

Supplemental Online Content

Faust JS, Krumholz HM, Du C, Mayes KD, Lin Z, Gilman C, Walensky RP. All-Cause Excess Mortality and COVID-19–Related Mortality Among US Adults Aged 25–44 Years, March–July 2020. *JAMA*. Published online December 16, 2020. doi:10.1001/jama.2020.24243

Supplement. eTable. Excess, Coronavirus Disease 2019 (COVID-19)–Related, and Unintentional Opioid Overdose Deaths in Select HHS Regions

This supplemental material has been provided by the authors to give readers additional information about their work.

HHS region	March-July 2020							March-July 2018	
	Expected deaths (95% CI), No.	Observed deaths, No.	Ratio of observed/expected deaths (95% CI)	Excess deaths (95% CI), No.	COVID-19 deaths, No. ^a	COVID-19 death rates per 100 000 person-months (95% CI) ^a	Excess deaths attributed to COVID-19, %	Unintentional opioid overdose deaths in 2018, No.	Unintentional opioid overdose death rates per 100 000 person-months in 2018 (95% CI)
Region 1	2447 (2310 to 2584)	2872	1.17 (1.11 to 1.24)	425 (288 to 562)	105	0.55 (0.45 to 0.66)	25	1003	5.34 (5.02 to 5.69)
March	491 (433 to 549)	555	1.13 (1.01 to 1.28)	64 (6 to 122)				217	5.78 (5.04 to 6.60)
April	494 (435 to 553)	599	1.21 (1.08 to 1.38)	105 (46 to 164)	63	1.64 (1.26 to 2.10)	60	202	5.38 (4.66 to 6.18)
May	484 (422 to 545)	565	1.17 (1.04 to 1.34)	81 (20 to 143)	28	0.73 (0.48 to 1.05)	34	182	4.85 (4.17 to 5.61)
June	484 (422 to 547)	544	1.12 (1.00 to 1.29)	60 (-3 to 122)	14	0.36 (0.20 to 0.61)	23	187	4.98 (4.29 to 5.75)
July	494 (429 to 559)	609	1.23 (1.09 to 1.42)	115 (50 to 180)				215	5.73 (4.99 to 6.55)
Region 3	6973 (6626 to 7321)	7429	1.07 (1.01 to 1.12)	456 (108 to 803)	284	0.70 (0.62 to 0.79)	62	1724	4.29 (4.09 to 4.49)
March	1404 (1269 to 1539)	1302	0.93 (0.85 to 1.03)	-102 (-237 to 33)				335	4.16 (3.73 to 4.63)
April	1387 (1241 to 1532)	1492	1.08 (0.97 to 1.20)	105 (-40 to 251)	97	1.19 (0.97 to 1.45)	92	353	4.39 (3.94 to 4.87)
May	1385 (1230 to 1540)	1640	1.18 (1.06 to 1.33)	255 (100 to 410)	102	1.25 (1.02 to 1.52)	40	374	4.65 (4.19 to 5.14)
June	1389 (1225 to 1554)	1447	1.04 (0.93 to 1.18)	58 (-107 to 222)	56	0.69 (0.52 to 0.89)	97	344	4.28 (3.84 to 4.75)
July	1408 (1235 to 1581)	1548	1.10 (0.98 to 1.25)	140 (-33 to 313)	29	0.36 (0.24 to 0.51)	21	318	3.95 (3.53 to 4.41)

Region 4	14 652 (14 066 to 15 238)	18 315	1.25 (1.20 to 1.30)	3663 (3077 to 4249)	697	0.80 (0.74 to 0.86)	19	2132	2.50 (2.39 to 2.60)
March	2961 (2747 to 3175)	3322	1.12 (1.05 to 1.21)	361 (147 to 575)	27	0.15 (0.10 to 0.22)	7	425	2.49 (2.26 to 2.74)
April	2840 (2602 to 3078)	3442	1.21 (1.12 to 1.32)	602 (364 to 840)	98	0.56 (0.46 to 0.68)	16	422	2.47 (2.24 to 2.72)
May	2959 (2697 to 3221)	3861	1.30 (1.20 to 1.43)	902 (640 to 1164)	107	0.61 (0.50 to 0.74)	12	423	2.48 (2.25 to 2.72)
June	2890 (2607 to 3173)	3690	1.28 (1.16 to 1.42)	800 (517 to 1083)	124	0.71 (0.59 to 0.85)	15	427	2.50 (2.27 to 2.75)
July	3003 (2700 to 3306)	4000	1.33 (1.21 to 1.48)	997 (694 to 1300)	341	1.95 (1.75 to 2.17)	34	435	2.55 (2.31 to 2.80)
Region 5	11 782 (11 397 to 12 166)	12 176	1.03 (1.00 to 1.07)	394 (10 to 779)	514	0.75 (0.69 to 0.82)	130	2201	3.28 (3.14 to 3.42)
March	2372 (2217 to 2528)	2173	0.92 (0.86 to 0.98)	-199 (-355 to -44)	47	0.34 (0.25 to 0.46)	-24	488	3.64 (3.32 to 3.97)
April	2282 (2118 to 2446)	2432	1.07 (0.99 to 1.15)	150 (-14 to 314)	190	1.39 (1.20 to 1.61)	126	409	3.05 (2.76 to 3.36)
May	2353 (2181 to 2525)	2616	1.11 (1.04 to 1.20)	263 (91 to 435)	158	1.16 (0.98 to 1.35)	60	404	3.01 (2.72 to 3.32)
June	2331 (2152 to 2510)	2434	1.04 (0.97 to 1.13)	103 (-76 to 282)	70	0.51 (0.40 to 0.65)	68	418	3.12 (2.82 to 3.43)
July	2444 (2257 to 2631)	2521	1.03 (0.96 to 1.12)	77 (-110 to 264)	49	0.36 (0.27 to 0.47)	64	482	3.59 (3.28 to 3.93)
Region 7	2867 (2682 to 3052)	3167	1.10 (1.04 to 1.18)	300 (115 to 485)	26	0.14 (0.10 to 0.21)	9	340	1.90 (1.70 to 2.11)
March	578 (507 to 648)	611	1.06 (0.94 to 1.21)	33 (-37 to 104)				73	2.04 (1.60 to 2.56)
April	569 (491 to 648)	582	1.02 (0.90 to 1.19)	13 (-66 to 91)				61	1.70 (1.30 to 2.19)

May	574 (492 to 656)	675	1.18 (1.03 to 1.37)	101 (19 to 183)	16	0.44 (0.25 to 0.71)	16	67	1.87 (1.45 to 2.38)
June	573 (486 to 661)	645	1.12 (0.98 to 1.33)	72 (-16 to 159)				78	2.18 (1.72 to 2.72)
July	572 (480 to 664)	654	1.14 (0.98 to 1.36)	82 (-10 to 174)	10	0.27 (0.13 to 0.51)	12	61	1.70 (1.30 to 2.19)
Region 8	2321 (2194 to 2448)	2755	1.19 (1.13 to 1.26)	434 (307 to 561)	49	0.27 (0.21 to 0.37)	11	252	1.48 (1.30 to 1.67)
March	460 (403 to 517)	491	1.07 (0.95 to 1.22)	31 (-26 to 88)				44	1.29 (0.94 to 1.73)
April	461 (404 to 518)	533	1.16 (1.03 to 1.32)	72 (15 to 129)	12	0.34 (0.17 to 0.59)	17	56	1.64 (1.24 to 2.13)
May	462 (406 to 519)	546	1.18 (1.05 to 1.35)	84 (27 to 140)	22	0.62 (0.39 to 0.93)	26	55	1.61 (1.21 to 2.10)
June	472 (415 to 528)	558	1.18 (1.06 to 1.34)	86 (30 to 143)				44	1.29 (0.94 to 1.73)
July	466 (409 to 523)	627	1.34 (1.20 to 1.53)	161 (104 to 218)	15	0.42 (0.24 to 0.69)	9	53	1.55 (1.16 to 2.03)
Region 10	2163 (2043 to 2284)	2567	1.19 (1.12 to 1.26)	404 (283 to 524)	24	0.11 (0.08 to 0.17)	6	250	1.26 (1.11 to 1.42)
March	436 (386 to 486)	485	1.11 (1.00 to 1.26)	49 (-1 to 99)		(0.09)		57	1.43 (1.09 to 1.86)
April	417 (363 to 470)	463	1.11 (0.98 to 1.28)	46 (-7 to 100)	10	0.24 (0.11 to 0.44)	22	51	1.28 (0.95 to 1.69)
May	432 (378 to 487)	516	1.19 (1.06 to 1.37)	84 (29 to 138)		(0.09)		57	1.43 (1.09 to 1.86)
June	442 (387 to 497)	509	1.15 (1.02 to 1.32)	67 (12 to 122)		(0.09)		52	1.31 (0.98 to 1.71)
July	437 (381 to 492)	594	1.36 (1.21 to 1.56)	157 (102 to 213)	14	0.33 (0.18 to 0.56)	9	33	0.83 (0.57 to 1.17)

^aThe 10 US Health and Human Services (HHS) regions do not add up to the number of COVID-19 deaths reported for the US, because when between 1 and 9 persons died during certain periods, those data are suppressed by National Center for Health Statistics, although those COVID-19 deaths are included in reported US totals.