The Epidemiology of Fatal Drug Overdoses: Potential for Prevention

Len Pauloizzi, MD, MPH
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

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Epidemics of unintentional drug overdose deaths in the U.S., 1970-2006*

*2006 rate is estimated.
# Numbers of drug-induced deaths, U.S., 2005

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Manner of Death</th>
<th>No. of Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poisoning</td>
<td>Unintentional</td>
<td>22,448</td>
</tr>
<tr>
<td>Poisoning</td>
<td>Suicide</td>
<td>4,240</td>
</tr>
<tr>
<td>Poisoning</td>
<td>Homicide</td>
<td>57</td>
</tr>
<tr>
<td>Poisoning</td>
<td>Undetermined</td>
<td>3,068</td>
</tr>
<tr>
<td>Adverse effects</td>
<td>NA</td>
<td>337</td>
</tr>
<tr>
<td>Mental and behavioral disorders</td>
<td>NA</td>
<td>1,080</td>
</tr>
<tr>
<td>All other</td>
<td>NA</td>
<td>2,311</td>
</tr>
<tr>
<td>Total</td>
<td>All</td>
<td>33,541</td>
</tr>
</tbody>
</table>
Unintentional drug overdose deaths by major type of drug, U.S., 1999-2005

Number of deaths

'99 '00 '01 '02 '03 '04 '05

opioid analgesic cocaine heroin
Distribution of first-listed specified drugs among unintentional drug overdose deaths, U.S., 2005

- Prescription opioids, 38.2%
- Other RX/OTC, 11.9%
- Cocaine, 25.1%
- Heroin, 7.7%
- Other illicit, 6.5%
- Unspecified narcotic, 10.6%
- Total RX/OTC Drugs, 50.1%
- Total Illicit Drugs, 39.3%
Unintentional drug overdose death rates and total sales of opioid analgesics in morphine equivalents by year in the U.S.
Unintentional drug overdose death rates in the U.S. in 2005 and opioid analgesic prescription rates in one state in 2002, men only

- **Mortality**
- **Prescriptions**
Characteristics of people dying from prescription drug overdose that suggest drug misuse/abuse, based on medical examiner studies

- Large majorities have a history of substance abuse
- Half or more lack prescriptions for their drugs
- Substantial minorities:
  - Die of street drugs combined with prescription drugs
  - Inject, snort or otherwise manipulate the drugs to enhance the “high.”
  - Have a history of previous overdoses
Unintentional and undetermined intent drug overdose death rates by degree of urbanization, U.S., 1999-2005

Type of County

Large Central Metro, Large Fringe Metro, Medium Metro, Small Metro, Micropolitan (Non-metro), NonCore (Non-metro)
Unintentional and undetermined intent drug overdose death rates by state, 2005

Rate per 100,000

1.0-7.4 7.5-9.9 10.0-17.5

NH 9.1 VT 5.6 MA 10.6 RI 12.7 CT 7.7 NJ 8.4 DE 6.4 MD 10.4 DC 12.3

HI 8.6
Unintentional and undetermined intent drug overdose death rates for New York State and its neighbors, 3 time periods

CT MA NJ NY PA VT

Rate per 100,000

'79-'85 '89-'95 '99-'05
Oxycodone in milligrams per capita by 3-digit zip, 2006

Source: DEA ARCOS and ESRI. Photo credit: Alex Richards, Las Vegas Sun, July 6, 2008
Unintentional and undetermined intent drug overdose death rates per 100,000 by county, New York State and its neighbors, 1979-1985

Median rate 0.88/100,000
Unintentional and undetermined intent drug overdose death rates per 100,000 by county, New York State and its neighbors, 1989-1995

Median rate 1.70/100,000
Unintentional and undetermined intent drug overdose death rates per 100,000 by county, New York State and its neighbors, 1999-2005

Median rate 5.07/100,000
Conclusions: Geographic Analysis

- Manyfold variations exist in drug overdose mortality and prescribing rates by state.
- To some extent, prescribing patterns match mortality patterns.
- Both prescribing and mortality patterns follow state boundaries in some cases.
- These results suggest that state-level policies related to prescription drugs have the potential to reduce the risk of overdose.
Legal measures that states have available to address the prescription drug problem

<table>
<thead>
<tr>
<th>Selected Measures</th>
<th>Prescription Drugs</th>
<th>Street Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensure of sources</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Special prescription forms</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Tracking prescriber and dispenser behavior</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Tracking user behavior</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Rehabilitating offenders</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Regulating drug disposal</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Thank you

The findings and conclusions in this report are those of the author and do not necessarily represent the views of the Centers for Disease Control and Prevention.