Nova Scotia Prescription Monitoring Program (NSPMP):

Promoting Appropriate Use of Monitored Drugs

Judith Fisher, PhD
Faculty of Health Professions, Dalhousie University
September 8, 2011

Highlighting NELS ICE Successes

NELS ICE | Network for End of Life Studies
Interdisciplinary Capacity Enhancement

Background

- Certain medications and drug classes have a high risk of abuse and diversion. E.g.
  - Opioid (narcotic) analgesics (e.g. morphine)
  - Some sedative-hypnotics (e.g. barbiturates)
  - CNS stimulants (e.g. methylphenidate or Ritalin®)
- Consequently, extensively regulated and monitored, by:
  - Federal law (Controlled Drug and Substance Act and Regulations)
  - Provincial legislation
    - In Nova Scotia, Pharmacy Act (Schedule IV); Prescription Monitoring Act (2004)
    - NSPMP website: http://www.nspmp.ca

Prescription Monitoring Programs: an overview

- Two types of monitoring programs (PMPs)
  - Multiple prescription copies e.g. triplicate prescription program
  - Electronic data transfer system
    - Prescription and dispensing information in a centralized database
      - Nova Scotia PMP now electronic (2005 onwards)
        - » Administered through Medavie Blue Cross (Dartmouth)
  - Other Canadian provinces with TPP: Alberta, Saskatchewan, British Columbia, Manitoba, New Brunswick.
      - Newfoundland and Labrador have a tamper-proof prescription pad system (and newly established e-system)

Nova Scotia Prescription Monitoring Program: an overview

- Electronic data transfer system (since June 2005)
  - Centralized database
    - Dispensing information for all prescriptions filled for monitored drugs in community pharmacies in NS.
- Vision:
  - To promote appropriate use of ‘controlled substances’
    - To be perceived in this way (not as ‘punitive agency’)
  - To monitor use and reduce (eliminate) drug diversion
- Competing concerns:
  - Potential diversion, overuse and abuse
    - Prescribed opioids are now a prominent form of illicit opioid use in Canada (CMAJ 2006; 175(11): 1385-87)
  - Management of chronic pain, including end of life care

Nova Scotia Prescription Monitoring Program: Strengths

- Comprehensive
  - Covers the population of Nova Scotia
    - All monitored drugs dispensed in community pharmacies in Nova Scotia
    - Regardless of benefit status or payment mechanism
  - Includes: patient, prescriber and drug-related information
    - E.g. specific drug, including dose, quantity and days supply
- Timely
  - Updated daily
- Vision
  - To promote appropriate drug use
  - Desire to work collaboratively

Collaborations with the Nova Scotia Prescription Monitoring Program

- Two completed projects:
  - Evaluation of an intervention conducted by NSPMP in 2007 to reduce meperidine (Demerol™) use in NS
  - Use of prescription acetaminophen/opioid compounds, e.g. acetaminophen with codeine (e.g. Tylenol no. 3 ™), acetaminophen + oxycodone (e.g. Percocet ™)
- Ongoing project
  - Joint project with Cancer Care Nova Scotia
    - To describe the prescription of opioid analgesics to all Nova Scotia (NS) cancer patients during 2005 to 2009.
      - Linkage of data from cancer registration

Evaluation of an educational intervention on meperidine use

- Issue: meperidine has a poor risk-benefit profile
  - Poor choice for managing chronic pain
  - Pharmacare non-benefit since 1998
- Intervention: prescriber focused individualised educational and audit/feedback
  - Sent to 30 highest meperidine prescribers
    - Represents 2.4% of all meperidine prescribers, 25% of meperidine prescriptions and 40% of tablets filled
  - Direct costs $210 (postage, stationary, PMP staff time)
- Study evaluated the impact on meperidine use
  - Meperidine use from July 1, 2005 to December 31, 2009
  - Examined using time series analysis: monthly number of individual patients who filled at least one meperidine prescription, prescriptions and tablets dispensed

Evaluation of an educational intervention on meperidine use

- Results:
  - Overall downward trend in use over the study period
  - The intervention was associated with a statistically significant decrease in use, adjusting for the overall (downward) trend
    - Patients decreased by **12%** (CI: p-value < 0.001; 95% CI: (5%, 18%)
    - Prescriptions decreased by **10%** (p-value = 0.003; 95% CI: (3%, 17%))
    - Tablets decreased by **13.5%** (p-value < 0.001; 95% CI: (6%, 29%))
- Interpretation:
  - An inexpensive educational intervention was effective in decreasing meperidine prescribing
  - Could such an intervention be extended to other potentially inappropriate prescribing patterns?

Are Adults at Risk from High Dose Acetaminophen in Prescription Acetaminophen/Opioid Compounds?

- Issue: Acetaminophen is generally 'safe', **but**
  - Potential for liver injury in acute overdose or chronic use above 4.0 g/day, and lower doses in some populations (e.g. elderly, high alcohol use, malnourished)
  - Commonly used medication that is present in:
    - Over-the-counter medications, e.g. pain and fever relief, cough and cold products
    - Prescription pain medications, in particular in combination with opioid analgesics, e.g. acetaminophen with codeine (e.g. Tylenol no. 3 ™), acetaminophen + oxycodone (e.g. Percocet ™)
- Study examined:
  - The number and proportion of adults who filled prescriptions for acetaminophen/opioid combinations from July 1, 2009 to June 30, 2010 exceeding:
    - 4.0 grams per day (Current Health Canada recommended maximum daily dose)
    - 3.25 grams per day (US FDA advisory committee recommended maximum daily dose)

Are Adults at Risk from High Dose Acetaminophen in Prescription Acetaminophen/Opioid Compounds?

- Results: From July 1, 2009 to June 30, 2010
  - ~ 60,000 individuals filled prescriptions for 13M+ acetaminophen/opioid tablets
    - 6% exceeded 4.0 g/day at least once
    - 18% exceeded 3.25 g/day at least once
    - 10% and 21% of those who exceeded these limits did so more than once
- Interpretation:
  - A substantial percentage of Nova Scotians exceed current guidelines on acetaminophen daily dose
  - Potential implications for persons at end of life – who may be more vulnerable, at increased risk
  - Would computer-generated alerts in decision support systems assist in determining maximum daily doses for OTC and prescription drugs?

Opioid analgesic use among Nova Scotia cancer patients: Collaboration between NSPMP and CCNS

- Linkage of two databases
- Purpose:To describe the prescription of opioid analgesics to all Nova Scotia (NS) cancer patients during 2005 to 2009.
- Study objectives:
  - To validate the 'cancer diagnosis flag' in the NSPMP
  - To describe the dispensing of opioid analgesics for persons with cancer in Nova Scotia, including:
    - By calendar year
    - By sub-population, e.g. age, sex, cancer site
    - By position in disease trajectory
      - Post-diagnosis
      - **End of Life** (12 months prior to death)

Considerations

- Two completed projects demonstrated the feasibility of working in partnership with NSPMP
  - ‘Paved the way’ for the joint CCNS-PMP project
  - Ground-breaking and innovative
- Despite proliferation of PMPs over past 2 decades, limited research addressing issues associated with these programs.
  - Only 10 peer-reviewed articles published since 1980s.
  - These have focused on the effect of state-mandated use of government-issued specialized forms for monitored drugs on practitioner prescribing. (Gilson, 2010)

Acknowledgments

- Nova Scotia Prescription Monitoring Program
  - Denise Pellerin, manager; Stacey Black, nurse consultant; Peter McDougall, medical consultant
  - Kirstin Crabtree and Lori Embree, analysts
- Drug Evaluation Alliance of Nova Scotia (DEANS)
  - Dawn Frail, Pharmaceutical Services, Department of Health Nova Scotia

Funding:

- Post doctoral funding for JF:
  - NELS ICE, funded by Canadian Institutes for Health Research (CIHR) through a strategic initiative grant (#HOA-80067), 2006-2011, and
  - The Drug Use Management and Policy Residency, a summer studentship, funded by The Canadian Health Services Research Foundation CHSRF), CIHR and the Nova Scotia Health Research Foundation (NHSRF).

Questions?