Are we contributing to the "Opioid Crisis"?

Discharge Opioid Prescriptions After Laparoscopic Surgery

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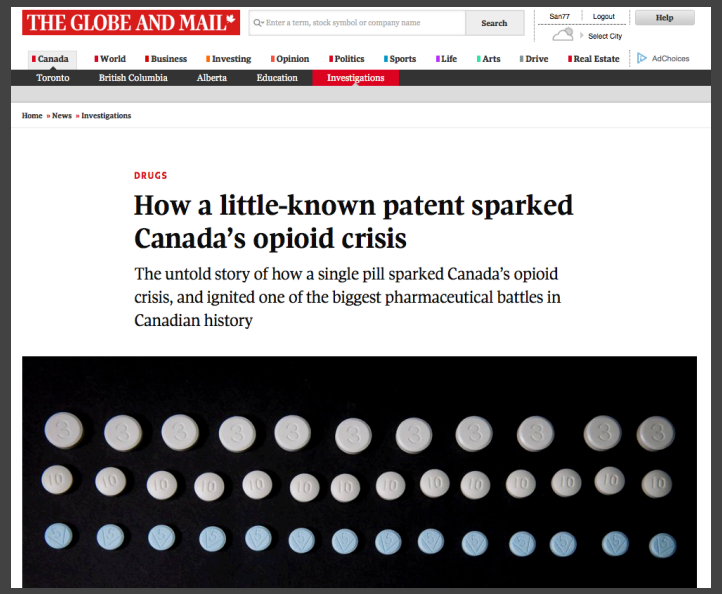
Conflicts and Disclosures:

- Sanjho Srikandarajah:
  - None

Opioid Crisis

- Opioids are constantly in the news:



Opioid Crisis

16

Average number of opioid poisonings resulting in hospitalization each day in Canada

53%

Increase in rate of hospitalizations for opioid poisoning over the past 10 years in Canada

Age

15 to 24

Age group with the fastest-growing rate of hospitalizations due to opioid poisoning over the past 10 years in Canada

https://www.cihi.ca/en/opioid-crisis-having-significant-impact-on-canadas-health-care-system - Accessed Nov 15, 2017

Opioid Crisis

- So what is this “opioid crisis” we keep hearing about?
    1. People who use illicit drugs (ie cocaine) and fall victim to these drugs being cut with high potency opioids (ie Fentanyl)[1]
    2. People using prescribed opioids illicitly

1. MacLean’s Magazine. April 20, 2017. “Ontario sees dramatic rise in opioid related deaths, say reachers”. Sheryl Ubelacker. http://www.macleans.ca/news/ontario-sees-dramatic-rise-in-opioid-related-deaths-say-researchers/

Opioid Crisis

- Pooling data from 2002 to 2012, the incidence of heroin initiation was 19 times higher among those who reported prior nonmedical pain reliever use than among those who did not
- Of people entering treatment for heroin addiction who began abusing opioids in the 1960s, more than 80 percent started with heroin. Of those who began abusing opioids in the 2000s, 75 percent reported that their first opioid was a prescription drug
- A study of young, urban injection drug users interviewed in 2008 and 2009 found that 86 percent had used opioid pain relievers non-medically prior to using heroin, and their initiation into nonmedical use was characterized by three main sources of opioids: family, friends, or personal prescriptions

National Institute on Drug Abuse. “prescription opioid use is a risk factor for heroin use. https://www.drugabuse.gov/publications/research-reports/relationship-between-prescription-drug-heroin-abuse/prescription-opioid-use-risk-factor-heroin-use

Opioid Crisis

- The Centre for Addiction and Mental Health reports that:
  - “1 in 10 (10%) of students in grade 7-12 - an estimated 95,000 students in Ontario report using a prescription opioid pain reliever non-medically in the past year.”
  - “The Majority (59%) of past year users report obtaining the drug from someone at home”

Centre for Addiction and Mental Health Ontario Student Drug Use and Health Survey 1977-2015. Executive summary pg vii
http://www.camh.ca/en/research/news_and_publications/ontario-student-drug-use-and-health-survey/Documents/2015%20OSDUHS%20Documents/2015OSDUHS_Detailed_DrugUseReport.pdf

Opioid Crisis

- And healthcare providers are being asked to help curb this problem

THE GLOBE AND MAIL

Experts urge a physician-assisted solution to the opioid crisis

ANALYSIS

Experts urge a physician-assisted solution to the opioid crisis

A naloxone anti-overdose kit.

JONATHAN HAYWARD/THE CANADIAN PRESS

ANDRÉ PICARD ›
PUBLIC HEALTH REPORTER
QUEBEC CITY
AUGUST 22, 2017

Discharge Prescriptions After Surgery

- Patients are often prescribed analgesics after operations in anticipation of pain after discharge
- Evidence has show that over-prescription of narcotics is common after surgical procedures and that surplus medication is a source for opioid diversion among some surgical patients
- A Canadian population-based study examining opioid-naïve elderly patients undergoing low-pain short-stay surgery found that 10% were long-term opioid users at one year
- Most cases patients are simply given a standard prescription after surgery

Alam A, Gomes T, Zheng H, Mamdani MM, Juurlink DN, Bell CM. Long-term analgesic use after low-risk surgery: a retrospective cohort study. Arch Intern Med. 2012;172(5):425-430.

Opioid Crisis

Table 1 Prescribers of opioids, in Ontario, 2016

Prescriber type	Number of prescribers*
Family doctors**	**15,423**
Dentists	**7,293**
Surgeons	**4,212**
Other doctors***	15, 571
Other non-doctors****	1,448
Total	**43, 947**

Source: Narcotics Monitoring System, 2016

*These numbers are for prescribers who prescribed an opioid to at least one patient who did not receive palliative care services within the previous 12 months. This also excludes prescribers who only prescribed cough medications that contain opioids.

**The "family doctors" category includes General Practitioners (GPs).

***The "other doctors" category includes internal medicine, psychiatry, and other physician specialties as well as doctors practising family practice and surgery but are missing these codes in the ICES data (e.g., new doctors).

****Examples of professions included in the "other non-doctors" category includes nurses and pharmacists.

About 1 in 9 new starts of opioids prescribed in Ontario by surgeons – who are likely to prescribe for acute pain – are for a supply of more than seven days.

Prescribing opioids for more than seven days is associated with approximately double the likelihood of continued use a year later.[3]

Opioid Crisis

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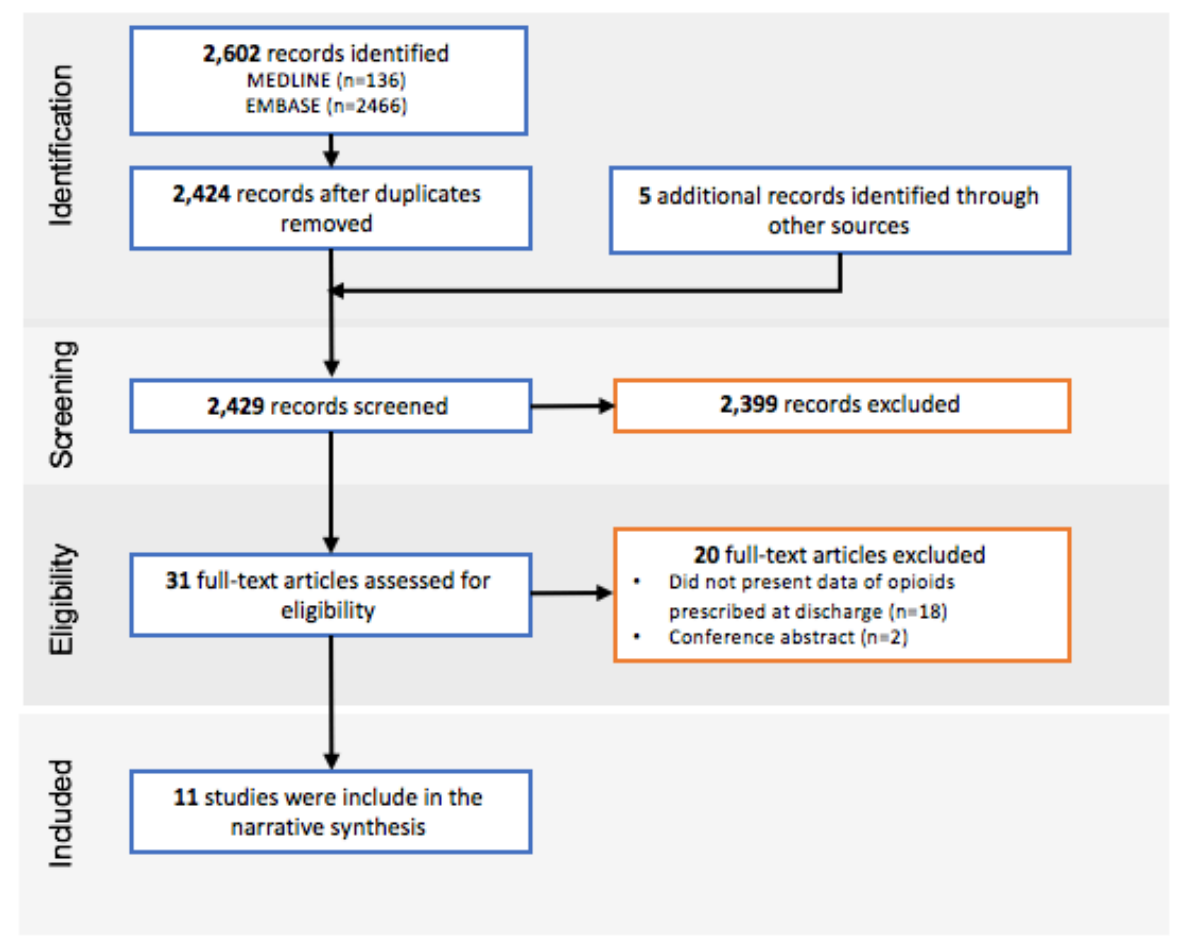
Discharge Prescriptions After Surgery



Feinberg A, Chesney T, Srikandarajah S, Acuna S, MacLoed R. Opioid Use After Discharge in Postoperative Patients. Annals of Surgery. 2017: Ahead of print.

Reference	Procedures	N	Opioid Rx	% Taken
Bartels et al	Post C-section	30	268 MME	53% took none or very few
	Post thoracic surgery	33	795 MME	45% took none or very few
Bates et al	Major open urologic	213	28.6	56.6
	Major laparoscopic urologic		23.2	57.3
	Minor open urologic		22.2	46.4
	Endoscopic urologic		21.7	58.1
Abou-Karam et al	Pediatric day surgery and general surgery patients	104 prescribed regular	NR	56% took regularly as prescribed
		77 prescribed PRN	18	5.5%
Swenson et al	Minimally invasive urogynecologic surgery	50	40	37.5%
Hill et al	Partial mastectomy	20	19.8	15.0
	Partial mastectomy with SLNB	21	23.7	25.0
	Laparoscopic cholecystectomy	48	35.2	33.0
	Laparoscopic inguinal hernia repair	20	33.8	15.0
	Open inguinal hernia repair	18	33.2	31.0

Discharge Prescriptions After Surgery

- Only one study looked at adult patients post general surgery
- They looked at 5 outpatient general surgery procedures and were only able to contact a total of 127 patients
- Found on average only 28% of pills prescribed were taken
- Study was retrospective
- Asked patients percentage consumed (0, 0-25% etc)
- They excluded people who were not opioid naïve
- Not very big numbers - only 48 of the patients called had cholecystectomies

NYGH Discharge Opioid Study

- 600,000 cholecystectomies and 300,000 appendectomies a year are preformed in the US
- At NYGH we preformed over 800 cholecystectomies and over 400 appendectomies in 2015.
- So we decided to do our own study
- We wanted to look and see how much of their prescribed pills patients actually took and whether this was enough to control their pain

Mason, RJ (August 2008). "Surgery for appendicitis: is it necessary?". Surgical Infections. 9 (4): 481–8

http://www.nytimes.com/1995/05/31/us/personal-health-gallbladder-surgery-is-easier-is-it-too-common.html

NYGH Discharge Opioid Study

- Recruited anyone coming for laparoscopic cholecystectomy or appendectomy from April – June of 2017
- This included both elective and emergent cases
- As well as patients with a history of chronic pain and those who had used opioids within the past month

NYGH Discharge Opioid Study

- Between April and June of 2017 at NYGH we did 118 Appendectomies and 212 Cholecystectomies (330 total)
- Our recruitment criteria were: willing to participate, age greater than 18, non-pregnant, and English speaking
- We were able to recruit 166 patients (we unfortunately do not know how many were not recruited due to refusal, eligibility or patients that were simply missed)
- Of the 166 we were able to get in touch with 129 patients.

Results

Characteristic	Laparoscopic Appendectomy (n=33)	Laparoscopic Cholecystectomy (n=94)
Age, median (IQR)	45 (33-54)	51 (38-62)
Female, n (%)	14 (42.4)	66 (70.2)
Emergency procedure, n (%)	30 (90.9)	18 (19.1)
Conversion to open, n (%)	0	0
History of Addiction, n (%)	1 (3.0)	1 (1.1)
History of Psychiatric Illness, n (%)	3 (9.1)	8 (8.5)
History of Chronic Pain, n (%)	1 (3.0)	9 (9.6)
Prior Long-term Opioid Use, n (%)	1 (3.0)	3 (3.2)

Results

	Laparoscopic Appendectomy (n=33)	Laparoscopic Cholecystectomy (n=94)
Formulation n(%)		
Acetaminophen with codeine	8(24)	30(32)
Acetaminophen with oxycodone	5(15)	18(19)
Oxycodone	18(55)	30(32)
Morphine	1(3)	10(11)
Hydromorphone	0(0)	5(5)
Other	1(3)	1(1)
Number of pills n(%)		
1 to 10	3(9)	22(23)
11 to 20	20(61)	34(36)
21 to 30	10(30)	38(40)
31 to 40	0 (0)	0(0)

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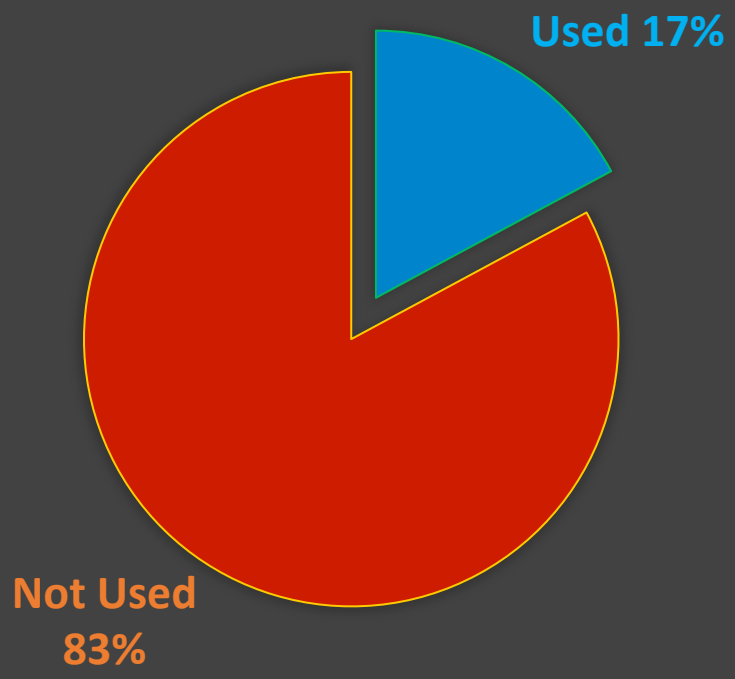
Results

- Total number of pills prescribed: **2,672**
- Total number consumed by patients: **458**
- Percentage consumed: **17%**

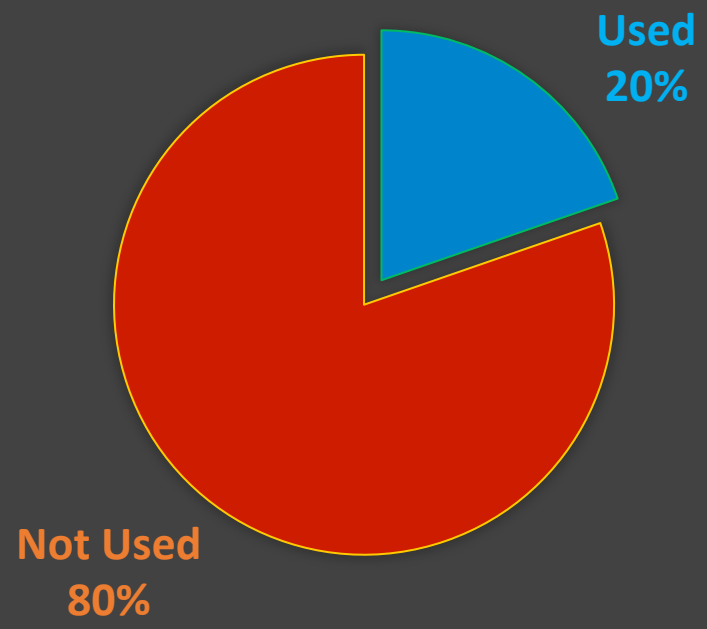
- A total of **2,214** pills unused



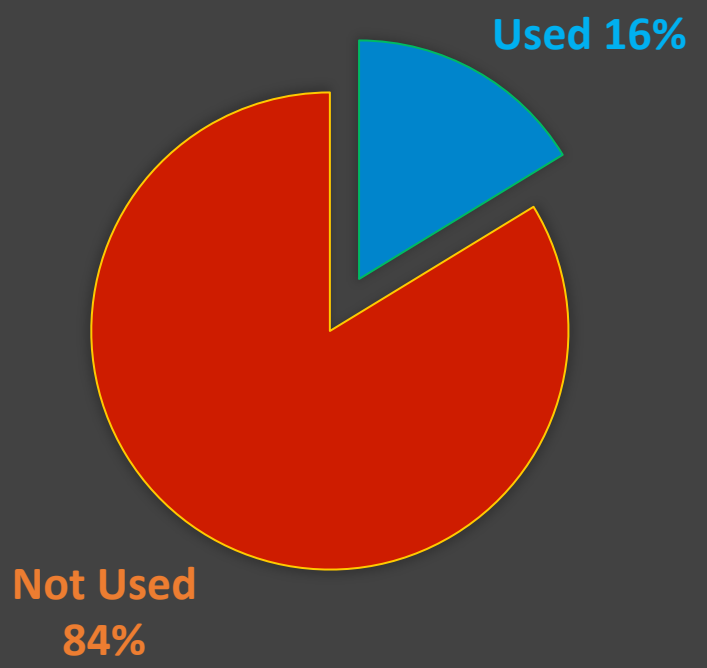
Results

- Number of pills consumed

APPENDECTOMY



COLECYSTECTOMY



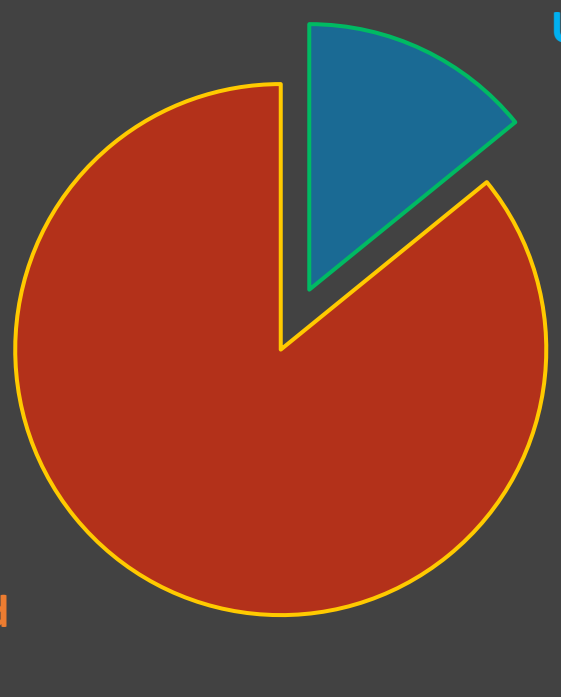
Results

- **35% used no opioids** of patients in both Appendectomy and Cholecystectomy groups
- Pills consumed:
  - Appendectomy: Average 4 pills, **Median 3 pills**
  - Cholecystectomy: Average 3.4 pills, **Median 2 pills**
- 75% used less than 7 pills
- Only 15 (12%) patients used more than 10 pills

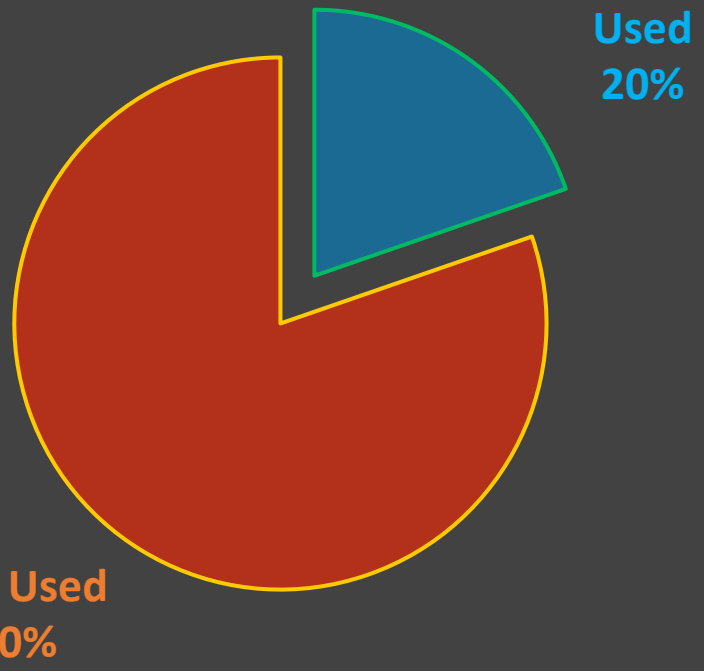
Results

- Morphine milligram equivalents (MME) consumed

Laparoscopic Appendectomy



Laparoscopic Cholecystectomy



Results

- Only 1 patient required a repeat prescription
- 7 patients (5%) were still taking their opioid tablets at 1 week
- Only 15 (12%) patients consumed 10 or more tablets

Number of Tablets Prescribed	Number of Patients who Consumed >= 10 tablets
1 to 10	1
11 to 20	6
21 to 30	8

Results

- Pain scores at 1 week were less than 5/10 in both groups
- 95% of patients reported satisfaction with their pain control (satisfied to very satisfied with pain control)

Results

- Total number of unconsumed pills: **2,214 in three months!**

- Average cost to patients of unconsumed pills: $0.10/pill = $221
- Rough street value of pills: $5-10/pill = **$10 - $20,000**

https://www.vice.com/en_ca/article/nn9p3k/the-cost-of-being-a-drug-addict-in-canada

http://money.cnn.com/2011/06/01/news/economy/prescription_drug_abuse/index.htm

Moving Forward

- Opioids required to cover the consumption of the 80th percentile of patients

Surgical Procedure	Codeine	Morphine	Oxycodone	Hydromorphone
Laparoscopic Appendectomy	300 mg	45 mg	30 mg	9 mg
Laparoscopic Cholecystectomy	250 mg	37.5 mg	25 mg	7.5 mg

Moving Forward

- Given the results of our study we created a standardized prescription:
  - Acetaminophen 500mg (1 extra strength Tylenol) q6h x 3 days
  - Ibuprophen 200mg (1 regular Advil) q6h x 3days
  - Choice of opioids:
    - Morphine 5mg q4h PRN 20 tablets dispense 10 every 3 days
    - Hydromorphone 1mg q4h PRN 20 tablets dispense 10 every 3 days
  - Entire Prescription expires after 1 month

Moving Forward

- We partnered with Pharmacy at NYGH and the Institute for Safe Medication Practice (ISMP) to develop a educational pamphlet for patients that talks about:
  - Managing their pain at home
  - Information on the various pain medications they will be sent home with and potential side effects
  - How to properly store and dispose of opioid medications
- We also in conjunction with pharmacy educated hospital staff as well as residents on general surgery about educating patients about opioids

Opioids for pain after day surgery:

Your questions answered

1. Changes?

Opioid and non-opioids have been prescribed for you to treat pain after surgery. Opioids (such as morphine) are generally used to treat severe pain. Non-opioids (such as acetaminophen, ibuprofen) are used to treat mild to moderate pain. Both can be used together to manage your pain. Other methods that can be combined to reduce pain include using ice, relaxation techniques, etc. Ask about which options are best for you to treat pain. Know your pain control plan.

2. Continue?

Opioids are usually required for less than 1 week. As you continue to recover from your surgery, your pain should get better day by day. As you get better, you will need less opioid and non-opioid pain medication.

3. Proper Use?

Use the lowest possible dose for the shortest possible time. It will take 30 to 60 minutes for the pain medication pill to start working. Do not drive a car while taking opioids. Avoid alcohol and sleeping pills (e.g. benzodiazepines like lorazepam) while taking opioids. Overdose and addiction can occur with opioids.

4. Monitor?

Side effects of opioids include: drowsiness, constipation, nausea, vomiting, itching and dizziness. Contact your healthcare provider if you have any medical concerns. Go to the emergency department if you have severe symptoms (e.g. fevers, difficulty breathing, chest pain, persistent nausea, vomiting or diarrhea).

5. Follow-Up?

Ask your prescriber when your pain should get better. If your pain is not improving as expected, or if your pain is not well controlled, talk to your healthcare provider.

To find out more, visit: **OpioidStewardship.ca** and **DeprescribingNetwork.ca**

Prevent Medication Accidents

It is important to:

Store Safely

Store your opioid medication in a secure place; out of reach and out of sight from children, teens and pets.

Dispose Safely

Take all unused and expired medications back to a pharmacy for safe disposal. Talk with your pharmacist if you have any questions. For locations that accept returns:
☎ 1-844-535-8889 healthsteward.ca

Never share

your opioid medication with anyone else.

What is the risk? Unused medications can pose a serious hazard to both yourself and others. Unused, unwanted or expired medications should be disposed of as soon as possible when no longer needed to prevent accidental exposure or abuse by others.

Did you know?

16 Canadians are hospitalized each day with opioid poisoning. Those aged 15 to 24 years old have the fastest growing rate of hospitalizations.
— Canadian Institute for Health Information, 2017

In 2016, opioids were responsible for 50% more deaths than car crashes.
— Public Health Agency of Canada, 2017

1 in 10 high school-aged teens in Ontario have tried an opioid medication recreationally.
— Centre for Addiction and Mental Health, 2015

Examples of opioids used for pain after surgery:

hydromorphone **morphine** **codeine** **oxycodone** **tramadol**

Notes:

Adapted with permission.

ismp CANADA · Canadian Deprescribing Network · cpsi icsp · Choosing Wisely Canada · NORTH YORK GENERAL

Moving Forward

- We then re-recruited patients after the implementation of our standardized prescription to look for changes in opioid consumption, pain scores and patient satisfaction

Conclusions

- So why do we prescribe so much?

Conclusions

- We don’t want our patients to be in pain
- Practical considerations:
  - We have limited time to discuss proper storage and disposal
  - We don’t want them to have to wait in busy ERs or in our busy clinic’s for pain medication
- Lack of evidence – how much do they really need?

Conclusions

- As physicians and as healthcare providers we need to be cognizant of the consequences of our decisions and actions
- We need better evidence with which to make our decisions

Conclusions

- Look at your own practice:
  - How much do you prescribe after surgeries
- Ask your patients
  - In follow-up how much did they consume
- Consider opioid sparing techniques and drugs
  - Mindfulness, Meditation, Acetaminophen, NSAIDS, etc
- Educate your patients and fellow healthcare providers
  - About the dangers of opioids, **proper storage and disposal**

Thank You.

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Thank You.

Questions?