Cannabis in Medical Education:
Igniting the Conversation

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1. A Few Cases
2. Literature Review
3. Assessing the Current State of Medical Education on Cannabis in Canada
4. Taking an Example from Opioids
5. Changing the curriculum
Case #1

Male. 20 y/o. Presents at your ER with Cannabis Intoxication

What are your first steps?
Case #2

Patient 58 y/o. Known to you for years, followed by you for chronic back pain. Today this patient inquiring about trying medical cannabis. Medical history includes chronic heart failure.

Are there any contraindications to prescribing cannabis or cannabinoids to this patient?

How do you prescribe cannabis to this patient (dosing, formulation)?
Case #3

Female. 28 y/o. Presents to your family clinic for a depression follow up. No other significant PMH. She has consumed 2g of cannabis a day, as “it helps her deal with her anxiety”.

What advice can you give her?

Is this an appropriate treatment?

What if she is pregnant?
StatCan - Cannabis Consumption

Cannabis use by province – 3rd quarter, 2018

Percentage of Canadians 15 years and older who have consumed cannabis in the past three months.

Cannabis use

<table>
<thead>
<tr>
<th></th>
<th>Canada</th>
<th>Quebec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime</td>
<td>44.8</td>
<td>52.2</td>
</tr>
<tr>
<td>12 months</td>
<td>29.2</td>
<td>32.3</td>
</tr>
</tbody>
</table>

Frequency of cannabis use by Canadians in the past 3 months

- Did not use: 85%
- Once or Twice: 5%
- Monthly: 2%
- Weekly: 3%
- Daily or almost daily: 6%

Males more likely to report daily or almost daily use than females

- Males: 7%
- Females: 4%

Cannabis use disorders

<table>
<thead>
<tr>
<th></th>
<th>Canada</th>
<th>Quebec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime</td>
<td>11.0</td>
<td>12.2</td>
</tr>
<tr>
<td>12 months</td>
<td>5.1</td>
<td>6.8</td>
</tr>
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</table>

(click on indicators to update charts on this page)
Literature Review
“... whether current medical school and graduate medical educational training prepare physicians to answer questions about and prescribe medical marijuana.”
<table>
<thead>
<tr>
<th>How prepared are your graduating students with answering patients’ questions about medical marijuana?</th>
<th>Total</th>
<th>Medical Marijuana Legal</th>
<th>Medical Marijuana Not Legal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>25</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Slightly</td>
<td>51</td>
<td>22</td>
<td>29</td>
</tr>
<tr>
<td>Moderately</td>
<td>22</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Very</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Extremely</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How prepared are your graduating students with prescribing medical marijuana?</th>
<th>Total</th>
<th>Medical Marijuana Legal</th>
<th>Medical Marijuana Not Legal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>66</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>Slightly</td>
<td>27</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Moderately</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Very</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Extremely</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Do you believe medical marijuana should be a required part of the medical school core curriculum at your institution?</th>
<th>Total</th>
<th>Medical Marijuana Legal</th>
<th>Medical Marijuana Not Legal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Disagree</td>
<td>15</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Neutral</td>
<td>34</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Agree</td>
<td>44</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

“Prefer not to answer” was an option for each question, which accounts for the variability in numbers of responses. Only 0–2 participants chose this answer for any given question.
More than 3 out 4 deans felt that their graduating students were not at all or only slightly prepared with answering patients’ questions about medical marijuana.

More than 9 out 10 (94%) deans felt that their graduating class was not at all or only slightly prepared to prescribe medical marijuana.

Almost half of (48.4%) deans agreed or strongly agreed, that medical marijuana should be a required part in the medical school core curriculum in their institution.
### Table 2

Resident/fellow survey responses. Total, and stratified by specialty.

<table>
<thead>
<tr>
<th></th>
<th>Total (258)</th>
<th>Hospital-based Specialty (54)</th>
<th>Medical Specialty (138)</th>
<th>Surgical Specialty (66)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How prepared are you with answering patient's questions about medical marijuana?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td>91 (35.3%)</td>
<td>21 (38.9%)</td>
<td>34 (24.6%)</td>
<td>36 (54.6%)</td>
</tr>
<tr>
<td>Slightly</td>
<td>107 (41.2%)</td>
<td>21 (38.9%)</td>
<td>64 (46.4%)</td>
<td>22 (33.3%)</td>
</tr>
<tr>
<td>Moderately</td>
<td>41 (15.9%)</td>
<td>8 (14.8%)</td>
<td>28 (20.3%)</td>
<td>5 (7.6%)</td>
</tr>
<tr>
<td>Very</td>
<td>17 (6.6%)</td>
<td>4 (7.4%)</td>
<td>10 (7.3%)</td>
<td>3 (4.6%)</td>
</tr>
<tr>
<td>Extremely</td>
<td>2 (0.8%)</td>
<td>0 (0.0%)</td>
<td>2 (1.5%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td><strong>How prepared are you with prescribing medical marijuana?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td>230 (89.5%)</td>
<td>47 (87.0%)</td>
<td>126 (92.0%)</td>
<td>57 (86.4%)</td>
</tr>
<tr>
<td>Slightly</td>
<td>13 (4.7%)</td>
<td>4 (7.4%)</td>
<td>4 (2.9%)</td>
<td>4 (6.1%)</td>
</tr>
<tr>
<td>Moderately</td>
<td>12 (4.7%)</td>
<td>2 (3.7%)</td>
<td>7 (5.1%)</td>
<td>3 (4.6%)</td>
</tr>
<tr>
<td>Very</td>
<td>3 (1.2%)</td>
<td>1 (1.9%)</td>
<td>0 (0.0%)</td>
<td>2 (3.0%)</td>
</tr>
<tr>
<td>Extremely</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td><strong>Have you received any education about medical marijuana?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>219 (84.9%)</td>
<td>50 (92.6%)</td>
<td>109 (79.0%)</td>
<td>60 (90.9%)</td>
</tr>
<tr>
<td>Yes in medical school</td>
<td>22 (8.5%)</td>
<td>4 (7.4%)</td>
<td>13 (9.4%)</td>
<td>5 (7.6%)</td>
</tr>
<tr>
<td>Yes in residency/fellowship</td>
<td>12 (4.7%)</td>
<td>0 (0.0%)</td>
<td>12 (8.7%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Yes in both medical school and residency/fellowship</td>
<td>5 (1.9%)</td>
<td>0 (0.0%)</td>
<td>4 (2.9%)</td>
<td>1 (1.5%)</td>
</tr>
<tr>
<td><strong>Do you believe education about medical marijuana should be required?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>56 (21.9%)</td>
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<tr>
<td>Yes in residency/fellowship</td>
<td>49 (18.6%)</td>
<td>6 (11.3%)</td>
<td>26 (19.0%)</td>
<td>8 (12.1%)</td>
</tr>
<tr>
<td>Yes in both medical school and residency/fellowship</td>
<td>87 (34.0%)</td>
<td>14 (26.4%)</td>
<td>53 (38.7%)</td>
<td>20 (30.3%)</td>
</tr>
</tbody>
</table>

*Prefer not to answer* was an option for each question, which accounts for the variability in numbers of responses. Only 0–2 participants chose this answer for any given question.

Significant difference between specialties in preparedness to answer questions about medical marijuana (Chi-square = 19.01, df = 4, p = 0.0008).

Significant difference between specialties in receiving education during medical school (Chi-square = 13.7, df = 6, p = 0.03).
Fellows and Residents

- Only 8.5% had received a certain level of education prior to residency.
- More than 3 out of 4 (76.8%) Residents/Fellows felt not at all or only slightly prepared to answer patients questions about medical marijuana.
- More than 9 out of 10 (94.2%) Residents/Fellows felt not at all or only slightly prepared to prescribe medical marijuana.
- More than 6 out of 10 (62.5%) Residents/Fellows believed education about medical marijuana should be required in medical school, prior to residency.
Table 3
Resident/fellow survey responses. Total, and stratified by whether the resident/fellow reported receiving education about medical marijuana.

<table>
<thead>
<tr>
<th>How prepared are you with answering patients' questions about medical marijuana?</th>
<th>Total N (258)</th>
<th>Received Education N (39)</th>
<th>Did Not Receive Education N (219)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>91</td>
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<td>3</td>
</tr>
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<td>4</td>
</tr>
<tr>
<td>Very</td>
<td>3</td>
<td>1.2%</td>
<td>0</td>
</tr>
<tr>
<td>Extremely</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

*Prefer not to answer* was an option for each question, which accounts for the variability in numbers of responses. Only 0–2 participants chose this answer for any given question.

* Significant difference in preparedness to answer questions about medical marijuana based on whether the resident/fellow received education about medical marijuana (Chi-square = 40.13, df = 2, p < 0.0001).
What about the education?

Very tough to answer:

- It seems to be that even though they do receive education, this education might not be adequate to equip future practitioners with the tools necessary to simply talk with their patients about medical marijuana.

**An important missing information: we our unable to qualify/quantify the education received by these students.**

This raises the questions:

1. Are students receiving the right education?
2. How much of it are they receiving?
3. Are they receiving it in the most optimal way?
And what about the curriculum?

- Of the 145 U.S. medical schools included in the AAMC Curriculum Inventory:
  - Only 13 (9.0%) of the participating schools documented any medical marijuana education in their submitted curriculum content.
    - No differences were seen in inclusion of medical marijuana education in the curriculum based on legality of medical marijuana in the state.
Objective: assessing Colorado medical students’ personal and professional opinions on current and future marijuana use in a healthcare setting.

The participants were 236 responders out of 624 medical students (n = 624) at the University of Colorado School of Medicine between January and February 2014.

One of the subjects questioned: support for MMJ training and research.
Table 2 Properties of Six Subscales Related to Marijuana Beliefs of Medical Students

<table>
<thead>
<tr>
<th>Subscale</th>
<th>M (SD)</th>
<th>Item/Total r</th>
<th>% agree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Support MMJ training and research (α = 0.813)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training about medical marijuana should be incorporated into curricula.</td>
<td>20.2 (3.3)</td>
<td>0.90</td>
<td>91.1</td>
</tr>
<tr>
<td>Training about medical marijuana should be incorporated into residency curricula.</td>
<td>4.7 (1.1)</td>
<td>0.90</td>
<td>88.6</td>
</tr>
<tr>
<td>Physicians should have formal training about medical marijuana prior to recommending it to patients.</td>
<td>4.6 (1.1)</td>
<td>0.90</td>
<td>88.6</td>
</tr>
<tr>
<td>Additional research regarding medical use of marijuana should be encouraged.</td>
<td>5.5 (0.87)</td>
<td>0.70</td>
<td>97.5</td>
</tr>
<tr>
<td></td>
<td>5.4 (0.91)</td>
<td>0.75</td>
<td>96.6</td>
</tr>
</tbody>
</table>

... prior to residency
An anonymous web-based electronic survey was sent to the 1727 members of the Colorado Academy of Family Physicians’ listserv.

Aim: gather information that may inform policies regulating medical marijuana and to evaluate the need for further medical education on this relatively new and rapidly growing area of medical practice.

They were asked if they agreed or not with the fact that training about medical marijuana should be incorporated into the medical school curriculum.

99% of physicians who had recommended marijuana use to a patient and 93% of those who hadn’t, agreed it should.
Four hundred and twenty six responses were received, and physician responses were distributed across Canada consistent with national physician distribution.

This study was conducted to determine the educational needs of Canadian physicians regarding CTP.

Gap analysis was conducted to determine the magnitude and importance of differences between perceived and desired knowledge on all decision factors.

The survey consisted of 6 sections, here are some of the few we found most important:
Our takeaway:

▪ Canadian physicians feel the need to acquire more knowledge on all of the subjects pertaining to cannabis for therapeutic purposes

▪ The biggest knowledge gaps concern subjects that have clinical impact, such as, "dosing and treatment plans", "similarities and differences between the different cannabis forms"

▪ The highest average desired knowledge levels concerned potential risks of using CTP

▪ * The need for education on cannabis in medicine was reported as strong or very strong by 64% of respondents. The problem...
1/2 Canadian Physicians perceive “Lack of personal knowledge/education or information regarding the use of cannabis for medical purposes” to be a barrier for the use of CTP in their practice.

All of the subjects mentioned in the above table were all seen as barriers that could be eliminated if the future physician were to be educated on the subject of cannabis and its multiple facets in the medical world.
71% of physicians would “feel more comfortable discussing the medical use of cannabis with patients/patient family members if they had more education about it”.

70% of physicians “feel that with more education they would be better able to treat patients using medical cannabis”

What does this tell us? Canadian physicians feel the need for more education on medical marijuana.
Our conclusion

- Need for medical education on cannabis
- CTP vs Marijuana as a global subject?
- How should we fix this issue...
Assessing the current state of medical education on cannabis in Canada
Our study

- What is the current state of medical education on cannabis from the perspective of Canadian medical students?

- Do Canadian medical students feel prepared to answer questions asked by patients and their families on cannabis for therapeutic purposes as well as recreational uses?

- What are Canadian medical students’ shared perception as to what would be the most effective way(s) to integrate cannabis related teaching into the present medical curriculum?
Hypotheses

▪ Medical schools across Canada are receiving little to no training on cannabis related issues.

▪ Students at every level feel a low level of comfort with their knowledge on the subject.

▪ Canadian students feel that diverse strategies should be integrated within medical school curriculums to increase their knowledge towards cannabis and cannabis related health issues.
# Demographics

<table>
<thead>
<tr>
<th>Table 1 - Demographics</th>
<th>All</th>
<th>4th only</th>
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</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>87</td>
<td>12</td>
</tr>
<tr>
<td>Female</td>
<td>127</td>
<td>34</td>
</tr>
<tr>
<td>I rather not say/Other</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>23</td>
<td>23</td>
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<tr>
<td>Highest Level of Education Prior to Med School</td>
<td></td>
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<tr>
<td>CEGEP/High School</td>
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<td>Undergraduate</td>
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<td>10</td>
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<td>6</td>
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<tr>
<td>Post-Doc Studies</td>
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<td>0</td>
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<td>What year of medical school are you presently enrolled in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PreMed</td>
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<td>0</td>
</tr>
<tr>
<td>1st</td>
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<td>2nd</td>
<td>48</td>
<td>0</td>
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<tr>
<td>3rd</td>
<td>51</td>
<td>0</td>
</tr>
<tr>
<td>4th</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>5th</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
School Distribution

- Université de Sherbrooke: 23.7%
- Université Laval: 12.3%
- McGill University: 11.8%
- Université de Montréal: 52.1%
Have you had a training (or a course) during your medical curriculum on:
How would you rate your level of comfort with:

- Discussing cannabis and its effects on health with patients and/or t...
- Discussing the potential medical use of cannabis with a patient...
- The management of a patient who has a can...
- With using the resources available to...
- Using the resources available to physicians...
- Referring a patient to the resources available...
- Referring a patient to the resources available...

How would you rate your level of comfort with:

- Discussing cannabis and its effects on health with patients and/or t...
- Discussing the potential medical use of cannabis with a patient...
- The management of a patient who has a can...
- With using the resources available to...
- Using the resources available to physicians...
- Referring a patient to the resources available...
- Referring a patient to the resources available...
How would you rate your medical school curriculum in its capacity to prepare you to face cannabis related issues in your future practice?

- Very Low: Count (70) vs Count (Grads) (70)
- Low: Count (100) vs Count (Grads) (100)
- Moderate: Count (40) vs Count (Grads) (40)
- High: Count (10) vs Count (Grads) (10)
- Very High: Count (0) vs Count (Grads) (0)
For each of the following subjects, do you believe that the teaching within your current medical school curriculum should be improved?
For each of the following subjects, do you believe that the teaching within your current medical school curriculum should be improved?

[Bar chart showing the percentage of medical graduates who believe the teaching should be improved for various subjects, with categories such as 'The endocannabinoid system', 'Cannabis use', 'Cannabis use management', 'Therapeutic use of cannabis', 'How to prescribe cannabis', 'Resources availability', 'Regulations surrounding cannabis use']
Please indicate which educational methods would be necessary to increase your comfort level with regards to the above mentioned cannabis related subjects?
Which educational method, of those mentioned above, would be the most important to integrate into medical school curriculums?

- Formal Lectures
- Case-Based Learning
- Increased Clinical Experience
- Increased Clinical Experience
- Direct Contact
- Direct Contact

![Bar Chart](chart.png)
Limitation of Study

1) Limited to Quebec
2) Sample size (n= 200 vs n=4200)
3) Selection Bias
   a) Interest levels of students for cannabis studies
4) Response bias
   a) self-reported data
5) Definition of a course/training versus exposure
1) Data suggests that there is a lack of education/exposure at all levels of medical school in Quebec
2) Student responders feel that they have very low to moderate knowledge and comfort levels on a wide range of cannabis related subjects
3) The majority of student responders believe that their curriculums could be improved by increasing exposure to cannabis related subjects (formal based lectures and increased exposure to patients)
Lessons from the Opioid Curriculum
The opioid crisis in Canada

- 53% increase in hospitalizations due opioid poisoning over the last 10 years
  - Oxycodone (1996), Fentanyl, Carfentanil
- Estimated over 4000 died from opioid related OD in 2017

- Are we, as physicians, responsible?

21 million prescriptions were dispensed in 2016
Level of comfort with opioid prescription

Primary Care Provider Concerns about Management of Chronic Pain in Community Clinic Populations


- 111 responders: 67 physicians, 22 residents, 19 Nurse Practitioners, 3 Physician assistants
- Satisfaction with chronic pain management education and training:
  - Scale of 0=insufficient, 1=adequate, 2=good, and 3=very good
    - Medical school: mean 0.35 (SD 0.67)
    - Post-graduate education: mean 0.7 (SD 0.84)

- 81.5% of physicians rated their training as insufficient
- 47.6% of residents rated their medical curriculum as insufficient
Level of comfort with opioid prescription

- PCP feel poorly prepared by their professional training for treating patients with chronic pain.

- Concerns about patient self-management and opioid prescription

- Emphasis on patient-centered approaches to chronic pain management, including skills for assessing risk of opioid abuse and addiction
A survey of prelicensure pain curricula in health science faculties in Canadian universities

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- Survey of 9 medical faculties curriculum across Canada
  - Only 32.5% respondents could identify specific hours allotted for pain course content
  - Average 16h (range 0-38h) designated mandatory formal content
Pain Curricula in Medical Faculties

![Diagram showing distribution of hours by content: physiology, misbeliefs, assessment, pharmacology, non-pharm, monitoring]
Challenges of opioid curriculum

- Difficulties in assessing exposure in clinical settings
  - Extremely varied exposure depending on the particular clinical experiences and clinicians involved
  - Unable to specify time spent on pain during clinical rotations

- Need for pain-related curriculum resources and interprofessional opportunities
  - Case studies and modules dedicated to pain management
  - Web-based material
  - Resources to reflect an interdisciplinary or interprofessional approach to pain
Opioid Related Curriculum

▪ AFMC Response to the Canadian Opioid Crisis
  – Report on best practice and accreditation standards concerning pain management and opioid prescription
▪ Focused on 4 key questions on opioids and addiction to all 17 medical faculties in Canada
  – Best practices to teach medical students
  – Best way to train residents
  – Best practices for continuing professional development
  – Role of medical schools in education and training related to prescription opioid abuse
Competencies and skills:

- Diagnosis and Assessment of Pain
- Treatment of Pain
- Differentiation between types of pain such as acute, chronic, cancer and non-cancer pain
- Treatment in psychosocial, and non-medical context
- Interdisciplinary training multi-dimensional pain care
- Safe prescribing, initiation, monitoring and where appropriate discontinuation of pain medications with a focus on Opioids
- Management of adverse effects of opioids (common and less common side effects)
- Recognition of effectiveness in symptom management
- Medical, personal and family consequences of substance use disorders
- Risk assessment and management of substance use disorders
- Prevention of misuse and diversion
Best Way to Teach Medical Students

- When
  - All stages of learning: Pre Clerkship, Clerkship

- What
  - Introductory concepts in UGME and evidence-based management, treatment, pharmacology and neuropharmacology, safe prescribing, non-medical options, contracts, diagnosis and management of addictions
Best Way to Train Residents

- **Who**
  - ALL specialities.

- **When**
  - All years, with gradual increase of knowledge level and responsibility

- **How**
  - Integrated into the existing curricula but also exist as stand-alone focused modules, and optimizing web-based routes for maintenance of competency
Best Practices for Continuing Professional Development

- What
  - Guidelines about prescribing and surveillance
  - Guidelines for identifying, managing, treating and navigating addictions and substance abuse

- How
  - Technology and web-based modules and examples of excellent peer mentorship in practice.
Tools for Physicians

The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain
The opioid crisis in Canada

- 21 million prescriptions were dispensed in 2016
- Estimated over 4000 died from opioid-related OD in 2017
- 53% increase in hospitalizations due to opioid poisoning over the last 10 years

2019 North American Cannabis Summit

2017 CANADIAN OPIOID PRESCRIBING GUIDELINE

KEY POINTS

- Patients with chronic noncancer pain may be offered a trial of opioids only after they have been optimized on an opioid therapy, including non-drug measures.
- We suggest avoiding opioid therapy for patients with a history of substance use disorder (including alcohol) or current mental illness, and opioid therapy should be avoided in cases of active substance use disorder.
- For patients beginning opioid therapy, we recommend restricting to under 90 mg morphine equivalents daily (MME) and suggest restricting the maximum prescribed dose to under 50 mg MME.
- Patients already receiving high-dose opioid therapy (≥90 mg MME) should be encouraged to embark on a gradual dose taper, and multidisciplinary support offered where available to those who experience challenges.

RECOMMENDATION 1

When considering therapy for patients with chronic noncancer pain, we recommend optimization of nonopioid pharmacotherapies and nonpharmacologic therapies, rather than a trial of opioids (strong recommendation).

RECOMMENDATION 2

For patients with chronic noncancer pain with an active substance use disorder, we recommend against the use of opioids (strong recommendation).

RECOMMENDATION 3

For patients with chronic noncancer pain with an active substance use disorder, we recommend against the use of opioids (strong recommendation).

RECOMMENDATION 4

For patients with chronic noncancer pain with an active psychiatric disorder whose nonopioid therapy has been optimized, and who have persistent problematic pain, we suggest stabilizing the psychiatric disorder before a trial of opioids is considered (weak recommendation).

RECOMMENDATION 5

For patients with chronic noncancer pain with a history of substance use disorder, whose nonopioid therapy has been optimized, and who have persistent problematic pain, we suggest continuing nonopioid therapy rather than a trial of opioids (weak recommendation).

RECOMMENDATION 6

For patients with chronic noncancer pain who are beginning opioid therapy, we recommend restricting the prescribed dose to less than 90 mg morphine equivalents daily, rather than having no maximum, or a higher limit on dosing (strong recommendation).

RECOMMENDATION 7

For patients with chronic noncancer pain who are currently using opioids, and have persistent problematic pain and/or problematic adverse effects, we suggest reduction to other opioids rather than keeping the opioid the same (weak recommendation).

RECOMMENDATION 8

For patients with chronic noncancer pain who are currently using opioids, and have persistent problematic pain and/or problematic adverse effects, we suggest reduction to other opioids rather than keeping the opioid the same (weak recommendation).

RECOMMENDATION 9

For patients with chronic noncancer pain who are currently using 90 mg morphine equivalents of opioids per day or more, we suggest tapering opioids to the lowest effective dose, potentially including discontinuation, rather than making no change in opioid therapy (weak recommendation).

RECOMMENDATION 10

For patients with chronic noncancer pain who are using opioids and experiencing serious challenges in tapering, we recommend a formal multidisciplinary program (strong recommendation).

GREAT PRACTICE STATEMENTS

- Acquire informed consent prior to initiating opioid use for chronic noncancer pain. A discussion about potential benefits, adverse effects, and complications will facilitate shared-care decision making regarding whether to proceed with opioid therapy.
- Clinicians should monitor chronic noncancer pain patients using opioid therapy for their response to treatment, and adjust treatment accordingly.
- Clinicians with chronic noncancer pain patients prescribed opioids should address any potential contraindications and exchange relevant information with the patient's general practitioner (if they are not the general practitioner) and/or pharmacists.

RECOMMENDATION 11

For patients with chronic noncancer pain with an active psychiatric disorder whose nonopioid therapy has been optimized, and who have persistent problematic pain, we suggest stabilizing the psychiatric disorder before a trial of opioids is considered (weak recommendation).

RECOMMENDATION 12

For patients with chronic noncancer pain who are beginning opioid therapy, we recommend restricting the prescribed dose to less than 90 mg morphine equivalents daily, rather than having no maximum, or a higher limit on dosing (strong recommendation).

RECOMMENDATION 13

For patients with chronic noncancer pain who are currently using opioids, and have persistent problematic pain and/or problematic adverse effects, we suggest reduction to other opioids rather than keeping the opioid the same (weak recommendation).

RECOMMENDATION 14

For patients with chronic noncancer pain who are currently using opioids, and have persistent problematic pain and/or problematic adverse effects, we suggest reduction to other opioids rather than keeping the opioid the same (weak recommendation).

RECOMMENDATION 15

For patients with chronic noncancer pain who are currently using 90 mg morphine equivalents of opioids per day or more, we suggest tapering opioids to the lowest effective dose, potentially including discontinuation, rather than making no change in opioid therapy (weak recommendation).

RECOMMENDATION 16

For patients with chronic noncancer pain who are using opioids and experiencing serious challenges in tapering, we recommend a formal multidisciplinary program (strong recommendation).

COLLABORATING FOR BETTER CARE

National medical organizations have come together to form the Pan-Canadian Collaborative for Improved Opioid Prescribing. This partnership seeks to connect prescribers with educational resources to help address the harms associated with prescription opioids, including addiction, overdose, and death. The Collaborative is also committed to helping ensure Canadians have timely and appropriate access to optimal treatment for acute and chronic pain.

The Collaborative is pleased to disseminate the 2017 Canadian Guideline for Opioid Therapy.

Centre at McMaster University. The guidelines are integral in assisting the practice decisions regarding use of opioids for chronic noncancer pain management based on the latest evidence and expert opinion.

Health care professionals will have access to an app available at https://www.mapcanc.org/pubs/guidelines/opioid guideline.html that gives easy access to the evidence underpinning the recommendations. There will be a self-directed CME on the guidelines available online.

These new prescribing guidelines are intended to improve patient safety, however, there are some acceptable harms while reducing opioid prescribing levels. Becoming familiar with the risks of abrupt cessation of opioids, strategies for overdose prevention, and resources to guide tapering and assessment of opioid use disorder may mitigate risks associated with reducing opioid prescribing. The work seeks to support physicians and therapists to get the information they need, how they need it.

Clinicians should share these guidelines with their members about new prescribing guidelines and considerations.
Role of Medical Schools in Education and Training Related to Prescription Opioid Abuse

“Medical schools are critical in the education and training to ensure safe opioid prescribing and ensure harm reduction. Without foundational knowledge students become practitioners who are unsafe prescribers.”

“This part of the curriculum should be mandatory as doctors prescribe... Doctors are the main gatekeepers to access and therefore are held accountable for the downstream effects and uses of these medications.”
How can this apply to cannabis education?

- Implementing introductory concepts (pharmacology, diagnosis, management, safe prescription) and evidence-based material early and across all the curriculum

- Dedicate mandatory formal training to cannabis, cannabis use and complications and medical cannabis prescription by including cannabis related objectives at the national level of accreditation (AFMC, medical colleges, etc.)

- Implement clear prescription and management guidelines for physicians

- Continuing professional development tools and workshops
Cannabis and Advocacy

How to ignite a change in curriculum
Pearls and pitfalls from our experience
Bringing our concerns to the government

- Informative document
  - For students and stakeholders
- Official recommendations
  - Harm reduction approach
  - How to safely legalize cannabis
- Unique angle
  - Medical students = future of medical care
  - Acting today for the patients of tomorrow
Levels of governance

Academic
Medical faculties
Nation wide (AFMC, Accreditation)

Political
Municipal
Provincial/State
Federal/National

Regulatory bodies
Medical Colleges/Orders
Getting the message out

- Regular follow ups
  - Faculties
  - Government officials
- Social media
- Traditional media
Changing the curriculum?

As students, we had the opportunity to bring our concerns to the federal and provincial government, which allowed us to ensure cannabis would be legalized with a goal of harm reduction.

We believe it is our duty to bring about this same change to medical curriculums across the country and certify every doctor will be properly trained to manage cannabis-related health problems, from use disorder to prescription.
So Wrap It All Up

- Need for cannabis related teaching in medical curriculum, as seen in prior studies and in the present study

- Pre-existing models on how to integrate teaching successfully into medical curricula exist

- Our plan: Implementing the changes required to complete our current curriculums
Thank you!

This would not have been possible without the help of

- Our co-author Dr. Tara D’Ignazio
- Our supervisor Dr. Didier Jutras-Aswad
Questions?