**LEARNING OBJECTIVES**

- Understand the utility of scene investigation and field drug testing in potential overdose deaths.
- Describe a method of effectively informing appropriate public health and criminal justice responses to the opioid epidemic.

**OUTLINE**

- Drugs are bad
- OD Surveillance Protocol
“REAL-TIME” OD SURVEILLANCE PROTOCOL

1. Medicolegal investigators conduct scene investigation.
2. Full autopsy examination is performed. Urine is dipstick tested for fentanyl.
3. Drug evidence collected from scene is field tested.
4. Pathologists rate probability of drug OD, including the predicted drug(s).
5. Blood samples are submitted to the tox lab for expedited testing. Drug evidence may also be sent for chemical analysis.
6. Pathologist or investigator contacts family to obtain additional information for identifying source of drug(s) or supplier.
7. A weekly “Bulletin” is emailed to a network of federal, state, and local criminal justice and public health agencies.
8. Justice is served, lives are saved, hooray.

DRUGS ARE BAD

- 175 OD deaths per day
- 2 deaths during this presentation

1. NEEDLE, ONE SYRINGE, ONLY ONE TIME.
2. Medication-Assisted Treatment (MAT)

WELCOME TO insite
**DRUGS ARE BAD**

![Graph showing increase in drug population](image)

**COMPLEMENTARY GOALS**

**Public Health: Reduce Demand**

**Law Enforcement: Reduce Supply**

**Inform Public Health**

- Recognize potential cases of public health importance.
- Spatial/temporal clusters
- Potential novel substances
- Request expedited analysis of:
  - Biological specimens
  - Drugs retrieved from scene
- Flag cases of PH importance to OD surveillance workgroup.
- Closely monitor trends over time on ongoing basis.

**Inform Law Enforcement**

- Identify and report similarities across cases.
- Attempt to gather information that could help identify source of drug.
- Develop rapid reporting system to inform local law enforcement, DEA, HIDTA.

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**OD SURVEILLANCE NETWORK**

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**“REAL-TIME” OD SURVEILLANCE PROTOCOL**

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**1. SCENE INVESTIGATION**

- History of drug use
- Drug paraphernalia
- Location
  - Hotel/motel room
  - Public restroom
  - Car
  - Bath/hot tub
- Signs of possible overdose
  - Needle clutched in hand
  - Kneeling head down position
  - External signs of drug use

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**2. AUTOPSY**

- Full autopsy with collection of samples for toxicology testing.
- Urine testing at time of autopsy.
2. AUTOPSY

3. DRUG EVIDENCE FIELD TESTS
• Colorimetric field tests (e.g. NarcoPouch).
• Urine dipsticks adapted for testing drug evidence samples.
• Raman spectroscopy (TruNarc).
• Field mass spectrometer (MX808).
• Chemical analysis (WSP or DEA laboratories).

4. PROBABLE OD LIST
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<table>
<thead>
<tr>
<th></th>
<th>Overdose</th>
<th>Not overdose</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>126 (95%)</td>
<td>7 (5%)</td>
<td>133 (100%)</td>
</tr>
<tr>
<td>Moderate</td>
<td>13 (43%)</td>
<td>17 (57%)</td>
<td>30 (100%)</td>
</tr>
<tr>
<td>Low</td>
<td>8 (29%)</td>
<td>20 (71%)</td>
<td>28 (100%)</td>
</tr>
<tr>
<td>Not Assigned</td>
<td>18 (4%)</td>
<td>408 (96%)</td>
<td>426 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>165 (27%)</td>
<td>452 (73%)</td>
<td>617 (100%)</td>
</tr>
</tbody>
</table>

KCMEO overdose probability predictions March 1, 2017 – July 31, 2017

Number of overdose fatalities by calendar week as determined by a final Drugs/Poisons classification as determined by toxicology results and by the Medical Examiner likelihood designation of probable (“High”) that the cause of death was due to fatal overdose.
4. PROBABLE OD LIST: CRITERIA

- Pathologist checks the “Probable OD” checkbox if two of the following conditions apply:
  1. No alternative cause of death apparent / note of intent
  2. Clinical symptoms of drug overdose described by investigator
  3. Suspected illicit drug substance present / reported proximal drug use
  4. Suspected illicit drug paraphernalia present
  5. Prescription medication over-utilized
  6. History of prior acute or illicit drug use (with overdose risk)
  7. Valid hospital toxicology test result
  8. Investigator/police report it as possible drug overdose, or other indication of overdose identified by medical examiner

4. PROBABLE OD LIST: DRUG PREDICTIONS

- Drug Predictions

- At least 1 correct 93% of the time

- 100% Correct  At least 1 correct  None Correct

5. TOXICOLOGY
5. TOXICOLOGY

Number of case submissions per year

# of tox lab positions

5. TOXICOLOGY: PRIORITY TESTING

- How to speed up the tox lab?
- Will throwing money at it help? (Yes.)

<table>
<thead>
<tr>
<th></th>
<th>Before grant</th>
<th>After grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receipt to LIMS</td>
<td>4.8 days</td>
<td>1.2 days</td>
</tr>
<tr>
<td>Receipt to 1st assay</td>
<td>28.8</td>
<td>2.3</td>
</tr>
<tr>
<td>Last to 1st assay</td>
<td>22.4</td>
<td>9.8</td>
</tr>
<tr>
<td>Receipt to Draft</td>
<td>57.5</td>
<td>17.6</td>
</tr>
<tr>
<td>Draft to Admin Rev</td>
<td>1.9</td>
<td>0.38</td>
</tr>
<tr>
<td>Admin Rev to Distrib</td>
<td>1.3</td>
<td>1.7*</td>
</tr>
<tr>
<td>Total TAT</td>
<td>60.8</td>
<td>19.7</td>
</tr>
</tbody>
</table>

* skewed by 2 cases where we messed up on the distribution — all other cases were distributed within 1 day

Receipt – the date we physically receive specimens
LIMS – the date we have processed the samples and entered the case in our database so it can be assigned to a scientist
1st assay – the date the scientist begins testing
Last assay – the date the scientist completes all testing
Draft – the date the scientist drafts the Tox Report for review
Admin Rev – the date the supervisor/manager reviews & accepts the Tox Report
Distrib – the date the Tox Report is sent to the submitting agency
TAT – total turnaround time from receipt to distribution of results
6. CONTACT FAMILY

- Pathologist or investigator calls family to obtain additional information for identifying source of drug(s) or supplier.

7. COMPIL e & DISTRIB UTE INFORMATION

- OD Surveillance Database
- OD Surveillance Network
  - Approximately 17 federal and local agencies in law enforcement and public health

7. COMPIL e & DISTRIB UTE: OD SURVEILLANCE DATABASE

- Purpose: To provide a single, comprehensive repository of information regarding drug overdose deaths, collected during the multiple phases of investigation that would serve as a resource for rapidly disseminating information as well as an historical record available for epidemiological analysis.
7. COMPILe & DISTRIBUTE: OD SURVEILLANCE DATABASE

- Dataset imported from main MEO database.
- Predicted drugs(s) causing death.
- Results of drug evidence field testing, including circumstantial and historical information, distinctive packaging, similarities to other cases, relevant autopsy findings.
- Results of autopsy urine testing.
- Details of drug evidence testing by analytical chemistry.
- Toxicology results from toxicology laboratory.
- Death certificate information as soon as the certificates are published.
- Follow-up information from family, friends, law enforcement and other sources.

7. COMPILe & DISTRIBUTE INFORMATION: OD SURVEILLANCE NETWORK

- “Bulletin” and “Highlights” distributed weekly
  - “Bulletin” contains detailed information about each probable overdose case from the week
  - Distributed to law enforcement only
  - “Highlights” (distributed to both LE and public health) covers the take-home points:
    - OD totals
    - OD trends
    - Fentanyl numbers
    - Representative cases with photos
    - Updates on previous cases (drug testing information, interesting toxicology)
    - Just published death certificates (cause of death) on previous cases

(Optional) 8. RESULTS

- Justice is served. Lives are saved. Hooray!
8. RESULTS

Outcome measures and some actual results:

- Network of approximately 17 local and federal partner agencies.
- Drug overdose surveillance database.
- Weekly publication of "KCMEO Drug Surveillance Bulletin" and "KCMEO Drug Surveillance Highlights" containing information detailing recent suspected and confirmed drug overdose deaths.
- Partner agencies in network have access to information relevant to their respective activities.
- Timely monitoring of drug overdose statistics and trends (days versus months).
- Alerts sent with respect to novel drugs or packaging, counterfeit pills, supply source, clustering of cases.
- Directed interventions such as community outreach, education, therapy.
- Multidisciplinary and multiagency OD Monitoring and Response Workgroup.
- Interagency collaboration with laboratories for expedited testing.
- Technology for rapid, safe field drug testing.
- Disruption of supply network.
- Linking concurrent investigations by different agencies.
- Linkage of three deaths in two states.
- Seizure of large quantity of fentanyl analogue associated with an overdose death.
- Investigations into deaths due to fentanyl acid or other drugs.
- Investigation into large quantity of illicit fentanyl/ tramadol pills.
- Investigation of Chinese source of U-47700.
- Investigation of domestic source of poppy pods.
- Public awareness of fentanyl in pills in the community.

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FENTANYL WARNING

Fentanyl is causing an increasing number of deaths in Kings County. Most drugs cut with fentanyl.

Fentanyl has been found locally in fake cocaine pills & in white and blue powders.

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