The Pennsylvania Heroin Overdose Prevention Technical Assistance Center

Janice Pringle, PhD
Director, Program Evaluation and Research Unit
University of Pittsburgh School of Pharmacy
Collaborating with the community is the cornerstone for efforts to improve public health.\(^1\)
Community efforts to reduce overdoses are emerging throughout the US.²
What Works:²

- Prescription Drug Monitoring Programs
- Medication Assisted Treatment
- Naloxone Availability
- Opioid Prescription Practices
Some community efforts have been successful.\textsuperscript{3,4}
What would a Community Coalition That Addresses Overdose Look Like?

Janice L. Pringle, PhD, Director

©2016
The coalition may be comprised of:

Persons who represent: the population at risk, the services the population needs, the policy entities that can change practices and the community’s values.
The coalition members work together to effectively ensure that their communities are safer, healthier, and drug free.
Making Your Community Coalition Successful: Preparation is KEY
Clearly define your VISION/GREATER PURPOSE

VISION

Inarguable
Motivating
Specific
Understand your community’s CURRENT CONDITION

- Culture
- Economy
- Social Networks
- Power Structures
- Norms and Values
- History
- Current or Previous Overdose Experience
Identify the best LEADERSHIP for your coalition.
Identify the best coalition MEMBERS needed to achieve your Vision based on your community’s Current Condition.
Examples of COALITION MEMBERS

- Representatives from Criminal Justice
- Police
- Healthcare Providers
- Single County Authorities
- Community Organizations
- Family Members
- Recovery Organizations
- Others
COALITION MEMBERS can change based on:

- Participation
- Funding
- Healthcare Providers
Role of the TECHNICAL ASSISTANCE CENTER – Assist Your Community to:

- Develop Vision
- Identify Leaders
- Develop Coalition
- Help Review Data
- Develop a Strategic Plan
- Identify Evidence-Based Practices
- Develop an Evaluation Plan
- Obtain Additional Resources
- Maintain a Healthy Coalition Culture
Additionally, the Technical Assistance Center will further develop OverdoseFreePA.org to provide more shared and individualized resources.
REFERENCES


4. Project Lazarus. *Community-based Overdose Prevention and Opioid Safety with Community Care of North Carolina*
Thank You!

Janice Pringle, PhD
Director, Program Evaluation and Research Unit
University of Pittsburgh School of Pharmacy
Phone: 412-383-2005
Email: jlprisinge@pitt.edu
Gathering Your Community Overdose Death Data

Dr. Karl Williams
Misconception #1
We know why people are dying today.
Reality

About the fastest turnaround time for toxicology is a week.

We know why people died yesterday, last month or last year.

Complex cases can take months.

Resolution of overdose cases often require knowledge of what was present at the scene of the death.
A Question on Opioid Overdoses…

does the presence of morphine alone mean heroin contributed to death?

- **YES**, if morphine is present in the blood.
- **YES**, if morphine is present in urine with 6-MAM present in blood.
- **NO**, if morphine is only present in urine.
Case #1
Straight Forward
Case #1
What We Know About the Death

- 43 year old white male with known history of “drug abuse”
- Known to use heroin daily
- Found “down at home” by 21 year old daughter
- Daughter directs police to syringe in garbage
- Daughter states that stamp bag for “Oxyclean” was seen
- Down time: 1-30 minutes
- EMS transports patient to hospital; resuscitation fails
Case #1
What We Learn From the Toxicology Report

Femoral Blood
Positive for Fentanyl
6.8 ng/ml

Urine
Positive for Fentanyl
Positive for Morphine
Case #1

Daily “heroin” use

Day before death dealer provided him with his usual heroin

Day of death dealer supplied different stamp bag

Morphine in urine most likely represents end of metabolism from day before

Fentanyl in blood is the drug that resulted in death
Case #2
Complex
Case #2
Cannabinoids a contributor?
Not now if it represents smoked marijuana, but possible in the future with synthetics.

Positive Findings:

<table>
<thead>
<tr>
<th>Compound</th>
<th>Result</th>
<th>Units</th>
<th>Matrix Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>316</td>
<td>mg/dL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>Blood Alcohol Concentration (BAC)</td>
<td>0.316</td>
<td>g/100 mL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>Codeine</td>
<td>Positive</td>
<td>ng/mL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>Alprazolam</td>
<td>20</td>
<td>ng/mL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>Delta-9 THC</td>
<td>4.2</td>
<td>ng/mL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>Delta-9 Carboxy THC</td>
<td>13</td>
<td>ng/mL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>Chlorzepate</td>
<td>610</td>
<td>ng/mL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>Norclozapine</td>
<td>860</td>
<td>ng/mL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>Tramadol</td>
<td>600</td>
<td>ng/mL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>O-Metamyltramadol</td>
<td>160</td>
<td>ng/mL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>Trazodone</td>
<td>0.16</td>
<td>mcg/mL</td>
<td>001 - Blood</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>Presump Pos</td>
<td>ng/mL</td>
<td>003 - Urine</td>
</tr>
<tr>
<td>Cannabinoids</td>
<td>Presump Pos</td>
<td>ng/mL</td>
<td>003 - Urine</td>
</tr>
</tbody>
</table>

See Detailed Findings section for additional information.

Testing Requested:

<table>
<thead>
<tr>
<th>Analysis Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8050U</td>
<td>Postmortem Toxicology - Urine Screen Add-on (6-MAM Quantification only)</td>
</tr>
<tr>
<td>8052B</td>
<td>Postmortem Toxicology - Expanded, Blood (Forensic)</td>
</tr>
</tbody>
</table>

Tests Not Performed:
Part or all of the requested testing was unable to be performed. Refer to the Analysis Summary and Reporting Limits section for details.

Specimens Received:

<table>
<thead>
<tr>
<th>ID</th>
<th>Tube/Container</th>
<th>Volume/Mass</th>
<th>Collection Date/Time</th>
<th>Matrix Source</th>
<th>Miscellaneous Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Gray Top Tube</td>
<td>9.5 mL</td>
<td>10/11/2014 13:00</td>
<td>Blood</td>
<td></td>
</tr>
<tr>
<td>002</td>
<td>Gray Top Tube</td>
<td>9.25 mL</td>
<td>10/11/2014 13:00</td>
<td>Blood</td>
<td></td>
</tr>
<tr>
<td>003</td>
<td>Red Top Tube</td>
<td>9 mL</td>
<td>10/11/2014 13:00</td>
<td>Urine</td>
<td></td>
</tr>
<tr>
<td>004</td>
<td>Red Top Tube</td>
<td>8.76 mL</td>
<td>10/11/2014 13:00</td>
<td>Bile</td>
<td></td>
</tr>
</tbody>
</table>
Case #2

Positive Findings:

<table>
<thead>
<tr>
<th>Compound</th>
<th>Result</th>
<th>Units</th>
<th>Matrix Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorazepam</td>
<td>71</td>
<td>ng/mL</td>
<td>01 - Peripheral Blood</td>
</tr>
<tr>
<td>Clonazepam</td>
<td>4.1</td>
<td>ng/mL</td>
<td>01 - Peripheral Blood</td>
</tr>
<tr>
<td>7-Amino Clonazepam</td>
<td>76</td>
<td>ng/mL</td>
<td>01 - Peripheral Blood</td>
</tr>
<tr>
<td>Oxycodeine - Free</td>
<td>620</td>
<td>ng/mL</td>
<td>01 - Peripheral Blood</td>
</tr>
<tr>
<td>Oxymorphone - Free</td>
<td>1.5</td>
<td>ng/mL</td>
<td>01 - Peripheral Blood</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>150</td>
<td>ng/mL</td>
<td>01 - Peripheral Blood</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>270</td>
<td>ng/mL</td>
<td>01 - Peripheral Blood</td>
</tr>
<tr>
<td>Nortriptyline</td>
<td>690</td>
<td>ng/mL</td>
<td>01 - Peripheral Blood</td>
</tr>
<tr>
<td>Triazolone</td>
<td>0.15</td>
<td>ng/mL</td>
<td>01 - Urine</td>
</tr>
<tr>
<td>Opiates</td>
<td>Presumptive Positive</td>
<td>ng/mL</td>
<td>03 - Urine</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>Presumptive Positive</td>
<td>ng/mL</td>
<td>03 - Urine</td>
</tr>
<tr>
<td>Oxycodeine</td>
<td>Presumptive Positive</td>
<td>ng/mL</td>
<td>03 - Urine</td>
</tr>
</tbody>
</table>

Testing Requested:

<table>
<thead>
<tr>
<th>Analysis Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>80500</td>
<td>Postmortem Toxicology - Utens Scarf, Am-10-MAM Osmoticization only</td>
</tr>
<tr>
<td>60529</td>
<td>Postmortem Toxicology - Expanded, Blood (Fenrir)</td>
</tr>
</tbody>
</table>

Tests Not Performed:

Part or all of the requested testing was unable to be performed. Refer to the Analysis Summary and Reporting Limits section for details.

Specimens Received:

<table>
<thead>
<tr>
<th>ID</th>
<th>Tube/Container</th>
<th>Volume</th>
<th>Matrix Source</th>
<th>Miscellaneous Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Grey Top Tube</td>
<td>6 ml</td>
<td>Peripheral Blood</td>
<td></td>
</tr>
<tr>
<td>002</td>
<td>Grey Top Tube</td>
<td>7 ml</td>
<td>Peripheral Blood</td>
<td></td>
</tr>
<tr>
<td>003</td>
<td>Red Top Tube</td>
<td>0.75 ml</td>
<td>Peripheral Blood</td>
<td></td>
</tr>
<tr>
<td>004</td>
<td>Red Top Tube</td>
<td>5 ml</td>
<td>Urine</td>
<td></td>
</tr>
</tbody>
</table>

Chloral Hydrate is:  
- Nitrazepam (Imesoma) 
- Triazolam (Halcion) 
- Zaleplon (Sonata) 
- Zolpidem (Ambien)

Shading indicates Benzodiazepines confirmed at Andor Labs.

There are > 50 types of Benzodiazepines on the market.

Known Metabolites:

Oxazepam and Nordiazepam are the primary metabolites of many benzodiazepines. Many Benzodiazepines occur as glucuronide conjugates in urine.
Misconception #2
We can rely on some high degree of uniform reporting between various agencies (Coroner/ME) dealing with drug overdose death.
Reality

There is no “Gold Standard” or even Standard Operating Procedure for analyzing and reporting drug overdoses. There is enormous variation in training between coroners (especially elected) and medical examiners on drug effects, metabolism and re-distribution. There can even be significant variation between Medical Examiner offices.
The arena of drug overdoses is evolving rapidly. Consider the **cannabinoids** – rapidly changing molecular configuration with increasing toxic side effects. Few were evaluated as primary overdose drug. New configurations of **stimulants** are discovered daily.
Misconception #3
We can rely on some high degree of uniform reporting with overdose *survivors.*
Reality

Overdoses that survive wind up in Emergency Departments.

- Few hospital labs have the capabilities of forensic laboratories.
- Until recently, most hospitals would screen blood and urine and treat symptomatically.
- Full forensic toxicology is complex and expensive.
Misconception #4
This is only a concern at the national level.
Reality

The overdose crisis happens at a local level.

Documenting overdoses needs to happen at the most granular level possible.

Efforts to combat overdoses need to happen locally and depend on this up-to-date granular data.

Recognizing the importance of the local level allows for optimal cooperation between law enforcement and community groups.
Other Issues

- The advantage of having a Toxicology Laboratory and Drug Chemistry section under the same roof and part of the same Laboratory Information System – ACOME

- The independent Forensic Laboratory
Developing a Strategic Plan to Address Overdoses Within Your Community

Janice Pringle, PhD
Director, Program Evaluation and Research Unit
University of Pittsburgh
School of Pharmacy
Steps to Developing your Strategic Plan
FIRST: Define the outcome you want to impact as specifically as possible based on your data.
SECOND: Use your data or literature to describe the HOW, WHERE, WHAT and WHEN your target population uses opioids associated with overdose.
THIRD: Use your data or literature to determine the FACTORS that are associated with increasing or reducing the target population’s opioid use or death.
FOURTH: Determine the Evidence-Based Practices that could theoretically reduce your targets opioid associated outcome.

- Prescription Drug Monitoring Programs (PDMPs)
- Naloxone Availability
- Medication Assisted Treatment
- Opioid Prescription Practices
EXAMPLE
OUTCOME

Reduce overdoses and overdose deaths among people aged 18-24.
HOW, WHAT, WHERE, WHEN

• Opioid use starts in high school.
• Heroin users tend to use opioids first.
• Most overdoses involve heroin, opioids, alcohol and marijuana.
• Youth overdoses end in Emergency Departments.
• Probable previous experience with SUD or mental health treatment.
• Probable previous experience in juvenile justice system.
• Unstable living or housing situation; usually have children.
INTERVENING FACTORS

- Prescribers not using PDMPs
- Low Naloxone Availability
- Youth not identified by systems (school, criminal justice, physicians, etc.)
- Little to no access to MAT, SUD treatment and recovery services
EVIDENCE-BASED PRACTICES

Prescription Drug Monitoring Programs (PDMPs)

Medication Assisted Treatment

Naloxone Availability

Opioid Prescription Practices
How do you choose your Evidence-Based Practices and Implementation Time Frames?
Match selected EVIDENCE-BASED PRACTICES with TIME FRAMES that allow quick implementation and high effectiveness.

• This Year?

• Within Two Years?

• Longer?
Determine how you will EVALUATE your plan once implemented.
The Technical Assistance Center will help you develop your strategic and evaluation plans via an individualized concierge service.
OverdoseFreePA.org will contain a list of potential practices, relevant resources, strategic plans, and evaluation results reflecting the work of participating communities.

<table>
<thead>
<tr>
<th>Allegheny</th>
<th>Clearfield</th>
<th>Greene</th>
<th>Perry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berks</td>
<td>Cumberland</td>
<td>Jefferson</td>
<td>Washington</td>
</tr>
<tr>
<td>Blair</td>
<td>Clinton</td>
<td>Lehigh</td>
<td>Westmoreland</td>
</tr>
<tr>
<td>Bucks</td>
<td>Dauphin</td>
<td>Luzerne</td>
<td>Wyoming</td>
</tr>
<tr>
<td>Butler</td>
<td>Delaware</td>
<td>Lycoming</td>
<td></td>
</tr>
</tbody>
</table>

**Single County Authority (SCA)**

**Allegheny County**
Latika D. Davis-Jones, PhD, MPH, MSW  
Allegheny County Department of Human Services | Office of Behavioral Health | Bureau of Drug and Alcohol Services

**Additional Resources**

The Allegheny County Overdose Prevention Coalition (ACOPC)

Prevention Point Pittsburgh (Needle Exchange and Overdose Prevention Training)

The Allegheny County Health Department's Overdose Resources Page
Thank You!

Janice Pringle, PhD
Director, Program Evaluation and Research Unit
University of Pittsburgh School of Pharmacy
Phone:  412-383-2005
Email:  jlpringle@pitt.edu