

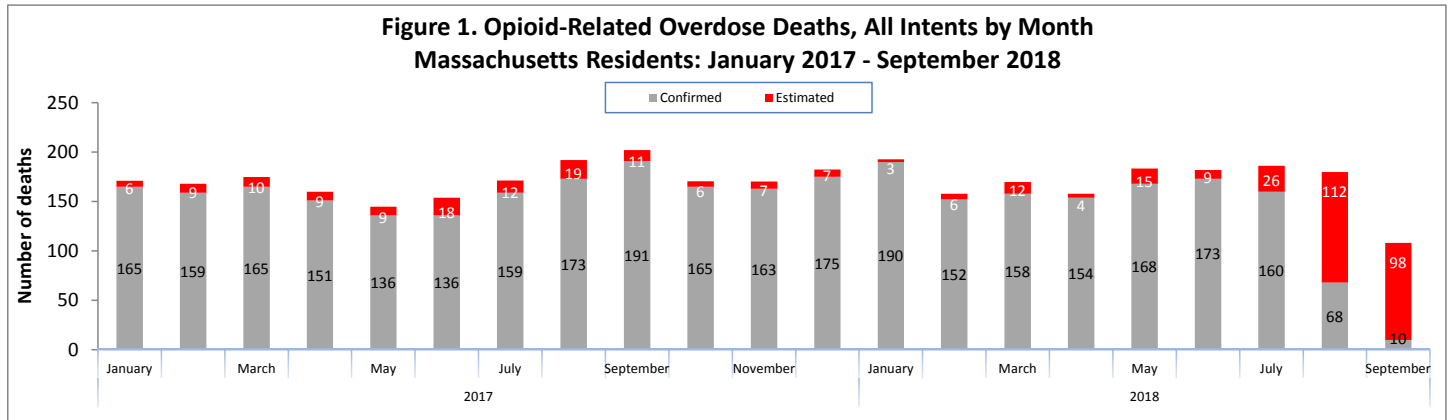


Data Brief: Opioid-Related Overdose Deaths among Massachusetts Residents

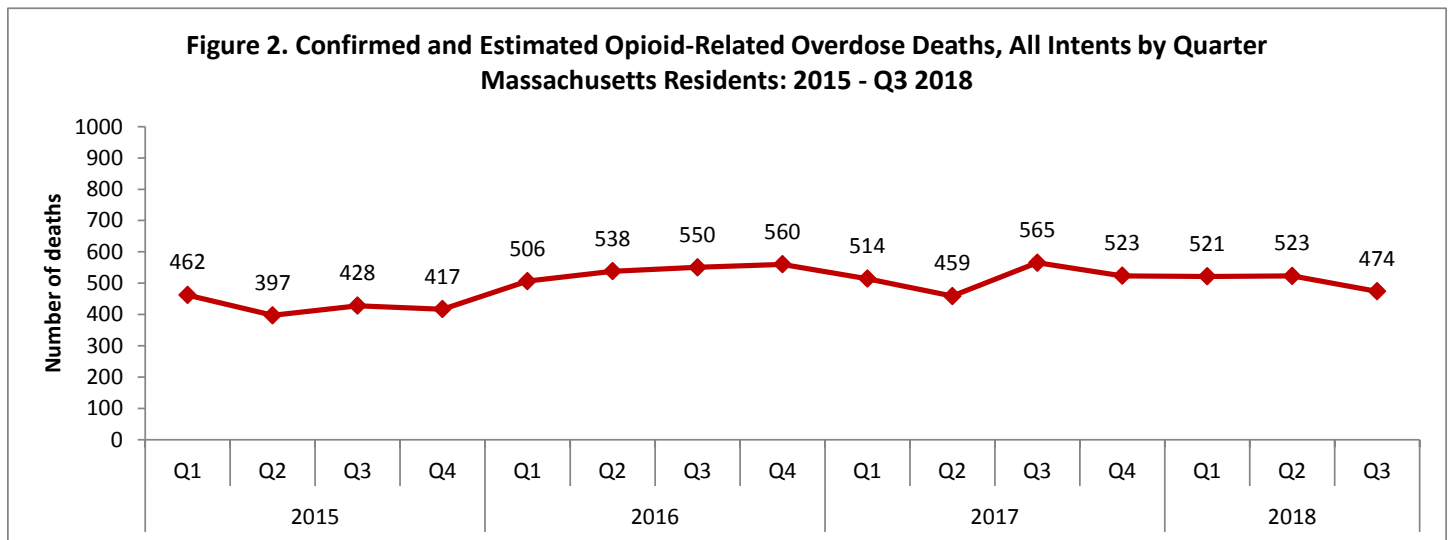
Massachusetts Department of Public Health

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This report contains both confirmed and estimated data through September 2018.



The chart above shows the month-by-month estimates for fatal opioid-related overdoses for all intents from January 2017 through September 2018. For the first 9 months of 2018, there are 1233 confirmed opioid-related overdose deaths and DPH estimates that there will be an additional 252 to 318 deaths.



From the fourth quarter of 2015 through the end of 2016, the count of opioid-related overdose deaths increased. For the first two quarters of 2017, the count of opioid-related overdose deaths decreased but then increased in the third quarter. Since the third quarter of 2017, the number of opioid-related overdose deaths has steadily decreased, including the first three quarters of 2018 (Figure 2). Despite the spike in the third quarter of 2017, overall, there was a 4% decrease in the number of opioid-related overdose deaths in 2017 compared with 2016.

**Figure 3. Opioid-Related Overdose Deaths, All Intent
Massachusetts Residents: 2000 - 2017**

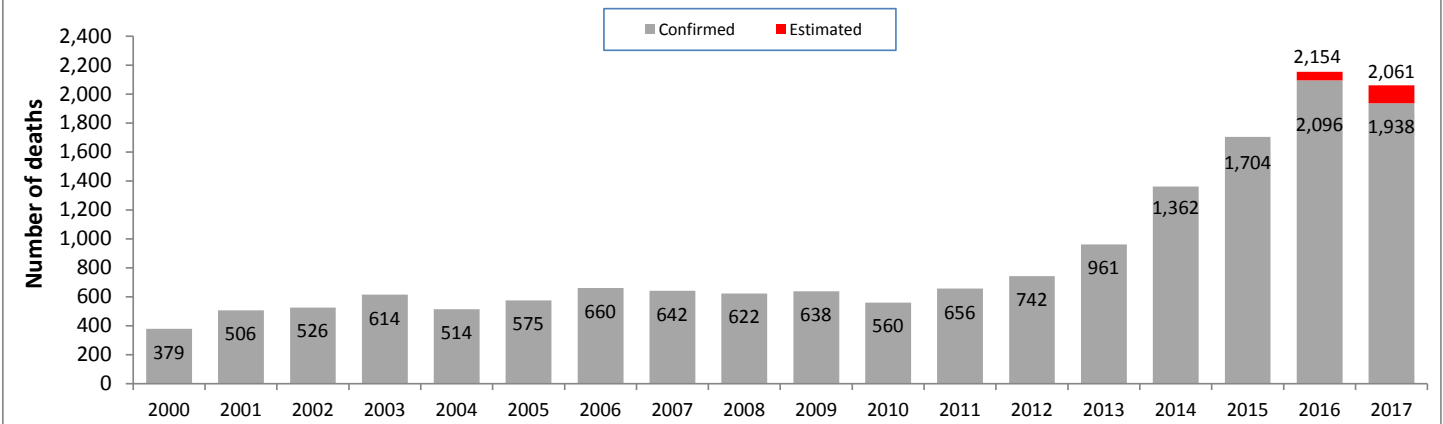
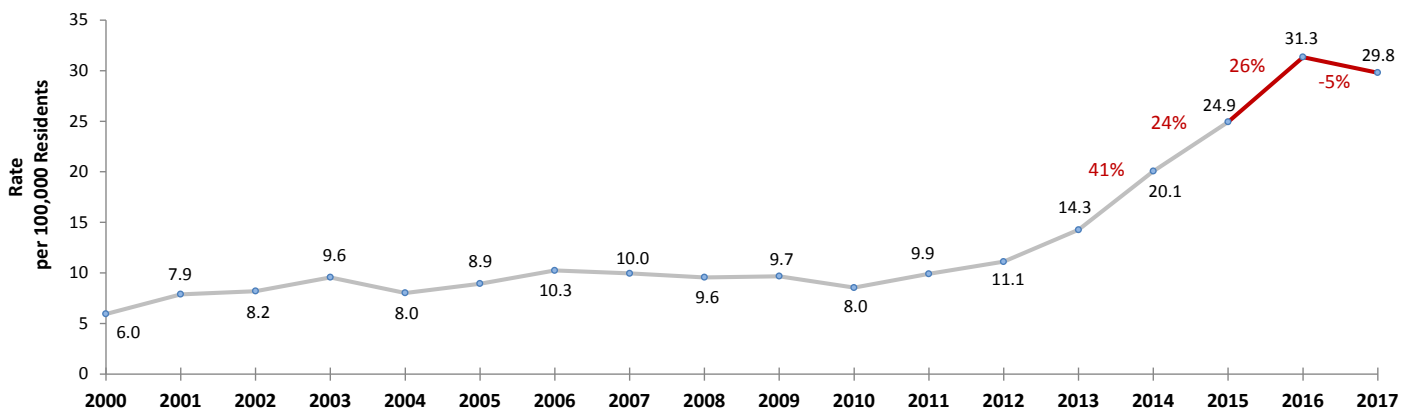


Figure 3 shows the trend in annual number of confirmed and estimated cases of opioid-related overdose deaths for all intents from 2000 to 2017. In order to obtain timelier estimates of the total number of opioid-related overdose deaths in Massachusetts - confirmed and probable - DPH used predictive modeling techniques for all cases not yet finalized by the Office of the Chief Medical Examiner (OCME). Based on the data available as of October 25, 2018, DPH estimates that there will be an additional 55 to 60 deaths in 2016, and an additional 115 to 130 deaths in 2017, once these cases are finalized.

Opioid-Related Overdose Death Rates, All Intent

In 2017, there was a 5% decrease in the rate of opioid-related overdose deaths compared with 2016.

**Figure 4. Rate of Confirmed and Estimated Opioid-Related Overdose Deaths, All Intent
Massachusetts Residents: 2000 - 2017**

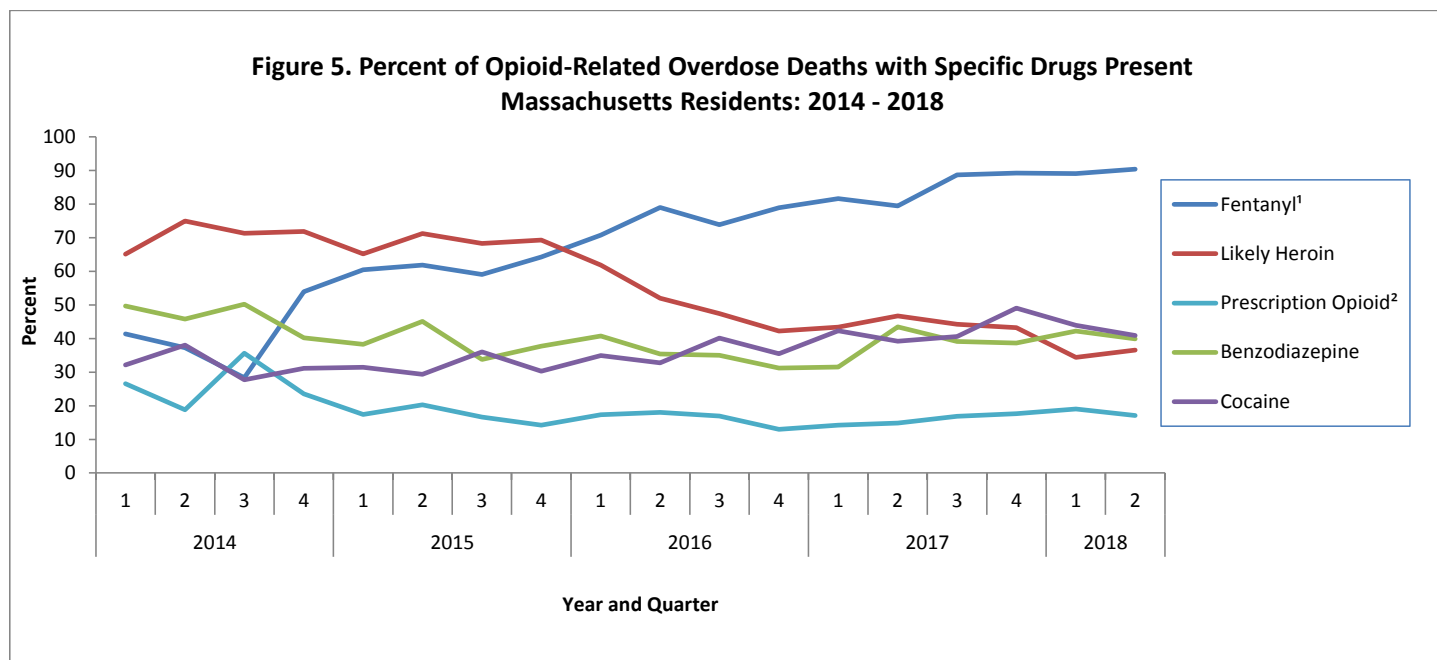


Toxicology Analysis: Fentanyl and Other Drugs

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 fentanyl.

The standard toxicology screen ordered by the Office of the Chief Medical Examiner includes a test for the presence of fentanyl. Among the 962 opioid-related overdose deaths in 2018 where a toxicology screen was also available, 863 of them (90%) had a positive screen result for fentanyl. In the second quarter of 2018, heroin or likely heroin was present in approximately 37% of opioid-related overdose deaths that had a toxicology screen. Cocaine was present in approximately 41% of these deaths; and benzodiazepines were present in approximately 40%. Since 2014, the rate of heroin or likely heroin present in opioid-related overdose deaths has been decreasing while the presence of fentanyl and cocaine is still trending upward.

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 judgment 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

Please note that previous estimates may change slightly as DPH routinely receives updated toxicology data from the Office of the Chief Medical Examiner and the Massachusetts State Police.

Technical Notes

- Opioids include heroin, illicitly manufactured fentanyl, opioid-based prescription painkillers, and other unspecified opioids.
- Data for 2016-2018 deaths are preliminary and subject to updates.
- Beginning with the May 2017 report, DPH started reporting opioid-related deaths for all intents, which includes unintentional/undetermined and suicide.
- This report tracks opioid-related overdoses due to difficulties in identifying heroin and prescription opioids separately. 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. Should new information become available that changes the estimates to any significant degree, updates will be posted.

Sources

- Massachusetts Registry of Vital Records and Statistics, MDPH
- Massachusetts Office of the Chief Medical Examiner
- Massachusetts State Police
- Population Estimates 2000-2010: National Center for Health Statistics. Postcensal estimates of the resident population of the United States, by year, county, age, bridged race, Hispanic origin, and sex (Vintage 2000-2010).
- Population Estimates 2011-2018: Small Area Population Estimates 2011-2020, version 2017, Massachusetts Department of Public Health, Bureau of Environmental Health. Population estimates used for years following the decennial census were developed by the University of Massachusetts Donahue Institute (UMDI) in partnership with the Massachusetts Department of Public Health, Bureau of Environmental Health.