Quotes from people in long term recovery: *Long Term Recovery*

"I'm grateful for the community, for literally loving me when I couldn't love myself."

"It turns out, I can love myself now."

- Michael's words transcribed by SD Nichols at Maine's Opioid Summit - Bangor, Maine - Summer 2012

Naloxone and addiction neurobiology and stigma… oh my!

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Statement of disclosure

- We have no conflicts of interest

Learning Objectives

- Recall opioid use disorder and overdose death epidemiological trends
- Describe signs and symptoms of opioid overdose and appropriate steps for response
- Identify naloxone pharmacology, role in therapy, and prescribing and administration principles
- Describe the disease of addiction and its impact on basic neurobiological systems
- Recall the impact of stigma on patients and the general public
- Identify non-stigmatizing words and phrases that can be used to engage patients and build trust
- Outline steps that can be taken today to reduce stigma in your pharmacy or health-system

What is your impression of these images?
Grab an index card – any color!

https://www.wave3.com/story/38198039

https://jjie.org/2011/08/03/heroin-part/

https://www.medicalnewstoday.com

https://www.bostonmagazine.com/health/2017/10/27/needle-litter-boston/

https://www.inlander.com/spokane/supply-and-demand methadone clinic

https://www.bcpharmacy.ca/nasal-naloxone-delivery

Sara Halsey's Story

Randy Morrison's Story

8

LO #1: Epidemiology of OUD, overdose deaths, and death by suicide

Which best describes the epidemiologic trends in overdose deaths in Maine?

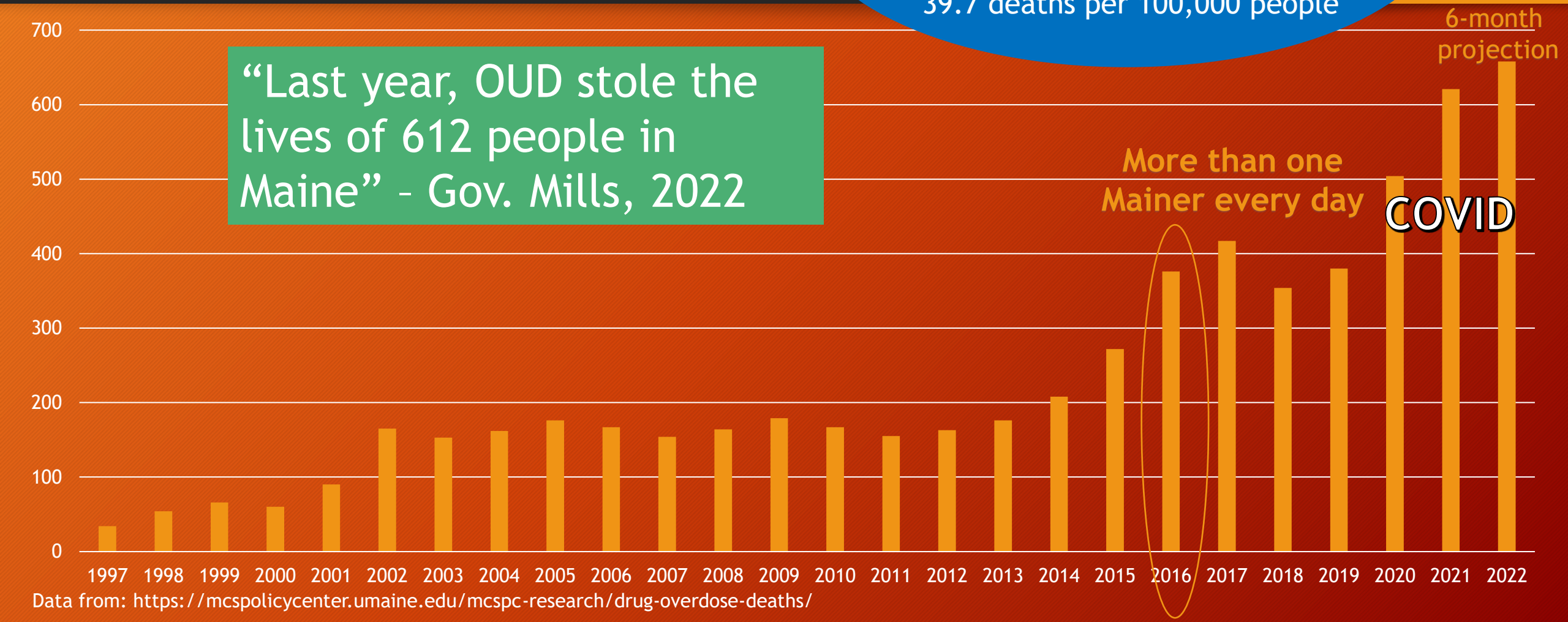
a. Increasing rapidly during the pandemic
b. Remaining similar to rates before pandemic years
c. Deceasing slowly since before the pandemic and continuing to decrease during it
d. Increasing first and then decreasing throughout the pandemic

Maine Overdose Deaths: *An Ongoing Tragedy*

Maine is the 9th highest state in overdose deaths (2020)

39.7 deaths per 100,000 people

10

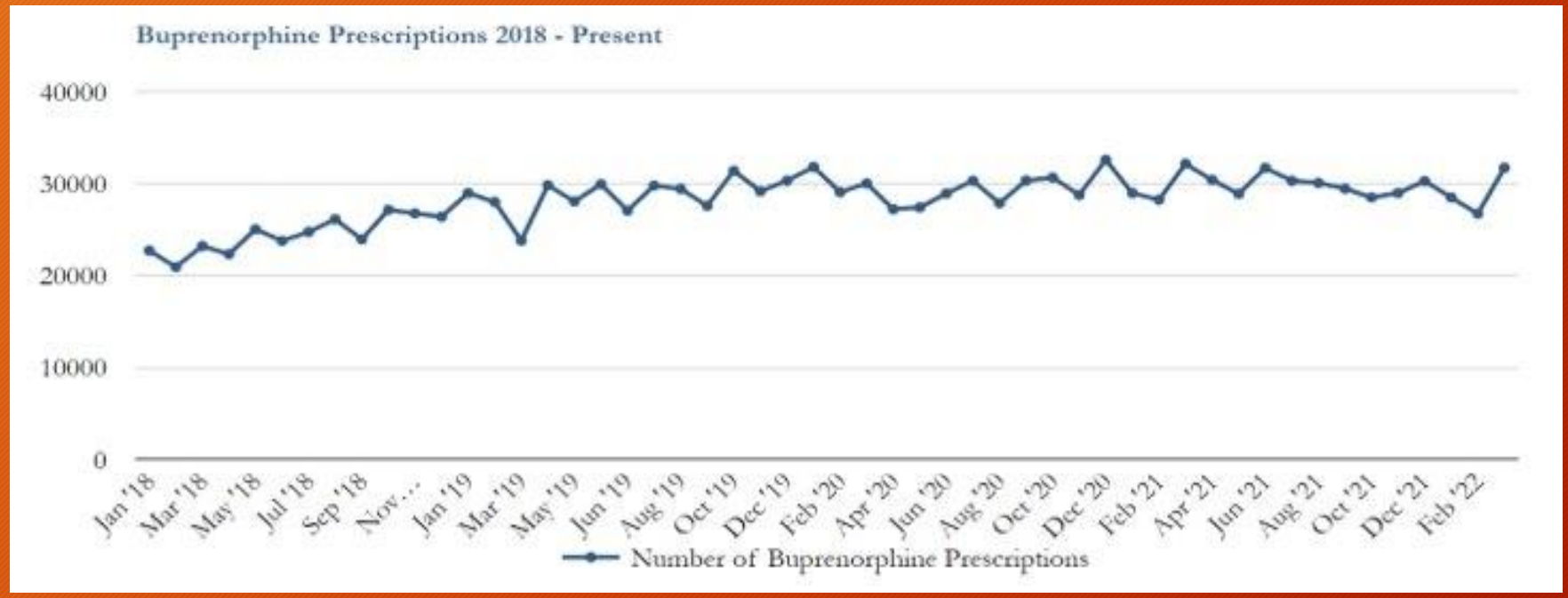


"Last year, OUD stole the lives of 612 people in Maine" – Gov. Mills, 2022

Data from: https://mcspolicycenter.umaine.edu/mcspc-research/drug-overdose-deaths/

What is preventing people with OUD from accessing treatment?

- Access is limited due to a dearth of buprenorphine prescribers in Maine

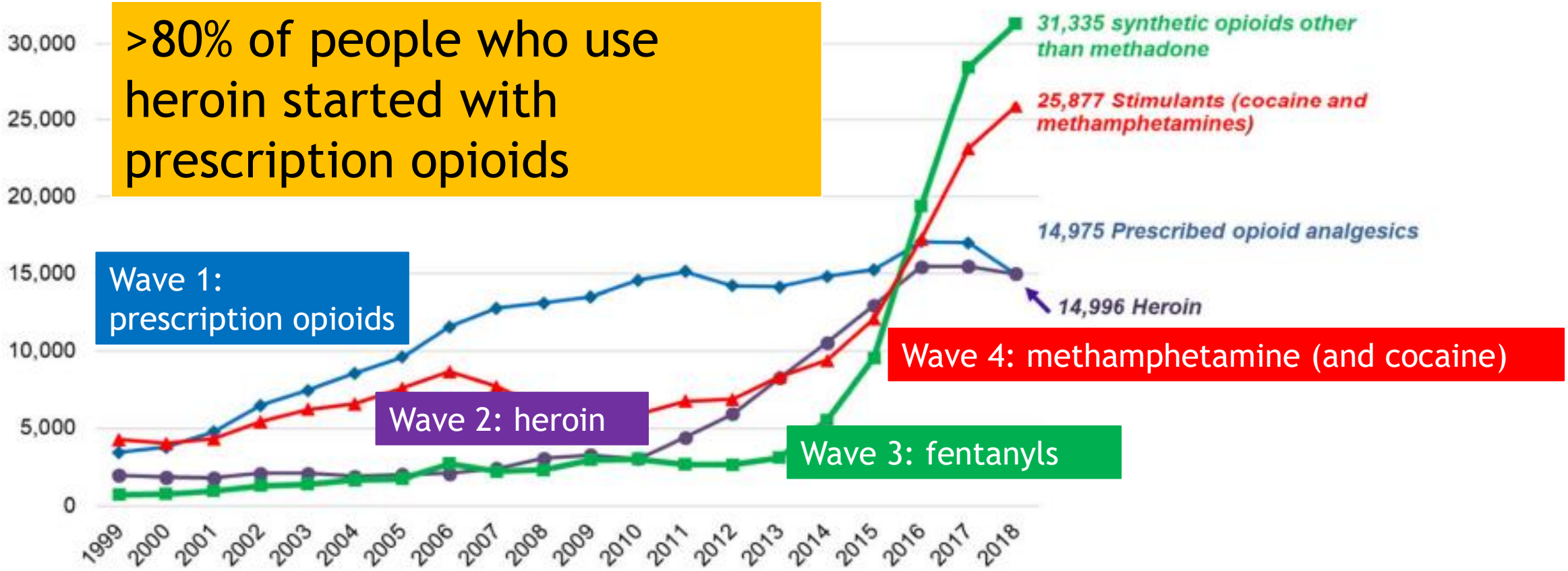


Prescriber numbers are increasing but not nearly as fast as new OUD diagnoses

- Mental health services capacity is extremely low and worsening in the post-pandemic mental health crisis

The 4 Waves of the Opioid Epidemic in the US

>80% of people who use heroin started with prescription opioids



Overdose deaths from 1999 to 2018 for prescription-type opioid analgesics, heroin, synthetic opioids other than methadone (i.e., fentanyl-related compounds), and stimulants (methamphetamine and/or cocaine).

Comptan WP et al. J Gen Intern Med 35(Suppl 3):S891-S4
Jones CM. Drug Alcohol Dep. 2013;132:95-100.

This work matters!

"25 million people in the US are in recovery!" – US SAMHSA Director and PILTR Tom Coderre

Tom Coderre

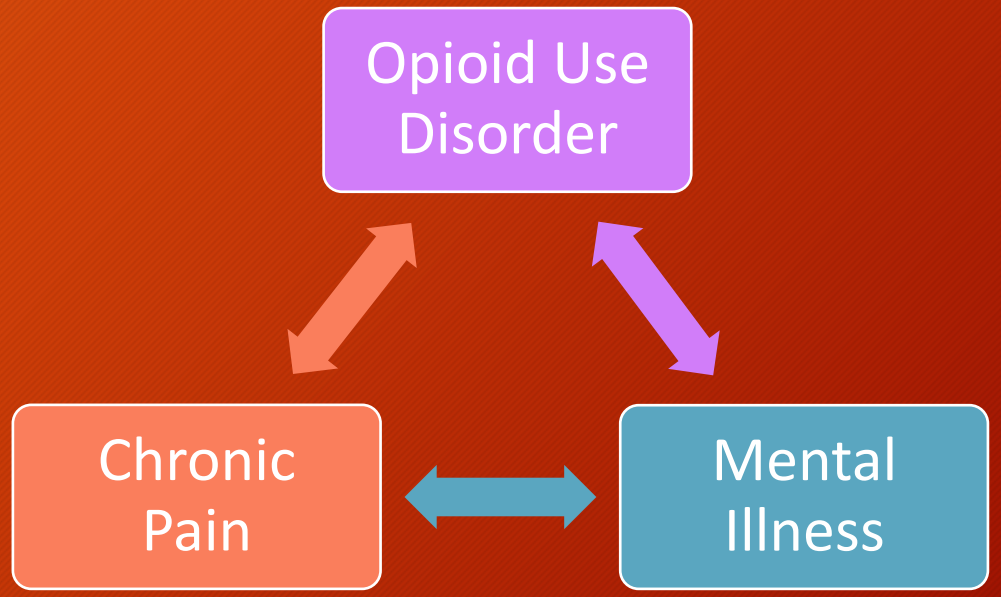
Acting Deputy Assistant Secretary for Mental Health and Substance Use

- But there is more work to do…
- In the US, only 1/3 of adult Americans with OUD received treatment *(2015 – 2017)*

Jones and McCance-Katz, 2019

OUD is complex and mental healthcare is essential

- Mental illness (MI) is highly correlated w/ OUD
  - 60% have comorbid mood disorders
  - 43% have anxiety disorders
- Lack of treatment of co-occurring MI and OUD occurs in up to ½ of patients



Hser, J Subst Abuse Treat. 2017; 77: 26–30.
Birgenheir, Gen Hosp Psych. 2013;35(5):480-4.
Novak, J Subst Abuse Treat. 2019 Mar;98:47-52
Grant, Arch Gen Psychiatry. 2004;61(8):807–16.

Opioids are not an evidence-based treatment for mental illness, yet…

51.4% of US opioid prescriptions are for individuals with a mental illness, who are only 16% of the US population

Emotional pain and physical pain are both associated with activation of the same location: the anterior insula and the anterior cingulate cortex – and ***opioids relieve both***

Davis, J Am Board Fam Med. 2017;30(4):407-417.
Sturgeon JA, Zautra AJ. *Pain Manag*. 2016;6(1):63-74.

Quotes from people in long term recovery: initial opioid use

"Taking opioids provided relief from discomfort for the first time in my life."

"After that first dose of opioids, I had peace, calm. Just for a second, the daily pain was gone and there was nothing."

Opioids and Suicide

- Significant overlap between death by unintentional overdose and death by suicide (deaths of despair)
- Up to 30% of “unintentional overdose” deaths are likely death by suicide
- After 30% adjustment, approximately one quarter of all suicides in 2017 were by opioids

1. Oquendo MA, Volkow ND. N Engl J Med. 2018;378(17):1567-1569. doi:10.1056/NEJMp1801417
2. Bohnert ASB, Ilgen MA. N Engl J Med. 2019;380(1):71-79. doi:10.1056/NEJMra1802148
3. Case A, Deaton A. Brookings Pap Econ Act. 2017;2017:397-476. doi:10.1353/eca.2017.0005

Suicide and unintentional overdoses in subpopulations of people

- Higher rates of death by suicide and OD in men and young people
- Rates of OD and death by suicide varied among race and are lowest in Asian and Pacific Island people
- People who are LGB are 5x more likely to attempt suicide
- Suicidality occurs in almost half of bisexual women

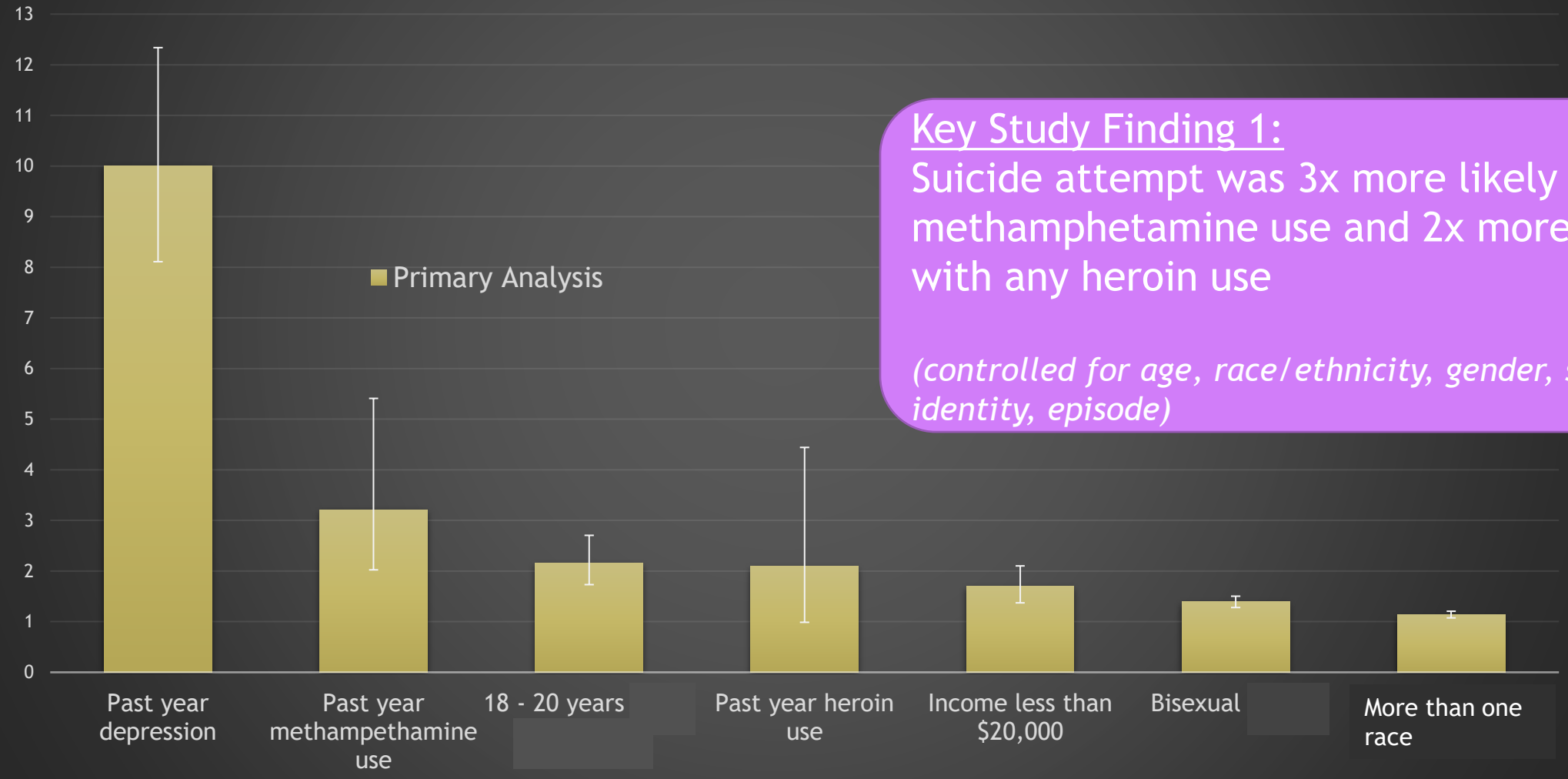
	Man	Woman
Heterosexual	7.4%	9.6%
Bisexual	24.8%	45.4%

Suicide in the US (2020) as a Cause of Death

Age	Ranking
5 – 9 years	10
10 – 14 years	2
15 – 24 years	3
25 – 34 years	2
35 – 44 years	4
45 – 54 years	7
55 – 64 years	9
All ages	12

Nimh.nih.gov/health/statistics/suicide

Adjusted Odds Ratio of Suicide Attempt in Primary Multivariate Analyses



Key Study Finding 1:
Suicide attempt was 3x more likely with any methamphetamine use and 2x more likely with any heroin use

(controlled for age, race/ethnicity, gender, sexual identity, episode)

Pre-published data. Nichols SD 2022

What reduces the risk of suicide in OUD?

- 61,633 veterans (93% male) on medications for OUD (MOUD)

MOUD ↓ suicide risk 55%

Stopping MOUD ↑ suicide risk 50%

	Death by suicide hazard ratio*	95% CI
Buprenorphine	0.34	0.23 - 0.52
Methadone	0.47	0.21 - 1.08
Naltrexone	1.28	0.67 - 2.44

*adjusted for age, gender, race, psychiatric conditions, and healthcare utilization

https://ajp.psychiatryonline.org/doi/10.1176/appi.ajp.2021.21070700?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed

Obj 2: Describe signs and symptoms of opioid overdose and appropriate steps for response

Which is the best description of a person in an opioid overdose?

a. Person gasping for air and in distress
b. Person peacefully nodding off with slowed breathing and dusky colored lips
c. Person who is obviously agitated and hyperventilating
d. Person who has normal respiration but is having a seizure

Recognizing an Opioid Overdose

Opioid Intoxication

- Contracted pupils
- Muscles slack and droopy
- They might “nod out”
- Scratching due to itchy skin
- Slurred speech
- Will respond to outside stimuli like loud noises or a shake from a concerned friend

vs.

Opioid Overdose

- Loss of consciousness
- Awake, but unable to talk
- Breathing and pulse slow and shallow, erratic, or stopped
- Body very limp
- Face pale or clammy
- Vomiting
- Snore-like gurgling noise
- Unresponsive to outside stimuli
- Skin tone turns bluish purple (lighter skin tones) or grayish or ashen (darker skin tones)
- Fingernails and lips turn blue or purple

Recognizing Opioid Overdose - National Harm Reduction Coalition

Opioid Overdose Mnemonic: B.L.U.E.

BREATHING	Breathing is shallow, gurgling, erratic, or absent.
LIPS	Lips and fingertips are blue due to reduced oxygenation.
UNRESPONSIVE	The victim will not respond to verbal or physical stimulation.
EYES	Pinpoint pupils.

Recognizing Overdose & What to Do (rchsd.org)

Responding to an Opioid Overdose

Suspected opioid poisoning
- Check for response
- Shout for help
- Call 911
- Open airway

GIVE NALOXONE

Is the person breathing normally?

Yes
- Rescue position
- Observe until EMS arrives/transport to hospital

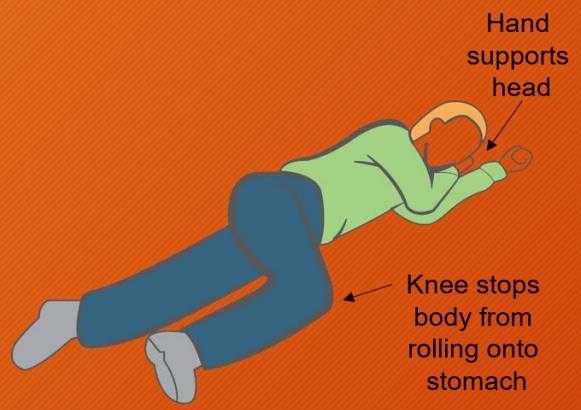
No

Dose the person have a pulse?

Yes
- Provide rescue breathing only
- Observe until EMS arrives/transport to hospital

No

Start CPR if trained while awaiting EMS



Recovery position with text - Generation Rx

Give more naloxone 3-5 min after first dose if no response

Adapted from: Opioid-associated out-of-hospital cardiac arrest: distinctive clinical features and implications for health care and public responses: a scientific statement from the American Heart Association. *Circulation*. 2021;143:e836-e870. doi: 10.1161/CIR.0000000000000958

Training works!

Role-based response	General public	Trained laypeople	Health care providers
Recognizing opioid poisoning	+/-	+	+
Using stimulus to assess individual's response	+	+	+
Differentiating cardiac from respiratory arrest	-	+/-	+
Using vitals and cardiac monitors	-	+/-	+
Identifying opioid poisoning vs other drug poisonings	-	+/-	+
Activating EMS	+	+	+
Administering naloxone	+	+	+
Titrating naloxone dose	-	-	+

Opioid-associated out-of-hospital cardiac arrest: distinctive clinical features and implications for health care and public responses: a scientific statement from the American Heart Association. *Circulation*. 2021;143:e836–e870. doi: 10.1161/CIR.0000000000000958

General risk factors for opioid overdose:

Opioid dependence, particularly following reduced tolerance

- Following detoxification without subsequent treatment
- After release from incarceration or hospitalization
- After cessation of MOUD

Use of prescription opioids (esp ≥50 MME)

Nonprescribed use of opioids or other substances, including counterfeit

BZDs, barbiturates, alcohol, other sedatives, carisoprodol

Use of opioids with other sedating and/or respiratory depressing substances

Use of opioids in patients with medical conditions

- DDIs, liver or renal disease
- Susceptibility to respiratory depression (COPD, sleep apnea)
- Increased risk of suicidal ideation (depression, bipolar disorder)

Access to opioids in the home by those other than the patient

Risk Index

Score (Points)	Avg. Predictive Probability (%)
< 25	3
≥ 67	94

Question	Points for Yes Response
In the past 6 months, has the patient had a healthcare visit (outpatient, inpatient or ED) involving any of the following health conditions?†	
Opioid dependence?‡	15
Chronic hepatitis or cirrhosis?	9
Bipolar disorder or schizophrenia?	7
Chronic pulmonary disease (e.g., emphysema, chronic bronchitis, asthma, pneumoconiosis, asbestosis)?	5
Chronic kidney disease with clinically significant renal impairment?	5
An active traumatic injury, excluding burns (e.g., fracture, dislocation, contusion, laceration, wound)?	4
Sleep apnea?	3
Does the patient consume:	
An extended-release or long-acting (ER/LA) formulation of any prescription opioid?§ (*e.g., OxyContin, Oramorph-SR, methadone, fentanyl patch*)	9
Methadone? (*Methadone is a long-acting opioid so also check "**ER/LA formulation**" [9 points]*)	9
Oxycodone? (*If it has an ER/LA formulation [e.g., OxyContin] also check "**ER/LA formulation**" [9 points]*)	3
A prescription antidepressant? (*e.g., fluoxetine, citalopram, venlafaxine, amitriptyline*)	7
A prescription benzodiazepine? (*e.g., diazepam, alprazolam*)	4
Is the patient's current maximum prescribed opioid dose‖:	
≥100 mg morphine equivalents per day?	16
50–<100 mg morphine equivalents per day?	9
20–<50 mg morphine equivalents per day?	5
In the past 6 months, has the patient:	
Had one or more emergency department (ED) visits?	11
Been hospitalized for one or more days?	8
Total point score (maximum 115)	

Zedler B, Xie L, Wang L, Joyce A, Vick C, Brigham J, Kariburyo F, Baser O, Murrelle L. Development of a Risk Index for Serious Prescription Opioid-Induced Respiratory Depression or Overdose in Veterans' Health Administration Patients. Pain Med. 2015 Aug;16(8):1566-79.

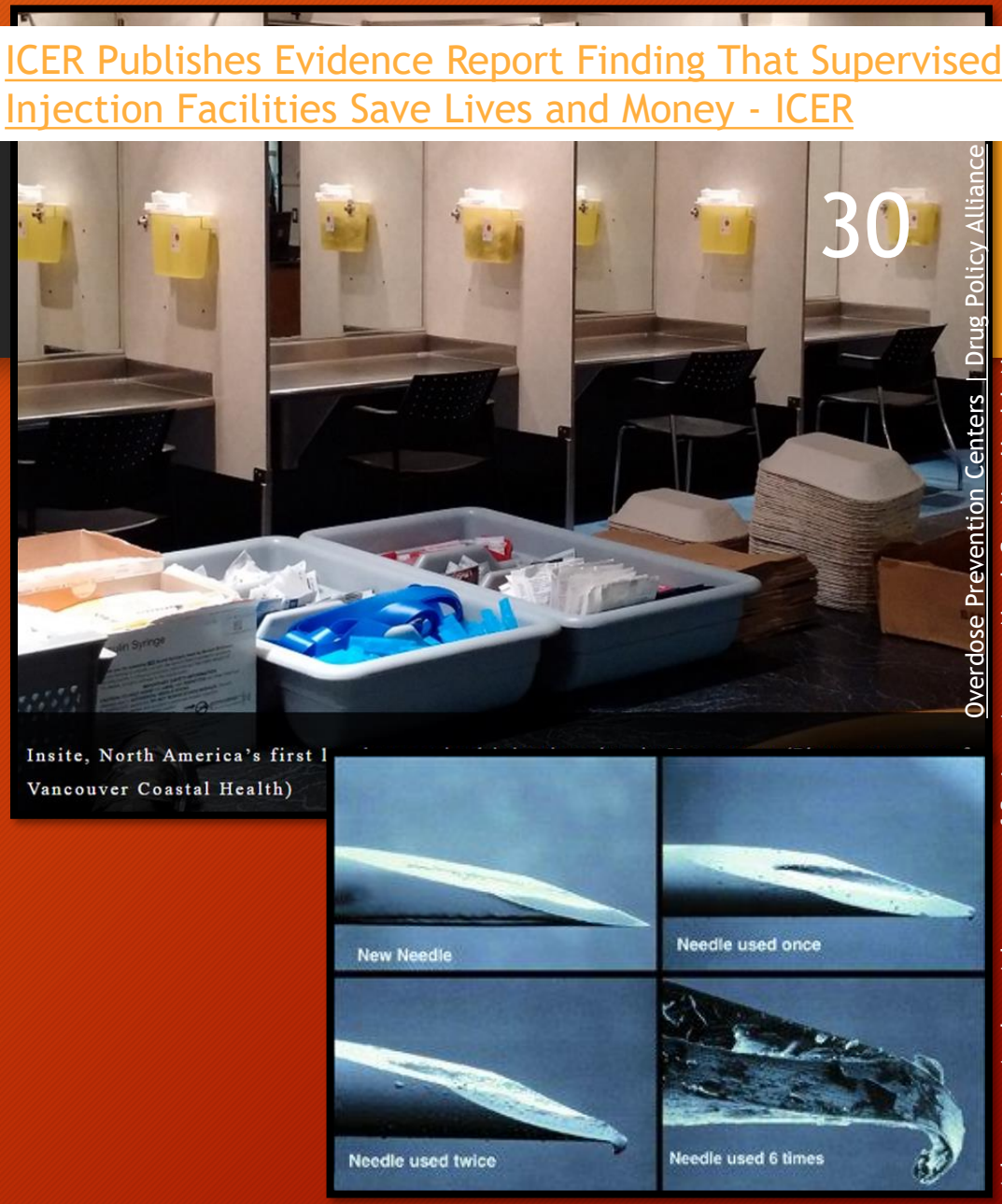
An ounce of prevention…

Harm Reduction

Meets the patient where they are.

“Emphasizes the measurement of health, social and economic outcomes, as opposed to the measurement of drug consumption.”*

[ICER Publishes Evidence Report Finding That Supervised Injection Facilities Save Lives and Money - ICER]



Overdose Prevention Centers | Drug Policy Alliance

Advocates Analyze Advantages of Syringe Access - North Carolina Health News

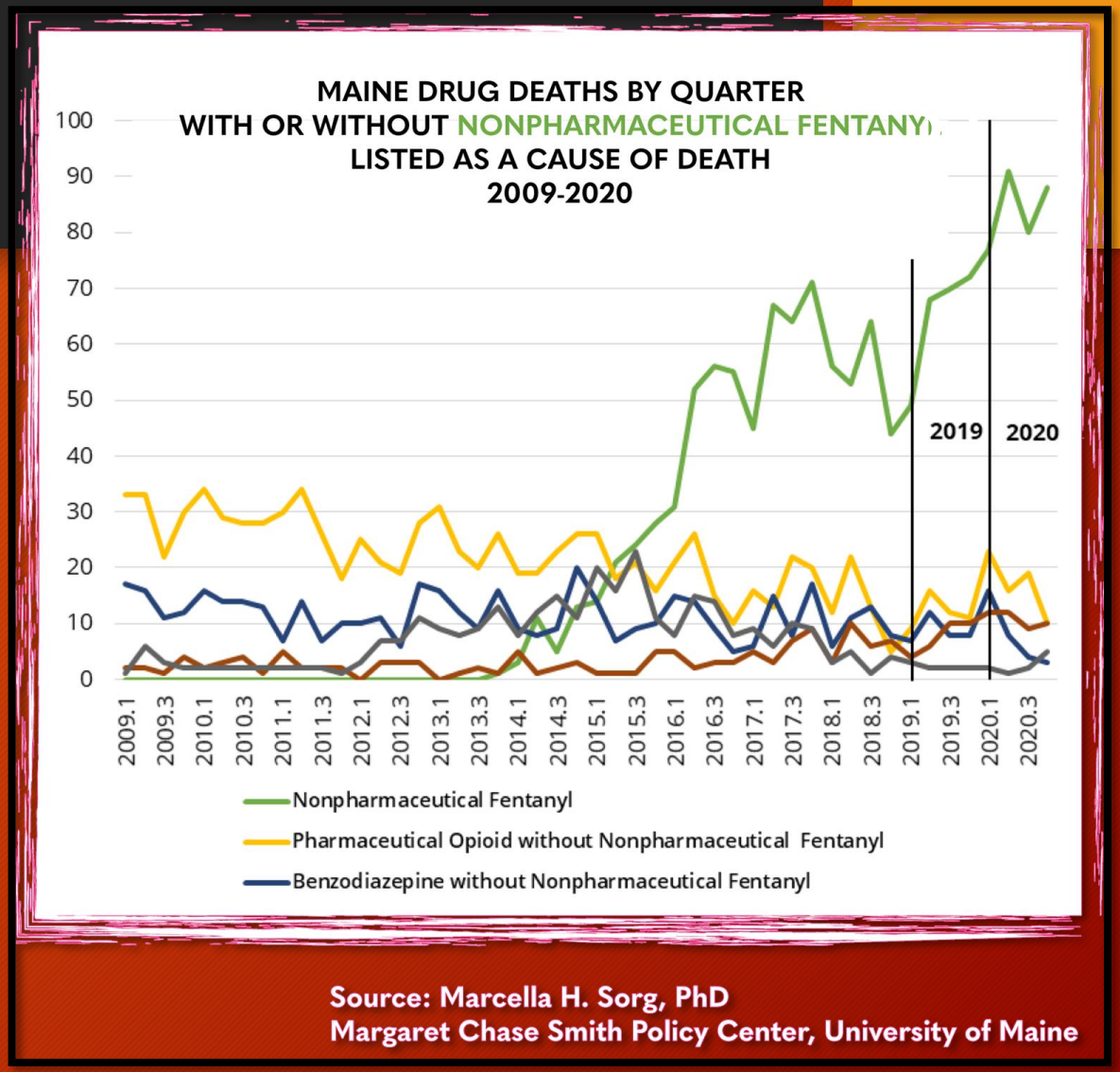
[Addiction Medicine Primer (cdc.gov)]

Canadian Pediatric Society - POSITION STATEMENT (AH 2008-01) - Harm reduction: An approach to reducing risky health behaviours in adolescents. *Paediatr Child Health* 2008;13(1):53-56.

Let's consider:

- Non-pharmaceutical fentanyl causes almost every overdose death in Maine
  - *It's in everything!*
  - *It's everywhere!*

A lethal dose of fentanyl:



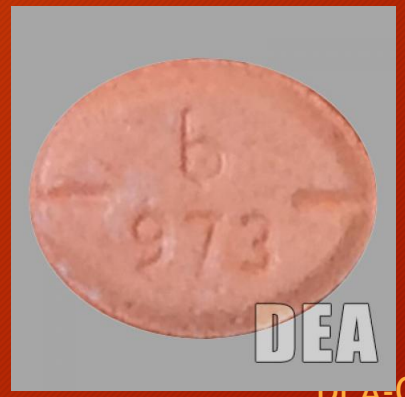
Fentanyl - Options (knowyouroptions.me)

Counterfeit Pills fact SHEET-5-13-21-FINAL.pdf (dea.gov)

One Pill Can Kill Initiative & Social Media Campaign

Authentic

Fake



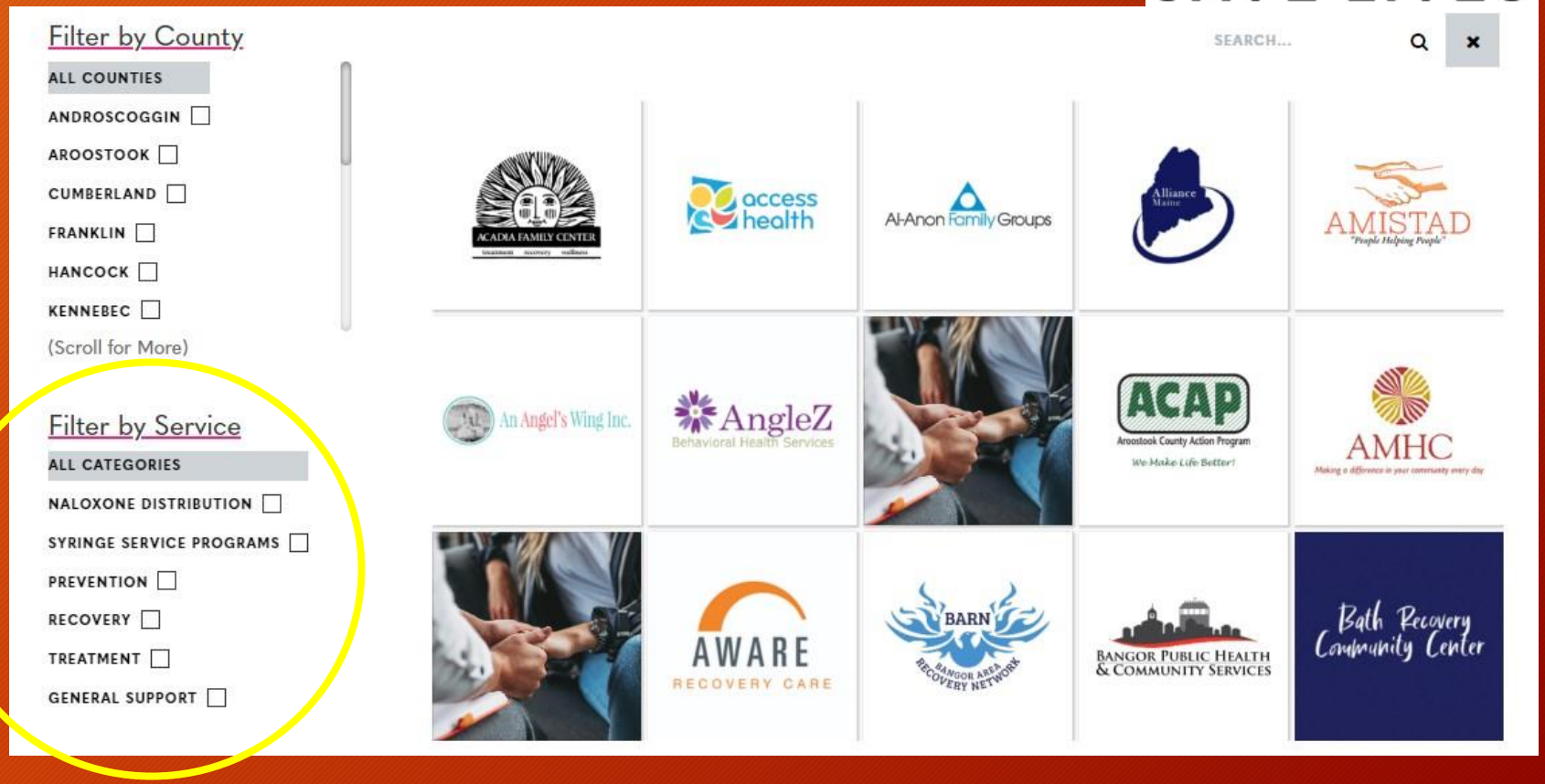
How To Use Fentanyl Test Strips — Trystereo | New Orleans Harm Reduction Network

DEA-OPCK_FactSheet_December 2021.pdf
https://www.dea.gov/onepill

Know & Share Resources

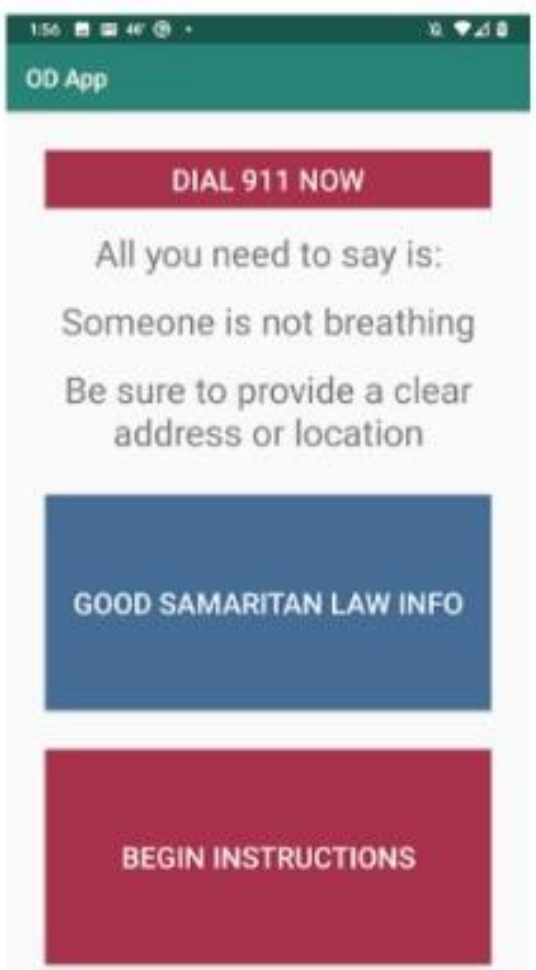
OPTIONS SAVE LIVES

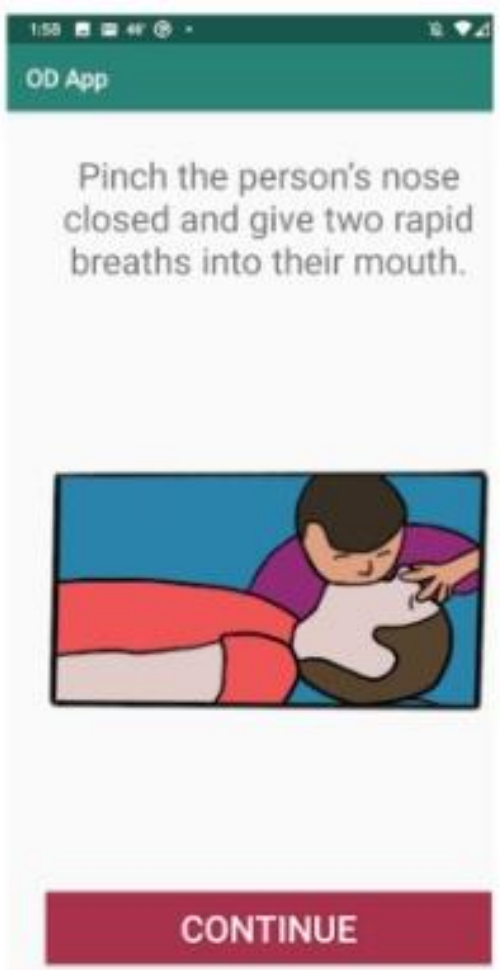
- Resources - Options (knowyouroptions.me)
- Resource Center | National Harm Reduction Coalition
- SAMHSA Opioid Overdose Toolkit



There’s an app for that!

App name: OD-ME





Naloxone Educational Resources

- Teaching videos: http://prescribetoprevent.org/
- VA Academic detailing site: https://www.pbm.va.gov/PBM/academicdetailingservice/Opioid_Overdose_Education_and_Naloxone_Distribution.asp
- VA videos illustrating how to use agents:

  Narcan NS nasal spray: https://www.youtube.com/watch?v=0w-us7fQE3s

  Naloxone nasal spray kit: https://www.youtube.com/watch?v=WoSfEf2B-Ds
- Maine Independent Clinical Information Service academic detailing naloxone info:

  https://www.mainemed.com/sites/default/files/content/MICIS_Naloxone_Provider_110316%2002.pdf

  https://www.mainemed.com/sites/default/files/content/MICIS_Naloxone_PatientFlyer_041416.pdf
- Where to obtain naloxone throughout the country:

  http://prevent-protect.org/individual-resources/where-to-get-naloxone/

Obj 3: Identify naloxone pharmacology, role in therapy, and prescribing and administration principles

In which group is naloxone contraindicated?

a. Toddlers and older children
b. Pets including cats and dogs
c. Pregnant people
d. Naloxone is safe for all of these groups

Naloxone History

- Novel opioid antagonist in the 1960s
- Dose guidelines & formulations have evolved

Harm minimisation for drug misusers

When second best may be best first

A quiet revolution is taking place in British responses to drug misuse. Harm minimisation is the new buzz word and refers to the component of care that makes reducing the harm that comes from drug use its main objective. Combating drug use then becomes the means to the end rather than the end itself.

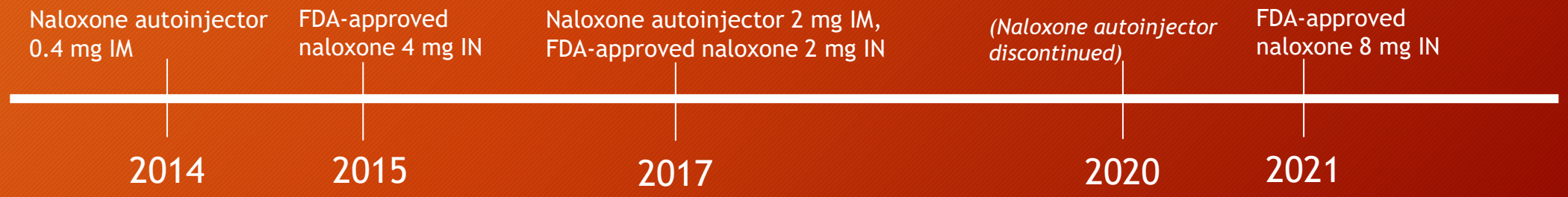
At its centre the debate is about goals: working towards either stable abstinence or the less ambitious goal of reducing the harm from continued drug use in the belief that this is more achievable.[1] Essentially, harm minimisation is the triumph of pragmatism over purism: the acceptance that second best may be best first.

Elsewhere in medical practice harm minimisation is regarded as good secondary preventive health care. If cigarette smokers cannot give up they are advised to go for second best by switching to filter cigarettes or low tar varieties. Diabetic patients are advised on dietary and drug regimens but are also advised about self monitoring and emergency management in the event of loss of glycaemic control. People are regularly advised to drink moderately to avoid the health hazards associated with heavy alcohol consumption.

Even in drug misuse the concept is not new: 20 years ago some of the new drug clinics and day centres provided not only needles and syringes but also instructions on injecting technique[2,3] and special on site fixing rooms.[4] In 1984 the *Prevention Report* made it clear that the goal of reducing drug use must exist alongside the goal of reducing the harm of continued drug use.[5] Since then various British reports have recognised that some drug use will inevitably exist.[1,6] They have legitimised efforts to reduce the harm of continued drug use while still endorsing efforts to counter drug use itself. The real issue becomes the balance between these strategies.

HIV has given harm minimisation a new prominence, and attempts to reduce sharing of syringes and unprotected sex have become key elements of this work. Harm minimisation is now being extended beyond HIV infection to overdose and hepatitis—as pioneered in Italy and the Netherlands.[7-9] Descriptions of harm minimisation now appear in the Department of Health's new guidelines on managing drug misuse.[10]

When it comes to drug misusers the new guidelines from the Department of Health clarify the responsibilities for all doctors and the legitimacy and importance of strategies to minimise harm.[10] Drug misusers have a right to health care regardless of doctors' moral indignation or prejudices. Abstinence (at least in the short term) is not the only



Rzasa Lynn R, Galinkin JL. Naloxone dosage for opioid reversal: current evidence and clinical implications. Ther Adv Drug Saf. 2018 Jan;9(1):63-88.

30 years ago…

Harm minimisation for drug misusers

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1127

Perhaps a case can be made for distributing ampoules of the opiate antagonist naloxone. Its potential for abuse is nil, the risks are probably minimal, and considerable benefit may accrue if drug users could give emergency doses of antagonist to fellow injectors who inadvertently overdose.

Harm minimisation must now move to a stage where the critical researcher is not outlawed as a heretic but welcomed as a scientist.

JOHN STRANG
Consultant Psychiatrist
MICHAEL FARRELL
Research Senior Registrar

Strang J and Farrell M. Harm minimisation for drug misusers. BMJ 1992;304:1127-1128.

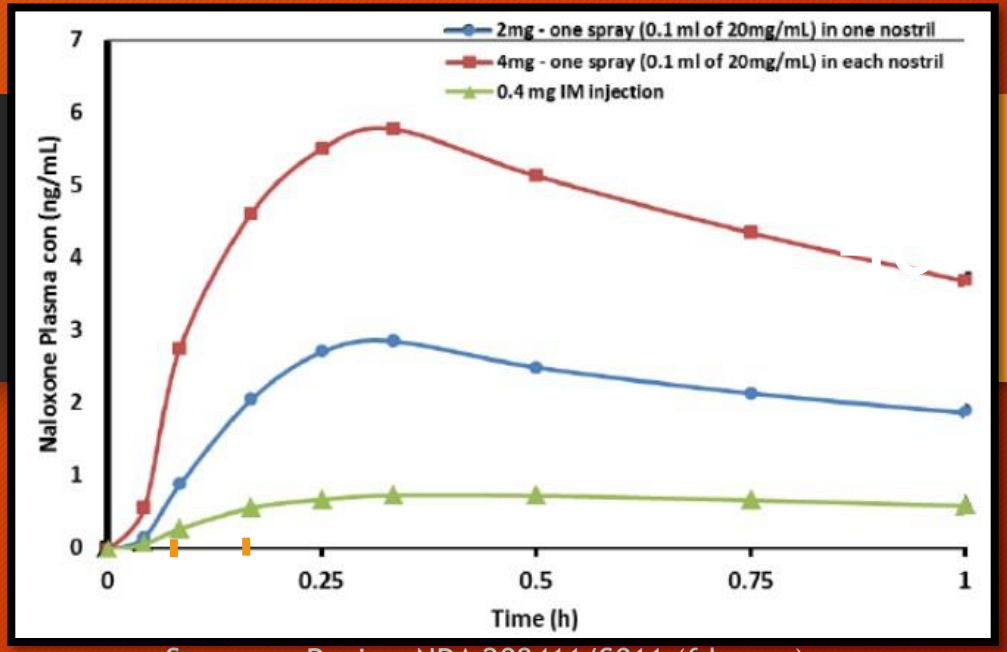
Naloxone Safety

- **Favorable risk vs benefit profile**
- Acute withdrawal syndrome
  - May adversely impact decision to administer naloxone to a peer
- Pulmonary edema & cardiovascular
  - Extremely rare
  - Diverse reports, perioperative association
  - Difficult to separate effect from overdose itself/operative sequelae vs naloxone

Rzasa Lynn R, Galinkin JL. Naloxone dosage for opioid reversal: current evidence and clinical implications. Ther Adv Drug Saf. 2018 Jan;9(1):63-88.

Naloxone Pharmacology Highlights

- Onset varies by route
- Serum t ½ approx. 60 min (30-90)
- Extensive first-pass metabolism: poor oral absorption
- No universal effective dose
  - Presence of fentanyl and analogues
  - Dosing approach by setting
  - Hospital: Reverse overdose while avoiding withdrawal = small initial dose
  - Community: Risk of under-dosing > risk of withdrawal = minimum effective dose



Summary Review NDA 208411/S011 (fda.gov)

Table 2. μ-Opioid Receptor Binding Affinities (Ki) for Commonly Used Opioids and Antagonists

Opioid	Ki (nM)
Buprenorphine	**0.2157**[3]
Hydromorphone	0.3654[3]
Morphine	1.168[3]
Fentanyl	1.346[3]
Naloxone	1.518[3]
Methadone	3.378[3]
Oxycodone	25.87[3]
Hydrocodone	41.58[3]
Codeine	734.2[3]
Tramadol	12,486[3]

Opioids with low Ki values have greater binding affinity at the μ receptor but do not necessarily have greater potency compared to other opioids. Affinity is not potency!

Naloxone Prescribing and Distribution

§13812

Title 32: PROFESSIONS AND OCCUPATIONS

Chapter 117: MAINE PHARMACY ACT

Subchapter 11-A: PRESCRIBING AND DISPENSING OF NALOXONE HYDROCHLORIDE

§13821

§13815. Authorization

1. Rules for dispensing naloxone hydrochloride.

[PL 2017, c. 364, §6 (RP).]

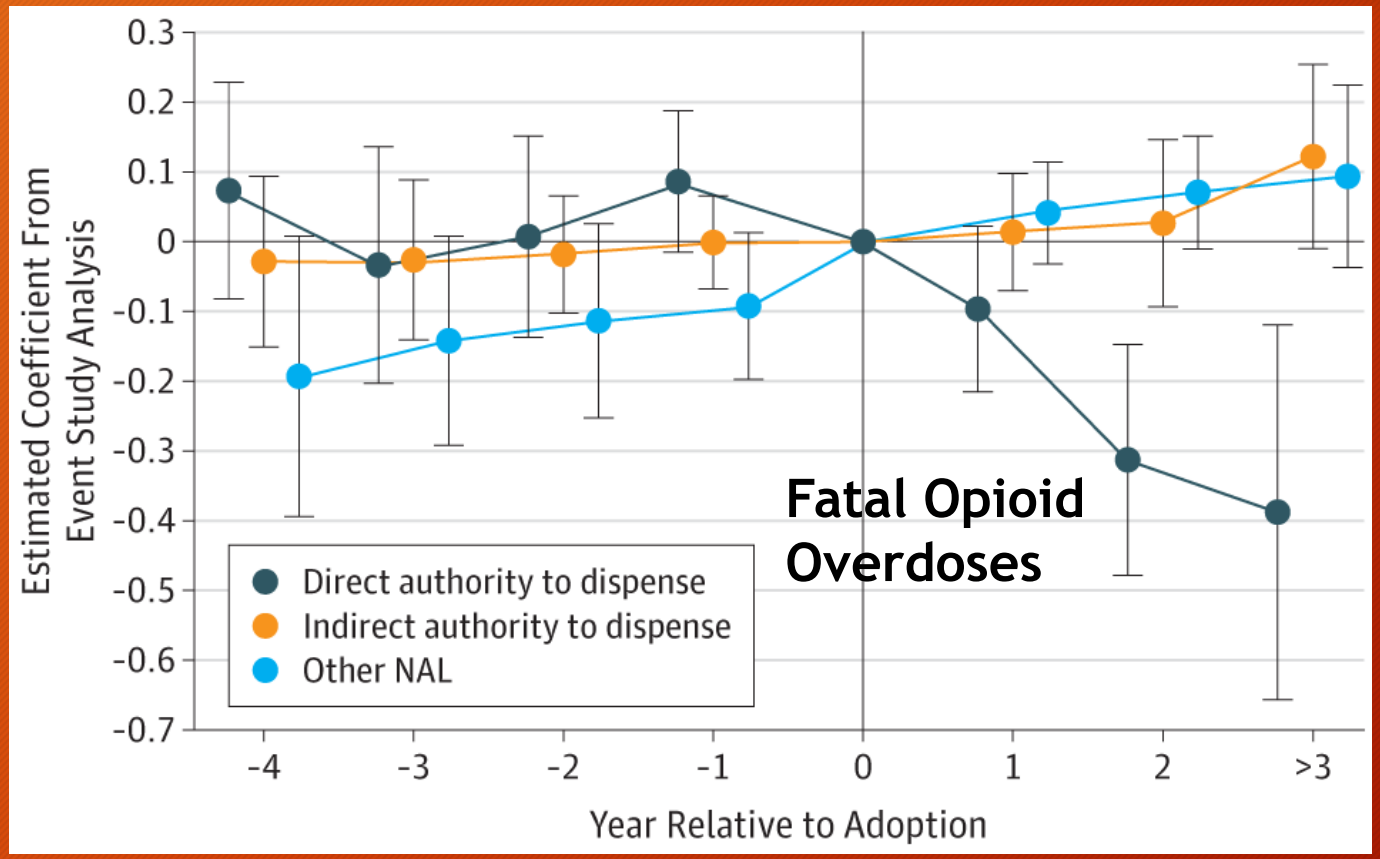
2. Rules for prescribing and dispensing naloxone hydrochloride. The board by rule shall establish standards for authorizing pharmacists to prescribe and dispense naloxone hydrochloride in accordance with Title 22, section 2353, subsection 2, paragraphs A-1 and C-1. The rules must establish adequate training requirements and protocols for prescribing and dispensing naloxone hydrochloride when there is no prescription drug order, standing order or collaborative practice agreement authorizing naloxone hydrochloride to be dispensed to the intended recipient. Rules adopted under this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A. A pharmacist authorized by the board pursuant to this subsection to prescribe and dispense naloxone hydrochloride may prescribe and dispense naloxone hydrochloride in accordance with Title 22, section 2353, subsection 2, paragraphs A-1 and C-1.

Title 32, §13815: Authorization (mainelegislature.org)

Pharmacist authorization to dispense naloxone saves lives.

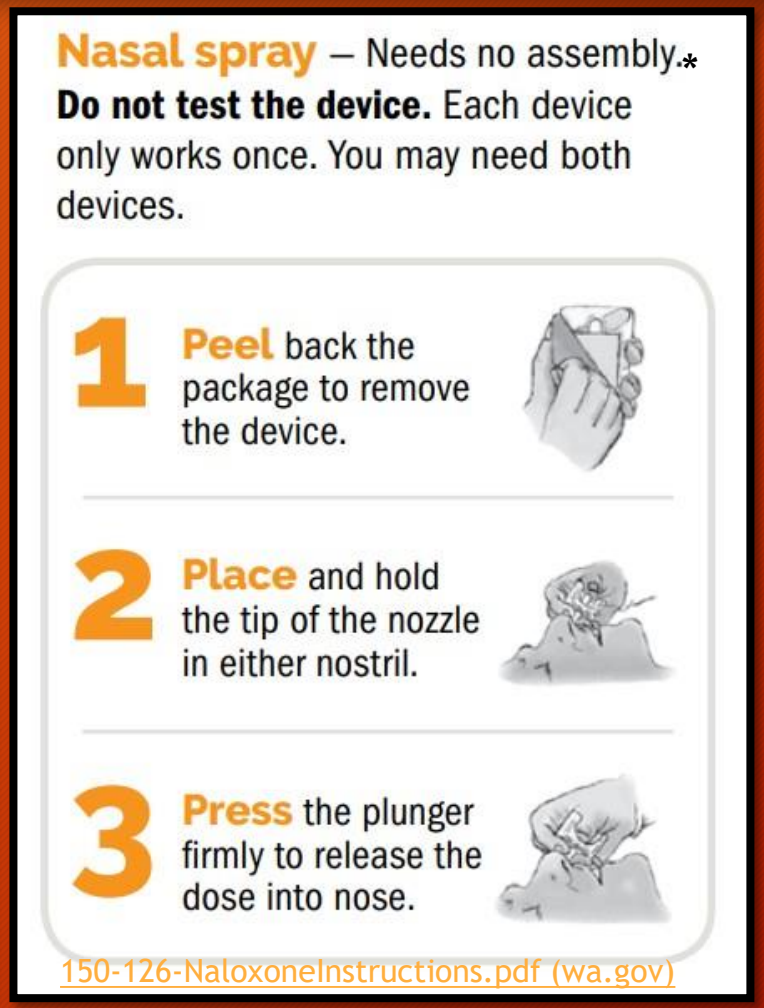
From: **Association Between State Laws Facilitating Pharmacy Distribution of Naloxone and Risk of Fatal Overdose**

JAMA Intern Med. 2019;179(6):805-811. doi:10.1001/jamainternmed.2019.0272



Outcome was opioid-related fatal overdoses per 100 000.

Intranasal Naloxone Administration



150-126-NaloxoneInstructions.pdf (wa.gov)

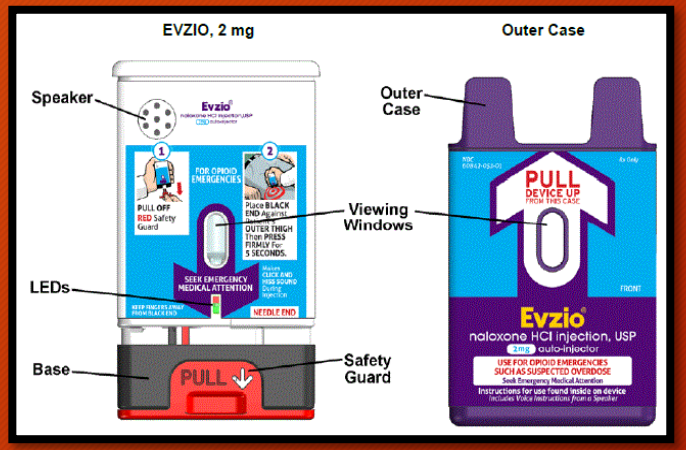
*Some products may have a red cap on the plunger → need to remove prior to use

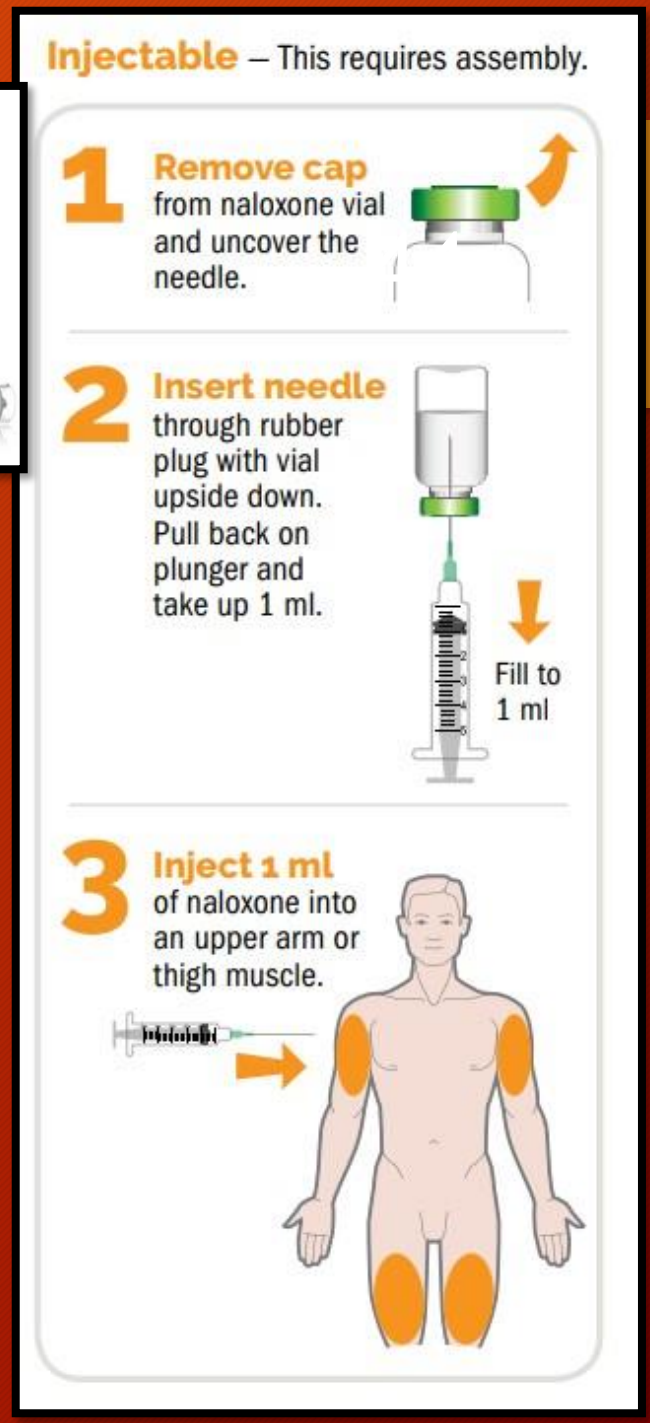
Prescribing instructions for each formulation available here: Primary, Chronic Pain and Palliative Care Settings (prescribetoprevent.org)

Other naloxone formulations

Prior to intranasal formulation, kits with nasal atomizers were common.

Evzio auto-injector (& generic equivalent) discontinued from the US market in 2020.





Pregnancy, Pediatrics, and Pets

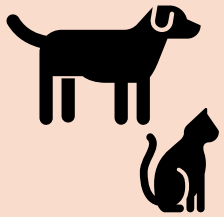
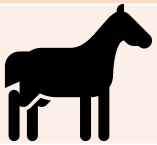
POISON Help 1-800-222-1222

- Pregnancy - naloxone should be used in the case of maternal overdose to save the woman's life.
- Pediatric naloxone dosing
  - Intranasal: 4 mg
  - IV: Usual initial dose 0.01 mg/kg; published ranges of 0.001-0.005 mg/kg/dose (PALS) to 0.001-0.02 mg/kg/dose, increase to 0.1 mg/kg/dose (AAP)
- Pets may become exposed to opioids and naloxone dosing is available in veterinary resources
  - Benchmark starting dose of 0.04 mg/kg IV

Safe medication storage and disposal are critical!

ASAM Guideline for Treatment of OUD 2020

Opioid reversal naloxone dosages by species

Species	Dosage	Notes
Dogs & Cats 	0.001 – 0.04 mg/kg IV, IM, SC, IO (dosages up to 0.1 – 0.2 mg/kg have been suggested depending on severity of the patient)	Typical starting dose is 0.04 mg/kg IV; may repeat Q2-3min. IM or SC effects may be delayed up to 5 min.
Horses 	0.01 – 0.05 mg/kg IV	Duration of effect can be very short (30 min)
Rabbits (& rodents, small mammals) 	0.01 – 0.02 mg/kg IV, IM, SC, or IP	Wide range of anecdotal dosages 0.005 – 0.1 mg/kg
Reptiles 	0.04 – 0.2 mg/kg SC	

Plumb, Donald C. Plumb's Veterinary Drug Handbook. Stockholm, Wis. : Ames, Iowa :PhrmaVet ; Distributed by Blackwell Pub., 2005

Veterinary dosing quick reference chart

Dose determined by estimated weight

	Weight (kg)	2.5	5	10	15	20	25	30	35	40	45	50
	Weight (lb)	5	10	20	30	40	50	60	70	80	90	100
Naloxone 0.4 mg/mL solution for intravenous injection	0.04 mg/kg	0.25 mL	0.5 mL	1 mL	1.5 mL	2 mL	2.5 mL	3 mL	3.5 mL	4 mL	4.5 mL	5 mL

Source: Veterinary Emergency & Critical Care Society (veccs.org) RECOVER Initiative CPR Emergency Drugs and Doses Chart

Naloxone Education Takeaways

- Important to include family and caregivers in the conversation as they are the ones administering the naloxone
- Pharmacists and pharmacy systems need to educate the entire practice from the front clerk to tech to other pharmacists about opioid overdose, take home naloxone, and reducing stigma regarding patients with substance use disorders

LO #4: Describe the disease of addiction and its impact on basic neurobiological systems

With OUD, what has happen to the dopamine (DA) system (which is important for both motivation and anticipation of pleasure)?

a. Eudopaminergic state (typical/normal DA)

b. Hyperdopaminergic (high DA)

c. Dysdopaminergic (conversion to toxified DA)

d. Hypodopaminergic state (low DA)

Addiction

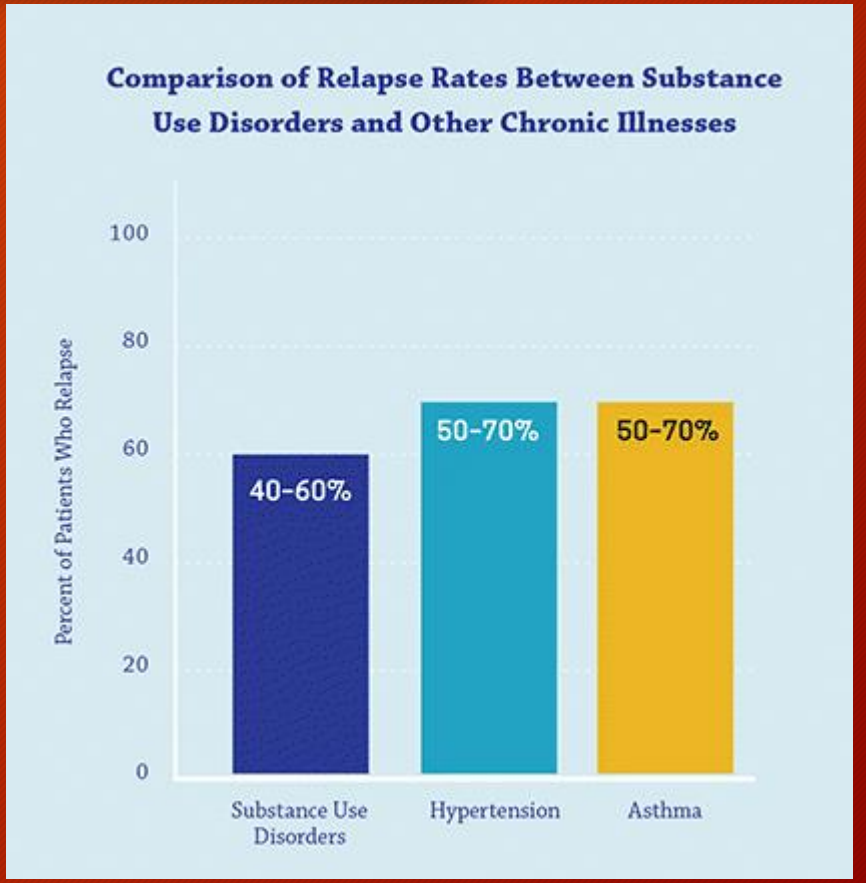
Addiction is a treatable, chronic medical disease involving complex interactions among brain circuits, genetics, the environment, and an individual's life experiences. People with addiction use substances or engage in behaviors that become compulsive and often continue despite harmful consequences.

Prevention efforts and treatment approaches for addiction are generally as successful as those for other chronic diseases.

- American Society of Addiction Medicine

Understand substance use disorders as chronic diseases

Disease	Signs of recurrence of symptoms?
Asthma	
Hypertension	
Diabetes	
Substance use disorders	



Treatment and Recovery | National Institute on Drug Abuse (NIDA) (nih.gov)

"Relapse" = a recurrence of symptoms requiring medical attention, which is an indicator that an *increase* in level of care is needed

Addiction Relapse Rates Compared to Those for Other Chronic Illnesses

Substance use disorders are chronic diseases

- As with all chronic diseases
  - Identification is done early, in primary care
  - Condition is not cured, but managed
  - When symptoms can't be managed they may be referred to a higher level
  - Risk of re-emergence of symptoms is reduced but not eliminated

- Ideal treatment for addiction (like diabetes) is multi-faceted - involves behavioral intervention, social services and **medication for opioid use disorder (MOUD)**

Meta-analysis of MOUD and mortality

"Suboxone helped save my life."

30 studies, 370,611 participants, 1,378,815 person-years

	All Cause Mortality		Overdose Death	
	Risk Ratio	95% CI	Risk Ratio	95% CI
Untreated vs on MOUD	2.56	1.72 – 3.80	8.10	4.48 – 14.66
Discharged vs Ongoing Treatment	2.33	2.02 – 2.67	3.09	2.37 – 4.01

Ma J, Bao YP, Wang RJ, et al. Mol Psychiatry. 2019;24(12):1868-1883. doi:10.1038/s41380-018-0094-5
Maine opioid summit 2022. Trascribed by SD Nichols

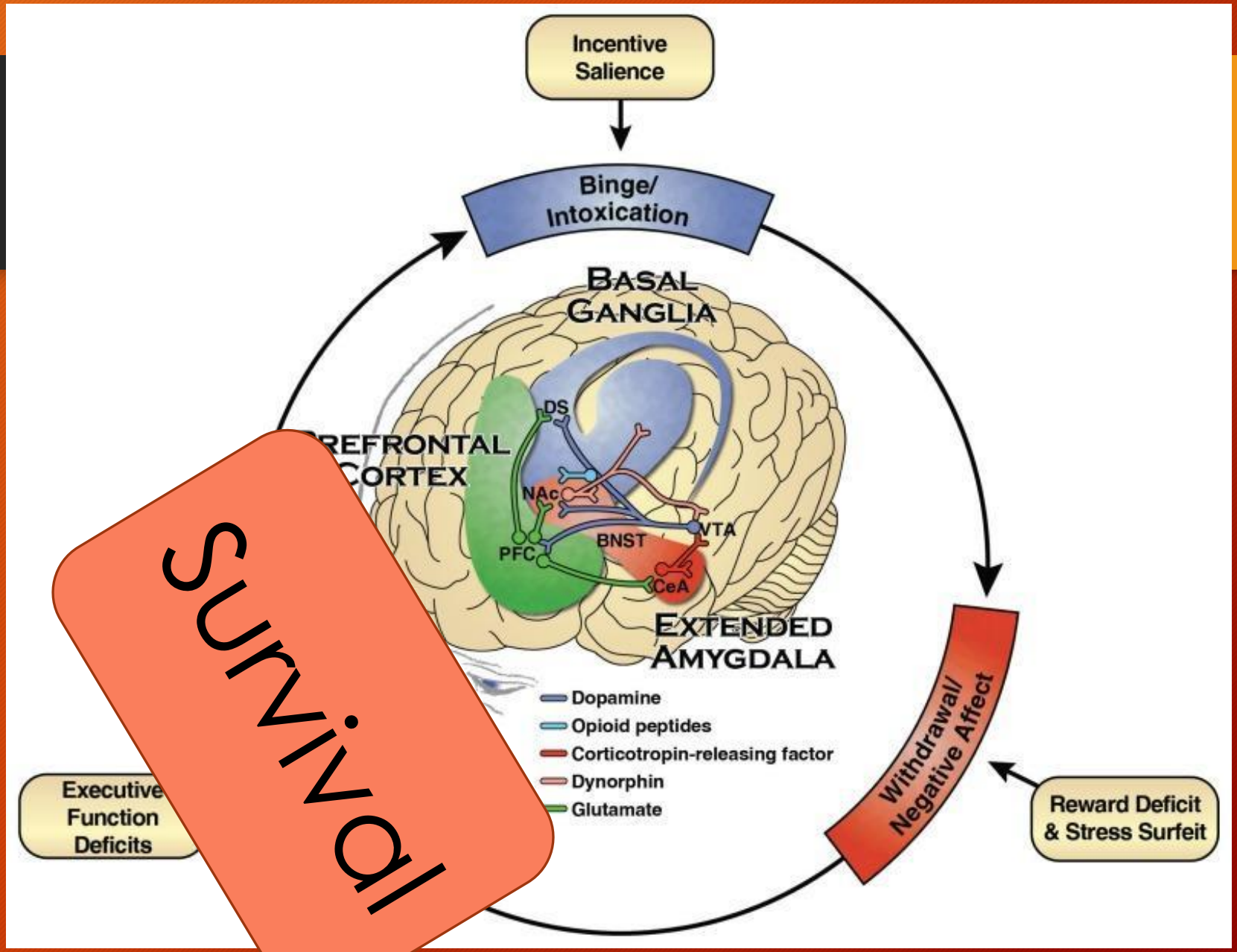
Quotes from people in long term recovery: *Despair*

"I knew what I was. I knew what my problem was.
I just couldn't stop."

- Transcribed by Nichols SD at the Maine Opioid Summit - Augusta, Maine - July 15, 2019

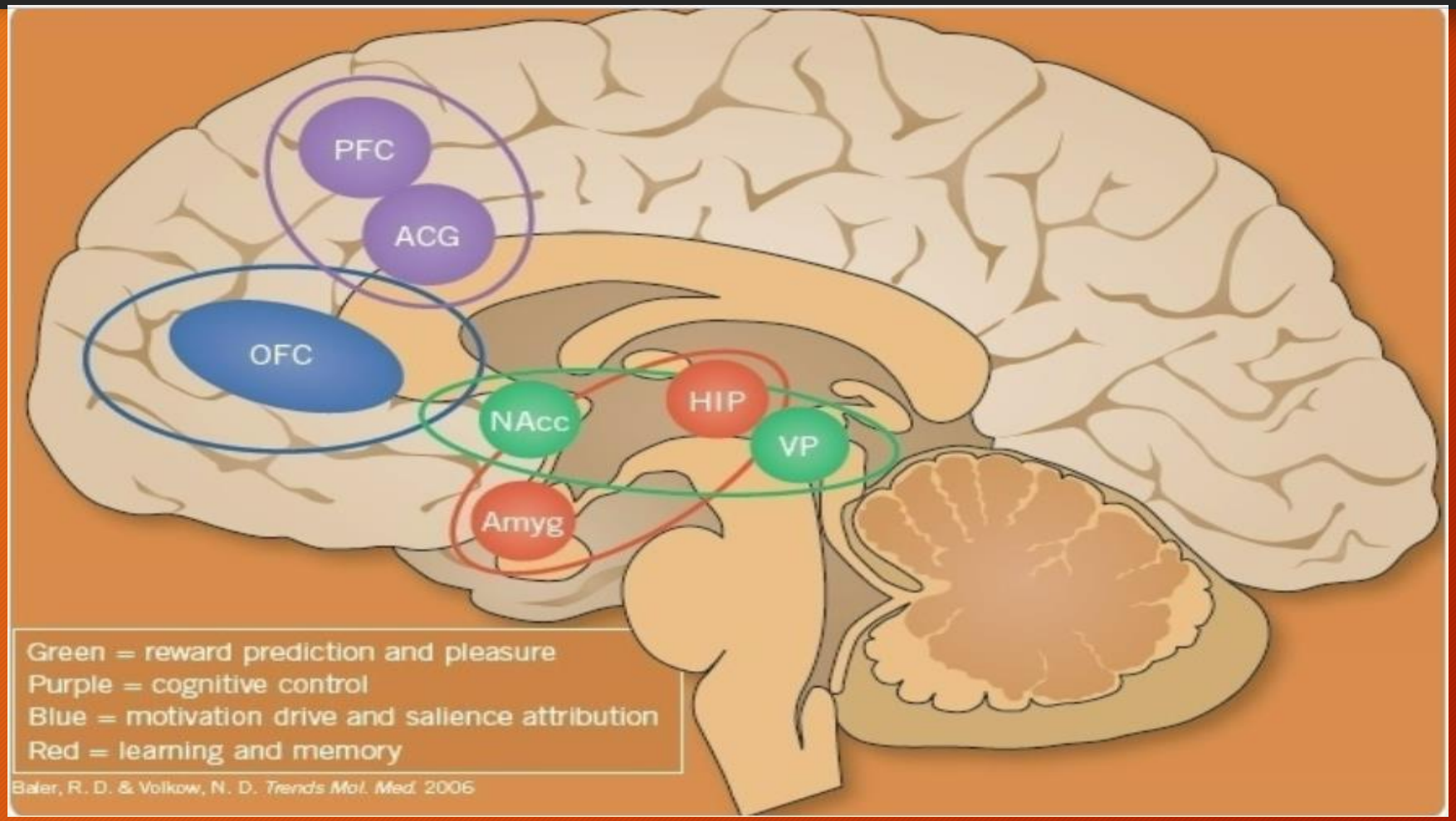
Neurobiology of OUD: Overview

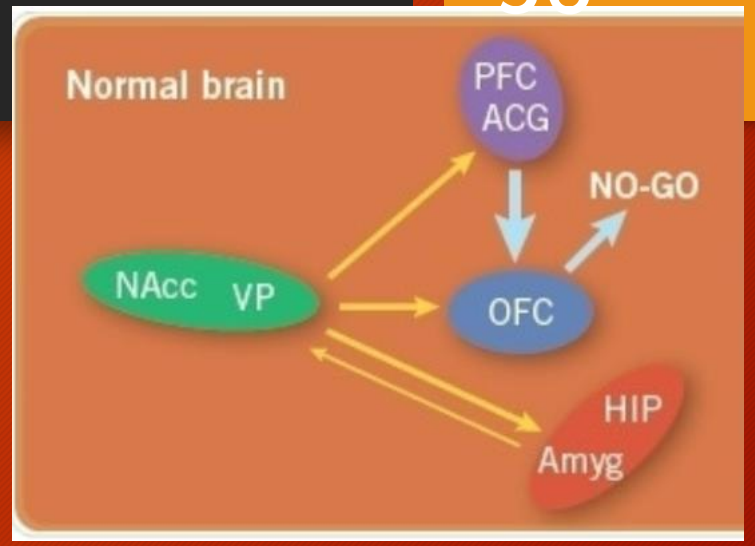
- ✓Food
- ✓Water
- ✓Dopamine

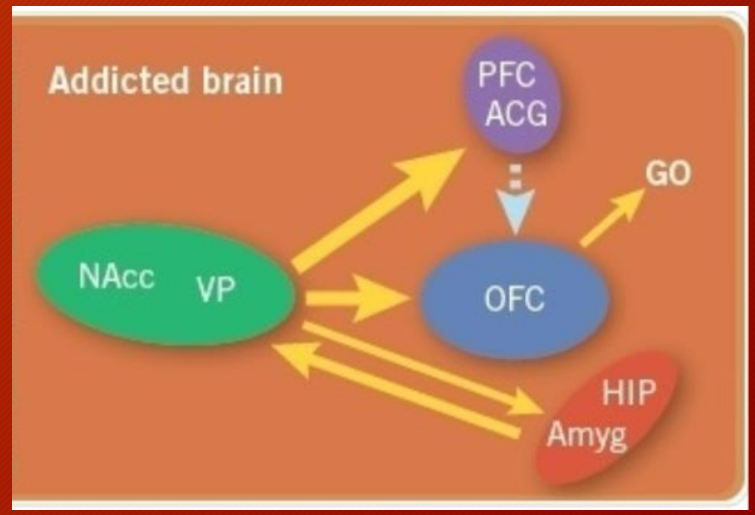


https://www.ncbi.nlm.nih.gov/books/NBK424849/figure/ch2.f12/

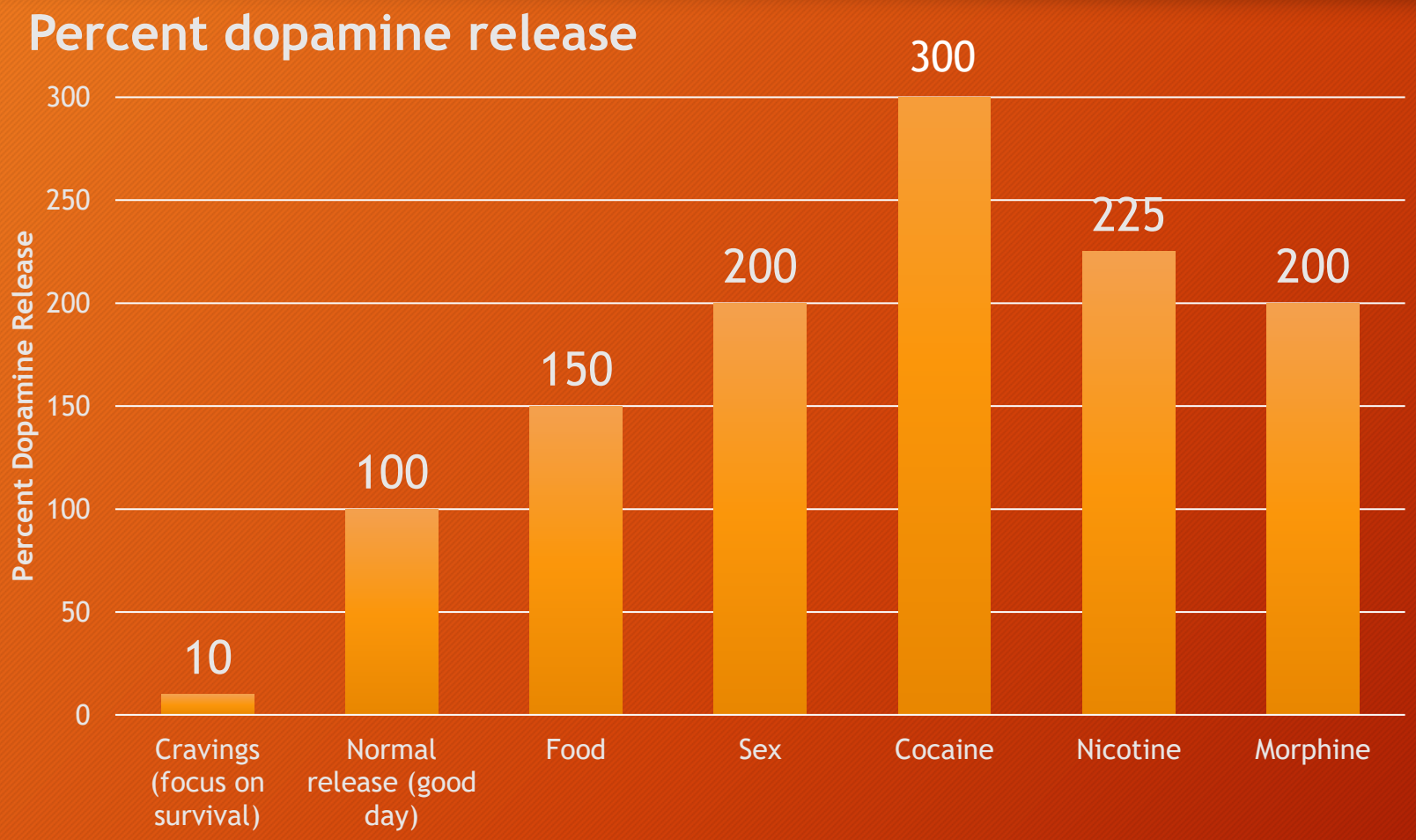
Addiction pathways (reward, cognition, motivation, and learning)

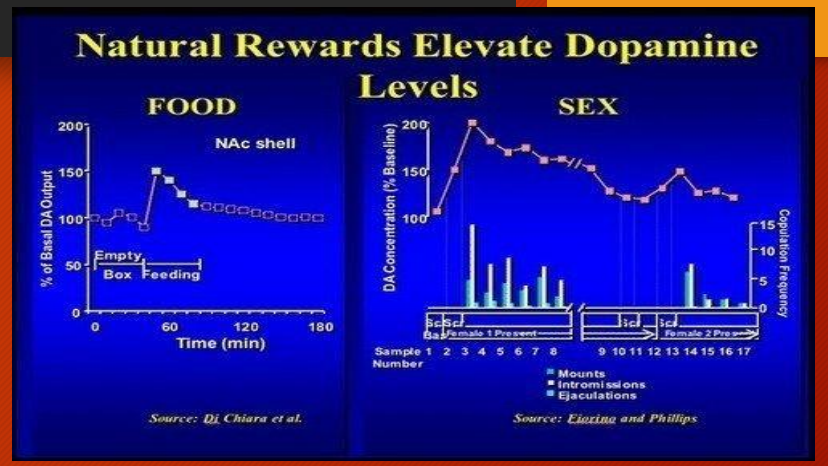


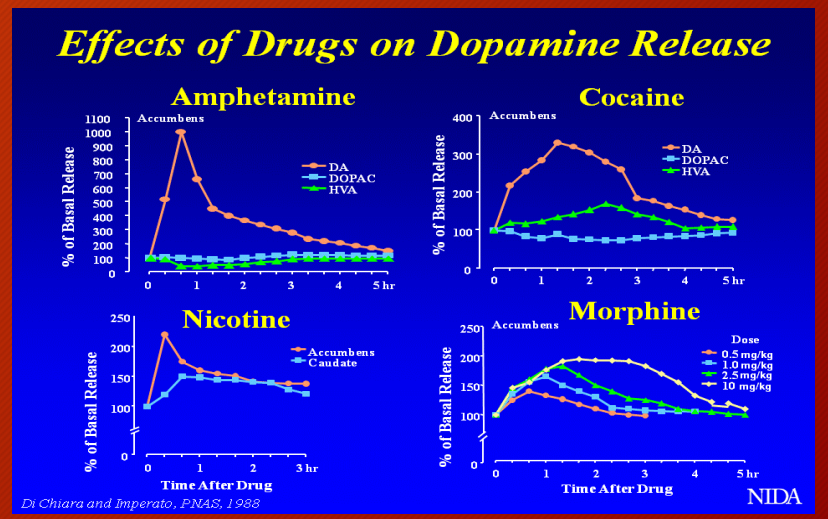




Drugs release synaptic dopamine in concentrations that are 2-10x that of natural rewards







Blum et al., J Genet Syndr Gene Ther 2012

Alternations in dopamine system function occur, particularly with co-morbid stimulant use disorder

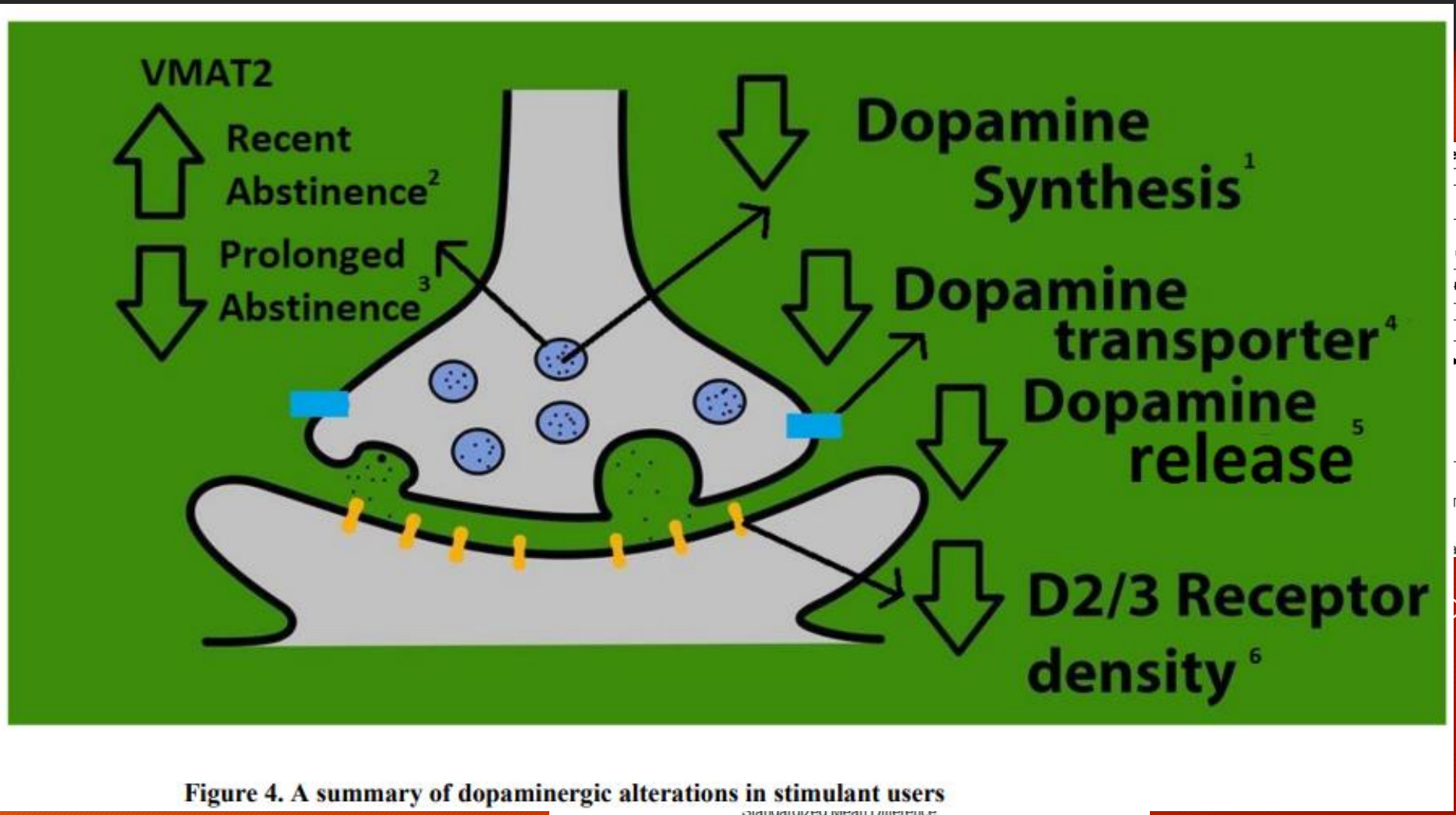


Figure 4. A summary of dopaminergic alterations in stimulant users

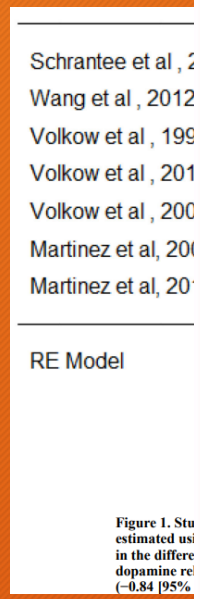


Figure 1. Stu
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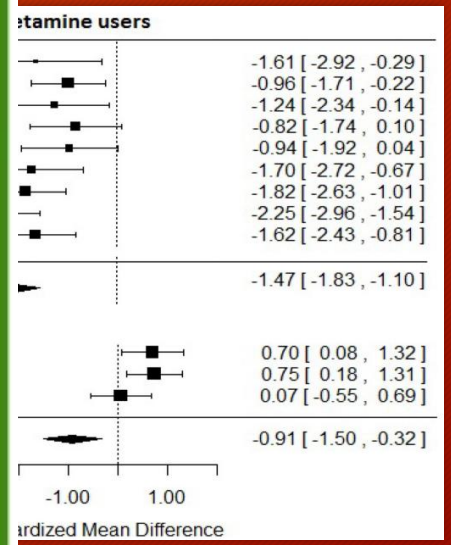
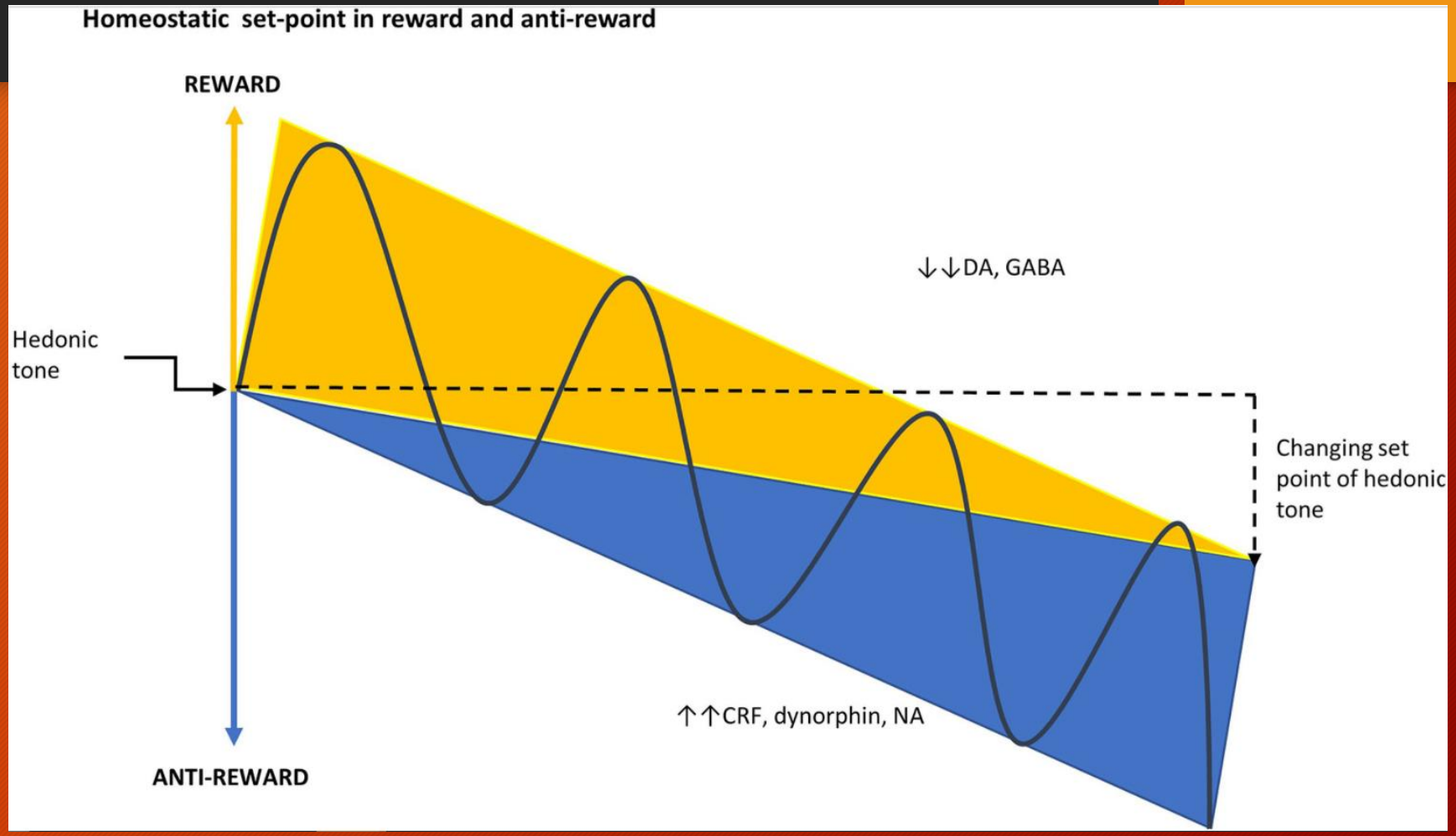


d DAT availability

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5419581/pdf/emss-71340.pdf

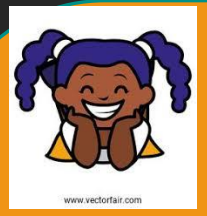
Homeostatic set point of hedonic tone: reward and anti-reward

- Set-point of hedonic tone is determined by the balance between the opposing reward and anti-reward pathways
- As addiction develops, there is a change in hedonic tone as deviation of set-point occurs when the reward system is down-regulated and the anti-reward system becomes dominant



https://www.frontiersin.org/articles/10.3389/fpsyt.2019.00592/full

Evolving from feeling euphoria to self-treating dysphoria -> hypodopaminergic state



Euphoria

Typical/normal

Dysphora & distress

Focus on survival

Dopamine Seeking Behaviors

- Hypodopaminergic state leads to dopamine seeking behavior at all costs
- This patient is in survival mode!
- Let's all hold our breath for a minute.
- After 45s or so, what would you do for more oxygen (actually to expel carbon dioxide)?
- Are you in survival mode seeking new air at all costs?
- What might help someone in this hypodopaminergic state?

“The opposite of addiction is connection”

“My customers became the community I was seeking.”

“People were caring for me and told me I belonged, which was exactly what I needed.”

Transcribed by SD Nichols. Maine Opioid Summit 2022. Bruce, a PILTR who had previously been arrested for trafficking substances.

Time to stand up and stretch!

Obj 5: Recall the impact of stigma on patients and the general public

Which describes one of the most important impacts of stigma?

a. Causes need to increase medication dose
b. Drives increased motivation to seek help
c. Causes disengagement in both community and medical care
d. Provides an opening for the person to engage in medical care

Sara and Randy share stigma stories

The biggest killer out there is stigma. Stigma keeps people in the shadows. Stigma keeps people from coming forward and asking for help. Stigma keeps families from admitting that there is a problem.

JEROME ADAMS, U.S. SURGEON GENERAL

Types of stigma (shatterproof.org)

75

Percent of the public who do not believe that a person with a SUD is experiencing a chronic medical illness such as diabetes, arthritis, or heart disease.

Published October 2021

https://www.shatterproof.org/sites/default/files/2021-10/Shatterproof%20Addiction%20Stigma%20Index%202021%20Report.pdf

Stigma worsens treatment outcomes

- SUDs are among the most stigmatized conditions worldwide
- Patients are treated differently by healthcare providers when they have a SUD
  - Lower expectations for positive health outcomes and reduced hope
  - Resentment, frustration, countertransference, and provider burnout can result
- Stigma worsens treatment outcomes
  - Less likely to accept and engage in treatment; reduced motivation
  - More likely to drop out of treatment programs; reduced treatment adherence
- Caregivers' attitudes are important in driving patient outcomes

1. Substance Abuse and Mental Health Services. Center for Prevention of Application Technologies. Words Matter. November 2017.
2. Avery, J et al. HSS J. 2019 Feb;15(1):31-36. doi: 10.1007/s11420-018-9643-3. Epub 2018 Nov 1.

Impact of race-based medical discrimination on SUD healthcare outcomes

- Relative to White peers, Black patients with substance use disorders:
  - experience delays in care access
  - are less often offered evidence-based addiction treatment
  - are less likely to complete or remain in treatment when enrolled
  - may experience poorer post-treatment outcomes
  - are more likely to suffer fatal overdose

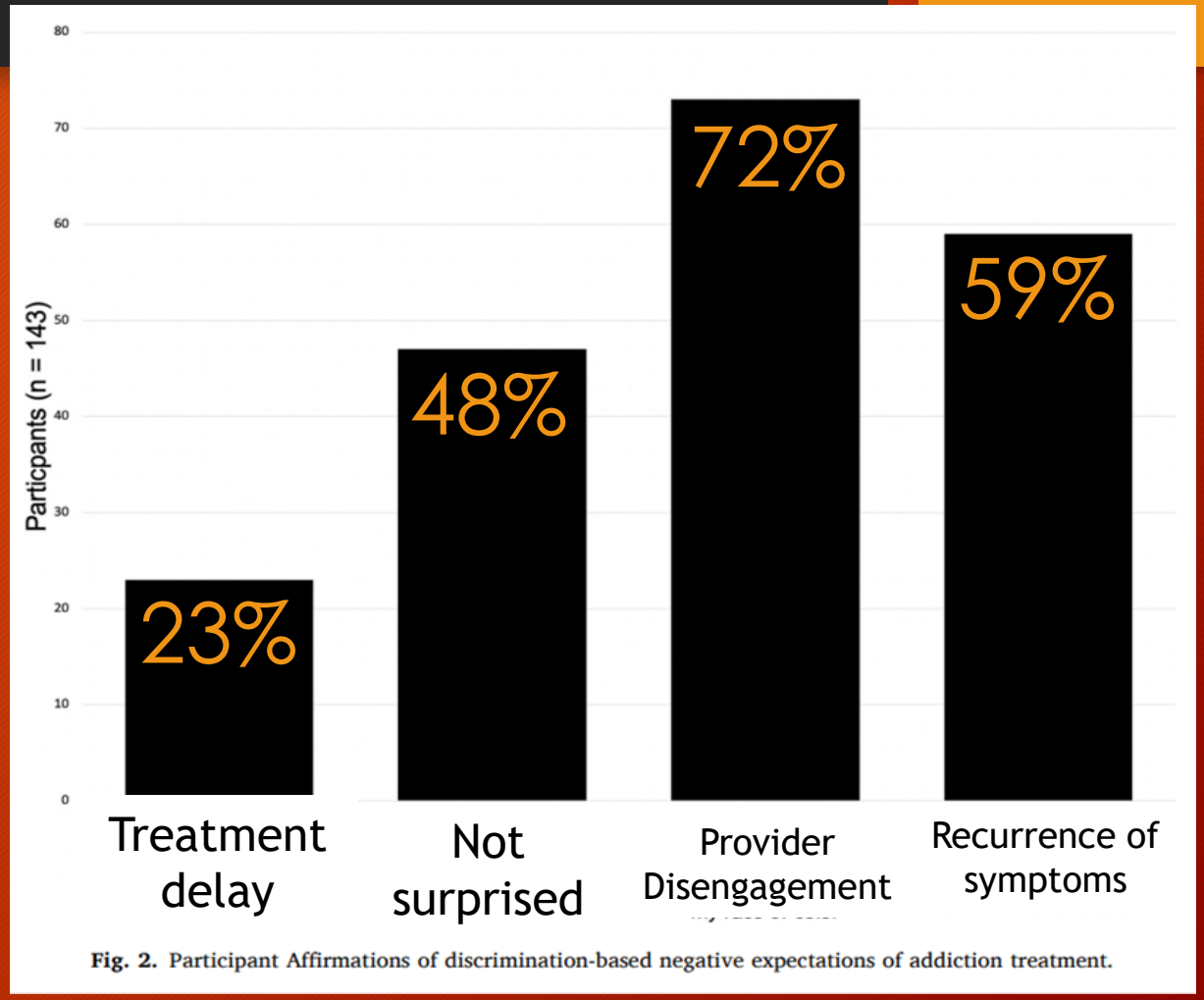


Fig. 2. Participant Affirmations of discrimination-based negative expectations of addiction treatment.

Hall et al. Journal of Substance Abuse Treatment 133 (2022)

Resources related to stigma

Addiction Medicine Primer (cdc.gov)

Title	Synopsis	Link
Office of National Drug Control Policy: Changing the Language of Addiction	In 2016, the Obama Administration provided a succinct overview of then-current attitudes and understandings of addiction that may still be relevant. It includes examples of stigmatizing language and suggested alternative language.	DRAFT: Changing the Language of Addiction | The White House (archives.gov)
Words Matter – Terms to Use and Avoid When Talking About Addiction	A National Institute on Drug Abuse (NIDA) webpage on the origin of stigma around substance use disorders, how it affects people, and the importance of using non-stigmatizing language and behaviors.	Words Matter - Terms to Use and Avoid When Talking About Addiction | National Institute on Drug Abuse (NIDA) (nih.gov)
Language, Substance Use Disorders, and Policy: The Need to Reach Consensus on an "Addiction-ary"	Abstract for a "perspectives" article by Kelly, Saitz, and Wakeman and published in a 2016 issue of the journal *Alcoholism Treatment Quarterly*. The authors detail the concepts, evidence, and conclusions underlying their argument that an updated vocabulary for discussing addiction is necessary.	https://idhdp.com/media/530474/language-substance-use-disorders-and-policy-the-need-to-reach-consensus-on-an-addiction-ary.pdf
Breaking Through the Wall of Stigma	NIDA "Research Spotlight" describing a variety of efforts aimed at preventing stigma from remaining a barrier to treatment for individuals and families. Features links to several video interviews.	Breaking Through the Wall of Stigma | NIH HEAL Initiative
Ending the Stigma of Addiction	The Shatterproof webpage shares information on learning what stigma is, how stigma affects the opioid epidemic, and guidance on how reducing stigma through language choices. A PDF of the Addiction Language Guide is available.	Ending addiction stigma (shatterproof.org)

LO #6: Identify non-stigmatizing words and phrases that can be used to engage patients and build trust

A patient presents to your pharmacy with post hospital discharge scripts. He tells you he was admitted for infective complications of intravenous fentanyl use. You would like to offer him a naloxone prescription. Which conversational prompt is non-stigmatizing?

a. “As an opioid addict, you are at high risk of opioid overdose and I can prescribe you take home naloxone as a harm reduction measure.”

b. “As an opioid addict, you are at high risk of opioid overdose and I can prescribe you take home naloxone as a crutch until you can quit.”

c. “As a person with an opioid use disorder, you are at high risk of opioid overdose and I can prescribe you take home naloxone as a harm reduction measure.”

d. “As a person with an opioid use disorder, you are at high risk of opioid overdose and I can prescribe you take home naloxone as a crutch until you quit.”

Quotes from people in long term recovery: *impact of stigma*

"Hearing 'you already had your one chance' is hard. Recovery after the first try is very uncommon; look at smoking, which requires 13-33 times."

"The idea of 'once a junkie, always a junkie' is devastating."

What are these?

"Words are important. If you care for something you call it a flower; If you want to kill it, you call it a weed."

Substance Abuse and Mental Health Services. Center for Prevention of Application Technologies. Words Matter. November 2017.

Adverse childhood experiences

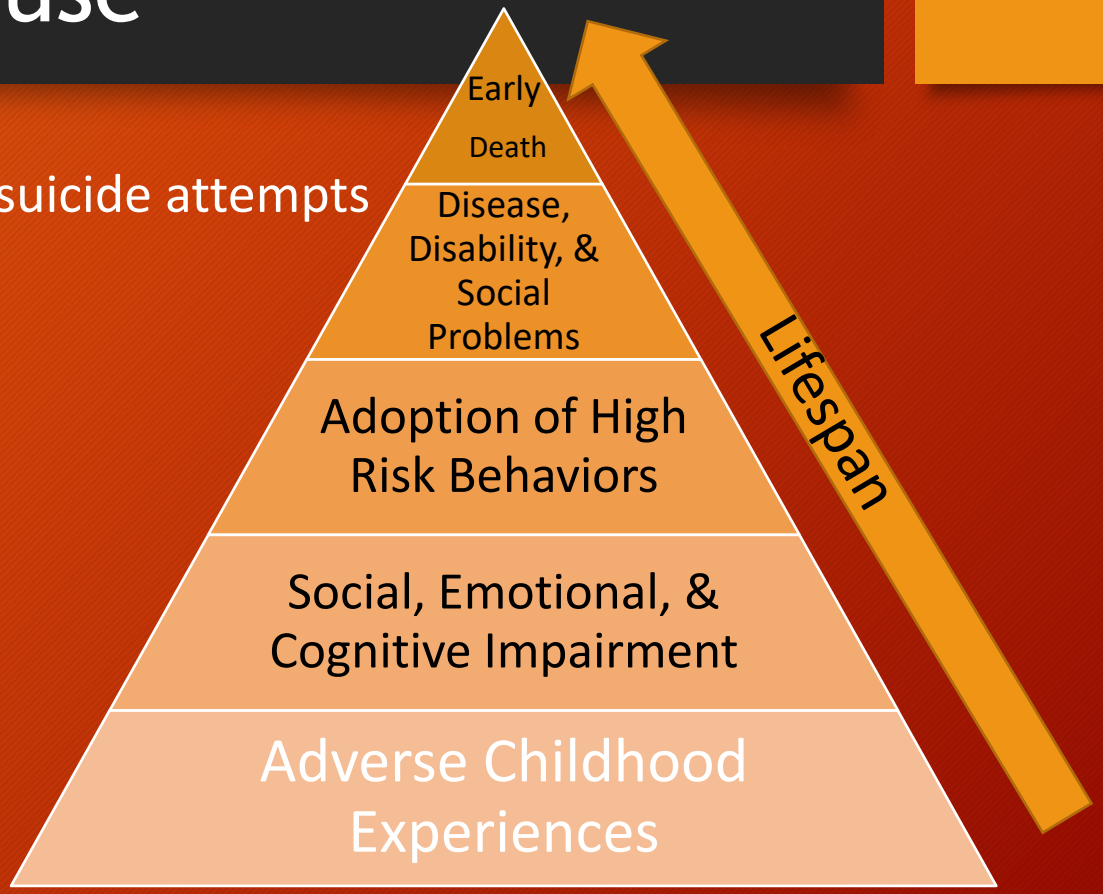
- Psychological, physical, or sexual abuse
- Household substance misuse, mental illness, or criminal behavior
- Mother treated violently

Adapted from Felitti, Am J Prev Med. 1998;14(4): 245–258.

Adverse childhood experiences are highly correlated with substance use

Also correlates with smoking, obesity, depression, suicide attempts

Odds Ratio Determined by # ACEs	1	2	3	4+
Self identifying as an "alcoholic"	2.0	4.0	4.9	7.4
Using illicit drugs	1.7	2.9	3.6	4.7
Injecting drugs	NS	3.8	7.1	10.3
Current smoking	NS	1.5	2.0	2.2



Adapted from Felitti, Am J Prev Med. 1998;14(4): 245–258.

Shout out: what you have heard in your practice?

- What language have you heard in healthcare setting about treatment of patients with SUDs?
  - With pain?
  - Anxious about a buprenorphine refill?
  - In the ED?
  - Post overdose?
  - Purchasing syringes?
  - With endocarditis and other infections?

Stigmatizing Terminology and Alternatives:

Stigmatizing	Preferred	Rationale
Substance or opioid abuse		
Addict or substance/opioid abuser		
Relapse		
Clean/Dirty Urine		
IV Drug User		
Against medical advice		
Crazy, insane, psycho		

Substance Abuse and Mental Health Services. Center for Prevention of Application Technologies. Words Matter. November 2017.

Language Alternatives that are Non-Stigmatizing

TABLE 1. Recommendations for Nonstigmatizing, More Clinically Accurate Language

Avoid	Prefer
Abuse[1–5]	Use (or specify low-risk or unhealthy use; the latter includes at-risk/hazardous use, harmful use, substance use disorder, and addiction)
Addicted baby	Baby experiencing substance withdrawal
Addict, user, abuser, alcoholic, crack head, pot head, dope fiend, junkie	Person with (the disease of) addiction, a substance use disorder, or gambling disorder
Dirty vs clean urine[24]	Positive or negative, detected or not detected
Drunk, smashed, bombed, messed up, strung out	Intoxicated
Meth	Methamphetamine, methadone, methylphenidate
Medical marijuana	Consider using instead "cannabis as medicine"*
Misuse, problem†	More accurate terms include at-risk or risky use, hazardous use, unhealthy use to describe the spectrum from risky/at-risk/hazardous use through disorder
Inappropriate use	More accurate terms should specify what is meant
Fix	Dose, use
Binge‡	Heavy drinking episode
Relapse[§,30]	Use, return to use, recurrence (of symptoms) or disorder vs remission specifiers (early or sustained) as defined by DSM-5
Substitution, replacement, medication assisted treatment	Opioid agonist treatment, medication treatment, psychosocially assisted pharmacologic treatment, treatment
Smoking cessation‖	Tobacco use disorder treatment, reduction or cessation of tobacco use[32]
Moderate drinking (or drug use)	Low- or lower-risk use
Detoxification	Withdrawal management, withdrawal

Saitz R, Miller SC, Fiellin DA, Rosenthal RN. Recommended Use of Terminology in Addiction Medicine. J Addict Med. 2021;15(1):3-7. doi:10.1097/ADM.0000000000000673

LO #7: Outline steps that can be taken today to reduce stigma in your pharmacy or health-system

Which is/are low cost steps that you can take today to reduce stigma?

a. Use person first language and avoid the term “abuse” when referring to substances

b. Treat people with OUD the same as people with other chronic diseases

c. Offer universal take home naloxone to all people with opioid prescriptions

d. All of these

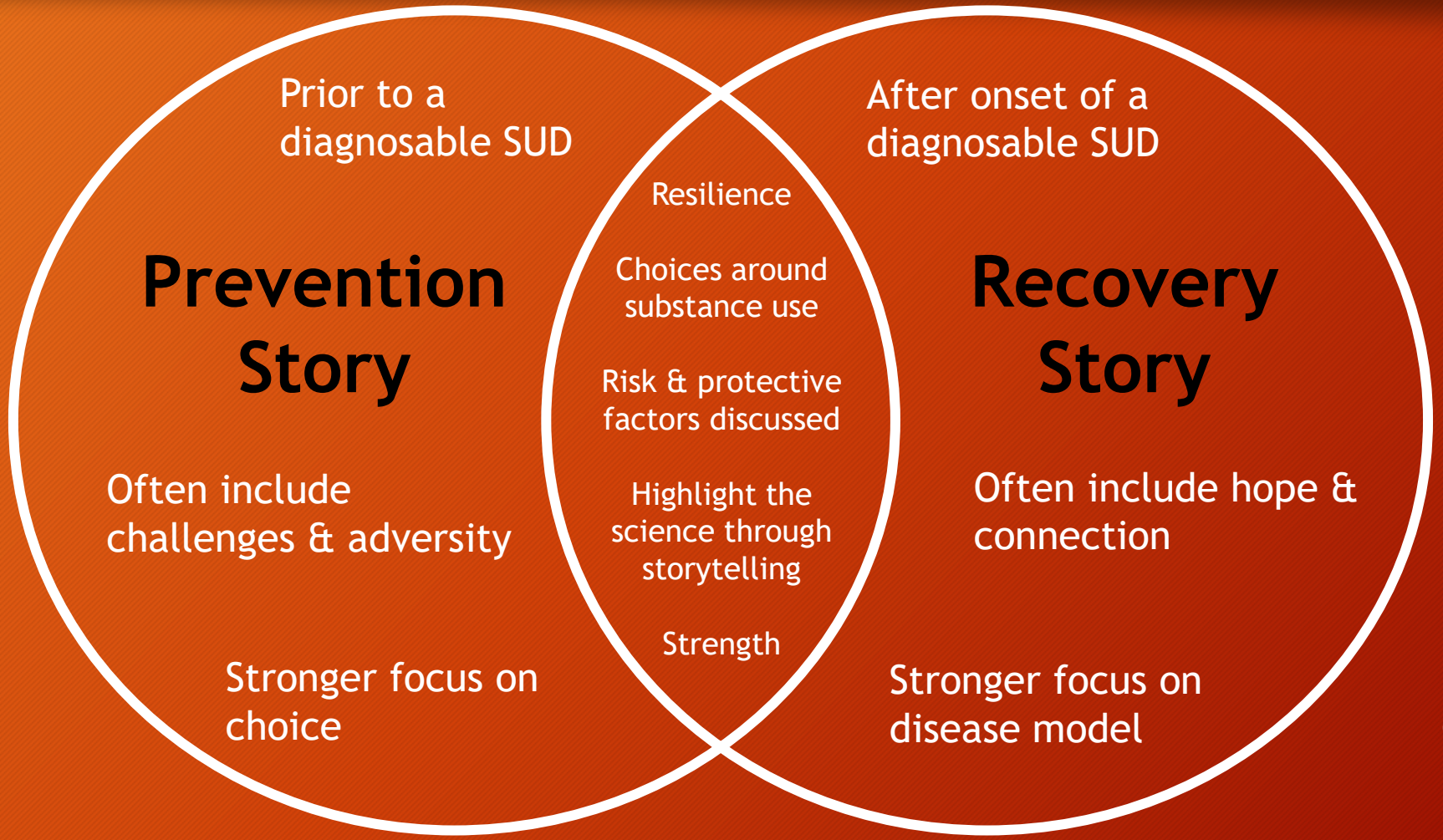
Evidence-Based Strategies for Preventing Opioid Overdose

1. Targeted Naloxone Distribution
2. Medication for Opioid Use Disorder (MOUD)
3. Academic Detailing
4. Eliminating Prior-Authorization Requirements for MOUD
5. Screening for Fentanyl in Routine Clinical Toxicology Testing
6. 911 Good Samaritan Laws
7. Naloxone in Treatment Centers & Criminal Justice Settings
8. MOUD in Criminal Justice Settings and Upon Release
9. Buprenorphine-based MOUD in Emergency Departments
10. Syringe Services Programs

Where can pharmacy impact prevention & harm reduction?

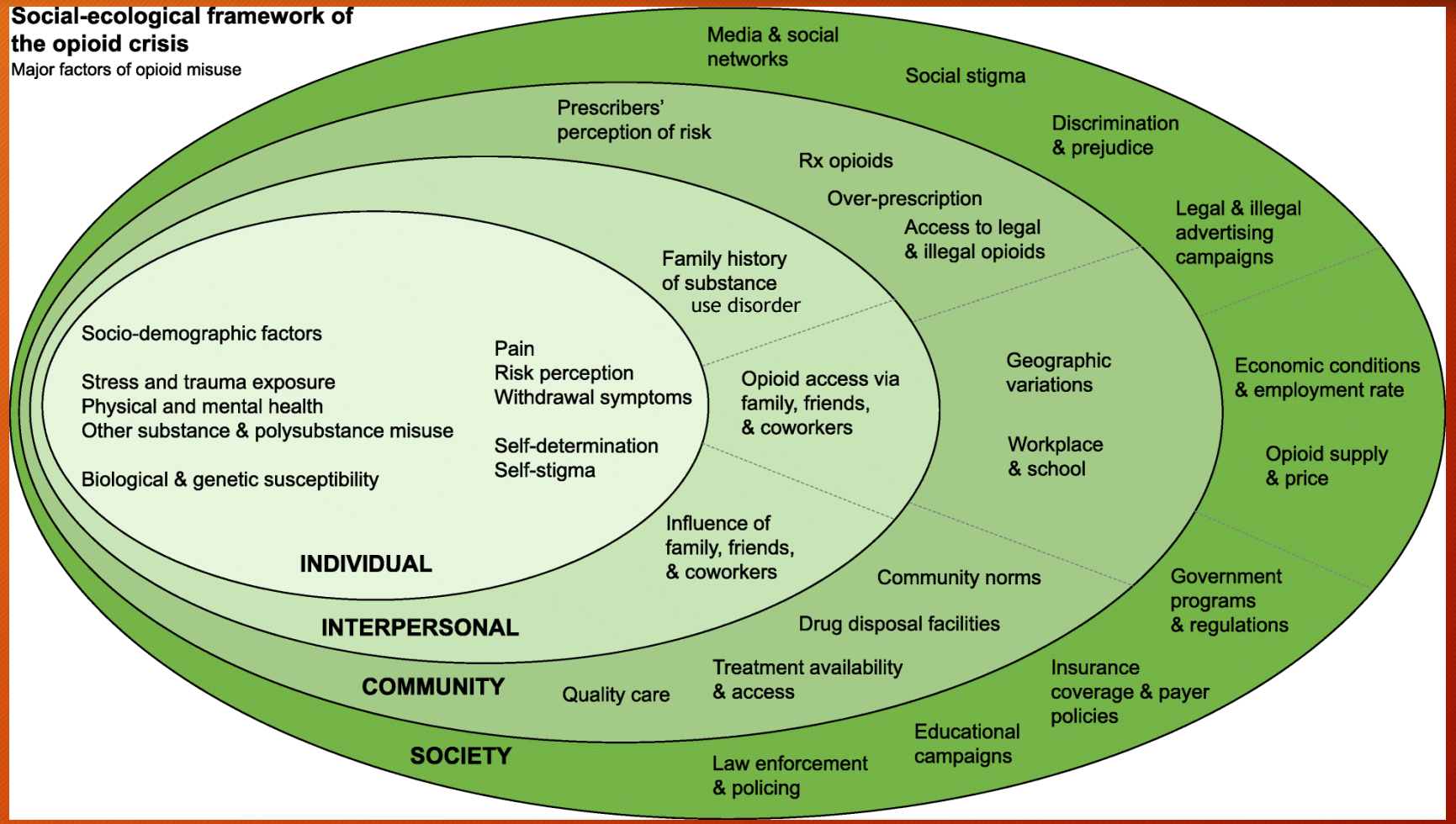
Centers for Disease Control and Prevention. Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, 2018.

Storytelling for Prevention



Going through the PACES: Stories of Substance Misuse Prevention and Resilience. New England Prevention Technology Transfer Center Network. May 2022.

Storytelling in the Social-Ecological Model

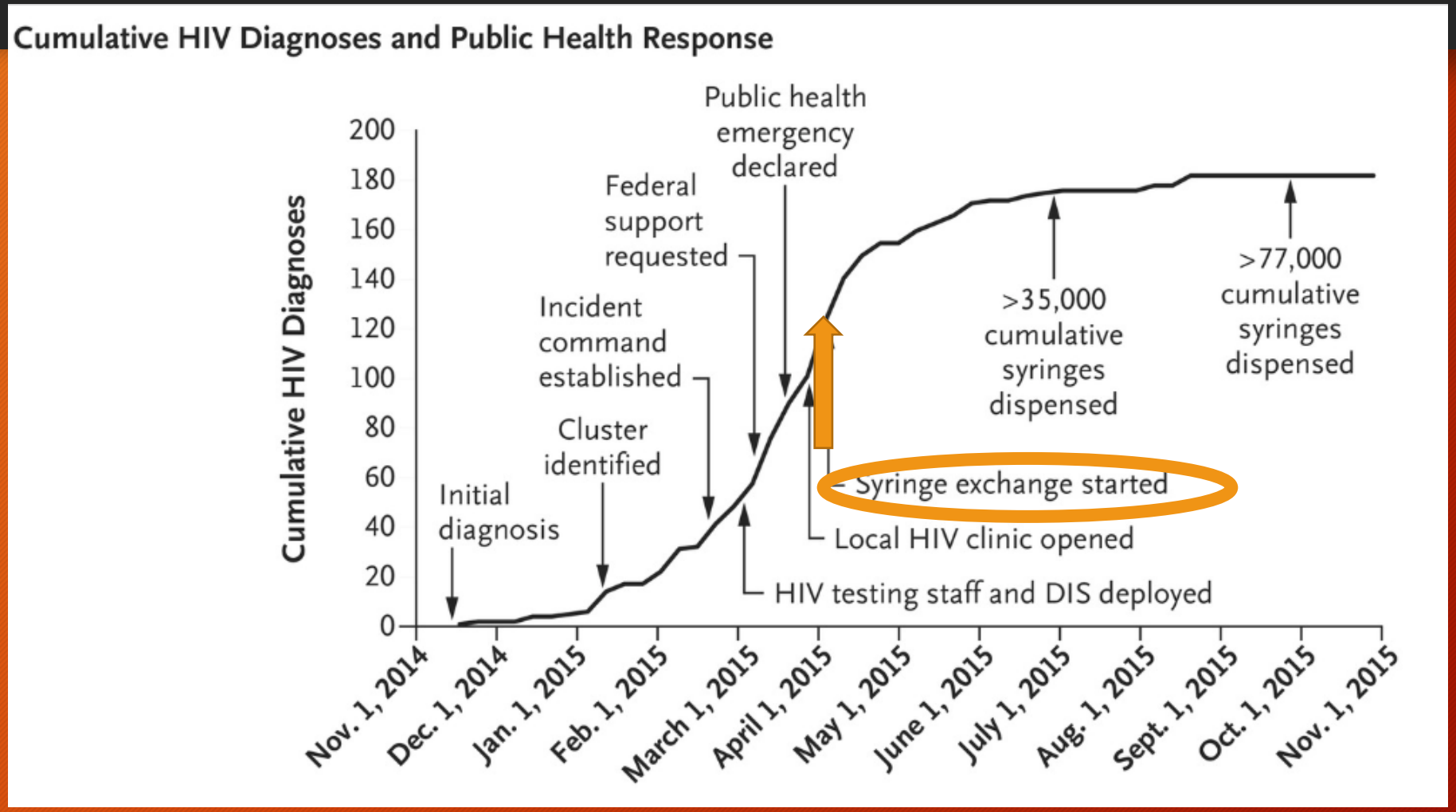


*age, race, gender, ethnicity, education, income, and unemployment factors

Image from: Jalali, M.S., Botticelli, M., Hwang, R.C. *et al.* The opioid crisis: a contextual, social-ecological framework. *Health Res Policy Sys* **18**, 87 (2020).

Concept from: Going through the PACES: Stories of Substance Misuse Prevention and Resilience. New England Prevention Technology Transfer Center Network. May 2022.

Story time!



Peters PJ, Pontones P, Hoover KW, et al. HIV Infection Linked to Injection Use of Oxymorphone in Indiana, 2014-2015. N Engl J Med 2016;375(3):229-39.

Implementing Low-Cost Opioid Overdose Prevention Strategies

- Put up posters about preventing or responding to an overdose
- Provide educational materials (brochures, fact sheets) for patients on overdose
- Develop a policy for responding to on-site (or in the parking lot) overdose
- Train everyone in the pharmacy/clinic on overdose – including risk factors, signs and symptoms, and response (including rescue breathing and naloxone)
- Discuss overdose risks with patients and screen patients for higher risk
- Ask patients if they have witnessed an overdose or survived an overdose
- Talk to patients about the availability of naloxone
- Offer referrals to places that provide MAT and/or naloxone if you do not
- Talk to patients about what to do if they are with someone who is overdosing
- Incorporate overdose prevention education in groups

Adapted from: http://harmreduction.org/wp-content/uploads/2012/11/od-manu

Five rules to avoid stigmatization on an individual basis

1. Use person first language
2. Don’t conflate substance use (including nonmedical use of prescription medications) and substance use disorders
3. Use technical terms with clear and simple language
4. Avoid using sensational or language based in fear, which can be perceived as being inauthentic
5. Avoid perpetuating drug-related moral panic, which can further marginalize rather than engage people

Substance Abuse and Mental Health Services. Center for Prevention of Application Technologies. Words Matter. November 2017.

Five Rules to "break the cycle" of stigma on a systems level

1. Perform a language audit of existing material related to SUDs/MI
2. Carefully consider shared material before re-sending to minimize perpetuating stigmatizing information
3. When delivering a message to others on prevention, carefully consider your word choices and respectfully help other allies select more appropriate options
4. Whenever developing new educational material in the area of SUDs/MH, seek input from people who have active substance use disorders or applicable mental illness or those who are in long term recovery
5. Train all staff on stigma-free word choice and approach to patients

Substance Abuse and Mental Health Services. Center for Prevention of Application Technologies. Words Matter. November 2017.

Handling macroaggressions and stigmatizing language

GRIT

- Gather
- Restate
- Inquire
- Talk it out

What is your impression of these images in just 1 – 2 words?

Let's review the responses from earlier…

Quotes from people in long term recovery: *Hope & Long Term Recovery*

"If you still have breath in your lungs, there is hope."

"Being in long term recovery, I came to believe I could live an abundant life and now I just can't dream big enough."

"I've discovered life in recovery is so much better than life with addiction."

As transcribed by SD Nichols at Maine's Opioid Summit - Augusta, Maine - July 15, 2019, and Bangor, Maine 2022.

The use of affirming language inspires hope.

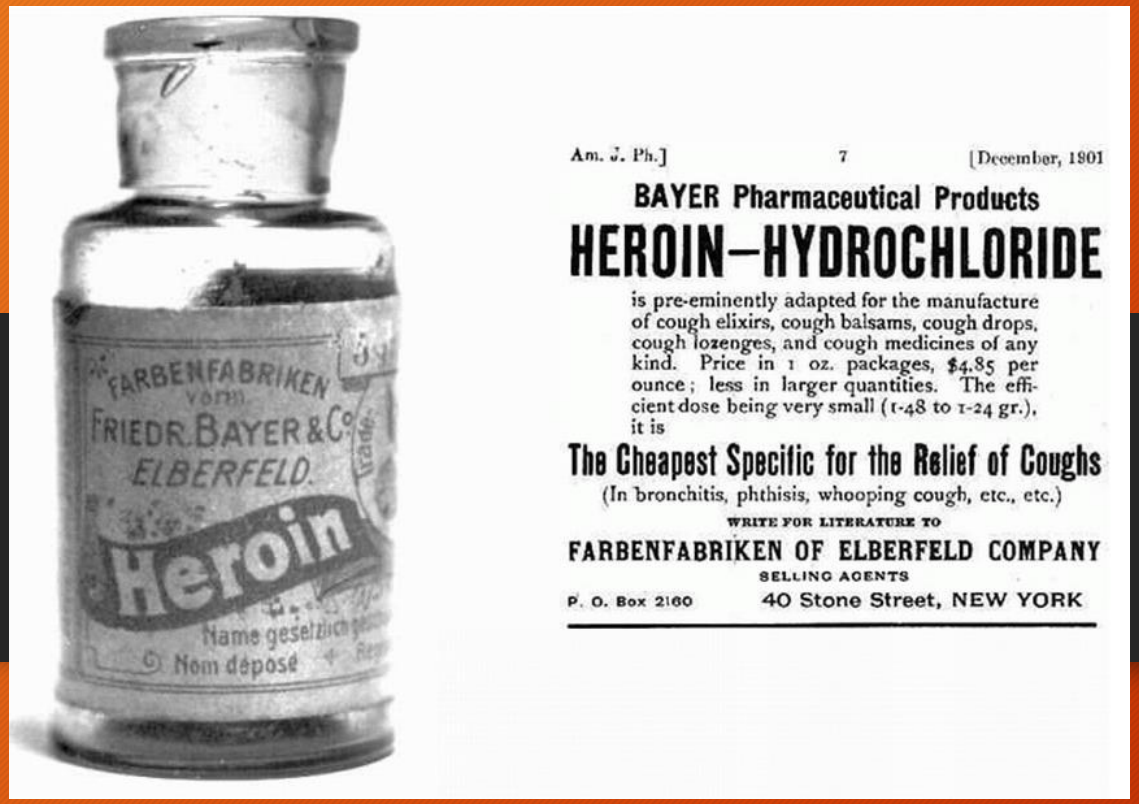
LANGUAGE MATTERS.

Words have power.

PEOPLE FIRST.

"Words are important. If you care for something you call it a flower; If you want to kill it, you call it a weed."

Thank you! Any Questions?



BAYER Pharmaceutical Products

HEROIN—HYDROCHLORIDE

is pre-eminently adapted for the manufacture of cough elixirs, cough balsams, cough drops, cough lozenges, and cough medicines of any kind. Price in 1 oz. packages, $4.85 per ounce; less in larger quantities. The efficient dose being very small (1-48 to 1-24 gr.), it is

The Cheapest Specific for the Relief of Coughs

(In bronchitis, phthisis, whooping cough, etc., etc.)

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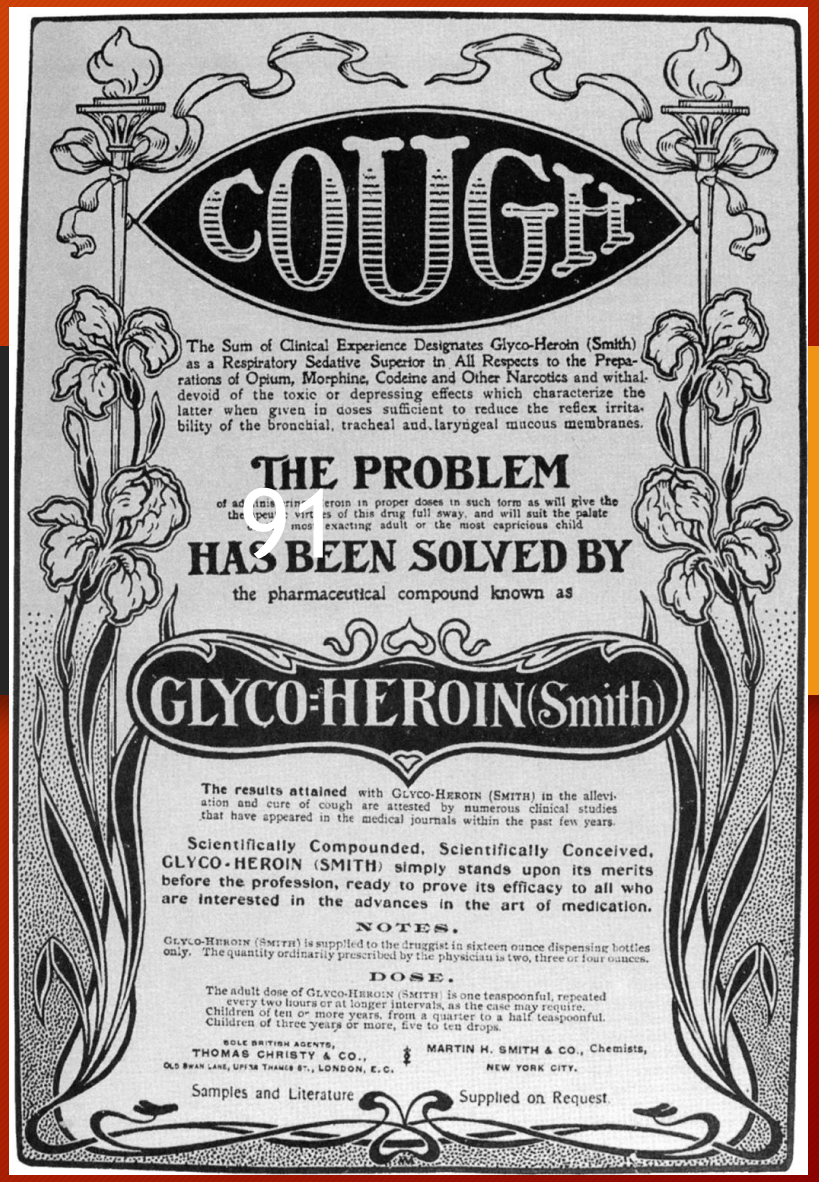

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Resources

- Speaking with friends and family about SUDs
  - https://www.youtube.com/watch?v=_3YE7JyVN-o&feature=youtu.be