Prescription Drug Abuse: Prevention and Treatment Across the Continuum of Care

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Dr. Novak has received contracts earned through competitive bids with the following companies:
- Eli Lilly and Company
- Shire Pharmaceuticals
- King Pharmaceuticals
- Pfizer
- Endo Pharmaceuticals
- Purdue Pharma

Funding for this presentation--NIDA (R01-030427, Novak, PI) and Substance Abuse and Mental Health Services Administration (SAMHSA)
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Focus of Today’s Symposium: Challenges for Addiction Health Services Research

1) Definition of the Problem

2) Surveillance Strategies to Identify High-Risk consumers
Prescription Drug Availability is Increasing

OPIOID USE IN THE U.S.
Use of therapeutic opioids in the United States in milligrams per person

- 1997
- 1998
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
Health Care Consequences and Costs

Trends in Emergency Department (ED) Visits Involving the Nonmedical Use of Narcotic Pain Relievers: 2004 to 2008

Total Societal Costs: $55.7B

- Productivity Loss: $5.10
- Healthcare: $25
- Criminal Justice: $25.60

Mean annual health care costs:
- $12,000-20,000 Opioid dependent
- $1,000-$8,000 Non-Opioid dependent

Federal Response

EPIDEMIC: RESPONDING TO AMERICA’S PRESCRIPTION DRUG ABUSE CRISIS

Office of National Drug Control Policy
April 2011

- Issued May 2011
- Includes guidance on
  - Federal agency roles and responsibilities (NIDA, CDC, SAMHSA, DEA, FDA, DOJ, DOD, DOJ)
  - Prevention and Treatment Goals
    *Establish best practice guidelines
    *New medications with lower abuse liability
    *Prescriber and patient education programs
Pharmaceutical Industry Requirements

- Issued January 2010
- Includes guidance on
  - Preclinical screening
  - Chemistry and manufacturing
  - Animal Behavioral Pharmacology
  - Pharmacokinetic/Pharmacodynamic Studies
  - Human Abuse Potential Studies
  - Related Pharmacology studies
  - Postmarketing Experience/PMP
  - Labeling & Drug Scheduling
  - Physician and consumer education programs
#1) Definition of the Problem

*Nonmedical Use:*

- Defined as any illicit use of a prescription substance, regardless of motivations for use (e.g., euphoria or self-treatment) and acquisition (own prescription versus illicit possession)
Definition of the Problem

*Drug Abuse*:

- Nonmedical use of a drug, repeatedly, or even sporadically, for the positive psychoactive effects it produces.

- An exposure resulting from the intentional improper or incorrect use of a substance where the victim was likely attempting to achieve a euphoric or psychotropic effect. All recreational use of substances for any effect is included.

- The use of a prescription medication in a way not intended by the prescribing doctor. Prescription drug abuse includes everything from taking a friend's prescription painkiller for your backache to snorting ground-up pills to get high.
Definition of the Problem

**Drug Misuse:**

- The use of a drug outside label directions or in a way other than prescribed or directed by a healthcare practitioner.

- An exposure resulting from the intentional improper or incorrect use of a substance for reasons other than the pursuit of a psychotropic or euphoric effect.

- The use of a medication (with therapeutic intent) other than as directed or as indicated, whether willful or unintentional, and whether harm results or not.
Other Key Definitions

- **Diversion**: The intentional removal of a medication from legitimate distribution and dispensing channels.

- **Disordered Use**: Diagnostic classification of a substance use problem DSM abuse/dependence

- **Non-Disordered Use**: Do not meet criteria for Disordered Use
Drug Typologies

**Therapeutic Class:** The pharmacological properties and/or medical indication for a drug (e.g., pain reliever, sedative/hypnotic, anti-depressant)

**Drug Schedule:** Rating based on Drug Enforcement and individual state criteria for abuse liability of a given drug. DEA scheduling determines: (a) who can prescribe; (b) number that can be prescribed; (c) number of refills; (d) written versus Eprescribing. Currently 5 levels of DEA scheduling, ranging from Schedule I Illicit drugs with accepted no medical value (e.g., LSD) to Schedule V over the counter medications (e.g., aspirin)

**Formulation:** Immediate release (IR) versus extended release (ER/CR)

**Active Pharmaceutical Ingredient (API):** Primary chemical (oxycodone, oxycodone with aspirin, hydrocodone)

**Abuse/Tamper:** Altering a product (crushing/snorting) with the intent to abuse via an alternative route of administration that maximizes desired physiological response (OxyContin OC/OP)
### Substance Abuse Treatment Data: Abuse 30 Days Prior to Admission

<table>
<thead>
<tr>
<th>Substance</th>
<th>Number of clients</th>
<th>Valid % 5/1/11-5/31/11</th>
<th>% Oral as Indicated</th>
<th>% Other by Tampering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroin</td>
<td>4866</td>
<td>5.4%</td>
<td>1.1%</td>
<td>98.9%</td>
</tr>
<tr>
<td>Morphine</td>
<td>448</td>
<td>0.7%</td>
<td>52.9%</td>
<td>47.1%</td>
</tr>
<tr>
<td>Diluadid</td>
<td>232</td>
<td>0.4%</td>
<td>40.0%</td>
<td>60.0%</td>
</tr>
<tr>
<td>Demerol</td>
<td>61</td>
<td>0.1%</td>
<td>77.8%</td>
<td>22.2%</td>
</tr>
<tr>
<td>Percocet</td>
<td>1278</td>
<td>2.0%</td>
<td>79.1%</td>
<td>20.9%</td>
</tr>
<tr>
<td>Darvon</td>
<td>85</td>
<td>0.1%</td>
<td>92.3%</td>
<td>7.7%</td>
</tr>
<tr>
<td>Codeine alone</td>
<td>386</td>
<td>0.6%</td>
<td>86.5%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Tylenol 2,3,4 w/ codeine</td>
<td>342</td>
<td>0.5%</td>
<td>90.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Oxycontin/Oxycodone</td>
<td>1542</td>
<td>2.4%</td>
<td>55.0%</td>
<td>45.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9,240</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## #2: National Surveillance Systems for Rx Abuse are Lacking

<table>
<thead>
<tr>
<th></th>
<th>TEDS</th>
<th>DAWN-Live</th>
<th>NSDUH</th>
<th>HMO/ADMN</th>
<th>NHIS/MEP</th>
<th>PMPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product specificity</td>
<td>X</td>
<td>X</td>
<td>✔</td>
<td>✔</td>
<td>X</td>
<td>✔</td>
</tr>
<tr>
<td>Consumption</td>
<td>Freq</td>
<td>None</td>
<td>Freq</td>
<td>Dose</td>
<td>Freq</td>
<td>None</td>
</tr>
<tr>
<td>Motivation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Timeliness</td>
<td>X</td>
<td>✔</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>✔</td>
</tr>
<tr>
<td>Data Collection</td>
<td>Client</td>
<td>Tx Staff</td>
<td>Person</td>
<td>Tx Staff</td>
<td>Person</td>
<td>Report</td>
</tr>
<tr>
<td>Risk Factors</td>
<td>Med</td>
<td>Low</td>
<td>High</td>
<td>Med</td>
<td>Med</td>
<td>Low-Med</td>
</tr>
<tr>
<td>Health Care</td>
<td>✔</td>
<td>X</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>X</td>
</tr>
</tbody>
</table>

Call to action: More data are needed on therapeutic class/product, motivations (abuse/misuse), individual risk and protective factors, and interactions with health care system
Data Sources:
- Product Supply
- NSDUH/TEDS (State)
- Other data sources (RADARS, Drug Arrest, Media Tracking)

Unit of Analysis:
- Nation
- State
- Zip Code

Use of Signal Processing to detect early patterns of abuse

Model forecasting to estimate cost-benefit ratios based on possible intervention scenarios/market changes
Identifying Patterns of Nonmedical Use

Nonmedical Prescription Pain Reliever Use
2008-2009 NSDUH Substate Estimates

Difference between “High Risk” areas and “High Prevalence Areas:

**Rural:** High Risk, Low Prev

**Urban:** Low Risk, High Prev
Past Year Nonmedical Prescription Drug Use and Meeting Criteria for Dependence or Abuse of Nonmedical Prescription Drugs, by Age and Year: 2005 - 2009 NSDUHs (per 100,000)
Past Year Substance Use Disorder among Persons Receiving Drug Treatment in the Past Year, by Age and Year: 2005-2009 NSDUHs (In Percent)
Past Year Substance Use Disorders Among Persons Aged 18 or Older Receiving Past Year Drug Treatment, by Year: 2005-2009 NSDUHs

- **NMPD Use Disorder Only**
- **NMPD and Alcohol Use Disorder, No Other Illicit Drug Use Disorder**
- **NMPD and Other Illicit Drug Use Disorder, No Alcohol Use Disorder**
- **NMPD, Alcohol, and Illicit Drug Use Disorder**
Who are the High-Risk Targets for Intervention?

- Youth (approximately 10% reported any NMPD in past year)
- Injection drug users: 90% of IDUs report co-occurring NMPD
- Pain Patients (20% report chronic pain, 30% NMPD)
- Military: ???
- Unemployed (in labor force)

- Myths:
  - College students—use 1-2 times often stimulants for studying
  - Elderly—initiation rates less than 1%, mostly due to continued use from middle adulthood
## Past-Year Pain Reliever NMU among Levels of Pain

<table>
<thead>
<tr>
<th></th>
<th>No Pain</th>
<th>Moderate Pain</th>
<th>High Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Any NMU</strong></td>
<td>1.39</td>
<td>2.45</td>
<td>2.73</td>
</tr>
<tr>
<td><strong>Non-disordered NMU</strong></td>
<td>1.18</td>
<td>1.89</td>
<td>1.99</td>
</tr>
<tr>
<td><strong>Disordered NMU</strong></td>
<td>0.21</td>
<td>0.56</td>
<td>0.75</td>
</tr>
</tbody>
</table>

**Source:** 2001-2002 National Epidemiologic Survey on Alcohol and Related Conditions
Prevalence of Past Year Opioid Use Among Adults Age 18-64 by Employment Status and Quarter for 2005-2009

Percent Endorsed Past Year Opioid Use

Year and Quarter

2005 2006 2007 2008 2009

1st Quarter 2nd Quarter 3rd Quarter 4th Quarter 1st Quarter 2nd Quarter 3rd Quarter 4th Quarter 1st Quarter 2nd Quarter 3rd Quarter 4th Quarter
Prevalence of Past Year Stimulant Use Among Adults Age 18-64 by Employment Status and Quarter for 2005-2009
Prevalence of Past Year Sedative or Tranquilizer Use Among Adults Age 18-64 by Employment Status and Quarter for 2005-2009
Recommend Opportunities for Intervention

- Middle/High School → Primary Prevention
- Health care providers-Pain Specialists → Pain.EDU/Provider education
- Drug treatment → Identify poly/drug users, motivations for use
- Employer → Reduce health care costs/CSAP-SAMHSA
- Unemployment → Gaps in health care coverage
- Military → Wounded Warrier
Contact

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