• Infrastructure for opioid research in Canada
• Trends in opioid prescribing and outcomes
• Measuring the impact of emerging policies
  – Tamper-deterrent LA oxycodone
  – Prescription Monitoring Systems
  – Fentanyl Patch-for-Patch Programs
• Challenges, opportunities and future directions
Evolution of opioid concerns in Canada

• CMAJ Publication (Dhalla et al.): 2009

![Graph showing opioid consumption per capita in Canada and the USA](image-url)

Figure 2: Deaths related to the use of opioids in Ontario, 1991 to 2004.
Opioid Research in Canada

FEDERAL

PROVINCIAL
Implications for Research

- No national data collection
- Fragmented access between and within provinces

- **Aggregated prescription counts:**
  QuintilesIMS

- **Linked data:**
  Provincial researchers
Data Linkage in Ontario
Opioid Prescribing Trends in Ontario, Canada

Dhalla et al. CMAJ 2009. Adapted and Updated
Increasing Rates of Opioid Related Deaths

N=144

OxyContin added to Formulary

Impact in Youth and Young Adults

2010:
- 1 in 8 deaths among young adults related to opioid overdose

Gomes et al. Addiction. 2014
1996: OxyContin approved by Health Canada
2007: Purdue settles marketing lawsuit
August 2010: TD LA Oxycodone introduced in US
December 2012: Generic OxyContin introduced in Canada
April 2016: B.C. declares public health emergency
January 2017: ON Delists high strength opioids
2000: OxyContin added to Ontario Formulary
April 2010: Canadian Guidelines Released
February 2012: TD LA Oxycodone introduced in Canada
March 2016: US CDC Revised Guidelines Released
October 2016: P4P Implemented in Ontario
November 2011: Ontario’s NSAA comes into force
OxyContin Reformulation: Canadian Implications

• How did the introduction of OxyNeo lead to changes in prescribing practices in Canada?

Source: CNODES Opioid Utilization Report
Impact on Opioid-Related Deaths
• After the introduction of tamper-deterrent long-acting oxycodone in Ontario, what opioid became most frequently involved in opioid-related deaths?

A. Fentanyl
B. Heroin
C. Hydromorphone
D. Methadone
E. Oxycodone (i.e. unchanged)
F. Other
Impacts on Opioid-Related Deaths

Ontario Narcotics Safety and Awareness Act: November 2011

• **Objectives:**
  – Promote appropriate prescribing and dispensing practices for narcotics and other controlled substances
  – Identify and reduce the abuse, misuse and diversion of these drugs
  – Reduce the risk of addiction and death from the abuse or misuse of these drugs.

• **Key Initiatives:**
  – Ministry of Health can collect, use, and disclose information that relates to the prescribing and dispensing of monitored drugs – **Narcotics Monitoring System (March 2012)**
  – Prescriber must be identified on prescriptions
  – Warnings in effect for double doctoring and polypharmacy
Evaluating Impact

• Did Ontario’s policies lead to any shifts in inappropriate prescribing of monitored drugs?
  – Opioids
  – Benzodiazepines
  – Stimulants

• “Potentially inappropriate use”
  – Early refill (ie prescription dispensed within 7 days of a previously filled Rx of 30 day duration or higher)
  – Different pharmacy dispensed the drug
  – Different prescriber wrote prescription for drug
Prevalence of Inappropriate Prescribing of Monitored Drugs in Ontario

However, ~10,000 prescriptions for monitored drugs still met this definition in May 2013, which is very likely representative of misuse.

Gomes et al. CMAJ Open. 2014
**Implications**

- **Improved data access and enhanced warnings for pharmacists** led to measurable reductions in potentially inappropriate dispensing behaviour.

- **But...still high degree of potentially inappropriate prescribing. Due to?**
  - Prescribers not having access to database
  - Too many different forms of ID allowed
  - Poor use of data for monitoring/surveillance
Fentanyl Patch-4-Patch Programs

• P4P program requires patients prescribed fentanyl to return their used patches to the pharmacy before receiving a refill

• As of October 1, 2016, province-wide implementation of P4P Programs across the province.

• Between Feb 2013 and April 2016, several jurisdictions across Ontario implemented P4P programs
Fentanyl P4P: Early Implementation

OUTCOMES

- Dispensing of Fentanyl (publicly-funded)
- Dispensing of non-Fentanyl Opioids (publicly-funded)
- Hospital visits for opioid toxicity
- Opioid-related deaths
- Police incidents involving fentanyl

Zeroed counties on intervention date and measured rates of outcomes pre- and post-program implementation.
Implications

• P4P may have been successful in reducing the volume of prescription opioids that were dispensed and diverted for sale illicitly.

• Limited impact on outcomes could be due to:
  – Heroin use
  – Emergence of illicit fentanyl
  – Diversion outside of participating counties
  – Longer follow-up needed
• CHALLENGES
– National Statistics and Surveillance
– Geographic Variation
– Inter-relationship between prescribed and illicit drug markets
– Prescriber ‘abandonment’ following dose threshold recommendations

Source: BC Coroners Service
Challenges, Opportunities and Future Directions

• **OPPORTUNITIES**
  – PMP data now linked to broad health services data in Ontario
  – National leadership leading to improved infrastructure for national surveillance

• **FUTURE DIRECTIONS**
  – Ongoing Monitoring of anticipated and unanticipated impacts of policies/programs:
    • Fentanyl Patch 4 Patch province-wide implementation
    • Delisting of high strength opioid formulations
Thank you!

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