

Primary Care Approach to Managing Opioids

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The Opioid Epidemic: Five Questions

- How significant is the problem?
- Why is it relevant to the sports medicine community?
- How did we get here?
- How do these drugs exert their effects?
- What can we do?

A Family Drug Center Pharmacy Manchester, Kentucky



Manchester, Kentucky

Population: About 1500


How many pharmacies are there in Manchester?

- A. One
- B. Two
- C. Five
- D. Seven
- E. Eleven

Clay County

Population 21,000

- For one 12-month period, prescriptions for 2.2 million doses of hydrocodone and about 617,000 doses of oxycodone were filled.
- That's 150 doses for every man, woman and child residing in the county.



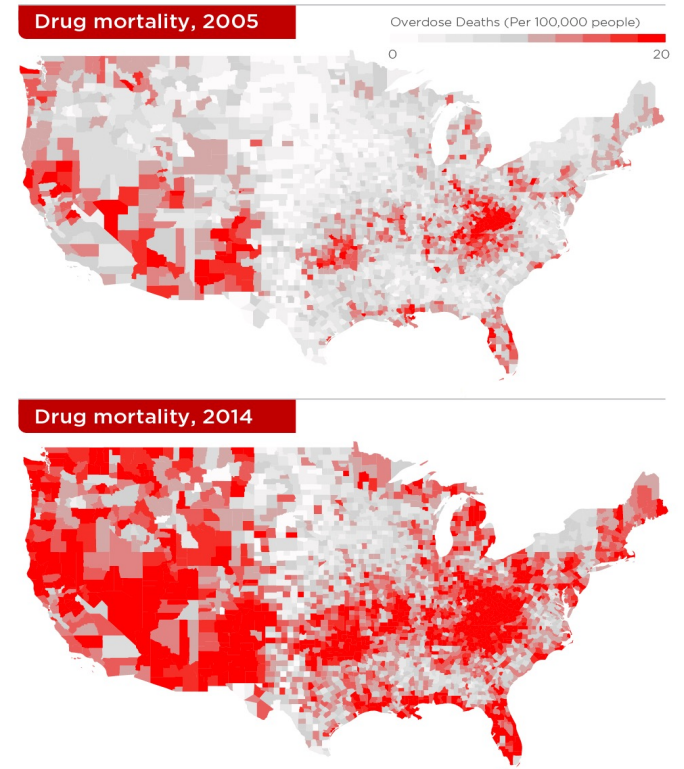
130
AMERICANS

.....

**die every day from
an opioid overdose**
(including Rx
and illicit opioids).

www.cdc.gov

The stunning spread of the opioid painkiller and heroin epidemic in two maps over 10 years.

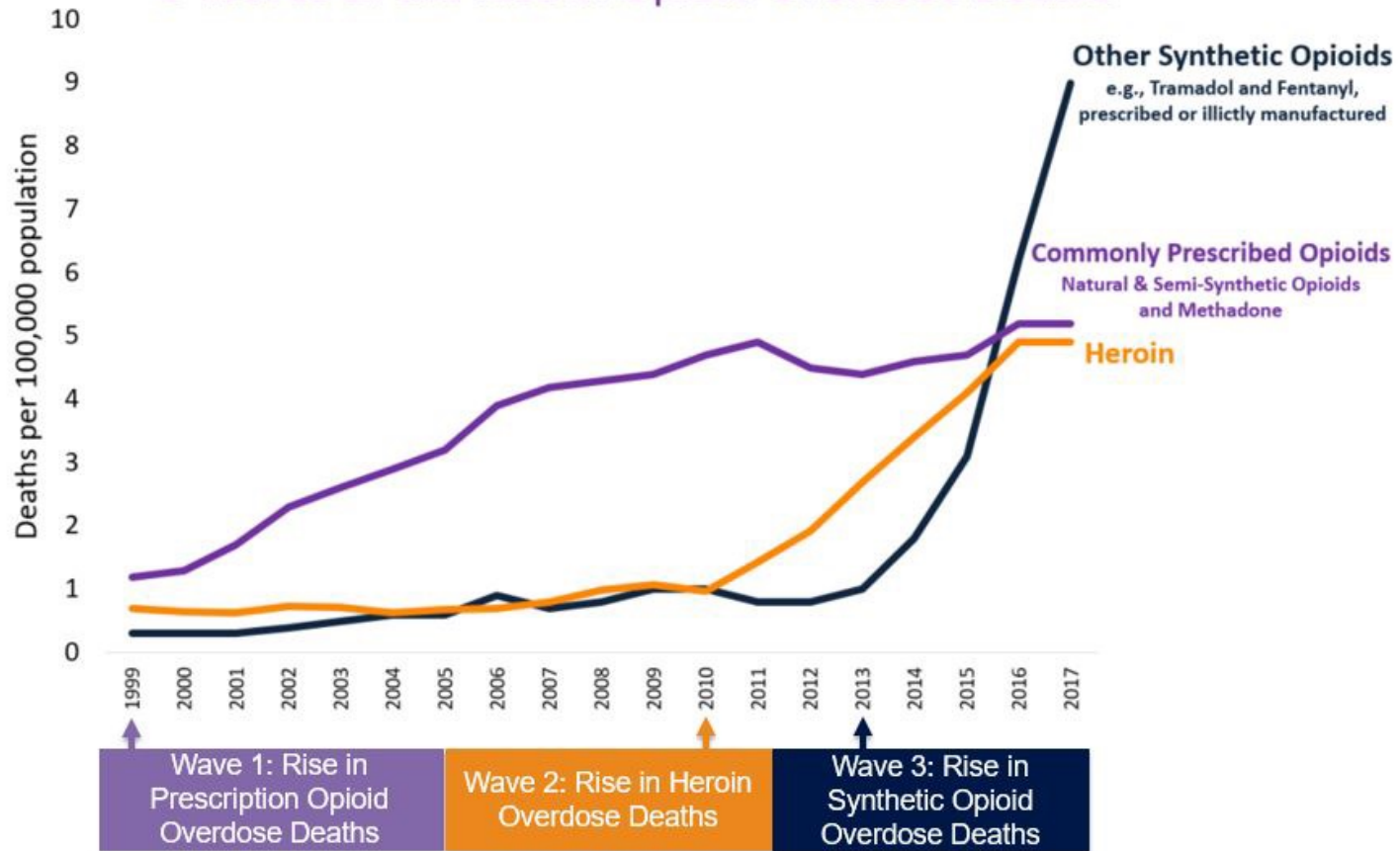


Sources: Centers for Disease Control and Prevention, National Institutes of Health

The Opioid Epidemic

- More than 20 million US residents have a substance use disorder – 1.5 times the prevalence of all cancers combined
- Associated healthcare, lost productivity, and criminal justice costs drain more than \$400 billion a year
- From 1999-2017, more than 700,000 people died from drug overdose; more than 400,000 from opiates
- More than 70,200 deaths occurred in 2017 with 68% of the deaths resulting from an opioid

3 Waves of the Rise in Opioid Overdose Deaths

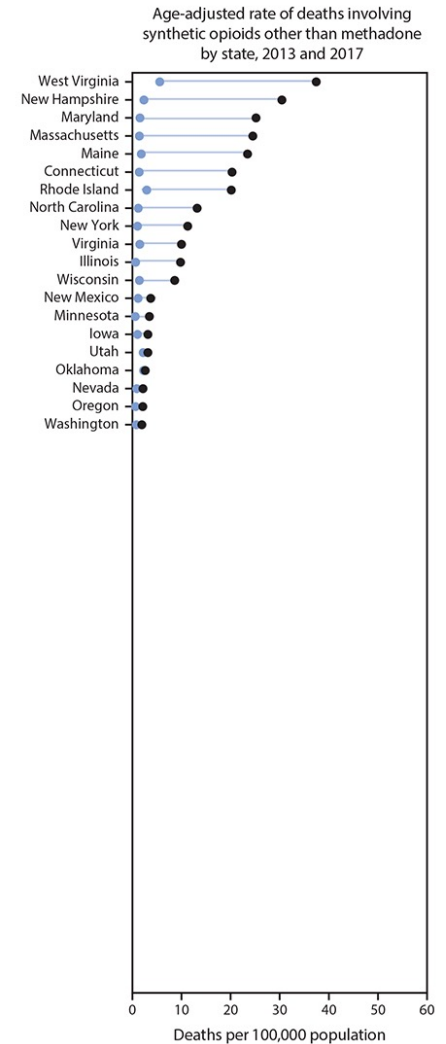
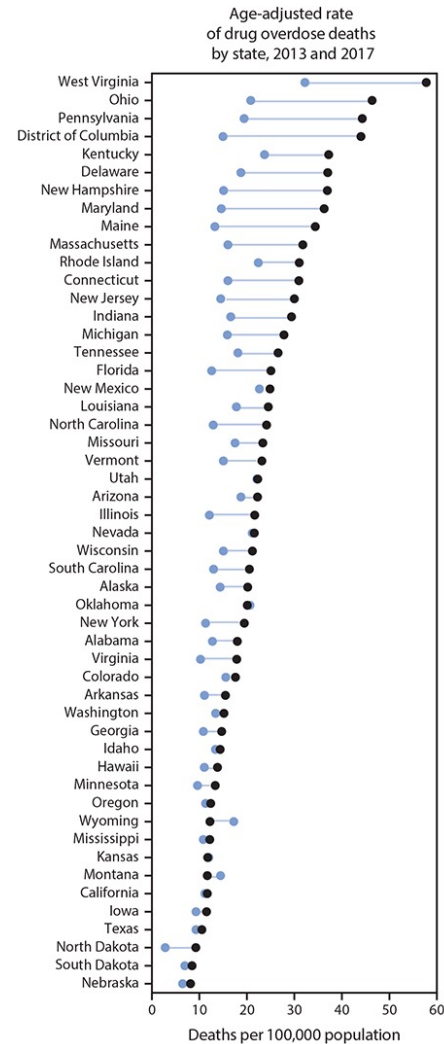


SOURCE: National Vital Statistics System Mortality File.

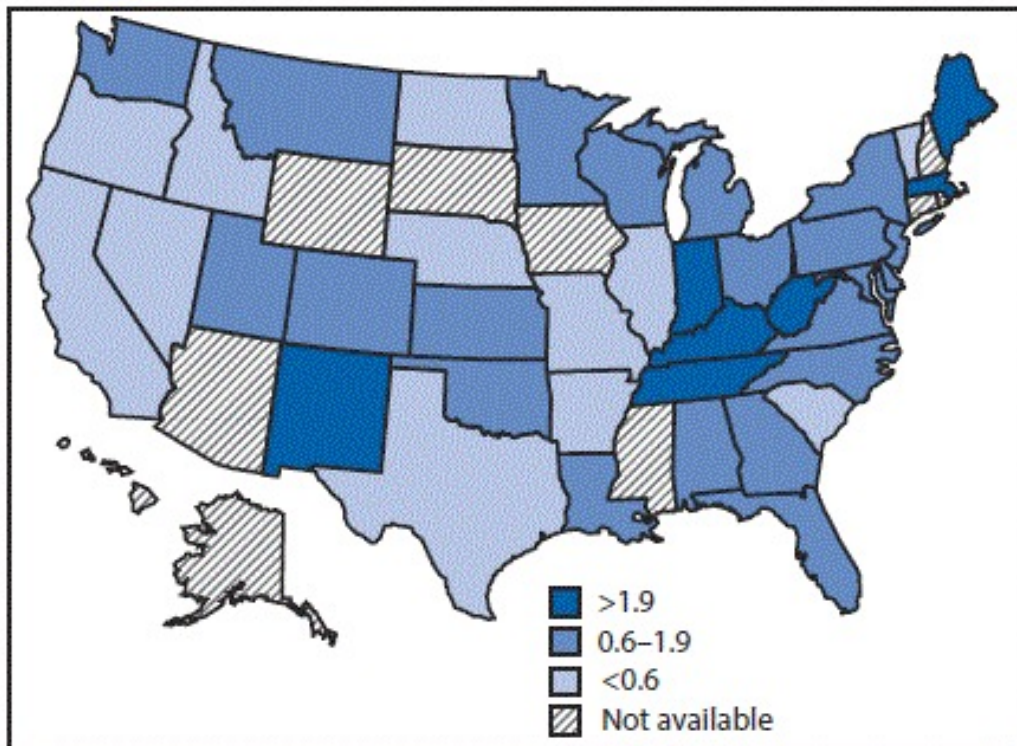
Age-adjusted Rate of Overdose Deaths 2013-17

- In 2017, 47,600 (67.8%) of all deaths were attributable to opiates
- From 2016-17, death rate from synthetic opioids other than methadone increased 45.2%
- Death rates increased across all demographics

Scholl L et. Al. MMWR 2019 67(5152):1419–1427.



Rising Hepatitis C Infection



- 33,900 new HCV infections in 2015
- Incidence: 0.8/100,000
- 294% increase in incidence from 2010
- Seven states with more than twice the national incidence

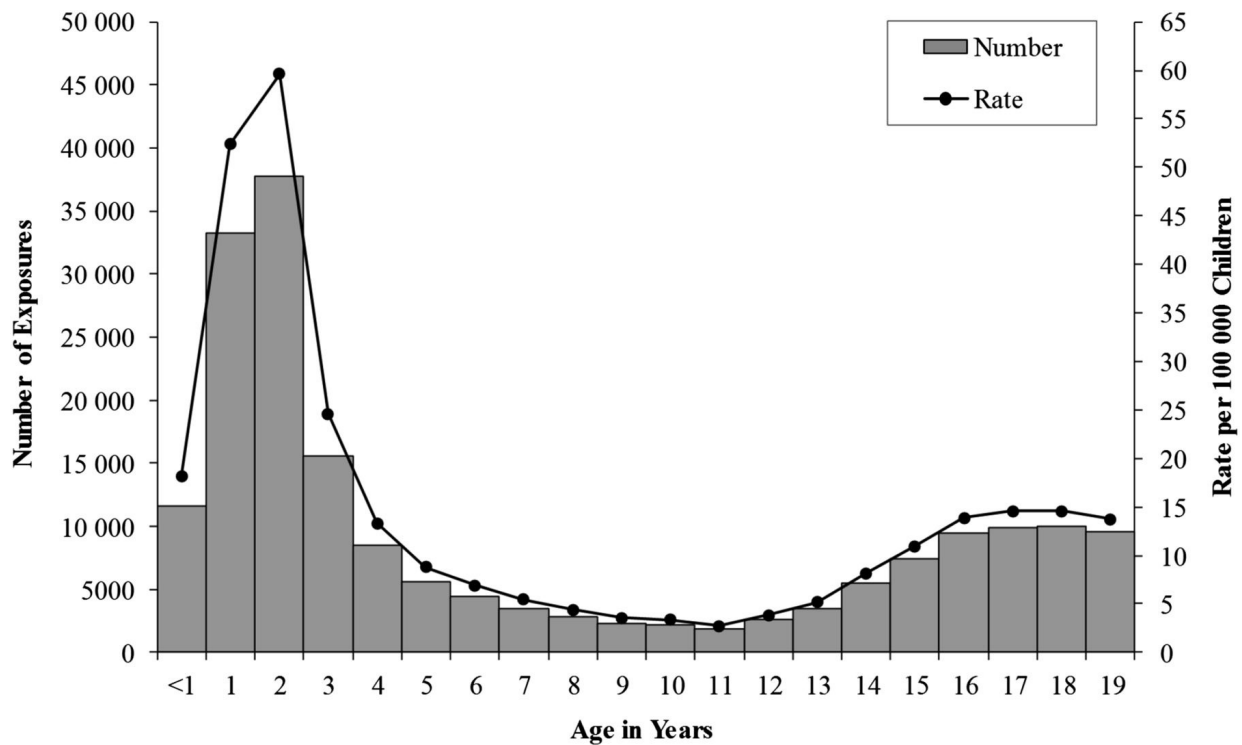
Campbell CA et al. MMWR 2017; 66(18):465-469

HIV Epidemic Hits Austin, Indiana



- First 30 cases reported in February, 2015 in town of 4000
- One year later, the number of reported cases had risen to 190
- Scott County: highest per capita use of OxyContin in the state
- Historically, fewer than 5 cases per year reported in the county

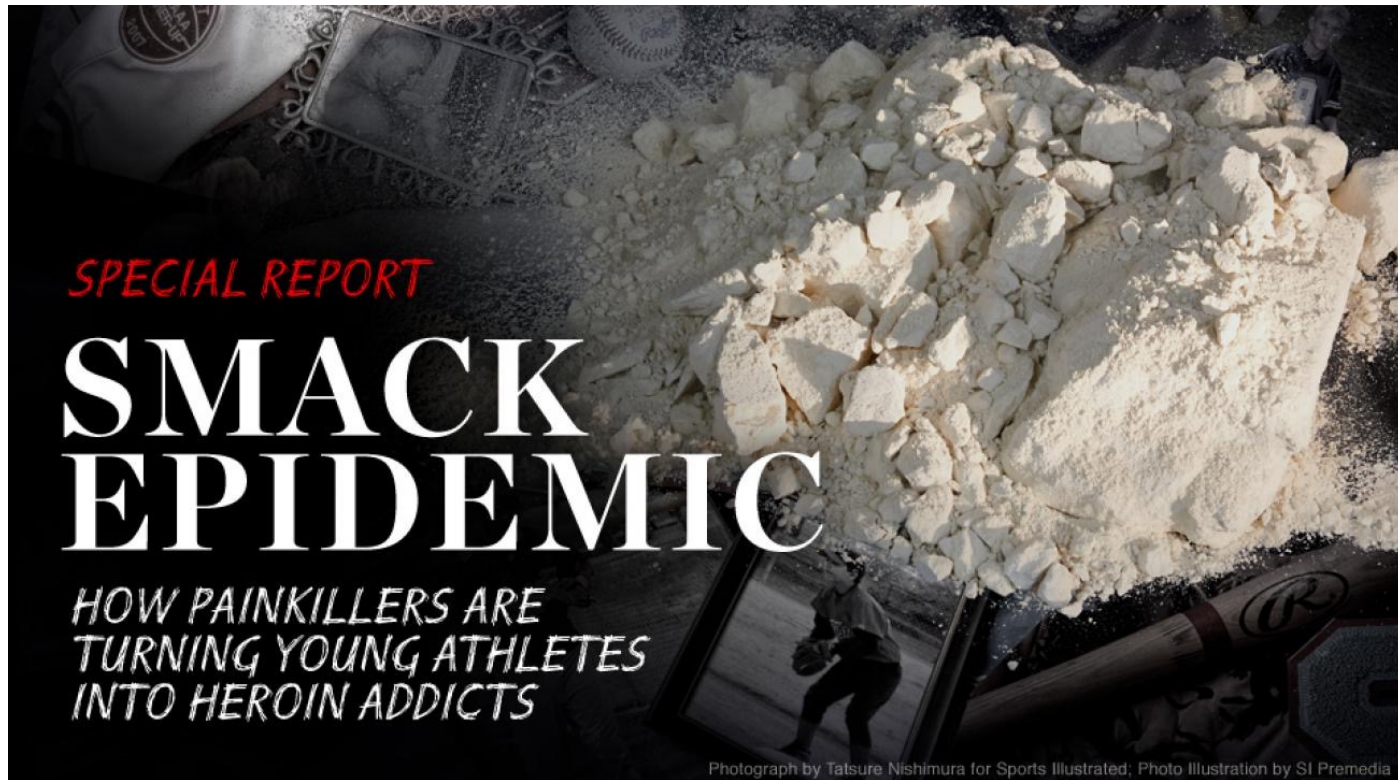
Number and rate of prescription opioid exposures by child age, NPDS 2000–2015.



Jakob D. Allen et al. *Pediatrics* doi:10.1542/peds.2016-3382



Sports Illustrated – June 22, 2015



SPECIAL REPORT

SMACK EPIDEMIC

*HOW PAINKILLERS ARE
TURNING YOUNG ATHLETES
INTO HEROIN ADDICTS*

Photograph by Tatsure Nishimura for Sports Illustrated; Photo Illustration by SI Premedia

Michael Duran, Jr. – 1991-2011



- Talented baseball player at a prep school
- Addicted to OxyContin after straining his knee playing soccer
- Kicked out of prep school; dropped out of public school
- Obtained GED; attended New Mexico State
- Became addicted to heroin and succumbed to an overdose

Tyler Skaggs Dies of Drug Overdose



Secondary Student Life Survey

- 743 male and 751 female adolescents surveyed longitudinally over 2 years
- Male athletes had 86% greater likelihood of being prescribed an opiate than non-athlete male counterparts
- Were more than 10 times more likely to misuse the medication as a result of taking too much
- Were 4 times more likely to use the drug to get high
- Similar associations were not seen among females

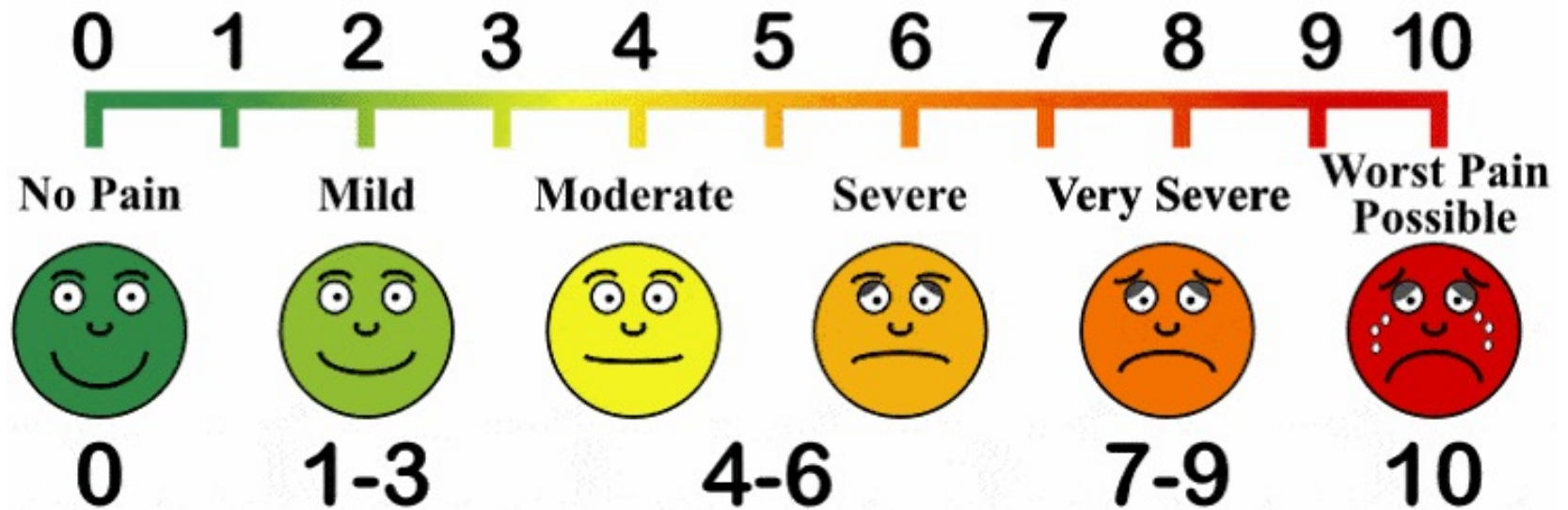
Lots of People Are in Pain!

- 126 million adults reported some pain in the previous 3 months
- 25 million adults suffer from daily, chronic pain with 23 million reporting significant pain
- 40 million adults report pain that likely resulted in worse health status, more health care use, and more disability compared to those with less severe pain

Pain as a Fifth Vital Sign

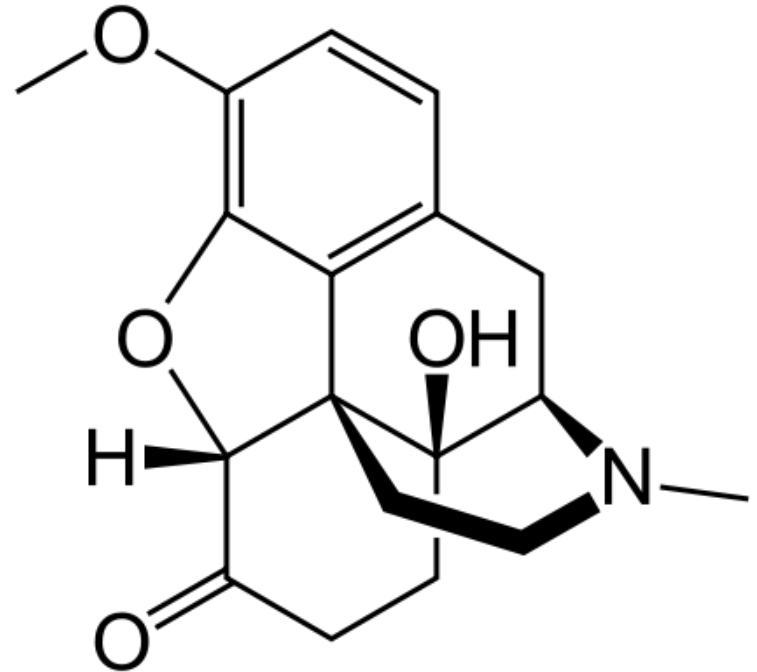
- Veterans Health Administration launched the “Pain as a 5th Vital Sign” initiative in 1999 in an effort to improve pain management.
- Providers were required to note patients’ self-reported assessment of their pain with an intensity rating of 0 – 10.
- The Joint Commission introduced its Pain Management Standards in 2001, which further promoted the notion that pain should be considered as a fifth vital sign and thus routinely measured in every patient.

Pain Scale



Oxycodone

- Oxycodone synthesized in Germany in 1916 by Freund and Speyer
- First clinical use of drug for pain relief documented in 1917
- Introduced into the US market in 1939
- Purdue Pharma introduced OxyContin in 1996



OxyContin

- Long-acting controlled release formulation of oxycodone
- Has produced \$31 billion dollars in revenue for Purdue Pharma
- Over the past 20 years, the National Survey on Drug Use and Health indicates abuse by more than 7 million Americans



A TIMES INVESTIGATION

**‘YOU WANT A DESCRIPTION OF
HELL?’
OXYCONTIN’S 12-HOUR PROBLEM**

by HARRIET RYAN, LISA GIRION AND SCOTT GLOVER

MAY 5, 2016

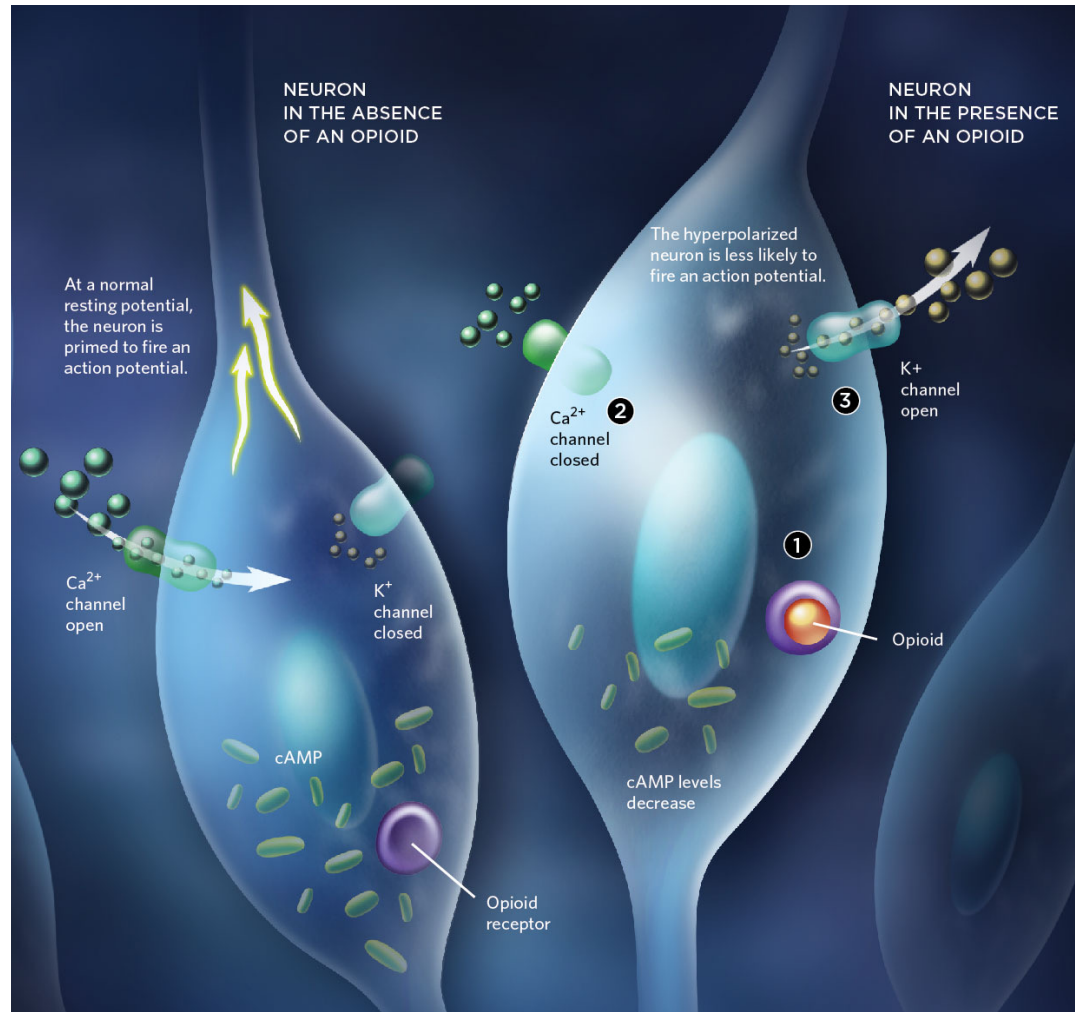
Opioid Receptors

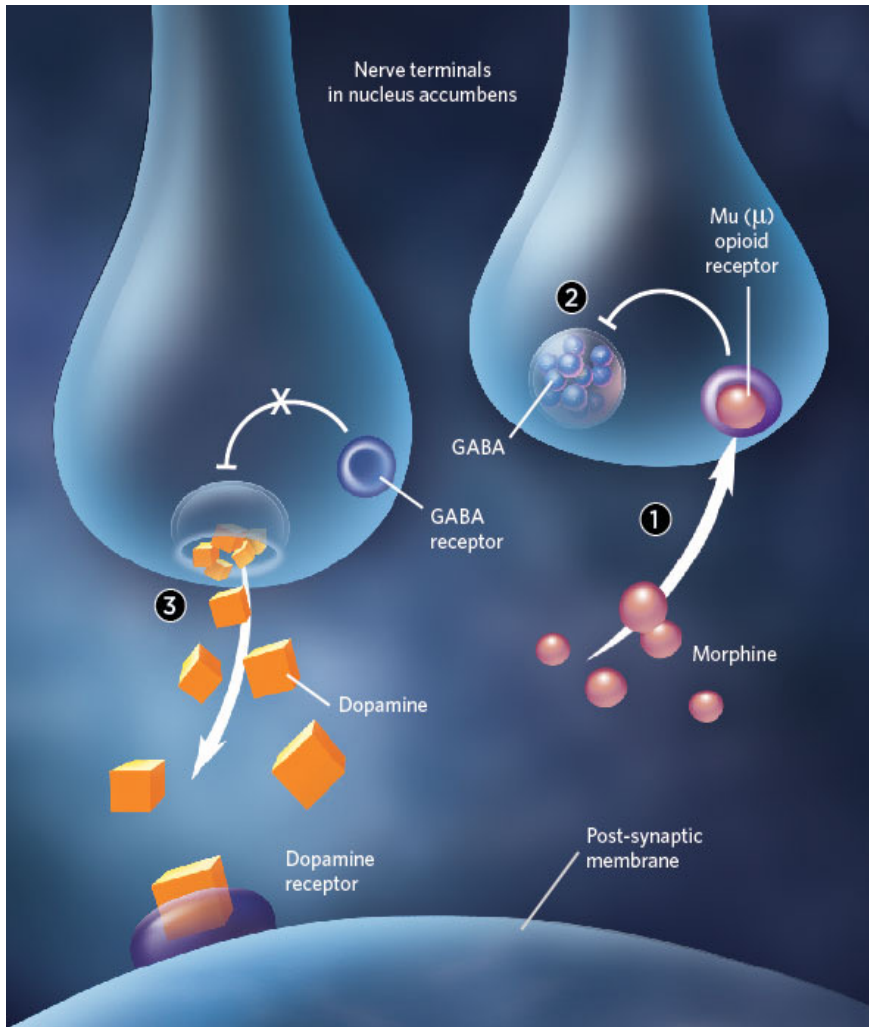
- Located in peripheral nerve endings, spinal cord, brain stem, periaqueductal gray, thalamus, nucleus accumbens, striatum, amygdala, hippocampus
- Mu – supraspinal and spinal analgesia, sedation, respiratory depression, slowed GI transit, euphoria
- Delta – supraspinal and spinal analgesia, modulation of hormone and neurotransmitter release
- Kappa – supraspinal and spinal analgesia, psychomimetic effects, slowed GI transit, dysphoria
- Sigma – hallucinations, dysphoria respiratory depression, vasomotor stimulation

Opioid Receptors

- Opiate binds to receptor
- Calcium channel closes
- cAMP decreases
- Potassium channel opens
- Neuron hyperpolarizes
- Pain signals dampened

Grens K The Scientist February 2014





Opioid Receptors

- Opiate binds to mu receptor in nucleus accumbens
- Diminishes GABA levels
- Drop in GABA results in release of dopamine
- Dopamine binds to receptors on postsynaptic membrane

Grens K The Scientist February 2014

POLL

Washington Post-Kaiser Family Foundation poll

Relief and concern among long-term opioid users

Percentage of long-term users of opioid painkillers who say . . .

They are physically dependent or addicted to opioids



They have discussed a plan to get off painkillers with their doctor



Painkillers have made life better



Pain relief outweighs risk of addiction



Source: Washington Post-Kaiser Family Foundation poll Oct. 3-Nov. 9; error margin plus or minus five percentage points among 622 current or recent long-term opioid users

EMILY GUSKIN AND CRISTINA RIVERO/THE WASHINGTON POST

“This is a public health problem that requires a public health solution. We now have evidence based treatment strategies that work. The challenge is ensuring that we get these to the people who need them.”



Vitek Murthy, M.D.
Former US Surgeon

Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs and Health

<http://addiction.surgeongeneral.gov>

Treatment Strategies

- Needle Exchange
- Safe Use Facilities
- Drug Courts
- Use of partial agonists/antagonists
- Adherence to recently published guidelines
- Correct Pain Management Strategies

Guidelines

- Veterans Administration/Department of Defense Opiate Prescribing Guidelines
- CDC Guideline for Prescribing Opioids for Chronic Pain (JAMA 2016; 315(15):1625-1645)

POLL Washington Post-Kaiser Family Foundation poll

Most long-term opioid users discussed the risks of painkillers with doctors, but not plans to stop taking them

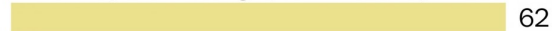
Q: When your doctor first prescribed these medications, did your doctor talk to you about (ITEM) or not?

Among long-term opioid users

A plan for getting off the medication



Other ways to manage pain besides painkillers



The possibility of addiction or dependence



Keeping medications in a safe place so they're not misused by others



Possible side effects associated with painkillers



Avoiding alcohol or certain medications while taking painkillers

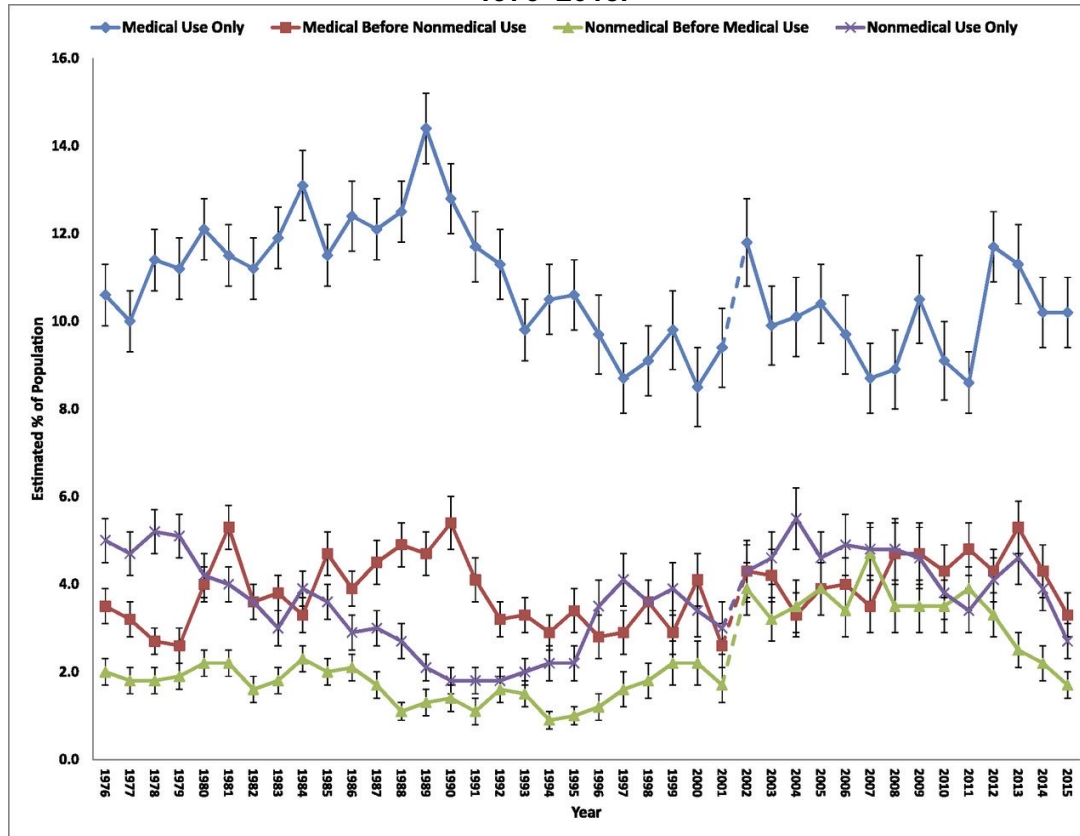


Source: Washington Post-Kaiser Family Foundation poll Oct. 3-Nov. 9; error margin plus or minus five percentage points among 622 current or recent long-term opioid users

Manage Acute Pain Correctly

- Consider opiate use only for moderate to severe pain
- Prescribe the lowest dose of opioid as indicated by patient-specific risks – no absolutely safe dose of opioids
- Risk for opioid use disorder starts at any dose and increases in a dose dependent manner
- Risk for overdose and death significantly increase within a range of 20-50mg morphine equivalent daily dose

Trends in patterns of lifetime use history for prescription opioids among US high school seniors, 1976–2015.



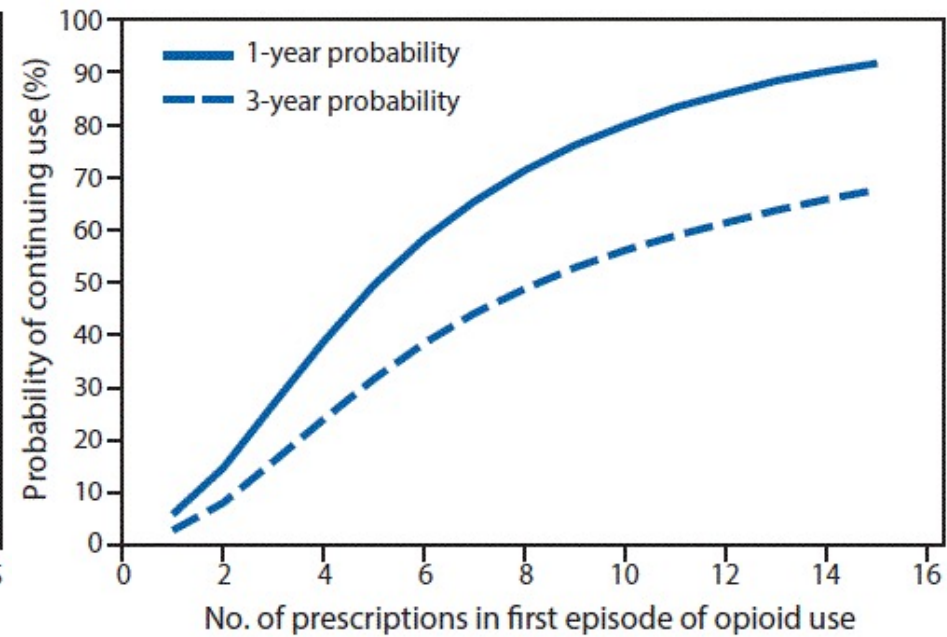
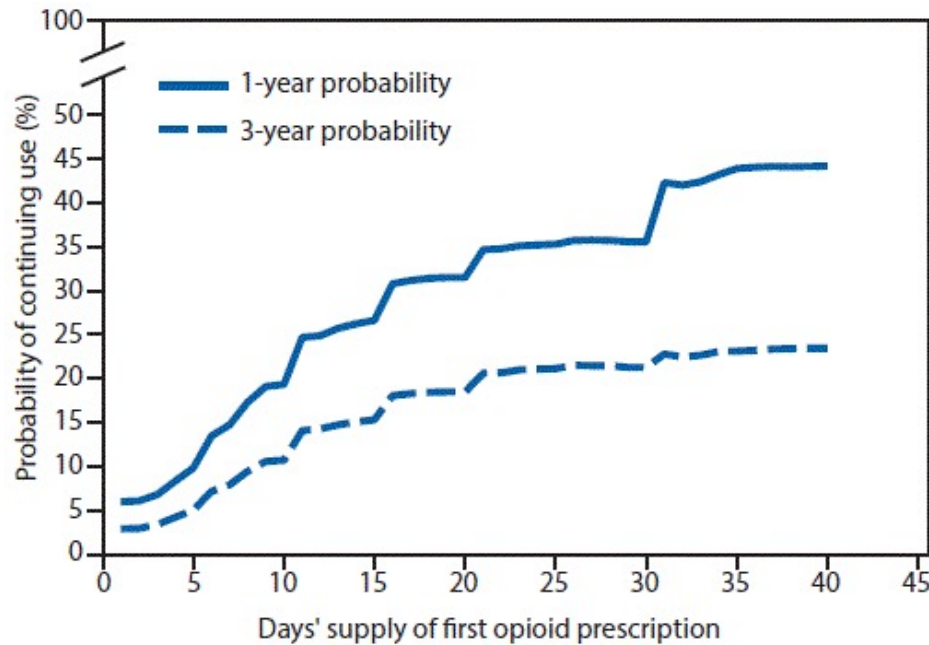
Sean Esteban McCabe et al. *Pediatrics* 2017;139:e20162387

PEDIATRICS[®]

Prescribe Correctly for Acute Pain

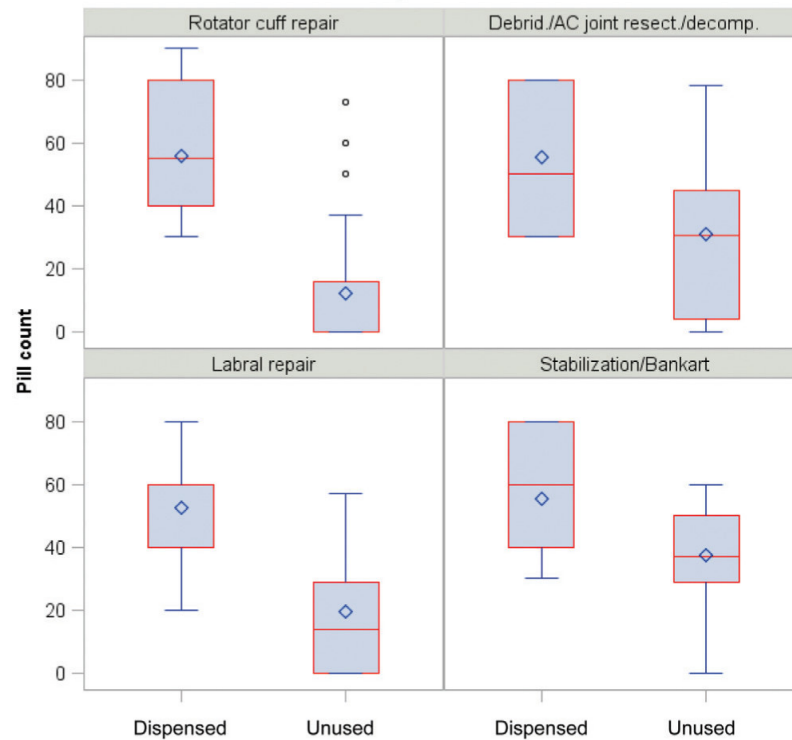
- Of 591,663 patients identified with an acutely sprained ankle from insurance claims data between 2008-2016, 11.9% filled an opioid prescription within seven days of diagnosis.
- Of the 454,813 patients that were opioid naïve at the time of diagnosis, 8.3% filled an opioid prescription within seven days.
- 8.4% of the opioid naïve group continued with persistent use of opioids.
- Prescriptions mainly provided by physicians (77%) in primary care and emergency department settings.

Prescribe Correctly for Acute Pain



Shah A et al. MMWR 2017; 66:265-269

Prescribed Correctly After Surgery



Published in: Kanupriya Kumar; Lawrence V. Gulotta; Joshua S. Dines; Answorth A. Allen; Jennifer Cheng; Kara G. Fields; Jacques T. YaDeau; Christopher L. Wu; *The American Journal of Sports Medicine* 45, 636-641.
DOI: 10.1177/0363546517693665
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Postoperative Pain Ratings

TABLE 3
Expected and Actual Postoperative Pain^a

Procedure	Worst Expected Pain After Surgery	Worst Pain in Last 24 Hours			
		POD 7	POD 14	POD 28	POD 90
Rotator cuff repair	8 (5, 10)	4 (2, 5) [n = 49]	2 (1, 3) [n = 39]	2 (0, 4) [n = 39]	0 (0, 1) [n = 40]
Debridement/AC joint resection/decompression	8 (5, 9)	5 (2, 6) [n = 19]	3 (1, 5) [n = 18]	1 (0, 4) [n = 15]	1 (0, 1) [n = 16]
Labral repair	8 (6, 10)	3 (2, 6) [n = 19]	3 (1, 5) [n = 18]	2 (0, 4) [n = 17]	0 (0, 2) [n = 16]
Stabilization/Bankart repair	9 (8, 10)	4 (3, 4) [n = 11]	4 (2, 4) [n = 11]	2 (0, 4) [n = 11]	0 (0, 2) [n = 9]

^aResults are presented as median (first quartile, third quartile) of patients' scores on the numerical rating scale [with number of subjects responding at each time point]. AC, acromioclavicular; POD, postoperative day.

Persistent Opioid Use After Surgery

- University of Michigan researchers used national insurance claims from 2013 and 2014 to determine persistent opioid use after 90 days
- 36,177 opioid naïve patients undergoing minor (29,068 – 80.3%) and major (7109) surgery were studied.
- Mean age 44.6; 66.1% female; 72.1% white
- No difference in persistent opioid use after 90 days between minor and major surgery groups (5.9% vs 6.5%)
- Non-surgical control group had opiate use incidence of 0.4%

Persistent Opioid Use After Surgery

Independent Risk Factors

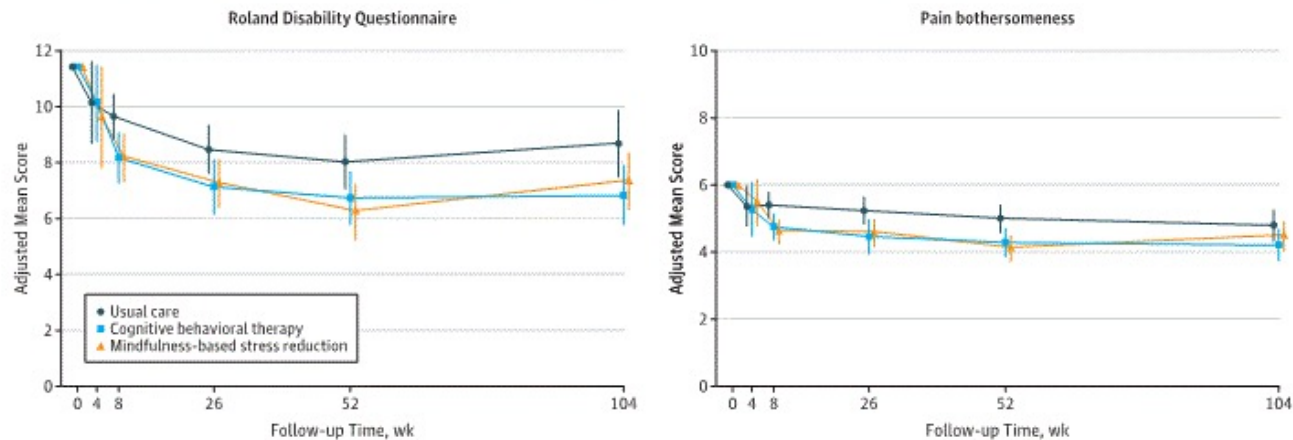
- Preoperative tobacco use (aOR = 1.35)
- Alcohol and Substance Abuse Disorder (aOR = 1.34)
- Anxiety (aOR = 1.25)
- Mood Disorder (aOR = 1.15)
- Preoperative back pain (aOR = 1.57)
- Preoperative neck pain (aOR = 1.22)
- Preoperative arthritis (aOR = 1.56) or centralized pain (aOR = 1.39)

Treat Chronic Pain Appropriately

- Focus on improvement in function versus the elimination of pain
- Benefit of analgesics is modest at best
- Consider use of anti-depressants and gabapentinoids where indicated
- Opioids should be the pharmacologic choice of last resort
- Increasing evidence for the role of nonpharmacologic therapies including structured educational programs, CBT, mindfulness, and structured exercise programs

CBT and Mindfulness

Figure. Adjusted Mean Questionnaire Scores by Treatment Group and Follow-up Time Among Adults With Chronic Low Back Pain



Analyses were adjusted for age, sex, education, baseline pain duration (<1 y vs \geq 1 y since experiencing a week without back pain), and baseline values of the outcome measures: the RDQ score (range 0 to 23, higher values indicate greater function limitations) and the pain bothersomeness score (range 0 to 10,

higher scores indicate worse pain bothersomeness). Error bars indicate 95% CIs. Baseline data were adjusted to the same baseline score in all groups to simplify comparisons of the data over time.

The Opioid Epidemic: Five Questions

- How significant is the problem?
- Why is it relevant to the sports medicine community?
- How did we get here?
- How do these drugs exert their effects?
- What can we do?

Manchester, Kentucky

Population: About 1500

How many pharmacies are there in Manchester?

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- B. Two
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