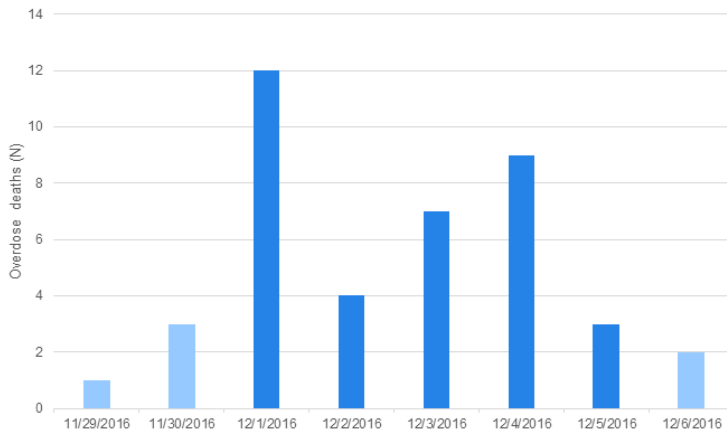


## Opioids Overdose Death Spike, December 2016

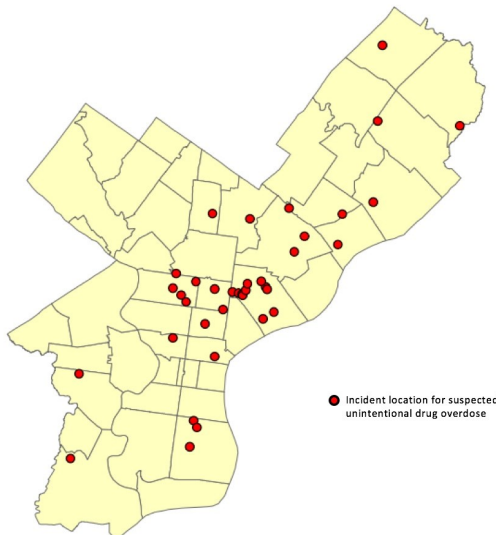
Philadelphia continues to see an alarming increase in unintentional drug overdoses. This issue of CHART describes a cluster of 35 deaths occurring between December 1-5, 2016, that were primarily due to heroin and fentanyl, an extremely strong synthetic opioid analgesic that is increasingly present in drug overdose fatalities.

### Drug Overdose Deaths Spiked December 1-5, 2016



- Drug overdoses cause an average of between 2 and 3 deaths per day in Philadelphia.
- The number of deaths between December 1-5, 2016 (dark blue) was significantly above this baseline. The 12 apparent unintentional drug deaths reported on December 1, 2016 were more than had ever been reported on a single day to the Medical Examiner's Office.

(Source: Philadelphia Department of Public Health, Medical Examiner's Office)

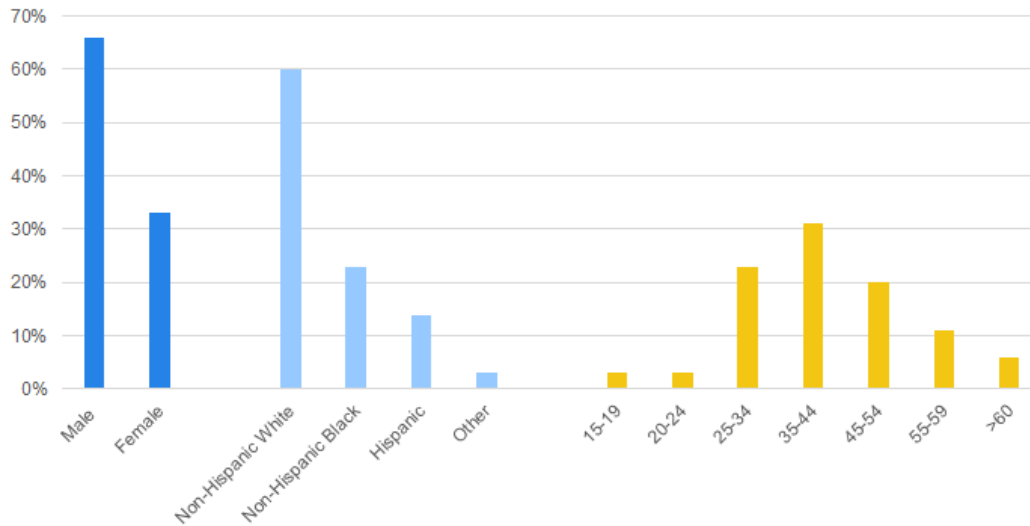


### Deaths Occurred Throughout Philadelphia

- These overdose deaths clustered in the North Philadelphia and Kensington neighborhoods, though occurred across Philadelphia.

(Source: Philadelphia Department of Public Health, Medical Examiner's Office)

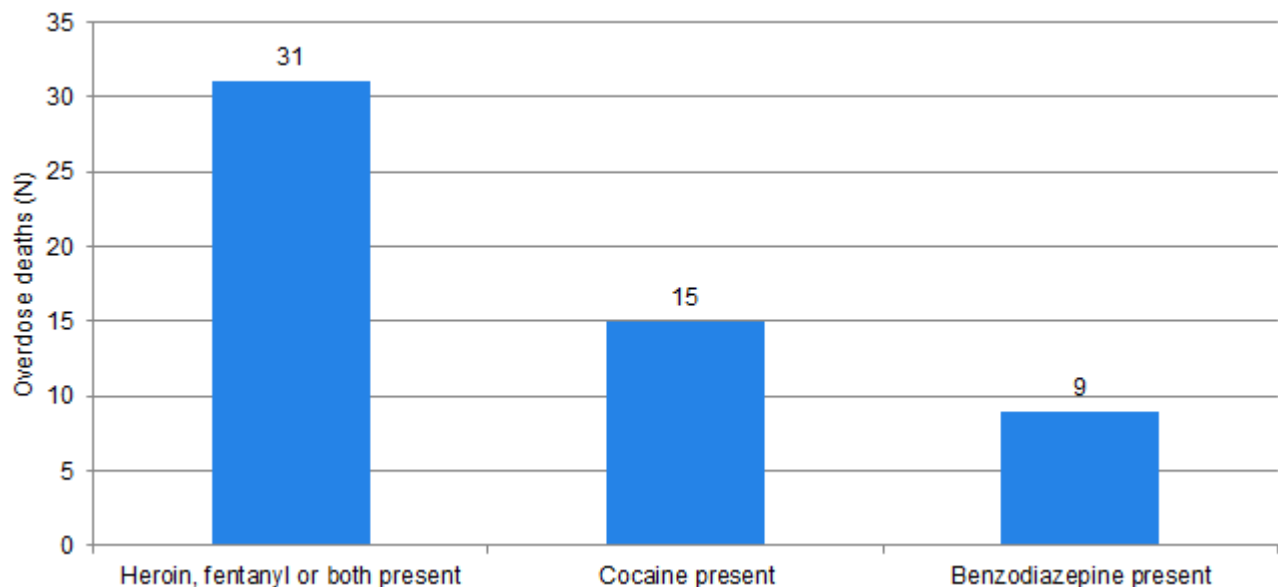
## Deaths Were Predominantly in Whites Aged 25 to 54



- The decedents were 19-66 years old, but the peak age was 25-54; 66% were men and 60% were non-Hispanic white.
- This is approximately representative of all drug overdose deaths in Philadelphia in the last three years.

(Source: Philadelphia Department of Public Health, Medical Examiner's Office)

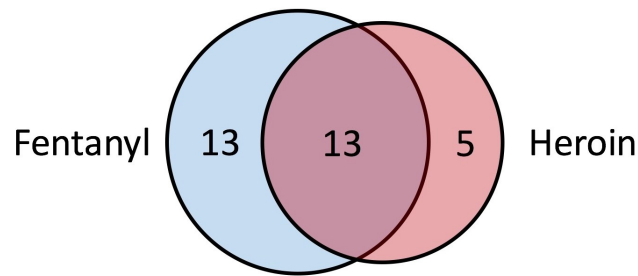
## Heroin or Fentanyl Were Found in 90% of Deaths



- Drugs, whether illicit or prescribed, are often used in combination with one another.
- 31 of 35 deaths (89%) were positive for heroin, fentanyl or both.
- Of the 4 cases that did not involve heroin or fentanyl, 3 were positive for cocaine.
- Based on preliminary data, at least nine cases involved benzodiazepines, a class of sedating prescription medications that includes diazepam (Valium™) and alprazolam (Xanax™). These are particularly dangerous when used in combination with opioids and alcohol.

(Source: Philadelphia Department of Public Health, Medical Examiner's Office)

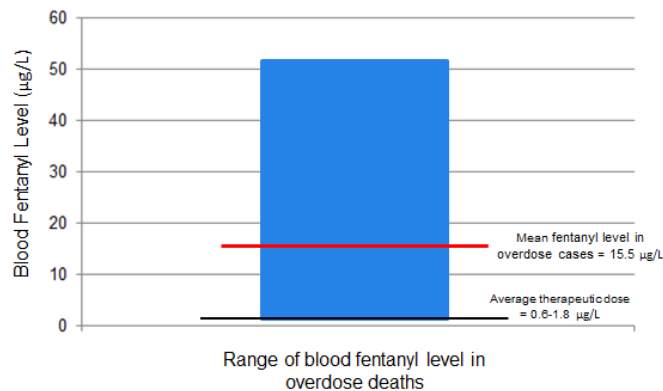
## Fentanyl and Heroin Were Often Found in Combination



- The biological effects of fentanyl are indistinguishable from heroin. Fentanyl may be added to heroin to produce a greater effect or “high”. Users may be unaware that fentanyl is present in the drugs they are using.
- Fentanyl is 50 to 100 times stronger than morphine. Extremely small amounts of it can result in overdoses.
- Of the 31 overdose deaths involving fentanyl and/or heroin, 26 (84%) involved fentanyl. This is significantly more than the proportion of opioid overdose deaths involving fentanyl in the past 3 years. In 2013, only 7% of opioid-related deaths involved fentanyl or a fentanyl analog.

(Source: Philadelphia Department of Public Health, Medical Examiner’s Office)

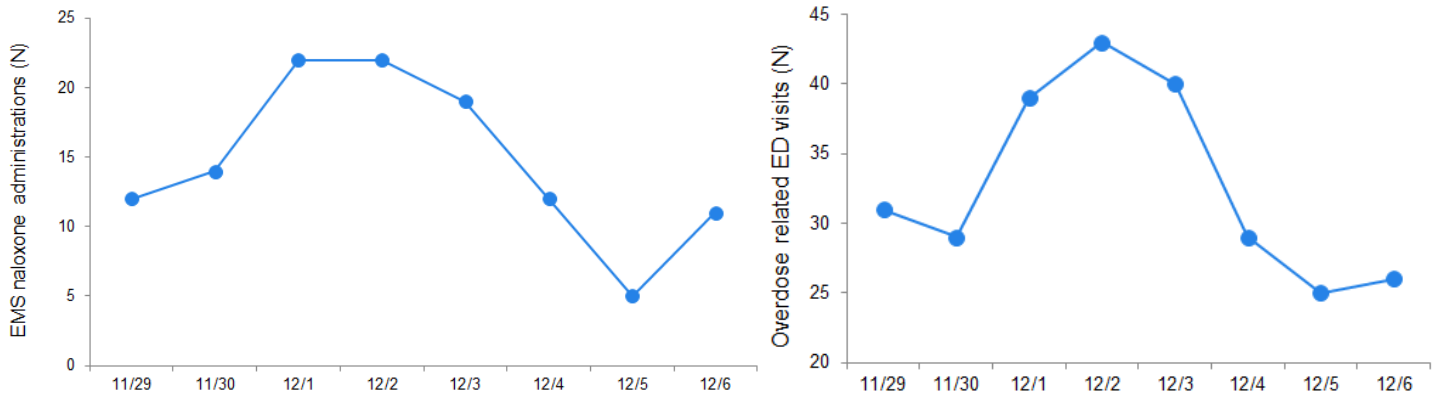
## Fentanyl Blood Levels Were Extremely High



- The blood levels of fentanyl were measured in 24 of the 26 fentanyl-positive cases. The mean fentanyl level in these cases was 15.5 micrograms per liter, with a range of 2.5-51 micrograms per liter.
- These levels are many times higher than the blood levels from therapeutic treatment with fentanyl (0.6-1.8 micrograms per liter)<sup>1</sup> and somewhat higher than previous fentanyl overdoses in Philadelphia (mean 12.3 micrograms per liter). When fentanyl is the only drug that depresses breathing, fatalities from acute fentanyl intoxication usually occur with levels above 3 micrograms per liter.<sup>1</sup>
- The December 1-5, 2016 deaths with fentanyl blood levels below 10 micrograms per liter also involved at least one other substance that depresses breathing (alcohol, a benzodiazepine or another opioid).

(Source: Philadelphia Department of Public Health, Medical Examiner’s Office; Baselt RC. 2008.)

## Non-fatal Overdoses Also Spiked



- Non-fatal overdoses also occurred in higher numbers than usual, with more administrations of naloxone by Emergency Medical Services and more overdoses seen in hospital emergency department visits during this time period.

(Sources: Philadelphia Fire Department; Philadelphia Department of Public Health, Division of Disease Control )

## Conclusions

This cluster of 35 deaths in Philadelphia was likely caused by fentanyl, which may have been present in larger concentrations in heroin than usual in Philadelphia between December 1-5, 2016.

## What Can Be Done

City agencies are:

- Providing naloxone to Emergency Medical Services staff and police officers to administer to persons who have experienced an overdose. Naloxone (Narcan™) is a safe, non-addictive medication that reverses the effects of opioid overdoses, including fentanyl.
- Funding and supporting drug treatment providers to offer treatment for people addicted to opioids.
- Working to disrupt criminal networks that are distributing fentanyl.

Health care providers can:

- Reduce their prescribing of opioids. Prescription opioid painkillers (such as Percocet™, Vicodin™ and Oxycontin™) are addictive and can by themselves cause overdoses. Additionally, many heroin users, particularly young adult users, transition to heroin after misusing opioid painkillers.<sup>2</sup> Reducing opioid prescribing should decrease the risk of becoming addicted to opioids.
- Be aware that fentanyl is increasingly common and can be unknowingly combined with heroin. Because of the potency of fentanyl, overdoses from it may require more doses of naloxone to reverse an overdose.

People in contact with drug users can:

- Encourage drug users to begin treatment for their substance use.
- Obtain naloxone and learn how to use it. Naloxone can be obtained from many pharmacies under a universal prescription (also known as a “standing order”) written by Pennsylvania’s Physician General.<sup>3</sup>

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## Resources

- [Prevention Point Philadelphia](#) provides education on drug overdose and naloxone training.
- The Division of Addiction Services of Philadelphia's [Department of Behavioral Health and Intellectual disAbility Services](#) provides resources for health care providers, people with drug dependence and their families. Those seeking treatment who lack health insurance should contact the Behavioral Health Special Initiative at 215-546-1200. Those who have Medical Assistance or Medicaid should contact Community Behavioral Health at 888-545-2600.

## References

1. Baselt RC. Disposition of Toxic Drugs and Chemicals in Man. 8<sup>th</sup> ed. Foster City, CA: Biomedical Publications; 2008.
2. Compton WM, Jones CM, Baldwin GT. Relationship between Nonmedical Prescription-Opioid Use and Heroin Use. *N Engl J Med* 2016;374:154-163.
3. Pennsylvania Department of Health. Standing Order DOH-002-2016. Available at: <http://www.health.pa.gov/My%20Health/Diseases%20and%20Conditions/A-D/Pages/Act-139-of-2014.aspx>

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Thomas Farley, MD, MPH  
Commissioner  
Philadelphia Department of Public Health  
1401 John Fitzgerald Kennedy Boulevard, Room 600  
Philadelphia, PA 19102

215-686-5200  
[healthdept@phila.gov](mailto:healthdept@phila.gov)  
<http://www.phila.gov/health>

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