

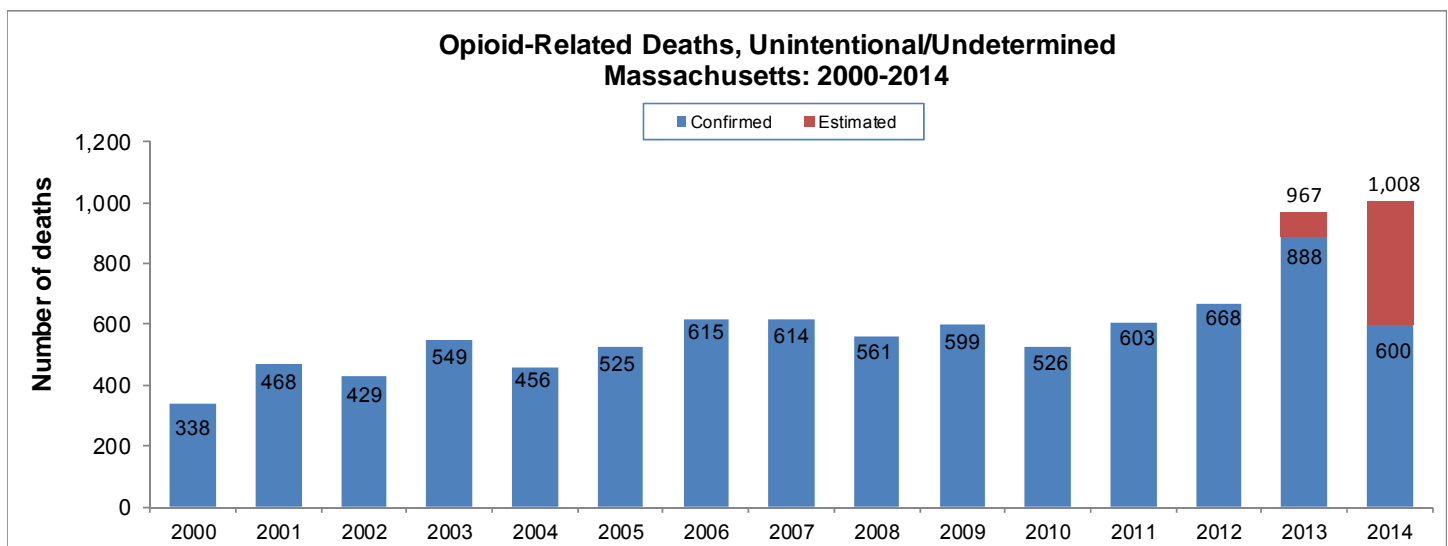


# Data Brief: Fatal Opioid-related Overdoses among MA Residents

Massachusetts Department of Public Health

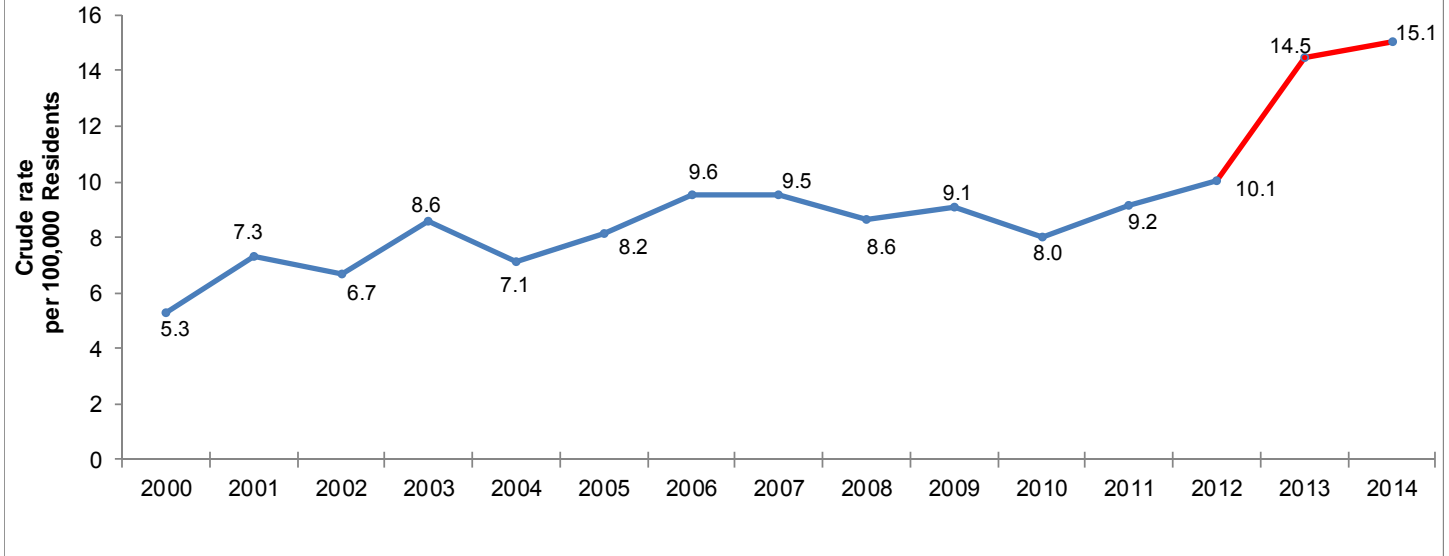
April 2015

Based on current confirmed data, the number of cases of unintentional overdose in 2014 represents a 33% increase over 2012 (n=668) and a 3.3% increase over 2013. In order to obtain a timelier estimate of the total number of opioid overdose deaths, DPH analysts used predictive modeling techniques to estimate the cause of death for all cases not yet certified by the Office of the Medical Examiner. Based on these modeled estimates and the data available as of 04/06/2015, DPH expects that there will be an additional 79 (95% CI: 68 to 91) unintentional opioid-related fatal overdoses in 2013 for total of 967 deaths in 2013 (95% CI: 958 to 981). For 2014 there were 600 confirmed unintentional opioid-related deaths and our model estimates 408 additional deaths for a total of 1,008 unintentional opioid-related deaths (95% CI: 945 to 1,070).



The rate of unintentional opioid-related overdose deaths, which includes deaths related to heroin, reached levels in 2013 previously unseen in Massachusetts. The rate of 14.5 deaths per 100,000 residents for 2013 was the highest ever for unintentional opioid overdoses and represents a 273% increase from the rate of 5.3 deaths per 100,000 residents in 2000.

## Rate of Unintentional<sup>1</sup> Opioid Overdose Deaths Massachusetts Residents: 2000- 2014



<sup>1</sup> Unintentional includes unintentional and undetermined intents to account for a change in death coding 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 separately. Many deaths related to heroin cannot be specifically coded as such due to the fast metabolism of heroin into morphine and the possible interaction of multiple drugs. To avoid underrepresenting the magnitude of the problem, all unintentional and undetermined opioid-related deaths are tracked.

### Notes:

The figures cited here for 2013 and 2014 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 then applied the final model to the 2013 open file to estimate the number of pending cases in 2013 and 2014 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, 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.



# Number of Unintentional<sup>1</sup> Opioid<sup>2</sup> Overdose Deaths by County, MA Residents, 2000-2014<sup>3</sup>

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

County	Year of Death															Total 2000-2014
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 <sup>3</sup>	2014 <sup>4</sup>	
Barnstable	12	17	17	14	16	17	19	29	21	20	19	15	22	43	35	315
Berkshire	2	3	0	2	3	9	1	8	3	8	3	6	15	20	27	110
Bristol	37	56	60	80	67	75	79	61	78	66	74	76	92	113	117	1,131
Dukes	1	0	1	0	0	2	0	3	1	1	0	0	0	1	3	13
Essex	41	58	44	74	61	73	83	85	52	69	48	54	85	120	146	1,093
Franklin	5	2	1	5	3	4	6	4	2	2	4	6	8	10	14	76
Hampden	30	36	34	44	26	33	42	38	43	45	46	42	51	73	47	630
Hampshire	5	5	4	10	8	2	9	12	10	9	10	9	10	29	24	156
Middlesex	56	76	77	102	96	109	106	101	104	113	90	118	106	154	212	1,620
Nantucket	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	4
Norfolk	24	39	34	36	37	49	46	53	67	64	55	59	65	83	88	799
Plymouth	22	24	27	42	24	35	47	49	45	46	39	60	54	86	85	685
Suffolk	44	79	75	93	73	62	106	101	67	91	60	79	82	115	98	1,225
Worcester	59	73	55	47	42	55	71	69	68	64	77	79	78	120	113	1,069
<b>TOTAL DEATHS</b>	<b>338</b>	<b>468</b>	<b>429</b>	<b>549</b>	<b>456</b>	<b>525</b>	<b>615</b>	<b>614</b>	<b>561</b>	<b>599</b>	<b>526</b>	<b>603</b>	<b>668</b>	<b>967</b>	<b>1,008</b>	<b>8,926</b>

1. Unintentional (also known as "accidental") 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 2013 death data are preliminary and subject to updates. Case reviews of deaths are evaluated and updated on an ongoing basis. A small number of death certificates have yet to be received from the municipalities and some have yet to be assigned cause-of-death codes. Data updated on **04/06/2015**.
4. 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. Data updated on **04/06/2015**.

**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 opioid-related overdoses due to difficulties in identifying heroin separately. Many deaths related to heroin cannot be specifically coded as such due to the fast metabolism of heroin into morphine and the possible interaction of multiple drugs. To avoid underrepresenting the magnitude of the problem, all unintentional and undetermined opioid-related deaths are tracked.

**Source: Registry of Vital Records and Statistics, MDPH**