

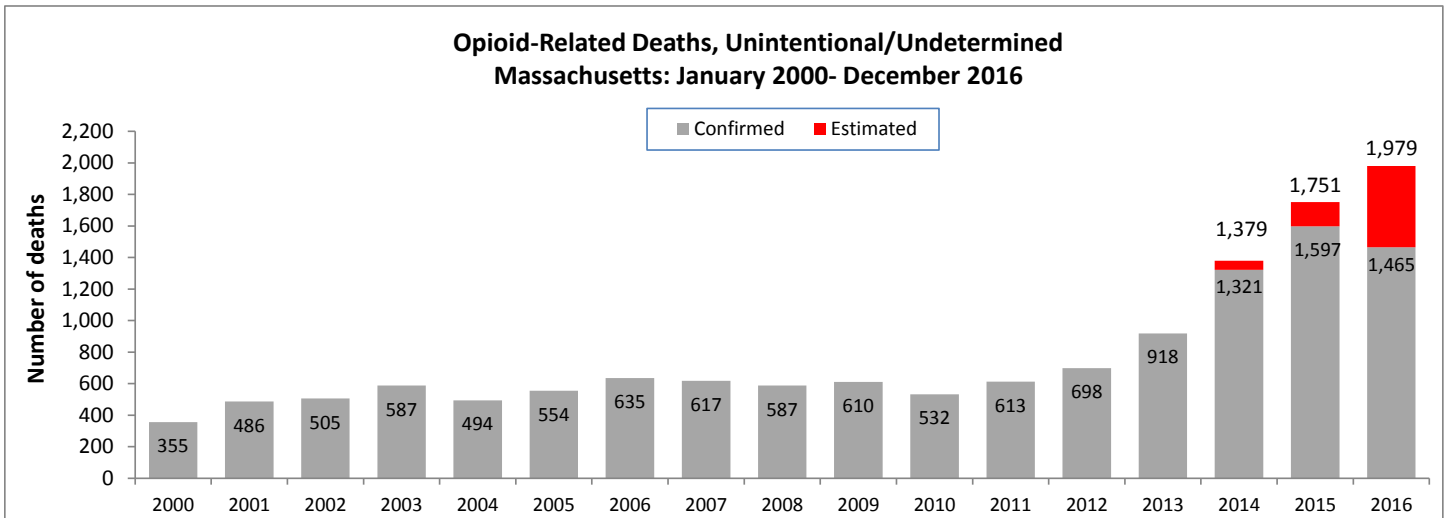


Data Brief: Opioid-related Overdose Deaths Among Massachusetts Residents

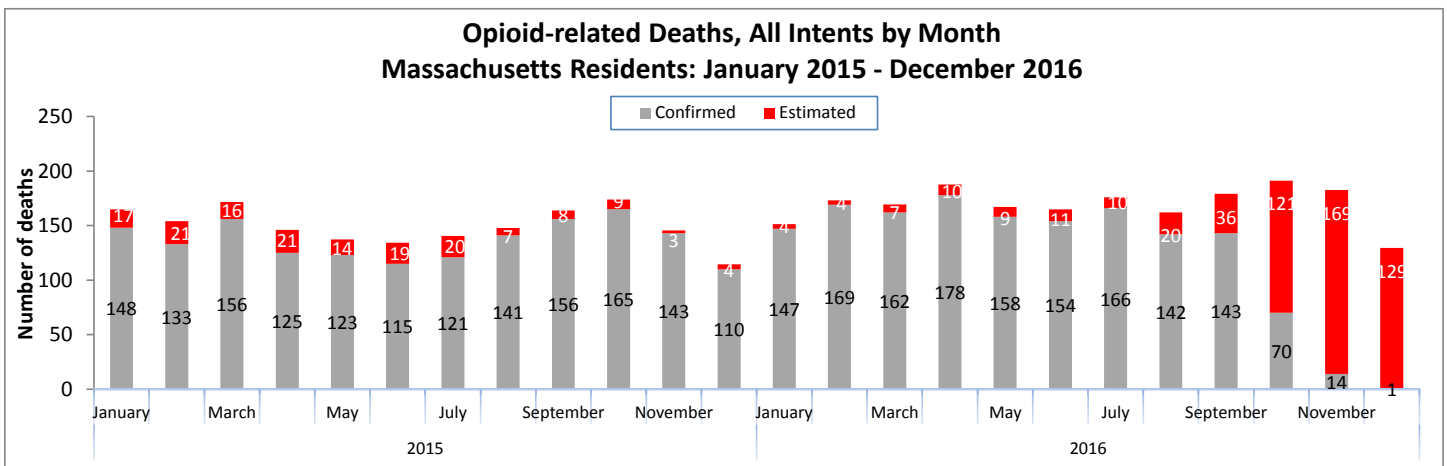
Massachusetts Department of Public Health

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This report contains both confirmed and estimated data through December 2016.

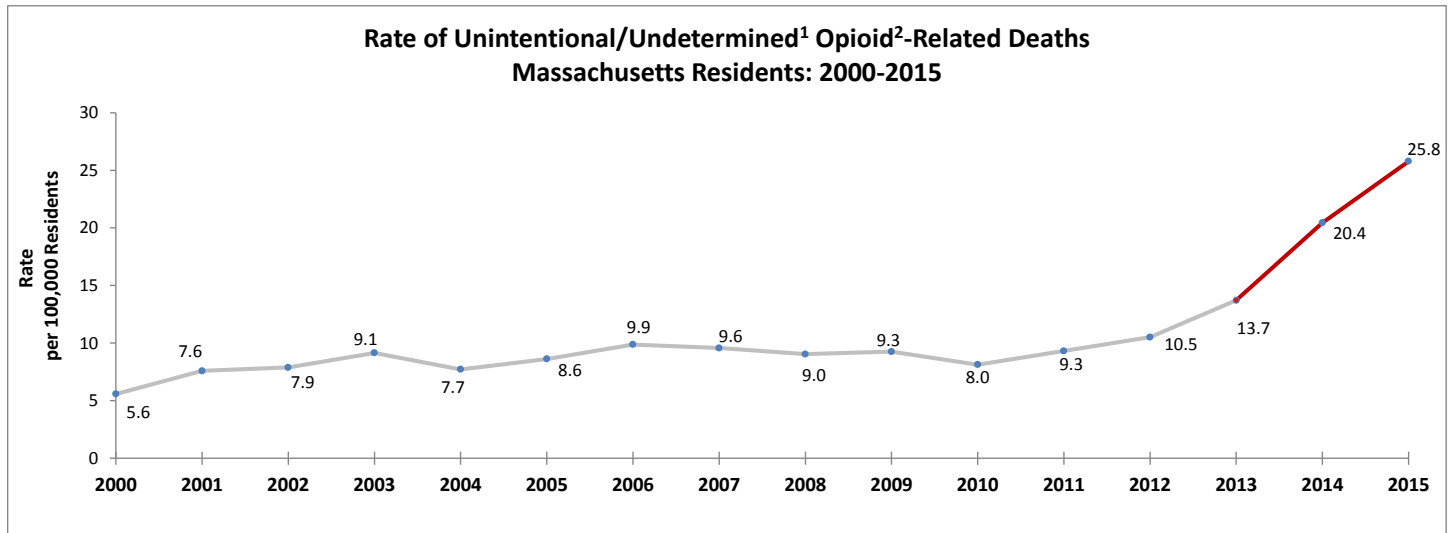


DPH has also made month-by-month estimates for all intents (unintentional/undetermined and intentional deaths) from January 2015 through December 2016.



Rate of Unintentional Opioid Deaths

In 2015, the estimated rate of unintentional opioid-related overdose deaths was 25.8 deaths per 100,000 residents. This represents a 26% increase from the rate of 20.4 deaths per 100,000 residents in 2014.



¹Unintentional 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.

²Opioids 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

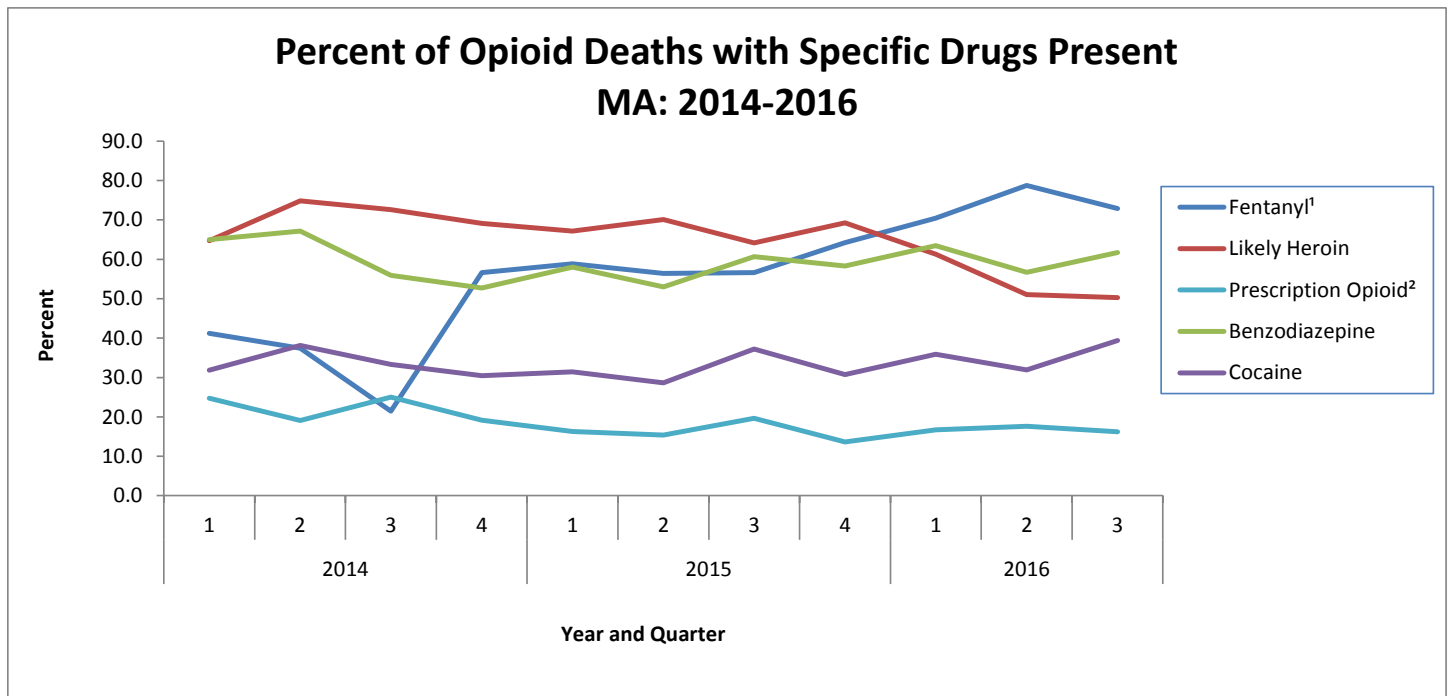
In order to obtain timelier estimates of the total number of opioid overdose deaths in Massachusetts - confirmed and probable - DPH uses predictive modeling techniques for all cases not yet finalized by the Office of the Chief Medical Examiner (OCME). Based on the data available as of 01/12/2017, DPH estimates that there will be an additional 53 to 63 deaths in 2014, an additional 143 to 165 deaths in 2015, and an additional 469 to 562 deaths in 2016, once these cases are finalized. The Department regularly reviews projections as more information becomes available. Information from the Office of the Chief Medical Examiner and the Massachusetts State Police are now incorporated into the predictive model. This additional information has improved the accuracy of the models that predict the likelihood that the cause of death for any person was an opioid-related overdose. DPH applied this model to death records for which no official cause of death was listed by the OCME. The model includes information from the death certificate, Medical Examiner's notes, and the determination by the State Police of a suspected heroin death. DPH added this estimate to the number of confirmed cases in order to compute 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 numbers that are considered unintentional, the Department applied the average percentage of total opioid-overdose deaths that were considered unintentional for the previous 3-year period (97%) to the total estimate. Should new information become available that changes the estimates to any significant degree, updates will be posted.

Toxicology Analysis: Fentanyl and Other Drugs

Fentanyl is a synthetic opioid that has effects similar to heroin. It can be prescribed for severe pain. According to the U.S. Department of Justice, Drug Enforcement Administration's 2015 Investigative Reporting, while pharmaceutical fentanyl (from transdermal patches or lozenges) is diverted for abuse in the United States at small levels, much of the fentanyl in Massachusetts is due to illicitly-produced fentanyl, not diverted pharmaceutical fentanyl¹.

The standard toxicology screen ordered by the Office of the Chief medical Examiner includes a test for the presence of fentanyl. In 2016, the number of fentanyl-related deaths continues to increase. Among the 1374 individuals whose deaths were opioid-related in 2016 where a toxicology screen was also available, 1031 of them (75%) had a positive screen result for fentanyl. In the third quarter of 2016, heroin or likely heroin was present in approximately half of opioid-related deaths that had a toxicology screen.

While screening tests can be used to note the rate at which certain drugs are detected in toxicology reports, they are insufficient to determine the final cause of death without additional information. The cause of death is a clinical judgement made within the Office of the Chief Medical Examiner.



1. This is most likely illicitly produced and sold, **not** prescription fentanyl

2. Prescription opioids include: hydrocodone, hydromorphone, oxycodone, oxymorphone, and tramadol

In the third quarter of 2016, prescription opioids were present in 16.2% of opioid-related overdose deaths where a toxicology result was available. The percentage of opioid-related overdose deaths where prescription drugs were present has been decreasing since the beginning of 2014, when 24.8% of deaths with a toxicology screen showed evidence of a prescription opioid. Also notable, the rate of heroin or likely heroin present in opioid-related deaths has been decreasing while the presence of fentanyl is increasing.

¹ U.S. Department of Justice, Drug Enforcement Administration, DEA Investigative Reporting, January 2015.