Prescription Opioid Misuse & Diversion

• Outline of Presentation
  – Brief RADARS® System Methodology
  – Trends with abuse deterrent formulations & market changes

• Researched Abuse, Diversion And Addition Related Surveillance (RADARS® System)
  – Denver Health
  – Non-profit
  – Funded by subscriptions from pharmaceutical companies
Current Data on Prescription Opioid Abuse in Colorado and the United States
Prescription Opioid Deaths - International Challenge

**United Kingdom Drug Related Deaths 2001 - 2011**

*Note: heroin and morphine are reported as one category in the data from England, Wales and Scotland; since the focus of this analysis is on prescription opioids, that category was not included in this analysis.*
WHICH OPIOIDS ARE ABUSED AND DIVERTED?
More Drug Production = More Drug Abuse

Dasgupta, et al. Drug Alcohol Depend, 2005
# What Drugs Are Abused?

## 2011 Rate (Ranked Highest-Lowest)

<table>
<thead>
<tr>
<th>Poison Center</th>
<th>Opioid Treatment</th>
<th>Survey of Key Informant Pts</th>
<th>Drug Diversion</th>
<th>College Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pop</td>
<td>URDD</td>
<td>Pop</td>
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<td>Pop</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>Methadone</td>
<td>Oxycodon</td>
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</tr>
<tr>
<td>Oxycodon</td>
<td>Bupren</td>
<td>Hydrocodone</td>
<td>Hydromorphone</td>
<td>Oxycodon</td>
</tr>
<tr>
<td>Tramadol</td>
<td>Morphine</td>
<td>Methadone</td>
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<td>Buprenorphine</td>
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WHERE DO ABUSERS GET THEIR DRUGS?
RADARS® System
Source of Abused Opioid, 2008

Opportunity → Use → Abuse → Dependence → Remission
Underground Website Lets You Buy Any Drug Imaginable

BY ADRIAN CHEN, GAWKER   06.01.11 2:25 PM
WHERE DO DRUG DIVERSION AND ABUSE OCCUR?
Abuse Occurs in Every 3 Digit Zip Code
## Colorado Ranking for Opioid Analgesics

<table>
<thead>
<tr>
<th>Program</th>
<th>Population rate</th>
<th>URDD rate</th>
<th># states covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTP+SKIP</td>
<td>19</td>
<td>23</td>
<td>46</td>
</tr>
<tr>
<td>PC</td>
<td>32</td>
<td>35</td>
<td>46</td>
</tr>
<tr>
<td>DD</td>
<td>19</td>
<td>22</td>
<td>48</td>
</tr>
<tr>
<td>CS</td>
<td>7</td>
<td>11</td>
<td>45</td>
</tr>
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</table>
Poison Center Program
Prescription Opioids Combined, 2009 – 2013

Population

URDD
Drug Diversion Program
Prescription Opioids Combined, 2009-2013

Population

URDD
Poison Center Program
Prescription Stimulants Combined, 2009 – 2013
Drug Diversion Program
Prescription Stimulants Combined, 2009-2013

Population

URDD

Rate per 100,000 Population

National
CO
Denver

Rate per 1,000 URDD

National
CO
Denver

Year Quarter
20091 20093 20101 20103 20111 20113 20121 20123 20131
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Rocky Mountain Poison and Drug Center
Oxycodone
12 months ending March 31, 2013
Abuse Deterrent Formulations

OxyContin, Opana, Exalgo, Nucynta
Unique Recipients of Dispensed Drugs

OxyContin®

Before OxyContin® ORF

After OxyContin® ORF

Year/Quarter:

Opana® ER

Before Opana® ER CRF

After Opana® ER CRF

Year/Quarter:
Tamper Resistant Strategies

- Hard coatings which resist crushing
- Polymers which turn to viscous gel when heated
- Polymers which resist dissolving in water and alcohol
- Nasal tissue irritants
- Novel delivery systems (patches, implants, etc.)
Drug Diversion Program
Abuse Deterrent Formulations

OxyContin

Opana ER
Poison Center Program
Abuse Deterrent Formulations

OxyContin

Opana ER
Treatment Programs
Abuse Deterrent Formulations

OxyContin

Opana ER
Poison Center Program
Contacts Involving Intentional Abuse
OxyContin®, Opana® ER, Other Opioids

ORF = OxyContin ADF, CRF = Opana ER ADF
Intentional Abuse: An exposure resulting from intentional improper or incorrect use of a substance where the victim was likely attempting to gain a high, euphoric effect or some other psychotropic effect.
Lessons

• Where does prescription drug abuse occur – Everywhere!
• Hydrocodone and oxycodone are the most prevalent drugs abuse
• Hydromorphone and oxymorphone are most likely to be abused when drug supply in considered
• Abuse deterrent formulations appear to be effective
  – State Attorneys General
  – FDA
Concepts

• Participants in the system
  – Demand: Patient vs. “Patient”
  – Supply: Prescriber, Pharmacist, Pharmaceutical company

• Prescription monitoring plans

• Relationship between licit and illicit drugs - Squeezing the balloon

• Community intervention – addresses them all
  – Lazarus project, North Carolina
    • OD death rate 46.6 per 100,000 in 2009 to 29.0 in 2010.
    • In 2008, 82% of OD decedents received an opioid analgesic prescription from a Wilkes prescriber, but only 10% in 2010.
  – Project UNITE
    • Eastern Kentucky
  – Florida pill mills

Opportunity → Use → Abuse → Dependence ← Remission