

2018 HEALTH
MEETING
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Session 122PD, The Opioid Crisis: Trends and Actuarial Perspectives

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The Opioid Crisis: Trends and Actuarial Perspectives

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Session 122
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ACTUARIES®**



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The United States antitrust laws aim to protect consumers by preserving the free economy and prohibiting anti-competitive business practices; they promote competition. There are both state and federal antitrust laws, although state antitrust laws closely follow federal law. The Sherman Act, is the primary U.S. antitrust law pertaining to association activities. The Sherman Act prohibits every contract, combination or conspiracy that places an unreasonable restraint on trade. There are, however, some activities that are illegal under all circumstances, such as price fixing, market allocation and collusive bidding.

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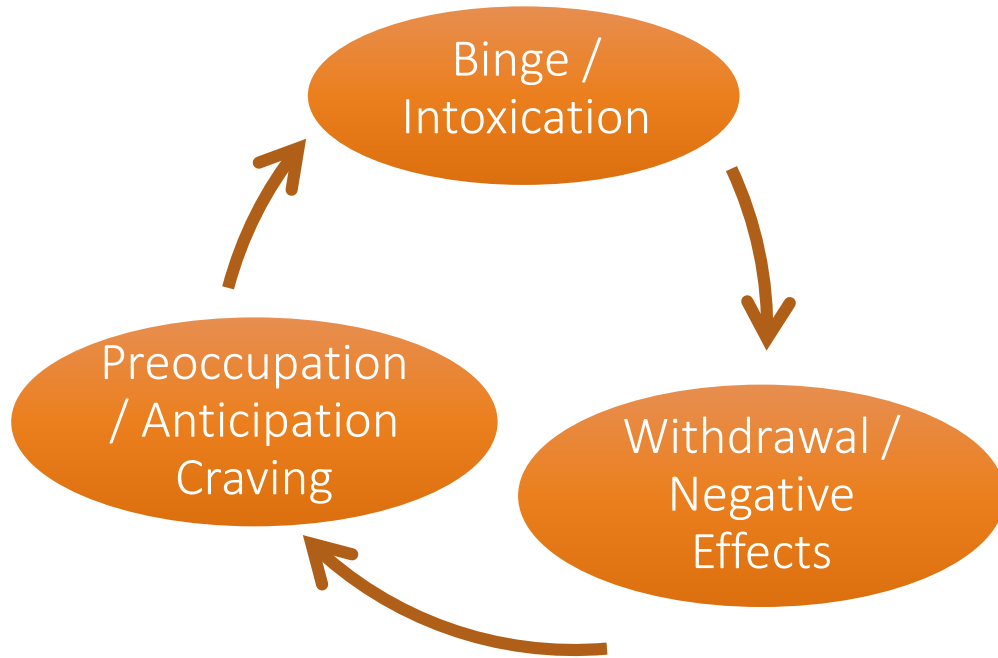
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Introduction



Dysregulated Pleasure Pathway



- Mesolimbic System(s)
- Multiple neurotransmitters
- Dependence varies
- 23% of heroin users become dependent

Neuropsychopharmacology. 2010 Jan; 35(1): 217–238.

Exp Clin Psychopharmacol. 1994 2(3) 244-268 & Erickson 2007

Substance Use Disorder

VIEWPOINT

Michael P. Botticelli, MEd
White House Office of
National Drug Control
Policy, Washington, DC.

Howard K. Koh, MD, MPH
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Boston, Massachusetts;
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Changing the Language of Addiction

Words matter. In the scientific arena, the routine vocabulary of health care professionals and researchers frames illness¹ and shapes medical judgments. When these terms then enter the public arena, they convey social norms and attitudes. As part of their professional duty, clinicians strive to use language that accurately reflects science, promotes evidence-based treatment, and demonstrates respect for patients.

However, history has also demonstrated how language can cloud understanding and perpetuate societal bias. For example, in the past, people with mental illness were derided as “lunatics” and segregated to

Stigma isolates people, discourages people from coming forward for treatment, and leads some clinicians, knowingly or unknowingly, to resist delivering evidence-based treatment services. The 2014 National Survey on Drug Use and Health⁴ estimates that of the 22.5 million people (aged ≥ 12 years) who need specialty treatment for a problem with alcohol or illicit drug use, only an estimated 2.6 million received treatment in the past year; of the 7.9 million specifically needing specialty treatment for illicit drug use, only 1.6 million received treatment. The survey noted that reasons for not seeking treatment included fears that

How did we get here?

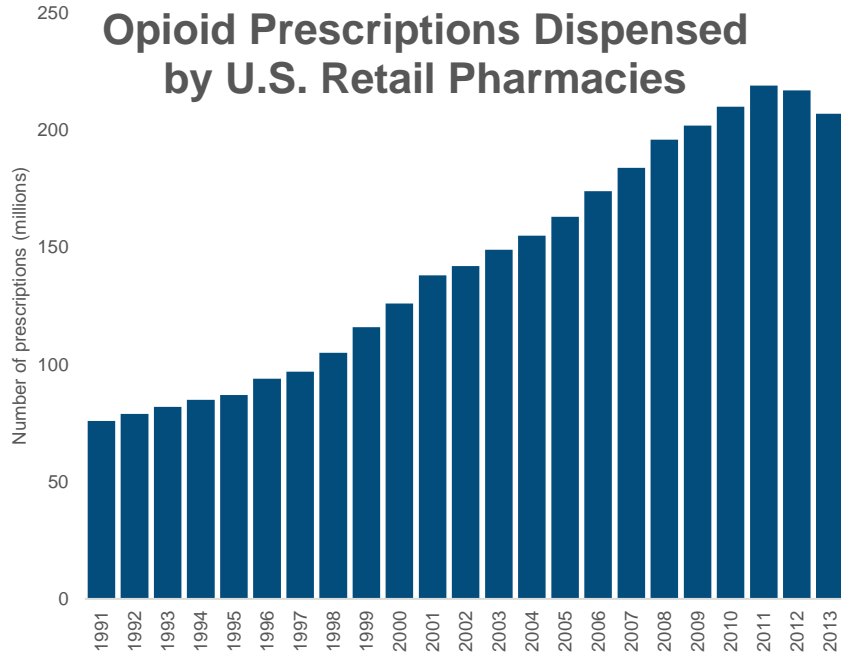
- 25 million Americans report chronic daily pain
- Undertreatment in the '90s, overtreatment now
- Early belief that opioid pain management solutions weren't addictive
- Pathway from opioids to heroin
- Rapid increase of fentanyl

Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4562413/>

Inputs and Outcomes



Prescriptions and abuse



Source: IMS's National Prescription Audit (NPA) & Vector One ®: National (VONA).

92 million people prescribed opioids in 2015

- Some may be at risk for developing opioid use disorder

11.5 million reported misusing opioids

- May or may not have discussed their opioid use with a clinician or be ready to begin treatment

1.9 million reported being addicted to opioids

- Many need enhanced care and management for recovery

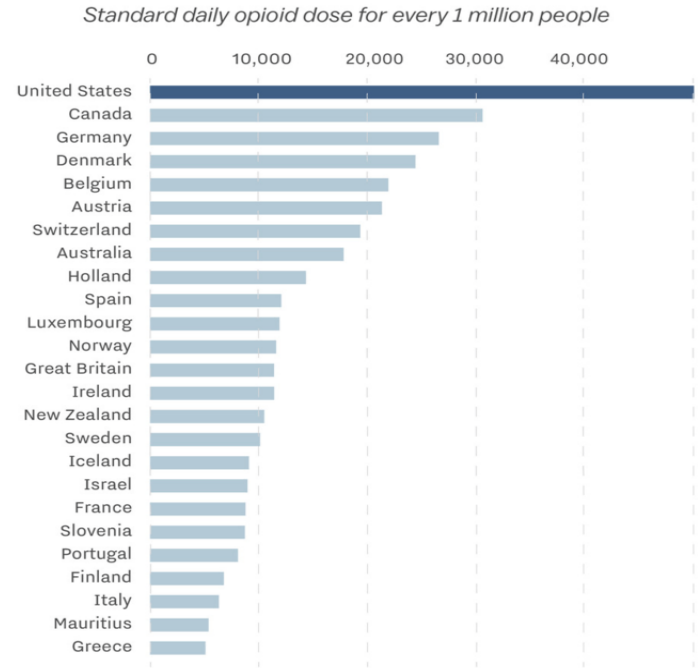
Source: 2015 National Survey on Drug Use and Health

US Opioid Consumption

- US consumes nearly 30% of the world's opioid supply
 - Makes up 4.4% of the global population

Source: a-better-america.com/2018/01/27/opioid-use-in-the-us-blows-other-countries-away/

Americans consume more opioids than any other country

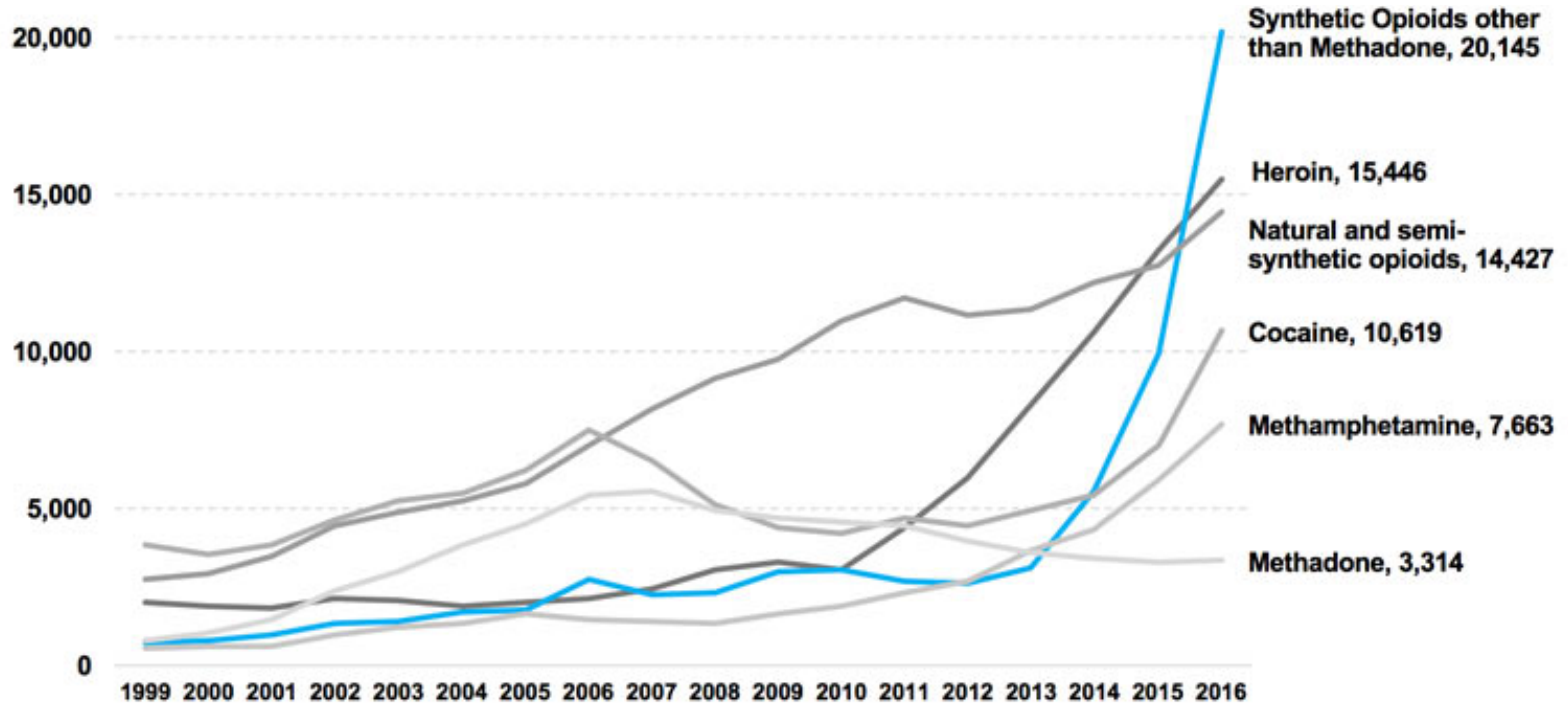


Source: United Nations International Narcotics Control Board
Credit: Sarah Frostenson

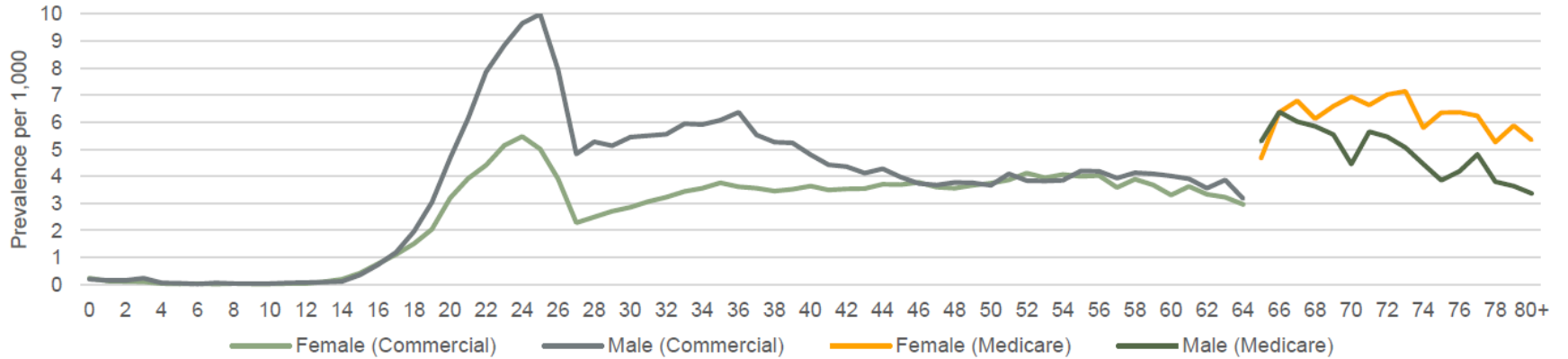
Vox

Source: amp.nymag.com/daily/intelligencer/2018/01/is-the-opioid-crisis-driven-by-supply-or-demand.html

Overdose Deaths



Opioid Use Disorder Prevalence - Demographics

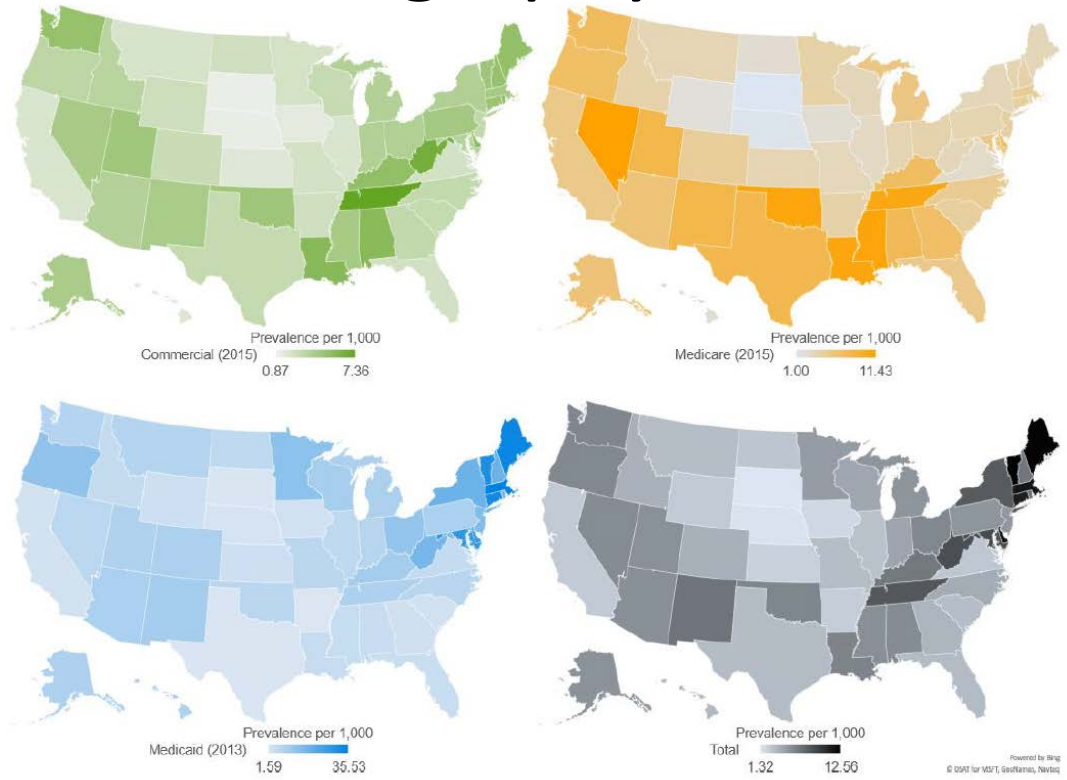


PAYER	DIAGNOSED PREVALENCE PER 1,000	TOTAL DIAGNOSED NATIONALLY NO. (%)
COMMERCIAL (2015)	3.28	622,000 (41.4)
MEDICARE (2015)	5.39	239,000 (15.9)
MEDICAID (2013)	8.90	642,000 (42.7)
TOTAL	4.91	1,503,000 (100.0)

Source: Milliman White Paper - Opioid use disorder in the United States: Diagnosed prevalence by payer, age, sex, and state

Opioid Use Disorder - Geography

- **Commercial:** high rates of opioid use disorder in the Appalachia region, Louisiana, New England, Washington state
- **Medicare:** Nevada, Mississippi, Louisiana, Oklahoma, Tennessee
- **Medicaid:** New England



Source: Milliman White Paper - Opioid use disorder in the United States: Diagnosed prevalence by player, age, sex, and state

Public Health Impacts



Putting things in perspective

- U.S. life expectancy declines two years in a row - opioid overdose deaths to blame.
 - First time since 1960
- If current trends continue, opioid overdose deaths could outnumber suicides in 2018 or 2019.
- More deaths from opioid overdose in 2016 than from the entire Vietnam War

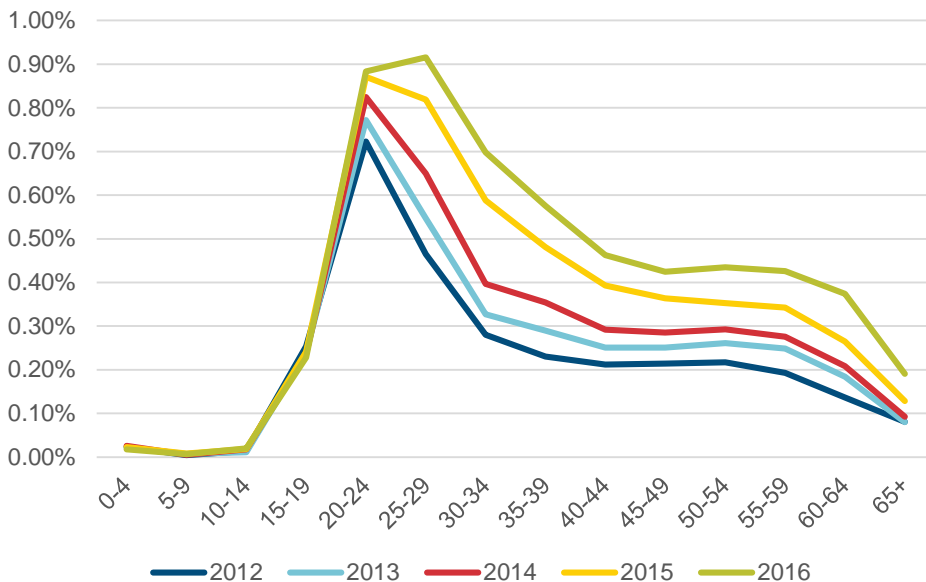
Sources: <https://www.cdc.gov/drugoverdose/pdf/pubs/2017-cdc-drug-surveillance-report.pdf>
<https://jamanetwork.com/journals/jama/article-abstract/2654372>
<https://www.cdc.gov/nchs/data/databriefs/db293.pdf>
<https://www.cbsnews.com/news/opioids-drug-overdose-killed-more-americans-last-year-than-the-vietnam-war/>

Opioid-Related ER Visits

Changes over five years (2012-2016):

- 2.2x as many ER visits with opioids as primary diagnosis
- 1.8x as many ER visits involving opioids
- Increases in all 50 states plus DC
- Increases in 78% of MSAs
- 30% increase from 2016 to 2017
- 25 year old males at highest risk:
 - 1 in 51 ER visits involve opioids
 - 4.6x more than average

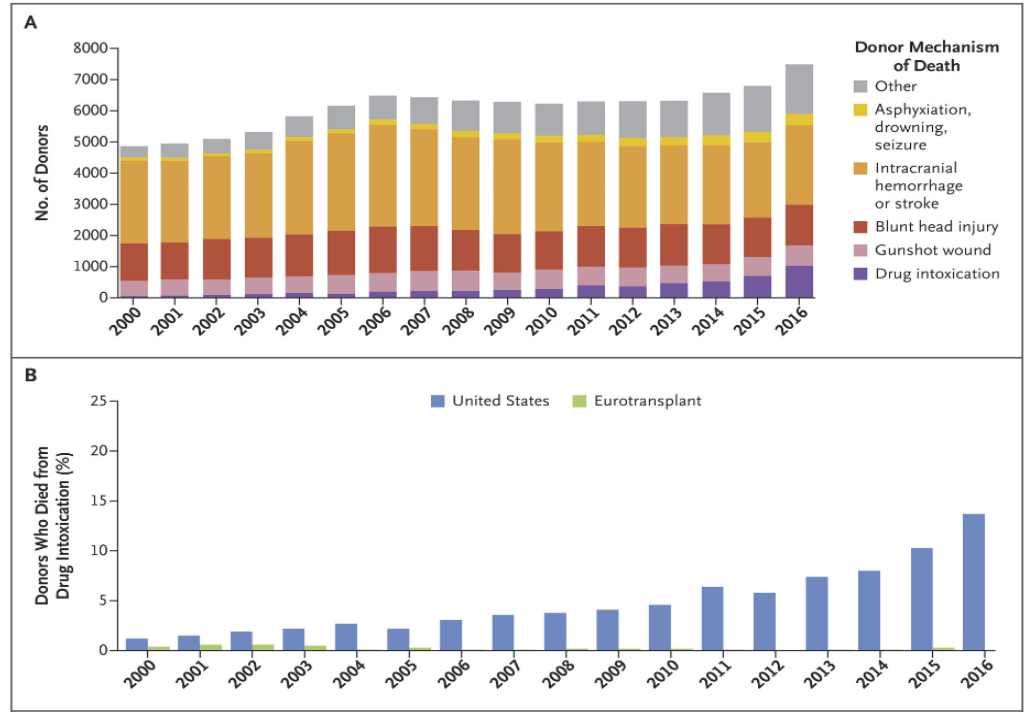
Percent of ER visits involving opioids, by age group (commercially insured)



Source: Milliman Analysis, publication pending
www.denverpost.com/2017/09/20/america-opioid-problem-life-expectancy/

The Effect on Organ Transplants

- Transplant organs more available due to overdose-related deaths



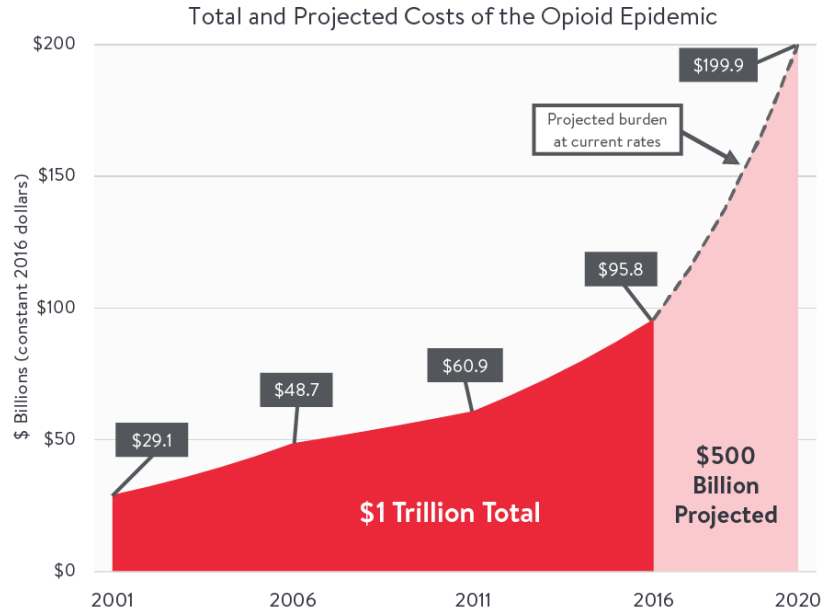
Source: www.nejm.org/doi/full/10.1056/NEJMc1802706

Family Impacts

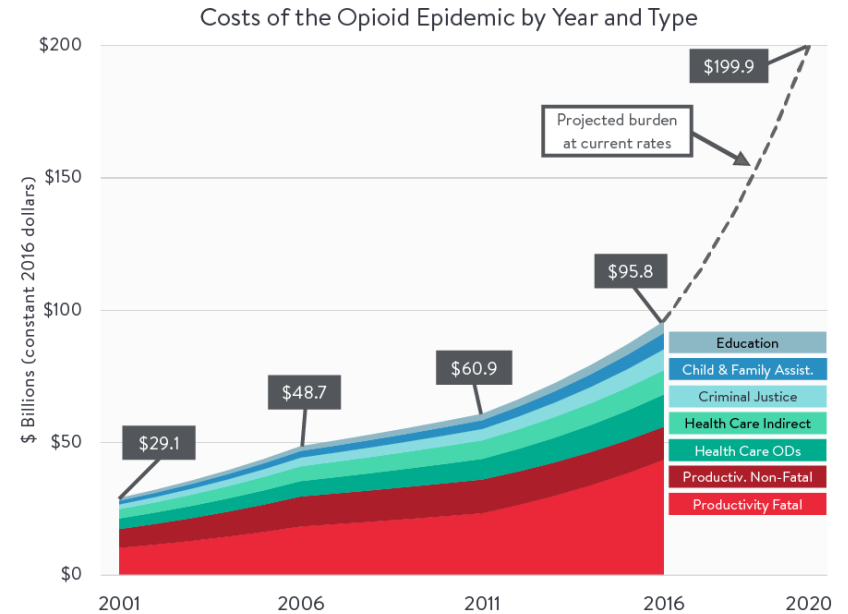
- Number of pregnant women using opioids grew significantly from 2004 to 2013
- Fivefold increase in newborns with neonatal abstinence syndrome (NAS)
- 8% increase in foster children from 2011 to 2015
- Opioid prescriptions are more likely among households already exposed to opioids

Sources: www.nytimes.com/2018/05/09/magazine/children-of-the-opioid-epidemic.html
www.motherjones.com/politics/2017/07/children-ohio-opioid-epidemic/
www.foxnews.com/health/2017/12/11/opioid-painkiller-prescriptions-may-run-in-families.amp.html

Economic Costs



* Data between labeled estimates interpolated using constant growth rates



* Data between labeled estimates interpolated using constant growth rates

Source: altarum.org/about/news-and-events/economic-toll-of-opioid-crisis-in-u-s-exceeded-1-trillion-since-2001

Impact on Labor Force

- 20% of drop in American men in labor force attributed to opioid use
- Half of working-age men not in labor force take prescription painkillers daily
- Unemployed are more likely to misuse painkillers

Source: www.denverpost.com/2017/09/07/opioids-american-men-labor-force

Struggles for Chronic Pain Patients

- 100 million Americans suffer from chronic pain
- Doctors pressured to decrease prescriptions
 - Opioid treatment agreements
 - Tapering
 - Psychological therapies
- Poor management can lead to withdrawal symptoms, even turning to other drugs like heroin

Sources: www.vox.com/science-and-health/2018/5/17/17276452/chronic-pain-treatment-psychology-cbt-mindfulness-evidence
www.politico.com/story/2018/05/08/opioid-epidemic-consequences-502619

More headlines . . .

By CHRISTINA CAPATIDES / CBS NEWS / May 24, 2018, 5:34 PM

Mussels off the coast of Seattle test positive for opioids

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As more and more American communities grapple with **opioid addiction**, the human toll of the **epidemic** has grown in both scope and severity. And now, scientists at the Washington Department of Fish and Wildlife have found evidence that drug's impact has literally flowed downstream to affect marine life, as well.

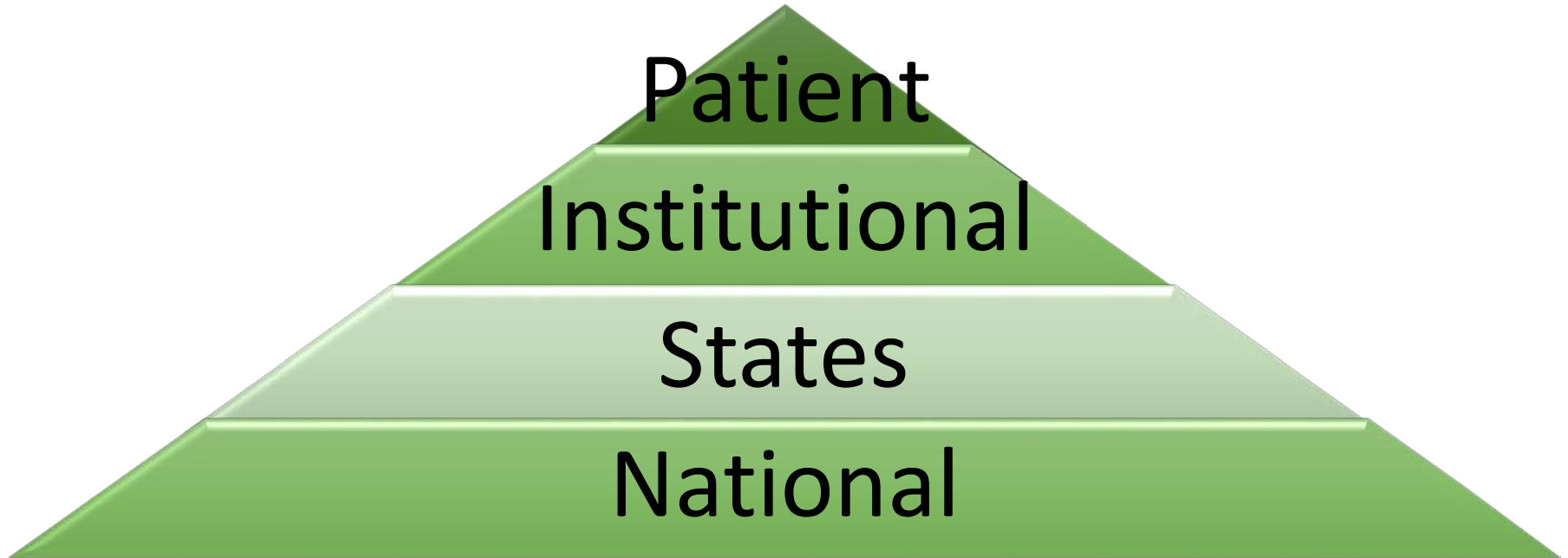


Source: www.cbsnews.com/news/mussels-test-positive-for-opioids-seattle-puget-sound/

Making a Difference



Strategy Levels



Solutions: Patients and Providers



Addiction Prevention & Treatment

- Stricter prescription guidelines
- Treatment of chronic pain with non-opioid painkillers
- Expanding access to anti-addiction medication
 - Greater buprenorphine access decreased overdose deaths by 79% in four years in France
- Develop stronger opioid antagonist formulas to prevent overdoses

Sources: www.vox.com/policy-and-politics/2018/4/17/17246484/opioid-epidemic-buprenorphine-france

www.nejm.org/doi/10.1056/NEJMs1706626

jamanetwork.com/journals/jama/fullarticle/2670713?utm_source=silverchair&utm_medium=email&utm_campaign=article_alert-jama&utm_content=olf&utm_term=012418

Treatment Options

- Detox, RTF, PHP, IOP, OP, counseling/therapy, MAT
- MAT is gold standard for harm reduction
- Increased Naloxone availability

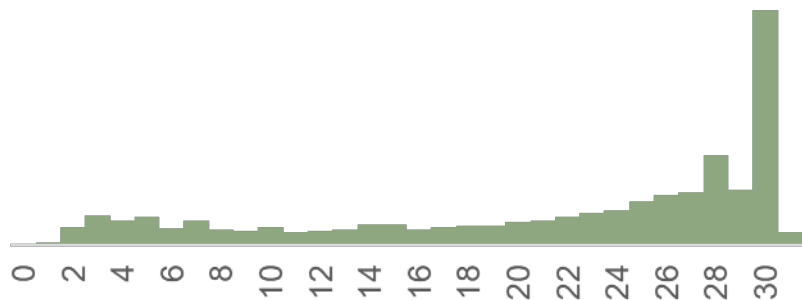
NSAIDs as an Alternative

- Two randomly controlled trials compared NSAIDs to opioids
- After 12 months, opioid groups experienced more pain than non-opioid groups
- Opioid group experienced more side effects

Sources: www.vox.com/science-and-health/2018/3/6/17082590/opioids-tylenol-chronic-pain-study
www.jwatch.org/na46261/2018/03/20/are-opioids-beneficial-chronic-back-and-osteoarthritis?query=etoc_jwgenmed&jwd=000011063136&jspc=

Opioid Diagnosed Misuser Snapshot

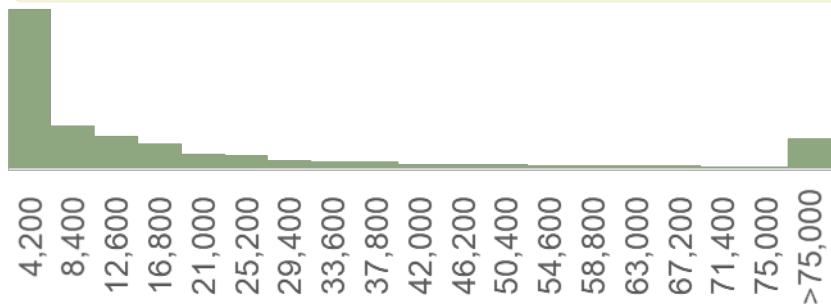
Days per Script



Proportion of Days Covered

PDC	% of OUD patients	Additional patients w/o OUD diagnosis
> 75%	48%	7.6x
100%	8%	7.0x

MMEs per Member



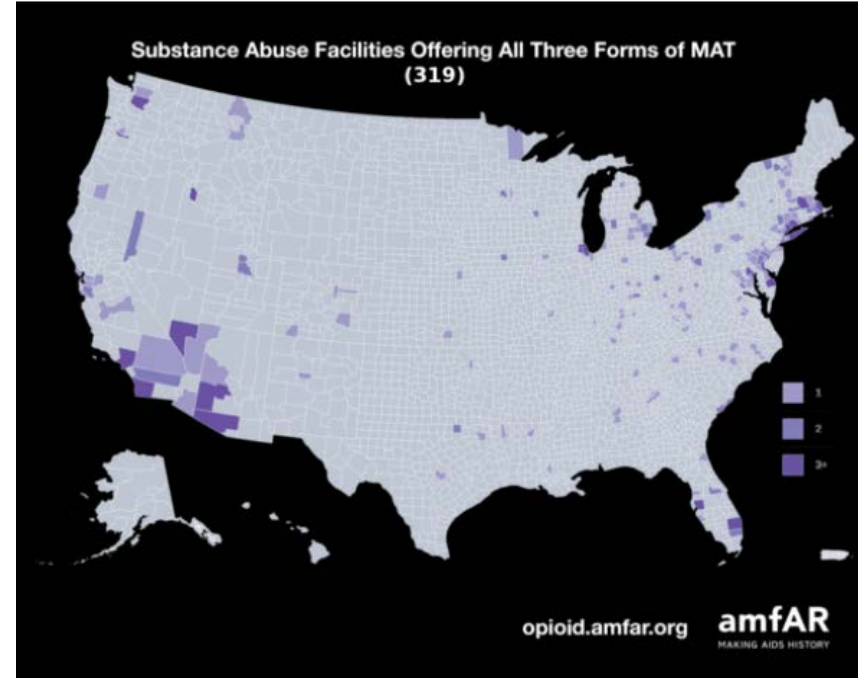
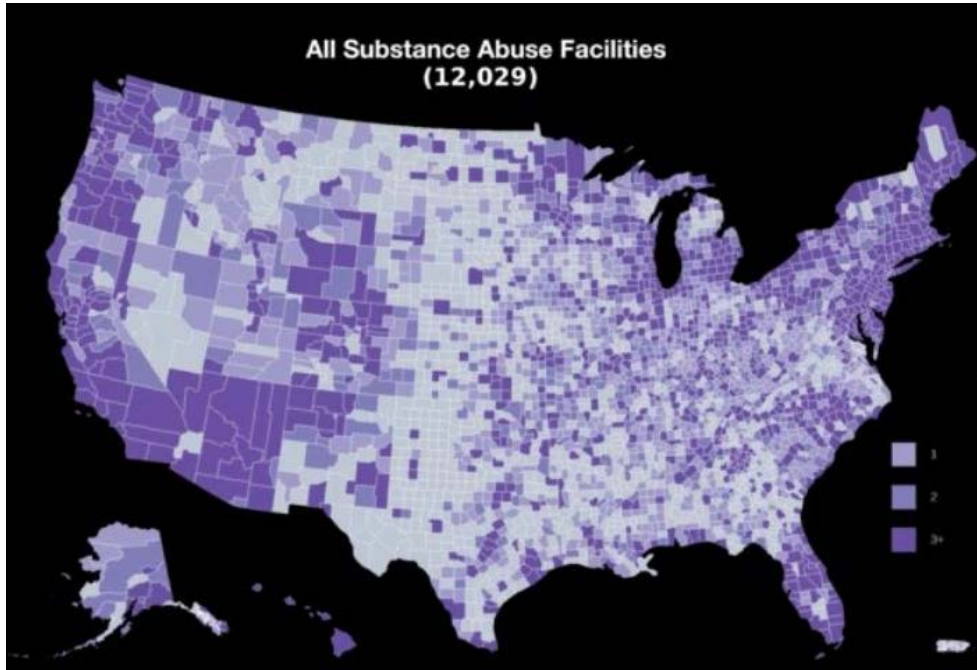
Days Supply

1/3 of OUD patients have ≥ 360 days supply

4.5x additional patients without an OUD diagnosis at this level

Source: Milliman Analysis, publication pending

Medication-Assisted Treatment (MAT)

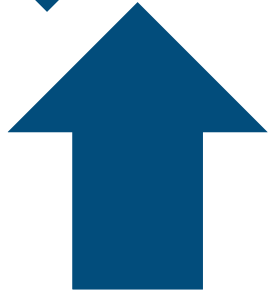


Sources: irjci.blogspot.com/2018/01/county-level-map-shows-one-reason.html
www.vox.com/platform/amp/2018/1/10/16872012/opioid-epidemic-medication-addiction-map

Encouraging trends



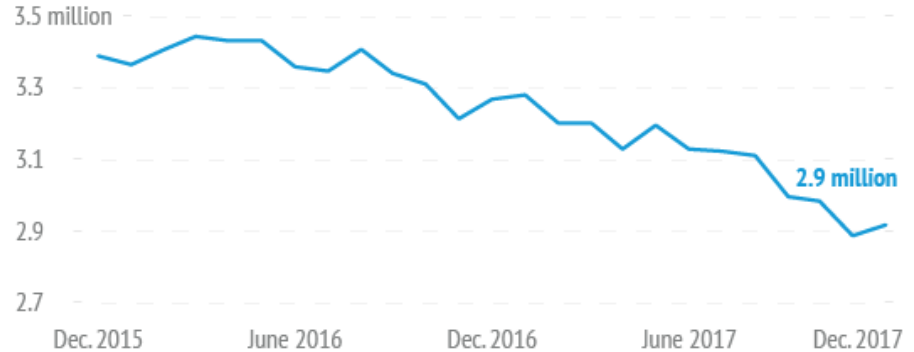
New opioid starts



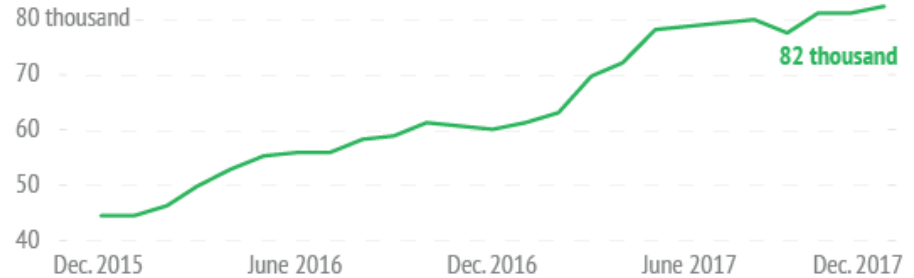
Medication Assisted Treatment

Seeking treatment

Opioid new therapy starts fell to 2.9 million a month at the end of 2017...



...while medically assisted treatment starts increased.



Note: Figures represent three-month moving averages
Source: IQVIA National Prescription Audit

CNBC

Source: www.cnbc.com/2018/04/19/how-doctors-in-the-us-prescribe-opioids--four-charts.html#

Solutions: Payers



Costs of Opioid Abuse

- Higher utilization of medical services and prescription drugs
 - 8x higher mean annual direct health care costs
 - 5x higher mean drug costs
 - Opioid abuse is associated with transmissible diseases
 - HIV/AIDS, Hepatitis, STIs, TB, etc.
- Costs include addressing immediate issues and future direct and indirect consequences

Sources: www.jmcp.org/doi/10.18553/jmcp.2005.11.6.469
www.theactuarymagazine.org/the-opioid-epidemic/

Access to Treatment: Insurance

- Parity for addiction treatment is uncommon
 - Often easier to obtain opioids than addiction medication
 - Insurers restrict less-addictive painkillers
 - Prior-approval
 - Termination of coverage on certain non-opioid drugs
 - 85% of US counties have no opioid treatment programs
 - Available treatment is often expensive and uncovered
- Days in residential treatment facilities are often limited to shorter than full courses of treatment

Sources: www.nytimes.com/2017/09/17/health/opioid-painkillers-insurance-companies.html?_r=0

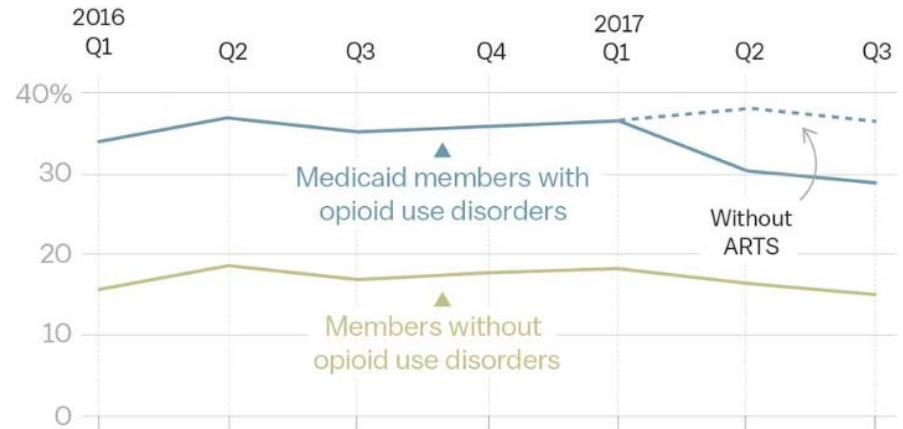
www.washingtonpost.com/opinions/insurers-are-making-it-harder-for-me-to-treat-my-opioid-addicted-patients/2018/04

www.vox.com/policy-and-politics/2018/5/10/17256572/opioid-epidemic-virginia-medicaid-expansion-arts/24/1ed674b0-2090-11e8-86f6-54bfff693d2b_story.html?utm_term=.ad2082fcb7fd

Medicaid Solution

- Virginia used Medicaid to boost reimbursement rates to addiction treatment providers
- Addiction and Recovery Treatment Services (ARTS)
 - Opioid-related ER visits dropped 31%
 - Treatment for opioid use disorder increased 29%

The likelihood of emergency department visits decreased with the ARTS program



Source: ARTS Evaluation Staff/Virginia Commonwealth University

Vox

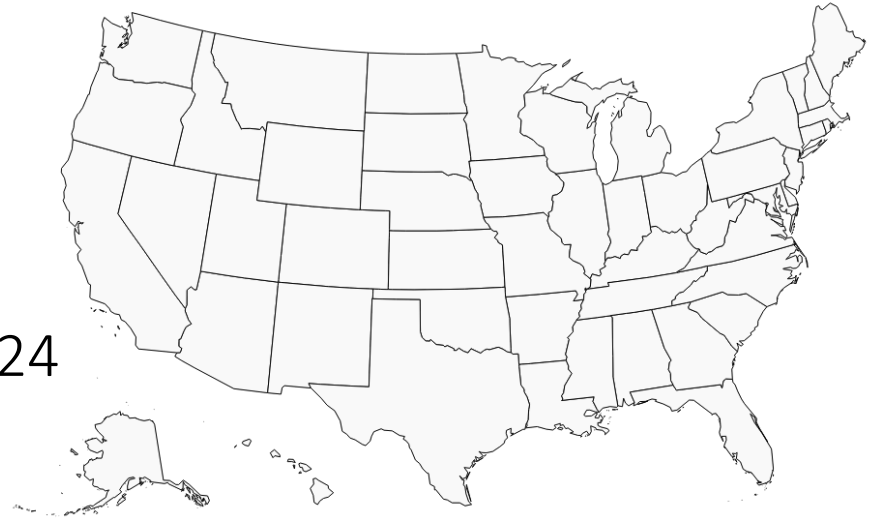
Source: www.vox.com/policy-and-politics/2018/5/10/17256572/opioid-epidemic-virginia-medicaid-expansion-arts

Solutions: State efforts



How States are Tackling the Opioid Crisis

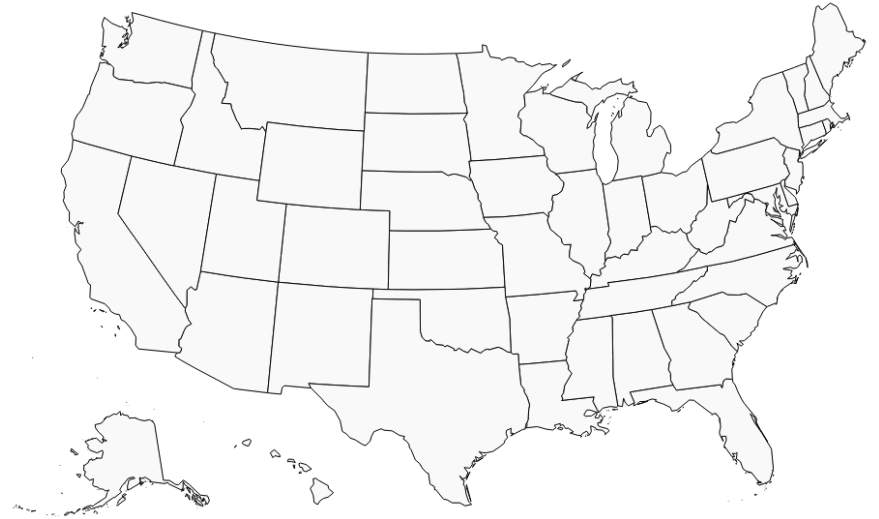
- Public Education = 48 states
- Prescriber Education = 31
- Patient and Family Education = 24
- Pharmacist Education = 22



Wickramatilake, et al, *Public Health Reports* 2017 Vol 132, Issue 2, pp. 171 - 179

How States are Tackling the Opioid Crisis

- ↑\$ for MAT = 29
- ↑ Naloxone availability = 28
- State Guidelines = 26
- PDMP requirements = 23
- Good Samaritan Laws = 23
- Regulate Pain Clinics = 14



Wickramatilake, et al, *Public Health Reports* 2017 Vol 132, Issue 2, pp. 171 - 179

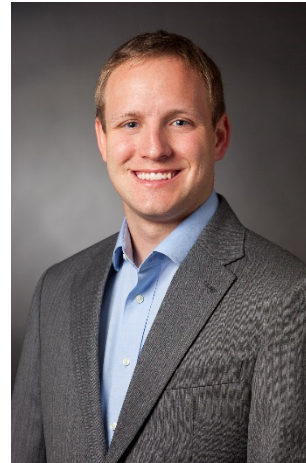
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