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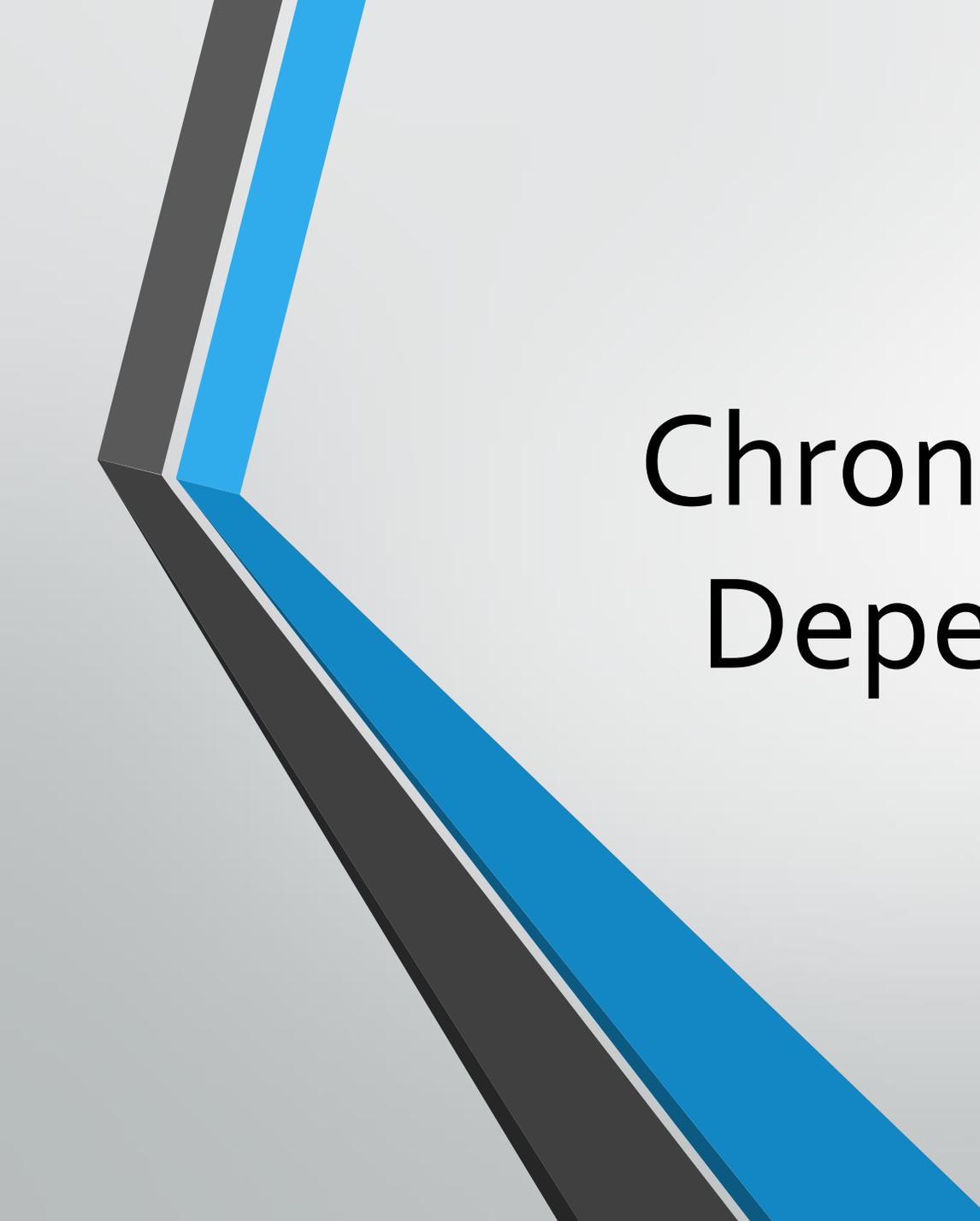


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Chronic Pain: Decreasing Dependence on Opioids

Derek Luzim, MS-3

University of Vermont College of Medicine

Family Medicine Clerkship, July-August 2016

Berlin Family Practice

Problem And Need

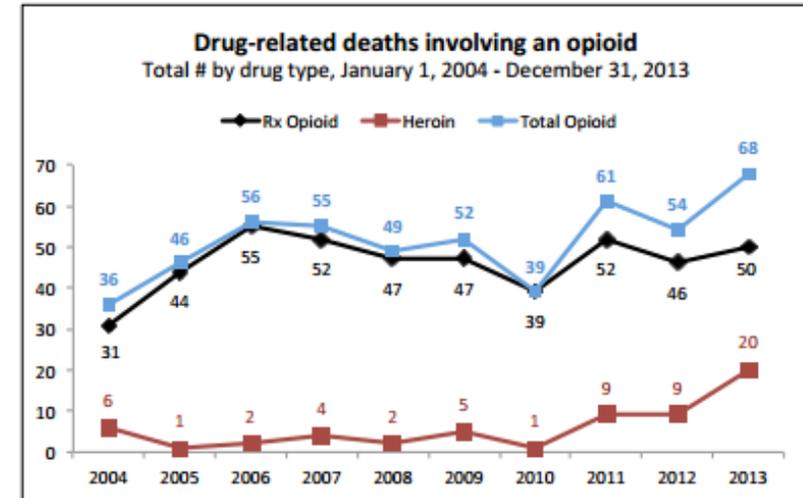
- **Chronic pain** can be described as ongoing or recurrent pain, lasting beyond the usual course of acute illness or injury or more than 3 to 6 months, and which adversely affects the individual's well-being. (ACPA)
- Historically, opioids have been used to treat pain
- Opioids can be helpful in the short-term, but long-term use leads to tolerance, dependence, and the risk of diversion and overdose. There is also evidence that opiates provide little to no gain in actual functioning and inadequate relief of pain concerns
- Providers and patients need education and support in decreasing opioid use and providing alternative modalities for chronic pain treatment

Public Health Cost

- In the U.S. persistent pain impacts 100 million adults and costs from \$560 to \$635 billion annually.
- Costs include direct medical cost, disability, and lost wages and productivity
- The costs of persistent pain exceed the economic costs of the six most costly major diagnoses—cardiovascular diseases (\$309 billion); neoplasms (\$243 billion); injury and poisoning (\$205 billion); endocrine, nutritional, and metabolic diseases (\$127 billion); digestive system diseases (\$112 billion); and respiratory system diseases (\$112 billion)

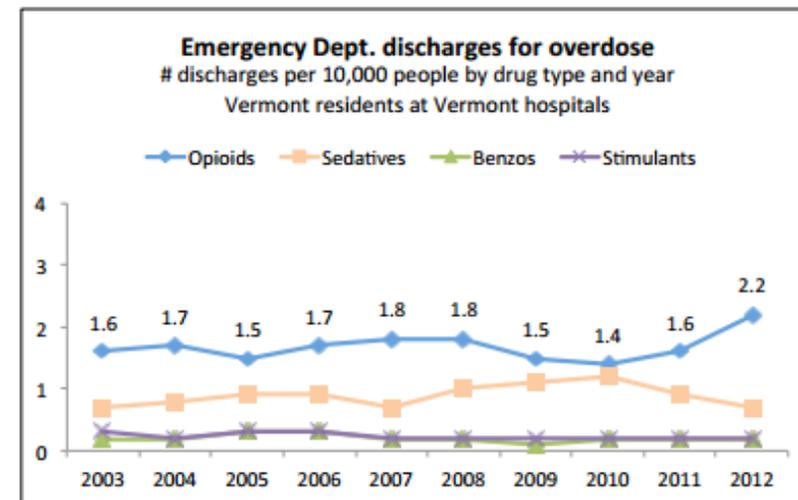
Public Health Cost

- Opioid use, even when medically indicated, has its own related public health costs
- Opioids create risk for accidental overdose and death



Vermont Department of Health/Office of the Chief Medical Examiner

NOTE: Total opioid includes unidentified opioids. Heroin and prescription opioids are not mutually exclusive



Vermont Department of Health/Vermont Uniform Hospital Discharge Data Set

Community Perspective

Rodger Kessler, PHD, Berlin Family Practice

- Generation of people addicted to opiates, and they are upset that doctors are now decreasing their medications after years of prescribing them for pain. More information will not necessarily change their behavior – we have to treat the addiction.
- Berlin Family practice could benefit from better coordination between MDs and Community Health Team regarding linkages to community resources.
- The probability of success is low that patients can substantially lower or eliminate their dependence on opiates for chronic pain, but success is greater with community-based therapy.
- Opioid Toolkit developed by Vermont providers is a model for how to approach use of narcotics

Community Perspective

Jacqueline M. S. Jancaitis, PT, The RehabGYM, Barre, VT

- Assessment based on functional capacity rather than “how much” pain they feel. Focus placed on gaining function that will improve quality of life.
- Ongoing discussion about medications/drugs used, functional improvements appreciated during PT, pain experienced, and referral back to doctor for possible medication adjustment.
- Mental Health counseling one of the most important ways to assist physical therapy. “Occasionally someone is appropriate for yoga or meditation, but mostly it seems coping strategies are more appropriate.”
- “Patient's who get off narcotics report to me that they're pain is very different after they are off the medication. A lot of them get stuck in a pain cycle on the medication and then when they are off the pain is better for no other reason.”

Intervention

- Literature Review
- Patient information sheet explaining role, limitations, and risks of opioid medication for chronic pain
- Provider Information sheet regarding Milligram Morphine Equivalent Conversion and evidence about opioid dosage and safety
- Survey for providers about intervention

Patient Information

Why do we try to reduce levels of opiate use?

Questionable Pain Control

Patients can experience tolerance and loss of effectiveness of opioids over time. (1)

Some patients taking opioids on a long-term basis develop *greater* sensitivity to painful stimuli. (2)

Patients who do not experience clinically meaningful pain relief early in treatment (i.e., within 1 month) are unlikely to experience pain relief with longer-term use. (3)

Patient Safety

Opioid therapy is associated with increased risk for an opioid abuse or dependence diagnosis. (4)

Higher opioid dosages are associated with higher overdose risk. (5)

You may be at greater risk for harm if you:

- Have sleep apnea or other causes of sleep-disordered breathing
- Have kidney or liver impairment
- Are an older adult
- Are pregnant
- Have depression or other mental health conditions
- Have alcohol or other substance use disorders
- Take a benzodiazepine medication

How much is safe?

What is a Morphine Milligram Equivalent (MME)?

Because there are many different types of opioids with different strengths, doctors have a standardized way of comparing dosages called the Morphine Milligram Equivalent (MME). Determinations of safety are based on the overdose risk associated with the MME of your current daily dose. There is no true cutoff, but research has shown that overdose risk increases with a higher MME.

1-20 MME	20-50 MME	50-100 MME	>100 MME
Relatively safe. Use smallest effective dose for shortest period of time.	Approximately 2-4X increased risk of overdose compared to <20 MME. Safer than 50-100 MME.	Approximately 2-9X increased risk of overdose. Does not necessarily improve pain control or function.	Significant risk for overdose. Careful justification required based on individualized assessment.

Hydromorphone (Dilaudid), 2 mg = 8 MME

Hydrocodone 5mg - Acetaminophen 325 mg (Vicodin), 4/day = 20 MME

Oxycodone (Oxycontin), 10 mg, 2/day = 30 MME

Methadone, 10 mg/day = 40 MME

Methadone, 30 mg/day = 240 MME

*The above are examples of commonly prescribed opioids. **Ask your provider to calculate your specific dosage** in Milligram Morphine Equivalents (MME)

Provider Information

TABLE 2. Morphine milligram equivalent (MME) doses for commonly prescribed opioids

Opioid	Conversion factor*
Codeine	0.15
Fentanyl transdermal (in mcg/hr)	2.4
Hydrocodone	1
Hydromorphone	4
Methadone	
1–20 mg/day	4
21–40 mg/day	8
41–60 mg/day	10
≥61–80 mg/day	12
Morphine	1
Oxycodone	1.5
Oxymorphone	3
Tapentadol [†]	0.4

The following information is excerpted from:

Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. *MMWR Recomm Rep* 2016;65(No. RR-1):1–49.

DOI: <http://dx.doi.org/10.15585/mmwr.rr6501e1>

The contextual evidence review found that although there is not a single dosage threshold below which overdose risk is eliminated, holding dosages <50 MME/day would likely reduce risk among a large proportion of patients who would experience fatal overdose at higher prescribed dosages. Experts agreed that lower dosages of opioids reduce the risk for overdose, but that a single dosage threshold for safe opioid use could not be identified. Experts noted that daily opioid dosages close to or greater than 100 MME/day are associated with significant risks, that dosages <50 MME/day are safer than dosages of 50–100 MME/day, and that dosages <20 MME/day are safer than dosages of 20–50 MME/day. One expert thought that a specific dosage at which the benefit/risk ratio of opioid therapy decreases could not be identified. Most experts agreed that, in general, increasing dosages to 50 or more MME/day increases overdose risk without necessarily adding benefits for pain control or function and that clinicians should carefully reassess evidence of individual benefits and risks when considering increasing opioid dosages to ≥50 MME/day. Most experts also agreed that opioid dosages should not be increased to ≥90 MME/day without careful justification based on diagnosis and on individualized assessment of benefits and risks.

Regarding high-dose therapy, several epidemiologic studies that were excluded from the clinical evidence review because patient samples were not restricted to patients with chronic pain also examined the association between opioid dosage and overdose risk (23,24,124–126). Consistent with the clinical evidence review, the contextual review found that opioid-related overdose risk is dose-dependent, with higher opioid dosages associated with increased overdose risk. Two of these studies (23,24), as well as the two studies in the clinical evidence review (66,67), evaluated similar MME/day dose ranges for association with overdose risk.

In these four studies, compared with opioids prescribed at <20 MME/day, the odds of overdose among patients prescribed opioids for chronic nonmalignant pain were between 1.3 (67) and 1.9 (24) for dosages of 20 to <50 MME/day, between 1.9 (67) and 4.6 (24) for dosages of 50 to <100 MME/day, and between 2.0 (67) and 8.9 (66) for dosages of ≥100 MME/day.

Compared with dosages of 1–<20 MME/day, absolute risk difference approximation for 50–<100 MME/day was 0.15% for fatal overdose (24) and 1.40% for any overdose (66), and for ≥100 MME/day was 0.25% for fatal overdose (24) and 4.04% for any overdose (66).

A recent study of Veterans Health Administration patients with chronic pain found that patients who died of overdoses related to opioids were prescribed higher opioid dosages (mean: 98 MME/day; median: 60 MME/day) than controls (mean: 48 MME/day, median: 25 MME/day) (127).

Finally, another recent study of overdose deaths among state residents with and without opioid prescriptions revealed that prescription opioid-related overdose mortality rates rose rapidly up to prescribed doses of 200 MME/day, after which the mortality rates continued to increase but grew more gradually (128).

Response

- Survey was sent to Berlin Family Practice Providers for feedback and suggestions for improvement
- Responses will be reviewed and guide changes to intervention and recommendations for future projects.

- 1) How likely are you to use this information sheet when discussing opiate prescription status with patients?
Not Likely 1 2 3 4 5 Very Likely
- 2) How likely will this information sheet be helpful to patients?
Not Likely 1 2 3 4 5 Very Likely
- 3) Is it straightforward enough for patients to understand? Will patients learn something related to opiate use and associated risks?
- 4) Do you think it will have any effect on patient beliefs and behavior around opiate use?
- 5) Is the information in this sheet redundant as it relates to patient opiate use agreements?
- 6) Do you think it is helpful for patients to understand Morphine Milligram Equivalents (MME) as a basis for decision-making around opiate dosage?
- 7) What additional information would you want to include in an information sheet?
- 8) If you were to use this information sheet, in what format would it be most useful (e.g. pamphlet, dot phrase, simple handout)?

Evaluation and Limitations

- Provider survey responses will inform practicality of intervention
- Tracking the number of information sheets given will assess its clinical utility
- Following practice-wide trends will demonstrate progress on this issue. Indicators may include the number of patients using opiates for chronic pain and the dosage or Milligram Morphine Equivalents prescribed
- It will be difficult to evaluate role of the information sheet in reducing opiate use vs. motivational interviewing and guidance from the provider.
- Additionally, many other variables will impact patient response such as access to complimentary treatment, level of social support, housing, access to food, and transportation.

Recommendations

- Practice-wide adoption of recommendations from:
Improving Opioid Prescribing: Sustainable Solutions for Vermont. Opioid Prescription Management Toolkit for Chronic Pain: Practice Fast Track
Connie van Eeghen, DrPH, Charles D. MacLean, MD, Amanda G. Kennedy, PharmD, BCP
- Provider and Community Health Team meeting(s) to plan specific actions that can increase the capacity of the community health team for connecting chronic pain patients with community-based resources and services.
- Continue to educate patients about the risks associated with opioid use and engage in realistic goal-setting for functioning with chronic pain

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