Wednesday, May 15, 2019
International Pre-Symposium
The Shifting Landscape of Prescription Drug Abuse: The Canadian Perspective
RADARS International Pre-Symposium

• Housekeeping

• RADARS innovations at the annual meeting
  – RADARS annual report demonstration
  – RADARS NMURx Express topic crowdsourcing
<table>
<thead>
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<td>12:00 pm–1:00 pm</td>
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<td>Director, BING Center for Health Economics; Co-Director, Drug Policy Research Center; Senior Economist; Professor, Pardee RAND Graduate School; RAND Corporation</td>
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<td>2:45 pm–3:15 pm</td>
<td>Break</td>
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### Agenda

**3:15 pm–4:30 pm**

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<thead>
<tr>
<th><strong>Comparing Canada and the United States: The RADARS® System</strong></th>
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<td><strong>Codeine in Canada – Don’t Forget Weak Opioids…</strong>  Beth Sproule, RPh, BScPhm, PharmD  Centre for Addiction and Mental Health and Leslie Dan Faculty of Pharmacy, University of Toronto</td>
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<td><strong>Emerging Changes in Opioid Diversion in Canada and the United States</strong>  Mance E. Buttram, PhD  Associate Director, Center for Applied Research on Substance Use and Health Disparities, Nova Southeastern University  <strong>Steven P. Kurtz, PhD</strong>  Professor and Director, Center for Applied Research on Substance Use and Health Disparities, Nova Southeastern University</td>
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<td><strong>Who’s Winning? Opioid Abuse Patterns in the United States and Canada</strong>  Theodore J. Cicero, PhD  John P. Feighner Professor of Psychiatry, Department of Psychiatry, Washington University in St. Louis School of Medicine</td>
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**4:30 pm–5:00 pm**

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<td><strong>Richard C. Dart, MD, PhD (Moderator)</strong>  Executive Director, RADARS® System, Denver Health and Hospital Authority  President, Canadian Consumer Product and Pharmaceutical Safety Inc.</td>
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Canada and the Global Mosaic: How Does Prescription Drug Use Compare?

Janetta L. Iwanicki, MD
Scientific Director of Research and Surveillance
Rocky Mountain Poison and Drug Center
The Global Mosaic: Can We Compare Apples and Oranges?

• Prescription medications vary widely across countries
  – Prescribing patterns
  – Medication availability
  – Cultural and social trends
• Each country measures the impacts of nonmedical use differently
  – Nationwide surveys
  – Nationwide databases
• How can we transition to comparing apples to apples?
WHO: Total Opioid Consumption (Morphine Equivalence Mg/Capita), 1980-2015

Sources: International Narcotics Control Board; World Health Organization population data.
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2018
Survey of Non-Medical Use of Rx Drugs (NMURx) Coverage

- UK: 3Q14
- Singapore: 3Q15
- US, Canada: 3Q16
- France, Italy: 2Q17
- Germany, Spain: 4Q17

Methodology optimization projects in 2018
Survey of Non-Medical Use of Prescription Drugs (NMURx)

- An online, cross-sectional survey that assesses prescription and illicit drug use in the general adult population
- 10,000 - 30,000 unique individuals twice annually
- Same survey
  - Canada
  - United Kingdom
  - Germany
  - France
  - Spain
  - Italy
The Global Mosaic of Nonmedical Use: 10,000 foot view

- Survey of Nonmedical Use of Prescription Drugs
  - Standardized survey in multiple countries
  - Allows direct cross-country comparisons
  - Each country has a “fingerprint” of patterns of nonmedical use
- Prevalence by class of drug
- Gives an initial idea of what the country-by-country trends are
The Global Mosaic of Nonmedical Use: 10,000 foot view
NMURx 2018 Prescription Opioids

Weighted Estimate per 100,000 Population

- Canada: 6639 Opioid NMU, 1927 Opioid Abuse
- Germany: 4454 Opioid NMU, 737 Opioid Abuse
- Italy: 3987 Opioid NMU, 803 Opioid Abuse
- Spain: 15484 Opioid NMU, 967 Opioid Abuse
- UK: 8093 Opioid NMU, 773 Opioid Abuse

References: 10 pt.
The Global Mosaic of Nonmedical Use: 10,000 foot view
NMURx 2018 Prescription Stimulants

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<tr>
<th>Country</th>
<th>Weighted Estimate per 100,000 Population</th>
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<tbody>
<tr>
<td>Canada</td>
<td>1671</td>
</tr>
<tr>
<td>Germany</td>
<td>991</td>
</tr>
<tr>
<td>Italy</td>
<td>570</td>
</tr>
<tr>
<td>Spain</td>
<td>1212</td>
</tr>
<tr>
<td>UK</td>
<td>1427</td>
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References: 10 pt.
The Global Mosaic of Nonmedical Use: 10,000 foot view
NMURx 2018 Sedatives

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<tr>
<th>Country</th>
<th>Sedative</th>
<th>Abuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>4144</td>
<td>1184</td>
</tr>
<tr>
<td>Germany</td>
<td>2979</td>
<td>556</td>
</tr>
<tr>
<td>Italy</td>
<td>4524</td>
<td>694</td>
</tr>
<tr>
<td>Spain</td>
<td>10276</td>
<td>878</td>
</tr>
<tr>
<td>UK</td>
<td>3490</td>
<td>1105</td>
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Weighted Estimate per 100,000 Population

References: 10 pt.
The Global Mosaic of Nonmedical Use: 10,000 foot view
NMURx 2018 GABA Drugs

Weighted Estimate per 100,000 Population

- **Canada**: 1219
- **Germany**: 845
- **Italy**: 708
- **Spain**: 917
- **UK**: 997

**GABA NMU**

**GABA Abuse**

References: 10 pt.
The Global Mosaic of Nonmedical Use: Zooming In

• Can zoom in within NMURx data for more detail:
  – By product
  – By geography
  – By behavior

• Focusing on opioid APIs by country
The Global Mosaic of Nonmedical Use: Zooming In
NMURx 2018 Opioid Nonmedical Use by APIs

Weighted Estimate per 100,000 Population

- Buprenorphine
- Codeine
- Hydromorphone
- Morphine
- Oxycodeone
- Tramadol

Canada, Germany, Italy, Spain, UK

References: 10 pt.
The Global Mosaic of Nonmedical Use: Zooming In
NMURx 2018 Opioid Abuse by APIs

Weighted Estimate per 100,000 Population

- Canada
- Germany
- Italy
- Spain
- UK

Drugs:
- Buprenorphine
- Codeine
- Hydromorphone
- Morphine
- Morphine
- Oxycodeone
- Tramadol

References: 10 pt.
The Global Mosaic of Nonmedical Use: Zooming In by Country

- Detailed data within each country provides more clear patterns of use and opportunities for intervention

- Canada as a case study in prescription drug misuse beyond the US

- Presentations later today will include:
  - Canadian NMURx data with a focus on codeine
  - Canadian Drug Diversion data
  - Canadian Opioid Dependence Treatment Program data

References: 10 pt.
Opioid Consumption in Canada

**Fentanyl**

- The number of deaths involving fentanyl more than doubled between the beginning of 2016 and the beginning of 2017.
- In 2016, the percentage of deaths involving fentanyl varies notably across provinces and territories, for example:
  - 63% in Alberta
  - 15% in Nova Scotia

**Sex**

- 73% of apparent opioid-related deaths occurred among men
- 27% were among women
- In British Columbia and Alberta, 77% of deaths were among MEN.
- In the Atlantic provinces, 40% of deaths were among WOMEN.

**Age**

- 28% of apparent opioid-related deaths in 2016 occurred among individuals in the 30 to 39 year age group.
- The percentage of apparent opioid-related deaths in the 30 to 39 year age group varies across provinces and territories, for example:
  - 42% in Saskatchewan
  - 23% in Ontario
Opioid-Associated Mortality in Canada

Number of deaths

RATE PER 100,000 POPULATION

- 20.0 and higher
- 15.0 to 19.9
- 10.0 to 14.9
- 5.0 to 9.9
- 0.0 to 4.9
- Suppressed

* British Columbia reports unintentional deaths related to all illicit drugs including, but not limited to, opioids.
* Expected to rise
Innovations in Use of Current Data: StreetRx

http://streetrx.com

- **Population**
  - Any person with access to the internet

- **Type of Cases**
  - Utilize crowdsourcing methodology
  - Report street price paid for specific prescription drug
Innovations in Use of Current Data: StreetRx and Crossborder Trafficking

- Crowd-sourced real-time data on street prices for diverted drugs
- Able to choose from list of drugs that includes some not currently legal in the US or Canada
- Differences in both formulations and APIs available in each country
- Confirmatory questions regarding source and location of purchase
You chose a product manufactured in Canada. Is that the product you intended to choose?

- Yes, I obtained it in the United States
- Yes, I obtained it in Canada
- ✘ No, this is not the correct product
Cross-Border Trafficking

- 97,914 reports during study timeframe

- Canadian-manufactured prescription oxycodone products was reported 433 times on US website
  - 351 (81%) products acquired in the US
  - 42 (10%) products acquired in Canada
  - 96% were crushable oxycodone

- Canadian website reported 20 hydrocodone and 5 oxymorphone purchases
Cross-Border Trafficking

- 25% cases reported in border states
- Popular destinations also well-represented
  - California, Florida
- Implications for policy in both countries
- More data needed on relative street prices and trafficking patterns
The Global Mosaic of Nonmedical Use: Conclusions

• Survey of Nonmedical Use of Prescription Drugs
  – Standardized survey in multiple countries
  – Allows direct cross-country comparisons
  – Each country has a “fingerprint” of patterns of nonmedical use

• Emerging patterns
  – Opioids and sedatives in Spain
  – Stimulants in UK
  – GABA drugs across countries
The Global Mosaic of Nonmedical Use: Conclusions

• Emerging patterns
  – Codeine is ubiquitous
  – Hydromorphone in Canada
  – Tramadol in UK and Spain

• Cross-border trafficking remains an issue
  – Both US drugs in Canada and Canadian drugs in US
  – Implications for policy in both countries
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