RADARS® System
International Pre-Symposium
05 May 2016

Prescription Drug Misuse –
A Global Crisis?
WELCOME

• RADARS® System International Data Updates by Region
  – Jody L. Green, PhD, CCRP
  – Director of Research Administration, RMPDC – Denver Health and Hospital Authority

• Non-Prescription Fentanyl: Canadian Fentanyl Trends Moving to the U.S.
  – Steven P. Kurtz, PhD
  – Professor and Director of the Center for Applied Research on Substance Use and Health Disparities, Nova Southeastern University
• Misuse of Medications in the UK and Related Advisory Council on Misuse of Drugs (ACMD) Activities
  – Professor Raymond G. Hill, B.Pharm., Ph.D, DSc (Hon), FMedSci
  – Visiting Professor of Pharmacology Imperial College, London; Chair, Technical Committee UK Advisory Council on Misuse of Drugs

• Trends of Prescription Drug Misuse in the UK and Singapore
  – David Wood, MD, FRCP, FEAPCCT, FACMT, FBPhS
  – Consultant Physician and Clinical Toxicologist, Guy's and St Thomas' NHS Foundation Trust and King's Health Partners; Senior Lecturer, King’s College London

• Panel Discussion
Which region’s prescription drug abuse trends are you most interested in hearing about?

- Australia
- Canada
- Europe
- Asia

- I thought we were here to talk about Marijuana in Colorado
Which region’s prescription drug abuse trends are you most interested in hearing about?

- Europe: 43
- Canada: 30
- Marijuana in CO: 13
- Australia: 10
- Asia: 5
Question:

There is a global crisis of prescription drug misuse.

A. True
B. False
C. Not sure yet
RADARS® System International Updates by Region

Jody L. Green, PhD, CCRP
RADARS System
Denver Health Rocky Mountain Poison & Drug Center
Mosaic Surveillance of Prescription Drug Abuse in Canada 2015
IMS Canada – Standard Units per Population

COUNTRY: CANADA


- BUPRENORPHINE
- CODEINE
- FENTANYL
- HYDROCODONE
- HYDROMORPHINE
CONCLUSION

• The OPC experienced an increase in the number of calls relating to intentional tramadol exposures from 2011---2013. Given the increasing number of standard units sold, data regarding its use and abuse should be closely monitored, as it is not scheduled.
Drug Diversion Program Cumulative Rates (per 100,000 Population) in Canada
Drug Diversion Program Cumulative Rates (per 100,000 Standard Units) in Canada
StreetRx Program Combined Number of Submissions in Canada (1q2012-3q2015)
StreetRx Program Number of Reports Over Time by Drug Substance in Canada
StreetRx Program Price per Milligram in Canada (1q2012 – 3q2015)
Web Monitoring Program Monthly Posts Over Time by Drug Substance in Canada
European Mosaic
Europe – Opioid Dosage Units per Population

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

### France n=187

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<tr>
<td>Yes</td>
<td>3 (1.60)</td>
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Primary Drug Used to Get High

- Fentanyl
- Amphetamine - Rx
- Oxycodone
- Tramadol
- THC / Cannabinoid / Marijuana - Rx
- Methadone
- Amphetamine - NOT Rx
- Morphine
- Codeine
- Buprenorphine
- Benzodiazepine
- Heroin
- >1 primary drug
- Other: write in
- THC / Cannabinoid / Marijuana - NOT Rx
France GTNet–Adult Human Exposures to Opioids and Benzodiazepines

![Graph showing the rate per 100,000 population for Benzodiazepines and Opioids over the years 2012 to 2014 for France. The graph compares different types of exposures, including Total, Intentional, and Unintentional.](image-url)
France Summary

• Codeine and tramadol by far the most utilized, oxycodone utilization increasing

• Patients entering substance abuse treatment most often report THC (not Rx), “other”, and heroin as their primary drug of abuse
  – Smoking reported by 43%

• Exposures of benzodiazepines and opioids have similar trends as reported to poison centres
Europe – Dosage Units per Population

[Graphs showing dosage units per population for various countries including Canada, France, Germany, Italy, Spain, and the UK. Each graph tracks different opioids over time, with BUPRENORPHINE highlighted in Germany.]
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<table>
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<tr>
<td>Yes</td>
<td>1 (0.68)</td>
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Primary Drug Used to Get High

- Fentanyl
- Amphetamine - Rx
- Oxycodone
- Tramadol
- THC / Cannabinoid / Marijuana - Rx
- Methadone
- Amphetamine - NOT Rx
- Methadone
- Codeine
- Buprenorphine
- Benzodiazepine

>1 PRIMARY

HEROIN

BENZODIAZEPINE
Germany - EUROPAD

Route of Abuse

- Swallowed whole
- Sniffed/Snorted
- Smoked
- Dermal
- Other
- >1 route used
- Injected
- Dissolved in mouth
- Chewed/swallowed

Bars for SMOKED and INJECTED routes of abuse are shown.
Germany GTNet–Adult Human Exposures to Opioids and Benzodiazepines

![Graph showing rates per 100,000 population for Germany from 2012 to 2014. The graph plots the rates of benzodiazepines and opioids, both intentional and unintentional.]
Germany Summary

• Oxycodone and hydromorphone utilization increasing

• Patients entering substance abuse treatment most often report heroin, benzodiazepines as their primary drug of abuse
  – Smoking and injection reported by ~22-26%

• Intentional abuse of benzodiazepines reported 4-5x more often than opioids to poison centre
Europe – Dosage Units per Population

Graphs showing the comparison of dosage units per population across countries in Europe from 2011 to 2015. The countries shown are Canada, France, Germany, Italy, Spain, and the UK. Each graph includes lines representing different opioids such as codeine, fentanyl, hydrocodone, hydromorphone, and meperidine.
## Italy n=86

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<td>Missing</td>
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</table>

| Pregnant | Yes    | 1 (1.16) |
Primary Drug Used to Get High

- Fentanyl
- Amphetamine - Rx
- Oxycodone
- Tramadol
- THC / Cannabinoid / Marijuana - Rx
- Methadone
- Amphetamine - NOT Rx
- Morphine
- Codeine
- Buprenorphine
- Benzodiazepine
- Heroin
- >1 primary drug
- Other: write in
- THC / Cannabinoid / Marijuana - NOT Rx

Italy- EUROPAD
Italy GTNet–Adult Human Exposures to Opioids and Benzodiazepines

![Graph showing Italy's rate of benzodiazepines and opioids from 2012 to 2014.](image-url)
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
  – Smoking reported most often (49%)
  – Injection reported by ~27%

• Exposures to benzodiazepines reported 7-8x more often than opioids to poison centre
Europe – Dosage Units per Population

- **Canada**: The standard units per population show a slight decrease over the years from 2011 to 2015.
- **France**: The trend indicates a steady increase in dosage units per population from 2011 to 2015.
- **Germany**: The dosage units per population have been gradually increasing over the years.
- **Italy**: The graph shows a slight decrease in dosage units per population from 2011 to 2015.
- **Spain**: The trend shows a significant increase in dosage units per population over the years.
- **UK**: The dosage units per population have been consistently increasing from 2011 to 2015.

The green circle highlights the dosage units for **Codeine**, **Fentanyl**, **Hydrocodone**, **Hydromorphone**, and **Buprenorphine**.
## United Kingdom - EUROPAD

**United Kingdom n=199**

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<td><strong>Pregnant</strong></td>
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<td>Yes</td>
<td>0 (0.0)</td>
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</table>
United Kingdom - EUROPAD

Primary Drug Used to Get High

- Fentanyl
- Amphetamine - Rx
- Oxycodone
- Oxycodone
- Methadone
- Morphine
- Codeine
- Buprenorphine
- Benzodiazepine
- Heroin
- >1 primary drug
- Other: write in

THC / Cannabinoid / Marijuana - Rx

Other: write in

THC / Cannabinoid / Marijuana - NOT Rx
United Kingdom - EUROPAD

Route of Abuse

- Swallowed whole
- Sniffed/Snorted
- Smoked
- Dermal
- Other
- >1 route used
- Injected
- Dissolved in mouth
- Chewed/swallowed

SMOKED

>1 ROUTE

INJECTED
UK GTNet–Adult Human Exposures to Opioids and Benzodiazepines

United Kingdom

Rate per 100,000 population

Year Quarter

Benzodiazepines - Total
Benzodiazepines - Intentional
Benzodiazepines - Unintentional
Opioids - Total
Opioids - Intentional
Opioids - Unintentional
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
  - Smoking reported most often (46%)
- Exposures to benzodiazepines and opioids similar as reported to poison centre
Europe – Dosage Units per Population

- **Canada**: Shows a decreasing trend in standard units per population from 2011 to 2015.
- **France**: Displays a stable trend with slight fluctuations.
- **Germany**: Exhibits an increasing trend, particularly evident in Buprenorphine.
- **Italy**: Displays fluctuations without a clear trend.
- **Spain**: Shows a declining trend.
- **UK**: Features a consistent increase in standard units per population.

Graphs indicate the trends in standard units per population for different countries over the years.
EUROPAD – Primary Drug Used to Get High

United Kingdom N=199

Spain N=62

Norway N=78

Italy N=86

Germany N=148

France N=187

0.0% 50.0% 100.0%

Fentanyl
Amphetamine - Rx
Oxycodone
Tramadol
THC / Cannabinoid / Marijuana - Rx
Methadone
Amphetamine - NOT Rx
Morphine
Codeine
Buprenorphine
Benzodiazepine
Heroin
>1 primary drug
Other: write in
THC / Cannabinoid / Marijuana - NOT Rx
EUROPAD – Route of Abuse

- United Kingdom N=199
- Spain N=62
- Norway N=78
- Italy N=86
- Germany N=148
- France N=187

- Swallowed whole
- Sniffed/Snorted
- Smoked
- Dermal
- Other
- >1 route used
- Injected
- Dissolved in mouth
- Chewed/swallowed
GTNet–Adult Human Exposures to Opioids and Benzodiazepines (per 100,000 population)

France

Germany

Italy

United Kingdom

- Benzodiazepines - Total
- Benzodiazepines - Intentional
- Benzodiazepines - Unintentional
- Opioids - Total
- Opioids - Intentional
- Opioids - Unintentional

[Charts showing trends in exposures over time for France, Germany, Italy, and the United Kingdom]
Conclusion

• A mosaic approach to surveillance provides valuable insight from multi-dimensional perspectives

• Each of the programs presented 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
Questions?

Jody.Green@rmpdc.org