Prevalence, Correlates, and Regulatory Strategies Related to Pain, Opioid Misuse and Overdose: The Experience in Vancouver, Canada

Pauline Voon, RN, PhD(c)
Research Associate, Addiction and Urban Health Research Initiative, BC Centre for Excellence in HIV/AIDS, Vancouver, Canada
Trudeau and Vanier Scholar, School of Population and Public Health, Faculty of Medicine, University of British Columbia

Committee on Pain Management and Regulatory Strategies to Address Prescription Opioid Abuse
November 4, 2016
No conflicts of interest to declare
Winnipeg police send out warning after three overdose on Fentanyl Sunday

Police believed two of the victims were dead before they were revived by paramedics.

Police warn about powdered fentanyl in Waterloo Region

Stay Connected with CBC News

Opioid related deaths on the rise in Ottawa

OPINION | 'Long past time' to act on Canada's deadly opioid epidemic

'This is the greatest drug safety crisis in Canadian history and it is worsening'

By Hakeem Virani, Rosalind Davies, David Jajjilink, CBC News  Posted: Oct 20, 2018 5:03 AM MT | Last Updated: Oct 20, 2018 5:00 AM MT
Chronic pain & prescription opioid use

• Prevalence of chronic pain in Canada: 15-29%
• Prevalence of non-medical analgesic use: 6.6%
• Canada has 2nd highest opioid consumption rate
  – Substantial variation in rates & types of opioids prescribed
• High risk prescribing practices
  – 35% of patients on methadone co-prescribed opioids not from the patient’s primary methadone provider
  – Methadone involved in 25% of PO related deaths in BC
  – Benzodiazepine co-prescription
    • Associated with elevated rates of HIV infection
    • 600% increase in PO deaths involving benzodiazepines over 10 years
• Fentanyl epidemic
Overdose, mortality, and related harms

- 87% of opioid overdose deaths were accidental
- More deaths than motor vehicle accidents involving drugs/alcohol
- POs prescribed above recommended safe-dosing guidelines in ~40% of deaths
- Strong correlation between rates of dispensation and deaths
Overview: Pain in concurrent opioid/substance misuse

• Up to 48% of people with chronic pain may have a concurrent substance use disorder (Morasco et al., 2011)

• 48% pooled prevalence of pain among prescription opioid misusers (Fischer et al., 2012)

• Our research:
  – NIDA- & CIHR- funded prospective cohorts (VIDUS & ACCESS)
  – Established 1996; >2,500 participants with substance misuse
  – Brief Pain Inventory since 2014 to assess epidemiology of pain & opioid/substance misuse
Self-management of pain among people who inject drugs in Vancouver

Pauline Voon¹, Cody Callon¹, Paul Nguyen¹, Sabina Dobrer¹, Julio Montaner¹,², Evan Wood¹,², and Thomas Kerr¹,²*

¹British Columbia Centre for Excellence in HIV/AIDS, St Paul's Hospital, 608-1081 Burrard Street, Vancouver, BC, V6Z 1Y6, Canada
²Department of Medicine, University of British Columbia, St Paul's Hospital, 608-1081 Burrard Street, Vancouver, BC, V6Z 1Y6, Canada

SUMMARY

Aims—To evaluate factors and methods associated with self-management of pain among people who inject drugs (IDUs) in Vancouver (Canada).

Patients & methods—This cross-sectional study used bivariate statistics and multivariate logistic regression to analyze self-reported responses among 483 IDUs reporting moderate-to-extreme pain in two prospective cohort studies from 1 December 2012 to 31 May 2013.

Results—Median age was 49.6 years (interquartile range: 43.9–54.6 years), 33.1% of IDUs were female and 97.5% reported self-management of pain. Variables independently and positively associated with self-managed pain included having been refused a prescription for pain medication (adjusted odds ratio: 7.83; 95% CI: 1.64–37.3) and having ever been homeless (adjusted odds ratio: 3.70; 95% CI: 1.00–13.7). Common methods of self-management of pain included injecting heroin (52.7%) and obtaining diverted prescription pain medication from the street (65.0%).

Conclusion—Self-management of pain was common among IDUs who reported moderate-to-extreme pain in this setting, particularly among those who had been refused a prescription for pain medication and those who had ever been homeless. These data highlight the challenges of adequate pain management among IDUs.

• 98% of PWID with pain report self-managing pain
• More likely to have:
  – been denied a prescription for pain medication
  – been homeless
• Common ways of self-managing pain:
  – Injecting heroin (53%)
  – Obtaining pain meds off the street (65%)
Denial of pain medication

- **66%** of PWID had been denied pain medication
- More likely to be on **methadone** treatment
- **44%** accused of “drug seeking”
- Common actions after being denied:
  - Buying the requested medication **off the street** (40%)
  - Obtaining heroin (33%)

---

Denial of pain medication in-hospital

- **48%** of hospitalized PWID had been denied pain medication while in hospital

- More likely to have used illicit drugs while in hospital

---

**ORIGINAL ARTICLE**

Denial of pain medication by health care providers predicts in-hospital illicit drug use among individuals who use illicit drugs

Liangping Ti MPH1,2, Pauline Voon RN BSN1,2, Sabina Dobrer MA1, Julio Montaner MD3,4, Evan Wood MD PhD1,3, Thomas Kerr PhD1,3

**BACKGROUND:** Under-treated pain is common among people who use illicit drugs (PWUD), and can often reflect the reluctance of health care providers to provide pain medication to individuals with substance use disorders.

**OBJECTIVE:** To investigate the relationship between having ever been denied pain medication by a health care provider and having ever reported using illicit drugs in hospital.

**METHODS:** Data were derived from participants enrolled in two Canadian prospective cohort studies between December 2012 and May 2013. Using binary and multivariable logistic regression analyses, the relationship between having ever been denied pain medication by a health care provider and having ever reported using illicit drugs in hospital was examined.

**RESULTS:** Among 1033 PWUD who had experienced 21 hospitalizations, 452 (44%) reported having ever used illicit drugs while in hospital and 491 (48%) reported having ever been denied pain medication. In a multivariable model adjusted for confounders, having been denied pain medication was positively associated with having used illicit drugs in hospital (adjusted OR 1.46 (95% CI 1.14 to 1.88)).

**CONCLUSIONS:** The results of the present study suggest that the denial of pain medication is associated with the use of illicit drugs while hospitalized. These findings raise questions about how to appropriately manage addiction and pain among PWUD and indicate the potential role that harm reduction programs may play in hospital settings.

Key Words: Addiction; Canada; Drug use; Health services; Pain management

Pain among individuals on methadone

• **52%** had moderate or extreme pain

• Greater pain severity associated with:
  - Self-managing pain
  - Believing methadone dose too low
  - Marijuana use

Voon P et al., J Pain 2015, 16(9):887-94
Pain among individuals on methadone

- 52% had moderate or extreme pain
- Greater pain severity associated with:
  - Self-managing pain
  - Believing methadone dose too low
  - Marijuana use

Pain Among High-Risk Patients on Methadone Maintenance Treatment

Pauline Voon,*,1 Kanna Hayashi,*, M-J Milloy,*,2 Paul Nguyen,*, Evan Wood,*,1 Julio Montaner,*,1 and Thomas Kerr*,1

*British Columbia Centre for Excellence in HIV/AIDS, St. Paul’s Hospital, Vancouver, BC, Canada.
1School of Population and Public Health, Faculty of Medicine, University of British Columbia, Vancouver, BC, Canada.
2Department of Medicine, University of British Columbia, St. Paul’s Hospital, Vancouver, BC, Canada.

Abstract: The complexity of treating concurrent pain and opioid dependence among many methadone-maintained individuals presents a major challenge in many clinical settings. Furthermore, recent expert guidelines have called for increased research on the safety of methadone in the context of chronic pain. This study explores the prevalence and correlates of pain among a prospective cohort of people who use illicit drugs in Vancouver, British Columbia, Canada, who reported enrollment in methadone maintenance treatment (MMT) between 2011 and 2014. Among the 823 participants eligible for this analysis, 338 (41.3%) reported moderate pain and 91 (11.1%) reported extreme pain at the first study visit. In multivariable, generalized, linear mixed model analyses, higher pain severity was positively and independently associated with self-managing pain (adjusted odds ratio [AOR] 2.15, 95% confidence interval [CI] 1.77–2.60), patient perception of methadone dose being too low (AOR 1.8, 95% CI 1.41–2.34), older age (AOR 1.31, 95% CI 1.13–1.51), having a physical disability (AOR 4.59, 95% CI 3.73–5.64), having ever been diagnosed with a mental illness (AOR 1.64, 95% CI 1.13–2.41), white ethnicity (AOR 1.42, 95% CI 1.10–1.83), and marijuana use (AOR 1.25, 95% CI 1.02–1.52). These findings suggest several areas for clinical intervention, particularly related to patient education and alternative analgesic approaches for MMT patients experiencing pain.

Perspective: To better understand the complexity of concurrent pain and opioid dependency among individuals on methadone maintenance treatment, this article describes the prevalence and correlates of higher pain severity among methadone-maintained people who use illicit drugs. Patients on methadone with comorbid pain may benefit from education and alternative analgesic approaches.

© 2015 by the American Pain Society
Key words: Pain, methadone, substance abuse, self-medication, opioid-induced hyperalgesia.
Opioid overdose: effect of cannabis?

Research

Bachhuber et al., *JAMA Intern Med* (2014)

Original Investigation

Medical Cannabis Laws and Opioid Analgesic Overdose Mortality in the United States, 1999-2010

Marcus A. Bachhuber, MD; Brendan Saloner, PhD; Chinazo O. Cunningham, MD, MS; Colleen L. Barry, PhD, MPP

- ~25% lower mean annual opioid overdose mortality rate in states with medical cannabis laws
- Our cohorts: daily opioid use significantly associated with overdose only in those who did not use cannabis
Together, we can do this

Strategies to Address British Columbia's Prescription Opioid

Recommendations from the British Columbia Node of the Canadian Research Initiative on Substance Misuse

November 2015


In light of the evidence and the unique characteristics of the system of care in BC, a number of steps should immediately be taken to reduce the harms of the pharmaceutical opioid epidemic in British Columbia. These steps include:

STRATEGIES FOR IMPROVED PRESCRIBING PRACTICES

1. Make registration for PharmaNet free, and legally require all clinicians with prescribing authority to be registered for PharmaNet and routinely check patients’ PharmaNet profiles when writing prescriptions. Exemptions to this requirement could be provided for individuals who practice in areas without Internet access or with other barriers.

2. Revise duplicate prescription pads to include a checkbox indicating that the prescribing practitioner has fulfilled his or her legal responsibility to review a patient’s PharmaNet record, thereby ruling out duplicate or high-risk co-prescriptions.

3. Put in place enforcement measures to ensure that pharmacies are checking PharmaNet to confirm that duplicate prescriptions or other evidence of inappropriate medical care is further brought to the attention of prescribing practitioners and regulatory authorities.

4. Change requirements for benzodiazepine prescribing such that benzodiazepines require a prescription on a duplicate prescription pad, in the same way that opioid prescriptions must be written in BC.55-57

5. Implement a maximum upper dispense limit for the amount of opioids that a patient may be dispensed at any one time.

STRATEGIES TO IMPROVE OPIOID ADDICTION CARE

6. Dedicate investments into addiction treatment. For instance, buprenorphine/naloxone—a proven treatment for opioid addiction—should be the first line pharmacotherapy option (along with methadone) for opioid addiction, given its superior safety profile with respect to overdose risk compared to methadone.76-77

7. Improve access to buprenorphine/naloxone by eliminating the requirement that prescribers must have methadone exemptions in order to prescribe buprenorphine/naloxone. This requirement is unnecessary given the low misuse potential of buprenorphine/naloxone and the low number of buprenorphine/naloxone prescribers the exemption requirement creates.39 In lieu of the methadone exemption, prescribers would be required to complete online training module on buprenorphine/naloxone prescribing.

8. Invest in recovery-oriented care for individuals with opioid addiction.

9. Consider comprehensive patient education with regards to risks of poly-substance use and overdose prevention, recognition and response including home naloxone prescription.79,80

10. Increase prescribers’ capacity for opioid agonist treatments (e.g., methadone and buprenorphine/naloxone) via novel collaborative strategies.

LONG-TERM STRATEGIES TO IMPROVE PRESCRIBER KNOWLEDGE

11. Invest in BC’s medical curricula and continuing medical education for physicians, nurses and other clinicians in addiction diagnosis, treatment and recovery; pain management including the use of non-opioid analgesics; and safe opioid prescribing, including the potential for serious adverse effects when opioids are co-prescribed with benzodiazepines and other psychotropic medications.80-82

12. Coinciding with benzodiazepines transitioning to a duplicate prescription requirement, investment should be made in education for BC prescribers on the known serious harms and clinical limitations of benzodiazepines, as well as the availability of safer alternatives.82

13. Support research and educational interventions in emergency departments to enhance safer opioid prescribing practices in this setting.82-86

If these evidence-based recommendations are enacted quickly, BC has the potential to dramatically reduce fatal overdoses, abuse, addiction and other severe harms related to unsafe opioid prescribing.

Together, we can do this. The time for action is now.
Health

Provincial health officer declares public health emergency

News Release

Victoria
Thursday, April 14, 2016 11:00 AM

Media Contacts

Kristy Anderson
Media Relations Manager
Ministry of Health
250 952-1887 (media line)

There were 474 apparent illicit drug overdose deaths in 2015, which is a 30% increase in deaths from 2014 (365 deaths). There were 76 deaths in Jan. 2016, which is the largest number of deaths in a single month for the examined period (Jan. 1, 2007 to Feb. 29, 2016).
JAMA Clinical Guidelines Synopsis

Clinical Management of Opioid Use Disorder

Beth Dunlap, MD; Adam S. Cifu, MD

TABLE 1. TREATMENT OPTIONS FOR OPIOID USE DISORDER

<table>
<thead>
<tr>
<th>Withdrawal Management (^1)(^-)(^3)</th>
<th>Agonist Therapies</th>
<th>Alternative Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tapered methadone, buprenorphine, or alpha-2 adrenergic agonists (\simeq) psychosocial treatment (^4)</td>
<td>Buprenorphine/naloxone (^6) (preferred)</td>
<td>Slow-release oral morphine (^9)</td>
</tr>
<tr>
<td>(\simeq) residential treatment</td>
<td>Methadone (^7,8)</td>
<td>Diacetylmorphine (^10)</td>
</tr>
<tr>
<td>(\simeq) oral naltrexone (^5)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LOW
If opioid use continues, consider treatment intensification »

TREATMENT INTENSITY HIGH
Where possible, « simplify treatment

Summary of the Clinical Problem
Death caused by drug overdose is a major problem in the United States. In 2014, nearly 29,000 people died of opiate overdose.\(^1\) Underlying this trend is a parallel increase in opioid use disorder, defined as problematic pattern of

Evidence Base
A systematic literature review was the basis of the guideline.\(^6\) Evidence was summarized using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) criteria. Strong recommendations were given to use of agonist therapies as first line
NP prescribing of Controlled Drugs and Substances

On July 26, 2016, the Minister of Health amended the Nurses (Registered) and Nurse Practitioners Regulation to clarify that NPs may compound, dispense and administer Schedule IA drugs. This follows the December 2015 amendments which added authority for NPs to prescribe Schedule IA drugs. The revised Nurse Practitioner (NP) Prescribing Standards, Limits and Conditions, as passed by the CRNBC board in June 2016 and incorporating the prescribing of federally controlled drugs and substances, also came into effect on July 26, 2016.

This standard has now been approved and integrated into the Scope of Practice for Nurse Practitioners: Standards, Limits, Conditions. The prescribing standards begin on page 26.

Please email practice@crnbc.ca if you have questions.
Training the next generation of leaders in addiction medicine

St. Paul's Hospital Goldcorp Addiction Medicine Fellowship

The application period for this addiction medicine fellowship is now closed. For details on this fellowship, please click here.
Reduction in overdose mortality after the opening of North America’s first medically supervised safer injecting facility: a retrospective population-based study

Brandon D L Marshall, M-J Milloy, Evan Wood, Julio S G Montaner, Thomas Kerr

Summary
Background Overdose from illicit drugs is a leading cause of premature mortality in North America. Internationally, more than 65 supervised injecting facilities (SIFs), where drug users can inject pre-obtained illicit drugs, have been opened as part of various strategies to reduce the harms associated with drug use. We sought to determine whether the opening of an SIF in Vancouver, BC, Canada, was associated with a reduction in overdose mortality.
Drugs tested at Insite, 86% contain fentanyl

Pilot study reveals vast majority of checks over a four-week period contained the dangerous drug

By Justin Moelroy, CBC News

Insite is one of only two legal supervised injection sites in the country, both of which are in Vancouver. (Radio-Canada)
Facilitating entry into drug treatment among injection drug users referred from a needle exchange program: Results from a community-based behavioral intervention trial

Steffanie A. Strathdee a,b,*, Erin P. Ricketts b, Steven Huettner b, Lee Cornelius c, David Bishai b, Jennifer R. Havens d, Peter Beilenson e, Charles Rapp f, Jacqueline J. Lloyd g, Carl A. Latkin b

a Division of International Health and Cross-Cultural Medicine, Department of Family and Preventive Medicine, University of California, San Diego, 9500 Gilman Drive, Ash Building, Room 118, Mailstop 0622, San Diego, CA 92093, USA
b Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, USA
c University of Maryland School of Social Work, Baltimore, MD, USA
d University of Kentucky Center on Drug and Alcohol Research, Lexington, KY, USA
e Baltimore City Health Department, Baltimore, MD, USA
f University of Kansas School of Social Welfare, Lawrence, KS, USA
g Temple University, School of Social Administration, Philadelphia, PA 19122, USA

Received 24 July 2005; received in revised form 12 November 2005; accepted 15 November 2005
A quantitative and qualitative evaluation of the British Columbia Take Home Naloxone program

Oluwajenyo Banjo MPHc, Despina Tzemis MPH, Diana Al-Qutub MPH, Ashraf Amlani MPH, Sarah Kesselring MPH, Jane A. Buxton MBBS MHScc

Results: As of March 13, 2014, the BCTHN program had been implemented at 40 sites, trained 1318 participants in overdose prevention, recognition and response, distributed 836 kits to clients and received reports of 85 overdose reversals. Stakeholders were supportive of the program, and clients reported greater confidence in response to overdose. Service providers found the program training materials easy to use and that training increased client engagement. Some of the challenges included difficulty in identifying physician willing to prescribe, recruitment of some at-risk populations (e.g., long-term opioid users and patients with chronic pain), and clients’ reluctance to call 911. We also found that the police had some misconceptions about BCTHN.

Interpretation: The BCTHN program was easy to implement, empowering for clients and was responsible for reversing 85 overdoses in its first 20 months. We suggest communities across Canada should consider implementing take-home naloxone programs and evaluate their findings.
Naloxone now available without a prescription in B.C.

ANDREA WOO
VANCOUVER — The Globe and Mail
Published Thursday, Mar. 24, 2016 8:35PM EDT
Last updated Tuesday, Apr. 05, 2016 2:26PM EDT

Non-Prescription Naloxone Now Available Outside of Pharmacies

The sale and use of NARCAN® Nasal spray for use in the home is now legal in B.C. (Photo: B.C. RCMP)

In British Columbia, NARCAN® Nasal spray will need a new prescription as well as additional information. This additional information includes instructions for using the spray and treating reactions. This additional information will be available without a prescription.
Ongoing & Future Research

• Optimizing patient centered-care: a pragmatic randomized controlled trial comparing models of care in the management of prescription opioid misuse (OPTIMA)
  – Sub-study on pain

• Cannabis dispensary cohorts and role of cannabis (M-J Milloy)

• Correlates and risks associated with pain in individuals with opioid/substance misuse
Summary: What do we know?

• Opioid related harms are a serious concern
  – But restrictive regulations without safe alternative strategies may lead to further harms
  – Individuals may resort to self-managing pain in risky ways, e.g.:
    • Obtaining diverted opioids
    • Injecting heroin

• More attention needed for pain management approaches in those with past or present opioid/substance misuse
  – High prevalence of pain
  – High risk of self-management
  – Research on the role of cannabinoids in opioid use
Summary: What can we do?

• Safer prescribing

• Safe alternatives to opioids for pain management

• Overdose prevention (e.g., naloxone, supervised injection facilities)

• More research and clinical guidance for comorbid pain and opioid/substance misuse

• Interdisciplinary care, education, and research
Acknowledgements

Conference organizers; VIDUS & ACCESS study participants; BC-CfE, UHRI, & St. Paul’s Hospital Addiction Nursing Fellowship leadership, staff and administrative support; community groups and others who support this work

pvoon@cfenet.ubc.ca
Twitter: @pvoon
https://www.researchgate.net/profile/Pauline_Voon