Methadone Morbidity and Mortality: Current Data and Trends from The RADARS® System

Methadone Mortality – Reassessment 2010
Washington, DC, July 29-30, 2010

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Denver Health and Hospital Authority
Denver, CO, USA
Statement of Disclosure

- The Researched Abuse, Diversion and Addiction Related Surveillance (RADARS®) System was initiated in 2002 and is owned and operated independently by Denver Health and Hospital Authority, a not-for-profit safety net hospital.
- The RADARS System is supported financially by subscriptions purchased by pharmaceutical companies.
Drug Dependence Pathway

Opportunity → Use → Abuse → Dependence → Remission

Drug Diversion

College Survey

Poison Center

Impaired Health Care Worker

Opioid Treatment

Survey of Key Informants’ Patients

### RADARS® System

**Six Views of Prescription Drug Abuse**

<table>
<thead>
<tr>
<th>Drug Diversion</th>
<th>• Law enforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey of Key Informant Patients</td>
<td>• Dependent/addicted patients</td>
</tr>
<tr>
<td>Poison Center</td>
<td>• Acute incident – calling for care advice</td>
</tr>
<tr>
<td>Opioid Treatment</td>
<td>• Dependent/addicted patients</td>
</tr>
<tr>
<td>Impaired Health Care Worker</td>
<td>• Subset of all signal detection systems</td>
</tr>
<tr>
<td>College Survey</td>
<td>• Experimentation phase</td>
</tr>
</tbody>
</table>
Research Questions

- Trends for methadone abuse and diversion
- Formulations of methadone
- Location of methadone abuse and diversion
- Medical effects and outcomes
- Impact of methadone on children
Trends in Methadone Abuse, Misuse and Diversion

The RADARS® System Poison Center, Survey of Key Informants’ Patients (SKIP), Opioid Treatment, Drug Diversion and College Survey Programs
2003-2009
Population vs. URDD Rates
RADARS® System Poison Center Intentional Exposures

Rate per 100,000 Population

Rate per 1,000 Unique Recipients of Dispensed Drug (URDD)

- Methadone
- Buprenorphine
- Oxycodone
Population vs. URDD Rates
RADARS® System SKIP and Opioid Treatment

SKIP Rate per 100,000 Population

SKIP Rate per 1,000 URDD

Opioid Treatment Rate per 100,000 Population

Opioid Treatment Rate per 1,000 URDD
Population vs. URDD Rates
RADARS® System Drug Diversion and College Survey

Drug Diversion Rate per 100,000 Population

Drug Diversion Rate per 1,000 URDD

College Survey Rate per 100,000 Population

College Survey Rate per 1,000 URDD

Methadone
Oxycodone
Buprenorphine
What Formulations of Methadone are Most Abused?

The RADARS® System
Poison Center, Survey of Key Informants’ Patients (SKIP), Opioid Treatment, Drug Diversion and College Survey Programs
2009
Where Does Methadone Abuse and Diversion Occur?

Data from The RADARS® System Poison Center, Opioid Treatment, Drug Diversion, Survey of Key Informants’ Patients, and College Survey Programs Combined, 2009

Medical Outcomes Associated with Methadone

RADARS® System Poison Center System
All intentional exposures (suspected suicidal, intentional misuse, intentional abuse, intentional unknown, withdrawal), all ages
2009
Medical Outcomes Associated with Intentional Exposures

RADARS® System Poison Center, 2009, all ages, intentional exposures

- Methadone: 2832 exposures, 39 deaths (1.4%)
- Buprenorphine: 1255 exposures, 5 deaths (0.4%)
- Oxycodone: 9191 exposures, 59 deaths (0.6%)

% of Intentional Exposure Mentions

- Methadone Tablets (n=668)
- Methadone Wafer/Disc (n=160)
- Methadone Oral Solution (n=114)
- Methadone - Unknown (n=1,890)

Conditions

Minor, Self-Resolving
Moderate Effects, Rec. Medical Attention
Major, Life Threatening Effects
Death
Unable to Follow, Potentially Toxic
What is the Effect of Methadone on Children?

Data from The RADARS® System Poison Centers
All exposure calls, <6 years old, 2009
Medical Outcome Associated with Pediatric Exposures

RADARS® System Poison Center, 2009, < 6 years, all exposures

- Methadone: 316 exposures, 2 deaths (0.6%)
- Buprenorphine: 1105 exposures, 0 death (0%)
- Oxycodone: 1655 exposures, 1 death (0.06%)
Conclusions

• Like prescription opioid abuse, methadone abuse is widespread, with an emphasis in Appalachia.
• Methadone abuse and diversion are increasing.
• All formulations are involved, but tablets predominate.
• Mortality is more common in poison center cases associated with methadone.
• In children, methadone is a very serious exposure, particularly the oral solution.
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See Also