Using the PDMP for Hot Spot Mapping and Data Driven Responses

2017 BJA Grantee Meeting

Colorado Department of Public Health and Environment
Colorado Consortium for Prescription Drug Abuse Prevention
3/30/2017
Harold Rodgers Category 3 Grantee

• **Goal 1:** Increase and maintain the strategic, multi-disciplinary state partnerships within Colorado to prevent prescription drug overdoses through the Colorado Consortium for Prescription Drug Abuse Prevention

• **Goal 2:** Increase public health surveillance of the prescription drug overdose epidemic in Colorado

• **Goal 3:** Increase data driven responses to Colorado's prescription drug overdose epidemic
Colorado PDMP

Board of Pharmacy in the Colorado Department of Regulatory Agencies runs the PDMP.

• DEA schedules II-V
• Data from 2013-2016

Legislation passed in 2014 to enhance monitoring:

• Mandatory registration
• Daily uploads
• Delegates
### Number and Type of Prescriptions by Year

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Rx</strong></td>
<td>8,439,156</td>
<td>8,659,426</td>
<td>8,920,152</td>
<td>8,740,098</td>
</tr>
<tr>
<td><strong>CO Rx</strong></td>
<td>8,250,613 (98%)</td>
<td>8,480,555 (98%)</td>
<td>8,743,076 (98%)</td>
<td>8,558,207 (98%)</td>
</tr>
<tr>
<td><strong>Opioids</strong></td>
<td>54%</td>
<td>55%</td>
<td>57%</td>
<td>57%</td>
</tr>
<tr>
<td><strong>Benzos</strong></td>
<td>25%</td>
<td>25%</td>
<td>23%</td>
<td>23%</td>
</tr>
<tr>
<td><strong>Stimulants</strong></td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>12%</td>
</tr>
</tbody>
</table>
Age-Adjusted Rates of Drug Overdoses Deaths in Colorado, 2000-2015
Age-Adjusted Opioid Related Overdose Death Rates by Health Statistics Region, Colorado, 2013-2015

Age-adjusted rates, poisoning deaths (per 100,000 population) cause of death: Any opioid danalgesic (natural, synthetic, methadone; mention of T40.2-T40.4))

by Heath statistics region:

- Lowest quartile (1.50-1.80)
- Second quartile (1.81-4.80)
- Third quartile (4.81-7.00)
- Highest quartile (7.01-9.60)
- Regional prevalence suppressed

- Statistically lower than average
- Statistically higher than average

Age-adjusted rates, poisoning deaths (per 100,000 population) cause of death: Heroin (T40.1)

by Health statistics region:
- Lowest quartile (0.90-1.70)
- Second quartile (1.71-3.40)
- Third quartile (3.41-4.40)
- Highest quartile (4.41-8.70)
- Regional prevalence suppressed

- Statistically lower than average
- Statistically higher than average
Using PDMP Data
Hot Spot Mapping

Examine geographic variability

Highlights high burden communities

Helps to determine where to allocate funds and resources

Allows for data-driven conclusions and local level strategies
Colorado's Hot Spot Mapping Process

1. Reached out to other states
2. Limited criteria to a combination of risk and outcome measures
3. Focused on goals and purpose of project

“Identify high burden communities related to prescription drug overdose and increase the uptake of opioid prescribing guidelines”
Age-Adjusted Rate of Poisoning Deaths
by Any Opioid Analgesic* Among Colorado Residents,
by County, Colorado, 2013-2015

*Cause of death: Any opioid analgesic (T40.2-T40.4)
Rates are per 100,000 population in year and sex category. Age-adjusted rates are standardized using the 2000 US Population Standard.
Categories within POISONING INTENT family mutually exclusive;
Categories within GENERAL DRUG CATEGORIES family are also mutually exclusive.
Categories within SPECIFIC OPIOID TYPE are not mutually exclusive.
Deaths involving more than one opioid analgesic category shown in this figure are counted multiple times.
Opioid analgesics include natural and semi-synthetic opioid analgesics
(for example, morphine, hydrocodone, and oxycodone) and synthetic opioid analgesics (for example, methadone and fentanyl).
Some deaths in which the drug was poorly specified or unspecified may involve opioid analgesics.
Definitions used based on NCHS Data Brief, No. 81, December 2011, "Drug Poisoning Deaths in the United States, 1980-2008".
Sources: Vital Statistics Program, Colorado Department of Public Health and Environment, Drug Enforcement Administration (DEA), Denver Field Division
Registered Drug Enforcement Administration (DEA) Prescription Drug Prescribers, by County, Colorado, 2014

Source: Drug Enforcement Administration (DEA), Denver Field Division
DEA Prescribers and Age-Adjusted Rate of Poisoning Deaths by Any Opioid Analgesic* Among Colorado Residents, by County, Colorado, 2013-2015

*Cause of death: Any opioid analgesic (T40.2-T40.4)
Rates are per 100,000 population in year and sex category. Age-adjusted rates are standardized using the 2000 US Population Standard.
Categories within POISONING INTENT family mutually exclusive;
Categories within GENERAL DRUG CATEGORIES family are also mutually exclusive.
Categories within SPECIFIC OPIOID TYPE are not mutually exclusive.
Deaths involving more than one opioid analgesic category shown in this figure are counted multiple times.
Opioid analgesics include natural and semi-synthetic opioid analgesics (for example, morphine, hydrocodone, and oxycodone) and synthetic opioid analgesics (for example, methadone and fentanyl).
Some deaths in which the drug was poorly specified or unspecified may involve opioid analgesics.
Definitions used based on NCHS Data Brief, No. 81, December 2011, "Drug Poisoning Deaths in the United States, 1980-2008".
Sources: Vital Statistics Program, Colorado Department of Public Health and Environment, Drug Enforcement Administration (DEA), Denver Field Division
Hot Spot Mapping - Lessons Learned

- Stick to goals and purpose
- Utilize existing partnerships
- Capacity may be a determining factor
- Prepare justification statement
Stakeholder Input

Rates of Emergency Department Visits That Mention:

- Pharmaceutical Opioids
- Heroin
- Benzodiazepines

Source: Colorado Hospital Association. Rates calculated by Colorado Department of Public Health and Environment. Adjusted rates per 100,000 population.
County Level Data Profiles

Comprehensive data report comprised of information from the PDMP, hospitalization and ED data, and mortality data

- Prescription rates
- CDC high risk indicators
- Characteristics of prescriptions dispensed
- Prescription opioid hospitalization and ED visit rates
- Prescription opioid/heroin fatal overdose rates

Incorporated recommendations and potential prevention strategies
County Level Data Profiles

Table 1: Characteristics of Controlled Substance Prescriptions Dispensed, Adams County, Colorado, 2014-2016

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Prescriptions Dispensed</td>
<td>638,414</td>
<td>666,277</td>
<td>632,869</td>
</tr>
<tr>
<td>Number of Unique Patients</td>
<td>131,746</td>
<td>135,947</td>
<td>131,068</td>
</tr>
<tr>
<td>Number of Unique Prescribers</td>
<td>12,397</td>
<td>13,487</td>
<td>13,625</td>
</tr>
<tr>
<td>Number of Unique Pharmacies</td>
<td>971</td>
<td>850</td>
<td>877</td>
</tr>
<tr>
<td>Estimated Median Distance Traveled by the Patient to the Prescriber (in miles)</td>
<td>8.0</td>
<td>8.4</td>
<td>8.2</td>
</tr>
<tr>
<td>Estimated Median Distance Traveled by the Patient to the Pharmacy (in miles)</td>
<td>3.1</td>
<td>3.1</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Table 2: High Risk Prescribing Practices and Patient Behaviors, 2014-2016

<table>
<thead>
<tr>
<th>PDMP Indicator</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of patients receiving more than 90 morphine milligram equivalents</td>
<td>10.5</td>
<td>10.3</td>
<td>8.9</td>
</tr>
<tr>
<td>Percent of patients receiving more than 120 morphine milligram equivalents</td>
<td>6.4</td>
<td>6.3</td>
<td>5.6</td>
</tr>
<tr>
<td>Rate of multiple provider episodes per 100,000 residents</td>
<td>65.2</td>
<td>60.6</td>
<td>45.4</td>
</tr>
<tr>
<td>Percent of patients prescribed long duration opioids who were opioid-naive</td>
<td>15.6</td>
<td>16.0</td>
<td>14.5</td>
</tr>
<tr>
<td>Percent of patient prescription days with overlapping opioid prescriptions</td>
<td>22.5</td>
<td>22.3</td>
<td>21.7</td>
</tr>
<tr>
<td>Percent of patient prescription days with overlapping opioid and benzodiazepine prescriptions</td>
<td>12.3</td>
<td>12.1</td>
<td>11.7</td>
</tr>
</tbody>
</table>

Source: Colorado Department of Public Health & Environment
Thank you!

Contact:
Maria.Butler@state.co.us
Whit.Oyler@ucdenver.edu