Trends in Opioid Analgesic Abuse and Mortality in Europe

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Disclosure

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Objective

• Drug utilization trends
• European mosaic network
• Abuse/misuse trends
Europe – Opioid Dosage Units per Population

Includes: buprenorphine, codeine, fentanyl, hydrocodone, hydromorphone, methadone, oxycodone, sufentanil, tapentadol, tramadol
Europe – Dosage Units per Population

- **Canada**
- **France**
- **Germany**
- **Italy**
- **Spain**
- **UK**

Graphs showing the standard units per population over years for different drugs and countries.
European Mosaic for Prescription Drug Misuse/Abuse

- **Drug Transactions**
- **Drug Diversion**
- **Illicit Market Price**
- **StreetRx**
- **Chatter on the Web**
- **Web Monitoring**
- **GTNet**
- **EUROPAD**
- **NMU-Rx**

**Acute Health Events**
**Entering Treatment**
**General Population**
European Opiate Addiction Treatment Association (EUROPAD)

• **Population**
  • Patients entering treatment, either inpatient or outpatient, for opioid addiction.

• **Definition/Type of Cases**
  • Self-reported use of prescription or illicit opioids to “get high” in the past 30 days. The data collected will include, but is not limited to, patient’s drug(s) of choice, route of administration, drug use in the past month, lifetime drug abuse, age at first use and the primary source of the abused drugs

• **Methodology**
  • Patients entering treatment, either inpatient or outpatient, for opioid addiction are asked to volunteer to complete the questionnaire. Questionnaires are sent to data coordination site for quality review and data entry.
EUROPAD Partners

Francina Fonseca  Gaetano Deruvo  Lorenzo Somaini  Didier Touzeau

Marc Auriacombe  Jean-Pierre Daulouède  Pierre Villèger  Amine Benyamina

Norbert Scherbaum  Thomas Clausen  Duncan Hill  Oscar D’Agnone  Kevin Ratcliffe
EUROPAD – Primary Drug Used to Get High

UK n=199
- codeine
- heroin
- other
- buprenorphine
- heroin
- THC
- not Rx

Spain n=62
- heroin
- other
- heroin
- heroin
- heroin
- THC
- not Rx

Norway n=78
- heroin
- heroin
- heroin
- heroin
- THC
- not Rx

Italy n=86
- heroin
- heroin
- heroin
- heroin
- THC
- not Rx

Germany n=148
- heroin
- heroin
- heroin
- heroin
- THC
- not Rx

France n=187
- THC
- not Rx
- THC
- not Rx
- THC
- not Rx
- THC
- not Rx
<table>
<thead>
<tr>
<th>Germany</th>
<th>Italy</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heroin</strong></td>
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</tr>
<tr>
<td>Methadone</td>
<td>THC-not Rx</td>
<td><strong>Benzo</strong></td>
</tr>
<tr>
<td><strong>Benz</strong>o</td>
<td><strong>Benz</strong>o</td>
<td>Codeine</td>
</tr>
<tr>
<td>THC-Rx</td>
<td>THC-Rx</td>
<td>THC-not Rx</td>
</tr>
<tr>
<td>Amphet-not Rx</td>
<td>Methadone</td>
<td>THC-Rx</td>
</tr>
<tr>
<td>THC-not Rx</td>
<td>Bup</td>
<td>Methadone</td>
</tr>
</tbody>
</table>
EUROPAD – Route of Abuse

Germany: Mentions by Route

- Heroin
  - Chewed then swallowed: 50
  - Smoked: 60
  - Snorted: 40
  - Injected: 30

- Methadone
  - Chewed then swallowed: 70
  - Smoked: 60
  - Injected: 20

- Benzodiazepine
  - Chewed then swallowed: 50
  - Smoked: 40
  - Snorted: 20
  - Injected: 10

Top 3 Matrix Drugs
EUROPAD – Route of Abuse

Italy: Mentions by Route

- Heroin
- THC, cannabinoid, marijuana- not Rx
- Benzodiazepine

Top 3 Matrix Drugs

Endorsements

- Chewed then swallowed
- Smoked
- Snorted
- Injected
EUROPAD – Route of Abuse

United Kingdom: Mentions by Route

- Heroin
- Benzodiazepine
- Codeine

Endorsements

- Chewed then swallowed
- Smoked
- Snorted
- Injected

Top 3 Matrix Drugs
Global Toxicosurveillance Network (GTNet)

- **Population**
  - young children, adolescents, young adults, adults, elderly

- **Definition/Type of Cases**
  - Spontaneous reports of intentional and unintentional exposure mentions of acute medical events associated with one or more prescription drug of interest through data collection at poison centers.

- **Methodology**
  - Standardized data are collected during routine daily management of acute medical events then queried for cases involving drugs of interest
<table>
<thead>
<tr>
<th>Country</th>
<th>Name</th>
<th>Member Poison Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Naren Gunja</td>
<td>New South Wales Poisons Information Centre</td>
</tr>
<tr>
<td></td>
<td>Jared Brown</td>
<td>Victorian Poisons Information Centre</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Queensland Poisons Information Centre</td>
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<tr>
<td></td>
<td></td>
<td>Western Australia Poisons Information Centre</td>
</tr>
<tr>
<td>France</td>
<td>Bruno Megarbane</td>
<td>Centre Antipoisoin et de Toxicovigilance de Paris</td>
</tr>
<tr>
<td></td>
<td>Robert Garnier</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>Andreas Schaper</td>
<td>GIZ-Nord Poisons Centre (Göttingen)</td>
</tr>
<tr>
<td></td>
<td>Martin Ebbecke</td>
<td></td>
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<tr>
<td>Italy</td>
<td>Fabrizio Sesana</td>
<td>Poison Control Centre of Milan</td>
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<td>The Netherlands</td>
<td>Irma de Vries</td>
<td>National Poisons Information Centre</td>
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<tr>
<td>Switzerland</td>
<td>Hugo Kupferschmidt</td>
<td>Swiss Toxicological Information Center</td>
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<tr>
<td>United Kingdom</td>
<td>Simon Thomas</td>
<td>National Poisons Information Service, Newcastle</td>
</tr>
<tr>
<td></td>
<td>John Thompson</td>
<td>National Poisons Information Service, Cardiff</td>
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<td>National Poisons Information Service, Birmingham</td>
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<td>National Poisons Information Service, Edinburgh</td>
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</tbody>
</table>
Web Monitoring

• Population
  • Youth and adults posting information on the internet.

• Definition/ Type of Cases
  • Qualitative measure of prescription drug abuse reported via the internet. Monitoring the content of various blogs, news articles, tweets and forums.

• Methodology
  • Systematic search is conducted on a regular schedule to identify posts related to the drugs of interest. A web crawler is used to conduct the search, remove duplicate posts and organize the data. Algorithms, supplemented by manual reviews by trained coders, are used to identify common themes and assess sentiment.
Web Monitoring Partners

Paul Dargan

David Wood
Web Monitoring Program Daily Posts by Drug Substance - UK (1Q2014-1Q2015)
# Web Monitoring Program Sentiment by Drug Substance - UK (1Q2014-1Q2015)

<table>
<thead>
<tr>
<th>Sentiment</th>
<th>Buprenorphine N=3,924 %</th>
<th>Codeine N=55,526, n=3,979 % (95% CI)</th>
<th>Tramadol N=29.948, n=3,852 % (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive (anti-abuse)</td>
<td>16.4</td>
<td>18.7 (17.4, 19.9)</td>
<td>24.2 (22.0, 26.4)</td>
</tr>
<tr>
<td>Neutral</td>
<td>14.7</td>
<td>40.6 (39.0, 42.1)</td>
<td>34.5 (31.1, 38.1)</td>
</tr>
<tr>
<td>Negative (pro-abuse)</td>
<td>7.2</td>
<td>30.3 (28.9, 31.8)</td>
<td>30.0 (27.0, 33.1)</td>
</tr>
<tr>
<td>Condition</td>
<td>Buprenorphine N=3,924 %</td>
<td>Codeine N=55,526, n=3,979 % (95% CI)</td>
<td>Tramadol N=29.948, n=3,852 % (95% CI)</td>
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<td>-----------------</td>
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</tr>
<tr>
<td>Addiction</td>
<td>1.2</td>
<td>1.4 (1.1, 1.8)</td>
<td>2.6 (2.0, 3.4)</td>
</tr>
<tr>
<td>Overdose</td>
<td>0.0</td>
<td>0.7 (0.5, 1.0)</td>
<td>0.4 (0.2, 0.7)</td>
</tr>
<tr>
<td>Death</td>
<td>0.0</td>
<td>&lt;0.1 (&lt;0.1, 0.3)</td>
<td>0.1 (&lt;0.1, 0.3)</td>
</tr>
</tbody>
</table>
Germany Summary

• Oxycodone and hydromorphone utilization increasing
• Patients entering substance abuse treatment
  – most often report heroin, benzodiazepines as their primary drug of abuse
  – most mentions of heroin (smoked & injected), methadone (chewed), and benzodiazepines (chewed)
• Intentional misuse & self-harm reported to poison centre increasing for methadone and oxycodone
Italy Summary

• Codeine most commonly utilized opioid, oxycodone utilization increasing

• Patients entering substance abuse treatment
  – most often report heroin and THC (not Rx) as their primary drug of abuse
  – most mentions of heroin (smoked), THC/cannabinoid/marijuana – not Rx (smoked), and benzodiazepines (chewed)

• Intentional self-harm reported to poison centre increasing for oxycodone
United Kingdom Summary

• Codeine most commonly utilized opioid, morphine utilization increasing

• Patients entering substance abuse treatment
  – most often report heroin and codeine as their primary drug of abuse
  – most mentions of heroin (smoked & injected), benzodiazepines (chewed), and codeine (chewed)

• Intentional self-harm reported to poison centres by healthcare professionals for methadone, oxycodone, and buprenorphine decreasing

• Pro-abuse chatter more likely for tramadol than buprenorphine

• Minimal chatter detected on the web for addiction, overdose or death associated with buprenorphine, codeine or tramadol
Conclusion

• A mosaic approach to surveillance provides valuable insight from multi-dimensional perspectives
• Each of the programs target different facets of prescription opioid abuse, misuse, and diversion
• While magnitude and patterns vary…
  – heroin, THC, prescription opioids and benzodiazepines commonly abused/misused in many countries
  – alternate routes of abuse often reported (smoked, injected, chewed)
Questions?
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