Clinical Science of Addiction

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What challenges, frustrations & opportunities do you frequently encounter in working with patients with substance use issues?

Common SUD-Related Challenges

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

- Patient issues
- Staff issues
- Systems issues

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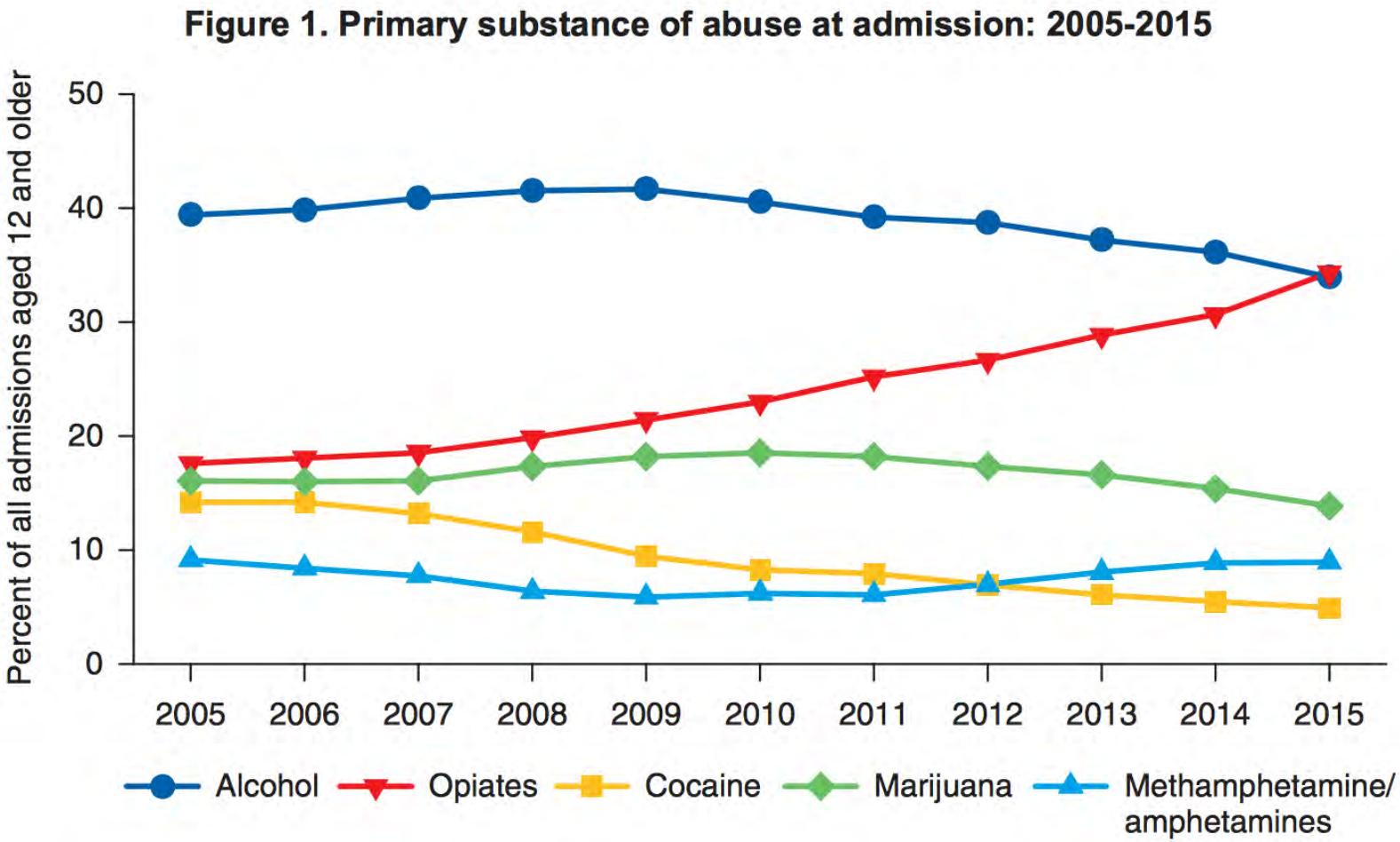
- Scope of substance use disorders
- Why people use & misuse drugs
- Approaches to recovery & harm reduction

Scope of substance use disorders

U.S. Primary Drug Treatment Trends

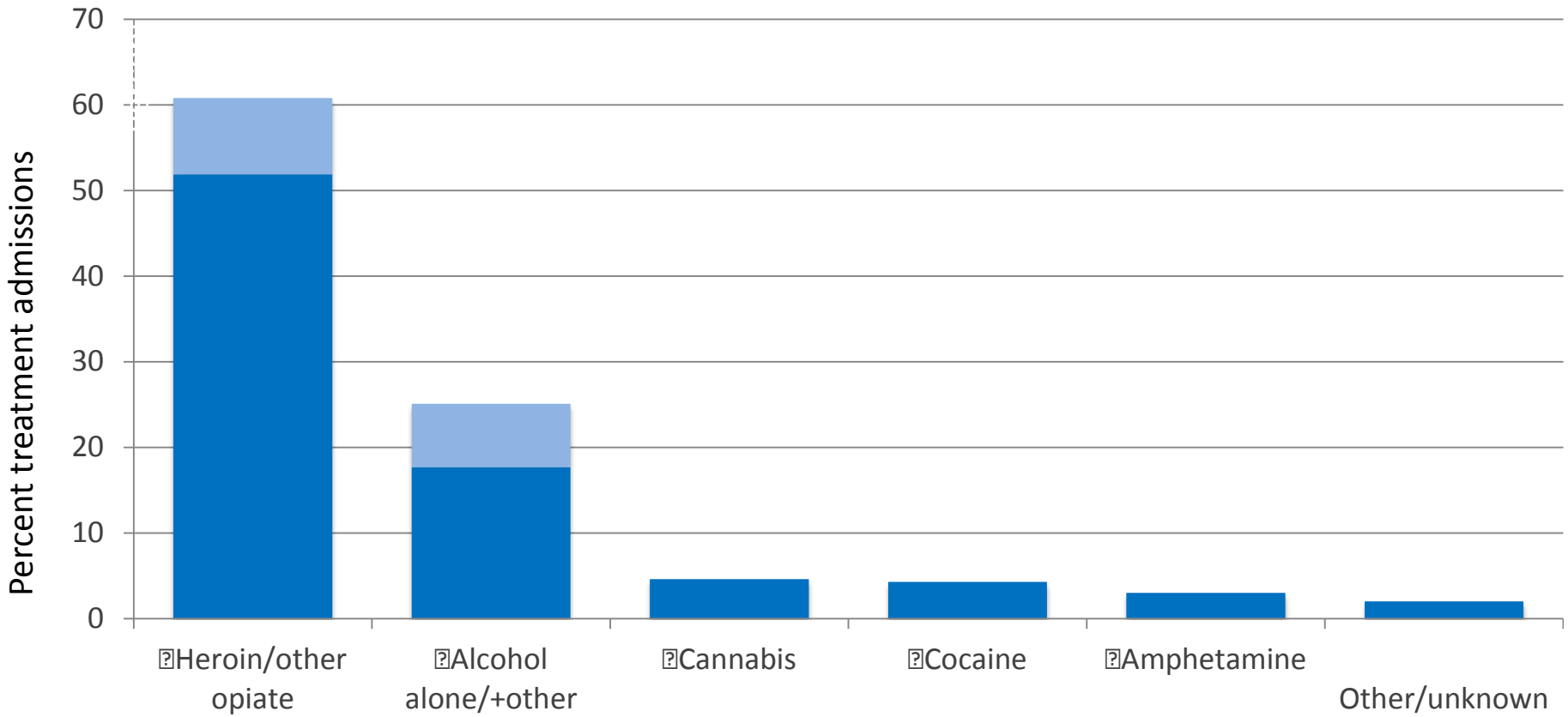


SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.01.16.

New Hampshire
Primary Drug for Treatment, 2016

Number Treated=4564)

SAMHSA Treatment Episode Data System (TEDS)



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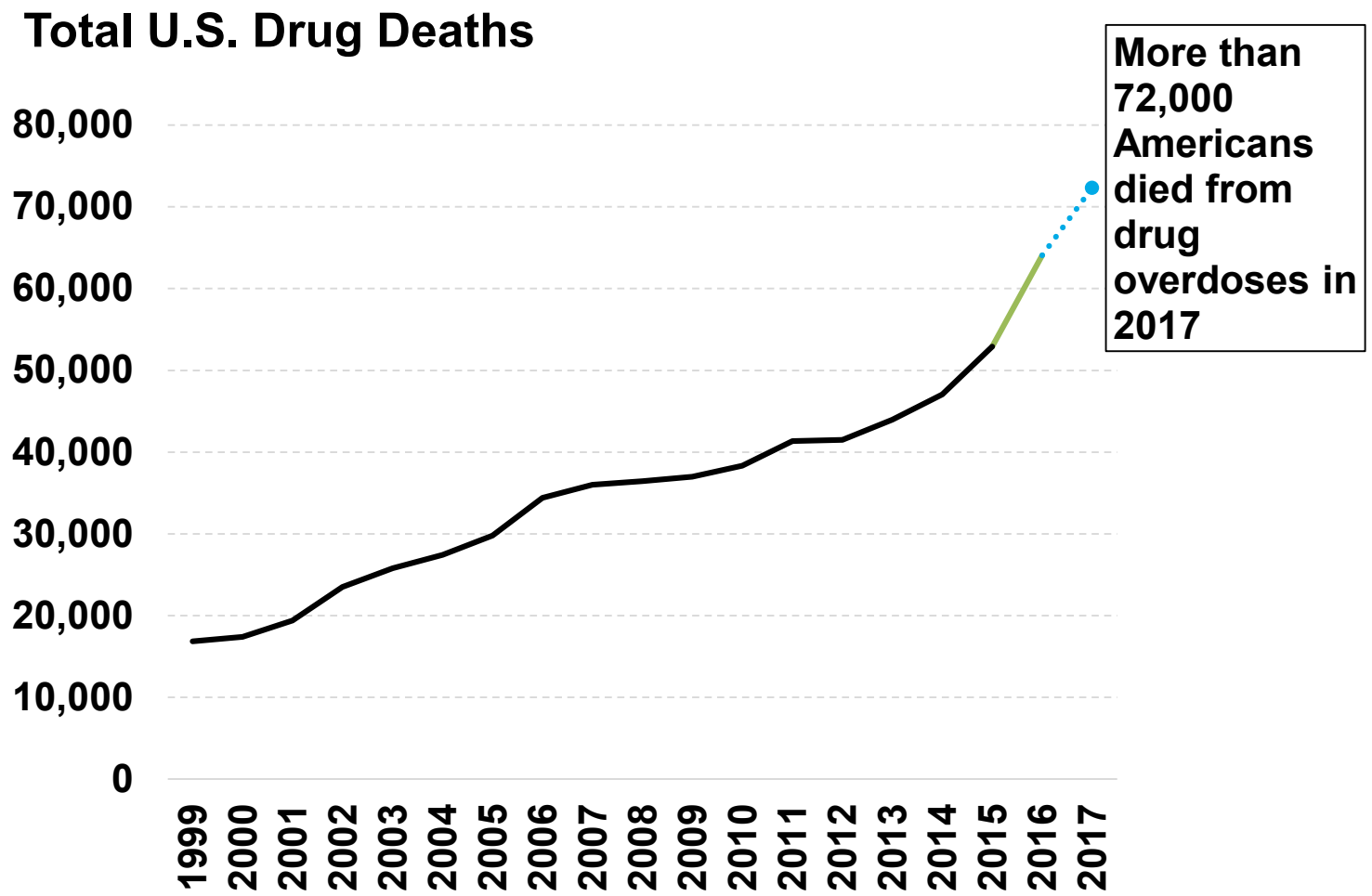
U.S. Drug Overdose Trends



Source: CDC WONDER

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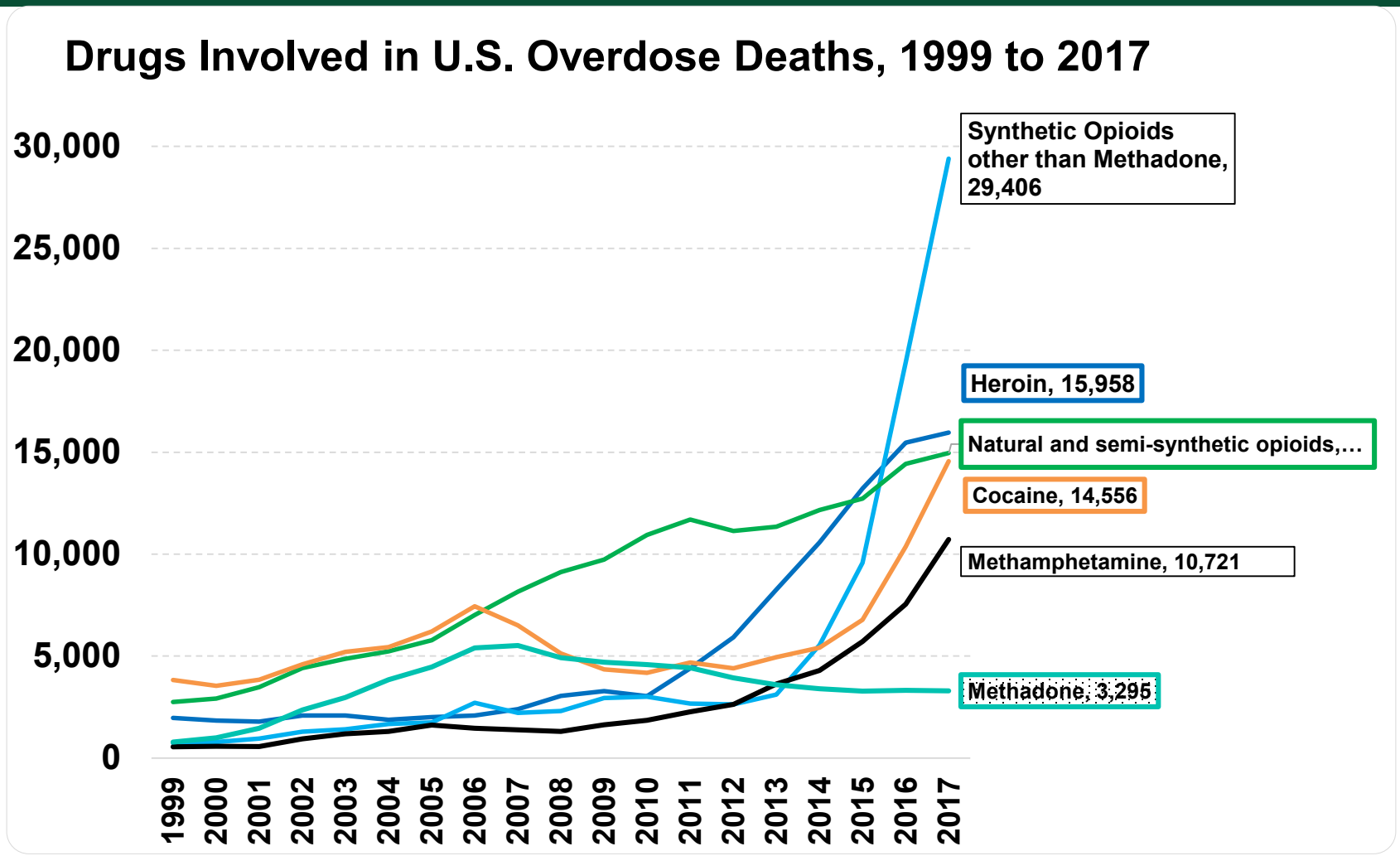
U.S. Drug Overdose Trends



Source: CDC WONDER

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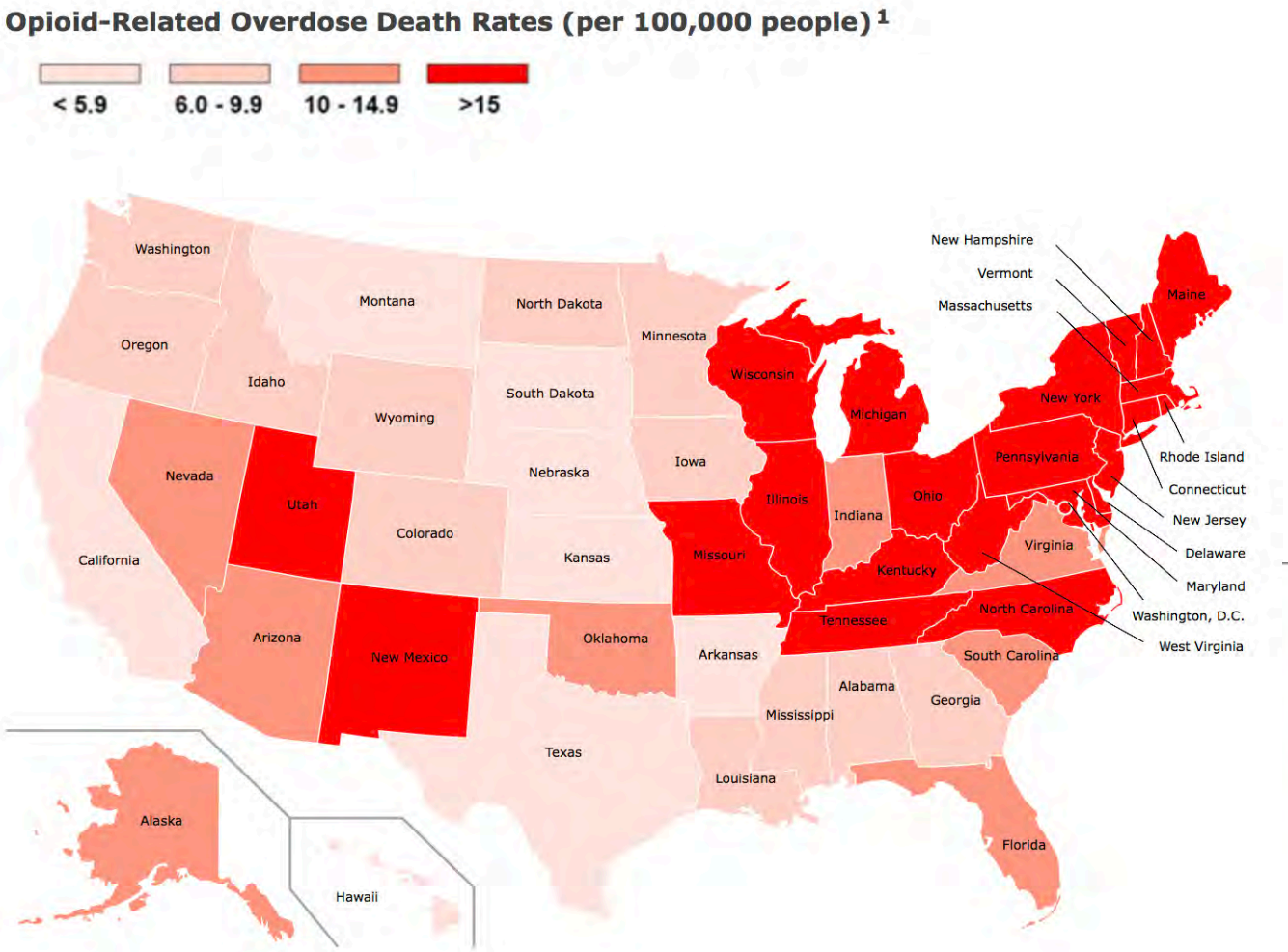
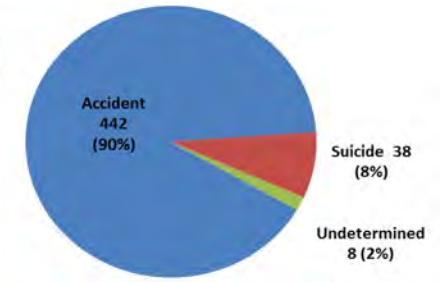
CDC Drug Overdose Deaths by State, 2017





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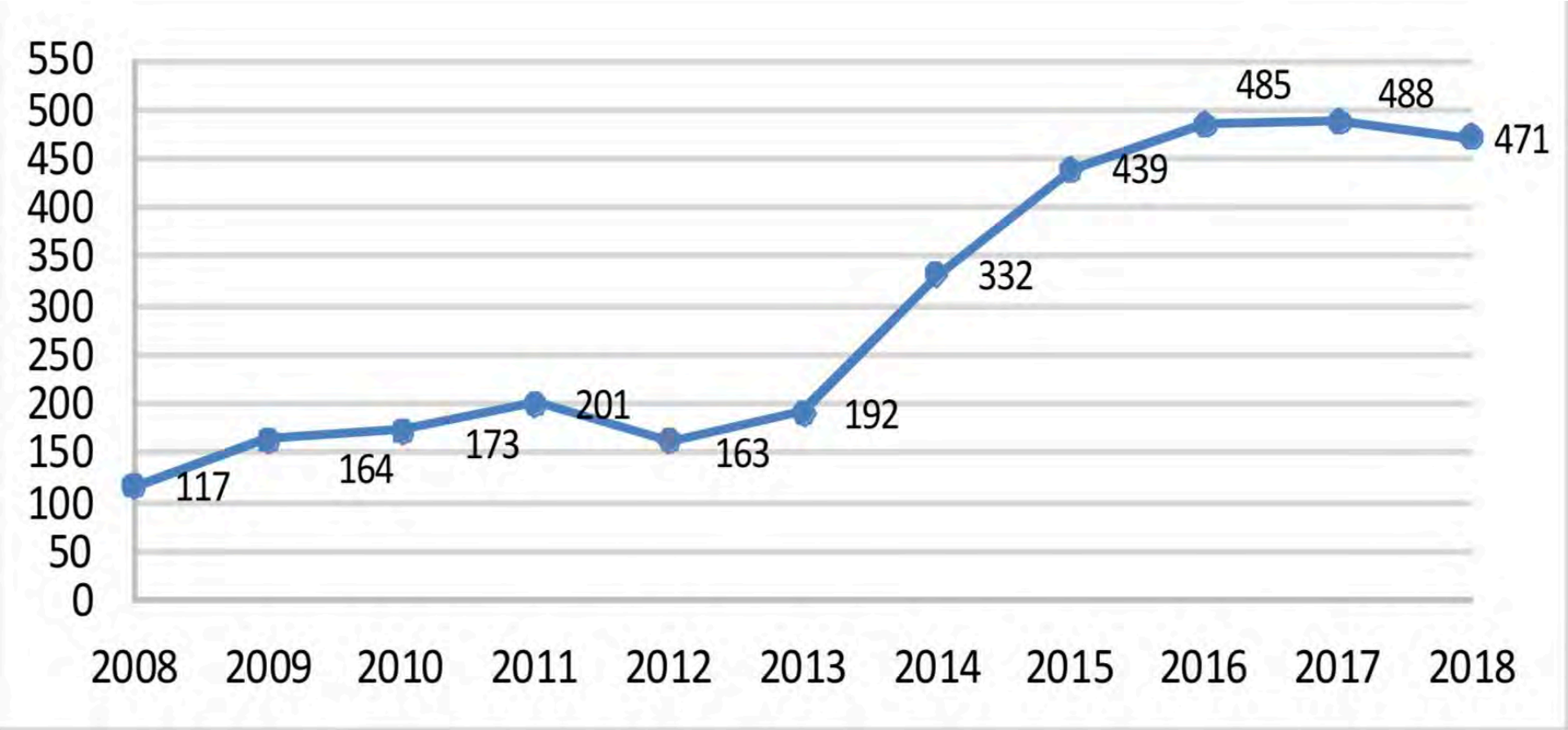
NH Drug Deaths

NH Drug Monitoring Initiative, NH DOS, May 2019



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Why should we care?

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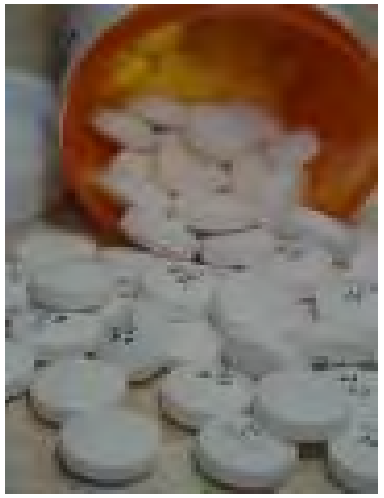
Why people use drugs

Motivators of Substance Use

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



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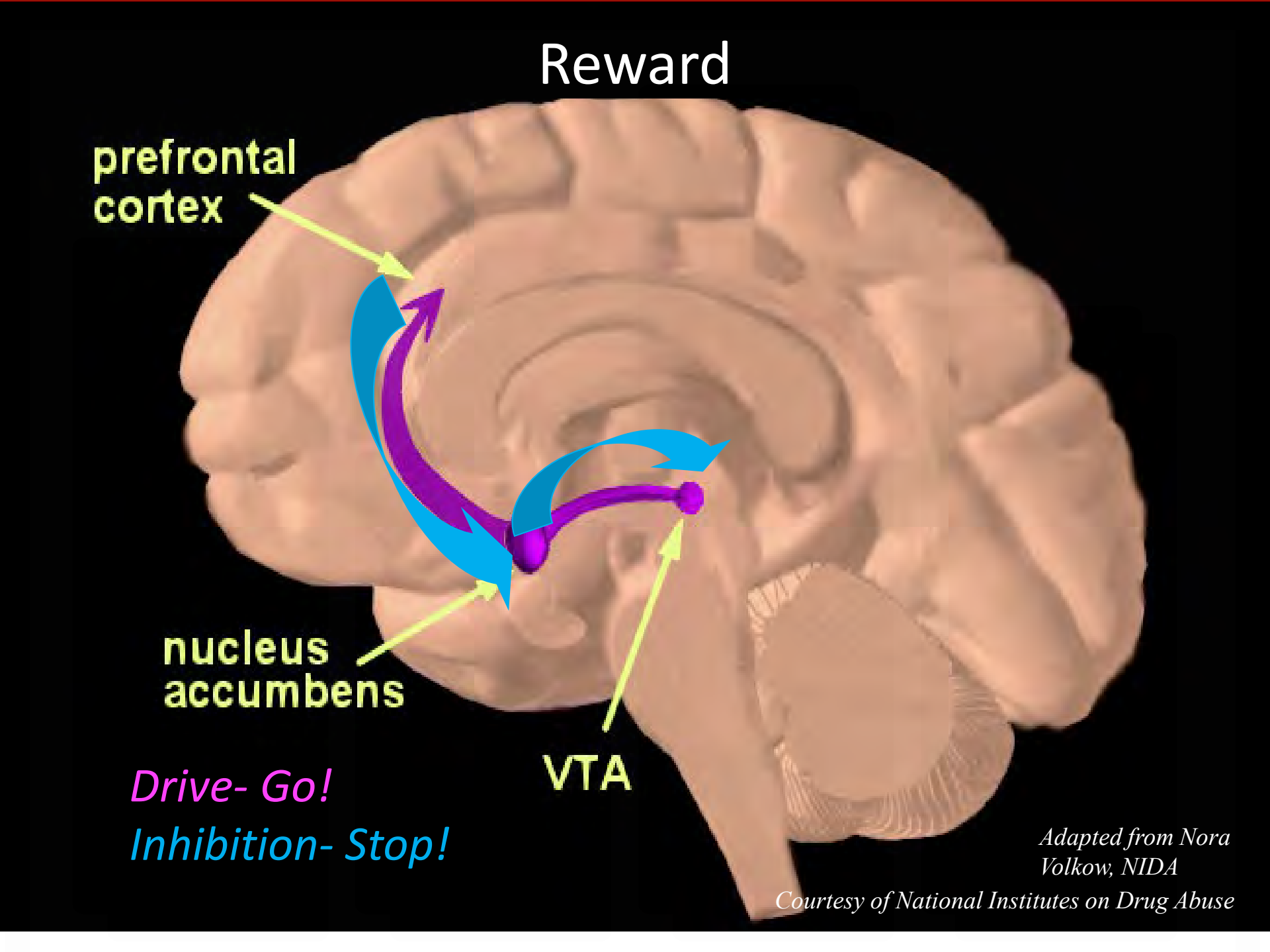
Reward



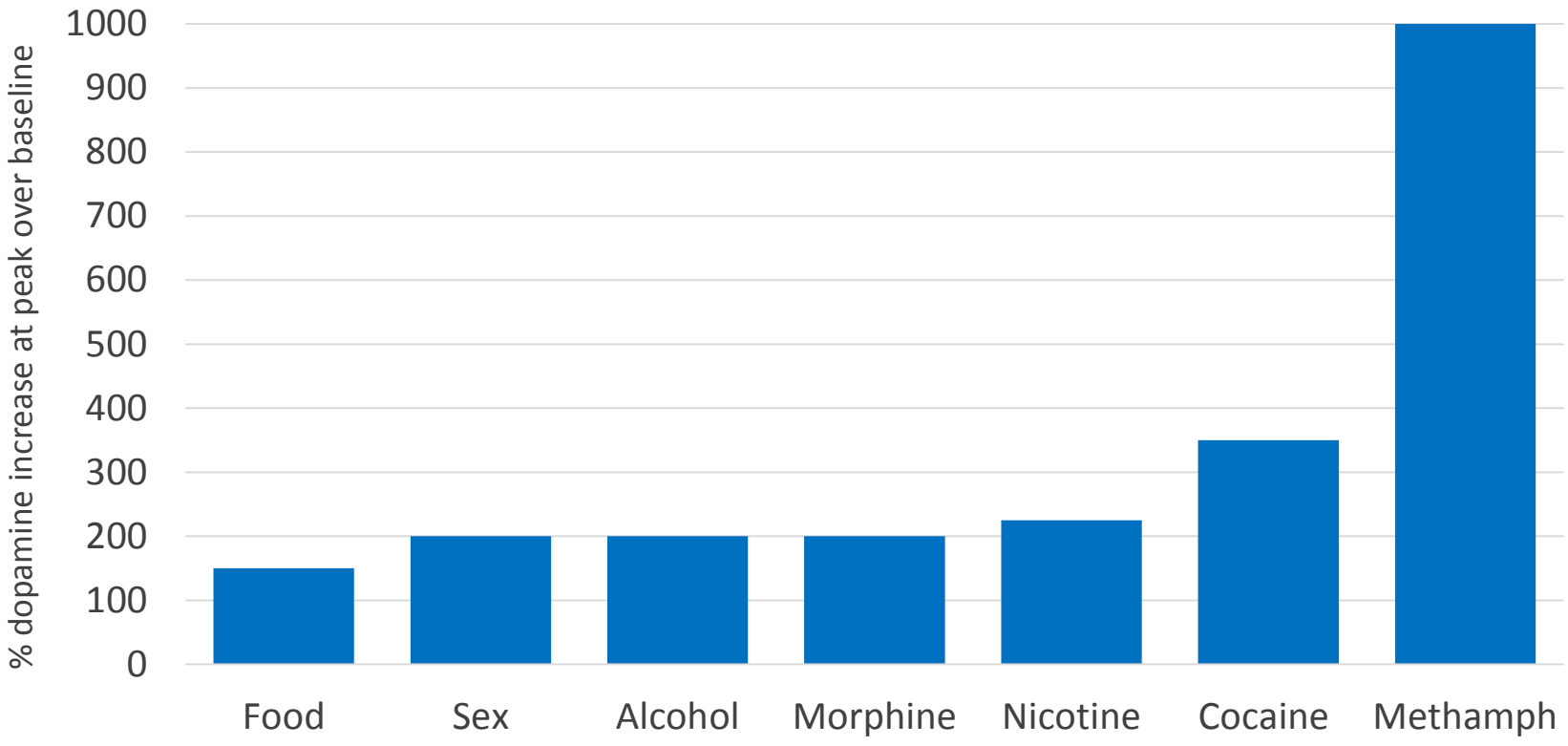
Adapted from Nora Volkow, NIDA

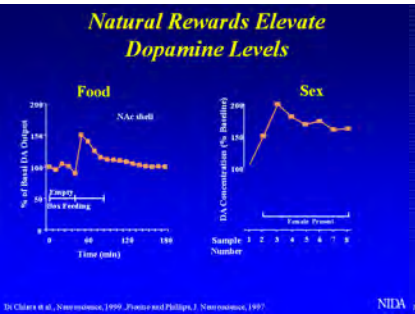
Courtesy of National Institutes on Drug Abuse

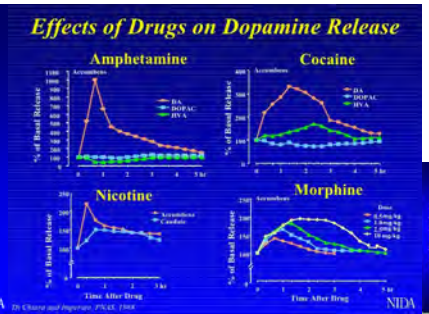
Reward (pleasure) is necessary to life

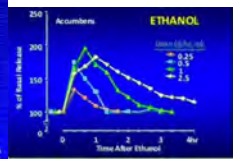
- Common natural rewards that we all experience
  - Eating food & drinking water necessary to sustain individual life
  - Sex/procreation necessary to sustain families and species
- Natural rewards increase dopamine in limbic reward centers causing pleasure
- Reward seeking is moderated by
  - Prefrontal 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*

Relative Dopamine Release









Choose your reward

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We always have perfect control, right?

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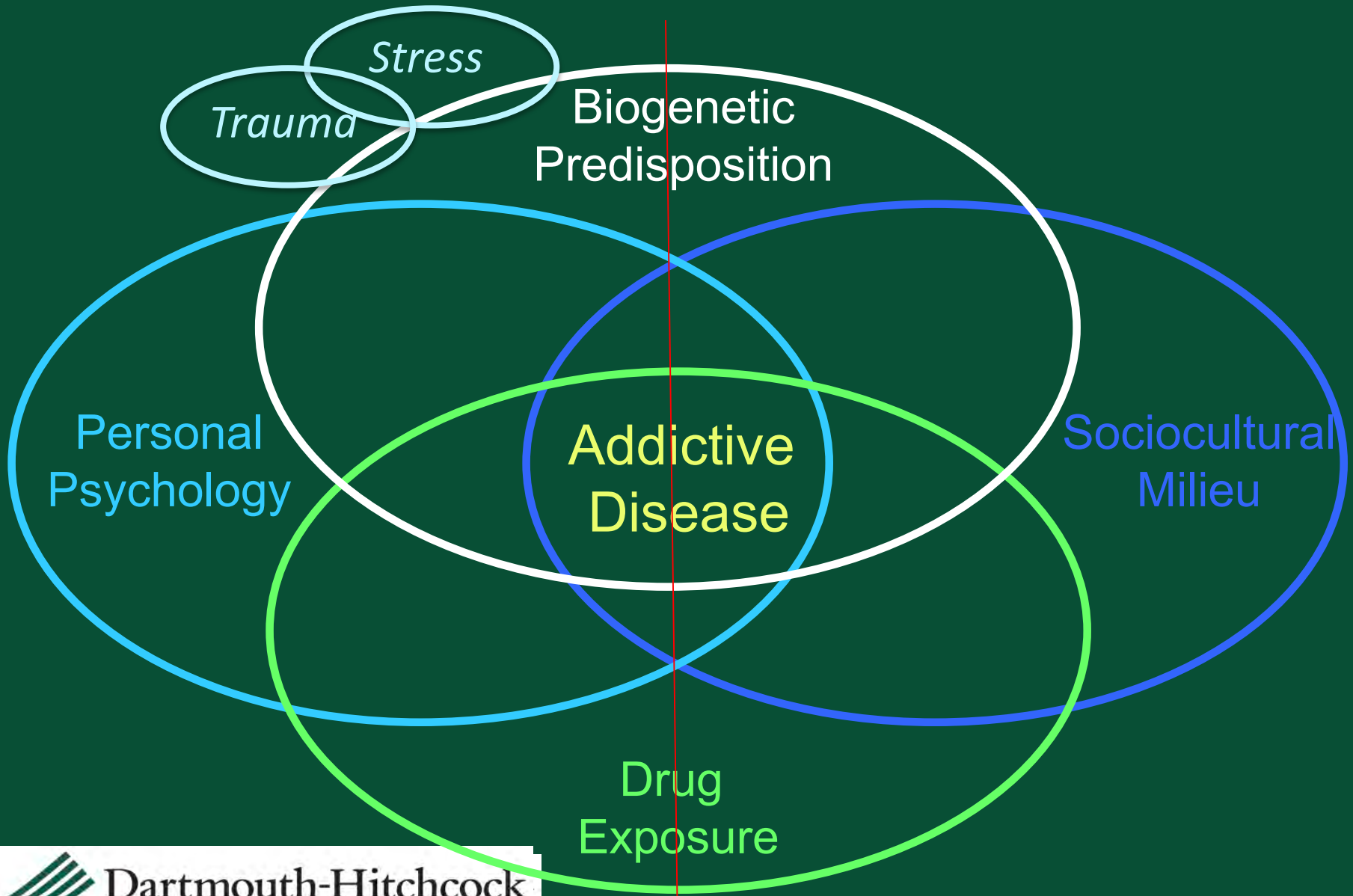
If some rewards are so good,
And our control mechanisms imperfect

Why don’t we all develop addiction?

Etiology Addiction



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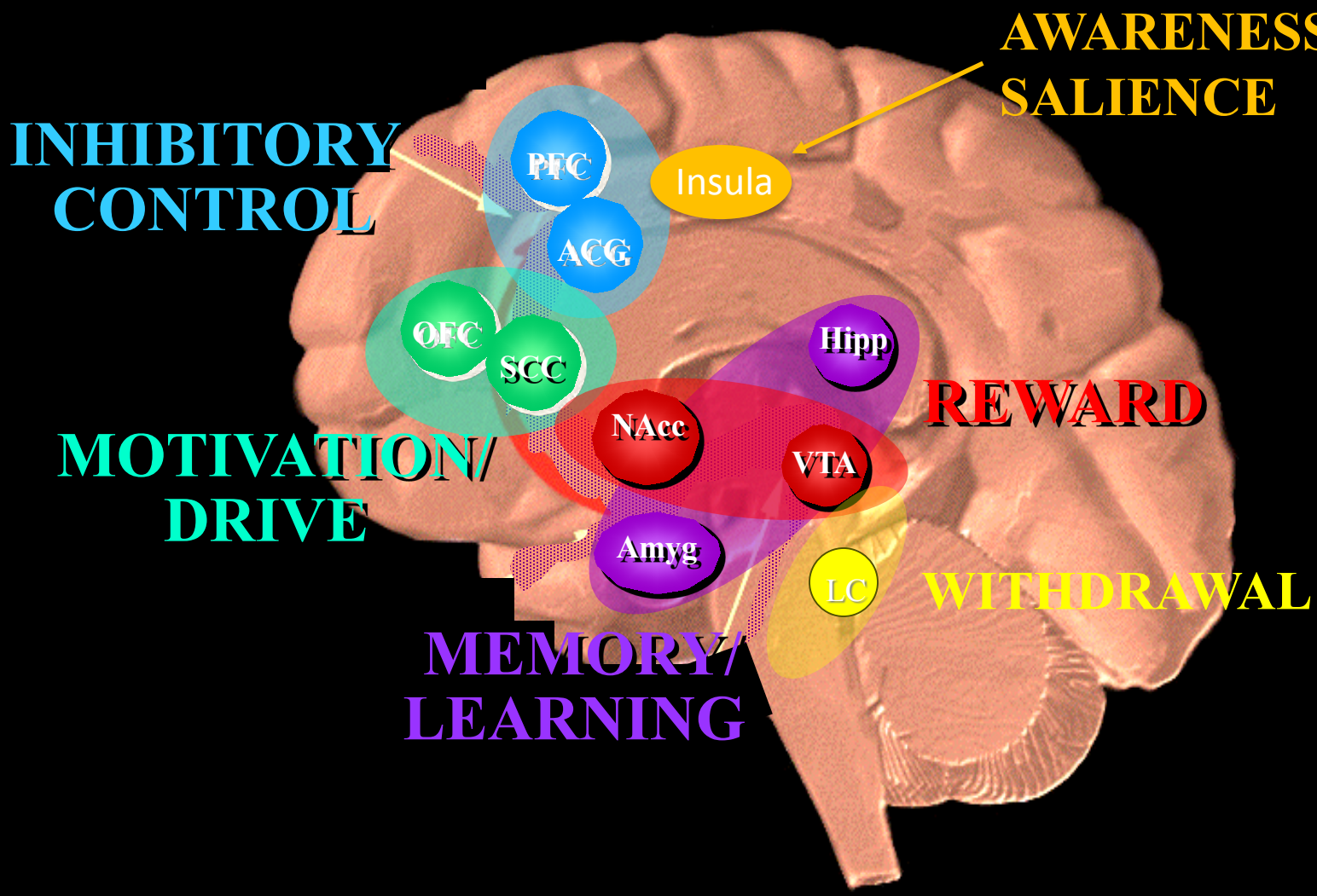
The Hijacked Brain in Addition



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

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*

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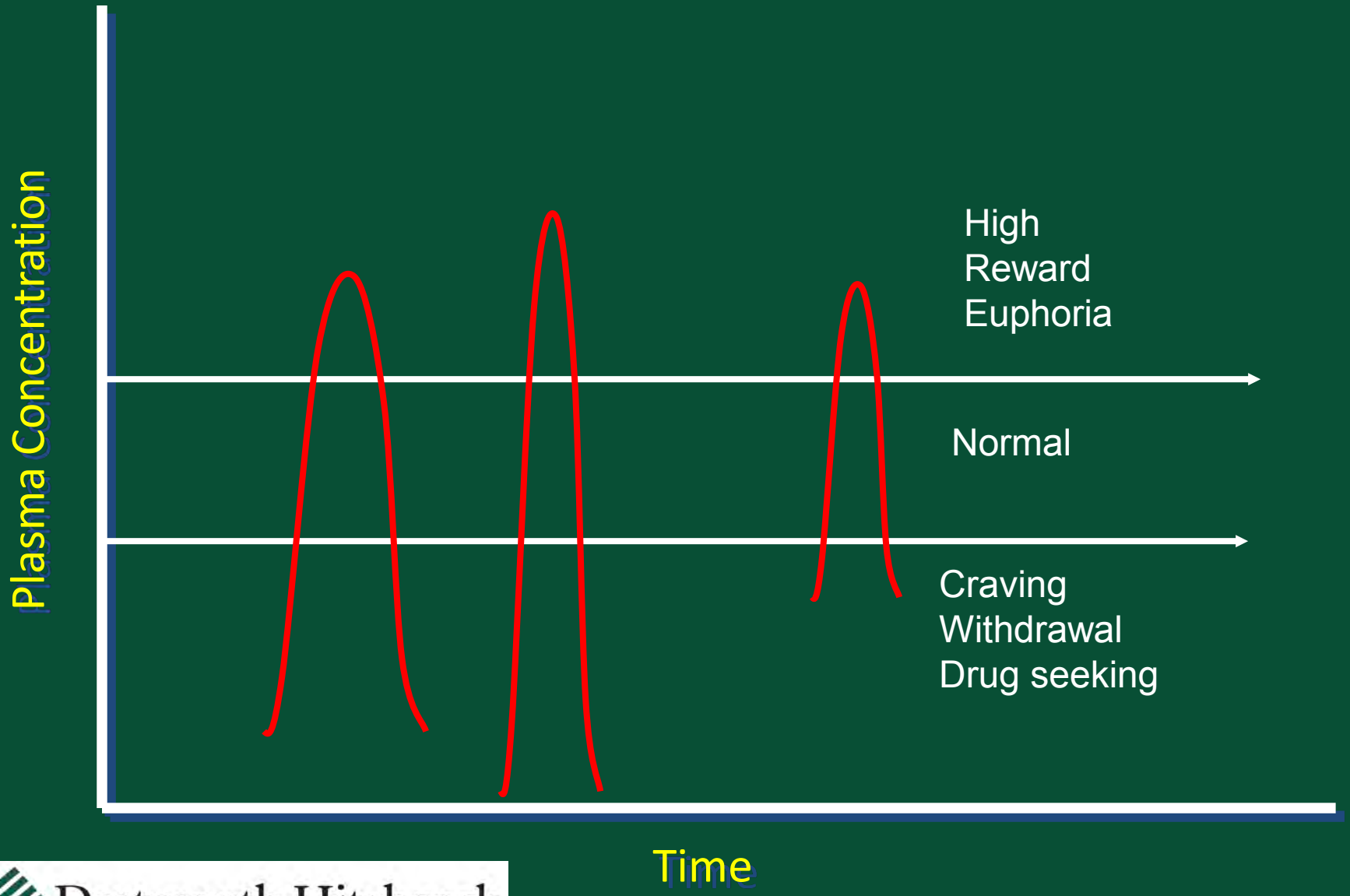
Typical Pattern of Drug Use



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Substance Use Disorder Behaviors

- Drug highs are variable *can lead to*
  - Calm, placid, sleepy states (opioids, cannabis) *or*
  - Agitated, wired, violent (cocaine, methamphetamine)
- Withdrawal tends to be physiologically opposite high
- Craving & drive state to use *can lead to*
  - Directed behaviors to obtain and use
  - Manipulation, lying, stealing, undermined values
- Caveats
  - Responses may be dose dependent
  - 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?

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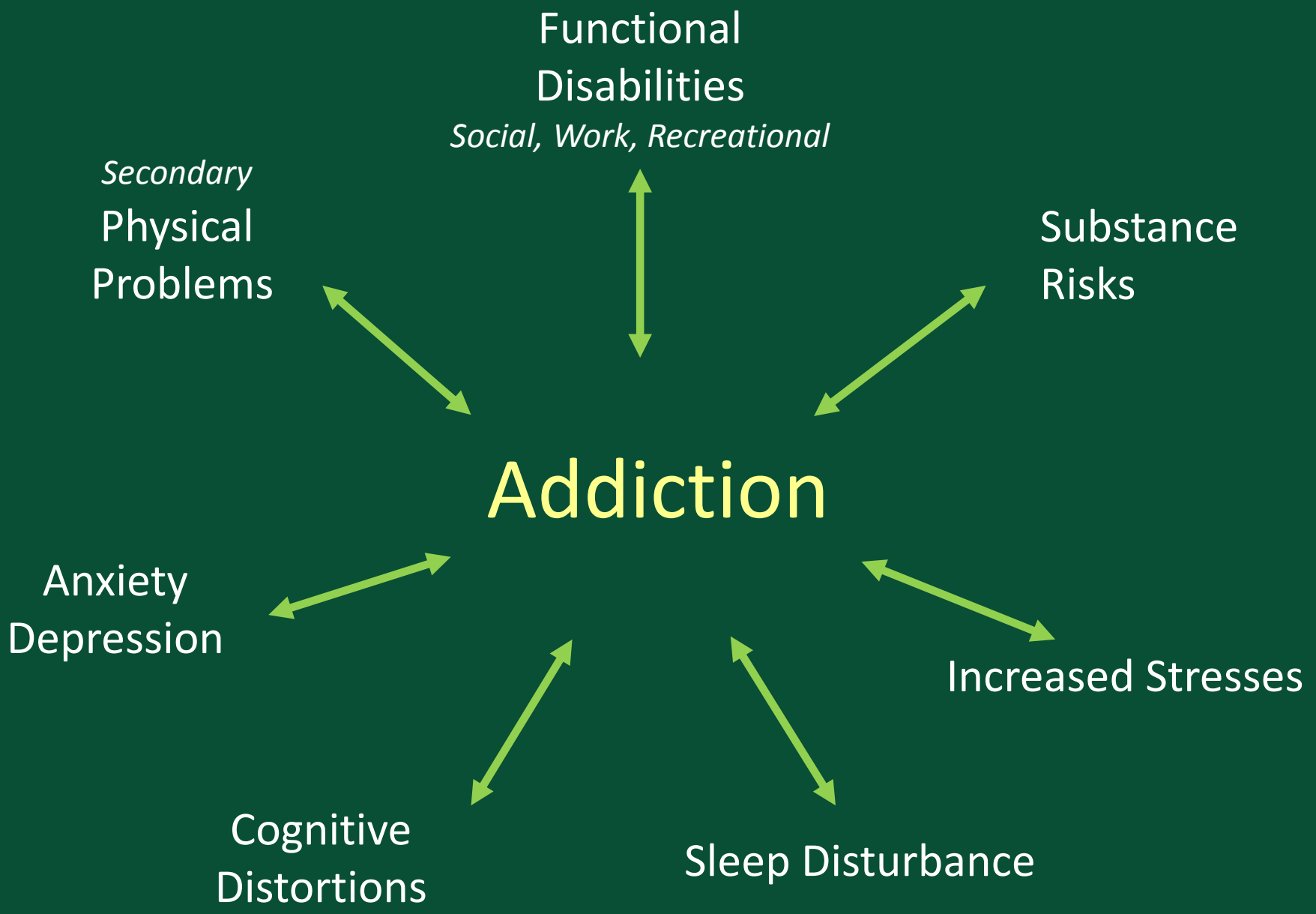
Functional
Disabilities
Social, Work, Recreational
Secondary
Physical
Problems
Substance
Risks
Addiction
Anxiety
Depression
Increased Stresses
Cognitive
Distortions
Sleep Disturbance

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
Chronic disease management

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

SUD Best Clinical Practices
Principles

- 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

ATTC SAMHSA, Educational Packages for Substance Use Disorders, 2018
http://attcnetwork.org/documents/ATTCEduPackagesOUDsCounselor.pdf

Approaches to recovery & harm reduction

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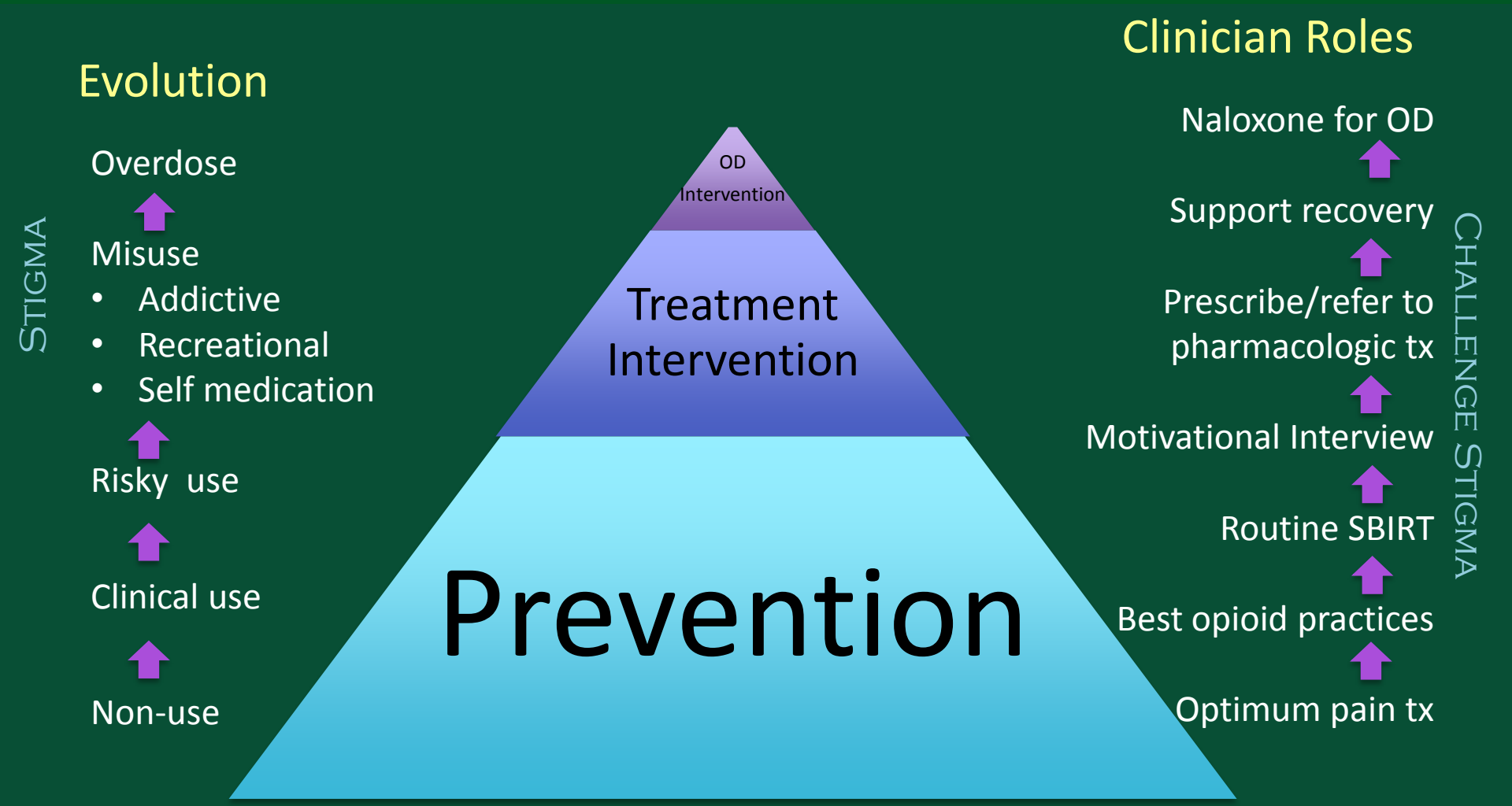
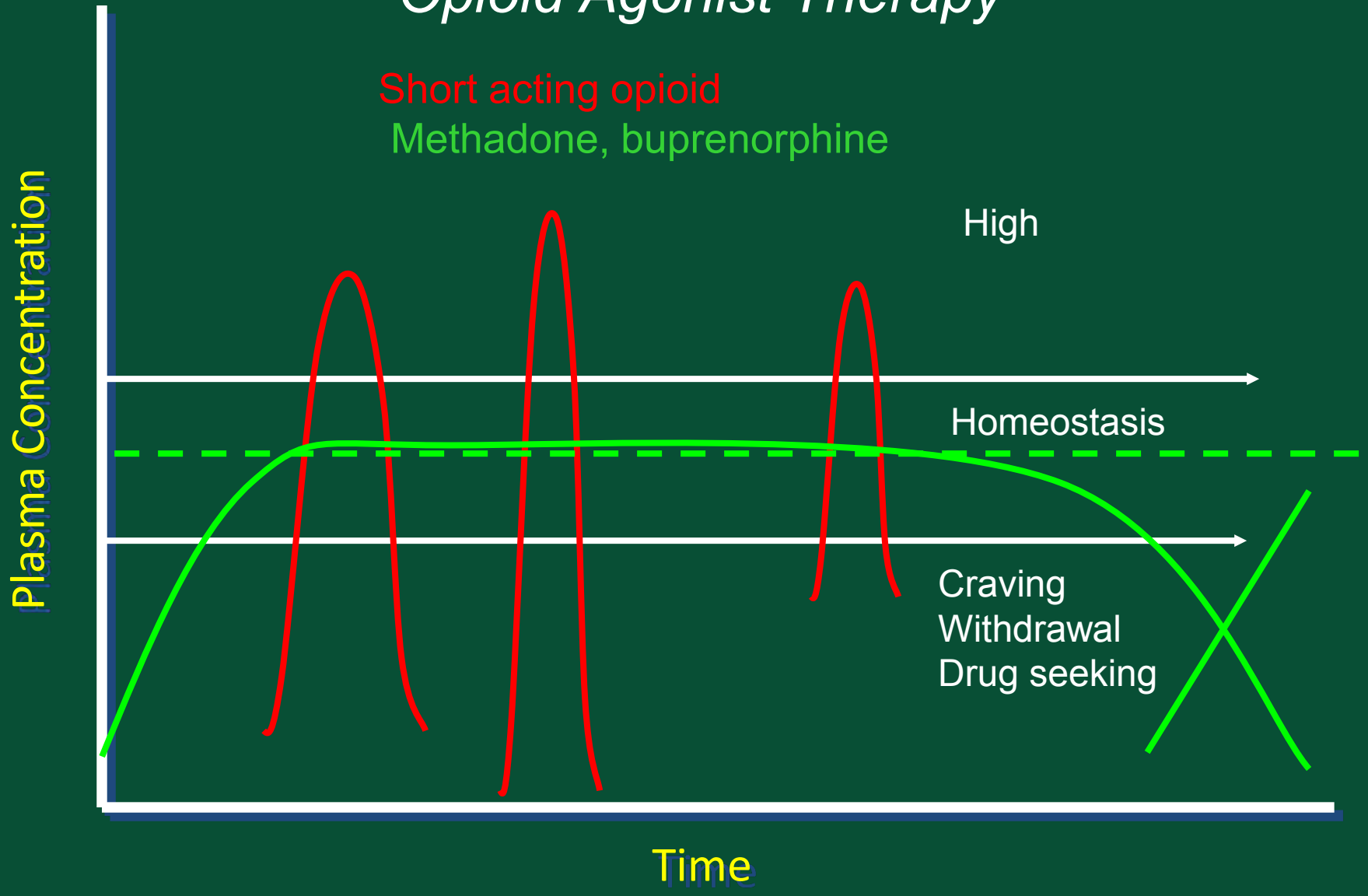
Opioid/Substance Use Spectrum & Intervention



Medications in Addiction Treatment (MAT)

Opioid Agonist Therapy



Medications in Addiction Treatment
Opioid Agonist Therapy

- Indications
  - Stabilization while planning care
  - Management of opioid withdrawal
    - In physiologic dependence without OUD or
    - Mild OUD and election of supervised trial off
  - Long-term treatment of opioid use disorder
    - Variable durations: month to years to a lifetime.

Medications in Addiction Treatment
Opioid Agonist Therapy

- 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

Comparative Effectiveness Public Advisory Committee (CEPAC) Report, 2014

- 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.

Medications in Addiction Treatment
Opioid Antagonist Treatment - Naltrexone

- Requires no special license or certification
- Blocks opioid effects
  - Blocks reward & reinforcement in early recovery
  - Reduces overdose risk
  - Reduces craving
- Forms available
  - Oral use q 1-3 days (50-150mg)
  - Monthly injections
- Less, but growing, evidence to shape use

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 get onto 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

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Expanding MAT Access

- Commonly provided in outpatient specialty settings
  - Requires referral
  - Often time lag, missed opportunity
- Expanding to introduce 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

Expanding MAT Access

- Emergency rooms & 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
- Prisons
  - Currently MAT often discontinued
  - Naltrexone on discharge currently possible
  - Depot buprenorphine as new option for incarcerated care.

What can each of us do to help?

- Recognize
  - Addiction as a chronic illness
  - Behaviors as symptoms of the disease
- Listen and respond with care
  - Use language carefully to avoid reinforcing negative misperceptions
  - Consider Mental Health First Aide, Motivational Interviewing or other trainings
- Link patients to evaluation & treatment resources
  - 211 - Doorways
  - D-H resources
  - NHtreatment.org


Thank You!