



Understanding Substance Use Disorders as Chronic Medical Conditions

Seddon R. Savage MD, MS

*Advisor, Dartmouth Hitchcock Substance Use & Mental Health Initiative
Adjunct Associate Professor of Anesthesiology, Geisel School of Medicine*

Mary Brunette, MD

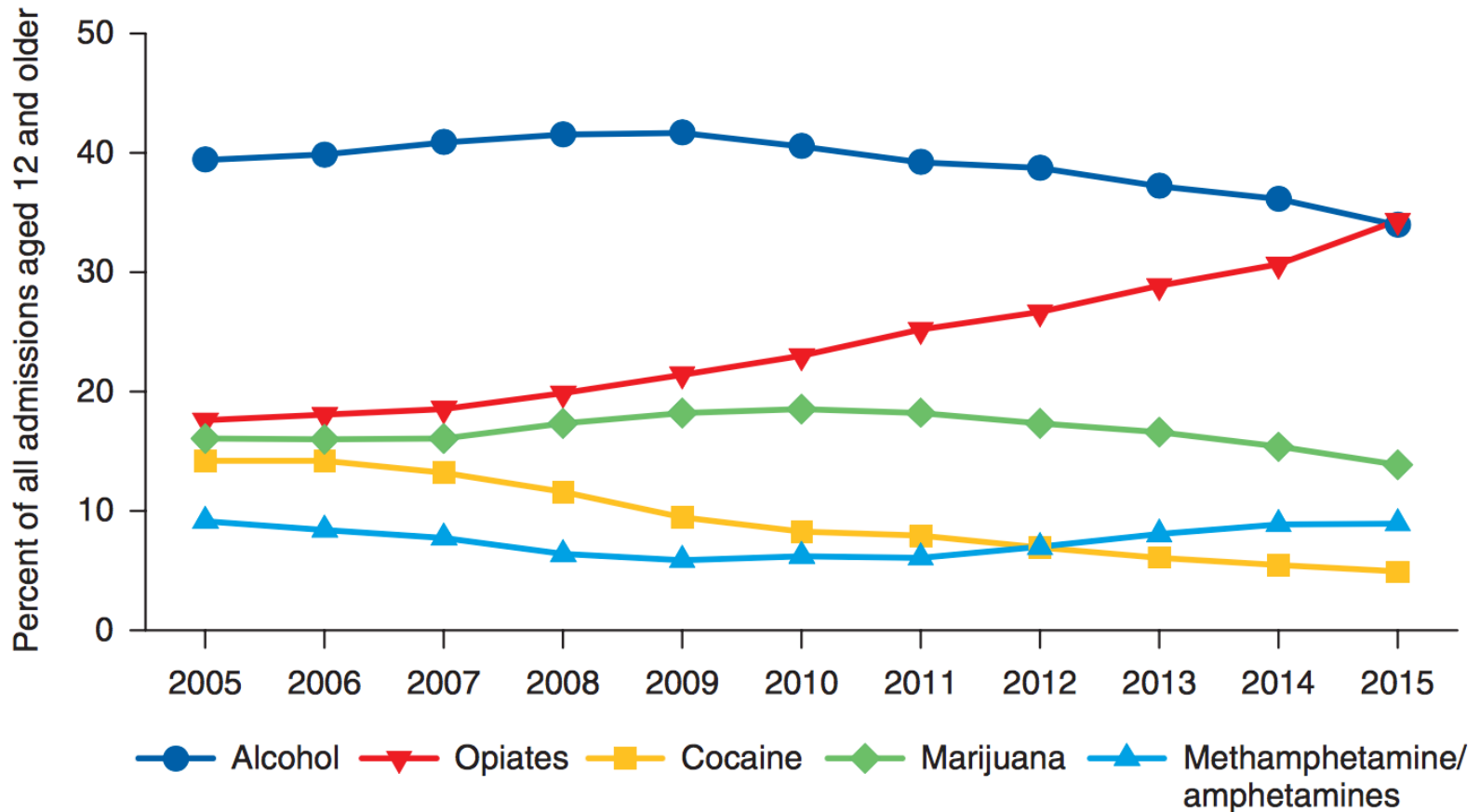
*Medical Director, Bureau of Behavioral Health, NH DHHS;
Associate Professor of Psychiatry, Geisel School of Medicine at Dartmouth*

Common SUD-Related Challenges in Healthcare Setting

- Patients distressed, moody, labile, irritable, demanding
 - In withdrawal or intoxicated
 - Using many medications for unclear purposes, street drugs
 - Health problems resulting from drug related behaviors
 - Don't follow through or adhere to recommendations
 - Persistent harmful behaviors, intoxication, withdrawal
 - Different levels of staff comfort addressing the issues
 - Variable practice patterns around prescribing
 - Difficulties cross-covering patients
 - Stigmatizing attitudes
 - Compassion fatigue
 - Resource gaps
 - Educational gaps
 - Lack of care integration
 - EMR doesn't support/prompt care
- Patient issues
 - Staff issues
 - Systems issues

U.S. Primary Drug Treatment Trends

Figure 1. Primary substance of abuse at admission: 2005-2015

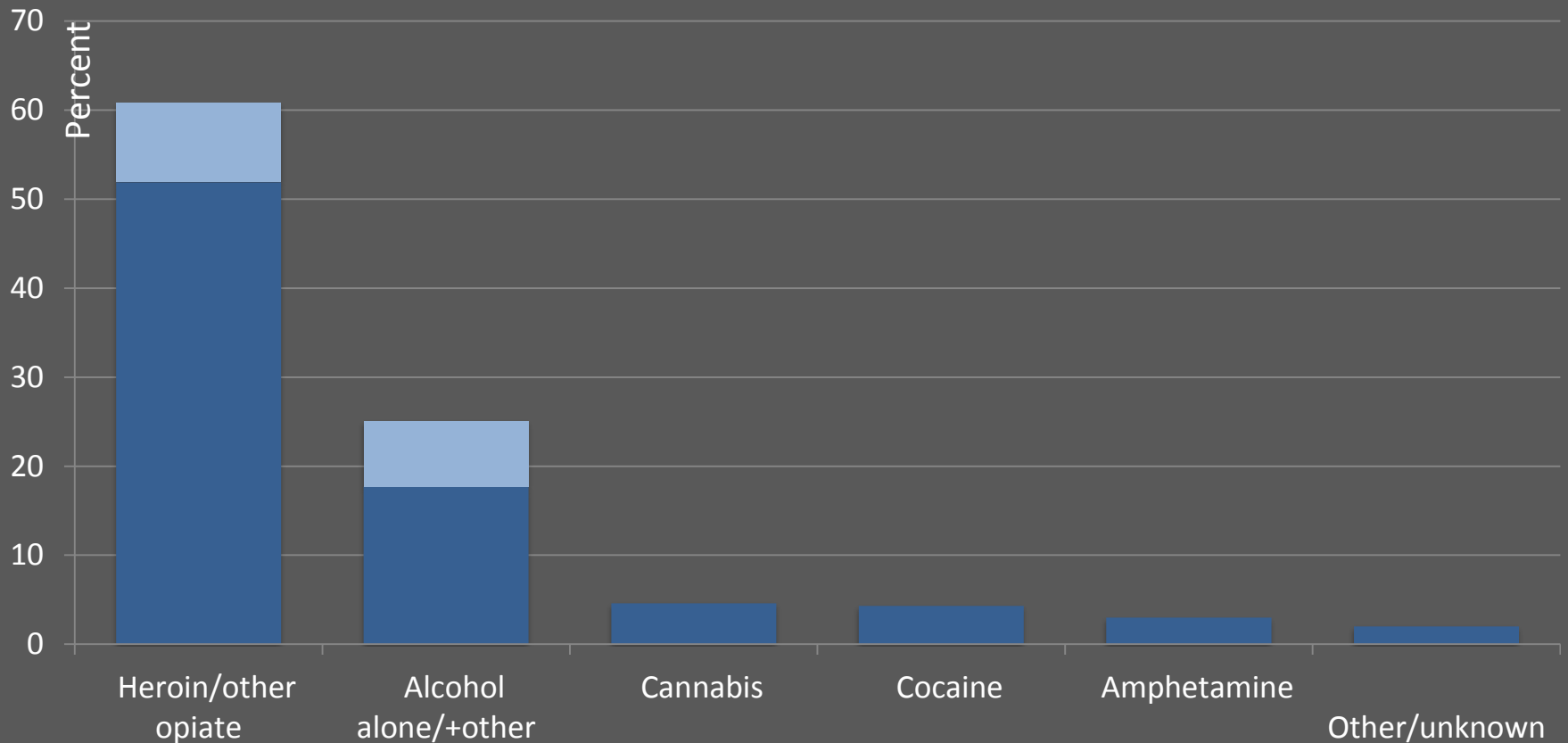


SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.01.16.

New Hampshire

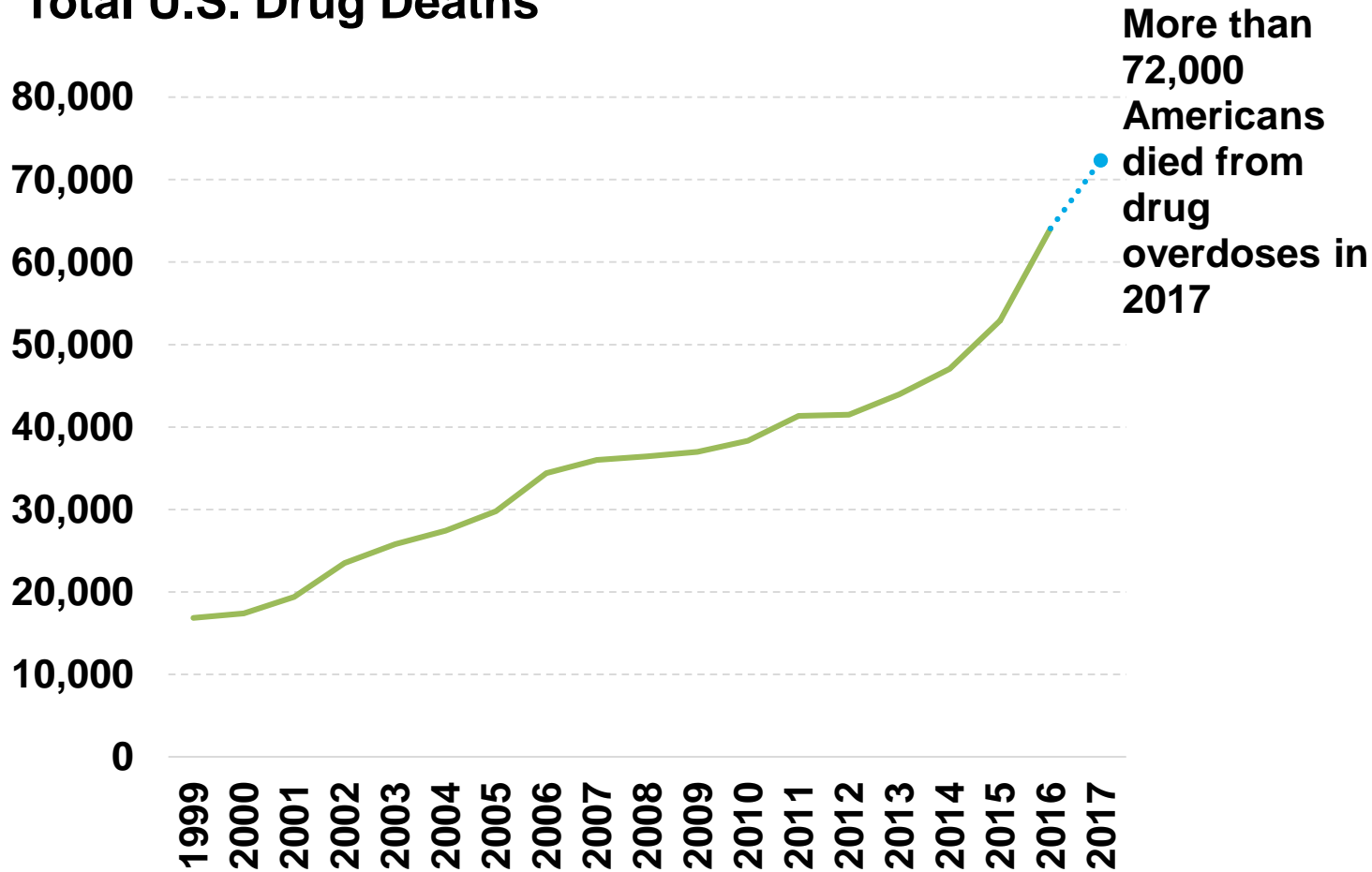
Primary Drug Treatment, 2016

(Number Treated=4564) Treatment Episode Data System (TEDS)



U.S. Drug Overdose Trends

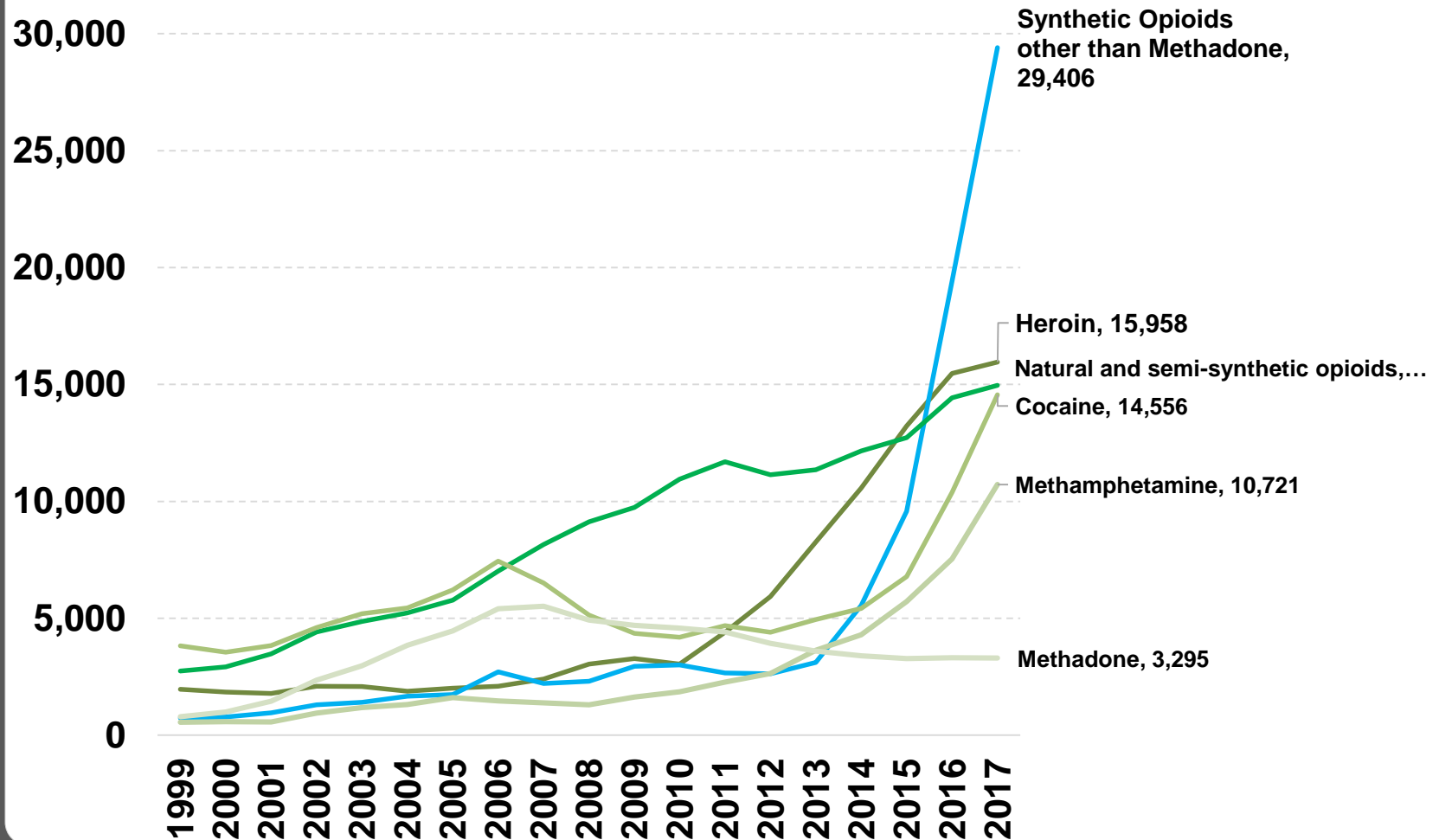
Total U.S. Drug Deaths



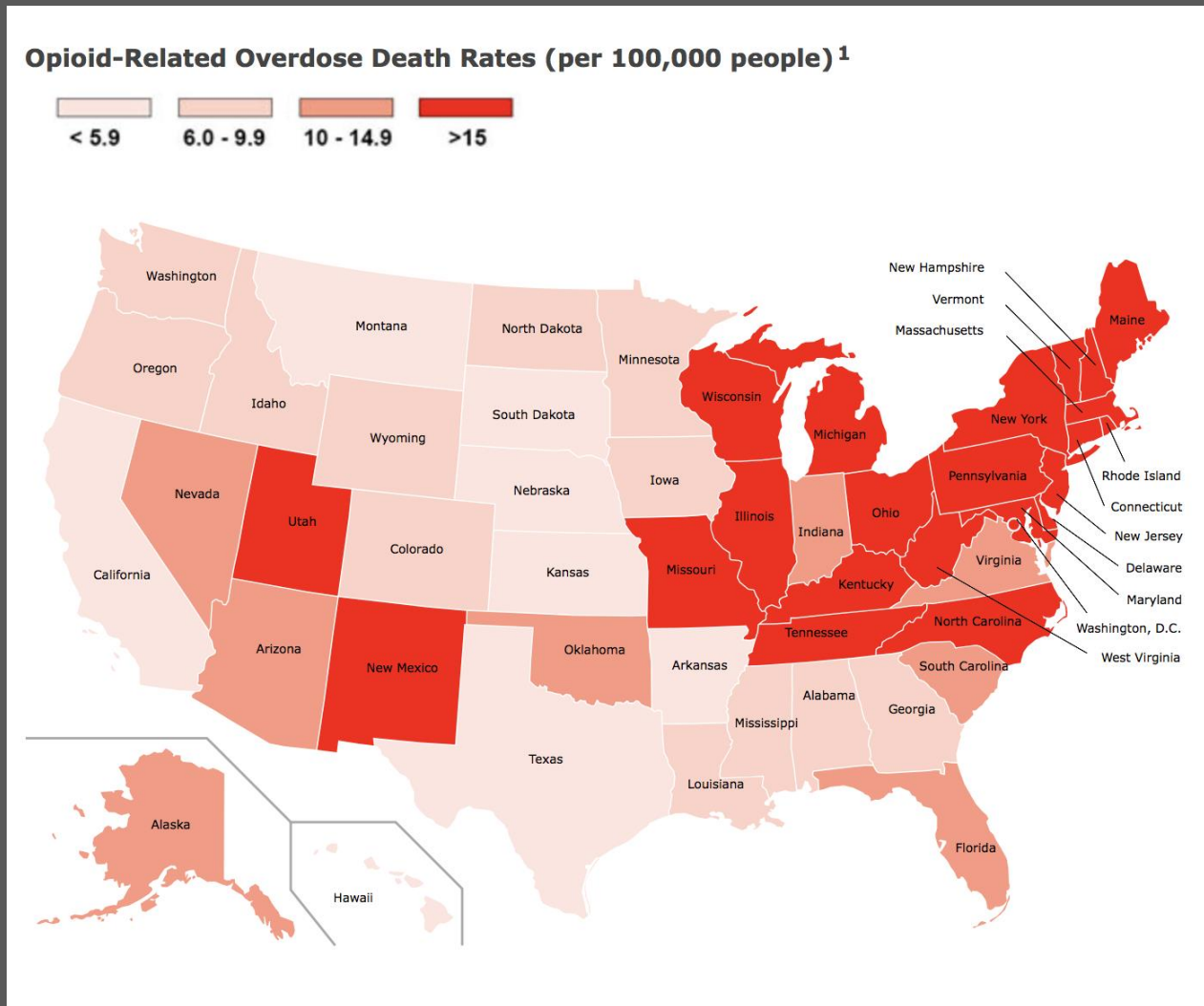
Source: CDC WONDER

U.S. Drug Overdose Trends

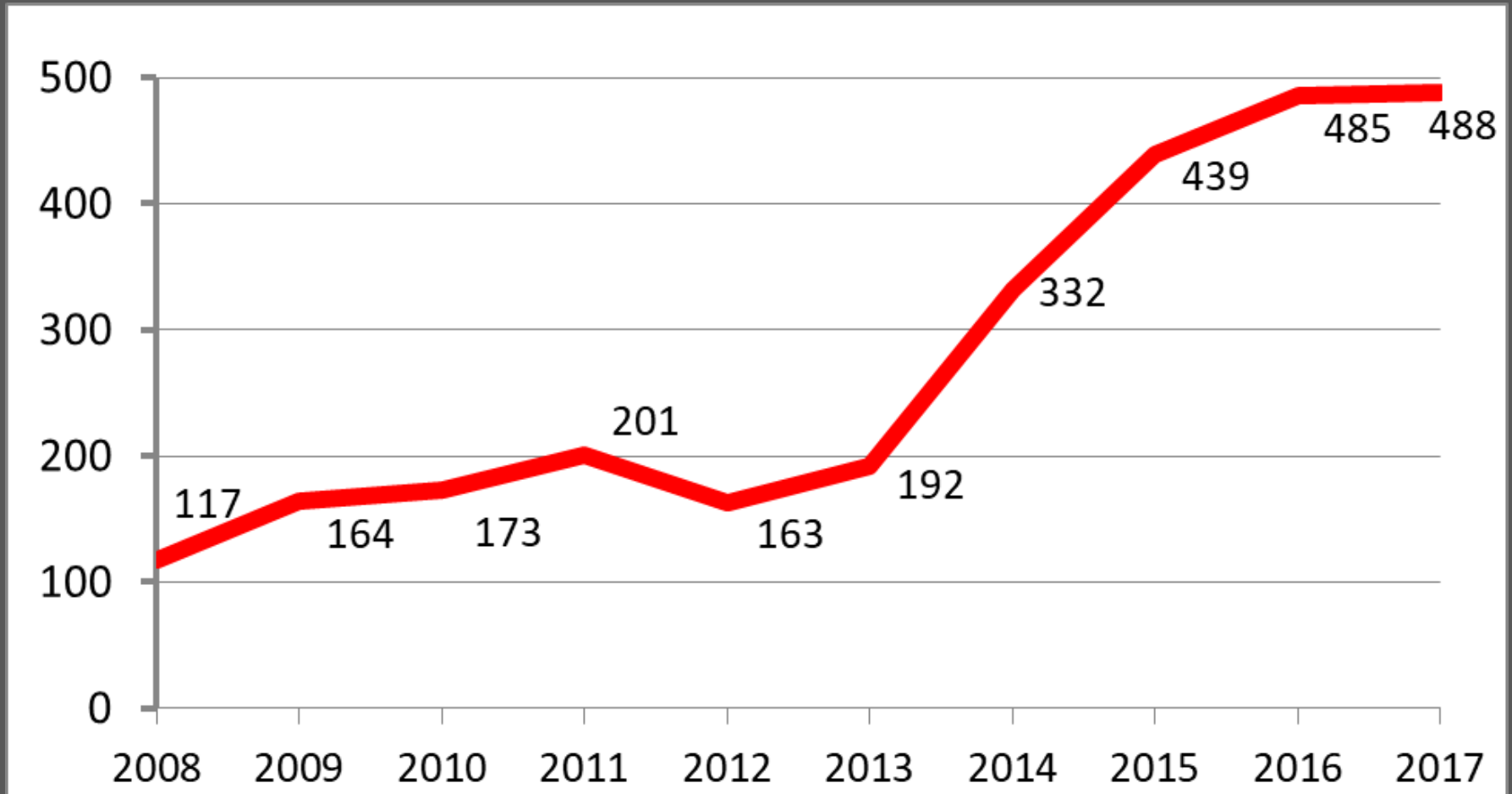
Drugs Involved in U.S. Overdose Deaths, 1999 to 2017



CDC Drug Overdose Deaths by State, 2017



NH Drug Deaths



Why should we care?



Motivators of Substance Use

- Curiosity/experimentation
- Elective use for euphoria/reward
- Symptom control
 - Mood, memories
 - Sleep
 - Pain
 - Withdrawal
- Compulsive use due to addiction
- Others



Reward

prefrontal
cortex

nucleus
accumbens

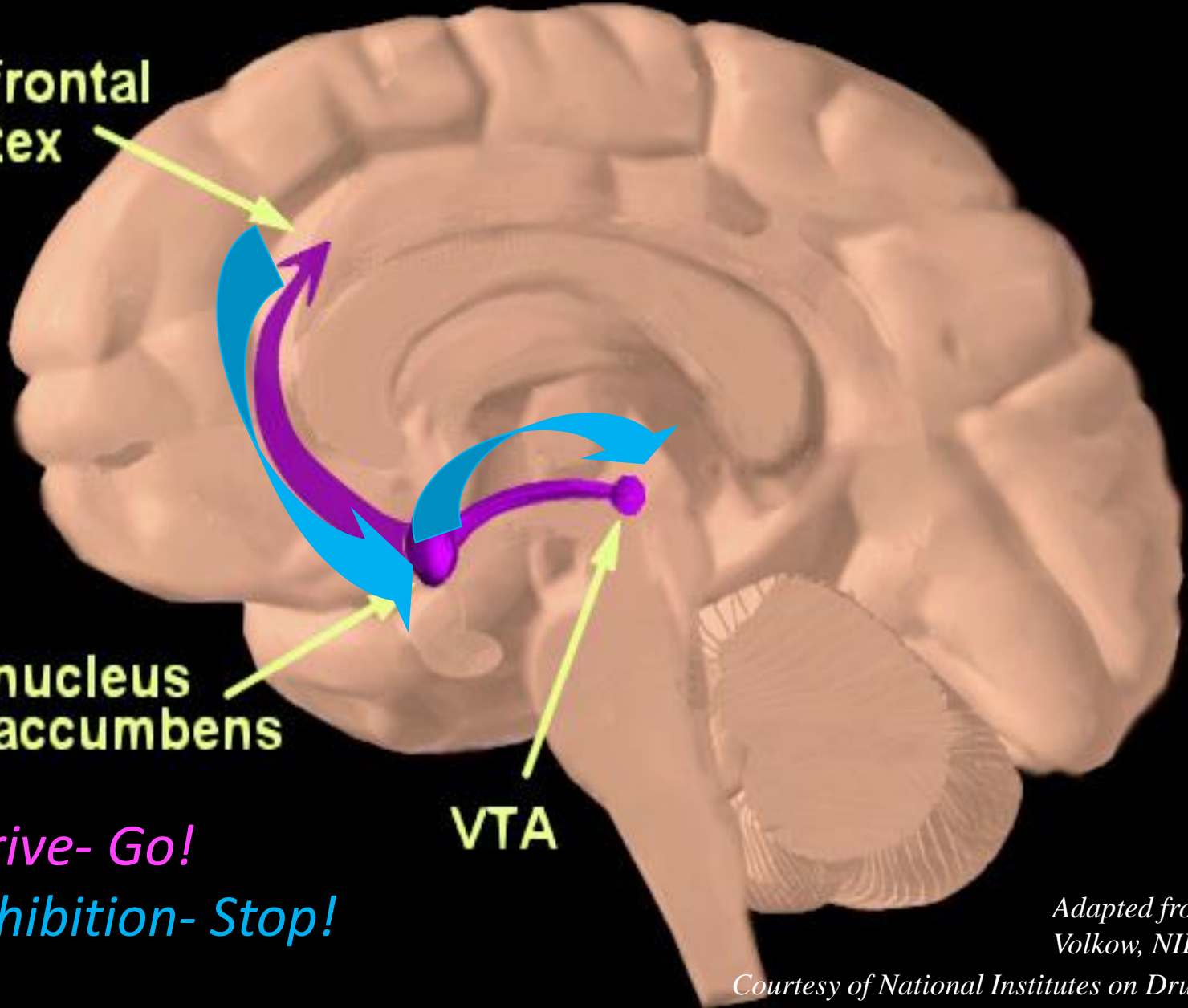
VTA

Drive- Go!

Inhibition- Stop!

*Adapted from Nora
Volkow, NIDA*

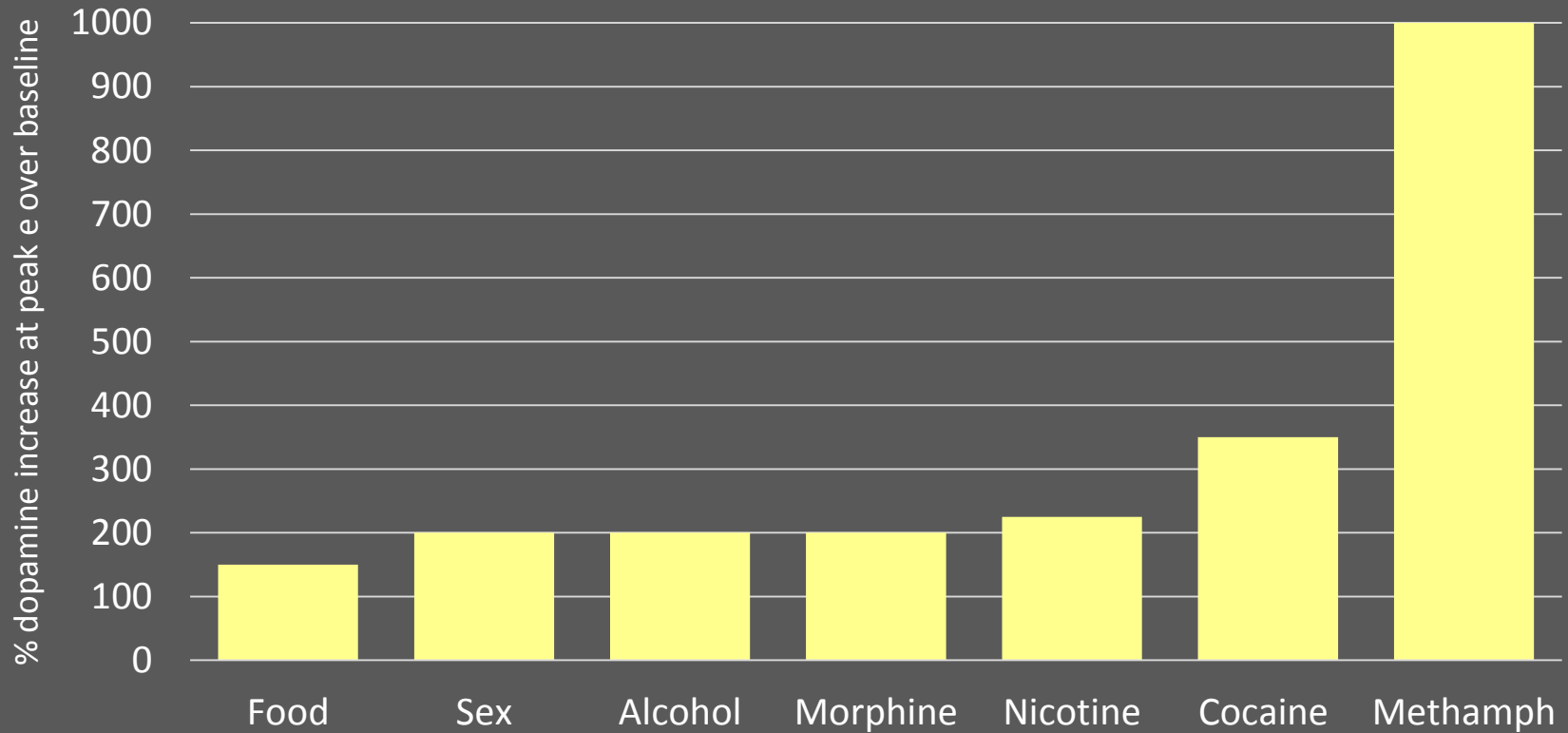
Courtesy of National Institutes on Drug Abuse



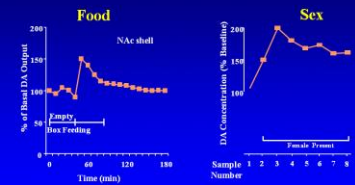
Reward (pleasure) is necessary to life

- Common natural rewards
 - Eating food & fluid intake necessary to sustain life
 - Sex/procreation necessary to sustain families and species
- Natural rewards increase dopamine in limbic reward centers causing pleasure
- Reward seeking is moderated by
 - Prefrontal cortex -executive command center- tells us to stop
 - Satiety mechanisms (telling us we are full or satisfied)
- Interplay between our reward system, prefrontal cortex and satiety systems help maintains healthy balance
 - *Dysregulation can lead to constant hunger or yearning*

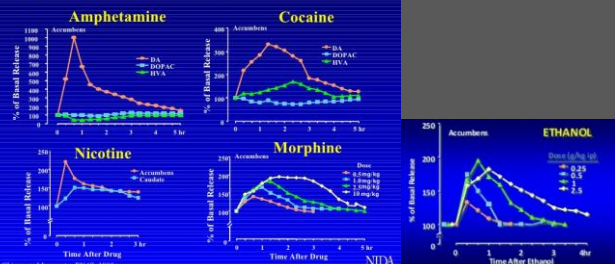
Dopamine Release



Natural Rewards Elevate Dopamine Levels



Effects of Drugs on Dopamine Release

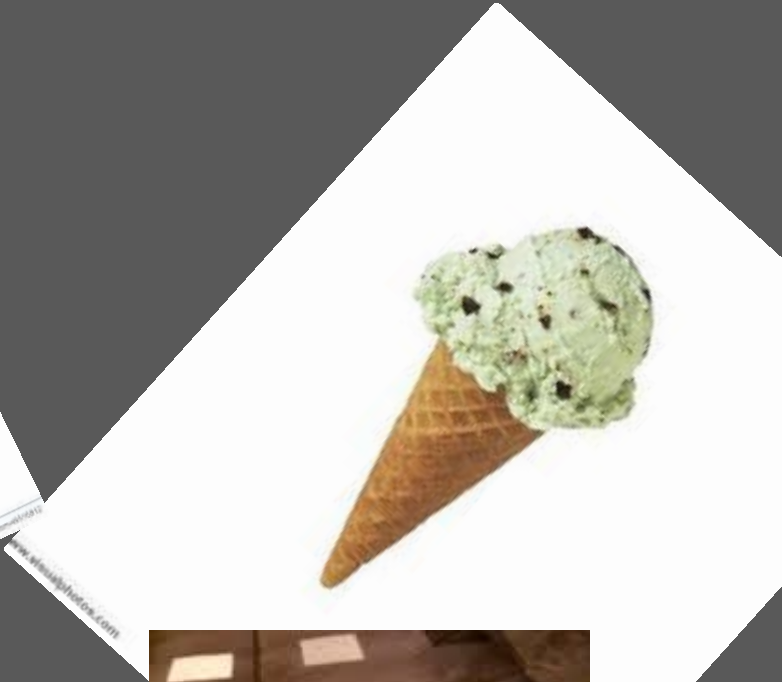
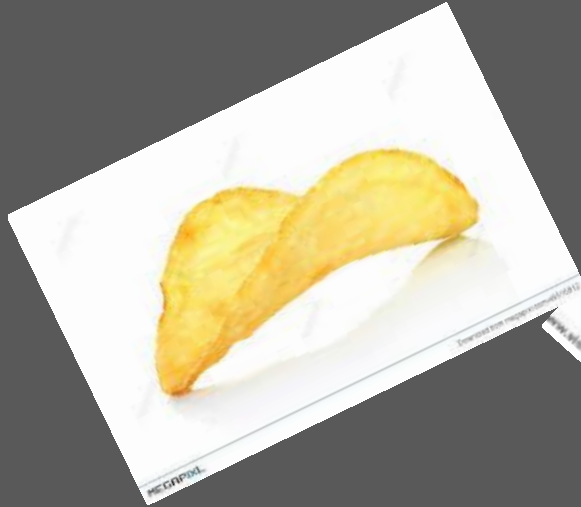



DiChiara & Imperato, 1988
Fiorino & Phillips, 1997

Choose your reward



We always have perfect control, right?

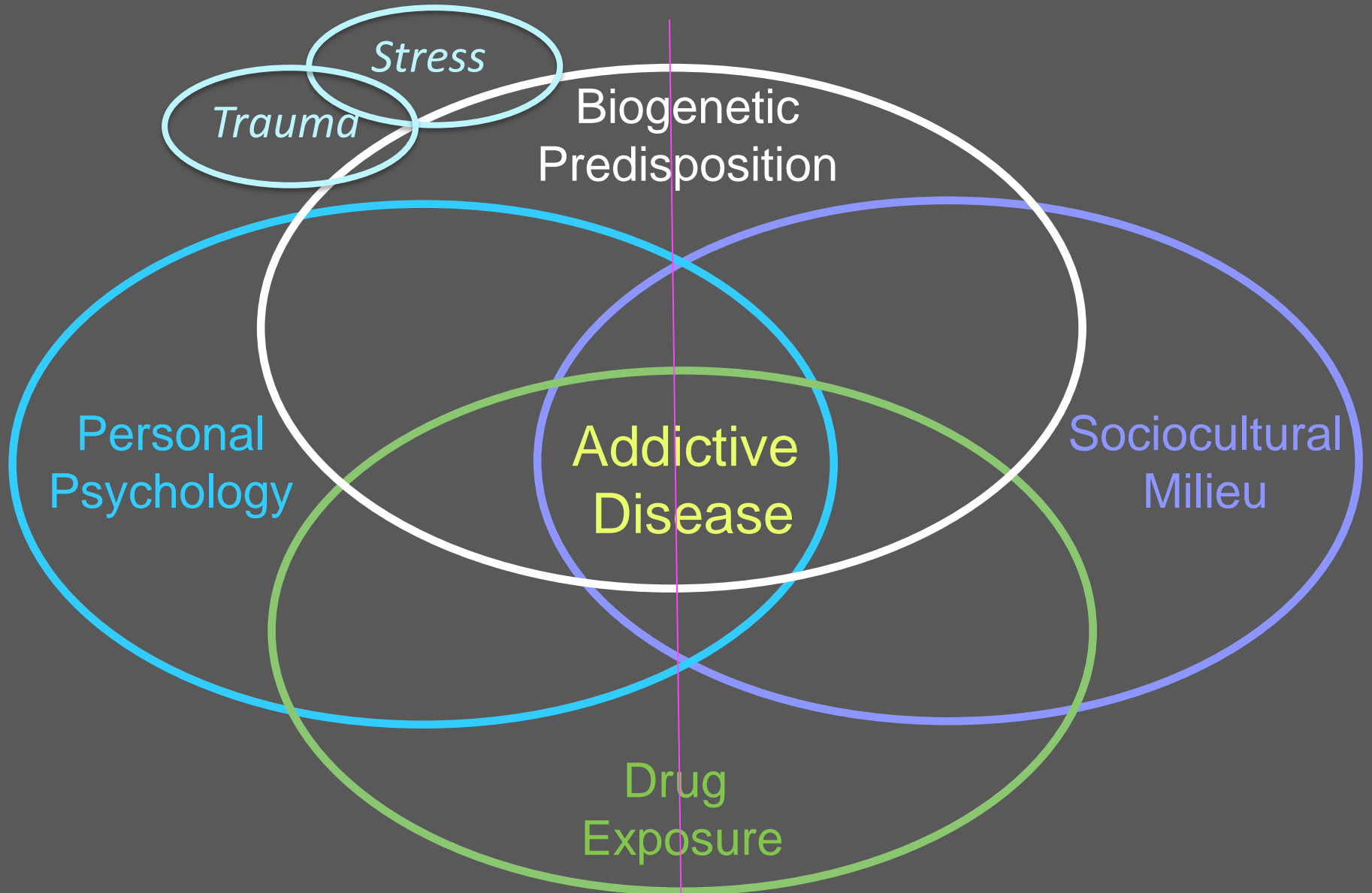




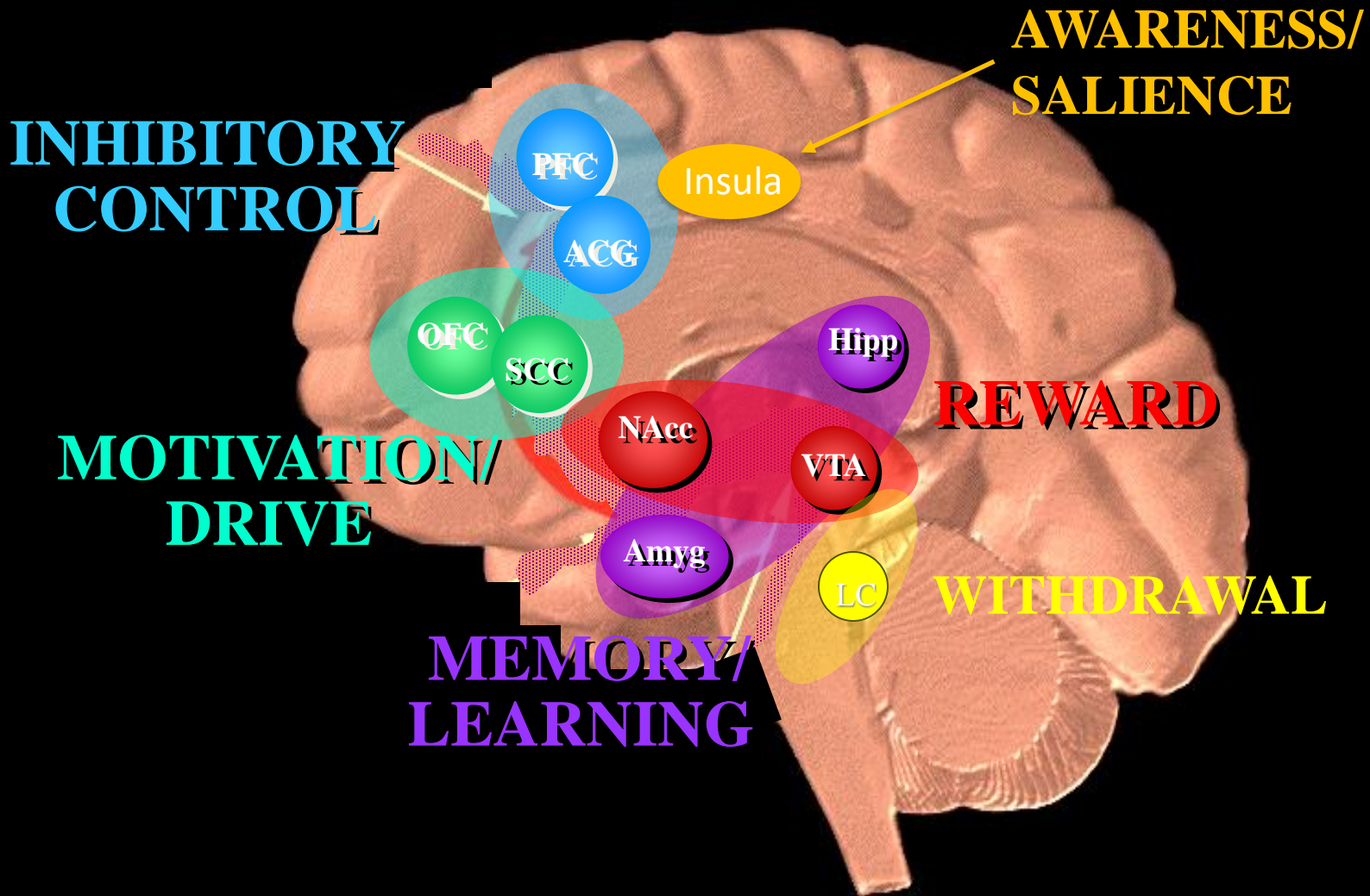
If some rewards are so good,
And our control mechanisms imperfect,

Why don't we all develop addiction?

Etiology Addiction



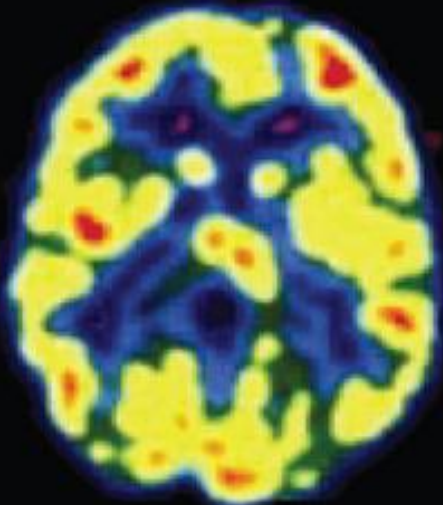
The Hijacked Brain in Addiction



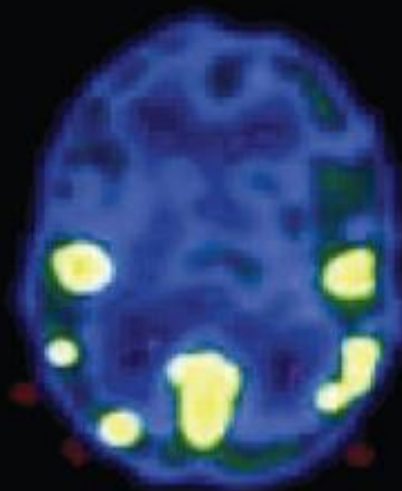
After Nora Volkow, Director NIDA; 2004
Locus Ceruleus added, after Koob; Insula
after Naqvi et al, 2014

Protracted Brain Changes

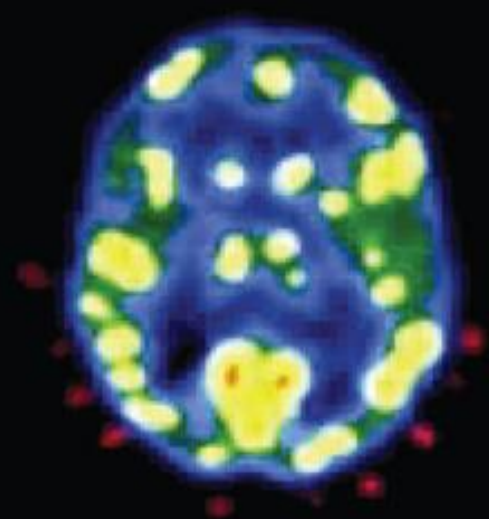
No Drug Use



Cocaine Addiction:
10 Days Without Cocaine



Cocaine Addiction:
100 Days Without Cocaine



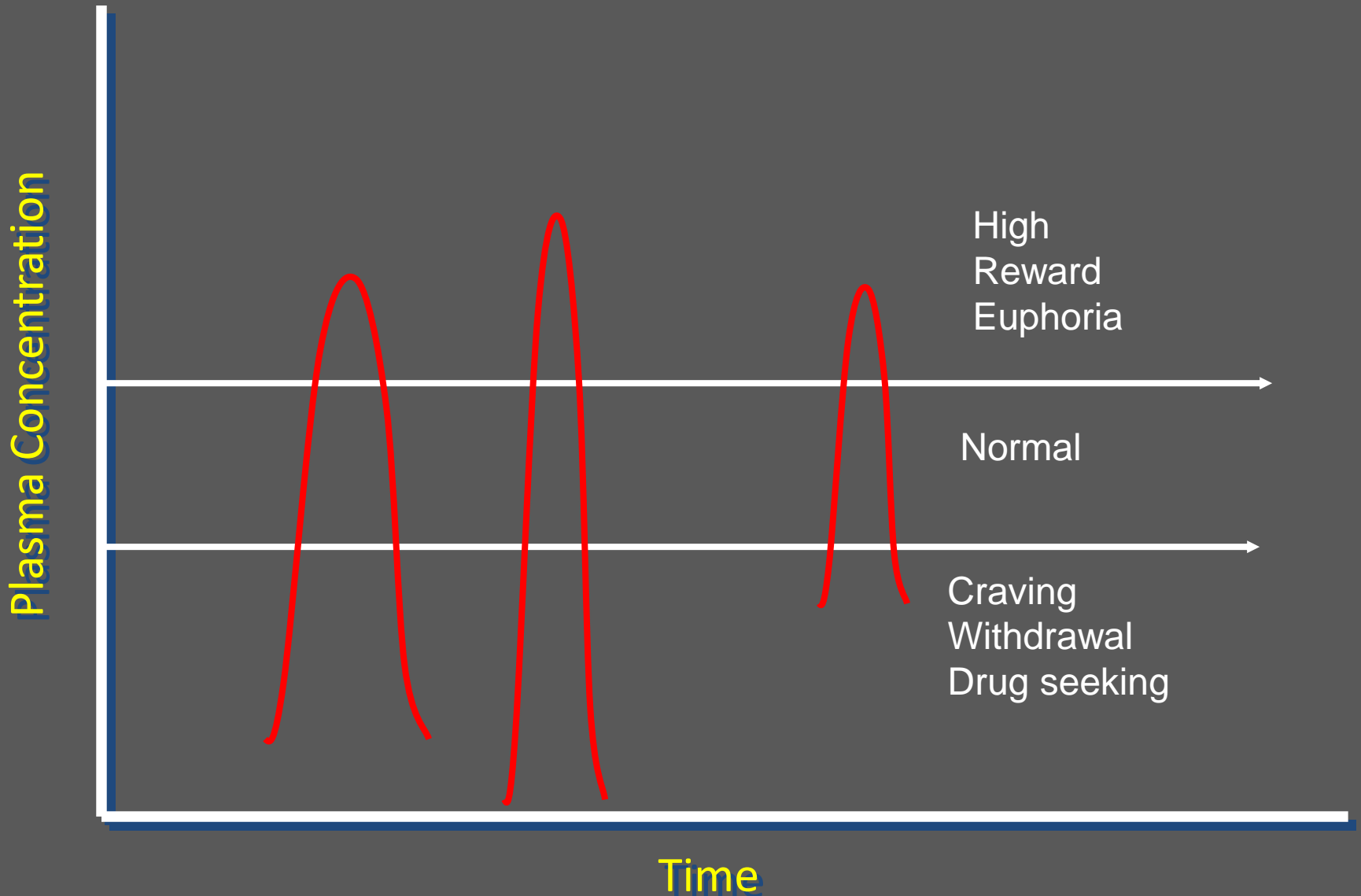
DSM V OUD Diagnostic Criteria

1. Use larger amounts or longer period of time than intended
2. Persistent desire or unsuccessful efforts to cut down or control
3. Great deal of time spent to obtain ,use, or recover from effects
4. Craving, or a strong desire to use
5. Failure to fulfill major role obligations at work, school or home
6. Persistent or recurrent social or interpersonal problems
7. Important social, work or recreational activities given up or reduced
8. Recurrent use in physically hazardous situations
9. Persistent or recurrent physical or psychological problems due to use
10. *Tolerance (increased amounts or diminished effects)
11. *Withdrawal (withdrawal symptoms or use to avoid)

**Criteria not met if taking solely under medical supervision*

Mild: 2-3 symptoms. Moderate: 4-5 symptoms. Severe: 6 or more symptoms

Typical Pattern of Substance Use



Drug Use Disorder Behaviors

- Drug effects variable, intoxication *can lead to*
 - Calm, placid, sleepy states (opioids, cannabis) *or*
 - Agitation, tension, violence (cocaine, methamphetamine)
- Withdrawal tends to be physiologically opposite high
- Craving & drive state to use *can lead to*
 - Behaviors directed to obtain and use
 - Undermining of values: manipulation, lying, stealing
- Caveats
 - Behavioral responses may vary with dose
 - Drugs often used in combination so mixed effects



Every person with challenging addiction issues started life as a vulnerable & innocent being.

Think: what might have shaped their journey to this point?

Functional
Disabilities

Social, Work, Recreational

Substance
Risks

Secondary
Physical
Problems

Addiction

Increased Stresses

Anxiety
Depression

Sleep Disturbance

Cognitive
Distortions

Addiction

Similar to Other Chronic Diseases

- Common: ~ 10% lifetime occurrence
- Etiology
 - Biogenetic predisposition
 - Behaviors contribute
- Course: remissions & exacerbations
- Life-threatening: treatable, but not curable
- Treatment & Recovery
 - Lifestyle changes
 - Counseling
 - Self awareness & regulation
 - Pharmacologic

Chronic Disease

Treatment Adherence

Addiction

- 40-60% fully abstinent at one year
- 15-30% non-dependent use

- Adherence lowest
 - Low socioeconomic status
 - Poor family & social support
 - Psychiatric co-morbidity

Other Chronic Conditions

- Adherence to meds
 - Hypertension < 40%
 - Asthma < 40%
 - Diabetes < 60%
- Adherence behavioral change <30% (diabetes & HTN)
- Adherence lowest
 - Low socioeconomic status
 - Poor family & social support
 - Psychiatric co-morbidity

Addiction Recovery Approaches

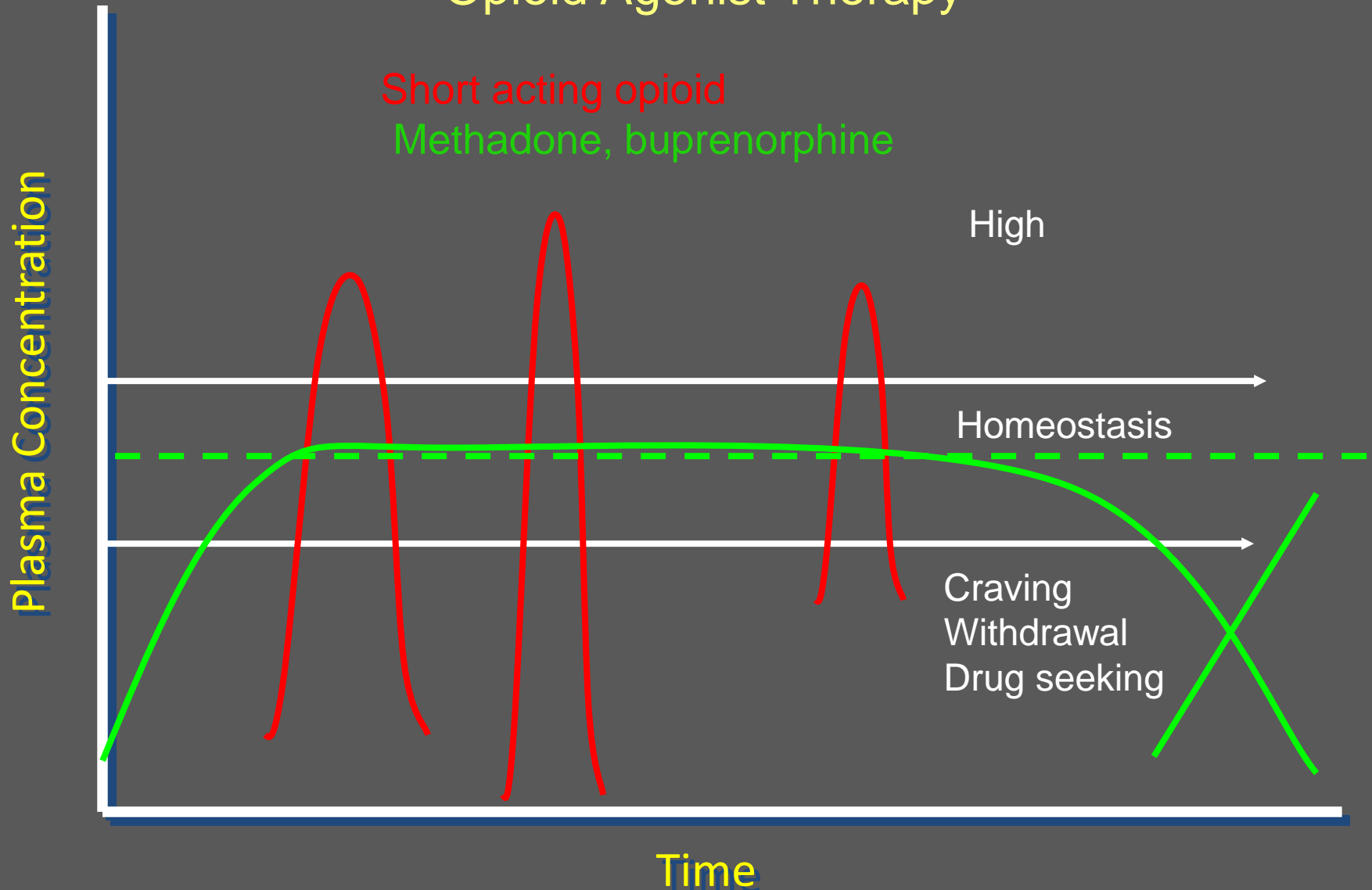
- Avoid/Limit rewarding drug use
- Psychosocial interventions
 - Counseling, group or individual, often CBT or ACT
 - Peer support
 - Group based -AA, NA, RR, SR, others
 - Peer recovery coaches
- Cultivation of personal well-being
 - Exercise, meditation, other self-care
 - Healthy social networks
 - Meaningful engagement
- Pharmacologic treatments

Principles of SUD Best Practices

- Timely care
- Recovery oriented
- Individualized & person centered
 - Respects preferences, values & culture
 - Empowers the individual with choice
 - Matches level of care to need
- Comprehensive
 - Co-occurring MH & medical issues
 - Social context & determinants of health
- Use of EVB treatment approaches

Medications in Addiction Treatment (MAT)

Opioid Agonist Therapy



Medications in Addiction Treatment

Opioid Agonist Treatment

- Methadone
 - Highly regulated, dispensed through clinics
 - Long half-life, risky if misused
 - Higher doses risk cardiac arrhythmias
- Buprenorphine, partial opioid agonist
 - Available by prescription by waivered providers (8-24 hours of training)
 - Binds tightly to receptor, but doesn't fully activate
 - Less risk with misuse though OD possible

Opioid Use Disorder Recovery Outcomes

2014 Comparative Effectiveness

Public Advisory Committee (CEPAC) Report

- Without opioid agonist therapy
 - 90-95% relapse within months
 - Sub-groups with better outcomes (short term use, no IV use, good social support, wrap around care)
- With opioid agonist therapy
 - 66% treatment retention at one year
 - 50% of those in treatment with some drug use
 - Decreased mortality, criminal involvement & healthcare emergencies
 - Increased employment

Isn't this just substituting
one addiction for another?

*While physiologic dependence is present,
none of the functional criteria of OUD are...*

Pharmacologic Therapy

Opioid Antagonist Treatment - Naltrexone

- No special license or certification required
- Clinically available
 - Oral use q 1-3 days (50-150mg)
 - Monthly depot injections
- Rationale:
 - Blocks opioid effects
 - Keeps patients relatively safe from overdose
 - Block reward and reinforcement in early recovery
 - Attenuation of craving
- Advantages : no opioid effects or risks
- Disadvantages
 - Less, but emerging, evidence
 - Sensitizes to opioid effects? (increasing risk if stopped)

Buprenorphine vs Naltrexone

- Multi- site clinical trial – 570 randomized to outpatient treatment with depot naltrexone or buprenorphine titrated to effect
- Found no differences among successfully induced patients in
 - Self-reported opioid cravings
 - Opioid relapse events
 - Alcohol use (decreased both groups)
 - Depression
 - Cognitive (concentration and logic)
 - Smoking status
 - Adverse events
- Harder to induce naltrexone (72% vs 94%) so overall success lower, but once successfully induced, recovery/relapse the same

Lee, Nunes, Novo, Bachrach et al; *Comparative effectiveness of extended-release naltrexone versus buprenorphine-naloxone for opioid relapse prevention (X:BOT): a multicentre, open-label, randomised controlled trial*; Lancet, 2018

Expanding MAT Access

- Traditionally provided in outpatient specialty settings
 - Requires referral
 - Often time lag, missed opportunity
- Introduction at time and place of need
 - Primary care: consistent with chronic disease model, original intention of Data 2000 act
 - Support through PCSS, NH Community of Practice
 - Emergency rooms and inpatient care units
 - Patients in withdrawal
 - Waiver not always required to treat opioid withdrawal
 - Patient admitted for non-SUD diagnosis
 - 3 days dispensing while arranging SUD care
 - Arrange ongoing SUD care

Expanding MAT Access

- Emergency rooms and inpatient care units
 - Patients in withdrawal
 - Waiver not required to treat opioid withdrawal
 - In patients admitted for non-SUD diagnosis
 - While arranging SUD care, may dispense for 3 days
 - Need to transition seamlessly to ongoing care
- Prisons
 - Currently MAT often discontinued
 - Naltrexone on discharge currently possible
 - Depot buprenorphine emerging as option for incarcerated care.

Opioid/Substance Use Spectrum & Interventions

Evolution

Overdose



Misuse

- Addictive
- Recreational
- Self medication



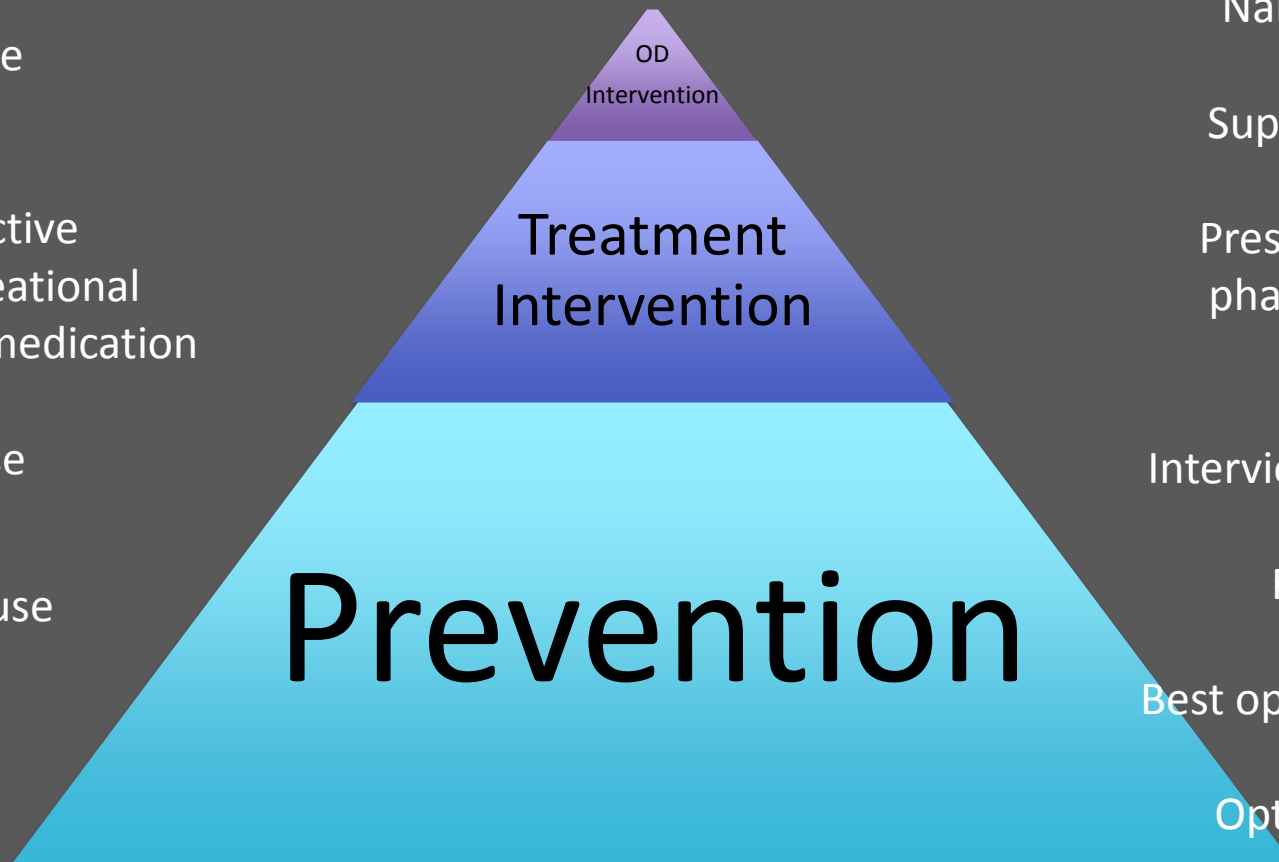
Risky use



Clinical use



Non-use



Clinician Roles

Naloxone for OD



Support recovery



Prescribe/refer to pharmacologic tx



Motivational Interview/education



Routine SBIRT



Best opioid practices



Optimum pain tx

CHALLENGE STIGMA



Thank You!