

Supplemental Table 1. Age-adjusted[§] intentional overdose death rates per 100,000 population and 95% confidence interval by age, race/ethnicity, and sex: U.S., 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trends
U.S. men	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.5	1.6	1.6	1.6	1.6*	1.6	1.5	1.3	1.3	1.3	1.2	1.2	2001-2012: APC=2.5 (1.9, 3.0), p<0.001; 2012-2019: APC= -4.9 (-5.9, -3.8), p<0.001
	1.2-1.3	1.3-1.4	1.3-1.4	1.3-1.4	1.3-1.4	1.4-1.5	1.4-1.5	1.5-1.6	1.5-1.6	1.6-1.7	1.5-1.6	1.6-1.7	1.5-1.7	1.5-1.6	1.3-1.4	1.2-1.3	1.3-1.4	1.2-1.3	1.1-1.2	2001-2019: AAPC=-0.4 (-0.9, 0.1), p=0.089
Men aged 15-24	0.5	0.6	0.6	0.7	0.6	0.6	0.7	0.6	0.7	0.8	0.7	0.7*	0.8	0.6	0.6*	0.6	0.7	0.7	0.8	2001-2012: APC=3.1 (2.2, 4.0), p<0.001
	0.4-0.6	0.5-0.7	0.5-0.7	0.6-0.8	0.5-0.7	0.5-0.7	0.6-0.8	0.5-0.7	0.6-0.8	0.6-0.9	0.6-0.8	0.6-0.8	0.7-0.9	0.5-0.7	0.5-0.7	0.5-0.7	0.6-0.8	0.6-0.8	0.6-0.9	2015-2019: APC=6.7 (1.7, 11.8), p=0.012
Men aged 25-34	1.3	1.5	1.4	1.6	1.4	1.6	1.5	1.5	1.6	1.6	1.5	1.8*	1.4	1.5	1.2	1.2	1.4	1.2	1.1	2001-2012: APC=1.1 (0.4, 1.8), p=0.005; 2012-2019: APC= -5.0 (-6.5, 3.6), p<0.001
	1.2-1.5	1.4-1.7	1.2-1.6	1.4-1.7	1.2-1.5	1.4-1.7	1.4-1.7	1.3-1.7	1.4-1.7	1.4-1.8	1.4-1.7	1.6-1.9	1.3-1.6	1.3-1.7	1.1-1.4	1.0-1.3	1.2-1.5	1.1-1.3	1.0-1.3	2001-2019: AAPC= -1.3 (-2.0, -0.7), p<0.001
Men aged 35-44	2.6	2.5	2.6	2.5	2.5	2.5	2.4	2.6	2.5	2.3	2.4	2.4	2.3*	2.3	1.8	1.8	1.9	1.6	1.5	2001-2013: APC= -0.8 (-1.4, -0.3), p=0.008; 2013-2019: APC= -7.0 (-9.0, -5.1), p<0.001
	2.4-2.8	2.3-2.7	2.3-2.8	2.3-2.7	2.3-2.7	2.3-2.7	2.2-2.6	2.3-2.8	2.2-2.7	2.1-2.6	2.2-2.6	2.2-2.6	2.1-2.5	2.1-2.5	1.6-2.0	1.6-2.0	1.7-2.1	1.4-1.8	1.3-1.7	2001-2019: AAPC= -2.9 (-3.7, -2.2), p<0.001
Men aged 45-54	2.4	2.7	2.7	2.8	2.8	3.1	3.1	3.5	3.4	3.7*	3.4	3.4	3.3*	3.1	2.8	2.5	2.6	2.3	2.1	2001-2010: APC=4.3 (3.7, 5.0), p<0.001
	2.2-2.6	2.5-2.9	2.5-2.9	2.6-3.1	2.5-3.0	2.9-3.3	2.9-3.4	3.3-3.8	3.2-3.7	3.4-3.9	3.1-3.6	3.2-3.7	3.0-3.5	2.9-3.3	2.6-3.1	2.3-2.7	2.4-2.8	2.1-2.5	1.9-2.3	2013-2019: APC= -6.8 (-8.0, -5.6), p<0.001
Men aged 55-64	1.2	1.5	1.6	1.8	1.9	2.2	2.3	2.3	2.6	2.9	2.8*	2.9	3.0	2.8	2.7	2.5	2.4	2.3	2.4	2001-2011: APC=8.3 (7.3, 9.2), p<0.001; 2011-2019: APC= -3.4 (-4.3, -2.6), p<0.001
	1.0-1.4	1.3-1.7	1.4-1.8	1.6-2.1	1.7-2.1	1.9-2.4	2.1-2.5	2.1-2.6	2.3-2.8	2.7-3.2	2.6-3.1	2.7-3.1	2.8-3.2	2.5-3.0	2.5-2.9	2.3-2.8	2.2-2.6	2.1-2.5	2.2-2.6	2001-2019: AAPC=2.9 (2.3, 3.5), p<0.001
Men aged 65-74	1.0	0.9	0.8	0.7	0.9	0.8	1.0	1.5	1.4	1.3	1.5	1.5	1.8*	1.7	1.5	1.5	1.5	1.8	1.5	
	0.8-1.2	0.7-1.1	0.6-1.0	0.6-0.9	0.8-1.2	0.6-1.0	0.8-1.3	1.2-1.7	1.2-1.7	1.1-1.5	1.3-1.8	1.3-1.8	1.6-2.1	1.4-1.9	1.3-1.8	1.3-1.7	1.3-1.7	1.6-2.0	1.3-1.7	
Men aged 75-84	0.7	1.2	0.7	1.1	1.1	0.9	0.8	0.9	1.0	1.2	1.1	0.9	1.3	1.4	1.3	1.1	1.2	1.2	1.6	2001-2019: AAPC=2.7 (1.8, 3.6), p<0.001
	0.5-1.0	0.9-1.5	0.5-1.0	0.7-1.2	0.8-1.4	0.7-1.2	0.6-1.1	0.7-1.2	0.8-1.3	0.9-1.6	0.9-1.4	0.7-1.2	1.0-1.6	1.1-1.7	1.0-1.6	0.9-1.5	0.9-1.5	1.0-1.5	1.3-1.9	
Men aged ≥85	#	#	1.8	1.7	1.5	#	1.8	1.5	1.3	2.1	1.1	2.1	2.1	1.9	1.9	1.8	1.7	1.4	1.7	
	0.9-2.4	0.7-2.0	1.1-2.7	1.1-2.6	0.9-2.2	0.5-1.6	1.2-2.5	1.0-2.2	0.8-2.0	1.5-2.9	0.7-1.7	1.5-2.9	1.5-2.8	1.4-2.6	1.4-2.6	1.3-2.5	1.2-2.3	0.9-1.9	1.2-2.3	
NH White men	1.5	1.6	1.6	1.7	1.7	1.8	1.9	1.9	2.0	2.1	2.0	2.1*	2.1	2.0	1.8	1.6	1.8	1.6	1.5	2001-2012: APC=2.9 (2.4, 3.5), p<0.001; 2012-2019: APC= -4.8 (-5.9, -3.8), p<0.001
	1.5-1.6	1.6-1.7	1.5-1.7	1.6-1.8	1.6-1.8	1.7-1.9	1.8-2.0	1.9-2.0	1.9-2.1	2.0-2.2	1.9-2.1	2.0-2.2	2.0-2.2	1.9-2.1	1.7-1.8	1.5-1.7	1.7-1.9	1.5-1.7	1.5-1.6	
NH Black men	0.5	0.5	0.4	0.4	0.5	0.5	0.4	0.6	0.5	0.6*	0.5	0.6	0.6	0.5	0.5	0.5	0.4	0.5	0.5	
	0.3-0.5	0.4-0.6	0.3-0.5	0.3-0.5	0.4-0.6	0.4-0.7	0.3-0.6	0.5-0.7	0.4-0.6	0.5-0.7	0.4-0.6	0.5-0.7	0.5-0.7	0.4-0.6	0.4-0.6	0.4-0.6	0.3-0.5	0.4-0.6	0.4, 0.6	
NH Asian Pacific men	0.4	0.5	0.4	0.5	0.4	0.5	0.5	0.4	0.6	0.5	0.6*	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.6	
	0.3-0.6	0.3-0.7	0.3-0.6	0.3-0.7	0.2-0.6	0.3-0.7	0.3-0.7	0.3-0.6	0.5-0.9	0.4-0.7	0.5-0.8	0.5-0.8	0.4-0.8	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.8	0.5-0.8	
Hispanic men	0.4	0.5	0.5	0.6	0.6	0.6	0.7*	0.6	0.7	0.7	0.5	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.6	2001-2007: APC=6.2 (2.1, 10.5), p=0.006; 2007-2019: APC= -2.1 (-3.0, -1.1), p<0.001
	0.3-0.5	0.4-0.7	0.4-0.7	0.4-0.7	0.5-0.7	0.5-0.7	0.5-0.8	0.5-0.8	0.6-0.8	0.6-0.8	0.4-0.6	0.5-0.7	0.5-0.7	0.5-0.7	0.4-0.6	0.5-0.7	0.4-0.6	0.4-0.6	0.5-0.7	
U.S. women	1.3	1.4	1.4	1.5	1.5	1.6	1.6*	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7*	1.7	1.6	1.6	1.5	2001-2007: APC=3.8 (3.2, 4.4), p<0.001; 2007-2015: APC=1.0 (0.6-1.4), p<0.001; 2015-2019: APC= -3.5 (-4.5, -2.5), p<0.001
	1.2-1.3	1.3-1.4	1.3-1.4	1.4-1.6	1.4-1.5	1.5-1.6	1.6-1.7	1.6-1.7	1.6-1.7	1.6-1.7	1.6-1.8	1.6-1.8	1.6-1.8	1.7-1.8	1.7-1.8	1.6-1.7	1.6-1.7	1.5-1.6	1.5-1.6	2001-2019: AAPC=0.9 (0.6, 1.2), p<0.001
Women aged 15-24	0.6	0.6	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.6*	0.7	0.7	0.9	0.9	1.0	2014-2019: APC=10.8 (6.7, 15.0), p<0.001
	0.5-0.7	0.5-0.7	0.4-0.6	0.5-0.7	0.5-0.7	0.4-0.6	0.4-0.6	0.4-0.6	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.6-0.8	0.5-0.7	0.5-0.8	0.6-0.8	0.7-1.0	0.7-1.0	0.8-1.1	2001-2019: AAPC=3.2 (2.0-4.4), p<0.001
Women aged 25-34	1.2	1.2	1.4	1.4	1.3	1.6	1.4	1.5	1.3	1.6	1.6*	1.5	1.3	1.4	1.3	1.2	1.2	1.2	1.1	2001-2011: APC=2.0 (0.9, 3.1), p=0.001; 2011-2019: APC= -4.1 (-5.6, -2.6), p<0.001
	1.0-1.3	1.1-1.4	1.2-1.6	1.2-1.5	1.2-1.5	1.4-1.8	1.3-1.6	1.4-1.7	1.1-1.4	1.4-1.8	1.4-1.7	1.3-1.7	1.2-1.5	1.3-1.6	1.1-1.4	1.1-1.3	1.1-1.4	1.0-1.3	1.0-1.3	2001-2019: AAPC= -0.8 (-1.6, 0.1), p=0.072

Women aged 35-44	2.3	2.6	2.4	2.7	2.6	2.7	2.5	2.9*	2.7	2.6	2.8	2.6	2.5	2.8	2.6*	2.4	2.2	2.1	1.9	2001–2008: APC=1.9 (0.6, 3.2), p=0.009; 2015–2019: APC=-7.4 (-10.8, -3.9), p<0.001 2001–2019: AAPC=-1.3 (-2.3, -0.3), p=0.012
	2.1-2.4	2.4-2.8	2.2-2.6	2.5-2.9	2.4-2.8	2.5-2.9	2.3-2.7	2.7-3.2	2.5-3.0	2.4-2.8	2.5-3.0	2.4-2.9	2.3-2.7	2.6-3.1	2.4-2.8	2.2-2.6	2.0-2.4	1.9-2.3	1.7-2.1	
Women aged 45-54	2.9	3.0	3.1	3.4	3.3	3.5	3.9	3.6	3.6	3.7	3.7	3.8*	3.8	3.5	3.8	3.7	3.4	3.0	3.2	2001–2012: APC=2.3 (1.4, 3.3), p<0.001; 2012–2019: APC=-3.0 (-4.8, -1.1), p<0.001
	2.7-3.1	2.8-3.3	2.8-3.3	3.1-3.6	3.1-3.6	3.3-3.8	3.6-4.1	3.4-3.9	3.4-3.9	3.4-3.9	3.4-4.0	3.6-4.1	3.5-4.1	3.3-3.8	3.5-4.0	3.5-4.0	3.2-3.7	2.8-3.2	3.0-3.5	
Women aged 55-64	1.7	1.9	2.0	2.1	2.3	2.6	3.0*	2.8	3.0	3.2	3.2	3.3	3.4	3.4	3.5*	3.4	3.1	3.2	2.9	2001–2007: APC=9.0 (7.4, 10.7), p<0.001; 2007–2015: APC=2.8 (1.9, 3.6), p<0.001; 2015–2019: APC=-4.8 (-6.8, -2.8), p<0.001 2001–2019: AAPC=3.0 (2.3, 3.8), p<0.001
	1.5-2.0	1.7-2.2	1.7-2.2	1.9-2.4	2.0-2.5	2.4-2.9	2.7-3.2	2.6-3.1	2.7-3.2	2.9-3.4	3.0-3.5	3.1-3.6	3.2-3.7	3.2-3.7	3.2-3.7	3.1-3.6	2.9-3.3	2.9-3.4	2.6-3.1	
Women aged 65-74	0.9	1.1	1.1	1.0	1.1	1.2	1.5	1.5	1.6	1.6	1.7	1.9	2.0	2.2*	2.0	2.2	2.3	2.3	2.1	
	0.7-1.1	0.9-1.3	0.9-1.3	0.8-1.2	1.0-1.4	1.0-1.4	1.2-1.7	1.3-1.7	1.3-1.8	1.4-1.8	1.5-2.0	1.7-2.1	1.7-2.2	1.9-2.4	1.7-2.2	2.0-2.5	2.1-2.5	2.0-2.5	1.9-2.3	
Women aged 75-84	0.8	0.9	1.0	0.9	1.1	1.0	1.1	1.2	1.2	1.1	1.2	1.3	1.3	1.4	1.3	1.4	1.3	1.3	1.7	2001–2019: AAPC=2.7 (2.2, 3.3), p<0.001
	0.6-1.0	0.7-1.2	0.8-1.3	0.7-1.2	0.9-1.3	0.8-1.3	0.8-1.3	1.0-1.5	1.0-1.5	0.9-1.3	1.0-1.5	1.0-1.5	1.0-1.5	1.2-1.7	1.0-1.5	1.1-1.7	1.1-1.5	1.1-1.5	1.4-2.0	
Women aged ≥85	0.7	0.7	‡	0.9	1.0	1.0	1.0	0.9	0.9	1.0	0.9	1.1	1.0	1.1	1.5	1.2	1.3	1.3	1.3	
	0.4-1.0	0.4-1.1	0.4-0.9	0.6-1.3	0.6-1.4	0.7-1.3	0.7-1.4	0.6-1.2	0.6-1.2	0.7-1.4	0.7-1.3	0.8-1.4	0.7-1.4	0.8-1.4	1.1-1.9	0.9-1.6	1.0-1.7	1.0-1.7	1.0-1.7	
NH White women	1.6	1.7	1.7	1.9	1.9	2.0	2.1*	2.2	2.1	2.2	2.3	2.3	2.2	2.3	2.3*	2.3	2.2	2.1	2.0	2001–2007: APC=4.8 (4.0, 5.6), p<0.001; 2007–2015: APC=1.5 (1.0-2.0), p<0.001; 2015–2019: -3.8 (-5.2, -2.4), p<0.001 2001–2019: AAPC=1.4 (0.9-1.8), p<0.001
	1.5-1.7	1.6-1.8	1.6-1.8	1.8-2.0	1.8-1.9	1.9-2.1	2.0-2.2	2.1-2.3	2.0-2.2	2.1-2.3	2.2-2.4	2.2-2.4	2.1-2.3	2.2-2.4	2.2-2.4	2.2-2.4	2.1-2.3	2.0-2.2	1.9-2.1	
NH Black women	0.4	0.4	0.6	0.5	0.5	0.4	0.4	0.4	0.6	0.5	0.5	0.5	0.4*	0.5	0.5	0.5	0.7	0.6	0.7	2013–2019: APC=5.7 (1.3, 10.4), p=0.015 2001–2019: AAPC=1.7 (0.0, 3.4), p=0.046
	0.4-0.6	0.3-0.5	0.5-0.7	0.4-0.6	0.4-0.6	0.3-0.5	0.4-0.5	0.3-0.5	0.5-0.7	0.4-0.6	0.4-0.6	0.4-0.6	0.4-0.5	0.4-0.6	0.4-0.6	0.4-0.6	0.5-0.8	0.5-0.7	0.6-0.8	
NH Asian Pacific women	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.6*	0.5	0.7	0.5	0.5	0.6	0.5	0.5	0.6	0.6	0.6	
	0.2-0.6	0.4-0.7	0.4-0.7	0.4-0.8	0.4-0.7	0.4-0.8	0.4-0.8	0.4-0.7	0.5-0.8	0.4-0.7	0.6-0.9	0.4-0.7	0.3-0.6	0.5-0.8	0.4-0.7	0.4-0.6	0.4-0.7	0.4-0.7	0.4-0.7	
Hispanic women	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.6	0.7	0.7	0.6*	0.7	0.6	0.6	0.6	0.6	
	0.3-0.6	0.4-0.7	0.5-0.7	0.5-0.7	0.4-0.7	0.5-0.7	0.5-0.7	0.4-0.6	0.4-0.6	0.5-0.7	0.5-0.7	0.6-0.8	0.6-0.8	0.5-0.7	0.6-0.8	0.5-0.7	0.5-0.6	0.5-0.7	0.6-0.7	

Data source: The 2001-2019 National Vital Statistics System's multiple cause-of-death mortality files. NH=non-Hispanic; Estimates for non-Hispanic American Indians or Alaska Natives are not reported due to too many suppressions over the years. *: Joinpoint, which is identified in this year indicating significant changes in nonlinear trends using permutation tests. APC=annual percentage change. AAPC=average APC. ‡: Age-specific rate for each specific age group. †: Unreliable.

Supplemental Table 2. Age-adjusted[§] firearm death by suicide rates per 100,000 population and 95% confidence interval by age, race/ethnicity, and sex: U.S., 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trends
U.S. men	11.1	11.1	10.8	10.4	10.6	10.3*	10.4	10.7	10.9	11.2	11.2	11.5	11.5	11.4	11.6	12.0	12.4	12.6	12.3	2001–2006: APC=−1.4 (−2.4, −0.4), p=0.011; 2006–2019: APC=1.5 (1.3, 1.7), p<0.001
	10.9-11.2	10.9-11.3	10.6-11.0	10.2-10.6	10.4-10.7	10.1-10.5	10.2-10.6	10.6-10.9	10.7-11.0	11.0-11.3	11.0-11.4	11.3-11.6	11.4-11.7	11.3-11.6	11.4-11.8	11.8-12.1	12.2-12.6	12.4-12.7	12.4-12.4	12.1-12.4
Men aged 15-24	9.4	9.1	8.9	8.8	8.1	8.2*	7.8	8.2	8.1	8.3	8.6	8.8	8.6*	9.0	9.7	10.5	11.9	12.1	11.5	2001–2007: APC=−2.8 (−4.8, −0.8), p=0.010; 2013–2019: APC=6.1 (4.2, 8.1), p<0.001
	9.0-9.8	8.6-9.5	8.5-9.3	8.4-9.2	7.8-8.5	7.8-8.5	7.4-8.2	7.8-8.6	7.7-8.4	7.9-8.6	8.2-9.0	8.4-9.2	8.2-9.0	8.6-9.3	9.3-10.1	10.1-11.0	11.5-12.4	11.6-12.5	11.0-11.9	2001–2019: AAPC=1.6 (0.5, 2.8), p=0.005
Men aged 25-34	11.3	10.5	10.6	10.0	10.1	9.6*	10.2	10.2	9.9	11.1	11.2	11.1	11.4	11.1	11.9	12.5	12.9	12.6	13.0	2001–2006: APC=−2.5 (−4.2, −0.8), p=0.007; 2006–2019: APC=2.3 (2.0, 2.7), p<0.001
	10.8-11.8	10.0-10.9	10.2-11.1	9.6-10.5	9.6-10.5	9.1-10.0	9.8-10.6	9.7-10.6	9.5-10.4	10.6-11.5	10.7-11.6	10.6-11.5	11.0-11.9	10.7-11.5	11.5-12.4	12.0-12.9	12.4-13.3	12.2-13.1	12.5-13.4	2001–2019: AAPC=1.0 (0.5, 1.5), p<0.001
Men aged 35-44	11.4	12.0	11.3	10.9	11.2*	11.0	11.2	11.2	11.8	12.0	11.7	12.1	12.3	11.6	12.1	12.6	12.7	13.1	12.9	2005–2019: APC=1.2 (0.9, 1.5), p<0.001
	10.9-11.8	11.6-12.5	10.8-11.7	10.5-11.3	10.7-11.6	10.5-11.4	10.8-11.7	10.7-11.6	11.3-12.2	11.5-12.5	11.3-12.2	11.6-12.6	11.8-12.8	11.2-12.1	11.6-12.6	12.1-13.1	12.2-13.2	12.6-13.6	12.4-13.4	2001–2019: AAPC=0.6 (0.1, 1.0), p=0.021
Men aged 45-54	13.2	13.6	13.8	13.5	14.1	13.7	13.8	14.5	15.0	15.8	15.4*	15.6	15.5	14.9	14.9	15.0	15.3	15.1	14.5	
	12.7-13.7	13.1-14.2	13.3-14.3	13.0-14.0	13.6-14.6	13.2-14.2	13.3-14.3	14.0-15.0	14.5-15.5	15.2-16.3	14.8-15.9	15.0-16.1	15.0-16.1	14.4-15.4	14.4-15.4	14.5-15.5	14.8-15.9	14.6-15.6	13.9-15.0	
Men aged 55-64	14.7	15.0	14.8	14.1	14.5	14.2	15.0	16.2	16.2	16.4	16.6	17.5*	17.0	17.3	16.8	17.1	17.6	18.3	17.7	
	14.0-15.4	14.4-15.7	14.2-15.5	13.5-14.7	13.9-15.1	13.6-14.8	14.4-15.6	15.6-16.9	15.6-16.8	15.8-17.0	16.0-17.2	16.9-18.1	16.4-17.5	16.7-17.8	16.2-17.3	16.5-17.7	17.1-18.2	17.7-18.9	17.1-18.2	
Men aged 65-74	19.1	19.4	18.2	17.2*	17.3	17.2	16.9	18.5	18.6	18.3	18.3	18.3	19.2	19.7	19.3	19.2	19.2	20.1	18.8	2001–2004: APC=−4.1 (−8.8, 0.9), p=0.072; 2004–2019: APC=0.9 (0.6, 1.2), p<0.001
	18.1-20.0	18.4-20.3	17.3-19.1	16.4-18.1	16.4-18.2	16.3-18.1	16.1-17.8	17.6-19.3	17.8-19.5	17.4-19.1	17.5-19.1	17.5-19.1	18.4-20.0	18.9-20.4	18.6-20.1	18.5-20.0	18.4-19.9	19.4-20.8	18.1-19.5	
Men aged 75-84	30.6	30.9	28.6	28.2	29.1	27.4	27.5	27.7	27.4*	26.3	28.0	28.8	28.5	28.0	28.7	29.5	29.7	30.8	30.0	2001–2009: APC=−1.5 (−3.2, −1.4), p<0.001; 2009–2019: APC=1.3 (0.8, 1.7), p<0.001
	29.1-32.1	29.4-32.4	27.1-30.0	26.7-29.6	27.6-30.5	26.0-28.8	26.1-28.9	26.3-29.1	26.0-28.8	24.9-27.6	26.6-29.4	27.4-30.2	27.1-29.8	26.6-29.3	27.3-30.0	28.2-30.9	28.3-31.0	29.5-32.1	28.7-31.3	
Men aged ≥85	40.1	40.7	39.5	37.6	37.5	36.4	36.7	34.2*	34.4	36.3	35.1	36.7	37.2	40.0	37.8	37.4	40.8	37.8	40.7	2001–2008: APC=−2.3 (−2.2, −0.8), p<0.001; 2008–2019: APC=1.3 (0.9, 1.7), p<0.001
	36.6-43.6	37.2-44.1	36.2-42.9	34.3-40.8	34.4-40.7	33.3-39.4	33.7-39.7	31.4-37.0	31.6-37.2	33.5-39.1	32.4-37.8	34.0-39.4	34.5-39.8	37.3-42.7	35.2-40.3	34.9-40.0	38.2-43.4	35.3-40.3	38.1-43.3	
NH White men	12.9	13.1	12.8	12.4	12.7*	12.4	12.6	13.2	13.4	14.0	14.2	14.5	14.8	14.6	15.1	15.4	16.0	16.2	15.8	2005–2019: APC=2.0 (1.7, 2.2), p<0.001
	12.7-13.2	12.8-13.3	12.6-13.1	12.2-12.6	12.5-12.9	12.2-12.6	12.4-12.9	13.0-13.5	13.2-13.7	13.7-14.2	14.0-14.4	14.3-14.7	14.5-15.0	14.4-14.9	14.8-15.3	15.2-15.7	15.8-16.3	15.9-16.4	15.6-16.0	2001–2019: AAPC=1.3 (0.9, 1.7), p<0.001
NH Black men	6.1	6.1	5.5	5.6	5.5	5.5	5.0*	5.4	5.4	5.3	5.4	5.5	5.2	5.3	5.3*	5.8	6.3	6.6	6.9	2001–2007: APC=−2.2 (−3.2, −1.3), p<0.001; 2015–2019: APC=7.0 (5.2, 8.7), p<0.001
	5.7-6.5	5.7-6.5	5.1-5.9	5.2-6.0	5.1-5.9	5.1-5.9	4.7-5.4	5.1-5.8	5.1-5.8	4.9-5.6	5.0-5.7	5.1-5.8	4.8-5.5	5.0-5.7	5.0-5.6	5.5-6.2	6.0-6.7	6.2-7.0	6.5-7.3	2001–2019: AAPC=0.9 (0.4, 1.3), p<0.001
NH Asian Pacific men	2.6	2.4	2.5	2.2	1.8*	2.1	2.7	2.1	2.4	2.4	2.2	2.6	2.6	2.3	2.6	3.1	3.1	3.0	3.2	2005–2019: APC=3.1 (2.0, 4.1), p<0.001
	2.2-3.1	2.0-2.9	2.1-2.9	1.8-2.6	1.4-2.1	1.7-2.4	2.3-3.1	1.8-2.5	2.0-2.8	2.1-2.8	1.9-2.6	2.2-2.9	2.3-3.0	1.9-2.6	2.2-2.9	2.8-3.5	2.7-3.4	2.7-3.3	2.8-3.5	
Hispanic men	4.8	4.9	4.6	4.5	4.1	3.9	4.5	4.1	4.3	4.2	3.9	4.1	3.8*	4.1	4.0	4.5	4.6	5.1	4.6	2001–2013: APC=−1.6 (−2.3, −0.9), p<0.001; 2013–2019: APC=4.3 (2.6, 6.1), p<0.001
	4.4-5.2	4.5-5.3	4.2-5.0	4.1-4.8	3.8-4.5	3.6-4.5	4.2-4.9	3.7-4.4	4.0-4.7	3.9-4.5	3.6-4.2	3.8-4.4	3.5-4.1	3.8-4.4	3.8-4.3	4.2-4.7	4.3-4.8	4.8-5.4	4.4-4.9	
U.S.	1.4	1.4	1.4	1.5	1.4	1.4*	1.4	1.4	1.5	1.5	1.6	1.7	1.8	1.8	1.8	1.9	1.9	1.9	1.8	2006–2019: APC=2.9 (2.4, 3.4), p<0.001

women	1.4-1.5	1.4-1.5	1.3-1.5	1.4-1.5	1.3-1.4	1.3-1.4	1.4-1.5	1.4-1.5	1.4-1.6	1.4-1.5	1.6-1.7	1.6-1.7	1.7-1.8	1.7-1.8	1.8-1.9	1.9-2.0	1.8-1.9	1.8-2.0	1.8-1.9	2001–2019: AAPC=1.9 (1.1, 2.7), p<0.001
Women aged 15-24	1.0 0.9-1.1	1.0 0.8-1.1	1.0 0.8-1.1	1.1 0.9-1.2	0.9 0.8-1.1	0.9 0.7-1.0	0.8 0.7-0.9	0.9* 0.8-1.0	1.0 0.8-1.1	0.9 0.8-1.1	1.1 0.9-1.2	1.1 1.0-1.3	1.3 1.1-1.4	1.2 1.1-1.4	1.4 1.2-1.5	1.6 1.4-1.7	1.5* 1.4-1.7	1.6 1.5-1.8	1.4 1.2-1.6	
Women aged 25-34	1.6 1.4-1.8	1.6 1.5-1.8	1.4 1.3-1.6	1.6 1.4-1.7	1.5 1.3-1.6	1.3* 1.2-1.5	1.4 1.2-1.5	1.5 1.4-1.7	1.7 1.5-1.9	1.5 1.3-1.7	1.9 1.7-2.1	1.9 1.7-2.1	2.0 1.8-2.2	1.8 1.6-2.0	2.1 1.9-2.3	2.2 1.9-2.4	2.2* 2.0-2.4	2.2 2.0-2.4	2.1 1.9-2.3	
Women aged 35-44	2.1 1.9-2.3	2.2 2.0-2.4	2.1 1.9-2.2	2.2 2.0-2.4	2.0* 1.8-2.2	2.1 1.9-2.3	2.3 2.1-2.5	2.1 1.9-2.3	2.1 1.9-2.3	2.3 2.1-2.5	2.3 2.1-2.5	2.4 2.2-2.6	2.3 2.1-2.5	2.4 2.2-2.6	2.5 2.3-2.7	2.7 2.5-3.0	2.5 2.3-2.7	2.5 2.3-2.7	2.4 2.2-2.7	2005–2019: APC=1.6 (1.1, 2.0), p<0.001 2001–2019: AAPC=1.1 (0.3, 1.9), p=0.009
Women aged 45-54	2.4 2.1-2.6	2.3 2.0-2.5	2.5 2.2-2.7	2.8 2.6-3.0	2.4 2.2-2.6	2.6 2.4-2.8	2.5 2.3-2.7	2.7 2.5-2.9	2.9 2.7-3.1	2.6 2.4-2.9	3.2 2.9-3.4	3.2 3.0-3.4	3.2 2.9-3.4	3.5* 3.3-3.7	3.2 3.0-3.4	3.3 3.0-3.5	3.4 3.2-3.7	3.2 3.0-3.5	3.4 3.1-3.6	
Women aged 55-64	2.4 2.1-2.7	2.2 1.9-2.4	2.2 1.9-2.4	2.2 2.0-2.4	2.1* 1.9-2.3	2.3 2.1-2.5	2.3 2.0-2.5	2.3 2.1-2.5	2.3 2.1-2.6	2.6 2.4-2.8	2.4 2.2-2.6	2.5 2.2-2.7	2.9 2.7-3.2	2.8 2.6-3.1	3.1 2.8-3.3	3.0* 2.8-3.3	3.0 2.7-3.2	3.1 2.9-3.4	2.9 2.7-3.2	
Women aged 65-74	1.7 1.4-1.9	1.6 1.3-1.8	1.6 1.4-1.9	1.5 1.3-1.8	1.6 1.4-1.9	1.6 1.4-1.9	1.5 1.3-1.8	1.6* 1.4-1.9	1.8 1.5-2.0	1.8 1.5-2.0	2.0* 1.8-2.3	1.9 1.7-2.3	2.2 1.9-2.4	2.1 1.8-2.3	2.0 1.7-2.2	2.3 2.1-2.6	2.1 1.9-2.3	2.3 2.1-2.5	2.2 2.0-2.4	2011–2019: APC=1.7 (0.9, 2.5), p<0.001
Women aged 75-84	1.5 1.3-1.8	1.4 1.1-1.6	1.5 1.2-1.8	1.4 1.1-1.7	1.3 1.0-1.6	1.2 1.0-1.5	1.4 1.1-1.6	1.4 1.1-1.7	1.4 1.1-1.6	1.4* 1.1-1.6	1.3 1.1-1.6	1.5 1.2-1.8	1.5 1.3-1.8	1.7 1.4-2.0	1.8* 1.5-2.1	1.7 1.4-1.9	1.7 1.4-2.0	1.6 1.4-1.9	1.6 1.3-1.9	
Women aged ≥85	1.0 0.7-1.4	0.8 0.5-1.2	1.0 0.6-1.4	‡ 0.4-0.9	0.9 0.6-1.3	0.7 0.5-1.1	0.6 0.4-0.9	1.0 0.7-1.4	0.7 0.4-1.0	0.8 0.5-1.2	1.0 0.7-1.4	1.1 0.8-1.5	1.0 0.7-1.3	0.9 0.6-1.3	0.9 0.7-1.3	0.8 0.6-1.2	0.9 0.6-1.2	1.0 0.7-1.4	1.2 0.9-1.6	2005–2019: AAPC=2.1 (0.3, 3.9), p=0.024
NH White women	1.8 1.7-1.9	1.8 1.7-1.8	1.8 1.7-1.8	1.9 1.8-1.9	1.7 1.7-18	1.8 1.7-19	1.8* 1.7-1.9	1.9 1.8-2.0	2.0 1.9-2.1	2.0 1.9-2.1	2.2 2.1-2.3	2.3 2.2-2.4	2.4 2.3-2.5	2.5 2.4-2.6	2.6* 2.5-2.7	2.7 2.6-2.8	2.6 2.5-2.7	2.6 2.5-2.8	2.6 2.5-2.7	
NH Black women	0.7 0.6-0.8	0.5 0.4-0.6	0.6 0.4-0.7	0.5 0.4-0.6	0.5 0.4-0.6	0.5 0.4-0.6	0.5 0.4-0.6	0.5* 0.4-0.6	0.5 0.4-0.6	0.6 0.5-0.7	0.5 0.4-0.6	0.7 0.5-0.8	0.5 0.4-0.6	0.5 0.4-0.7	0.5 0.4-0.6	0.8 0.7-0.9	0.7 0.6-0.8	0.8 0.7-0.9	0.8 0.6-0.9	2001–2008: APC=-3.4 (-7.2, 0.6), p=0.086; 2008–2019: APC=5.0 (3.2, 6.8), p<0.001 2001–2019: AAPC=1.6 (-0.1, 3.4), p=0.072
NH Asian Pacific women	0.4 0.3-0.6	0.3 0.2-0.5	0.4 0.3-0.6	0.4 0.3-0.6	‡ 0.1-0.4	0.3 0.2-0.4	0.3 0.2-0.5	‡ 0.1-0.4	0.3 0.2-0.4	0.2 0.1-0.4	0.3 0.2-0.5	0.3 0.2-0.4	0.4 0.3-0.5	0.3 0.2-0.5	0.4 0.3-0.6	0.4 0.3-0.5	0.5 0.4-0.7	0.5 0.4-0.7	0.4 0.3-0.5	2009–2019: AAPC=6.9 (5.1, 8.7), p<0.001
Hispanic women	0.4 0.3-0.5	0.4 0.3-0.5	0.3 0.2-0.4	0.5 0.4-0.6	0.3 0.3-0.4	0.3 0.2-0.4	0.4* 0.3-0.4	0.3 0.3-0.4	0.4 0.3-0.5	0.4 0.3-0.5	0.4 0.3-0.4	0.4 0.3-0.5	0.5 0.4-0.6	0.4 0.4-0.5	0.5 0.4-0.6	0.5 0.5-0.6	0.6 0.5-0.7	0.6 0.5-0.7	0.6 0.5-0.7	2007–2019: APC=5.2 (4.0, 6.5), p<0.001 2001–2019: AAPC=2.4 (0.7, 4.1), p=0.005

Data source: The 2001-2019 National Vital Statistics System's multiple cause-of-death mortality files. NH=non-Hispanic; Estimates for non-Hispanic American Indians or Alaska Natives are not reported due to too many suppressions over the years. *: Joinpoint, which is identified in this year indicating significant changes in nonlinear trends using permutation tests. APC=annual percentage change. AAPC=average APC. ‡: Age-specific rate for each specific age group. †: Unreliable.

Supplemental Table 3. Month of the year and day of the week patterns of intentional overdose deaths: U.S., 2001-2019

Time Period	Among Men					Among Women				
	Mean*	SD	IRR	95% CI	p	Mean*	SD	IRR	95% CI	p
Month										
January	184	27	0.969	0.925-1.015	0.183	209	34	0.927	0.887-0.967	<0.001
February	179	26	0.947	0.903-0.992	0.022	208	27	0.924	0.885-0.965	<0.001
March	183	25	0.968	0.924-1.014	0.171	213	35	0.944	0.904-0.985	0.008
April	184	25	0.968	0.924-1.015	0.176	220	38	0.978	0.937-1.020	0.296
May	189	24	0.995	0.950-1.043	0.846	224	29	0.993	0.952-1.036	0.753
June	189	30	0.995	0.950-1.042	0.832	220	35	0.974	0.934-1.017	0.231
July +	190	22	1.000	-		225	30	1.000	-	
August	186	29	0.979	0.935-1.026	0.371	222	33	0.984	0.943-1.026	0.443
September	180	29	0.952	0.908-0.997	0.038	212	34	0.940	0.900-0.981	0.005
October	170	19	0.897	0.855-0.940	<0.001	210	29	0.933	0.894-0.974	0.002
November	171	19	0.901	0.859-0.944	<0.001	205	33	0.911	0.872-0.951	<0.001
December	161	23	0.849	0.809-0.891	<0.001	194	25	0.861	0.824-0.900	<0.001
Day										
Monday +	28	7	1.000	-		33	8	1.000	-	
Tuesday	27	7	0.962	0.929-0.996	0.031	32	8	0.962	0.932-0.994	0.019
Wednesday	27	7	0.946	0.914-0.980	0.002	31	8	0.943	0.913-0.974	<0.001
Thursday	26	7	0.925	0.893-0.958	<0.001	30	8	0.904	0.875-0.934	<0.001
Friday	26	7	0.911	0.879-0.944	<0.001	30	8	0.899	0.870-0.929	<0.001
Saturday	25	7	0.871	0.840-0.902	<0.001	29	8	0.873	0.844-0.902	<0.001
Sunday	24	7	0.852	0.822-0.884	<0.001	31	8	0.921	0.892-0.952	<0.001

Data source: The 2001-2019 National Vital Statistics System's multiple cause-of-death mortality files. CI=confidence interval.

+: reference group. *Mean number of intentional drug overdose deaths by month adjusted as the mean number of overdose deaths per day for a given month during 2001-2019 x 30 days.