Opioids and controlled substances

Joshua D. Lenchus, DO, RPh, FACP, SFHM

Regional Chief Medical Officer, Broward Health Medical Center
Immediate Past President, Florida Osteopathic Medical Association
Speaker of the House, Florida Medical Association
Adjunct Associate Professor of Medicine, NSU-KCPCOM
Disclosure

- No financial or other material conflicts of interest

- Not representative of any institution or organization
Outline-1

- Pharmacology of opiates
- Epidemiology of opioid crisis
- Current Michigan statistics regarding M&M of controlled substance-related deaths
- Current standards, laws and rules on prescribing controlled substances
- Proper prescribing of opiates
- Risks, diagnosis and treatment of opioid addiction
Outline-2

- Prescribing emergency opioid antagonists
- Alternatives to controlled substance prescribing
  - Nonpharmacological therapies
- Controlled substance disposal
- Pharmacology of opiates
- Epidemiology of opioid crisis
- Current Michigan statistics regarding M&M of controlled substance-related deaths
- Current standards, laws and rules on prescribing controlled substances
- Proper prescribing of opiates
- Risks, diagnosis and treatment of opioid addiction
Definitions

- Opiate
- Opioid
- Narcotic
- Controlled substance
Mechanism of action

[Diagram showing the mechanism of action of opioids, including the involvement of morphine, cAMP, and calcium ions in the dorsal horn, leading to hyperpolarization and no nociception.]
## Receptor activity

<table>
<thead>
<tr>
<th>Mu</th>
<th>Delta</th>
<th>Kappa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analgesia</td>
<td>Analgesia with fewer adverse effects</td>
<td>Mild analgesia</td>
</tr>
<tr>
<td>Sedation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Euphoria</td>
<td></td>
<td>Dysphoria</td>
</tr>
<tr>
<td>Respiratory depression</td>
<td></td>
<td>Less respiratory depression</td>
</tr>
<tr>
<td>Constipation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical dependence</td>
<td></td>
<td>Decreased dependence</td>
</tr>
</tbody>
</table>
# Opioid classification

<table>
<thead>
<tr>
<th>Full agonist</th>
<th>Partial agonist</th>
<th>Agonist-antagonist</th>
<th>Antagonist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>Buprenorphine</td>
<td>Pentazocine</td>
<td>Naloxone</td>
</tr>
<tr>
<td>Fentanyl</td>
<td></td>
<td>Butorphanol</td>
<td>Naltrexone</td>
</tr>
<tr>
<td>Oxycodone</td>
<td></td>
<td>Nalbuphine</td>
<td></td>
</tr>
<tr>
<td>Hydrocodone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methadone</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Opioid comparison

<table>
<thead>
<tr>
<th>Medication</th>
<th>Onset (po)</th>
<th>Duration (po)</th>
<th>Equianalgesic dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fentanyl patch</td>
<td>12-24 hrs</td>
<td>72 hrs/patch</td>
<td>12.5mcg/hr; 0.1mg IV</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>15-30 mins</td>
<td>4-6 hrs</td>
<td>6 - 7.5mg po/1.5mg IV</td>
</tr>
<tr>
<td>Tapentadol</td>
<td>1.5 hrs (IR)</td>
<td>4 hrs</td>
<td>100mg po</td>
</tr>
<tr>
<td>Morphine IR</td>
<td>30-60 mins</td>
<td>3-6 hrs</td>
<td>30mg po/10mg IV</td>
</tr>
<tr>
<td>MS Contin®</td>
<td>30-90 mins</td>
<td>8-12 hrs</td>
<td>30mg po</td>
</tr>
<tr>
<td>Oxycodone IR</td>
<td>15-30 mins</td>
<td>4-6 hrs</td>
<td>20mg po</td>
</tr>
<tr>
<td>OxyContin®</td>
<td>1 hr</td>
<td>12 hrs</td>
<td>20mg po</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>30-60 mins</td>
<td>4-6 hrs</td>
<td>30mg po</td>
</tr>
<tr>
<td>Codeine</td>
<td>30-60 mins</td>
<td>4-6 hrs</td>
<td>200mg po/100–120mg IV</td>
</tr>
<tr>
<td>Meperidine</td>
<td>10-15 mins</td>
<td>2-4 hrs</td>
<td>300mg po/75-100mg IV</td>
</tr>
<tr>
<td>Phenanthrenes</td>
<td>Phenylpiperidines</td>
<td>Phenylheptylamines</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------</td>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td>Morphine</td>
<td>Fentanyl*</td>
<td>Methadone*</td>
<td></td>
</tr>
<tr>
<td>Hydromorphone*</td>
<td>Meperidine</td>
<td>Propoxyphene (d/c’d)</td>
<td></td>
</tr>
<tr>
<td>Oxymorphone*</td>
<td>Diphenoxylate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Codeine</td>
<td>Loperamide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrocodone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxycodone*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buprenorphine</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Controlled substance examples

<table>
<thead>
<tr>
<th>C-II</th>
<th>C-III</th>
<th>C-IV</th>
<th>C-V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codeine</td>
<td>Lower dose of codeine</td>
<td>Tramadol</td>
<td>Lowest dose of codeine</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>Anabolic steroids</td>
<td>Chlordiazepoxide</td>
<td>Robitussin-AC®</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>Lower dose of hydrocodone</td>
<td>Chlordiazepoxide</td>
<td>Lomotil®</td>
</tr>
<tr>
<td>Morphine</td>
<td>Ketamine</td>
<td>Clorazepate</td>
<td>Phenergan with codeine®</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>Dronabinol</td>
<td>Carisoprodol</td>
<td>CBD oil (Epidiolex®)</td>
</tr>
<tr>
<td>Methadone</td>
<td>GHB</td>
<td>Meprobamate</td>
<td></td>
</tr>
<tr>
<td>Amphetamine</td>
<td>Buprenorphine</td>
<td>Phentermine</td>
<td></td>
</tr>
<tr>
<td>Pentobarbital</td>
<td></td>
<td>Phenobarbital</td>
<td></td>
</tr>
</tbody>
</table>
- Pharmacology of opiates
- Epidemiology of opioid crisis
- Current Michigan statistics regarding M&M of controlled substance-related deaths
- Current standards, laws and rules on prescribing controlled substances
- Proper prescribing of opiates
- Risks, diagnosis and treatment of opioid addiction
LEAVE THE PAST IN THE PAST.
From 1999 to 2013, the amount of prescription opioid pain relievers prescribed & sold in the U.S. nearly quadrupled.

Yet there has not been an overall change in the amount of pain that Americans report.
History

- 1803: scientist discovers morphine
- 1874: chemist synthesizes diacetylmorphine
- 1898: pharmaceutical commercialization
- 1914: Harrison Narcotics Tax Act
- 1924: Anti-Heroin Act
- 1973: graduate student discovers opioid receptor

https://www.history.com/topics/crime/history-of-heroin-morphine-and-opiates
https://www.washingtonpost.com/national/health-science/candace-b-pert-neuroscientist-who-discovered-opiate-receptor-dies-at-67/2013/09/18/c84ef128-1eda-11e3-8459-657e0c72fcec_story.html?utm_term=.54b42d75dc3f
ADDICTION RARE IN PATIENTS TREATED WITH NARCOTICS

To the Editor: Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients, Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

JANE PORTER
Hershel Jick, M.D.
Boston Collaborative Drug Surveillance Program
Waltham, MA 02154

Boston University Medical Center

Chronic Use of Opioid Analgesics in Non-Malignant Pain: Report of 38 Cases

Russell K. Portenoy and Kathleen M. Foley

Pain Service, Department of Neurology, Memorial Sloan-Kettering Cancer Center, and Department of Neurology, Cornell University Medical College, New York, NY 10021 (U.S.A.)

(Received 10 June 1985, accepted 28 October 1985)

Summary

Thirty-eight patients maintained on opioid analgesics for non-malignant pain were retrospectively evaluated to determine the indications, course, safety and efficacy of this therapy. Oxycodone was used by 12 patients, methadone by 7, and levorphanol by 5; others were treated with propoxyphene, meperidine, codeine, pentaocine, or some combination of these drugs. Nineteen patients were treated for four or more years at the time of evaluation, while 6 were maintained for more than 7 years. Two-thirds required less than 20 morphine equivalent mg/day and only 4 took more than 40 mg/day. Patients occasionally required escalation of dose and/or hospitalization for exacerbation of pain; doses usually returned to a stable baseline afterward. Twenty-four patients described partial but acceptable or fully adequate relief of pain, while 14 reported inadequate relief. No patient underwent a surgical procedure for pain management while receiving therapy. Few substantial gains in employment or social function could be attributed to the institution of opioid therapy. No toxicity was reported and management became a problem in only 2 patients, both with a history of prior drug abuse. A critical review of patient characteristics, including data from the 16 Personality Factor Questionnaire in 24 patients, the Minnesota Multiphasic Personality Inventory in 23, and detailed psychiatric evaluation in 6, failed to disclose psychological or social variables capable of explaining the success of long-term management. We conclude that opioid maintenance therapy can be a safe, salutary and more humane alternative to the options of surgery or no treatment in those patients with intractable non-malignant pain and no history of drug abuse.
How did we get here?

- 1980s: opioids for non-malignant pain
- 1996: the 5th vital sign; OxyContin released
- 2001: TJC weighs in
- 2006: HCAHPS pain questions
- 2018: 130+ opioid-related OD deaths/day, US


Source of pain relievers for non-medical use, users aged 12 or older: 2012-2013

Image from SAMHSA, as cited in Tetrault and Butner, 2015.
U.S. State Prescribing Rates, 2006

U.S. State Prescribing Rates, 2008

U.S. State Prescribing Rates, 2010

U.S. State Prescribing Rates, 2014

U.S. State Prescribing Rates, 2006

U.S. State Prescribing Rates, 2016

Figure 1. National Drug Overdose Deaths Number Among All Ages, by Gender, 1999-2017

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database, released December, 2018
Figure 3. **National Drug Overdose Deaths Involving Any Opioid, Number Among All Ages, by Gender, 1999-2017**

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database, released December, 2018.

Figure 4. **National Drug Overdose Deaths Involving Prescription Opioids, Number Among All Ages, 1999-2017**

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database, released December, 2018

Figure 3. NAS/NOWS Incidence Rate and Hospital Costs for Treatment in the United States. Source: T N.A. Winkelman, et al., 2018.

Sobering statistics

- 21 – 29% of those Rx opioids misuse them
- 8 – 12% develop OUD
- 4 – 6% who misuse Rx opioids => heroin
- ~80% of heroin users first misused Rx opioids

- 80% post-op opioids go unused
- 3 – 10% chronic users post-op

- $78.5B/yr in economic cost, 2018

- Pharmacology of opiates
- Epidemiology of opioid crisis
- **Current Michigan statistics regarding M&M of controlled substance-related deaths**
- Current standards, laws and rules on prescribing controlled substances
- Proper prescribing of opiates
- Risks, diagnosis and treatment of opioid addiction
Figure 2. Michigan rate of overdose deaths involving prescription opioids and the opioid prescribing rate.
Source: CDC and CDC WONDER.
Historical Overview of Methamphetamine Occurrences
(Present and Cause)
2003 to 2017
Increase in psychostimulant deaths since 2010

Nationwide, deaths involving meth were 6762 in 2016 (3.5 x 2011 level)
Figure 1. Number of overdose deaths involving opioids in Michigan, by opioid category. Drug categories presented are not mutually exclusive, and deaths might have involved more than one substance. Source: CDC WONDER

# Drug overdose deaths

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>63,600</td>
<td>70,237</td>
<td>10.4</td>
</tr>
<tr>
<td>Michigan</td>
<td>1,883</td>
<td>2,033</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heroin</td>
<td>15,469</td>
<td>15,482</td>
<td>0.1</td>
</tr>
<tr>
<td>Methadone</td>
<td>3,373</td>
<td>3,194</td>
<td>- 5.3</td>
</tr>
<tr>
<td>All opioids</td>
<td>42,249</td>
<td>47,600</td>
<td>12.7</td>
</tr>
<tr>
<td>Semi-synthetic opioids</td>
<td>14,487</td>
<td>14,495</td>
<td>0.1</td>
</tr>
<tr>
<td>Synthetic opioids</td>
<td>19,413</td>
<td>28,466</td>
<td>46.6</td>
</tr>
</tbody>
</table>

https://www.cdc.gov/nchs/products/databriefs/db294.htm

https://www.cdc.gov/nchs/products/databriefs/db294.htm
Pharmacology of opiates

Epidemiology of opioid crisis

Current Michigan statistics regarding M&M of controlled substance-related deaths

Current standards, laws and rules on prescribing controlled substances

Proper prescribing of opiates

Risks, diagnosis and treatment of opioid addiction
Recently passed laws require prescribers to obtain and review a patient's prescription history in the Michigan Automated Prescription System prior to prescribing controlled substances to patients. The bills also create disciplinary action for prescribers who fail to use MAPS. Below is a summary of the new acts.

<table>
<thead>
<tr>
<th>Public Acts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Act 246 of 2017</td>
<td>Requires the disclosure of prescription opioid information and risks to minors and patients, beginning 6/1/18.</td>
</tr>
<tr>
<td></td>
<td>Required &quot;Start Talking&quot; form.</td>
</tr>
<tr>
<td>Public Act 247 of 2017</td>
<td>Requires prescribers to be in a bona fide prescriber-patient relationship prior to prescribing Schedules 2-5 controlled substances. These provisions were due to take effect on 3/31/18, however the implementation date has been pushed back by Public Act 101 of 2018.</td>
</tr>
<tr>
<td>Public Act 248 of 2017</td>
<td>Requires the review of MAPS prior to prescribing or dispensing to a patient a controlled substance in a quantity that exceeds a 3-day supply, beginning 6/1/18. Further, the act requires that a licensed prescriber be registered with MAPS prior to prescribing or dispensing a controlled substance to a patient, beginning 6/1/18.</td>
</tr>
</tbody>
</table>
Public Act 249 of 2017

Provides sanctions for failing to comply with the new MAPS usage mandates, failure to establish bona fide prescriber-patient relationships, and failure to inform patients regarding the risks associated with prescription opioid drugs.

Public Act 250 of 2017

Requires health professionals that treat patients for opioid-related overdoses to provide such patients with information regarding Substance Use Disorder Services, beginning 3/27/18.

Public Act 251 of 2017

Requires prescribers treating patients for acute pain to not prescribe such patients with more than a 7-day supply of an opioid within a 7-day period, beginning 7/1/18.

Public Act 252 of 2017

Provides that before dispensing or prescribing buprenorphine or a drug containing buprenorphine and methadone to a patient in a substance use disorder program, the prescriber shall review a MAPS report on the patient, beginning 3/27/18.

Public Act 253 of 2017

Codifies Medicaid coverage for detox programs, beginning 3/27/18.
<table>
<thead>
<tr>
<th>Public Act 254 of 2017</th>
<th>Requires the Prescription Drug and Opioid Abuse Commission (PDOAC) to develop for Michigan’s Department of Education (MDE) recommendations for the instruction of pupils on the dangers of prescription opioid drug abuse, by 7/1/18.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Act 255 of 2017</td>
<td>Requires MDE to make available to school districts a model program of instruction on the dangers of prescription opioid abuse, developed or adopted by the PDOAC, by 7/1/19. Further, beginning in the 2019-2020 school year, MDE shall ensure that the state include within its health education standards, instruction on prescription opioid drug abuse.</td>
</tr>
<tr>
<td>Public Act 101 of 2018</td>
<td>Pushes back the effective date for the bona fide prescriber-patient relationship requirement to 3/31/19, or if rules are promulgated to provide alternatives to the prescriber-patient requirement before 3/31/19, on the date on which rules are promulgated.</td>
</tr>
</tbody>
</table>
In The News…

- **Aug 2016**: influx of fentanyl-laced counterfeit pills and toxic compounds further increases risk of fentanyl-related ODs and fatalities

- **Sep 2016**: FDA adds boxed warnings to Rx opioids and BZDs
  - DEA issues carfentanil warning
Jan 1 2018: TJC requires opioid stewardship

- Designate a leader
- Engage patients
- Identify and monitor high-risk patients
- Facilitate PDMP access
- Screen patients
- Non-pharmacological pain management
- Identify treatment programs
- Conduct PI activities
October 24, 2018: SUPPORT for Patients and Communities Act
- $8.5B appropriation
- Expands recovery centers
- Curbs drug shipments
- Lifts treatment restrictions
- Frees new painkiller research
- Changes Medicare and Medicaid provisions

MISSING: provider education, labeling opioid bottles with risk
<table>
<thead>
<tr>
<th>Provision</th>
<th>House</th>
<th>Senate</th>
<th>Final Bill</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medicare and Drug Provisions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes provider reimbursements to incentivize the use of non-opioid drugs for post-surgical pain</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Requires CMS to test a bundled payment model to expand Medicare coverage for opioid treatment programs</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Improves providers’ ability to prescribe medication-assisted therapy drugs by expanding physician authorization</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Establishes grant programs to incentivize hospitals and emergency departments to use opioid alternatives</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Provides the National Institutes of Health authority to direct more funding toward opioid alternative research</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Allows CMS to waive limits on telemedicine reimbursement for substance abuse and related mental health disorders</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
</tr>
<tr>
<td>Mandates electronic prescribing in Medicare Part D for controlled substance prescriptions</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Requires Part D plans to establish drug management programs for beneficiaries with substance abuse risk</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
</tr>
<tr>
<td>Establishes a demonstration initiative to encourage providers to use certified e-health records</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Allows Medicare Part D plans to suspend payments to pharmacies under investigation for fraud</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
</tr>
<tr>
<td>Allows CMS to identify Part D enrollees with histories of opioid overdoses and add them to monitoring systems</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Requires a review of opioid prescriptions and screening for abuse disorder in the initial Medicare preventive exam</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>MEDICAID PROVISIONS</td>
<td>HOUSE</td>
<td>SENATE</td>
<td>FINAL BILL</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>-------</td>
<td>--------</td>
<td>------------</td>
</tr>
<tr>
<td>Allows Medicaid to pay for opioid-related residential treatment at large facilities by removing Institutes for Mental Disease exclusion</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
</tr>
<tr>
<td>Allows Medicaid to pay for residential pediatric recovery centers for infant care</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Requires Medicaid and Medicaid managed care plans to implement safety limits for opioid prescriptions and refills</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
</tr>
<tr>
<td>Establishes a demonstration program to expand provider capacity for substance abuse treatment</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
</tr>
<tr>
<td>Ensures CHIP coverage for substance abuse disorder services for children and pregnant women</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
</tr>
<tr>
<td>Extends 90 percent federal Medicaid match for “health homes” that treat opioid addiction</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
</tr>
<tr>
<td>Expands Medicaid availability for juvenile inmates and adult inmates during the 30 days prior to release</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
</tr>
</tbody>
</table>
## Comparison of select provisions in the House, Senate, and final opioid packages

<table>
<thead>
<tr>
<th>PROVISION</th>
<th>HOUSE</th>
<th>SENATE</th>
<th>FINAL BILL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OTHER PROVISIONS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increases FDA and U.S. Customs funding and authority to prevent illegal</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>shipping of manufactured opioids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarifies the FDA's post-market drug authorities to consider reduced</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>efficacy over time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establishes a $10 million annual grant program to establish or operate</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>comprehensive opioid recovery centers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reauthorizes and extends grants for the comprehensive opioid abuse</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>grant program, worth $330 million annually</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reauthorizes the Office of National Drug Control Policy, the High-</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Intensity Drug Trafficking program and other DOJ programs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OFFSETS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase number of months employer-sponsored plans must cover end-stage</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>renal disease services before Medicare coverage begins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Require employer group plans to report prescription drug coverage to</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>determine primary payer situations in Medicare</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institute medical loss ratios for state Medicaid managed care plans that</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>currently do not have such ratios</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Congress.gov; Capital Alpha Partners; ML Strategies

By Tucker Doherty, POLITICO Pro DataPoint
Jan 1, 2019: CMS addresses opioid crisis

- Hard safety edit at pharmacy
- 90 MME threshold
- Encourage drug management program

Medicare Prescription Drug Coverage

- Also called Part D
- Provides outpatient prescription drugs
- All Medicare beneficiaries are eligible
  - Can have Part A and/or Part B
- Coverage for Part D is provided by:
  - Prescription Drug plans (PDP’s), also known as stand alone plans
  - Medicare Advantage Prescription Drug Plans (MAPD’s)
Laws Setting Limits on Certain Opioid Prescriptions

- **Statutory limit: 14 days**
- **Statutory limit: 7 days**
- **Statutory limit: 5 days**
- **Statutory limit: 3-4 days**
- **Statutory limit: Morphine Milligram Equivalents (MME)**
- **Direction or authorization to other entity to set limits or guidelines**
- **No limits**

*Note: The map displays the state’s primary opioid prescription limit and does not include additional limits on certain providers or in certain settings. Arizona allows prescriptions up to 14 days following surgical procedures and North Carolina allows up to seven days for post-operative relief. Maryland requires the “lowest effective dose.” Minnesota’s limit is for acute dental or ophthalmic pain. The map also does not reflect limits for minors that exist in at least eight states.*

Source: NCSL, StateNet
When does dependence begin?

![Graph showing probability of continuing use over days of opioid prescription supply]

*Days’ supply of the first prescription is expressed in days (1–40) in 1-day increments. If a patient had multiple prescriptions on the first day, the prescription with the longest days’ supply was considered the first prescription.*

---

http://www.newsweek.com/cdc-opiate-addiction-572498

https://www.cdc.gov/mmwr/volumes/66/ww/mm6610a1.htm
Pharmacology of opiates

Epidemiology of opioid crisis

Current Michigan statistics regarding M&M of controlled substance-related deaths

Current standards, laws and rules on prescribing controlled substances

Proper prescribing of opiates

Risks, diagnosis and treatment of opioid addiction
Purpose of Issue of Prescription

- Legitimate medical purpose
- Practitioner
- Usual course of practice
- Corresponding responsibility

Title 21 CFR, Part 1306 – Prescriptions, 1306.04, US DOJ, DEA
Date: August 1, 2019
Patient Name: Jasmine Akrabah
DOB: 09/19/1975
Address: 1111 Center Lane, Anytown, Florida 33312
Percocet (5/325)
Disp. # 10 (Ten)
Sig: Take one tab by mouth every 6 hours PRN post-op pain
No Refills
DEA # BA1222103

Signature
DEA 2010

- EPCS is born
- Dual factor authentication is required
  - Something you know: a knowledge factor
  - Something you have: a hard token
  - Something you are: biometric information
- Confirm identity
- Two-factor authentication issued
- Setting access control

https://www.deadiversion.usdoj.gov/ecomm/e_rx/index.html
https://www.deadiversion.usdoj.gov/ecomm/e_rx/faq/practitioners.htm
MACRA 2015

- **QPP**
  - A-APMs
  - MIPS
    - Quality: 45%
    - Resource Use (cost): 15%
    - Improvement Activities (IA): 15%
    - Promoting Interoperability (PI): 25%
      - Use 2015 CEHRT
      - No thresholds

https://qpp.cms.gov/mips/overview
<table>
<thead>
<tr>
<th>Objective</th>
<th>Weight</th>
<th>Maximum points</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-prescribing</td>
<td>E-prescribing</td>
<td>10 points</td>
</tr>
<tr>
<td></td>
<td>Bonus: Query of PDMP</td>
<td>5 bonus points</td>
</tr>
<tr>
<td></td>
<td>Bonus: verify opioid tx agreement*</td>
<td>5 bonus points</td>
</tr>
<tr>
<td>Health information exchange</td>
<td>Sending health info</td>
<td>20 points</td>
</tr>
<tr>
<td></td>
<td>Receiving and incorporating health info</td>
<td>20 points</td>
</tr>
<tr>
<td>Provide to patient exchange</td>
<td>Provide patients electronic access to their health info</td>
<td>40 points</td>
</tr>
<tr>
<td>Public health and clinical data exchange</td>
<td>Report to 2 of the following:</td>
<td>10 points</td>
</tr>
<tr>
<td></td>
<td>Immunization registry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic case</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public health registry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clinical data registry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Syndromic surveillance</td>
<td></td>
</tr>
</tbody>
</table>

SUPPORT Act of 2018

- Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act
  - Section 2003
  - EPCS under Medicare Part D
  - Jan 1, 2021

Opioid Prescribing Recommendations: Summary of 2016 CDC Guidelines

**Determining when to initiate or continue opioids for chronic pain**
- Opioids are not first-line or routine therapy
- Establish treatment goals before starting opioid therapy and a plan if therapy is discontinued
- Only continue opioid if there is clinically meaningful improvement in pain and function
- Discuss risks, benefits and responsibilities for managing therapy before starting and during treatment

**Opioid selection, dosage, duration, follow-up and discontinuation**
- Use immediate-release (IR) opioids when starting therapy
- Prescribe the lowest effective dose
- When using opioids for acute pain, provide no more than needed for the condition
- Follow up and review benefits and risks before starting and during therapy
- If benefits do not outweigh harms, consider tapering opioids to lower doses or taper and discontinue

**Assessing risk and addressing harms of opioid use**
- Offer risk mitigation strategies, including naloxone for patients at risk for overdose
- Review PDMP* data at least every 3 months and perform UDT** at least annually***
- Avoid prescribing opioid and benzodiazepines concurrently when possible
- Clinicians should offer or arrange MAT**** for patients with OUD†

*Prescription drug monitoring program
**Urine drug testing
***Some VA facilities may require more frequent testing
****Medication-assisted treatment
†Opioid use disorder
Clinically meaningful improvement

- 30%+ improvement
- Assess and document
- Validated tools

- What is not CMI?

- Rx – CMI = inappropriate care

- Pharmacology of opiates
- Epidemiology of opioid crisis
- Current Michigan statistics regarding M&M of controlled substance-related deaths
- Current standards, laws and rules on prescribing controlled substances
- Proper prescribing of opiates
- Risks, diagnosis and treatment of opioid addiction
Consequences

- Opioid use disorder
- Addiction
- Addiction treatment
- Withdrawal
- Toxicity/overdose
- Overdose treatment
Risks of Opioid Therapy

- **Mortality** (of all-causes)
  - Hazard ratio (HR) 1.64 for long acting opioids for non-cancer pain

- **Overdose deaths** (unintentional)
  - HR 7.18-8.9 for MED > 100 mg/d

- **Opioid use disorder**
  - For patients on long-term opioids (> 90 days)
    - HR 15 for 1-36 mg/d MED
    - HR 29 for 36-120 mg/d MED
    - HR 122 for > 120 mg/d MED

*MED=Morphine Equivalent Daily Dose (in mg/d)
## DSM-5 Criteria for OUD *(Rx opioids)*

*(2 or more criteria)*

<table>
<thead>
<tr>
<th>DSM-5 Criteria</th>
<th>Example behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Craving or strong desire to use opioids</td>
<td>Describes constantly thinking about opioids</td>
</tr>
<tr>
<td>Recurrent use in hazardous situations</td>
<td>Repeatedly driving under the influence</td>
</tr>
<tr>
<td>Using more opioids than intended</td>
<td>Repeated requests for early refills</td>
</tr>
<tr>
<td>Persistent desire/unable to cut down or control opioid use</td>
<td>Unable to taper opioids despite safety concern or family’s concern</td>
</tr>
<tr>
<td>Great deal of time spent obtaining, using or recovering from the effects</td>
<td>Spending time going to different doctor’s offices and pharmacies to obtain opioids</td>
</tr>
<tr>
<td>Continued opioid use despite persistent opioid-related social problems</td>
<td>Marital/family problems or divorce due to concern about opioid use</td>
</tr>
<tr>
<td>Continued opioid use despite opioid-related medical/psychological problem</td>
<td>Insistence on continuing opioids despite significant sedation</td>
</tr>
<tr>
<td>Failure to fulfill role obligations</td>
<td>Poor job/school performance; declining home/social function</td>
</tr>
<tr>
<td>Important activities given up</td>
<td>No longer active in sports/leisure activities</td>
</tr>
</tbody>
</table>
Opioid Risk Tool

This tool should be administered to patients upon an initial visit prior to beginning opioid therapy for pain management. A score of 3 or lower indicates low risk for future opioid abuse, a score of 4 to 7 indicates moderate risk for opioid abuse, and a score of 8 or higher indicates a high risk for opioid abuse.

<table>
<thead>
<tr>
<th>Mark each box that applies</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Family history of substance abuse</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Illegal drugs</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Rx drugs</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Personal history of substance abuse</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Illegal drugs</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Rx drugs</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Age between 16—45 years</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>History of preadolescent sexual abuse</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>Psychological disease</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADD, OCD, bipolar, schizophrenia</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Depression</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Scoring totals**

Physical dependence vs. addiction

**Physical Dependence**
- Body is used to having a high level of opioid
- Abrupt discontinuation will result in withdrawal symptoms (nausea & vomiting, anxiety, etc.)

**Addiction**
- Uncontrollable craving and compulsive use, inability to control drug use
- There is no addiction without craving

Addiction is a chronic, progressive brain disease due to altered brain structure and function

Addiction

- **Definition**
  1. Tolerance
  2. Withdrawal
  3. Abuse
  4. Helplessness
  5. Compulsion
  6. Isolation
  7. Vicious circle of devastation

- **Dependence**

- **Hyperalgesia**


Addiction treatment

- **Inpatient**
  - Short term
  - Long term
  - Partial hospitalization

- **Outpatient**
  - Intensive programs
  - Clinics

- **Medication-assisted treatment programs**

http://www.samhsa.gov/medication-assisted-treatment
MAT

- Component of comprehensive treatment
- Methadone
- Buprenorphine
- Naltrexone/naloxone?
<table>
<thead>
<tr>
<th></th>
<th>Buprenorphine/Naloxone*</th>
<th>Methadone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment setting</strong></td>
<td>Office-based</td>
<td>Specially licensed OTP</td>
</tr>
<tr>
<td><strong>MOA</strong></td>
<td>Partial opioid agonist*</td>
<td>Opioid agonist</td>
</tr>
<tr>
<td><strong>FDA-approved?</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Reduces cravings?</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>OUD classification?</strong></td>
<td>Mild—Moderate</td>
<td>Mild/Moderate/Severe</td>
</tr>
<tr>
<td><strong>Candidates</strong></td>
<td>None/few failed attempts</td>
<td>Many failed attempts</td>
</tr>
<tr>
<td><strong>Recommended for</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>those using ongoing short-acting opioids?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Psychosocial</strong></td>
<td>Addiction-focused MM</td>
<td>Individual counseling and/or contingency management</td>
</tr>
<tr>
<td><strong>intervention</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>recommendations</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

http://buprenorphine.samhsa.gov/  
http://www.opioidprescribing.com/naloxone_module_1-landing  
http://www.pcessmat.org  
https://www.samhsa.gov/medication-assisted-treatment
Withdrawal

- Rhinorrhea
- Diarrhea
- Yawning
- Anxiety
- Mydriasis

- Lacrimation
- Vomiting
- Hyperventilation
- Hostility

Clinical Opiate Withdrawal Scale

Clonidine v lofexidine

Opiate-induced constipation (OIC)

- Dietary and lifestyle interventions
- OTC medications
  - Stimulant laxatives: bisacodyl, senna
  - Stool softeners: docusate, mineral oil, Mg citrate
  - Enemas
- Prescription medications
  - Lubiprostone (Amitiza)
  - Methylnaltrexone (Relistor)
  - Naloxegol (Movantik)
  - Naldemedine (Symproic)

https://www.uspharmacist.com/article/opioidinduced-constipation-clinical-guidance-and-approved-therapies
- Prescribing emergency opioid antagonists
- Alternatives to controlled substance prescribing
  - Nonpharmacological therapies
- Controlled substance disposal
Toxicity/overdose

- Coma
- Miosis
- Bradypnea/hypoventilation
Overdose treatment

- BLS
- Naloxone
  - Injectable (Narcan)
  - Autoinjectable (Evzio)
  - Nasal spray (Narcan)
- Active monitoring
- http://getnaloxonenow.org

https://www.drugabuse.gov/related-topics/opioid-overdose-reversal-naloxone-narcan-evzio
- Prescribing emergency opioid antagonists
- **Alternatives to controlled substance prescribing**
  - Nonpharmacological therapies
- Controlled substance disposal
- Pharmacological
  - Antidepressants
  - Anticonvulsants
  - Acetaminophen
  - NSAIDs
  - Anesthetics
  - Corticosteroids
  - Non-BZD muscle relaxers

*JAMA.* 2018;320(23):2448-2460.
Dental Opioid Guidelines

We convened a multidisciplinary consortium of dentists, periodontists, oral and maxillofacial surgeons, endodontists, and patients to develop ideal opioid prescribing patterns after common dental procedures utilizing a modified Delphi approach. Best prescribing practices are listed for post-operative narcotic naive patients at discharge.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Start with this: Acetaminophen 1g PO 8 hours, Ibuprofen 400mg PO 8 hours (unless contraindicated)</th>
<th>If needed, maximum opioid pills recommended at discharge: Oxycodone 5 mg tablet*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine Tooth Extractions</td>
<td>Acetaminophen and/or Ibuprofen (NSAIDs)</td>
<td>0</td>
</tr>
<tr>
<td>Extractions of impacted teeth including 3rd molars</td>
<td>Acetaminophen and/or Ibuprofen (NSAIDs)</td>
<td>15</td>
</tr>
<tr>
<td>Surgical extractions</td>
<td>Acetaminophen and/or Ibuprofen (NSAIDs)</td>
<td>12</td>
</tr>
<tr>
<td>Alveoloplasty</td>
<td>Acetaminophen and/or Ibuprofen (NSAIDs)</td>
<td>12</td>
</tr>
<tr>
<td>Bone grafting procedures</td>
<td>Acetaminophen and/or Ibuprofen (NSAIDs)</td>
<td>12</td>
</tr>
</tbody>
</table>
Abuse-deterrent opioids

- **Hydrocodone**: Hysingla ER; Vantrela ER; Zohydro ER
- **Hydromorphone**: Exalgo
- **Morphine ER**: Morphabond; Arymo ER
- **Morphine ER/Naltrexone**: Embeda
- **Oxycodone IR**: Oxyaydo; Roxybond
- **Oxycodone ER**: Oxycontin; Xtampza ER
- **Oxycodone ER/Naltrexone**: Targiniq ER; Troxyca ER
Next generation

- IV acetaminophen
- Slow-release bupivacaine
- Different targets than opioid receptors
- Longer acting agents
- Nerve fiber inactivation
- Novel combinations
- Non-euphoric opioids
- Generic naloxone
- OTC naloxone
Nonpharmacological

- Heat/cold
- Osteopathic manipulation
- Physical therapy
- Chiropractic
- Acupuncture
- TENS?
- Biofeedback
- Cognitive behavioral therapy
- Exercise
Prescribing emergency opioid antagonists

Alternatives to controlled substance prescribing
  - Nonpharmacological therapies

Controlled substance disposal
Prescribing emergency opioid antagonists

Alternatives to controlled substance prescribing
  - Nonpharmacological therapies

Controlled substance disposal
Controlled substance disposal

- Small amounts

- Secure safely

- Safe disposal options
  - Veterans Health Administration
  - Return to pharmacist or prescriber?
Medication disposal

- **Take-back programs**
  - [https://www.deadiversion.usdoj.gov/drug_disposal/takeback/](https://www.deadiversion.usdoj.gov/drug_disposal/takeback/)

- **DEA-authorized collectors**
  - [https://apps.deadiversion.usdoj.gov/pubdispsearch/spring/main?execution=e1s1](https://apps.deadiversion.usdoj.gov/pubdispsearch/spring/main?execution=e1s1)
  - DEA Office of Diversion Control’s Registration Call Center: 1-800-882-9539

- **Household trash** *(not for controlled substances)*

- **Flushing:**

---


[https://www.fda.gov/drugs/resourcesforyou/consumers/buyingusingmedicinesafely/ensuringsafeuseofmedicine/safedisposalofmedicines/ucm186188.htm](https://www.fda.gov/drugs/resourcesforyou/consumers/buyingusingmedicinesafely/ensuringsafeuseofmedicine/safedisposalofmedicines/ucm186188.htm)
Thank you

Joshua D. Lenchus, DO, RPh, FACP, SFHM
jlenchus@yahoo.com
954-817-5684 (cel)

National Prescription Drug Take-Back Day
Turn in your unused or expired medication for safe disposal
Visit www.dea.gov or call 800-882-9539 for a collection site near you.
Sponsored by the U.S. Drug Enforcement Administration

130 Americans die every day from an opioid overdose (including Rx and illicit opioids).
Additional references

- American Society of Addiction Medicine Opioid Addiction 2016 Facts & Figures [link]
- Medication Assisted Treatment [link], [link]
- National Institute on Drug Abuse (NIDA) [link]
- Schuckit MA. Treatment of Opioid Use Disorders. NEJM (07/28/16) Vol. 375, No. 4, P. 357 [link]
- Drug disposal: [link]
- National Academy of Medicine: [link]