

# Emergency Department Surveillance for Opioid Overdoses in Pennsylvania

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# Agenda

- Centers for Disease Control and Prevention – Enhanced State Opioid Overdose Surveillance Grant
- Syndromic Surveillance
  - Pennsylvania Opioid-Related Overdose Classifiers
  - Enhanced Data Project
- How Pennsylvania Uses Syndromic Surveillance Data
  - Public Reporting
  - Alerts

# Enhanced State Opioid Overdose Surveillance

## **Fatal Overdose Surveillance**

- Death Certificate Data
- Coroner/Medical Examiner Data

## **Non-fatal Overdose Surveillance**

- Emergency Medical Service (EMS) Data
- Emergency Department (ED) Data

# Syndromic Surveillance

- Investigational approach for monitoring disease indicators in real-time or near real-time to detect outbreaks of disease earlier than would otherwise be possible with traditional public health methods<sup>1</sup>
- Originally started as mechanism for threat preparedness; early detection of a large-scale release of a biologic agent<sup>2</sup>
- Expanded to include
  - Disease outbreak detection
  - Monitoring of illness/injury trends, including during mass gatherings
  - Identification of sentinel cases

<sup>1</sup> [CDC. Framework for evaluating public health surveillance systems for early detection of outbreaks: recommendations from the CDC working group. MMWR 2004;53\(No.RR-5\).](#)

<sup>2</sup> Henning, KJ. Overview of Syndromic Surveillance What is syndromic surveillance? MMWR 2004;53(Suppl);5-11.

# Syndromic Surveillance

- In Pennsylvania, syndromic surveillance via vendor-hosted EpiCenter
  - Direct connections to 167/170 (98%) emergency departments in the state
- Data points collected include, but are not limited to
  - Facility Identification and Location
  - Date and Time of the Visit
  - Patient Age, Gender, ZIP Code of Residence
  - Chief Complaint
  - Admit/Encounter Reason
  - Diagnosis Codes, including Discharge Diagnosis Codes
  - Medical Notes

# Pennsylvania's Opioid-Related Overdose Classifiers

- Any Drug Overdose
  - Overdose of any drug, including over-the-counter, prescription and illicit drugs, and may include alcohol
- Any Opioid Overdose
  - Overdose of any illicit or prescription opioid medication
- Heroin Overdose
- Inclusion/exclusion based on keywords and ICD-9/ICD-10 codes

# Pennsylvania's Opioid-Related Overdose Classifiers

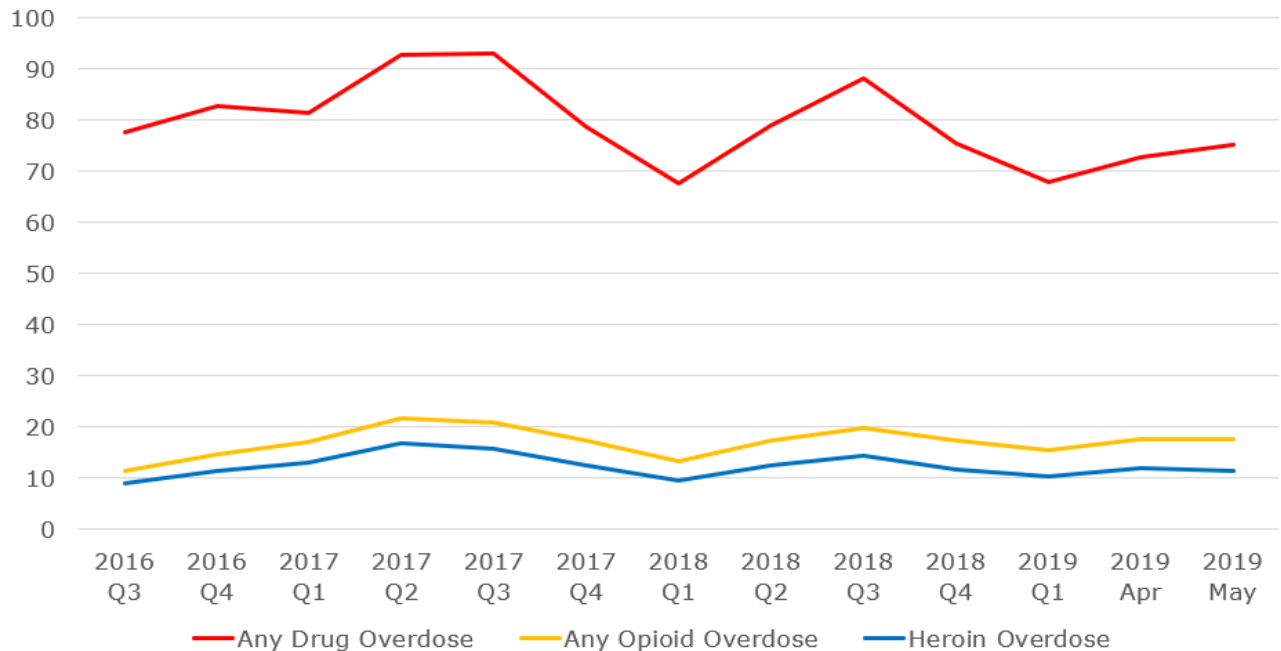
- Deficiencies included:
  - Non-specific Chief Complaints (e.g. state “overdose” with no indication of the substances involved)
    - Sensitivity Analysis of Chief Complaint text to identify
      - Any Drug Overdose – 0.69
      - Any Opioid Overdose – 0.31
      - Heroin Overdose – 0.37
  - Lack of diagnosis codes/discharge diagnosis data from some facilities

# Enhanced Data Collection Project

- Initial outreach by Department of Health
- Handoff to vendor to work with facility staff to improve data submission
  - Diagnosis codes
  - Medical Notes
- Facilities submitting Discharge Diagnosis Codes for more than 90% of visits
  - 2017 – 36%
  - 2019 – 51%
- Facilities submitting Medical Notes
  - 2017 – 16%
  - 2019 – 34%
- Facilities submitting no enhanced data
  - 2017 – 30%
  - 2019 – 14%



# Rate of Emergency Department Visits Related to Overdose per 10,000 Visits



## Interactive Data Report

This tool gives you an interactive look at controlled substance prescribing and drug overdose trends at the state and county level.

### How to use

To get started, navigate to the report you are interested in by using the links in the Table of Contents below. You can also navigate by clicking on the labeled tabs at the top. Each report can be interacted with using drop-down boxes or by moving your mouse over the data visualizations. The data visualizations will automatically reflect the options you select. Reports with maps allow you to zoom in and out, as well as scroll through the different time periods to see change over time.

### Technical notes

The overdose data presented represents data collected through syndromic surveillance. Not all overdose victims go to an emergency room and not all emergency departments in the Commonwealth report overdoses through syndromic surveillance. Please see [Overdose Data Technical Notes](#) for more information on how this data was compiled.

Prescribing data represents data submitted to the Pennsylvania PDMP by pharmacies and dispensing practitioners. Please see [PDMP Data Technical Notes](#) for more information on how this data was compiled.

### Contact Information

For questions about the interactive data report, please consult the technical notes or email [rad@pdmp.hhs.gov](mailto:rad@pdmp.hhs.gov).

### Disclaimer

The PDMP Office is continuously working to improve the quality and timeliness of the data. The interactive data report represents a snapshot of PDMP and overdose data as of the date they were analyzed and is subject to change.

### Troubleshooting

If you are using Internet Explorer and the dashboard does not load below, please [click here](#) or try using a different web browser such as Firefox, Chrome or Safari.

[Please click here if the interactive data report does not load below.](#)

Table of Contents | Statewide Measures | Controlled Substance Dispensations | Risky Prescribing

## Pennsylvania PDMP Interactive Data Report

### Table of Contents

#### Topics

[Statewide Drug Dispensation and Overdose Measures](#)

[Controlled Substance Dispensations](#)

[Risky Prescribing Measures](#)

[Emergency Department Visits Related to Overdose](#)

[Hospitalizations Related to Overdose](#)

#### Additional Information

[PDMP Data Technical Notes](#)

[Overdose Data Technical Notes](#)

[Contact Information](#)

# Pennsylvania Prescription Drug Monitoring Program (PDMP)

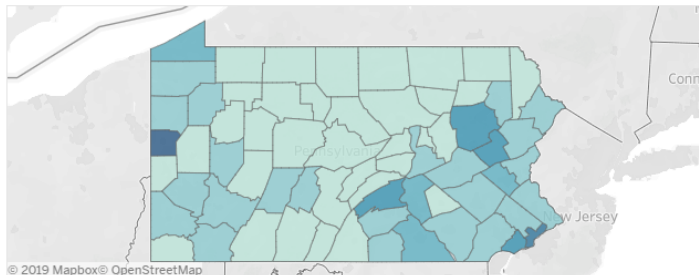
## Interactive Data Report

<https://www.health.pa.gov/topics/programs/PDMP/Pages/Data.aspx>

# PDMP Interactive Data Report

## Pennsylvania Emergency Department Visits Related to Overdose

County Map of ED Visits Related to Overdose - 2018 Q3



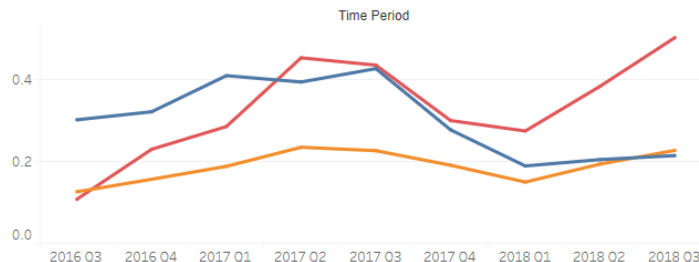
Drug Class  
Any Opioid Overdose

Measure  
Rate of Emergency Department Visits Related to Ove...

Time Period  
2018 Q3

Count  
0.0000 0.6759

ED Visits Related to Overdose by County



Drug Class  
Any Opioid Overdose

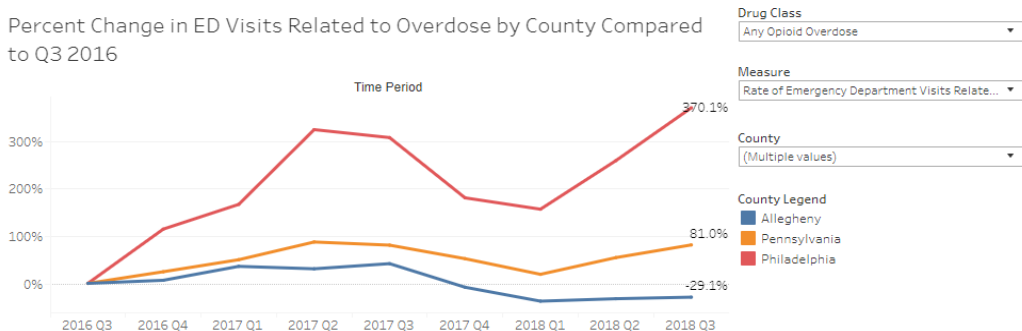
Measure  
Rate of Emergency Department Visits Related to Ove...

County  
(Multiple values)

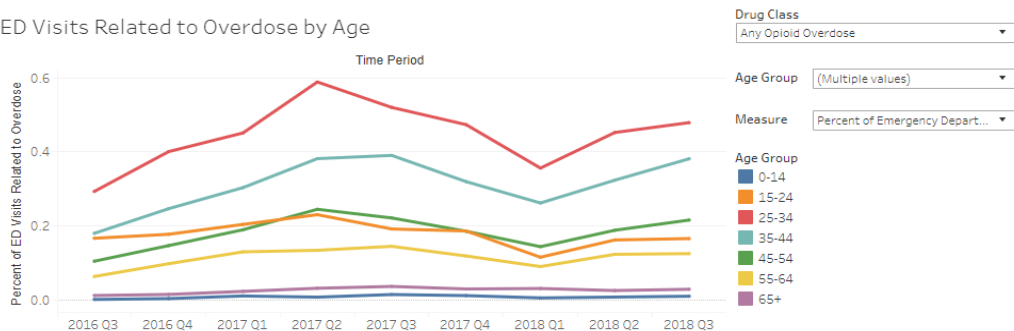
County Legend  
Allegheny  
Pennsylvania  
Philadelphia

# PDMP Interactive Data Report

Percent Change in ED Visits Related to Overdose by County Compared to Q3 2016

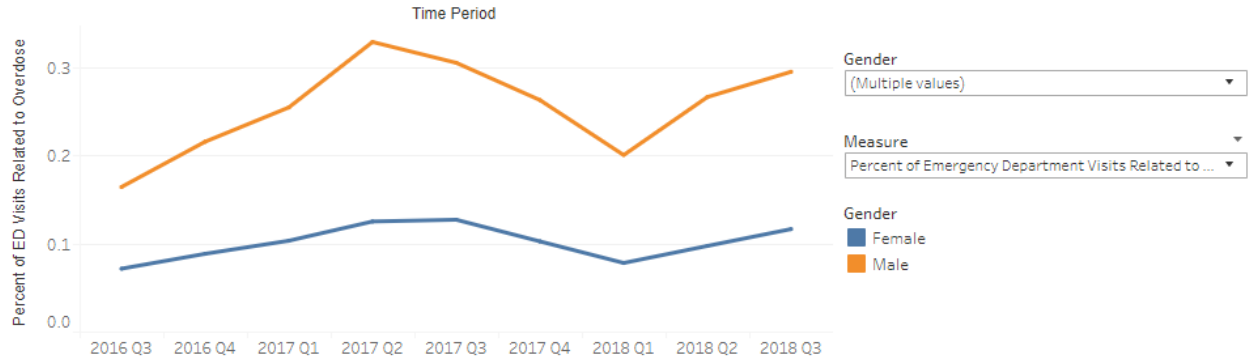


ED Visits Related to Overdose by Age



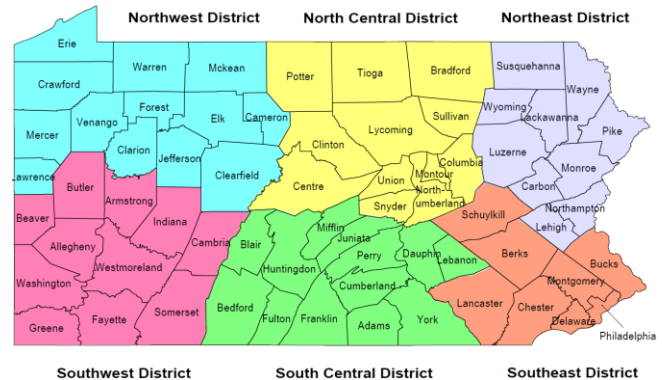
# PDMP Interactive Data Report

## ED Visits Related to Overdose by Gender



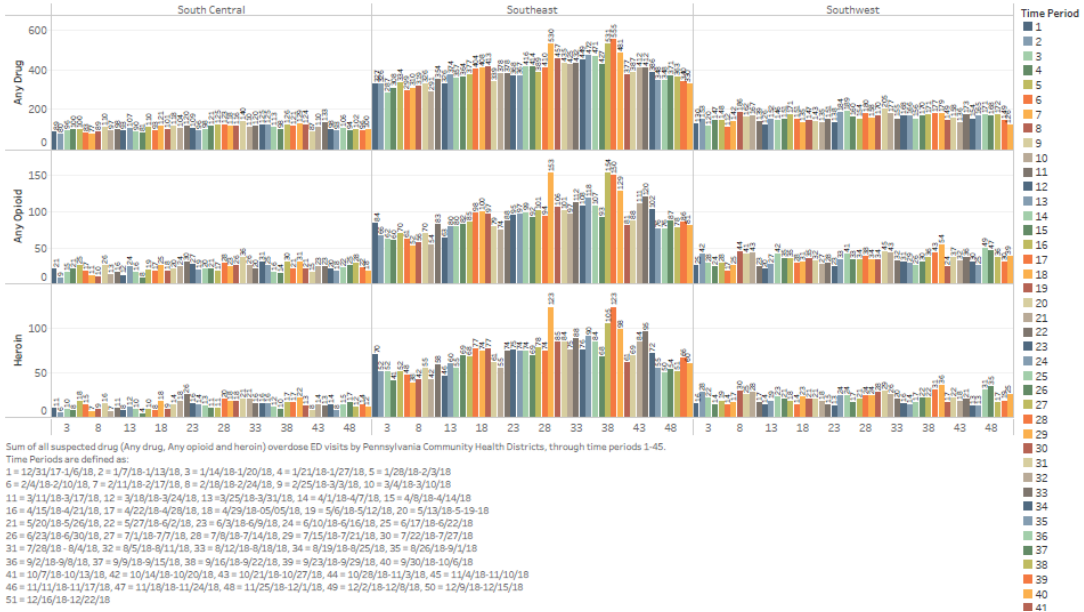
# Weekly Reporting to Incident Command

- Commonwealth year-to-date totals by Facility Location
- County-level weekly totals by Patient Residence Location
  - Highlight any significant increase over the previous week or changes in trends
- Graphs of weekly totals by Health District



# Weekly Reporting to Incident Command

## Overdose ED Visits



# EpiCenter Alerts

- Began sending in August 2018
  - As of June 2019
    - 31 alerts have been sent out
- Began asking those receiving alerts for feedback in December 2018
  - As of May 2019
    - 36 responses have been received



# Generating EpiCenter Alerts

- Used to use an older DRUGS classifier for alert notification
  - Variety of methods used to look at moving averages and thresholds for rolling 24 hour period
  - Deficiencies included
    - Captures visits for detox/withdrawal
    - Captures unrelated visits (e.g. mention of drugs taken correctly)
- Moved to static thresholds for new classifiers in May 2019
  - Analyzed data from 1/1/2017 – 12/31/2018
- EpiCenter monitors at the following levels
  - Facility County
  - Patient Residence County

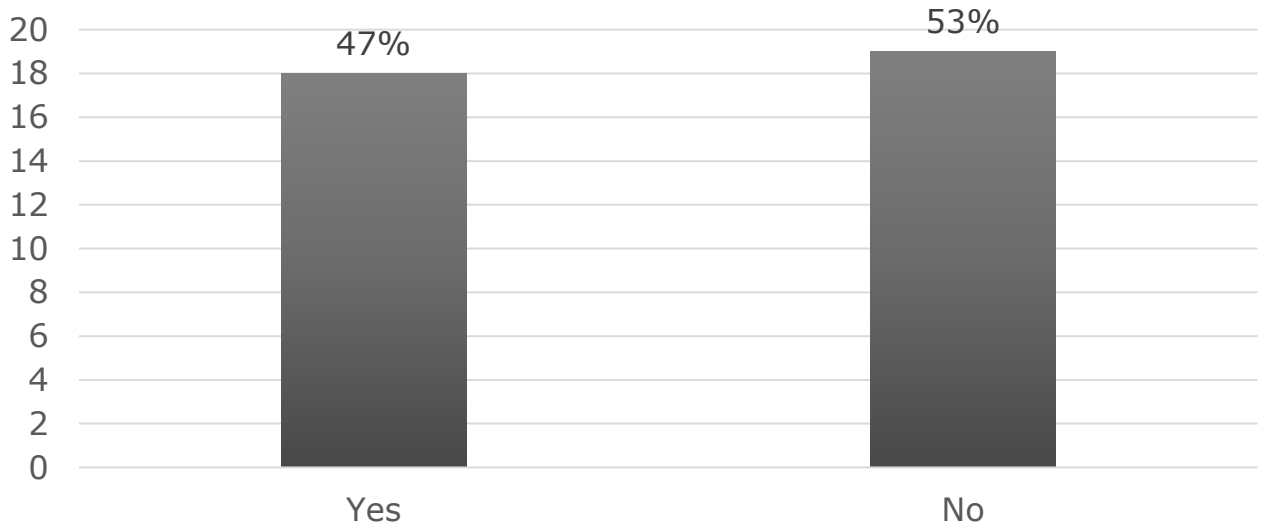
[https://www.health-monitoring.com/wp-content/uploads/2018/10/EpiCenter\\_3.5.3\\_User\\_Manual.pdf](https://www.health-monitoring.com/wp-content/uploads/2018/10/EpiCenter_3.5.3_User_Manual.pdf)

# EpiCenter Alert Notification Details

State-level Stakeholder	Local-level Stakeholder
Department of Health (DOH) Leadership / Incident Command	
Department of Drug and Alcohol Programs	Single County Authority
Department of Human Services	Centers of Excellence
DOH – Bureau of Emergency Medical Services	Regional Council
DOH – Bureau of Public Health Preparedness	Hospital Association → local hospitals
Pennsylvania Emergency Management Agency Watch Desk	County 911 Centers → local police, fire, EMS, and local Overdose Taskforce (if applicable)
Pennsylvania State Police	Troops and local law enforcement

# Feedback on Alerts

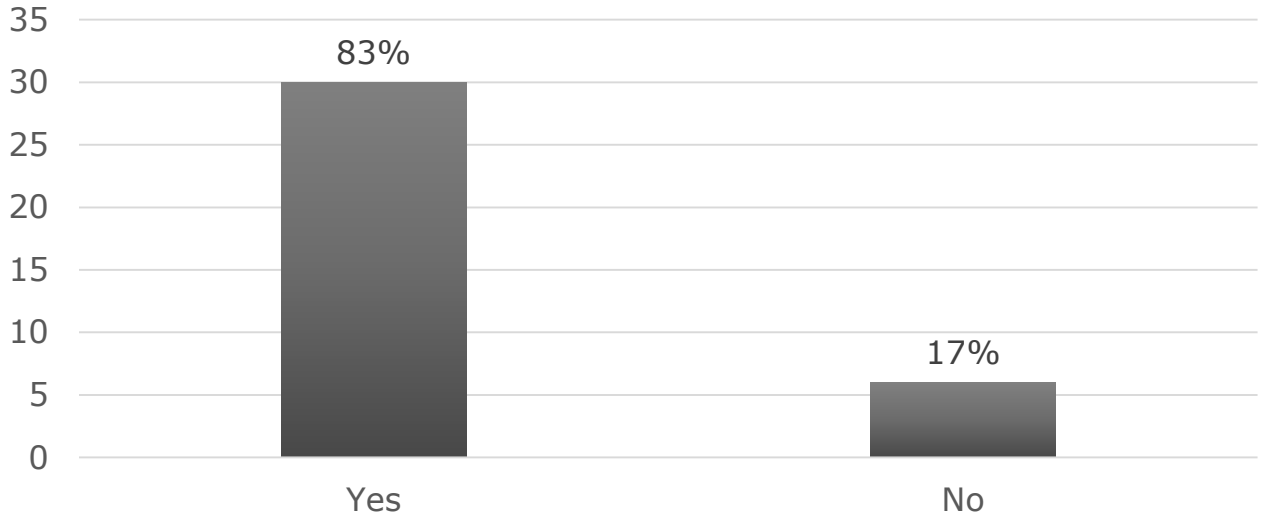
Did you take any action(s) based on this alert?



**Actions taken include forwarding to local partners, including drug court teams, coroners, overdose task forces, medical directors and ER physicians, 911 county supervisors and all key players in the warm handoff process.**

# Feedback on Alerts

Was this alert useful?



**How could alerts be more useful? Responses included suggestions for notification for additional stakeholders and requests for more information.**

# Acknowledgements

- Kaamna Mirchandani, PDMP Healthcare Data Analyst
- Meghna Patel, PDMP Director
- Incident Command Team and Stakeholders
- CDC

# Questions?

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