

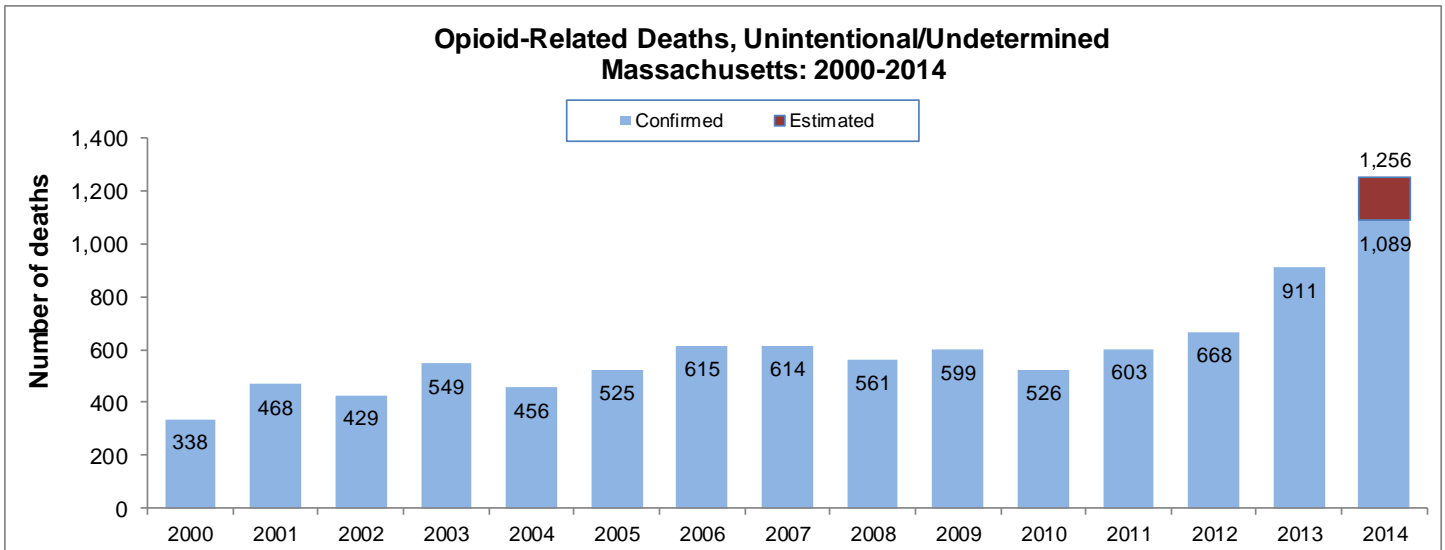


Data Brief: Fatal Opioid-related Overdoses among Massachusetts Residents

Massachusetts Department of Public Health

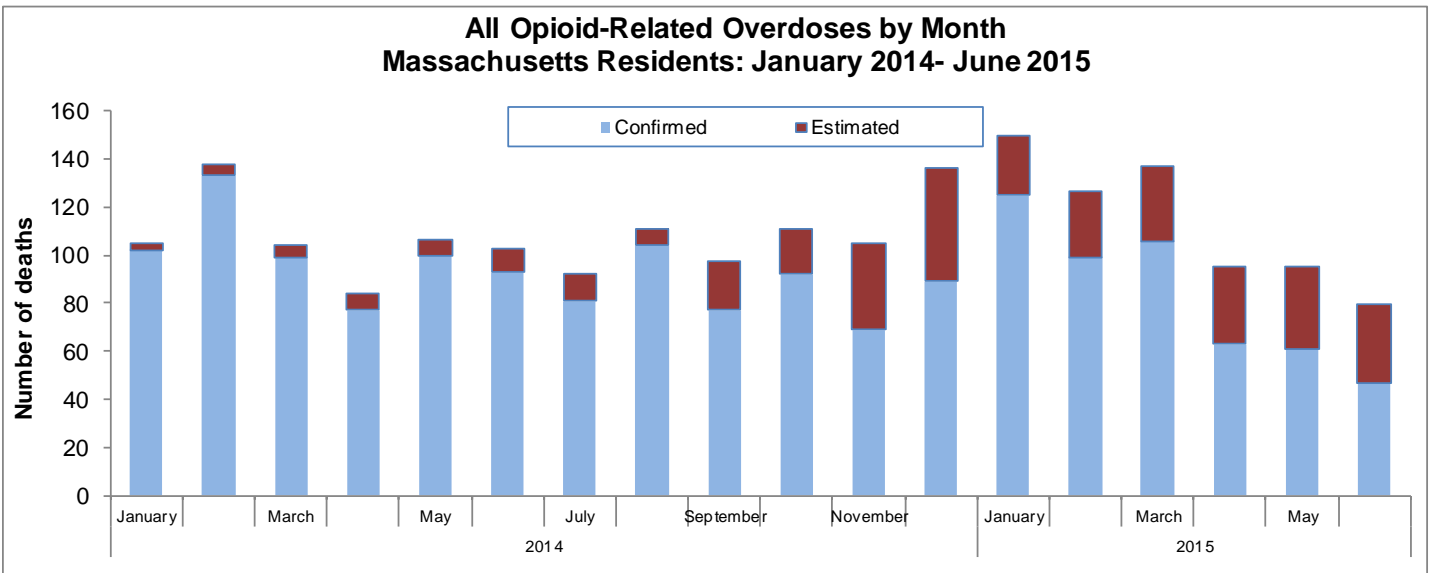
OCTOBER 2015

The number of confirmed cases of unintentional opioid overdose deaths for 2014 (n=1089) represents a 63% increase over 2012 (n=668) and a 20% increase over cases for 2013 (n=911). In order to obtain timelier estimates of the total number of opioid overdose deaths in Massachusetts, confirmed and probable, DPH analysts used predictive modeling techniques for all cases not yet finalized by the Office of the Chief Medical Examiner. Based on the data available as of 10/15/2015, DPH estimates that there will be an additional 136 to 199 deaths in 2014, once these cases are finalized.



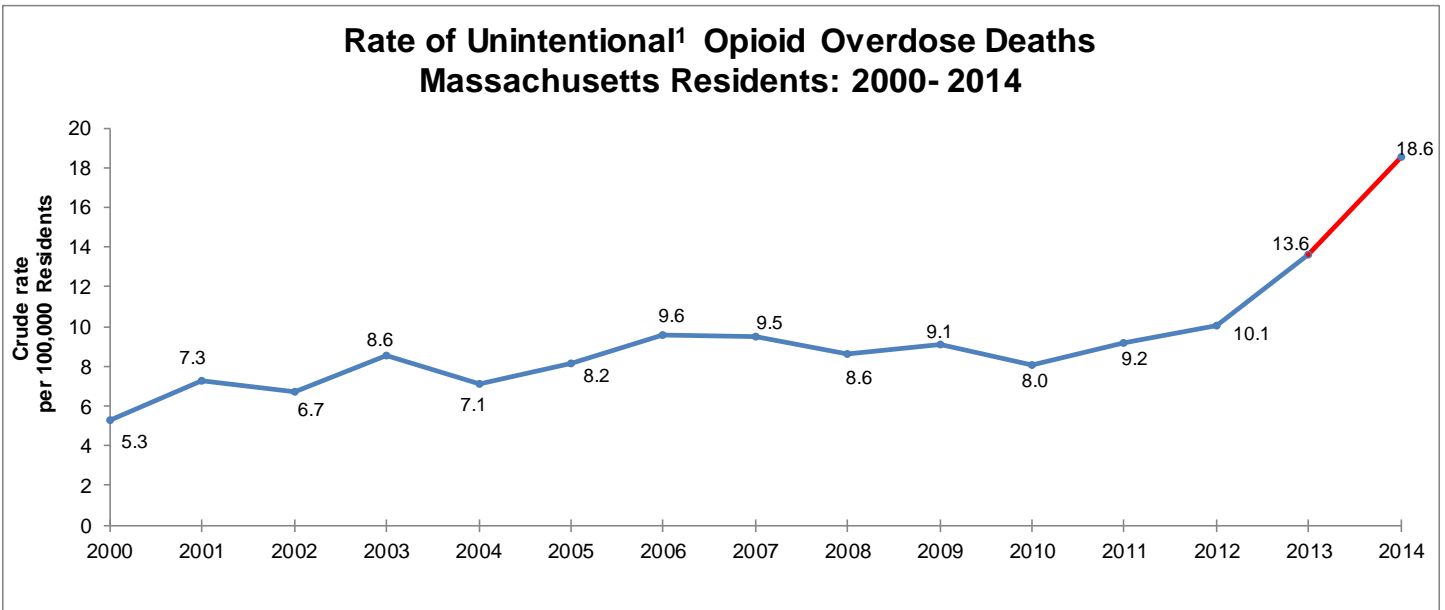
DPH analysts have also made month-by-month estimates for each month from January 2014 through June 2015. We only report data for those months in 2015 for which at least 80% of deaths have a recorded final cause of death. This data should be considered preliminary, and not necessarily representative or depictive of any larger trend.

All Opioid-Related Overdoses by Month Massachusetts Residents: January 2014- June 2015



The estimated rate of unintentional opioid-related overdose deaths, which includes deaths related to heroin, reached levels in 2014 previously unseen in Massachusetts. The estimated rate of 18.6 deaths per 100,000 residents for 2014 is the highest ever for unintentional opioid overdoses and represents a 251% increase from the rate of 5.3 deaths per 100,000 residents in 2000.

Rate of Unintentional¹ Opioid Overdose Deaths Massachusetts Residents: 2000- 2014



¹ Unintentional includes unintentional and undetermined intents to account for a change in policies related to assignment of manner of death in overdose deaths that occurred in 2005. Opioids include heroin, opioid-based prescription painkillers, and other unspecified opioids. This report tracks opioid-related overdoses due to difficulties in identifying heroin and prescription opioids separately.

Technical Notes:

The figures cited here for 2014 and 2015 are based on estimates. As estimates, the Department will regularly review the projections as more information becomes available. Should the estimates change to any significant degree, updates will be posted. We used the closed analytic files for the years 2008 – 2012 to create and then refine a model to predict the likelihood that the cause of death for any person will be an opioid-related overdose. We later added 2011-2015 data from the Medical Examiner’s Office (OCME) to refine our model for 2011-2015, which

improved the model significantly. Finally, we applied this model to the 2014 to 2015 open files to estimate the number of pending cases that will be an opioid-related overdose. Included in the final model are: age, race, education, gender, year of death, place of death, autopsy status, Medical Examiner's notes, and latent class geography. We added this estimate to the number of confirmed cases in order to estimate the total number of opioid-related overdoses. Due to missing information on intent in the open files, the models predict the total number of fatal opioid-related overdoses. In order to estimate the number that are considered unintentional, we applied the average percentage of total opioid-overdose deaths that were considered unintentional for the previous 5-year period (94%) to the total estimate.



Number of Unintentional¹ Opioid² Overdose Deaths by County, MA Residents, 2000-2014³

Massachusetts Department of Public Health, Office of Data Management and Outcomes Assessment • October 2015

County	Year of Death															Total 2000-2014
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 ³	
Barnstable	12	17	17	14	16	17	19	29	21	20	19	15	22	40	51	329
Berkshire	2	3	0	2	3	9	1	8	3	8	3	6	15	21	25	109
Bristol	37	56	60	80	67	75	79	61	78	66	74	76	92	111	139	1,151
Dukes	1	0	1	0	0	2	0	3	1	1	0	0	0	1	5	15
Essex	41	58	44	74	61	73	83	85	52	69	48	54	85	111	193	1,132
Franklin	5	2	1	5	3	4	6	4	2	2	4	6	8	9	11	72
Hampden	30	36	34	44	26	33	42	38	43	45	46	42	51	68	59	637
Hampshire	5	5	4	10	8	2	9	12	10	9	10	9	10	28	23	154
Middlesex	56	76	77	102	96	109	106	101	104	113	90	118	106	142	257	1,653
Nantucket	0	0	0	0	0	0	0	1	0	1	1	0	0	1	N/A ⁴	N/A ⁴
Norfolk	24	39	34	36	37	49	46	53	67	64	55	59	65	79	116	823
Plymouth	22	24	27	42	24	35	47	49	45	46	39	60	54	83	104	701
Suffolk	44	79	75	93	73	62	106	101	67	91	60	79	82	105	135	1,252
Worcester	59	73	55	47	42	55	71	69	68	64	77	79	78	112	137	1,086
TOTAL DEATHS	338	468	429	549	456	525	615	614	561	599	526	603	668	911	1,256	9,118

1. Unintentional poisoning/overdose deaths combine unintentional and undetermined intents to account for a change in death coding that occurred in 2005. Suicides are excluded from this analysis.
2. Opioids include heroin, opioid-based prescription painkillers, and other unspecified opioids.
3. Please note that 2014 death data are provisional and are subject to updates. Case reviews of deaths are evaluated and updated on an ongoing basis. A large number of death certificates have yet to be received from the municipalities and some have yet to be assigned cause-of-death codes. These counts are based on the estimates rather than confirmed cases. Data updated on **10/15/2015**.
4. Numbers and calculations based on values less than 5 are suppressed for years in which the death file is not yet closed.

Please note that there is rounding of counts for 2014.

Method Notes:

- Cases were defined using the International Classification of Disease (ICD-10) codes for mortality. The following codes were selected from the underlying cause of death field to identify poisonings/overdoses: X40-X49, Y10-Y19. All multiple cause of death fields were then used to identify an opioid-related death: T40.0, T40.1, T40.2, T40.3, T40.4, and T40.6.
- This report tracks all opioid-related overdoses due to difficulties in reporting heroin-associated overdoses separately. Many deaths related to heroin are not specifically coded as such due to the fast metabolism of heroin into morphine
- To maintain consistency with NCHS reporting, we do not include the ICD-10 code F11.1, which may include opioid-related overdose deaths

Source: Registry of Vital Records and Statistics, MDPH