Linking SUDORS data with PDMP Data
Connecticut Department of Public Heath

Shobha Thangada, PhD
Injury and Violence Surveillance Unit
Connecticut Department of Public Health

Presentation at CSTE data linking webinar series
Dated 4/1/2020
Primary Objectives

• To evaluate if:
  * Overall number of opioid prescriptions are being reduced;
  * There are fewer prescribers prescribing opioids to the same person;
  * There are fewer pharmacies filling opioid prescriptions for the same person.

• These objectives can be accomplished by:
  * Prescribers registering with the Connecticut Prescription Monitoring and Reporting System (CPMRS) and checking CPMRS/NarxCare before prescribing;
  * Pharmacists checking CPMRS before dispensing opioid prescriptions.
Drug Overdose Crisis in Connecticut

Unintentional Drug Overdose-Related Deaths in Connecticut, 2012-2019
Impact of Prescription Opioids and Illicit Drugs in U.S. and Connecticut
Triple Wave: U.S. Opioid Mortality Rates

Overdose Death Rates Involving Opioids, by Type, United States, 2000-2017

Retrieved from https://wonder.cdc.gov/
Overdose Mortality Percentages with Different Substances

Percentage of Overdose Deaths In Connecticut Involving Fentanyl, Heroin, Cocaine and Oxycodone (2012-2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>Heroin</th>
<th>Fentanyl</th>
<th>Cocaine</th>
<th>Oxycodone</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>3.9</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2013</td>
<td>19.9</td>
<td>29.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2014</td>
<td>29.4</td>
<td>48.7</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2015</td>
<td>32.3</td>
<td>60.7</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2016</td>
<td>38.6</td>
<td>74.7</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2017</td>
<td>38.6</td>
<td>81.6</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2018</td>
<td>32.3</td>
<td>81.6</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2019</td>
<td>7.7</td>
<td>81.6</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Percentage of Prescription Opioids in Unintentional Overdose Deaths, Connecticut, 2012-2019

- Oxycodone in any Death
- Methadone in any death
- Hydrocodone in any death
- Hydromorphone
- Buprenorphine
Opioid Prescriptions Dispensed in Connecticut are Declining

Commonly Dispensed Opioid Prescriptions are Declining, Connecticut, 2015-2019

<table>
<thead>
<tr>
<th>Year</th>
<th>Opioid Prescriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>2,625,042</td>
</tr>
<tr>
<td>2016</td>
<td>2,519,791</td>
</tr>
<tr>
<td>2017</td>
<td>2,161,959</td>
</tr>
<tr>
<td>2018</td>
<td>1,960,988</td>
</tr>
<tr>
<td>2019</td>
<td>1,265,853</td>
</tr>
</tbody>
</table>
Data Linking Methodology
• Data linking started from 2017 (Funding: PDO-PfS grant and now OD2A grant from CDC).
• Collaborative work between CT DPH, DCP, and OCME (Memoranda of Agreement (MOA) in place).
• Data linked twice a year (Jan-June and July-Dec).
• Currently data are available for 2017, 2018 and 2019; analysis is in progress.
Collaboration between 3 agencies

OCME - SUDORS list twice a year

DPH -
• List edited with required variables;
• Analysis

Variables: Full name, DOB, Sex, Residential address

DCP -
• Uploads list to CPMRS;
• Patient bulk search;
• Link data;
• Back to DPH for analysis
• 2 variables primarily used for linking- Name and DOB: When first name, last name, and DOB are matched- it is a ‘perfect match’.

• When system finds multiple people with same name and DOB, residential address is used for specific identity. (This does not happen often)

• **If there is a name change**- PDMP records should have all known names of the patient if notified to the PDMP, either by a prescriber or pharmacist.
• CPMRS administrators are able to consolidate a patient’s records into 1 record so that no matter which name is searched, the record will still be found.

• The record would have all the names the patient used to obtain a prescription.
Analysis and Results of SUDORS-PDMP Linked Data
Data collected and linked per case:

• Number of opioid medications prescribed within 30 days prior to drug overdose death.

• Number of prescribers writing opioid prescriptions within 180 days prior to drug overdose death.

• Number of pharmacies dispensing opioid prescriptions within 180 days prior to drug overdose death.
Matched data variables are analyzed by DPH

• Percentage of overdose decedents with:
  * 0, 1, 2, or 3+ opioid meds prescribed within 30 days prior to OD death;
  * 0, 1, 2, or 3+ opioid prescribers within 180 days prior to OD death;
  * 0, 1, 2, or 3+ pharmacies dispensing opioid meds within 180 days prior to OD death.
SUDORS and PDMP Linking: Analysis

Percentage of SUDORS Incidents Matched with PDMP

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage Matched</td>
<td>71.3%</td>
<td>70.0%</td>
<td>78.2%</td>
<td>77.7%</td>
<td>78.1%</td>
</tr>
</tbody>
</table>
SUDORS and PDMP Linking: Analysis

Percent of Overdose Decedents with 0, 1, 2 or 3+ Opioid Prescriptions within 30 Days Prior to Drug Overdose Death

<table>
<thead>
<tr>
<th></th>
<th>Jan- June 2017</th>
<th>July-Dec 2017</th>
<th>Jan- June 2018</th>
<th>July- Dec 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>82.0%</td>
<td>78.1%</td>
<td>79.4%</td>
<td>83.2%</td>
</tr>
<tr>
<td>One</td>
<td>8.8%</td>
<td>13.1%</td>
<td>11.6%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Two</td>
<td>5.5%</td>
<td>3.4%</td>
<td>6.1%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Three or greater</td>
<td>3.6%</td>
<td>5.3%</td>
<td>2.9%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Connecticut Department of Public Health - Keeping Connecticut Healthy
# SUDORS and PDMP Linking: Analysis

## Percent of Overdose Decedents with 0, 1, 2 or 3+ Prescribers Prescribing Opioid Prescriptions within 180 Days Prior to Drug Overdose Death

<table>
<thead>
<tr>
<th>Prescriber Count</th>
<th>Jan-June 2017</th>
<th>July-Dec 2017</th>
<th>Jan-June 2018</th>
<th>July-Dec 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>58.8%</td>
<td>58.4%</td>
<td>59.4%</td>
<td>61.6%</td>
</tr>
<tr>
<td>One</td>
<td>21.8%</td>
<td>22.2%</td>
<td>22.2%</td>
<td>21.0%</td>
</tr>
<tr>
<td>Two</td>
<td>10.5%</td>
<td>11.6%</td>
<td>9.8%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Three or greater</td>
<td>8.8%</td>
<td>7.8%</td>
<td>8.7%</td>
<td>6.4%</td>
</tr>
</tbody>
</table>

Connecticut Department of Public Health - Keeping Connecticut Healthy
SUDORS and PDMP Linking: Analysis

Percentage of Overdose Decedents with 0, 1, 2 or 3+ Pharmacies Dispensing Opioid Prescriptions Within 180 Days Prior To Drug Overdose Death

<table>
<thead>
<tr>
<th>% Overdose Decedents</th>
<th>Jan- June 2017</th>
<th>July- Dec 2017</th>
<th>Jan- June 2018</th>
<th>July- Dec 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>58.8%</td>
<td>58.4%</td>
<td>59.4%</td>
<td>61.6%</td>
</tr>
<tr>
<td>One</td>
<td>24.6%</td>
<td>25.3%</td>
<td>27.4%</td>
<td>27.5%</td>
</tr>
<tr>
<td>Two</td>
<td>9.4%</td>
<td>11.3%</td>
<td>9.0%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Three or greater</td>
<td>7.2%</td>
<td>5.0%</td>
<td>4.2%</td>
<td>2.2%</td>
</tr>
</tbody>
</table>
Data to Action
Prevention Work

- In CT, about 97% of the prescribers and pharmacists are registered with CPMRS which will enable them to check for opioid prescriptions and other controlled substances.
- DCP sends reminders to unregistered.
- NarxCare went live on October 1, 2019 with enhanced tools to all CPMRS users.
What is NarxCare Enterprise?

- Provides users with risk scores for their patients resulting in better patient care and safety.
- Communications module that allows prescribers to communicate with other prescribers of the patient.
- NarxCare also provides resources and tools that support patients' needs and connects them to treatment.
Summary and Next Steps
Summary

• Great collaboration between state agencies - CT DPH, DCP and OCME.
• 97% of prescribers are registered with CPMRS.
• Overall decrease in opioid prescriptions 2015 thru 2019.
• Decrease in % of overdose decedents with 2 or 3+ opioid prescriptions within 30 days prior to OD death.
• Decrease in multiple opioid prescribers within 180 days of OD death.
• Decrease in multiple pharmacies dispensing opioid prescriptions within 180 days of OD death.
Other Data Linking Projects

Other multi-agency data linking projects are underway.

- Plan to link non-fatal overdose-related ED and Hospitalization records to PDMP.
- SUDORS (OD death) data linked to previous four years of ED and Hospitalization overdose records, Department of Correction data, PDMP data, and Medication-Assisted Treatment data.
- Analysis in progress.
CSTE Questions

• Any barriers/ challenges linking the data?
• Able to use linked data to inform public health interventions?
• What is the impact of linkage on jurisdiction overdose surveillance?
Questions?

Please contact
shobha.thangada@ct.gov
susan.logan@ct.gov

Acknowledgement goes to Valerie Maignan, DCP data manager, for linking overdose decedents to PDMP and Susan Logan, OD2A Lead Epidemiologist