23	201	23
2004	4342	2280	2062	3257	847	26	174	28
2005	4901	2585	2316	3713	907	43	194	39
2006	5144	2688	2456	3865	939	42	252	37
2007	5406	2752	2654	4083	965	46	256	53
2008	5870	2959	2911	4445	999	55	289	63
2009	6386	3184	3202	4808	1108	78	333	45
2010	6709	3242	3467	5078	1137	72	359	56
2011	7922	3878	4044	5994	1301	72	465	79
2012	8718	4294	4424	6501	1546	83	493	72
2013	8493	4069	4424	6377	1376	77	575	69
2014	8939	4167	4772	6800	1399	101	525	90
2015	9842	4572	5270	7368	1624	97	617	93
2016	10147	4792	5355	7551	1704	97	675	80
2017	10755	4866	5889	8071	1718	96	713	107
2018	11720	5208	6512	8816	1927	109	729	101
2019	12031	5391	6640	8952	1991	129	802	125
2020	19988	9213	10775	13361	3776	226	2339	250
<b>Total</b>	<b>162274</b>	<b>78373</b>	<b>83901</b>	<b>120377</b>	<b>28065</b>	<b>1533</b>	<b>10405</b>	<b>1461</b>
NH=Non-Hispanic								

**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
<b>Totals</b>	<b>15771</b>	<b>3918</b>	<b>305</b>	<b>13636</b>

**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
<b>Overall</b>		
1999–2018	5.07%* (3.40 to 6.50)	0.002799
2018–2020	26.50%* (12.88 to 34.65)	< 0.000001
<b>Female</b>		
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
<b>Male</b>		
1999–2018	6.10%* (1.68 to 31.46)	0.037992
2018–2020	20.39%* (6.73 to 28.96)	< 0.000001
<b>American Indian</b>		
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
<b>Asian or Pacific Islander</b>		
2000–2018	4.13% (-1.48 to 6.46)	0.080384
2018–2020	39.94%* (8.66 to 61.01)	< 0.000001
<b>Black</b>		
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
<b>White</b>		
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
<b>Hispanic</b>		
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
<b>Urban Areas</b>		
1999–2012	6.72%* (5.74 to 12.07)	< 0.000001
2012–2019	2.94% (-1.01 to 4.67)	0.071186
<b>Rural Areas</b>		
1999–2002	23.11%* (7.35 to 60.04)	< 0.000001

2002–2019	5.70%* (2.74 to 6.73)	0.030794
<b>Northeast</b>		
1999–2018	5.53%* (3.81 to 6.70)	0.013197
2018–2020	23.85%* (7.70 to 32.97)	< 0.000001
<b>Midwest</b>		
1999–2018	5.93%* (4.08 to 7.09)	0.009198
2018–2020	24.48%* (8.79 to 33.46)	< 0.000001
<b>South</b>		
1999–2018	4.98%* (3.20 to 6.33)	0.012398
2018–2020	25.62%* (7.79 to 35.03)	< 0.000001
<b>West</b>		
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	<b>6.8 (6.7 to 6.8)</b>	<b>5.5 (5.4 to 5.5)</b>	<b>6.1 (6.1 to 6.1)</b>

**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)
<b>Total</b>	<b>5.73 (5.57 to 5.88)</b>	<b>9.9 (9.34 to 10.46)</b>	<b>1.26 (0.92 to 1.52)</b>	<b>4.6 (4.5 to 4.7)</b>	<b>8.68 (6.69 to 11.03)</b>

**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)
<b>Total</b>	<b>4.7 (4.7 to 4.8)</b>	<b>6.6 (6.5 to 6.7)</b>	<b>6.3 (6.2 to 6.3)</b>	<b>6.5 (6.5 to 6.6)</b>

**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)
<b>Total</b>	<b>5.8 (5.7 to 5.8)</b>	<b>7.8 (7.7 to 7.8)</b>