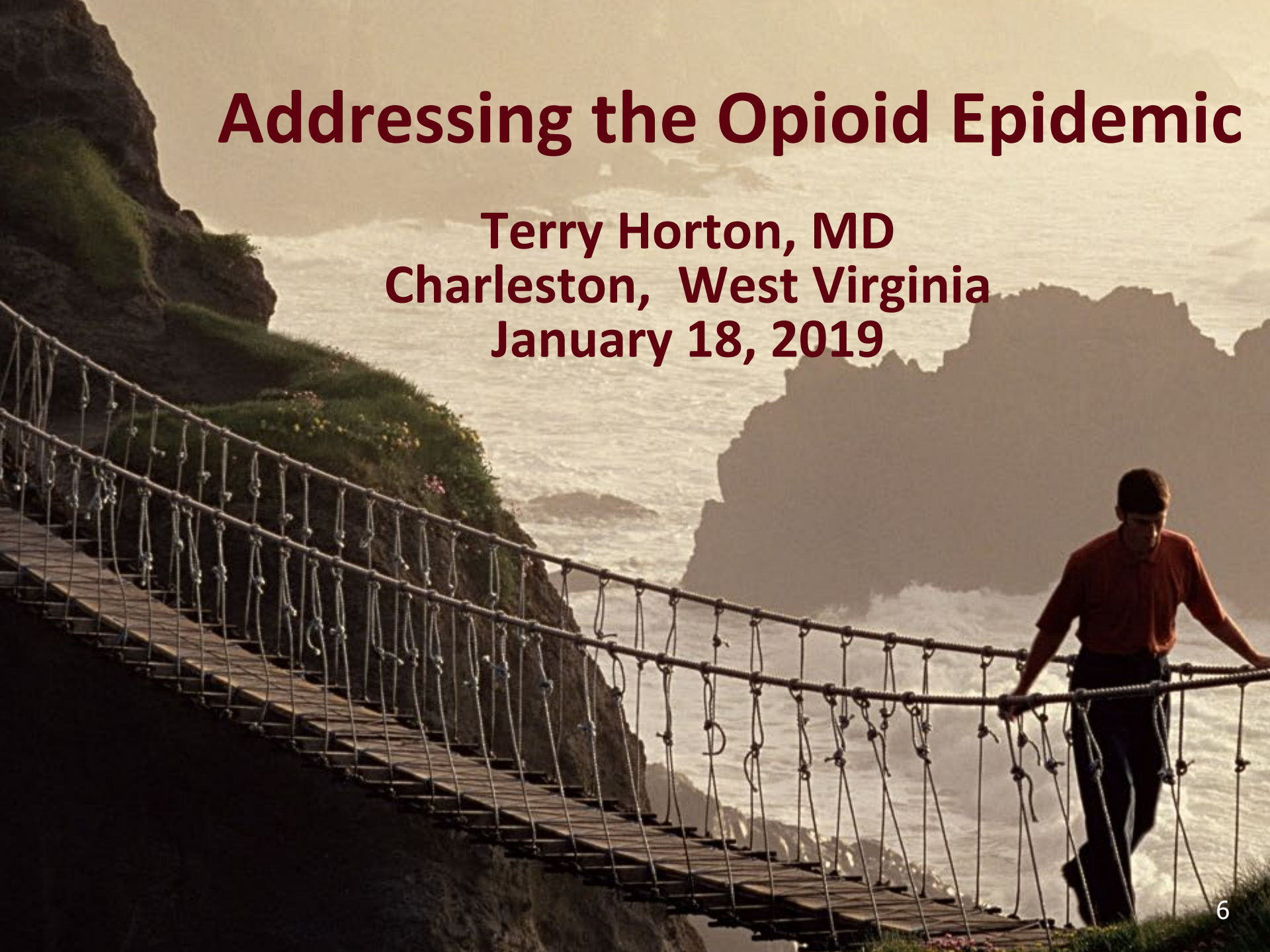


Addressing the Opioid Epidemic

Terry Horton, MD
Charleston, West Virginia
January 18, 2019

Overview

1. Stigma
2. Opioids and the brain disease of addiction
3. Opioid Treatment Cascade
4. Recovery and the Rope Bridge Metaphor

No Financial Disclosures

Case: Jason

21 yo landscaper admitted with fever, chills and chest pain.

- Diagnosed with MRSA endocarditis
- IV antibiotics started
- Day 2 of admission a nurse found him injecting heroin in the bathroom


STIGMA

Stigma

- Social: Prejudices and stereotypes that interfere with our understanding the nature of addiction and our ability to render care.
- Structural: When views affect family support, doctors/health systems and policy makers opinions and actions – does not foster a therapeutic alliance
- Personal: the patient internalizes, shame is reinforced and avoids care. More challenging to engage
- Causes: more complex than just ignorance
  - Negative experiences of patient, family, staff
  - Moralistic expectations of disordered behaviors
  - Personal responsibility vs loss of control
  - HOPELESSNESS

Stigma - Examples

- “Drug addicts are criminals”
- “I have real issues with someone who does this to themselves”
- “If they really wanted to get better”
- “They are hopeless”
- “I don’t want my husband to be on Methadone. Its just trading one addiction for another.”
- “If you give them 2 strips of Suboxone, they’ll just sell one of them.”
- “I never felt like I was in recovery while on Suboxone”

Case: Jason with MRSA Endocarditis

- Attending Physician refused to use opioids to address his withdrawal – “not going to facilitate his addiction”
- Medical team attempted to discharged the patient after caught using heroin in the bathroom
- RN quietly confronted the Medical Attending and senior resident, facilitating a Project Engage referral.
- Addiction Medicine Consultant initiated buprenorphine/naloxone which was maintained at a daily 8mg dose. No further aberrant behaviors
- Completed 6 weeks of IV antibiotics, Project Engage facilitated successful transfer to our outpt Medication Assisted Treatment service

Case: Jackie

45 yo female admitted with a severe leg abscess

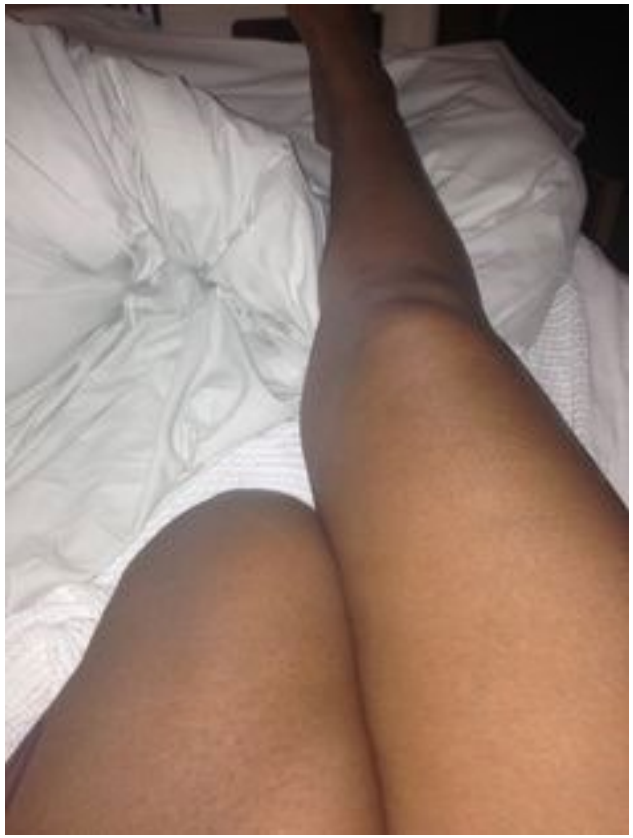
- Polysubstance abuse since early teens
- Heroin IVDA since 35 yo
- “Bipolar” and prominent axis 2 comorbidity
- Well known to staff because of multiple admissions and ***notoriously*** difficult

Case: Jackie

- Did poorly, became septic, transferred to the ICU where developed a necrotizing fasciitis and compartment syndrome.
- Had an above knee amputation
- Addiction Medicine consulted because she was demanding pain medications despite being overtly over sedation and threw a soda

Case: Jackie

- Where as everyone saw a badly behaving “addict”, you see?
- What do you say?
- What do you offer?



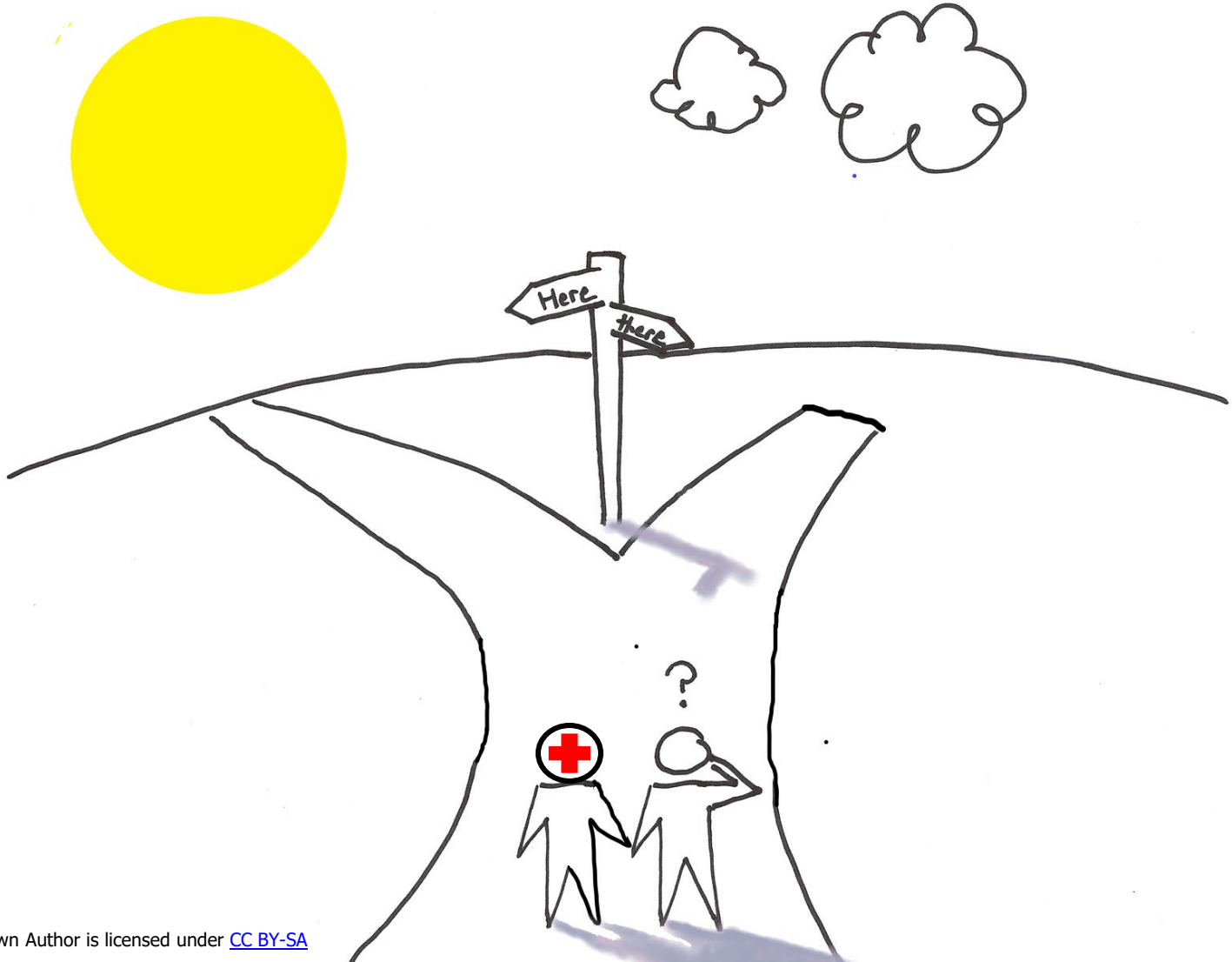
Case: Jackie

- The next day, the nurse reported a “good day” without any outbursts and more appropriate use of her pain medications.
- She was awake alert, actually smiled.
- Very spiritual and wanted a chaplain
- Eventually transitioned to q 8 hour methadone and inpatient rehabilitation unit eventually discharging to a methadone clinic

Lesson #1 from Jackie

The glasses we wear determine what we see – a legless woman or a difficult ‘addict’

Lesson #2 from Jackie



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Case: Brian

22 yo male admitted after an overdose with compartment syndrome of the arms requiring bilateral fasciotomies and renal dialysis

- Polysubstance use disordered since early teens
- Heroin IVDA since 20 yo, multiple ODs
- Family supportive but frustrated
- Medical team consulted because of difficulty engaging – frustrated with his lack of motivation

Case: Brian

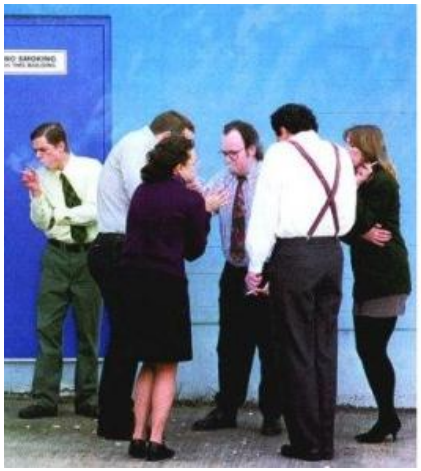
- Initially found to be cognitively impaired– *not unmotivated*
- Eventually improved. Very motivated to return to residential care on Suboxone which was successfully inducted in the hospital
- Followed up as an outpt. Did well for 4 months but insisted on tapering because of discomfort with peer feedback that he was “not sober”
- Relapsed and overdosed in Baltimore
- Survived and re-engaged into care.

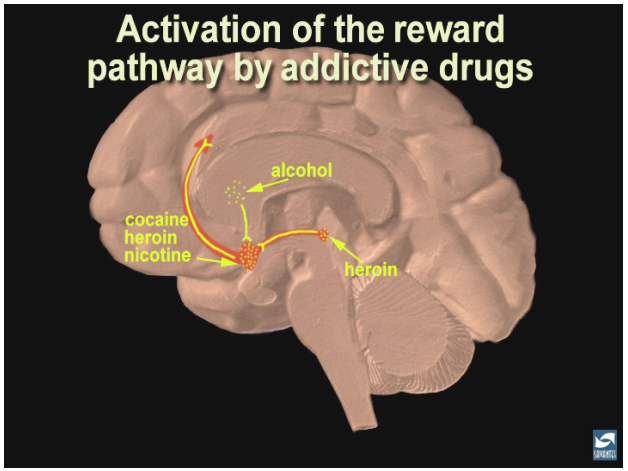
Addressing Stigma

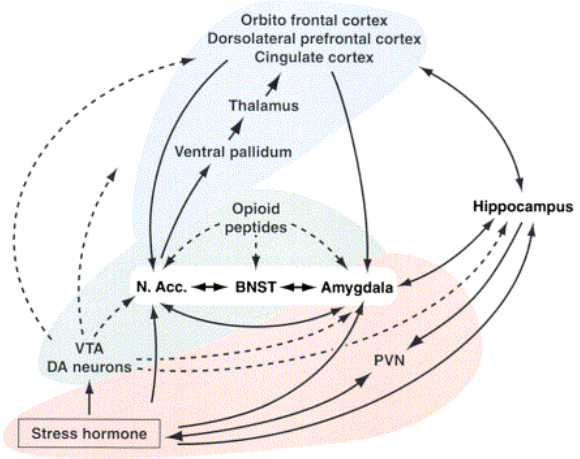
- Education
- Promote hope
  - Sharing successes
  - Peer counselors as Recovery Ambassadors
- Counter misinformation and inappropriate actions
- Leaders demonstrate rationale leadership based on evidence and science

Addiction: an Acquired Brain Disease

- Repeated drug use in vulnerable patients
- Reward and motivational circuits involved
- Compulsive drug seeking, use, and craving despite harmful consequences



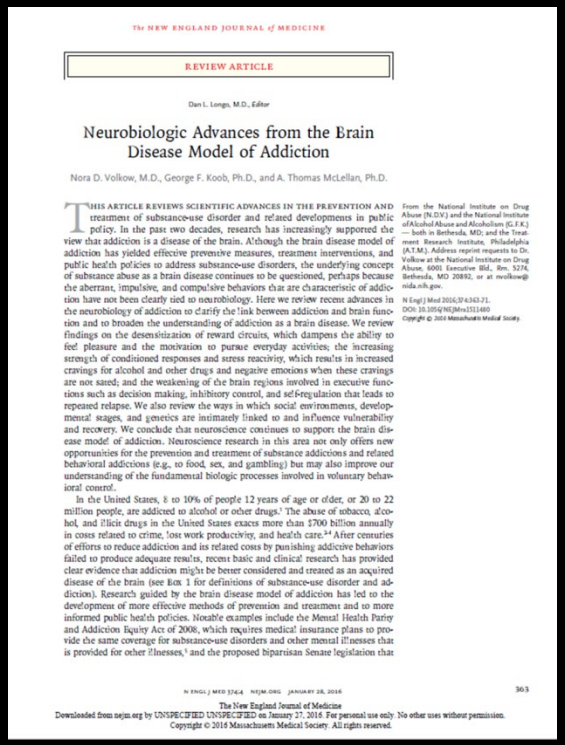




Review Article

Neurobiologic Advances from the Brain Disease Model of Addiction

Nora D. Volkow, M.D., George F. Koob, Ph.D., and A. Thomas McLellan, Ph.D.

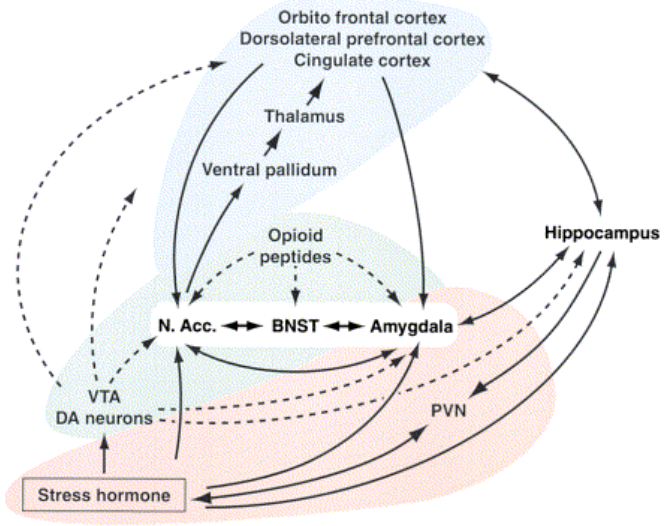


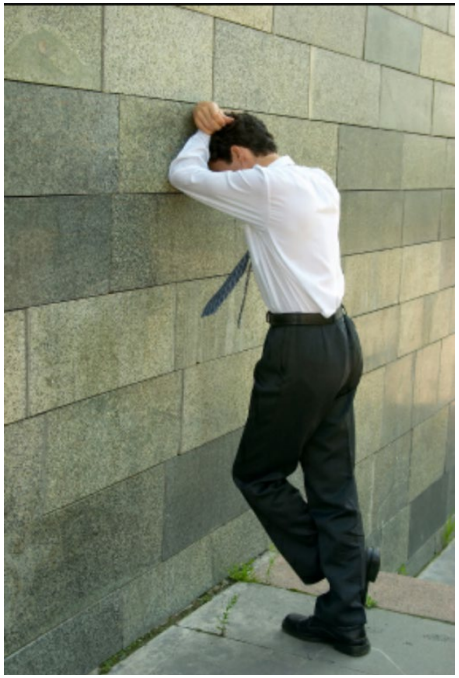
Nora Volkow, MD, Director of National Institute on Drug Abuse

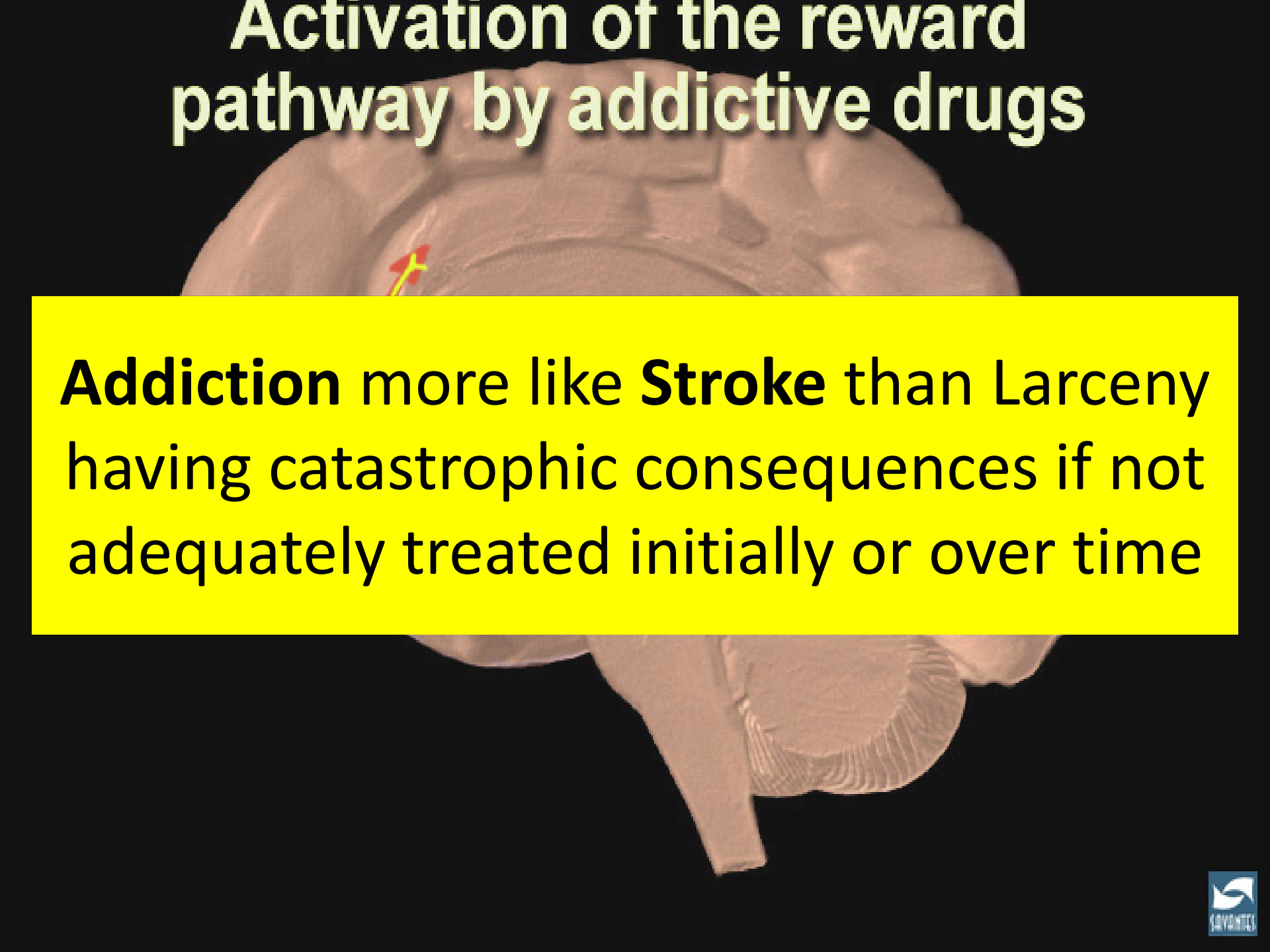
N Engl J Med, Volume 374(4):363-371, January 28, 2016

Opioid Withdrawal

- With dependence, brain mal adapts
- Collection of reproducible symptoms when opioids are removed – **PRIMAL MISERY**
- Highly motivating

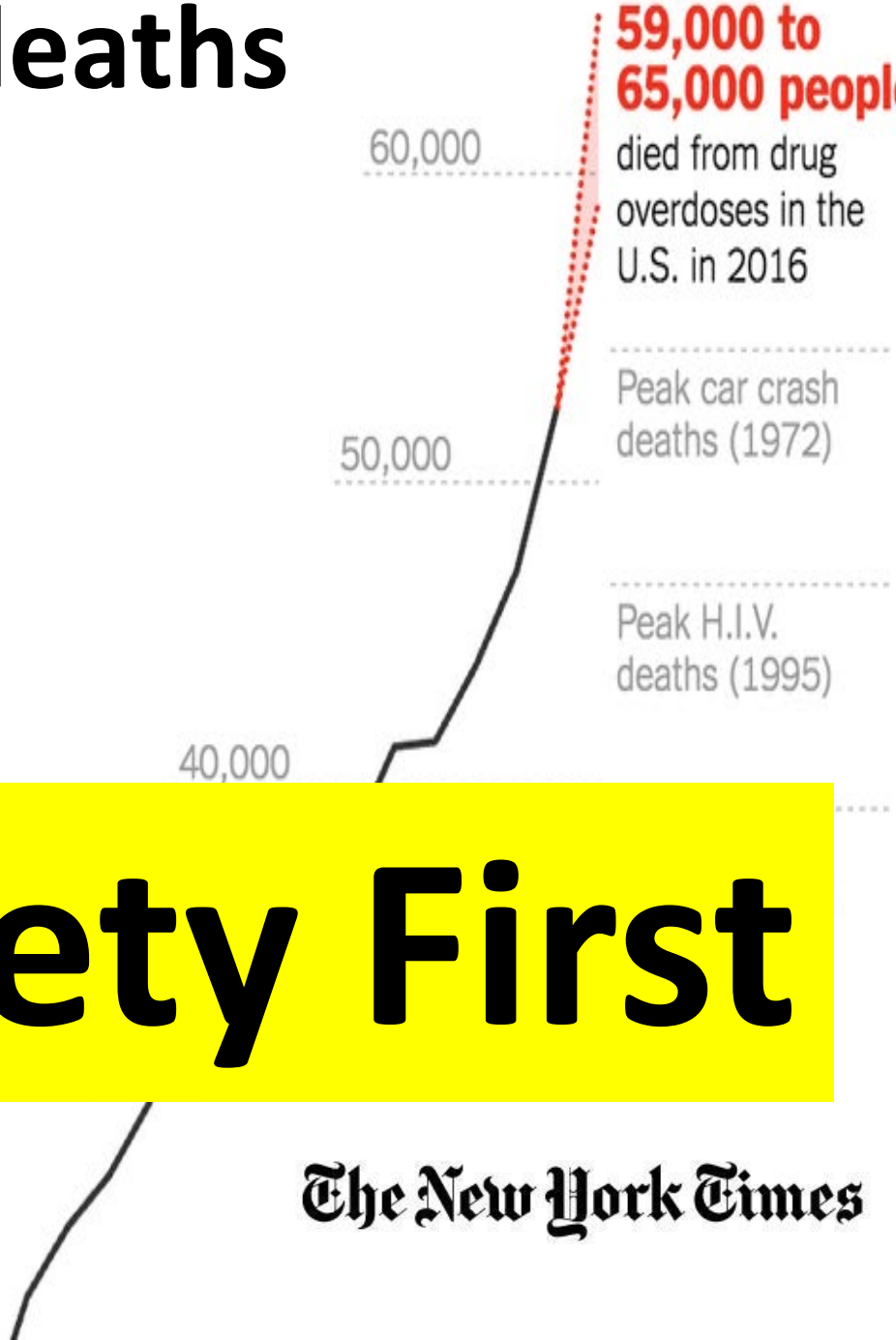






Addiction more like **Stroke** than Larceny having catastrophic consequences if not adequately treated initially or over time

Drug overdose deaths 1980-2016



Safety First

Tackling the Opioid-Overdose Epidemic

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Perspective

Medication-Assisted Therapies — Tackling the Opioid-Overdose Epidemic

Nora D. Volkow, M.D., Thomas R. Frieden, M.D., M.P.H., Pamela S. Hyde, J.D., and Stephen S. Cha, M.D.

N Engl J Med 2014; 370:2063-2066 | May 29, 2014 | DOI: 10.1056/NEJMp1402780

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Article | References | Citing Articles (174) | Metrics

The rate of death from overdoses of prescription opioids in the United States more than quadrupled between 1999 and 2010 (see graph), far exceeding the combined death toll from cocaine and heroin overdoses.[1] In 2010 alone, prescription opioids were involved in 16,651 overdose deaths, whereas heroin was implicated in 3036. Some 82% of the deaths due to prescription opioids and 92% of those due to heroin were classified as unintentional, with the remainder being attributed predominantly to suicide or "undetermined intent."

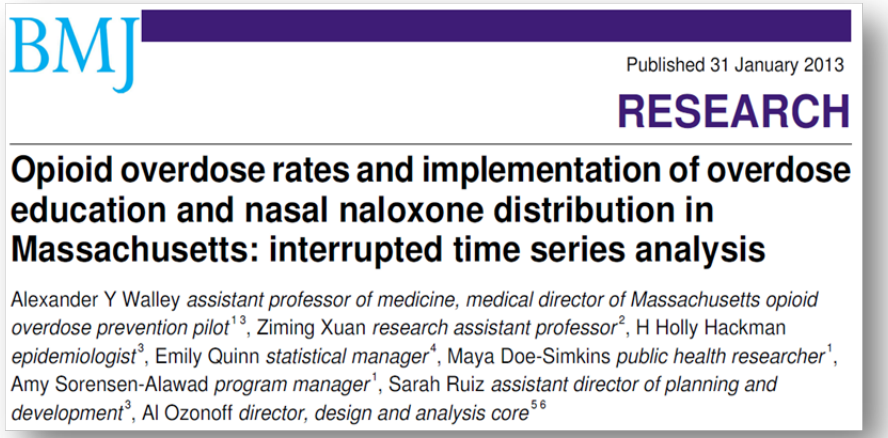
Opioid Sales, Admissions for Opioid-Abuse Treatment, and Deaths Due to Opioid Overdose in the United States, 1999–2010.

Rates of emergency department visits and substance-abuse treatment admissions related to prescription opioids have also increased markedly. In 2007, prescription-opioid abuse cost insurers an estimated $72.5 billion — a substantial increase over previous years.[2] These health and economic costs are similar to those associated with other chronic diseases such as asthma and HIV infection.

1. "providing prescribers with the knowledge to improve their prescribing decisions and the ability to identify patients' problems related to opioid abuse
2. reducing inappropriate access to opioids
3. increasing access to effective overdose treatment
4. providing substance-abuse treatment to persons addicted to opioids."

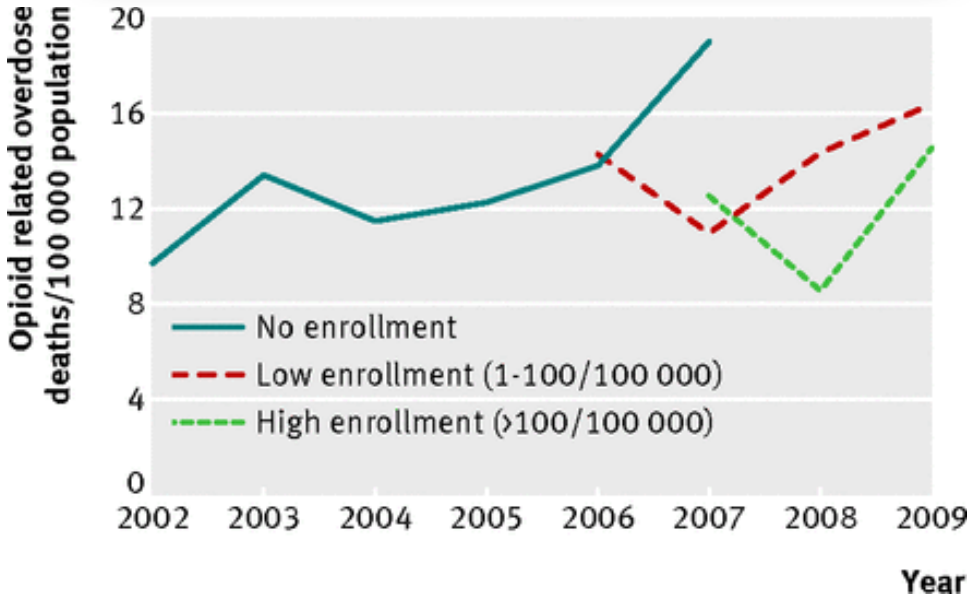
Overall Strategy – Intranasal Narcan

Death rates from opioid overdose were reduced in 19 communities where overdose education and naloxone distribution was implemented


BMJ
Published 31 January 2013
RESEARCH

Opioid overdose rates and implementation of overdose education and nasal naloxone distribution in Massachusetts: interrupted time series analysis

Alexander Y Walley *assistant professor of medicine, medical director of Massachusetts opioid overdose prevention pilot*[1 3], Ziming Xuan *research assistant professor*[2], H Holly Hackman *epidemiologist*[3], Emily Quinn *statistical manager*[4], Maya Doe-Simkins *public health researcher*[1], Amy Sorensen-Alawad *program manager*[1], Sarah Ruiz *assistant director of planning and development*[3], Al Ozonoff *director, design and analysis core*[5 6]



Overall Strategy – Intranasal Narcan

- Initially EMS and Police only
- My patients commonly describe use for family and friends
- In Delaware, likely 4X increase in deaths if no Narcan – now have standing order by DOH Director
- Developing models for broader dissemination
  -
  -
  -
  -
- Need systematic approaches

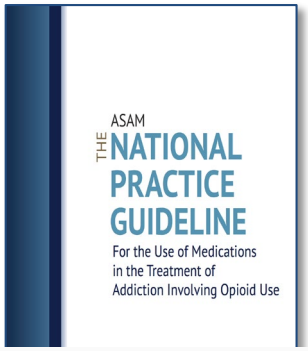
Safety First

OUD Drug Treatment Options

- Outpatient
- Inpatient
- Counseling
- Medication-Assisted Treatment (MAT)
- Fellowship – Narcotics Anonymous, AA
- Drug Free, Faith-based

DETOX by itself is **not treatment** and may place patients at risk for overdose

FDA-Approved For OUDs



Agent	Dose	Dosing
Buprenorphine sublingual film, tablets (generic)	PO: 2 mg, 8 mg film and tablets	**Initial:** 2–4 mg (Increase by 2–4 mg) **Daily:** ≥8 mg /day
Methadone tablets/liquid (generic)		0 mg (Reassess in 3–4 hours; PRN) 20 mg[a]
Naltrexone XR injection *(Vivitrol®)*		ts
Naltrexone tablets (generic)		g (May give 2–3 daily doses I–W–F.)

Gastfriend, MD. "Medication-Assisted Treatments (MAT) for Opioid Use Disorder", 4th Annual Addiction Medicine Symposium, Delaware, August, 2016

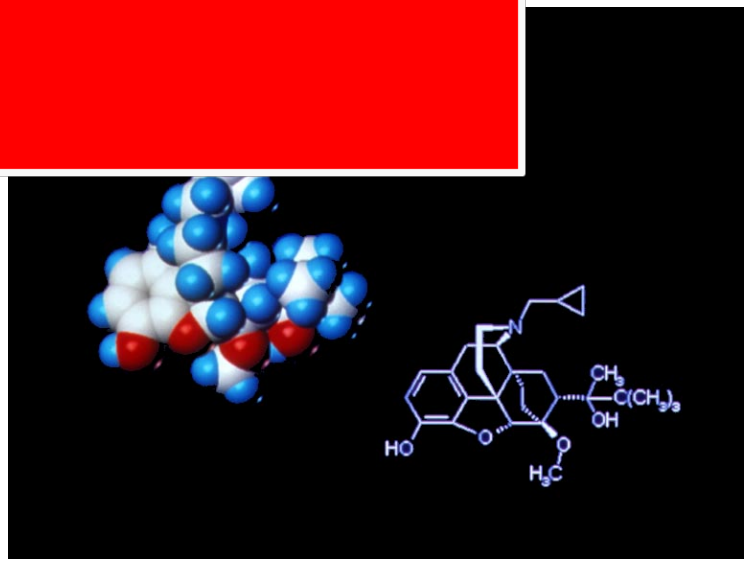
Buprenorphine

Syn
ma

Suboxone
Blocks other opioids,
Reduces overdose risk

— Milder withdrawal

- Sublingual dosing
- New Extended Release monthly injection



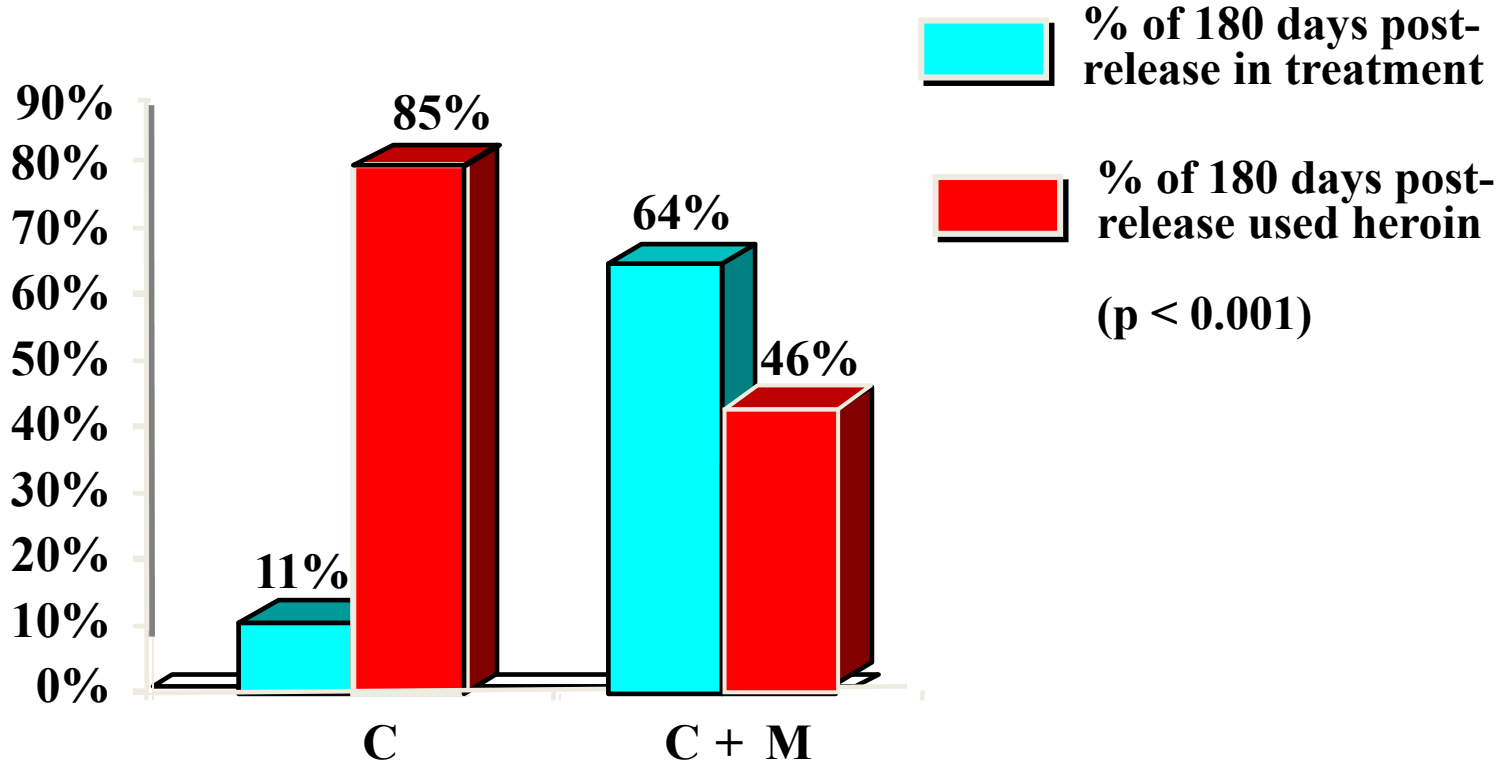
Methadone For Opioid Use Disorders

- Addiction treatment – Rockefeller University 1965 daily observed liquid form (>80mg) at an OTP
- More effective than non-pharmacological approaches in **retaining** patients in treatment and in the **suppression** of heroin use (6 RCTs, RR = 0.66 95% CI 0.56-0.78)

Mattick RP, Breen C, Kimber J, Davoli M. Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence. Cochrane Database of Systematic Reviews 2009

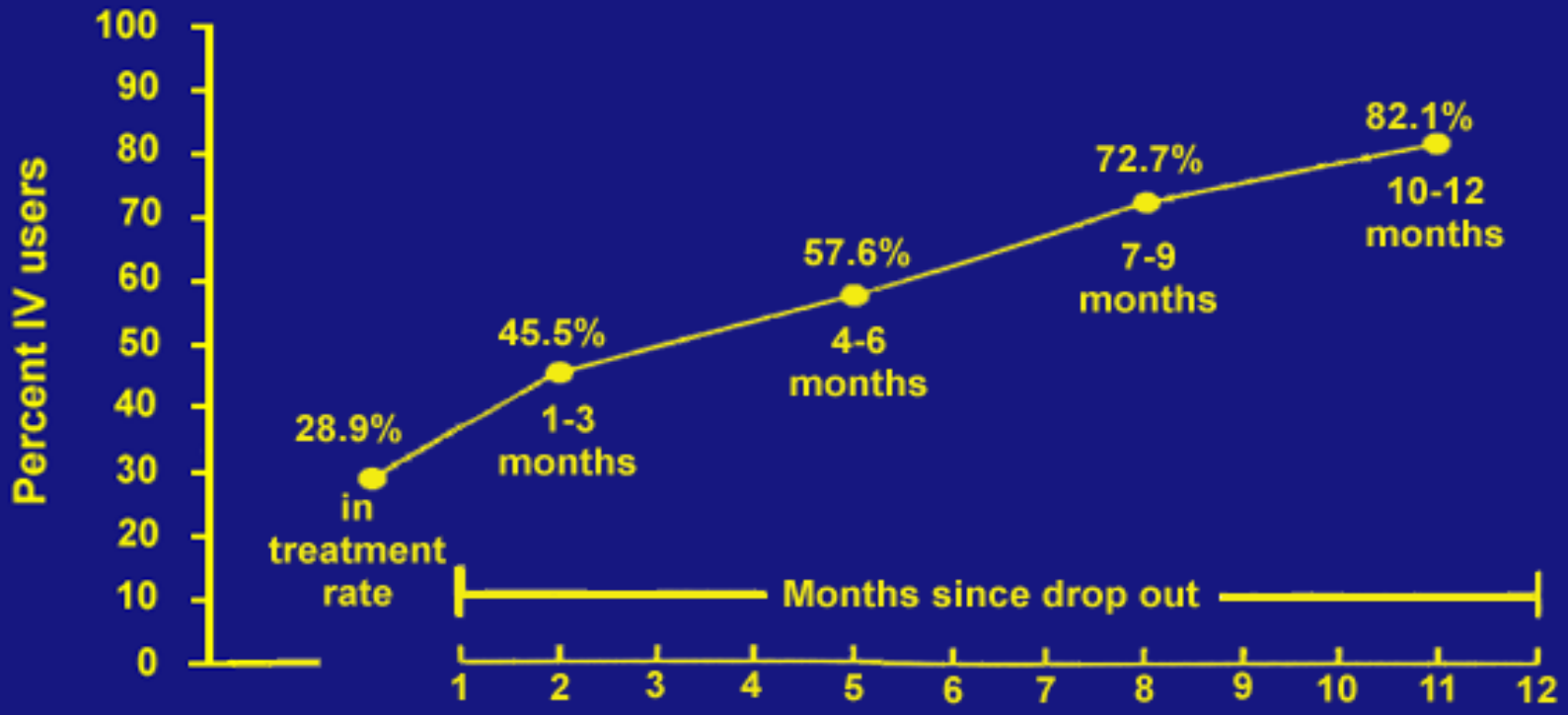
MMT: Impact on Treatment & Heroin Use

During the 6 Mos. Post-release From Prison ± MMT (N=141)



C = Counseling Only (N=70)
C+M = Counseling & Methadone Started in Prison (N=71)

Gordon, MS et al., Addiction 103:1333-1342, 2008.



Relapse to intravenous drug use after methadone maintenance treatment for 105 male patients who left treatment.

From the Effectiveness of Methadone Maintenance Treatment (p. 182). by J. C. Ball and A. Ross, 1991, New York: Springer-Verlag. Copyright 1991 by Springer-Verlag New York, Inc. Reprinted with permission.

XR-Naltrexone vs Buprenorphine

- Open-label, randomized controlled, comparative effectiveness trial at eight US community-based sites
- N = 570 randomized to XR-NTX or BUP-NX measuring relapse and craving at 24 weeks
- 24 week relapse events were greater for XR-NTX

  (65% vs 57%; p<0·036)
- XR-NTX had a **"substantial induction hurdle":** fewer initiated onto XR-NTX than BUP-NX

  (72% vs 94%; p<0·0001)

THE LANCET

Comparative effectiveness of extended-release naltrexone versus buprenorphine-naloxone for opioid relapse prevention (X:BOT): a multicentre, open-label, randomized controlled trial. Lee, J, Lancet. 2018 January 27; 391(10118): 309–318

XR-Naltrexone vs Buprenorphine

- XR-NTX early relapse (70 of 79 [89%]) due to induction failures.
- Outcomes similar when compare those inducted onto XR-NTX vs BUP-NX.
- 28 overdoses in 23 persons, 5 fatal (2 XR-NTX and 3 BUP). No difference between groups.
- Overdoses occurred in those unable to start or who stopped medication

THE LANCET

Comparative effectiveness of extended-release naltrexone versus buprenorphine-naloxone for opioid relapse prevention (X:BOT): a multicentre, open-label, randomized controlled trial. Lee, J, Lancet. 2018 January 27; 391(10118): 309–318

Detox = Poor Outcome

- N = 653 Rx drug dependent patients
- Phase 1 – Short term 2 week bup/naloxone tx
  - only **6.6%** (43 of 653) successful = no opioid use
- Phase 2 – Extended 12 week bup/naloxone tx
  - **49.2%** (177 of 360) successful
- If tapered off bup – only **8.6%** successful by week 24
- Counseling and chronic pain had no effect on outcomes

Weiss, etal., Archives of General Psychiatry 2011;68(12):12381246.

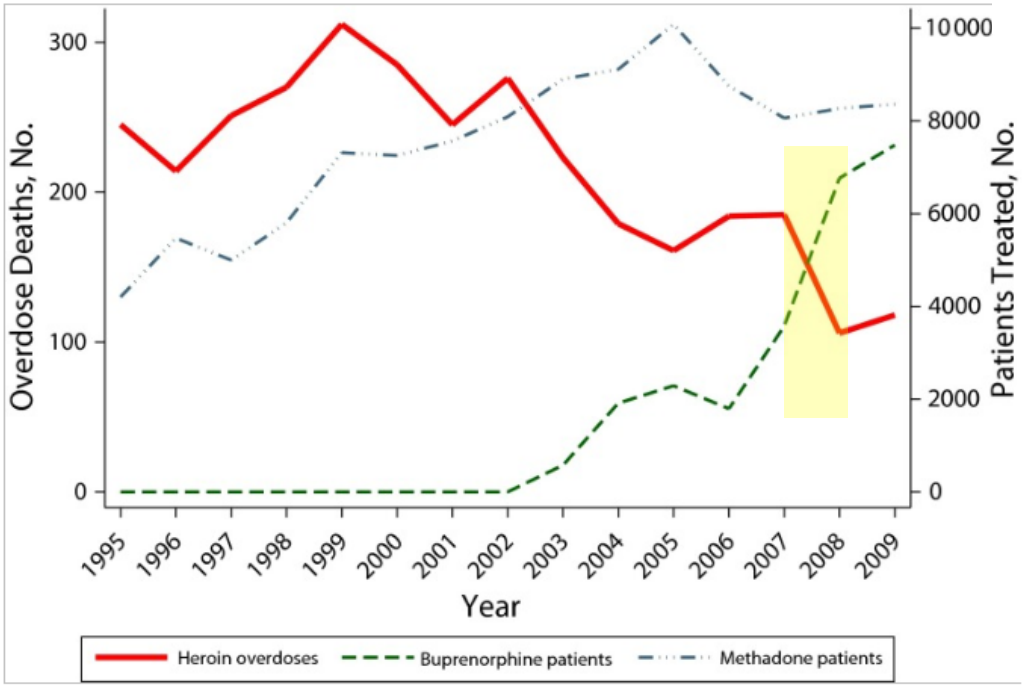
Detox Increases Risk of OD and Death

- Loss of tolerance and overdose mortality after inpatient opiate detoxification: follow up study, Strang, J., BMJ, May 3; 2003.
- Psychosocial and pharmacological treatments versus pharmacological treatment for opioid detoxification . Cochrane Database Syst Rev
- Risk of fatal overd st drug treatment: the VEdeTTE study, a e cohort study, Davoli, M., Addict
- Overdose after de udy, Wines, J., Drug and Alcohol Dependence July 2007
- A Call For Evidence-Based Medical Treatment Of Opioid Dependence In The United States And Canada, Bohdan Nosyk, B,. Health Affairs 2013
- Opioid Abuse in Chronic Pain — Misconceptions and Mitigation Strategies, Volkow, N., New England Journal of Medicine, March 2016

Reducing Overdose Deaths- MAT

Baltimore – Schwartz

- Longitudinal series analysis of archival data 1995-2009
- 4x expansion of Methadone and Buprenorphine services* associated with 62% reduction of overdose deaths



*sharpest drop from 2007 to 2008 associated with doubling of buprenorphine access

Schwartz et al. American Journal of Public Health, May 2013

Reducing Overdose Deaths- MAT

Mortality risk during and after opioid substitution treatment: systemic review and meta-analysis of cohort studies – Sordo et.al. BMJ, April 2017

- 19 cohorts, n =122,885 treated with methadone 1.3-13 years and 15,831 treated with buprenorphine 1.1-4.5 years
- Being in MAT significantly reduced mortality risk
- Induction onto methadone and stopping both most dangerous
- **Methadone**: all cause mortality 11.3 vs 36.1/1000 person yrs
  overdose mortality 2.6 vs 12.7 (5x reduction)
- **Buprenorphine**: all cause mortality 4.5 vs 9.5 (2x reduction)
  overdose mortality 1.4 vs 4.6 (3x reduction)

Reduce Deaths by Engaging in Tx

Annals of Internal Medicine ORIGINAL RESEARCH

Medication for Opioid Use Disorder After Nonfatal Opioid Overdose and Association With Mortality

A Cohort Study

Marc R. Larochelle, MD, MPH; Dana Bernson, MPH; Thomas Land, PhD; Thomas J. Stopka, PhD, MHS; Na Wang, MA; Ziming Xuan, ScD, SM; Sarah M. Bagley, MD, MSc; Jane M. Liebschutz, MD, MPH; and Alexander Y. Walley, MD, MSc

Background: Opioid overdose survivors have an increased risk for death. Whether use of medications for opioid use disorder (MOUD) after overdose is associated with mortality is not known.

Objective: To identify MOUD use after opioid overdose and its association with all-cause and opioid-related mortality.

Design: Retrospective cohort study.

Setting: 7 individually linked data sets from Massachusetts government agencies.

Participants: 17 568 Massachusetts adults without cancer who survived an opioid overdose between 2012 and 2014.

Measurements: Three types of MOUD were examined: methadone maintenance treatment (MMT), buprenorphine, and naltrexone. Exposure to MOUD was identified at monthly intervals, and persons were considered exposed through the month after last receipt. A multivariable Cox proportional hazards model was used to examine MOUD as a monthly time-varying exposure variable to predict time to all-cause and opioid-related mortality.

Results: In the 12 months after a nonfatal overdose, 2040 persons (11%) enrolled in MMT for a median of 5 months (interquartile range, 2 to 9 months), 3022 persons (17%) received buprenorphine for a median of 4 months (interquartile range, 2 to 8 months), and 1099 persons (6%) received naltrexone for a median of 1 month (interquartile range, 1 to 2 months). Among the entire cohort, all-cause mortality was 4.7 deaths (95% CI, 4.4 to 5.0 deaths) per 100 person-years and opioid-related mortality was 2.1 deaths (CI, 1.9 to 2.4 deaths) per 100 person-years. Compared with no MOUD, MMT was associated with decreased all-cause mortality (adjusted hazard ratio [AHR], 0.47 [CI, 0.32 to 0.71]) and opioid-related mortality (AHR, 0.41 [CI, 0.24 to 0.70]). Buprenorphine was associated with decreased all-cause mortality (AHR, 0.63 [CI, 0.46 to 0.87]) and opioid-related mortality (AHR, 0.62 [CI, 0.41 to 0.92]). No associations between naltrexone and all-cause mortality (AHR, 1.44 [CI, 0.84 to 2.46]) or opioid-related mortality (AHR, 1.42 [CI, 0.73 to 2.79]) were identified.

Limitation: Few events among naltrexone recipients preclude confident conclusions.

Conclusion: A minority of opioid overdose survivors received MOUD. Buprenorphine and MMT were associated with reduced all-cause and opioid-related mortality.

Primary Funding Source: National Center for Advancing Translational Sciences of the National Institutes of Health.

Ann Intern Med. 2018;169:137-145. doi:10.7326/M17-3107 Annals.org
For author affiliations, see end of text.
This article was published at Annals.org on 19 June 2018.

The United States is in the midst of a crisis of opioid-related harms (1). Some efforts to address this crisis focus on expanding access to effective treatment of opioid use disorders (OUDs) (2). Prior nonfatal opioid overdose is a known risk factor for subsequent nonfatal and fatal overdoses (3–7), and engaging persons in treatment who survive an overdose may be effective in limiting subsequent fatalities. However, data on the association between treatment of OUD and mortality after a nonfatal overdose are limited to a single retrospective cohort study that analyzed enrollment in methadone maintenance treatment (MMT) at a single time point and found no association (3).

The 3 medications for OUD (MOUD) approved by the U.S. Food and Drug Administration are methadone, buprenorphine, and naltrexone. Randomized controlled trials of these medications have shown consistent benefits across many outcomes, including increased treatment retention and suppression of illicit opioid use (8–10). A recent systematic review and meta-analysis of 19 observational cohort studies identified substantial reductions in all-cause and overdose mortality for methadone and buprenorphine (11). However, the mortality benefit in this analysis was limited to time actively retained in treatment, and the 4-week period after discontinuation was associated with an especially high risk for death. The few studies that examined mortality among patients receiving naltrexone show an unclear effect (12–15).

Massachusetts has been particularly affected by the opioid crisis: Opioid overdose deaths more than tripled between 2010 and 2016 (16). Through Chapter 55 of the Acts of 2015, the state legislature permitted individual-level linkage of data from 16 Massachusetts government agencies to gain a deeper understanding of the circumstances that influence fatal and nonfatal opioid overdoses (17). For this analysis, we identified a cohort of persons in the Chapter 55 data set who survived an opioid overdose and described any episodes of treatment with MOUD before and after that overdose. Specifically, we sought to determine whether

See also:
Editorial comment 190
Summary for Patients I-16
Web-Only
Supplement

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Retrospective cohort study of 17,568 Massachusetts adults without cancer who survived an opioid overdose between 2012 and 2014.

- Followed for 1 year
- 4.7/100 person/yr overall death rate
- Only 34% received MAT
- MAT significantly reduced mortality
  - Methadone AHR = .47
  - Buprenorphine = .62
  - Naltrexone ER = 1.42

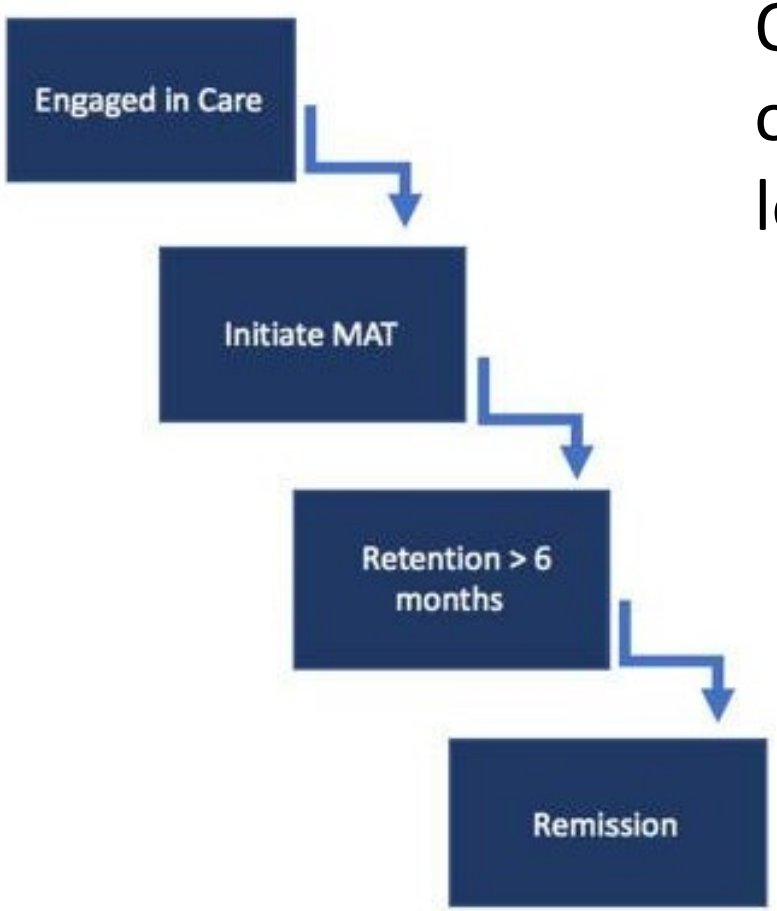
Summary: Benefits of MAT

- Facilitates retention in drug treatment*
- Reduces heroin use*
- Reduces relapse**
- Reduces overdose deaths and overall mortality***

* Mattick, RP., Cochrane Database Syst Rev. 2009
* Gordon, MS et al., Addiction, 2008
** Clark et.al. J Subst Abuse Treat, May 2015
***Schwartz et al. American Journal of Public Health, May 2013
***Sordo et.al. BMJ, April 2017

“But Dr Horton, I don’t want my son trading one addiction for another”

Opioid Treatment Cascade of Care



OUD like HIV is a chronic, relapsing, often fatal disorder that requires long-term medication treatment.

- Must achieve every step to be safe
- Diagnosis and Linkage
  - EMS, emergency room, hospital, criminal justice, outreach, needle exchanges, peer navigators.
- Retention/abstinence
  - Aggressive case management
  - Attention to vulnerabilities
  - Motivational interviewing, incentives
- Metrics to guide interventions

"To Battle The Opioid Overdose Epidemic, Deploy The 'Cascade of Care' Model, " Williams, A., Nunes, E., Olfson, M., Health Affairs Blog, March 13, 2017.

"90-90-90 An ambitious treatment target to help end the AIDS epidemic", UNAIDS 2014

Hospitals Aggregate the Disordered

- Doors are always open
- Substance use disorders are common and severe*
- High dosages of heroin/fentanyl
- **IVDA** instead of inhaled
- Early medical sequelae
- Increasing OD rate

* Saitz, JGIM, 2006; Bertholet, JGIM, 2010

Role of Project Engage Peer

- Peer/Social Worker Dyad
- Engage and support
  - Patient and Family
  - Medical team
- Liaison between staff and patient
- Assist with discharge planning
- Improve readmissions
- Case management
- Overcoming stigma
  - Recovery ambassadors
  - Marketing success

Opioid Withdrawal is a Safety Issue

Poorly addressed opioid withdrawal negatively impacts:

1. ability to address acute serious health consequences of addiction
2. ability to engage and transition into community-based drug treatment

Ti, Am J Public Health. 2015 Dec;105(12):e53-9. http://www.ncbi.nlm.nih.gov/pubmed/26509447
Ti, PLoS One. 2015 Oct 28; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4624845/

CCHS Response to the Opioid Epidemic

- 2016: Behavioral Health partnered with Acute Care Service Line
- Inpatient Medical Service
  - Screening and Identification of admitted patients
  - Rapid treatment of withdrawal by medical team
  - Inpatient initiation of drug abuse treatment
  - Addiction Medicine Consultation Service
  - Referral to community-based care using Project Engage

Reachable Moment

Additional Outcomes (discharged 11/15-1/18)

- 296 patients received Addiction Medicine Consult
- **63%** (187/296) scheduled community treatment; of those,
- **72%** (133/187) successfully attended their initial appt and
- **78%** (104/133) were still attending community treatment at 30 days. **56%** (104/187) of interested
- **Treatment associated with lower 90 day readmission**

CHRISTIANA CARE HEALTH SYSTEM

Recovery

Definition: “Process of change through which individuals improve their health and wellness, live self-directed lives, and strive to reach their full potential.” *

A path towards becoming or returning to citizenship which implies achieving sobriety, maturity, self-awareness and necessary skills to become a productive member of society while learning to live with others in an honest and meaningful manner.

*SAMHSA 2018

Elements of Recovery

- **<u>Safety dictates that adherence to MAT is critical</u>**
- Outcome determined by length of time in treatment
  (Hubberd JSAT, 2003, Simpson 2001, Heinrich, 2005)
- Individualized support important
  - Role for group and individual counseling
  - Medical and psychiatric comorbidities
  - Care Management?
- Reconnecting with family and spirituality helpful
- Sober social network, fellowship

Recovery

Social determinants mitigate results

- Safe Housing and environmental risk
- Transportation
- Meaningful employment
- Legal issues
- Family involvement

Safe Housing

- **Many suffer from environmental risk**
  - Homelessness is a risk factor for poor outcome
  - Active substance use is common at home
- **Residential Treatment**
  - Most are < 30 days and do not allow MAT
  - Long term residential care is rare
  - Sober Living Houses is an option
  - Need for longer term “Supervised Sober” housing

Research Supports Residential Care

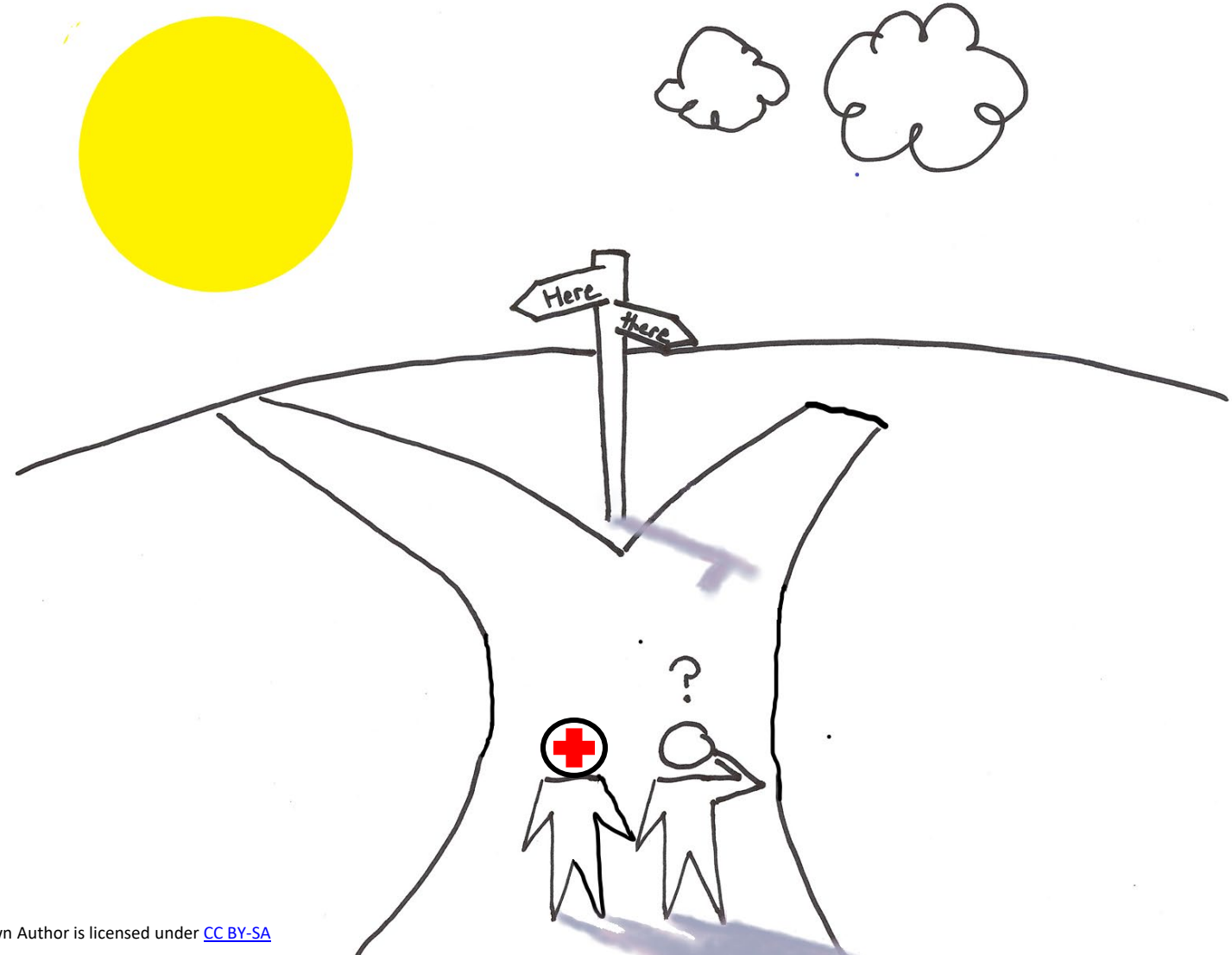
- SAMHSA Treatment Episode Data Set (TEDS-D)
  - n = 318,924
  - 65% completion rate compared to 52% for outpatient
  - increased the likelihood of completion for older clients, Whites, and OUD (Stahler, Addict Behav, 2016)
- Drug Abuse Treatment Outcome Study (DATOS)
  - n = 2,966 interviewed at intake and at 1-year follow-up
  - Clients dependent on heroin benefited most from inpatient and residential programs. (Yser, JSAT, 1998)
- Research supporting outpt care vs residential
  - Starting 1980's looking at detox comparing costs
  - Compared Day programs with residential
  - Did not consider environmental risk (Guydish 1989,1999)

Summary

- Life threatening disorder of core motivational circuits of the brain that can be treated
- First
reso
- Trea
comprehensive to meet our patients' needs
- Stigma threatens our patients' safety
- There is hope

Safety First

Questions?



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