Learning From Past Mistakes – Opioids, Cannabis and the Treatment of Chronic Non-Cancer Pain Conditions

Jefferson
Philadelphia University + Thomas Jefferson University
HOME OF SIDNEY KIMMEL MEDICAL COLLEGE

Joseph Flaxer, MD(c), MPH (c)
Mentors: Marianna LaNoue, PhD MS; Mitchell Cohen, MD

Background

Overview

- Finding effective treatments for chronic pain is a major public health challenge
- Claims of opioid effectiveness without addiction for Chronic Non-Cancer Pain (CNCP) conditions was rooted in uncritical citation of faulty science by the pharmaceutical industry and physicians
  - **National Public Heath Impact of 'opioid epidemic' is well known**
- Medical Cannabis has proliferated as a physician-prescribed treatment for Chronic Non-Cancer Pain conditions
- Research Question – has the medical community 'repeated past mistakes' in chronic pain management?

Our Approach

- Comparative analysis of quality of evidence for opioids and cannabis for CNCP conditions during their periods of liberalization

Method

1. Identification of *'liberalization periods'*

- Opioids: 1989-1999
- Cannabis: 1998 – 2008

2. Literature search for Randomized Control Trials (RCTs)

- Literature search results of recently published systematic reviews
- Restricted time periods to identified liberalization periods

3. Independent evaluation (2 raters) using GRADE criteria (*Cochrane Collaborative tool for assessing Quality of Evidence)*, with consensus review

- 5 Domains
  1. Risk of Study Bias
  2. Risk of Publication Bias
  3. Risk of Indirectness
  4. Risk of Imprecision
  5. Risk of Inconsistency

4. Synthesized results final GRADE for each body of evidence

- 4 levels of evidence
  1. High
  2. Moderate
  3. Low
  4. Very Low

5. Contextualized final GRADE for each body of evidence

- Considered important factors including…
  - Timeline of events during both liberalization periods
  - The overall state of the rigor of scientific research in each time period
  - Differing policies and laws surrounding opioids and cannabis

Results

Table 1: Summary of GRADE Evaluations

	Liberalization Period	# Studies Reviewed	# Studies Published	Quality of Evidence	Main Concerns
Opioids	1998-1998	6	6	High Moderate Low Very Low	• Publication bias • Handling of dropouts • Incomplete outcome Data • Vague Method descriptions • Indirectness of population and intervention
Cannabis	1997-2007	10	8	High Moderate Low Very Low	• Publication bias • Potential blinding issues • Indirectness of Population

Figure 1: Timeline of Events, Opioids

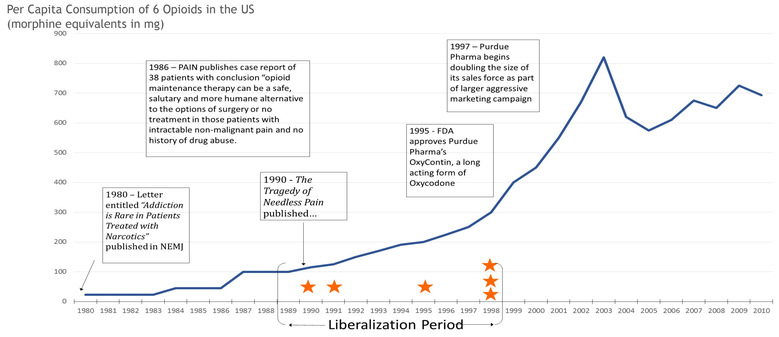
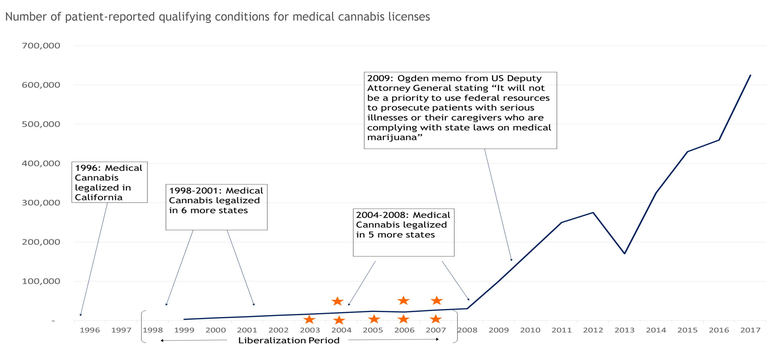


Figure 2: Timeline of Events, Cannabis

★ indicate publication years of included studies



Conclusions & Discussion

- Scientific rigor was greater during cannabis liberalization than during opioid liberalization (and greater now than during cannabis liberalization period)
  - Explains some but not all of the improvement in quality of evidence according to the modern GRADE standards
- As schedule 2 substances, opioids were easier to conduct studies on, yet bigger and higher quality studies were not done
- As schedule 1 substances, cannabinoid quality of evidence was likely hindered by difficulty conducting studies
- **Despite these differences and qualifiers, the parallels are striking**
- In both cases, treatments were liberalized in spite of evidence quality ranging from low to very low
  - From almost exclusively small, industry sponsored studies
  - For cannabis, the only 2 studies with 'negative' results accounted for 49% of the total N across studies, and neither were published
- Evidence translation & uptake is slow
- Physician ultimately responsible for interpreting and contextualizing the evidence
  - In chronic pain management, this seems to have not happened while these substances were being liberalized

Policy Implications

- **Rescheduling marijuana (from schedule 1) would make research easier, providing higher quality evidence**
- **Reinforcing quality and rigor standards for clinical trials, peer-review and publication**
  - **CONSORT reporting standard in 2001, 2010**
- **Medical school curricula could include more emphasis on EBM, interpretation & evidence synthesis in place of other topics**
- **More consistent & authoritative sources for treatment & prescribing recommendations needed**

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Detail procedures & citations available by request