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ED Population Health and the Opioid Crisis

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Associate Professor of Emergency Medicine
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Disclosures

Boston University – Served as course director for a lecture titled “Emergency Response – Safer Opioid Prescribing in the Emergency Department”. CME and video production funded by Amerisource Bergen grant obtained by Boston University.

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The US Emergency Department

44.5 ED visits per 100 persons in 2015, 12% resulted in admission

Approximately 50% of all hospital admission come from ED

Open 24/7/365

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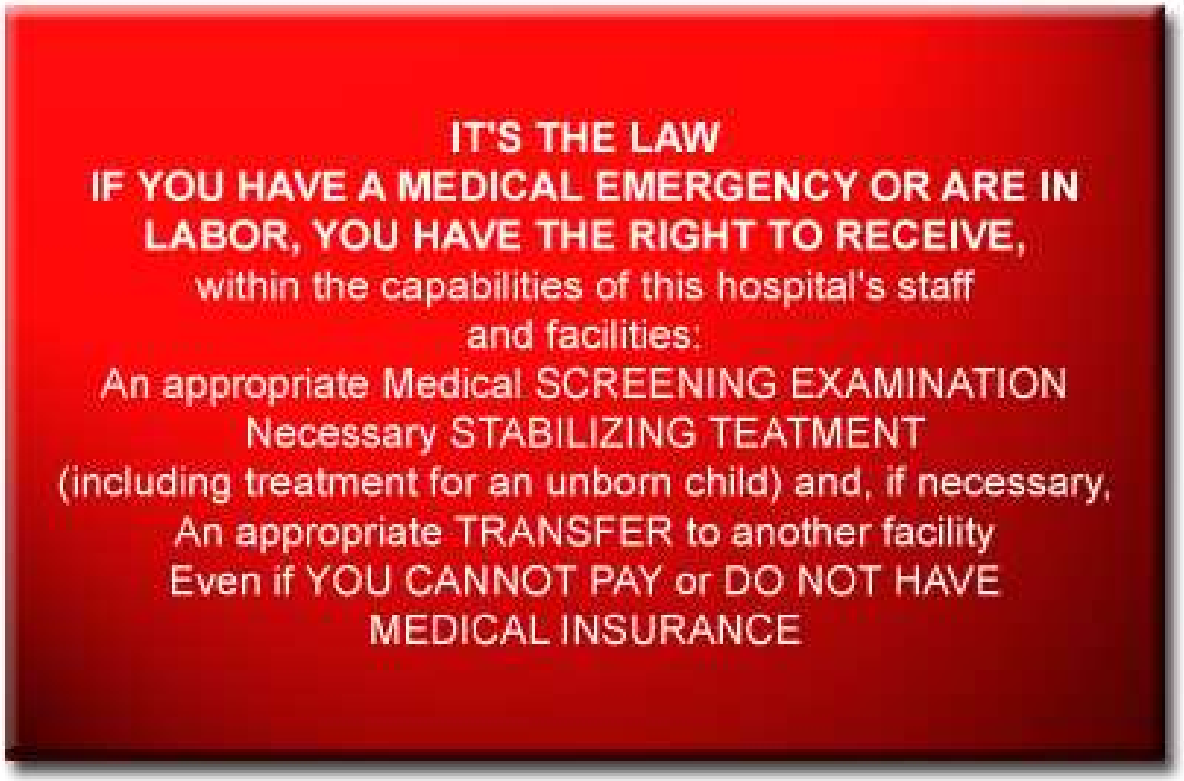
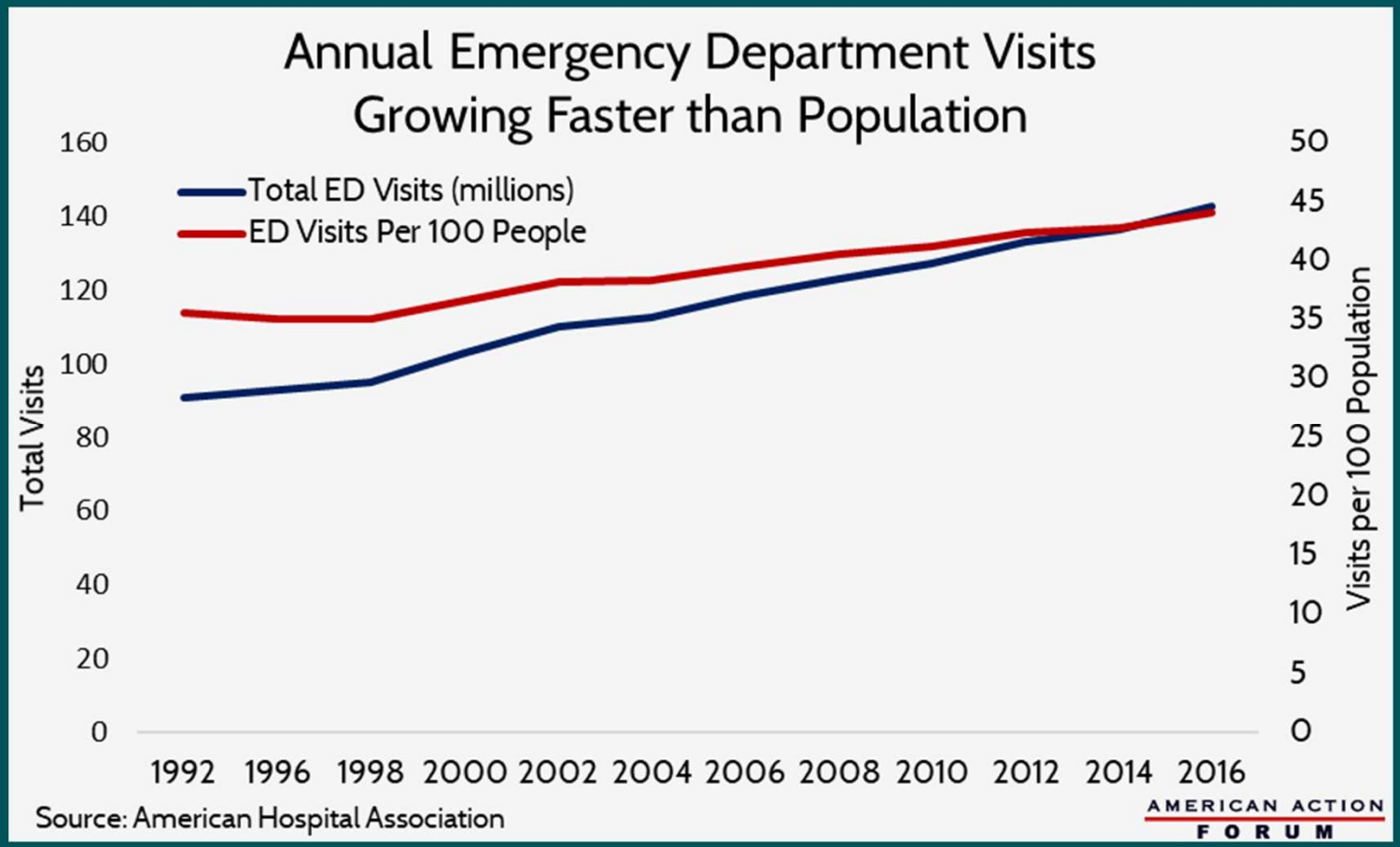

IT'S THE LAW
IF YOU HAVE A MEDICAL EMERGENCY OR ARE IN LABOR, YOU HAVE THE RIGHT TO RECEIVE,
within the capabilities of this hospital's staff and facilities:
An appropriate Medical SCREENING EXAMINATION
Necessary STABILIZING TEATMENT
(including treatment for an unborn child) and, if necessary,
An appropriate TRANSFER to another facility
Even if YOU CANNOT PAY or DO NOT HAVE MEDICAL INSURANCE



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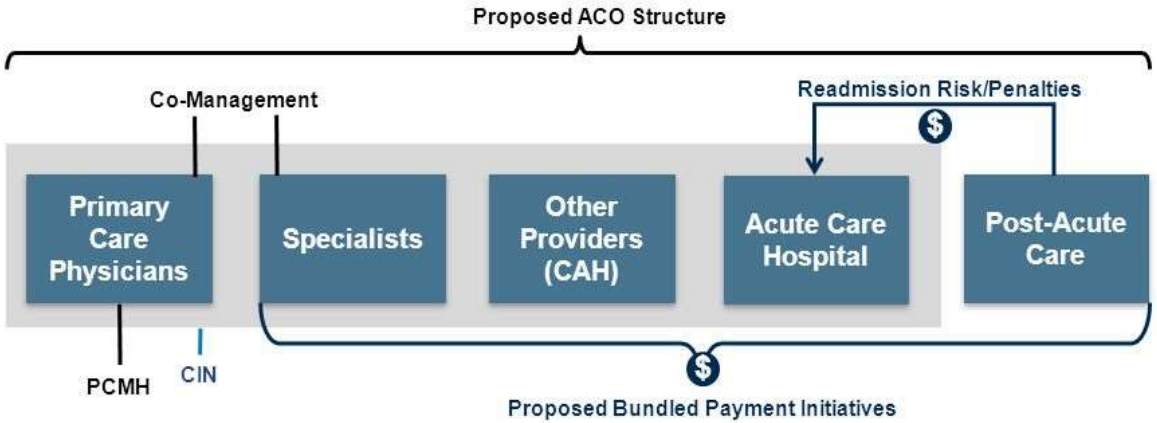
Clinically Integrated Models



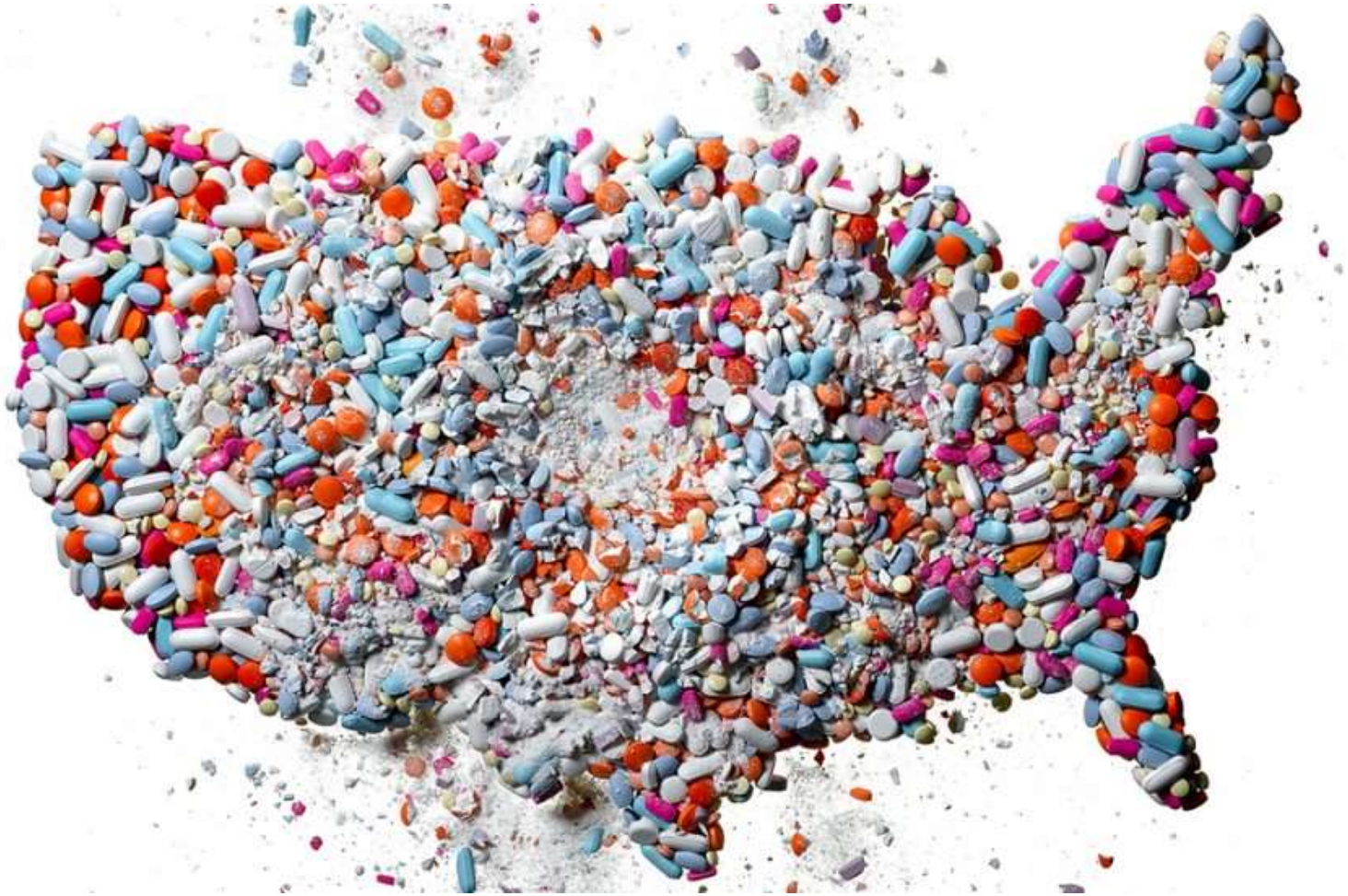
Patient Centered Medical Home (PCMH):
Primary care approach that supports comprehensive, team based care, improved patient access and engagement; serves as "hub" of care coordination; focuses on chronic disease management

Clinical Integration Network (CIN):
Acute care hospital, multispecialty physician network and other providers committed to quality and cost improvement, with support from joint negotiated commercial contracts

Accountable Care Organization (ACO):
Model to promote accountability for a patient population by improving care coordination, encouraging investment in infrastructure, and redesigning the care continuum around quality

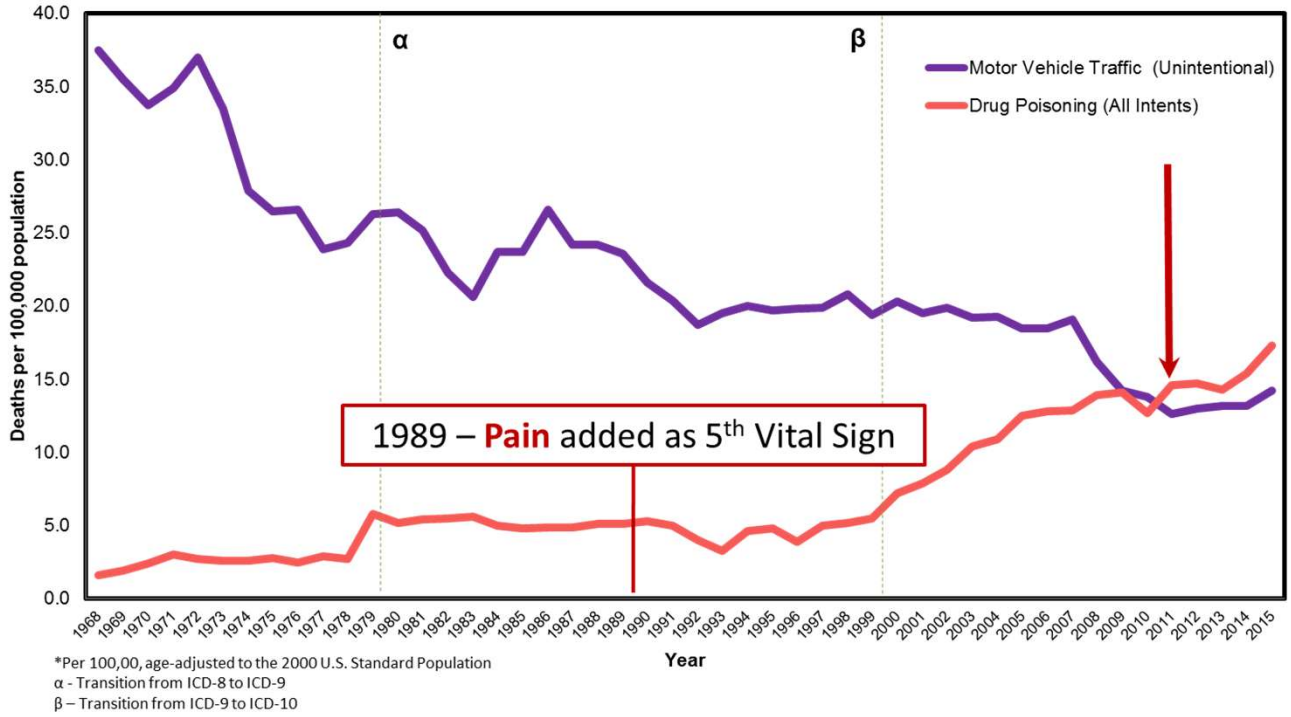
Co-Management: Model to align physician incentives around quality, cost and satisfaction with fair market compensation

Source: The Advisory Board



Death Rates* for Two Selected Causes of Injury,

North Carolina, 1968-2015



*Per 100,00, age-adjusted to the 2000 U.S. Standard Population
α - Transition from ICD-8 to ICD-9
β – Transition from ICD-9 to ICD-10

National Vital Statistics System, http://wonder.cdc.gov, multiple cause dataset
Source: Death files, 1968-2015, CDC WONDER
Analysis by Injury Epidemiology and Surveillance Unit

North Carolina
Injury & Violence
PREVENTION Branch

The NEW ENGLAND JOURNAL of MEDICINE

January 10, 1980

N Engl J Med 1980; 302:123

DOI: 10.1056/NEJM198001103020221

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[1] 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,[2] 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

1. Jick H, Miettinen OS, Shapiro S, Lewis GP, Siskind Y, Slone D. Comprehensive drug surveillance. JAMA. 1970; 213:1455-60.
2. Miller RR, Jick H. Clinical effects of meperidine in hospitalized medical patients. J Clin Pharmacol. 1978; 18:180-8.

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COMMONWEALTH OF MASSACHUSETTS

SUFFOLK, ss.

SUPERIOR COURT
C.A. No. 1884-cv-01808 (BLS2)

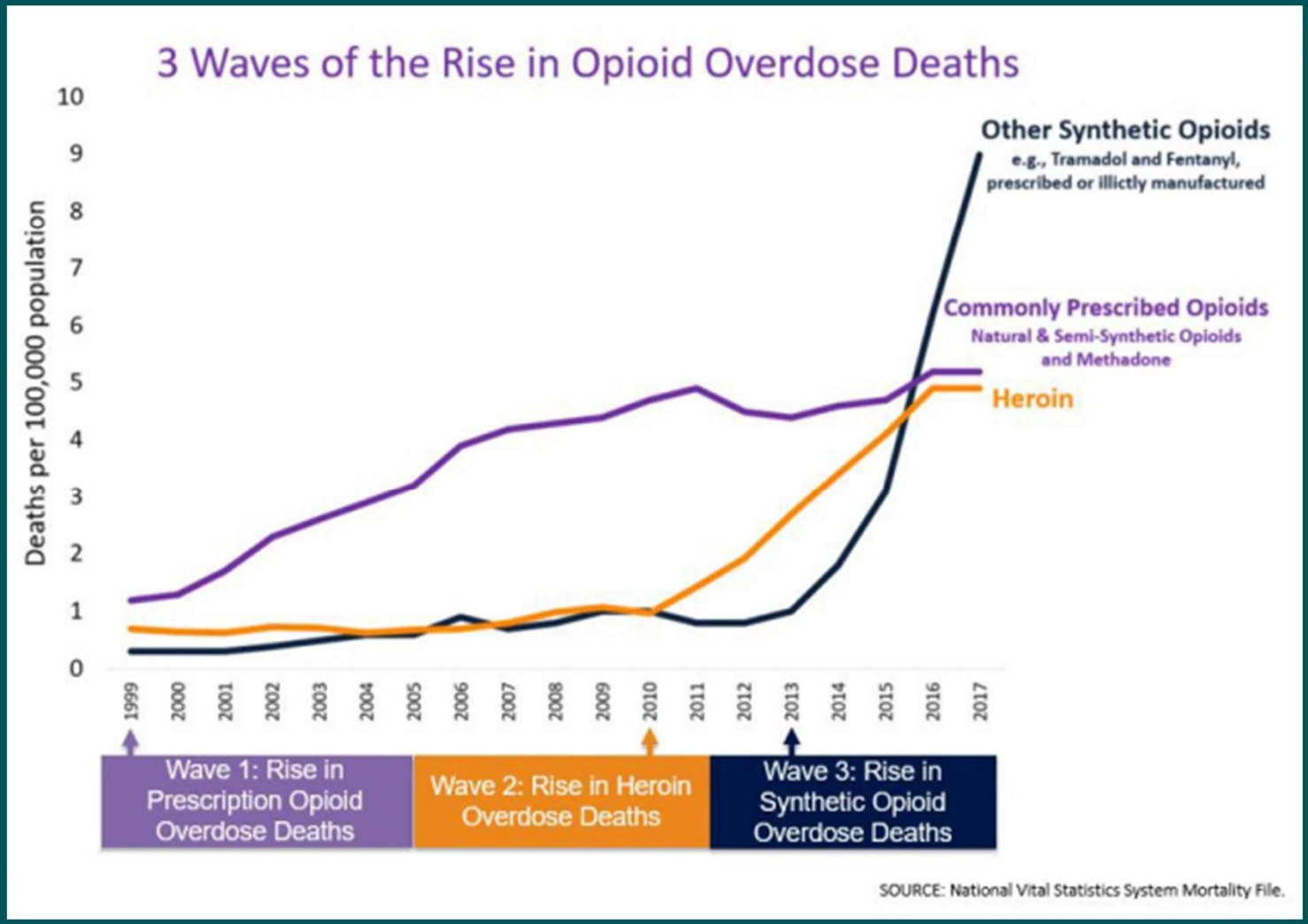
COMMONWEALTH OF MASSACHUSETTS,

v.

PURDUE PHARMA L.P., PURDUE PHARMA INC., RICHARD SACKLER, THERESA SACKLER, KATHE SACKLER, JONATHAN SACKLER, MORTIMER D.A. SACKLER, BEVERLY SACKLER, DAVID SACKLER, ILENE SACKLER LEFCOURT, PETER BOER, PAULO COSTA, CECIL PICKETT, RALPH SNYDERMAN, JUDITH LEWENT, CRAIG LANDAU, JOHN STEWART, MARK TIMNEY, and RUSSELL J. GASDIA

FIRST AMENDED COMPLAINT AND JURY DEMAND

Complete Unredacted Corrected Version
For The Public File
Submitted According To Court Order
January 31, 2019



https://www.cdc.gov/drugoverdose/epidemic/index.html Source: National Vital Statistics System Mortality File

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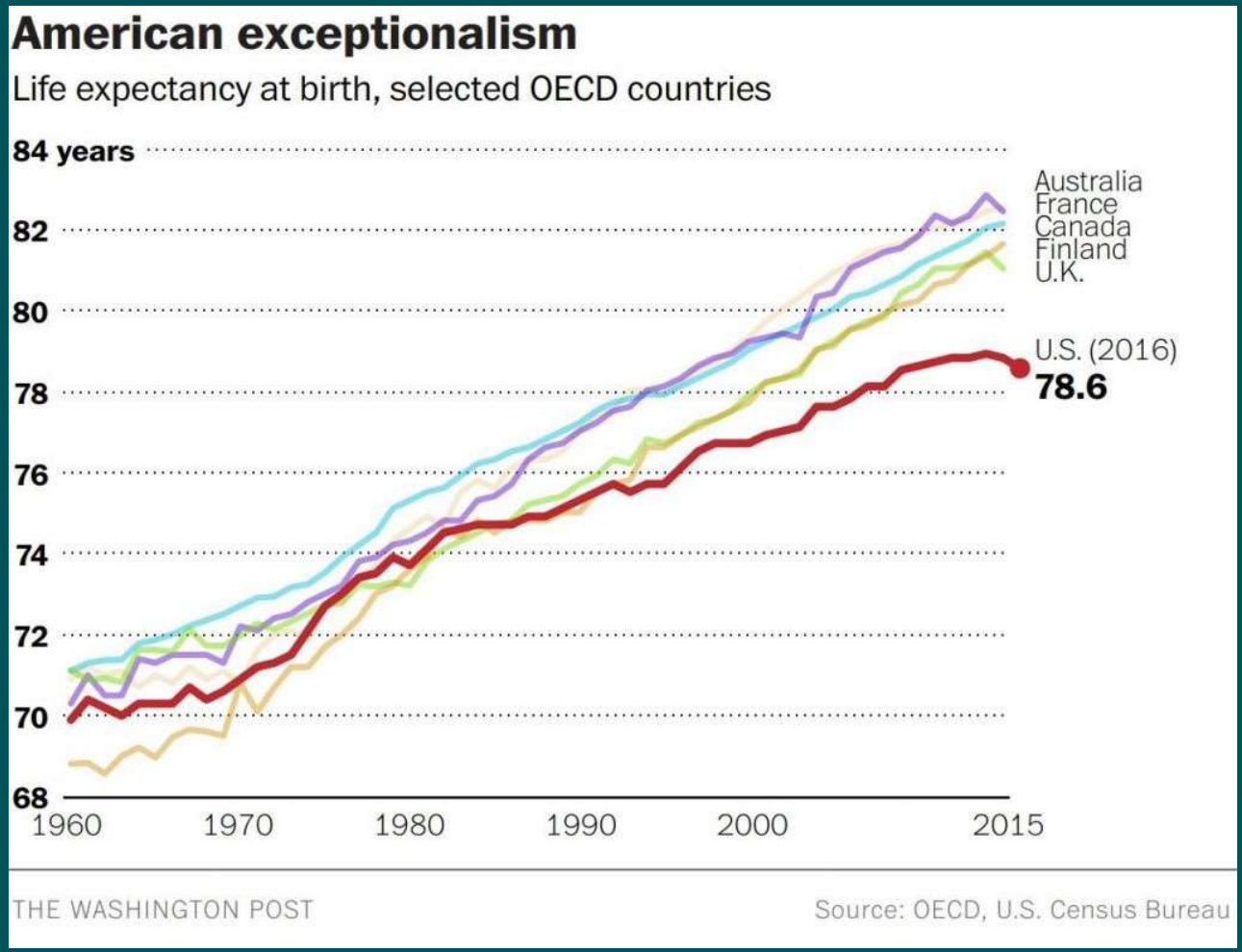

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Defining Opioid Use Disorder:

1. Use of an opioid in increased amount or longer then intended.
2. Persistent wish or unsuccessful effort to cut down or control opioid use.
3. Excessive time spent to obtain, use, or recover from opioid use.
4. Strong desire or urge to use an opioid.
5. Interference of opioid use with important obligations.
6. Continued opioid use despite resulting interpersonal problems, social problems or both.
7. Elimination or reduction of important activities because of opioid use.
8. Use of an opioid in physically hazardous situations (ie. While driving).
9. Continued opioid use despite resulting physical problems, psychological problems, or both.
10. Need for increased doses of an opioid for effects, diminished effect per dose, or both.
11. Withdrawal when dose of an opioid is decreased, use of drug to relieve withdrawal, or both.

2 to 3 items in 12 months: Mild opioid use disorder
4 to 5 items in 12 months: Moderate opioid use disorder
6 or greater items in 12 months: Severe opioid use disorder
DSM 5th Edition

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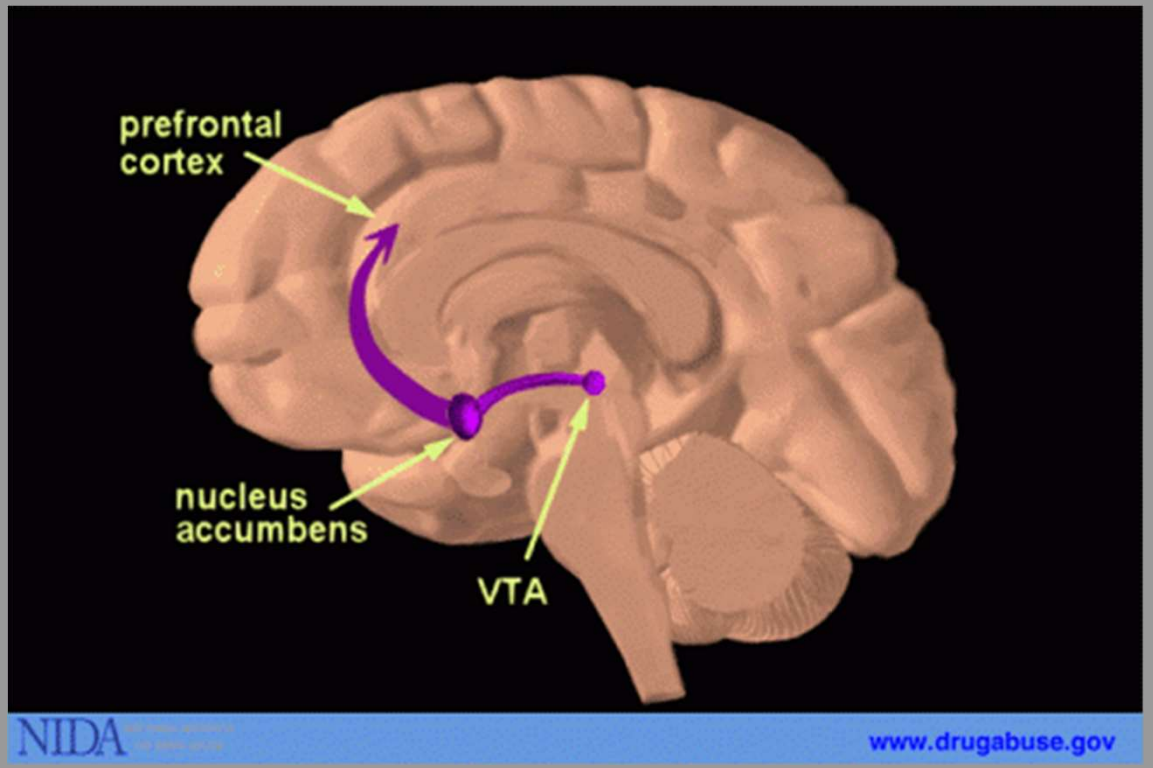
Opioid Use Disorder is a Brain Disease

- Risks include genetic, environmental, and social factors
- Family history, early exposure to drug use, stressful environments, and mental illness all increase risk.
- Reward from both drug and from natural rewarding stimuli (like relationships), decreases with time



Volkow, Nora D., George F. Koob, and A. Thomas McLellan. "Neurobiologic advances from the brain disease model of addiction." *New England Journal of Medicine* 374.4 (2016): 363-371.

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Prescription Opioid Analgesics

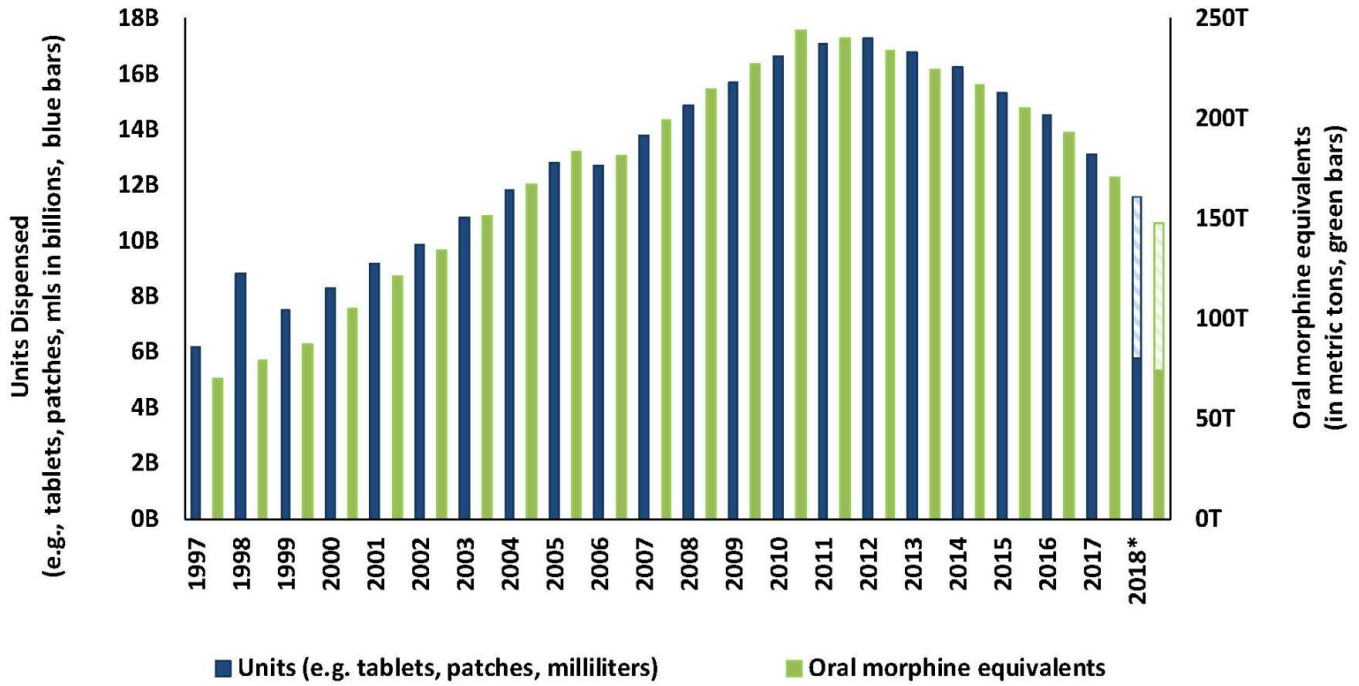

Figure 1: Estimated number of units (e.g., tablets, patches, milliliters) and calculated oral morphine equivalents (in metric tons) dispensed for opioid analgesic products from U.S. outpatient retail pharmacies, 1997 through projected year 2018*

Source: IQVIA, National Prescription Audit™. 1997-June 2018.

One billion MME is equivalent to 1 metric ton of oral morphine equivalents

*Projected year 2018 based on doubling the number of units and oral morphine equivalents dispensed during the first half of 2018 (Jan-June)

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The New York Times

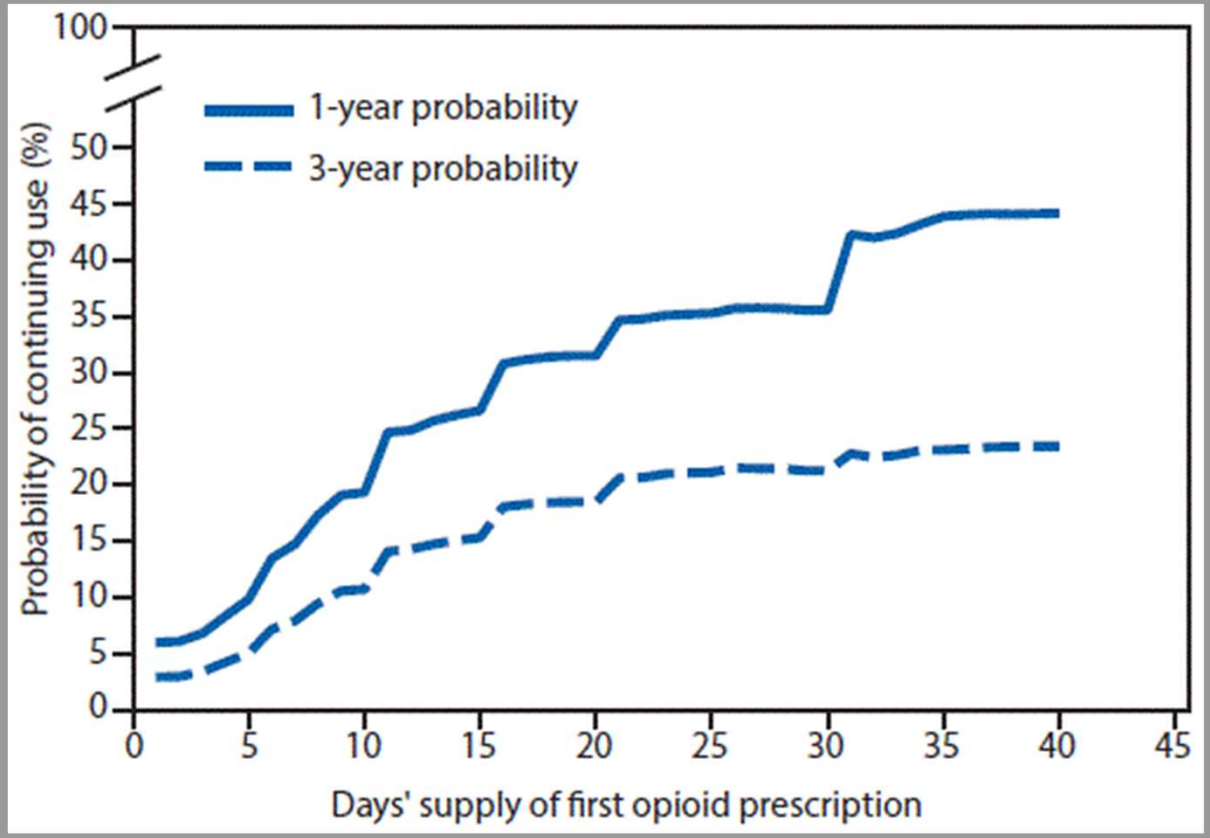
TheUpshot

Drug Overdose Deaths Drop in U.S. for First Time Since 1990

By Abby Goodnough, Josh Katz and Margot Sanger-Katz

Jul 17, 2019

Probabilities of continued opioid use among opioid-naïve patients— United States, 2006–2015



- Shah A, Hayes CJ, Martin BC. Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use — United States, 2006–2015. MMWR Morb Mortal Wkly Rep 2017;66:265–269.

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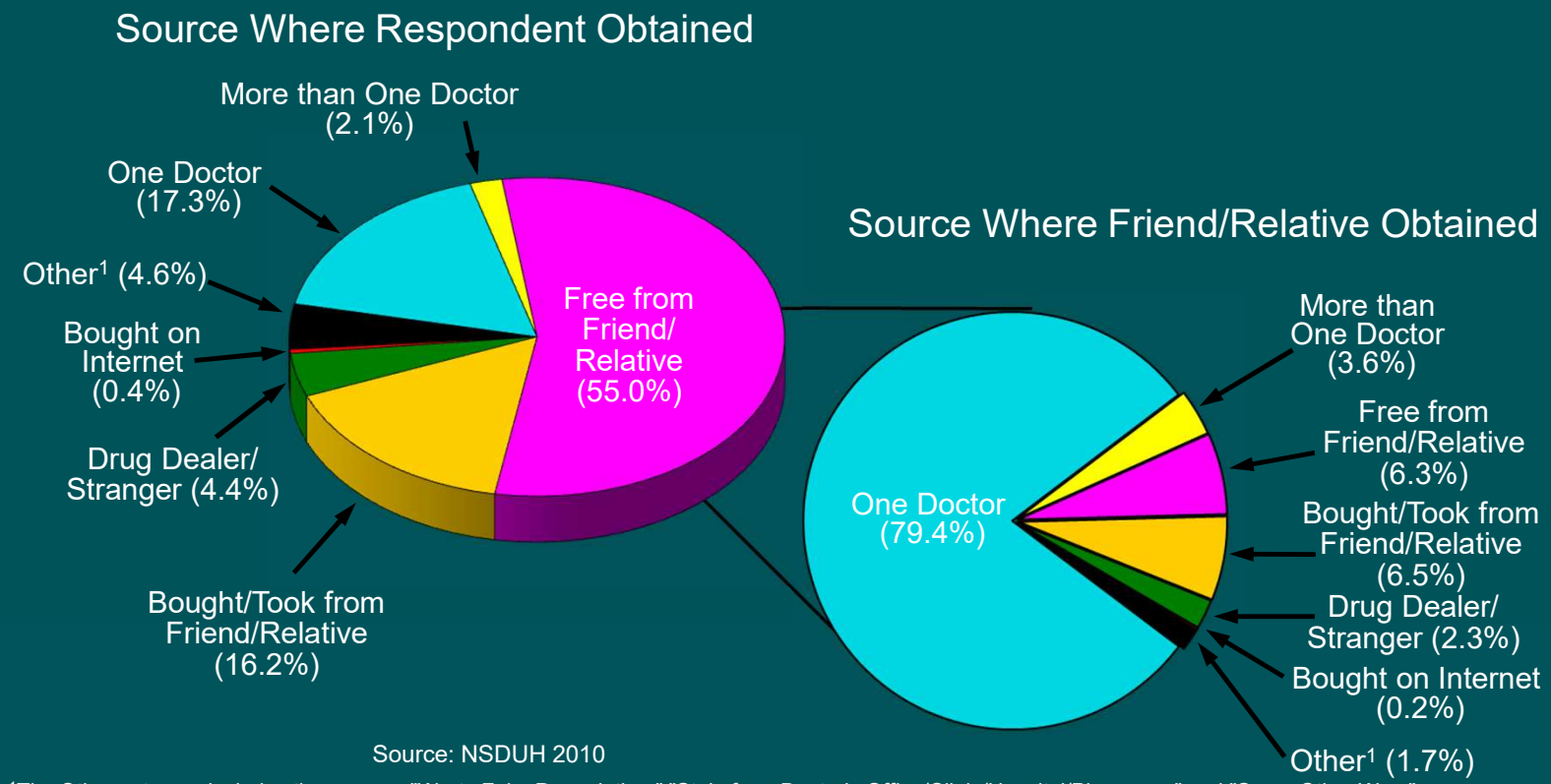
Source Where Pain Prescription is Obtained



Source: NSDUH 2010

[1]The Other category includes the sources "Wrote Fake Prescription," "Stole from Doctor's Office/Clinic/Hospital/Pharmacy," and "Some Other Way."

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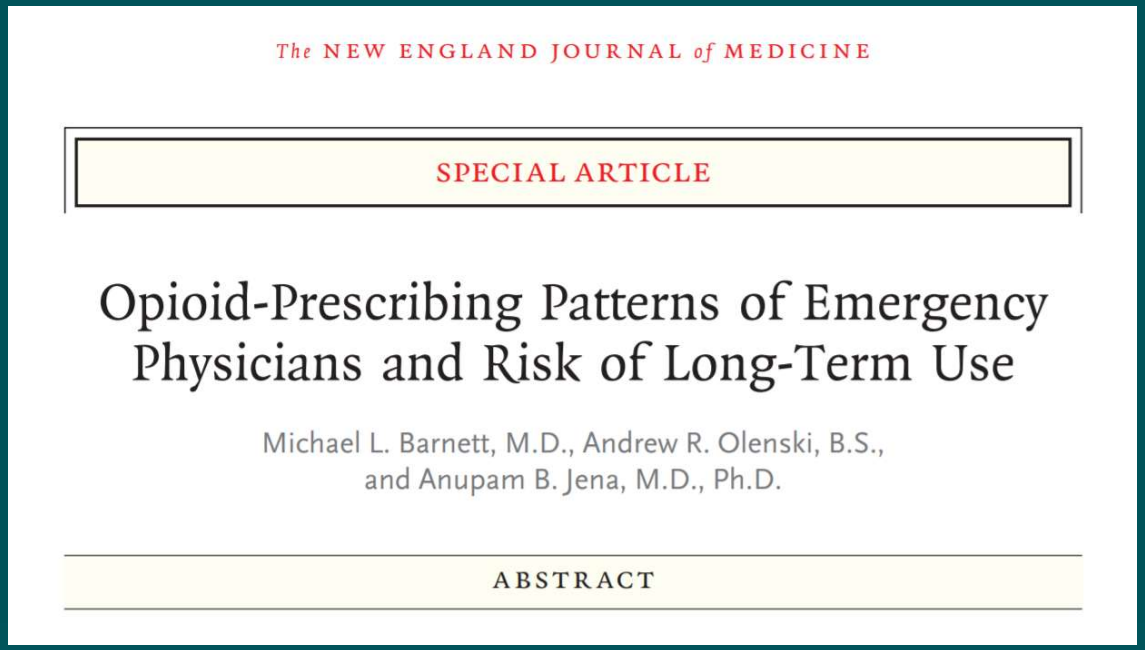

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

Opioid-Prescribing Patterns of Emergency Physicians and Risk of Long-Term Use

Michael L. Barnett, M.D., Andrew R. Olenski, B.S., and Anupam B. Jena, M.D., Ph.D.

ABSTRACT

- Retrospective study of Medicare beneficiaries
- Analyzed long term use of opioids in cohorts of patients based on exposure to emergency providers with varying intensity of prescribing habits
- Patients seen by emergency providers with high intensity prescribing habits were more likely to be on long term opioids one year after visit

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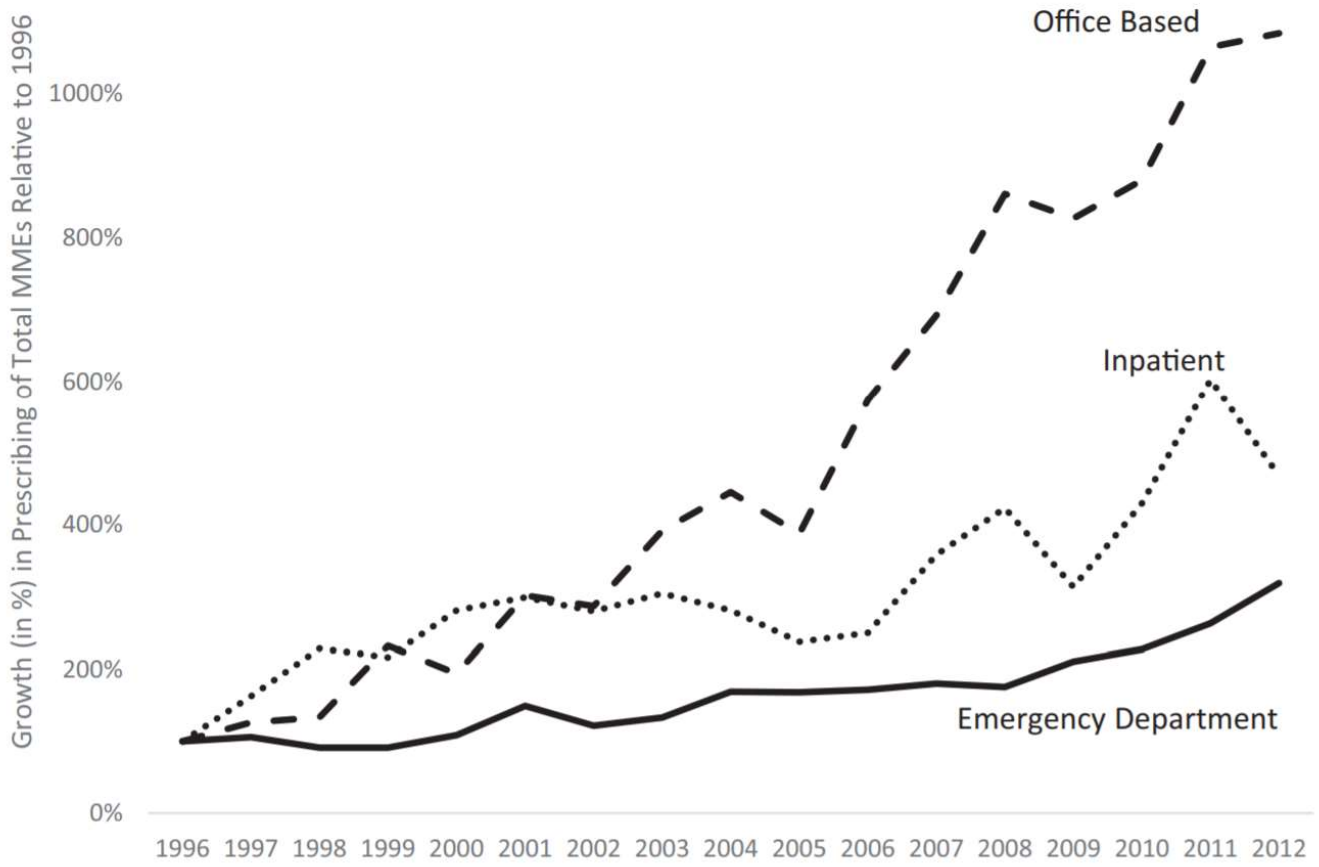

Figure. Growth in total milligrams of morphine equivalents by source of prescribing, 1996 to 2012. *MME*, Milligrams of morphine equivalents.

Axeen, Sarah, Seth A. Seabury, and Michael Menchine. "Emergency department contribution to the prescription opioid epidemic." *Annals of emergency medicine* 71.6 (2018): 659-667.

EM Goals for the Opioid Crisis

- Primary Prevention: reduce patient exposure to opioids
  - Keep opioid naïve patients opioid naïve
  - Use multimodal analgesia to effectively manage pain
  - Opioid Rx: lowest effective dose for shortest duration
- Secondary Prevention: early identification of OUD
  - Screen for substance use disorder in the ED
  - Avoid escalating opioid doses of patients on long term opioids
- Tertiary Prevention: treat and reduce harm in patients with OUD
  - ED initiated buprenorphine
  - Connect patients to community based treatment
  - Naloxone co-prescribing

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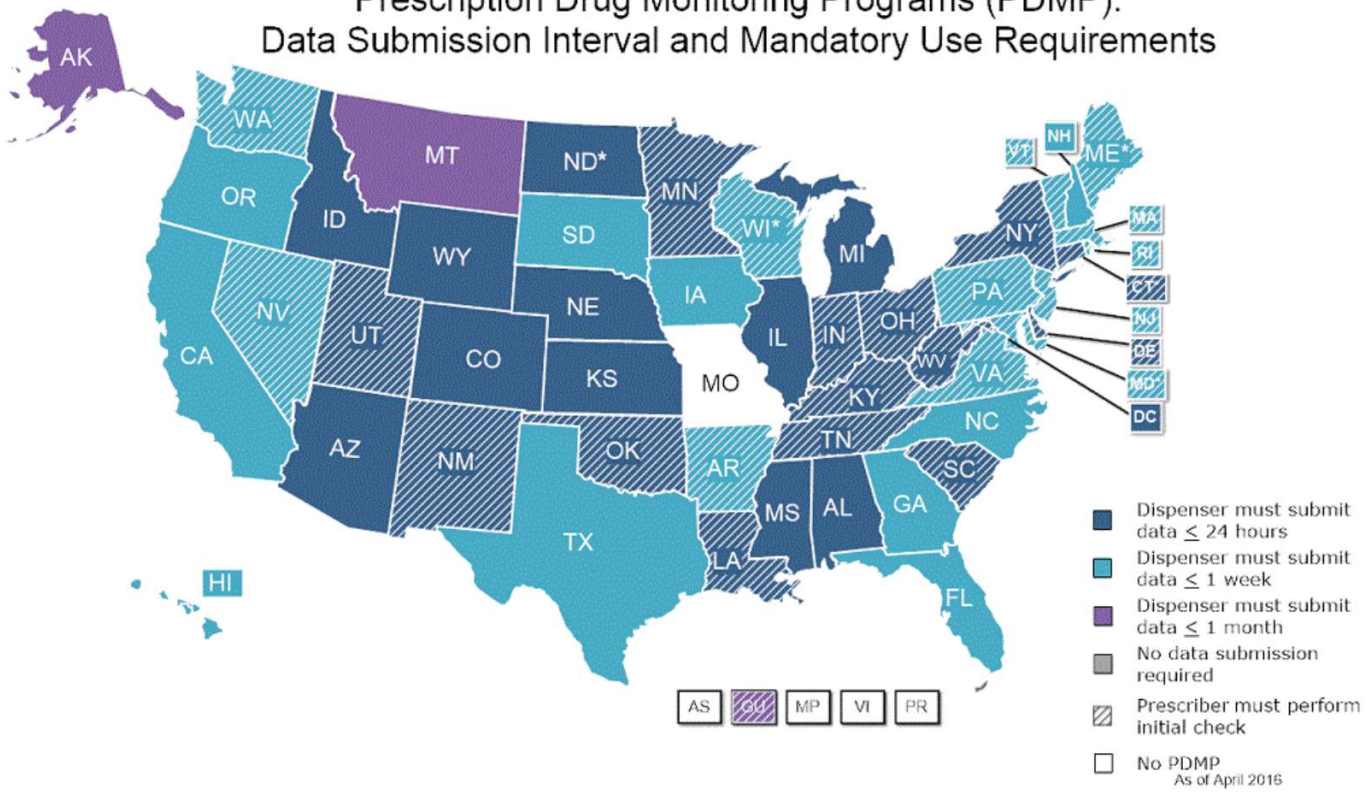
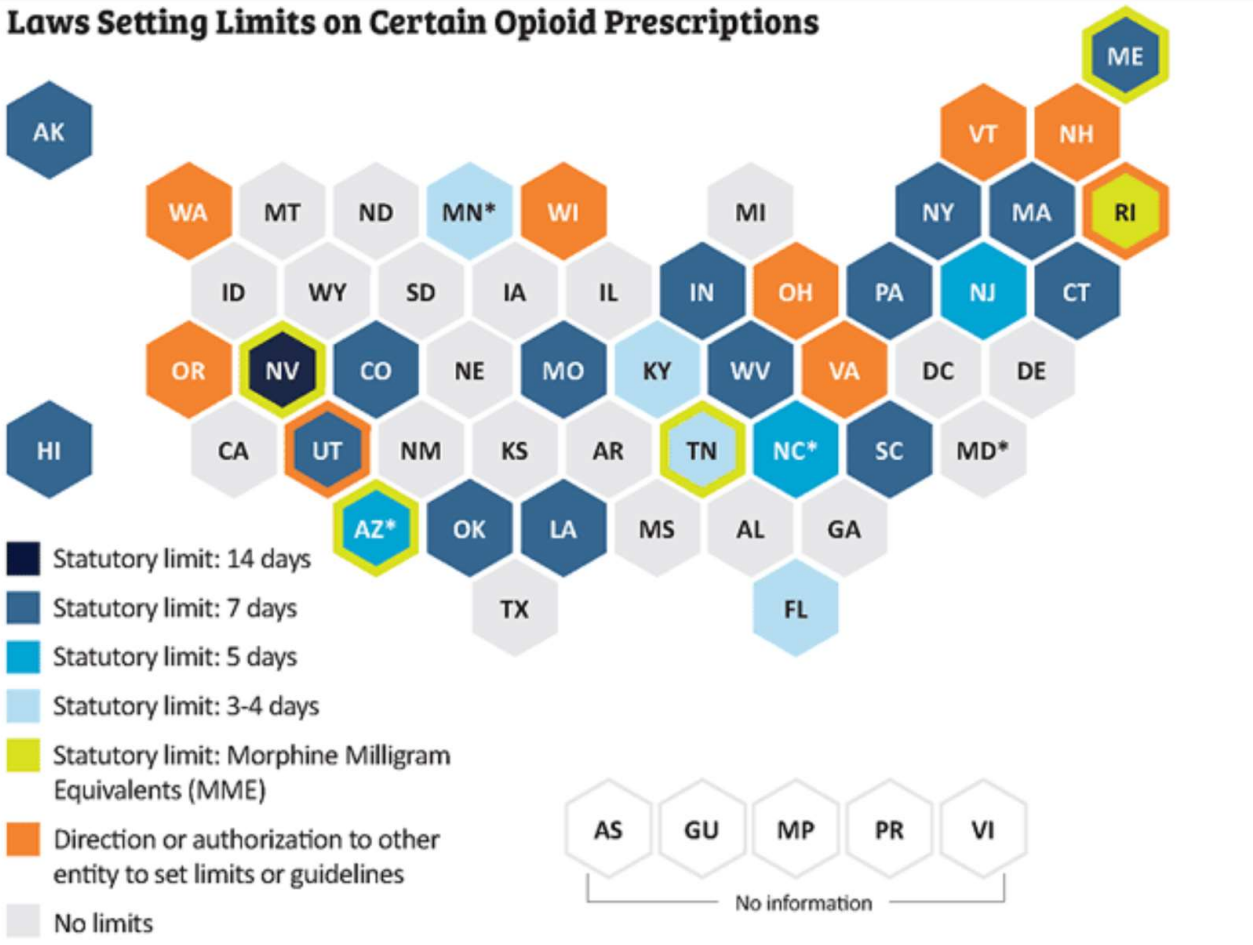
Prescription Drug Monitoring Programs (PDMP): Data Submission Interval and Mandatory Use Requirements



+ Includes states in which prescribers are required to check the PDMP before writing most initial prescriptions for opioids, as well as when a check is required in select circumstances.
* CT, ME, MD and WI have recently passed laws requiring providers to perform an initial check, which go into effect between 2016 and 2018. ND requires dispensers to check the PDMP before dispensing opioids in certain circumstances.

Sources: Centers for Disease Control and Prevention, Prevention Status Report, 2016; National Alliance for Model State Drug Laws, 2015; PDMP Training and Technical Assistance Center, 2016



http://www.ncsl.org/research/health/prescribing-policies-states-confront-opioid-overdose-epidemic.aspx

ED level primary prevention

ED's prioritize multimodal analgesia (ALTO protocols)

Provider level tracking of opioid prescribing with feedback

Improve availability of non-opioid modalities in the ED

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Contents lists available at ScienceDirect

American Journal of Emergency Medicine

journal homepage: www.elsevier.com/locate/ajem

Alternatives to opioids for pain management in the emergency department decreases opioid usage and maintains patient satisfaction

Rachael W. Duncan, PharmD [a,*], Karen L. Smith, PhD [b], Michelle Maguire, PharmD [a,1], Donald E. Stader III, MD [a]

Study Results

- Reduction in IV opioids administered by 20% compared to one year prior
- No change in Press Ganey satisfaction scores was noted post implementation

Multimodal Analgesia

APAP
NSAIDS
Triptans
Promethazine
Metoclopramide
Dexamethasone
Haloperidol
Magnesium
Valproic Acid
Lidocaine patch
IV lidocaine
Gabapentin
Cyclobenzaprine
Ketamine
Trigger point injection
Dicyclomine
Diphenhydramine
Nitrous Oxide

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Opioid Prescribing in the ED

- Screen for risk factors: SUD, mental illness, chronic pain, OSA, renal failure, hepatic failure, age>65, pregnancy
- Lowest dose for shortest duration: average ED script is 2 to 3 days
- Avoid initiating opioid therapy in chronic pain patients
- Poor evidence that one opioid is safer than another

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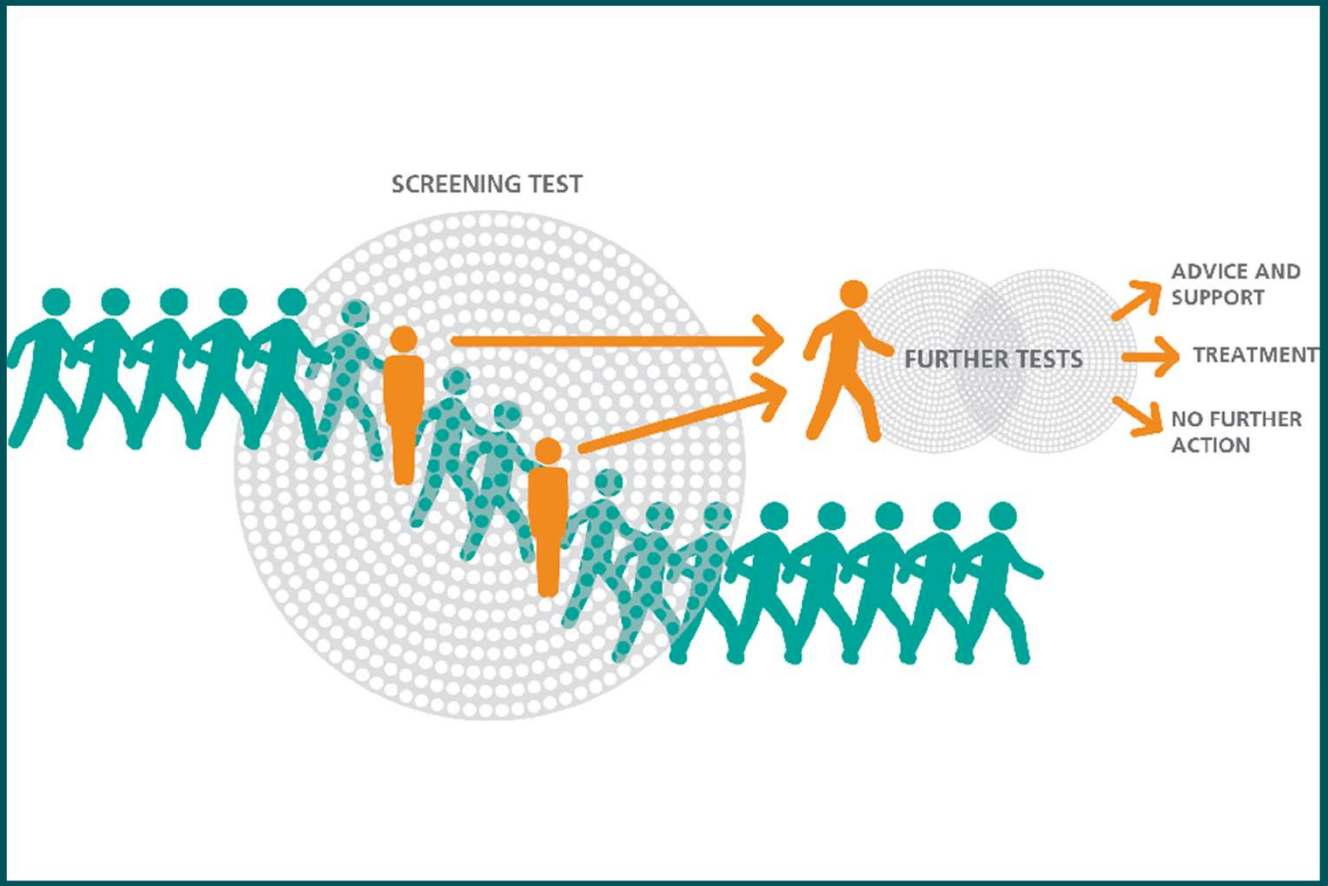
Secondary Prevention



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- 19.8 million people need treatment for SUD but only 10.8% receive treatment
- From 2006 to 2013, ED visits for SUD increased 37%
- Brief motivational interviewing can help to engage patient in treatment

Park-Lee E, Lipari RN, Hedden SL, Copello EAP, Kroutil LA. Receipt of services for substance use and mental health issues among adults: results from the 2015 National Survey on Drug Use and Health. NSDUH Data Review; 2016.
Weiss AJ, Barrett ML, Heslin KC, Stocks C. Trends in emergency department visits involving mental and substance use disorders, 2006–2013 . HCUP Stat. Br. #216. Agency Healthc. Res. Qual. Rockville, MD. 2016

Tertiary Prevention

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One-Year Mortality of Patients After Emergency Department Treatment for Nonfatal Opioid Overdose

Scott G. Weiner, MD, MPH*; Olesya Baker, PhD; Dana Bernson, MPH; Jeremiah D. Schuur, MD, MHS

*Corresponding Author. E-mail: sweiner@bwh.harvard.edu, Twitter: @scottweinermd.

- Retrospective observational study of 3 MA statewide datasets
- 11,557 patients were treated in EDs for opioid overdose
- 635 (5.5%) died within one year of overdose
- 130/635 (20.5%) died within one month of overdose
- 29/635 (4.6%) died within 2 days of the overdose

Weiner, Scott G., et al. "One-Year Mortality of Patients After Emergency Department Treatment for Nonfatal Opioid Overdose." *Annals of emergency medicine* (2019).

ED Initiated Buprenorphine

- Increases likelihood of retention in treatment
- D'Onfrio study: twice as many ED patients retained in treatment at 30 days
- Untreated patients **have 2.5 times** all cause mortality and **8 times** overdose mortality

D'Onofrio, Gail, et al. "Emergency department–initiated buprenorphine/naloxone treatment for opioid dependence: a randomized clinical trial." *Jama* 313.16 (2015): 1636-1644.
Ma J, Bao YP, Wang RJ, et al. Effects of medication-assisted treatment on mortality among opioids users: a systematic review and meta-analysis. *Mol Psychiatry*. 2018 Jun 22. doi: 10.1038/s41380-018-0094-5.

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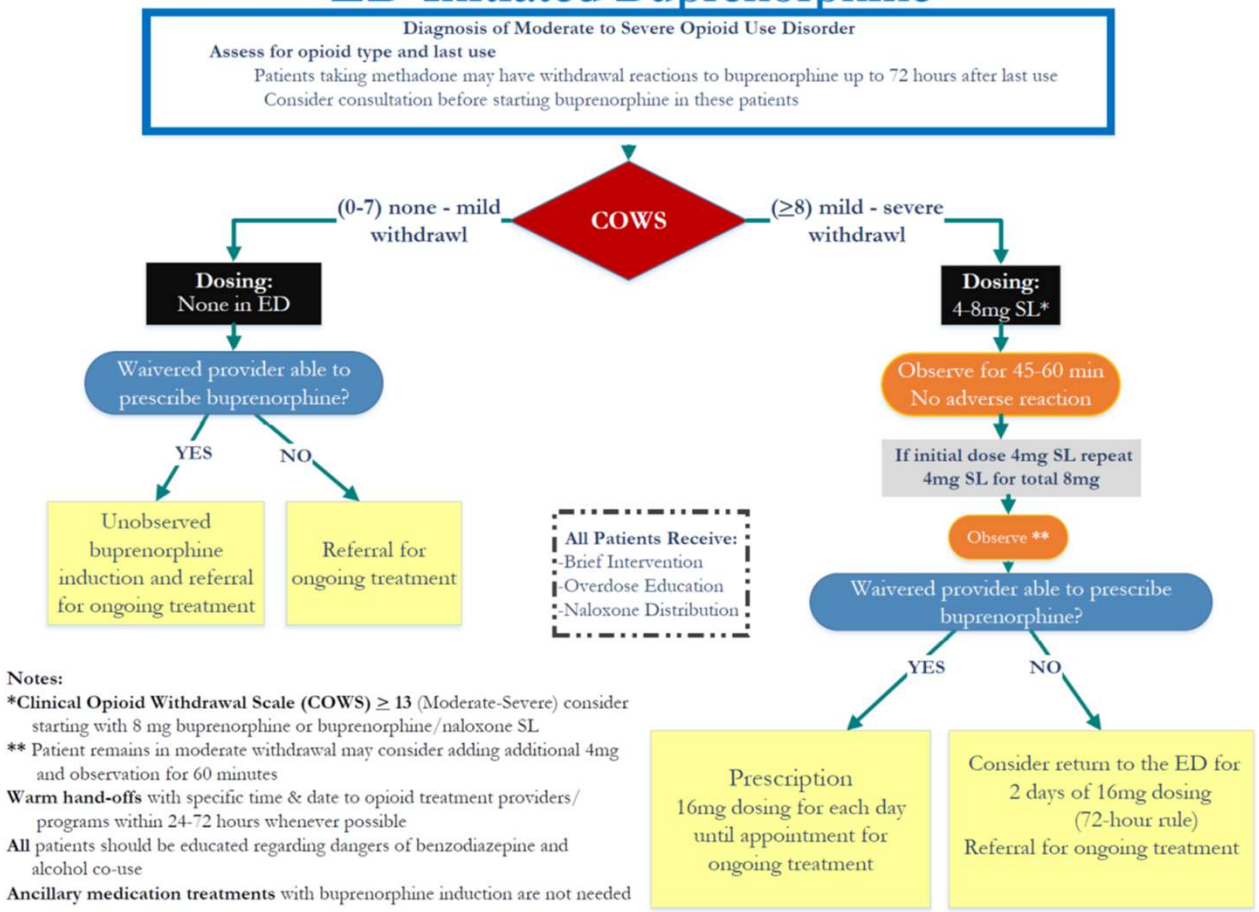
ED-Initiated Buprenorphine



Notes:

***Clinical Opioid Withdrawal Scale (COWS) ≥ 13** (Moderate-Severe) consider starting with 8 mg buprenorphine or buprenorphine/naloxone SL

** Patient remains in moderate withdrawal may consider adding additional 4mg and observation for 60 minutes

Warm hand-offs with specific time & date to opioid treatment providers/ programs within 24-72 hours whenever possible

All patients should be educated regarding dangers of benzodiazepine and alcohol co-use

Ancillary medication treatments with buprenorphine induction are not needed

https://medicine.yale.edu/edbup/Algorithm_338052_5_v2.pdf

ED Naloxone Distribution

- Improves mortality
- Cost effective among heroin users with markedly conservative assumptions
- Partner with state or local government entities to fund naloxone distribution
- Co-prescribe naloxone kits to high risk patients

Kerensky, Todd, and Alexander Y. Walley. "Opioid overdose prevention and naloxone rescue kits: what we know and what we don't know." *Addiction science & clinical practice* 12.1 (2017): 4.
Coffin, Phillip O., and Sean D. Sullivan. "Cost-effectiveness of distributing naloxone to heroin users for lay overdose reversal." *Annals of internal medicine* 158.1 (2013): 1-9.

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Emergency Medicine and Population Health

- Readmission Initiatives
- High Utilizer Initiatives
- Behavioral Health Care Coordination
- Primary Care Linkage

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