Frida Kahlo *Without Hope* 1945

JOHNS HOPKINS
MEDICINE

Managing comorbid psychiatric disorders and chronic pain

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No financial disclosures

Objectives

- Understand how pain and psychiatric disorders are related
- Discuss how pain medications relate to psychiatric disorders
- Identify psychiatric treatments that can impact pain
- Review management strategies for patients with psychiatric and pain disorders

Pain:

- A sensory experience associated with physical manipulation
- An emotional response of distress and anxiety related to the sensory information

How academics think about pain

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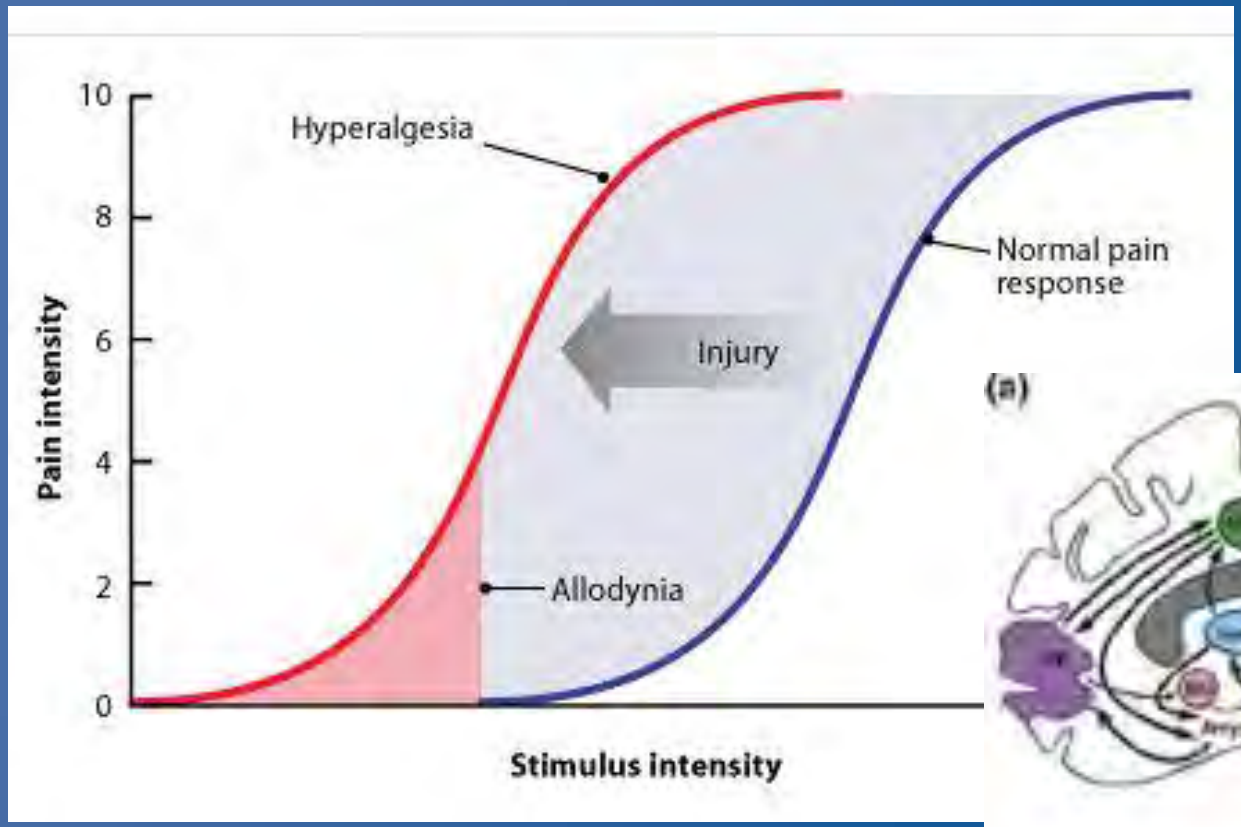

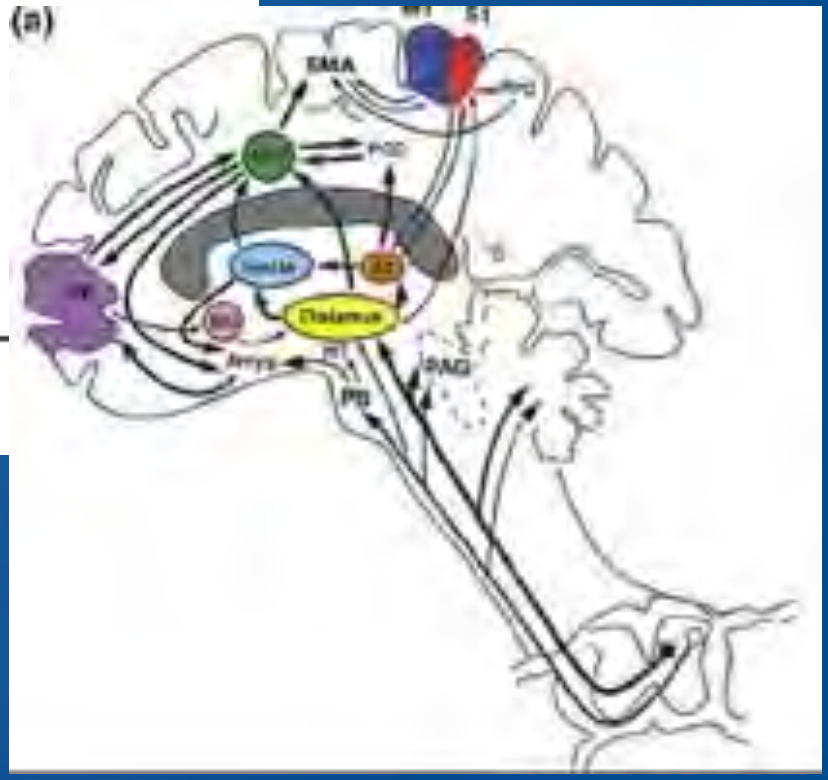

How individuals think about pain

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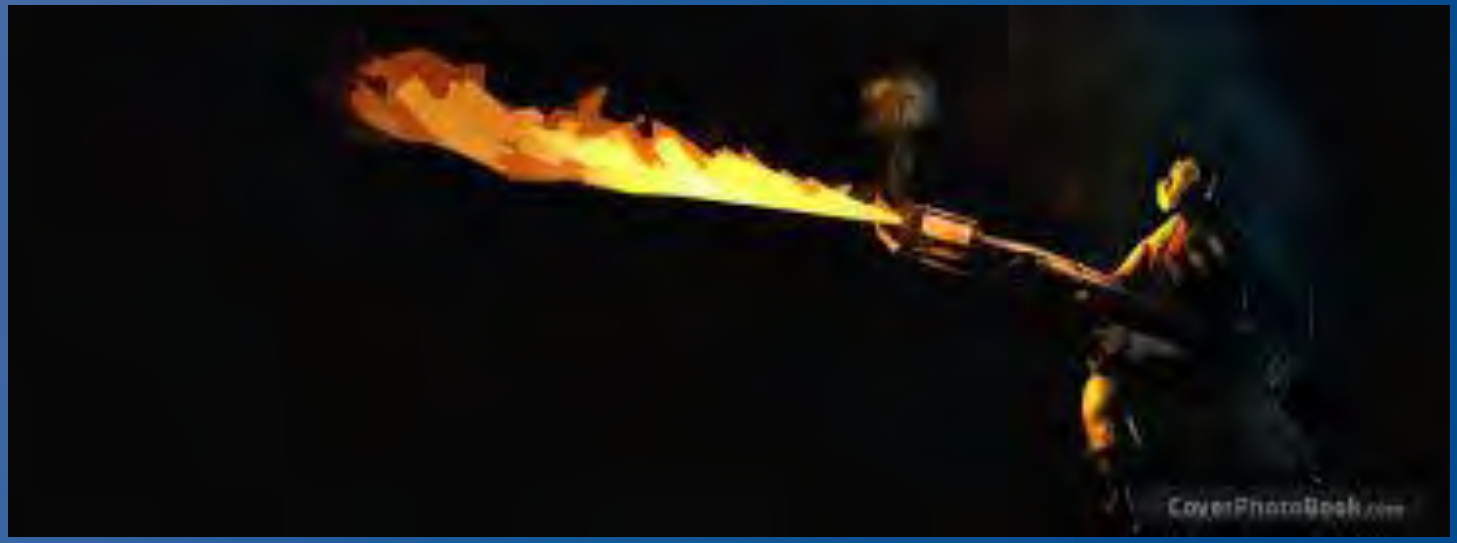


How providers have thought about pain

"Ask your doctor if taking a pill to solve all your problems is right for you."

Pain is common

- > 30% of Americans have some form of acute or chronic pain.
  - >40% in older adults

Depression is common in chronic pain

- 12-72% of chronic pain patients experience significant depression

- pain has been found to be a manifestation of depression and vice versa. Though there is no clear causality, their mutually reinforcing relationship is undeniable

Depression and anxiety in chronic pain are associated with:

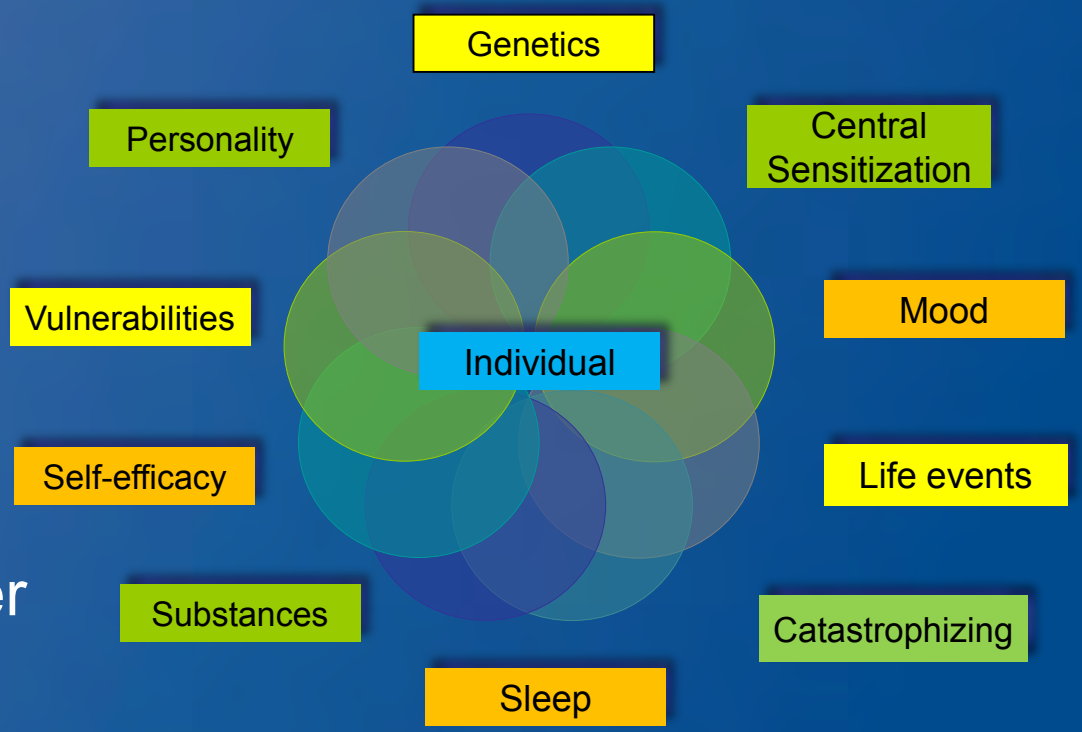
- more persistent pain
- lower quality of life
- higher opioid doses and prolonged prescription of opioids

Personality disorders

- prevalence of personality disorders is higher (31-81%) than the general population (~15%)
- greatest in populations with either medical or psychiatric illnesses

Chronic pain comorbidities

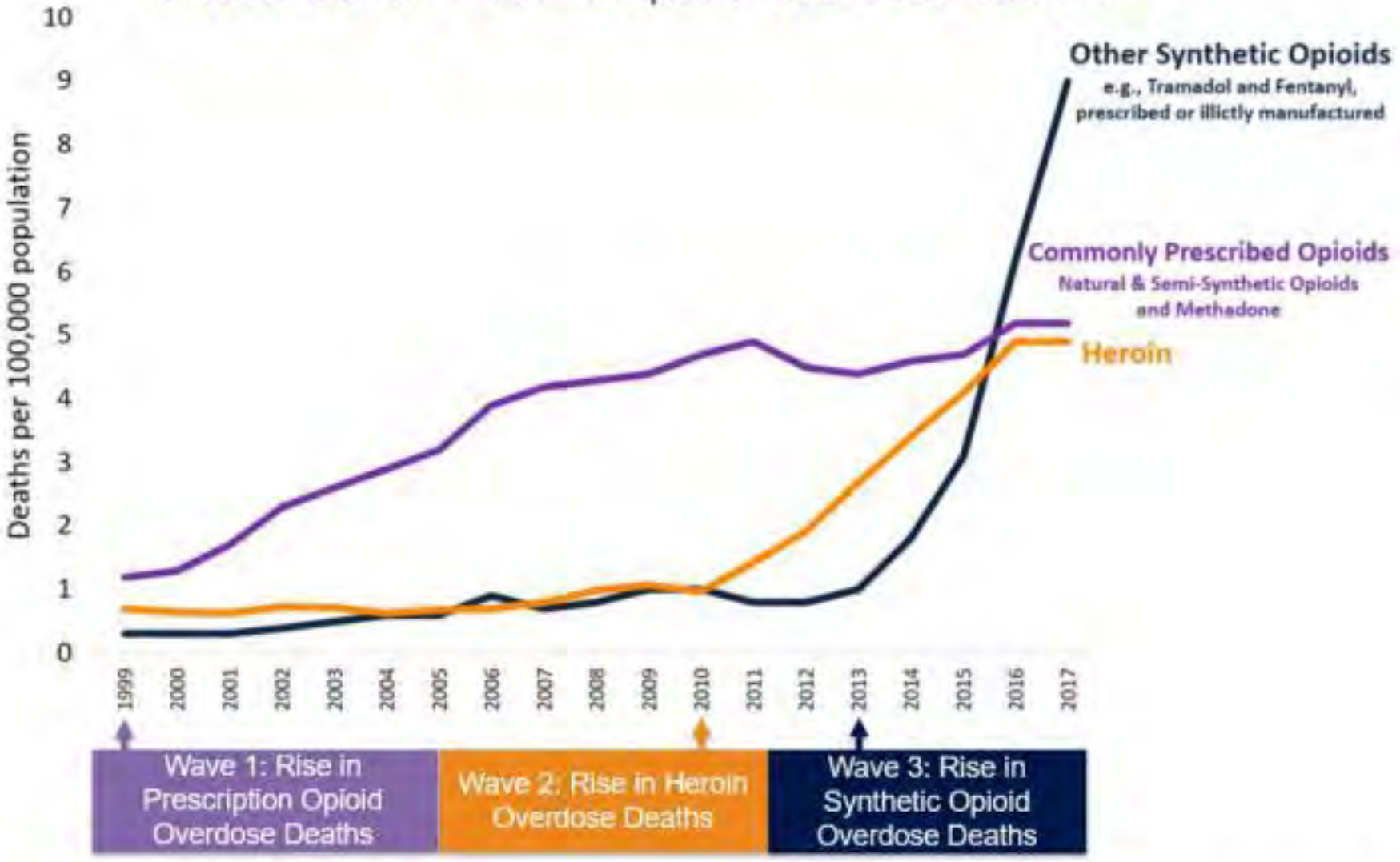
- Bereavement/grief
- Demoralization
- Stressful life events
- Major Depression
- Bipolar Disorder
- Anxiety Disorder
- Substance Use Disorder
- Insomnia Disorder
- Personality strengths/weaknesses



Objectives

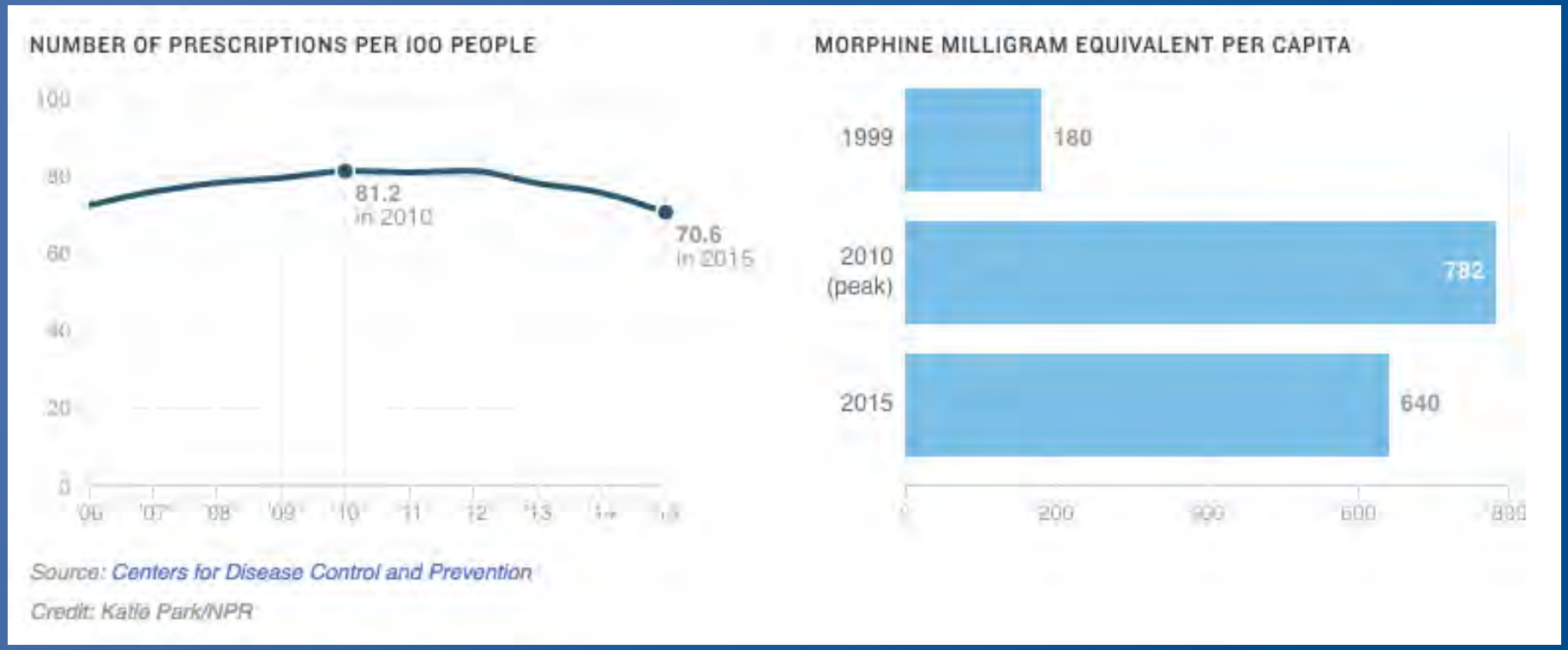
- Discuss how pain medications relate to psychiatric illness
  - The opioid epidemic
  - The effect of opioid and opioid use disorder on the brain
  - The use of opioids in chronic pain

3 Waves of the Rise in Opioid Overdose Deaths



SOURCE: National Vital Statistics System Mortality File.

Opioid prescriptions per 100 people in the U.S.



Opioid prescribing in Maryland, 2017

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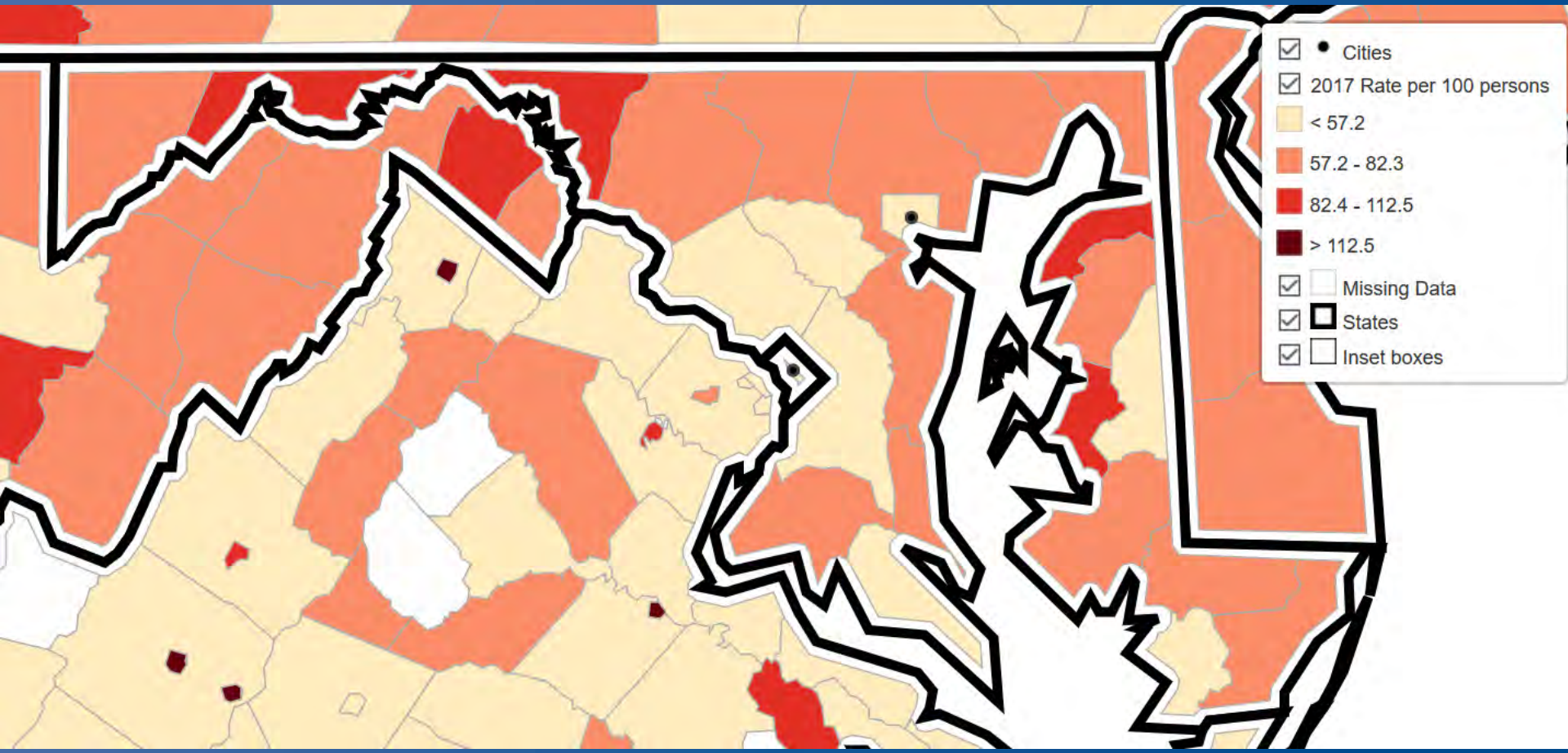
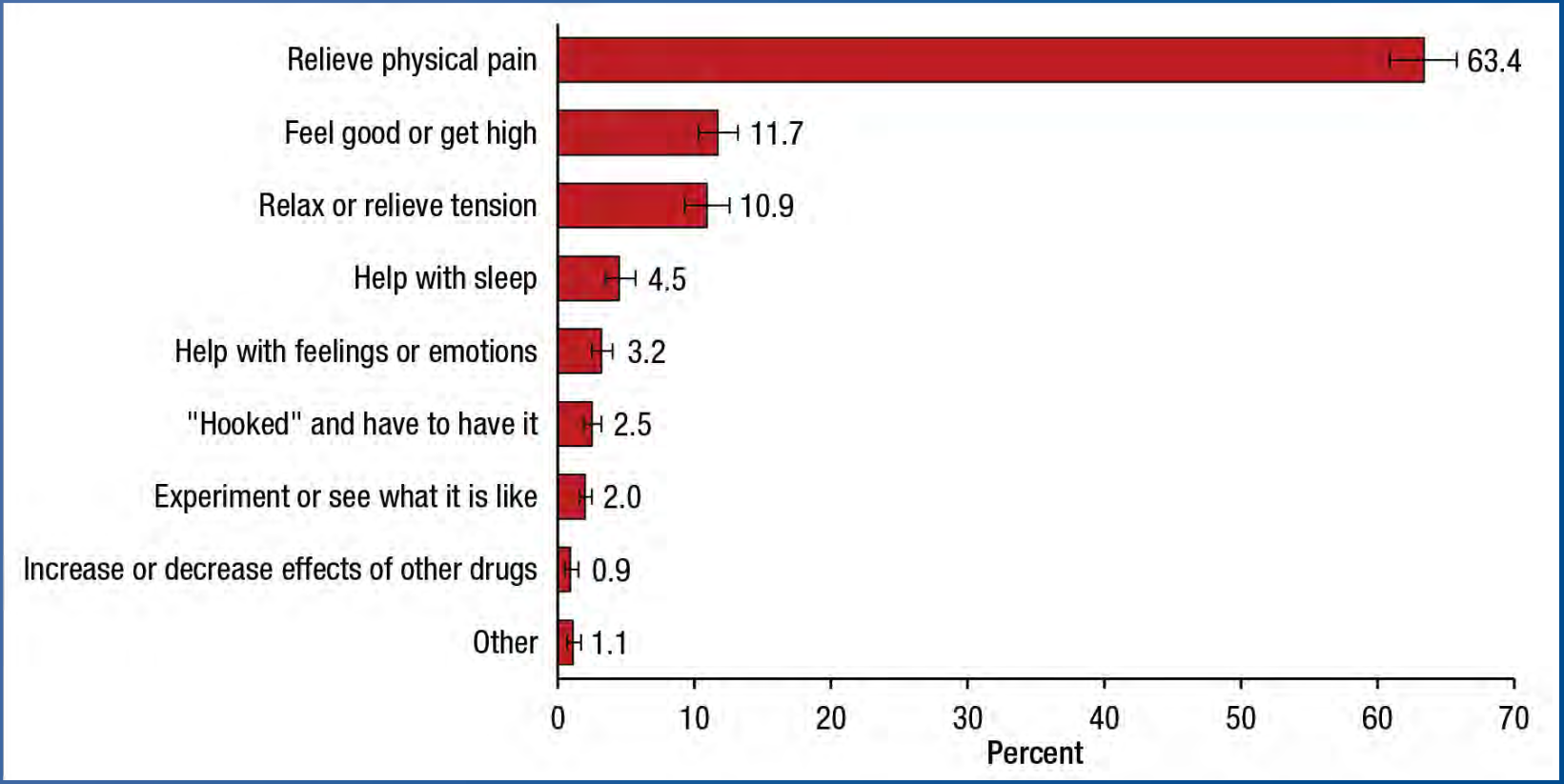


https://www.cdc.gov/drugoverdose/maps/rxcounty2017.html

Opioids are addictive drugs

- Rewarding
- Reinforcing
- Pleasurable

Main reasons for last episode of prescription misuse



Brain Reward Circuitry

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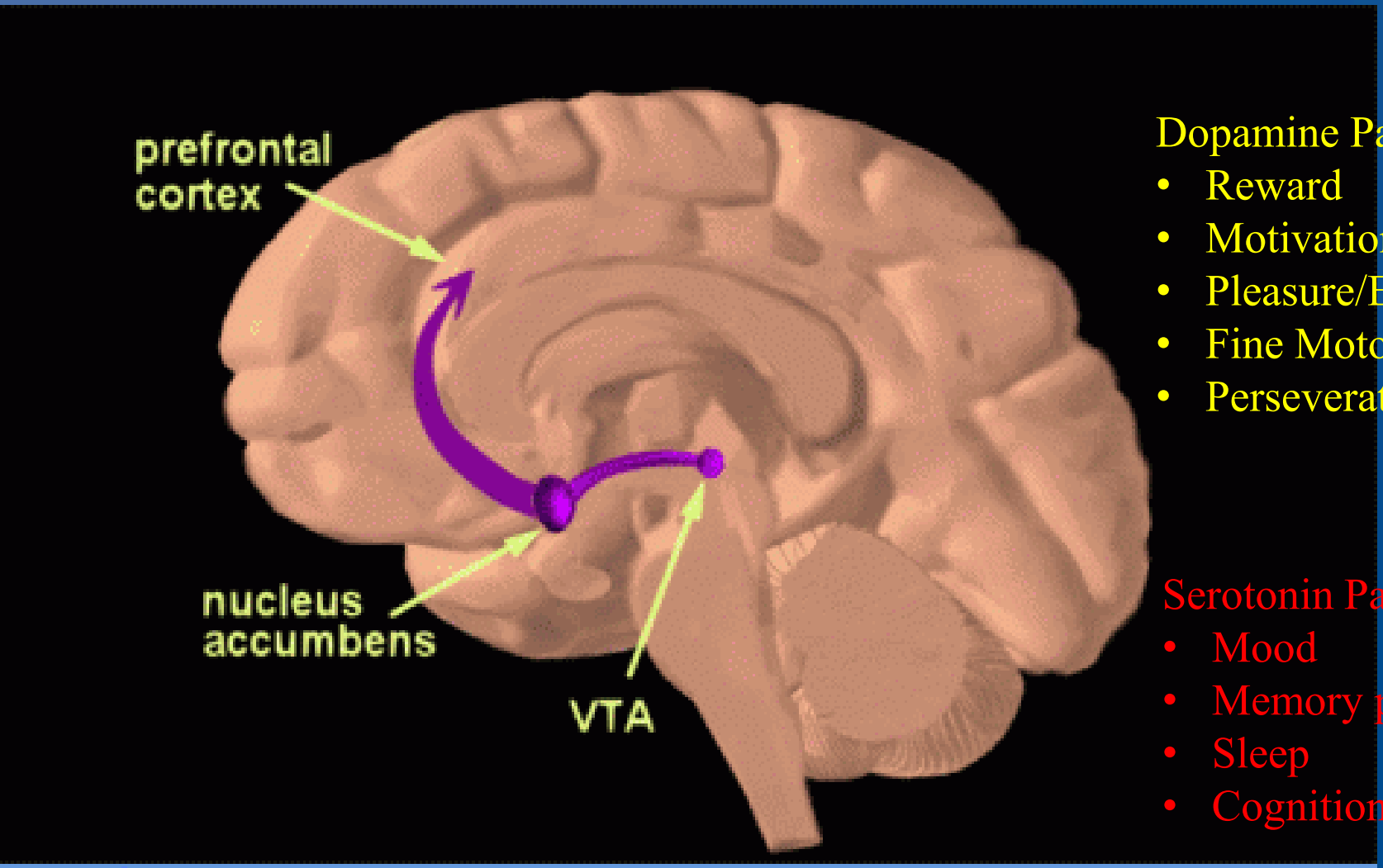

Dopamine Pathways
- Reward
- Motivation
- Pleasure/Euphoria
- Fine Motor Function
- Perseveration

Serotonin Pathways
- Mood
- Memory processing
- Sleep
- Cognition

Dopamine is the Reward Neurotransmitter in the Brain

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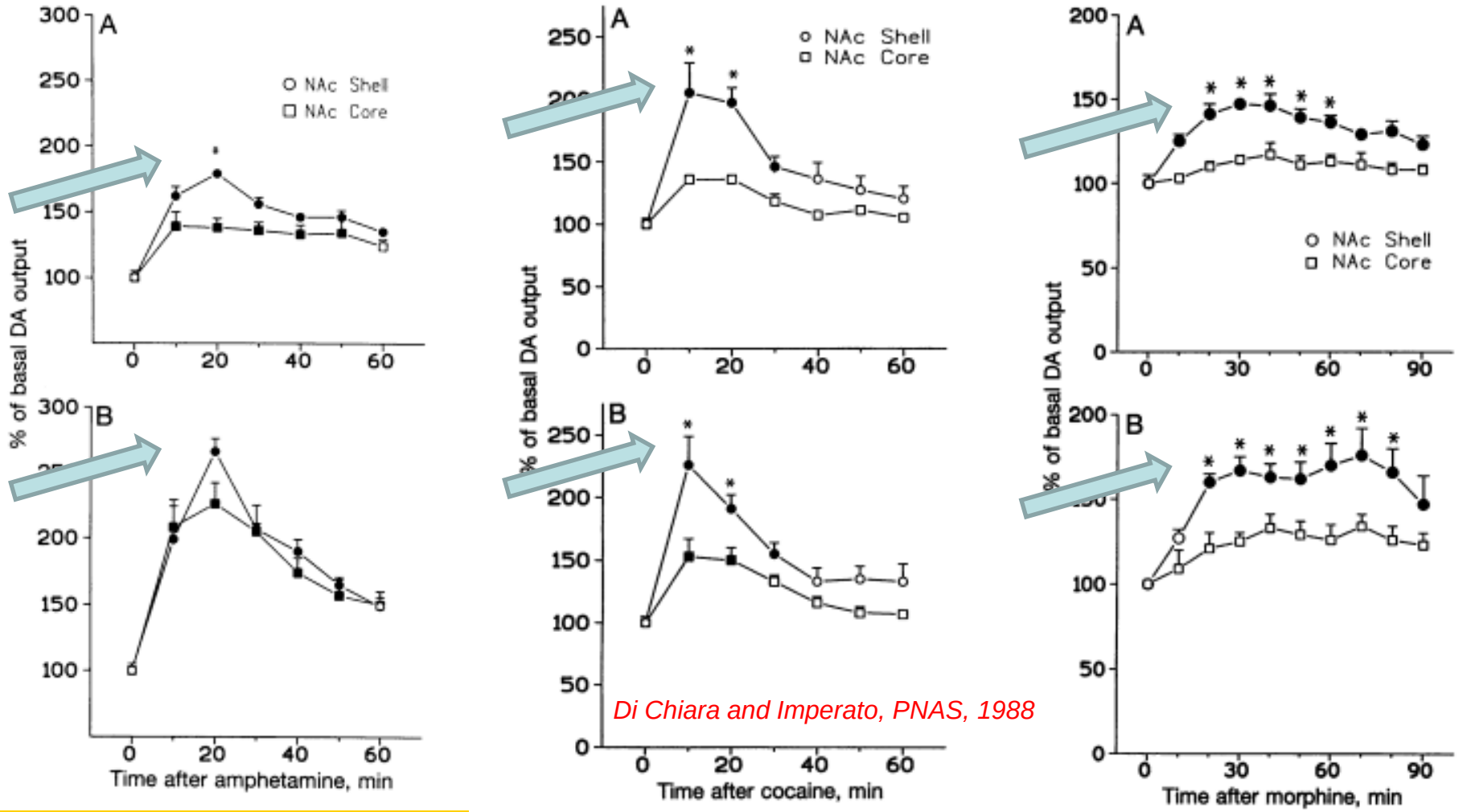
Amphetamine **Cocaine** **Morphine**



Di Chiara and Imperato, PNAS, 1988

Number of Adults Filling a Benzodiazepine Prescription, Quantity Filled, and Overdose Deaths Involving Benzodiazepines: United States, 1996–2013

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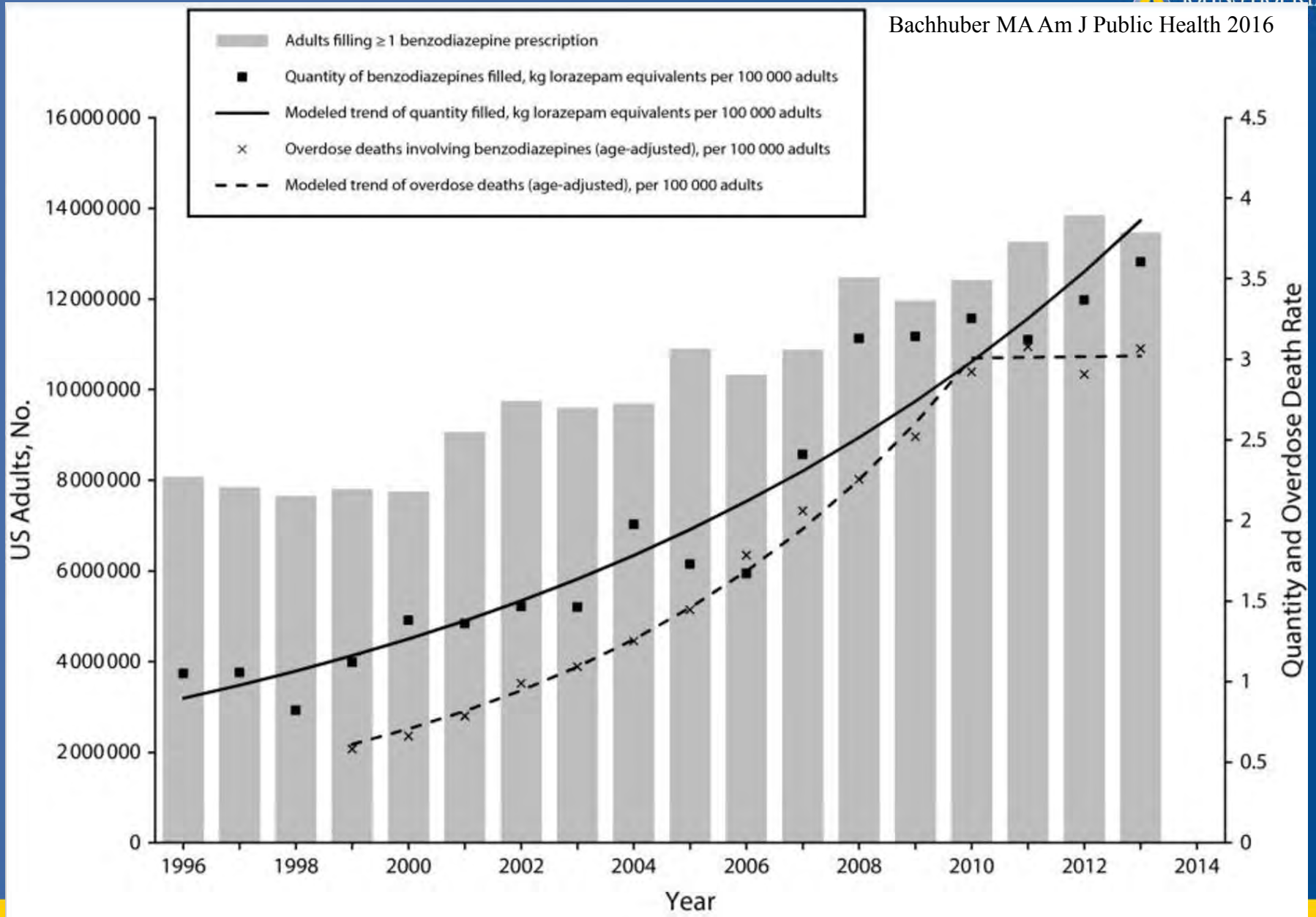
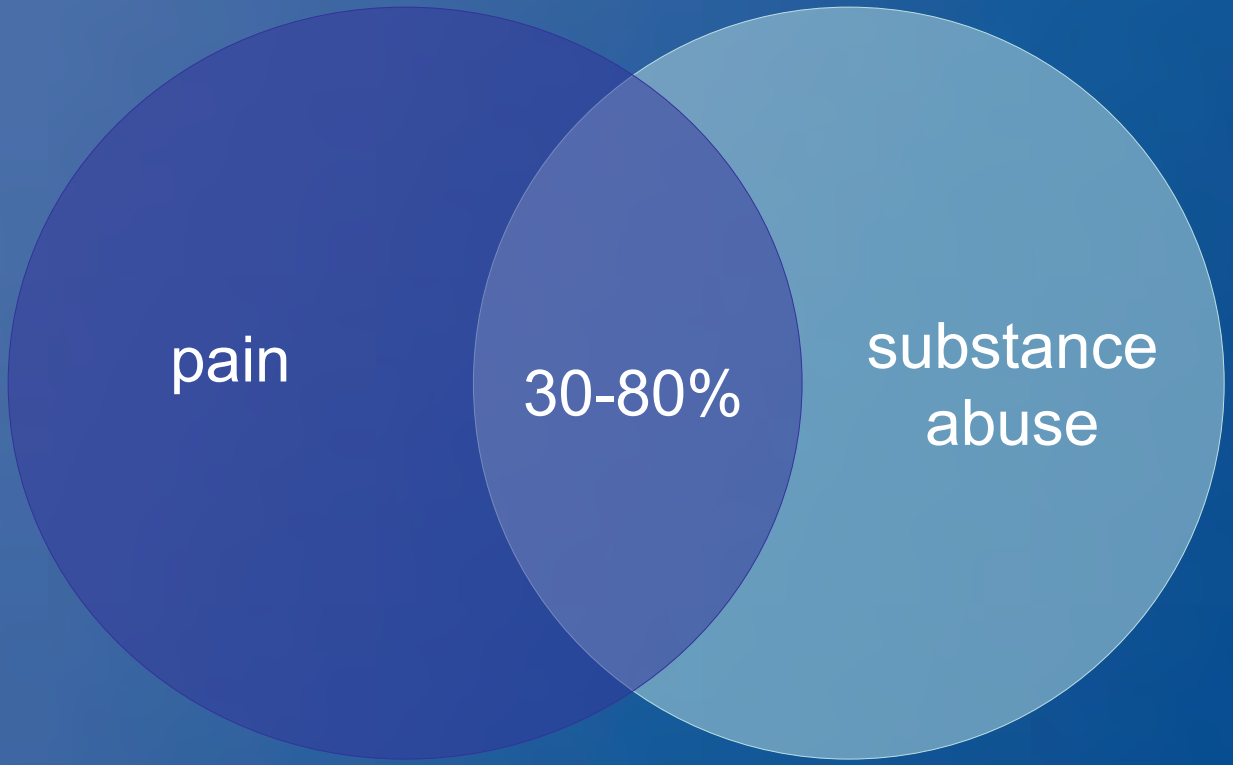
Bachhuber MA Am J Public Health 2016



Who is at risk of developing substance use disorder (SUD)?

- Family History
- Gender
- Early Onset of Drug Use
- Education
- Socioeconomic Status
- Trauma
- Stress
- Exposure to Drugs
- Impulsivity
- Poor Coping Skills
- Antisocial Traits
- Comorbid Psychiatric Disorders

Chronic Pain is Common in Substance Use Disorders



Carroll IR Pain Med 2015

How do substance use disorders affect pain management?

- increases liability to medication overuse
- decreases social networks and support
- decreases motivation to get well
- diminishes the baseline experience of being well

How important are opiates in the genesis of chronic pain disorders?

- Extremely powerful reinforcers
  - Positive reinforcement for use
  - negative reinforcement for disuse
- Intoxication allows for psychological comfort with worsening disability
- Decrease pain tolerance; hyperalgesia
- Allows for ongoing injury during peaks of pain relief
- Iatrogenic addiction is disordering

Major depression is a key comorbidity in chronic pain and opioid use disorder

- uncouples the reward system
- increases reliance on escapist and avoidance coping
- increases the vulnerability to medication overuse
- Increases pain sensitivity and decreases pain inhibitory pathways

Psychiatric disorders, chronic pain, and problematic opioid use

- significant association between psychiatric comorbidity (especially depression and anxiety) and:
  - the development of problematic opioid use
  - more severe opioid craving
  - poor opioid treatment outcomes

- depressive, anxiety, and substance use disorders are associated with increased use of prescribed opioids in the general population

Life story factors that shunt patients toward dysfunction

- Learned helplessness
- Lack of resources
- A disability system that rewards illness
- A legal system that rewards illness
- Acceptance of illness lifestyle
- Role modeling of self indulgence and comfort
- Lack of role modeling of meaningful sacrifice and acceptance of discomfort

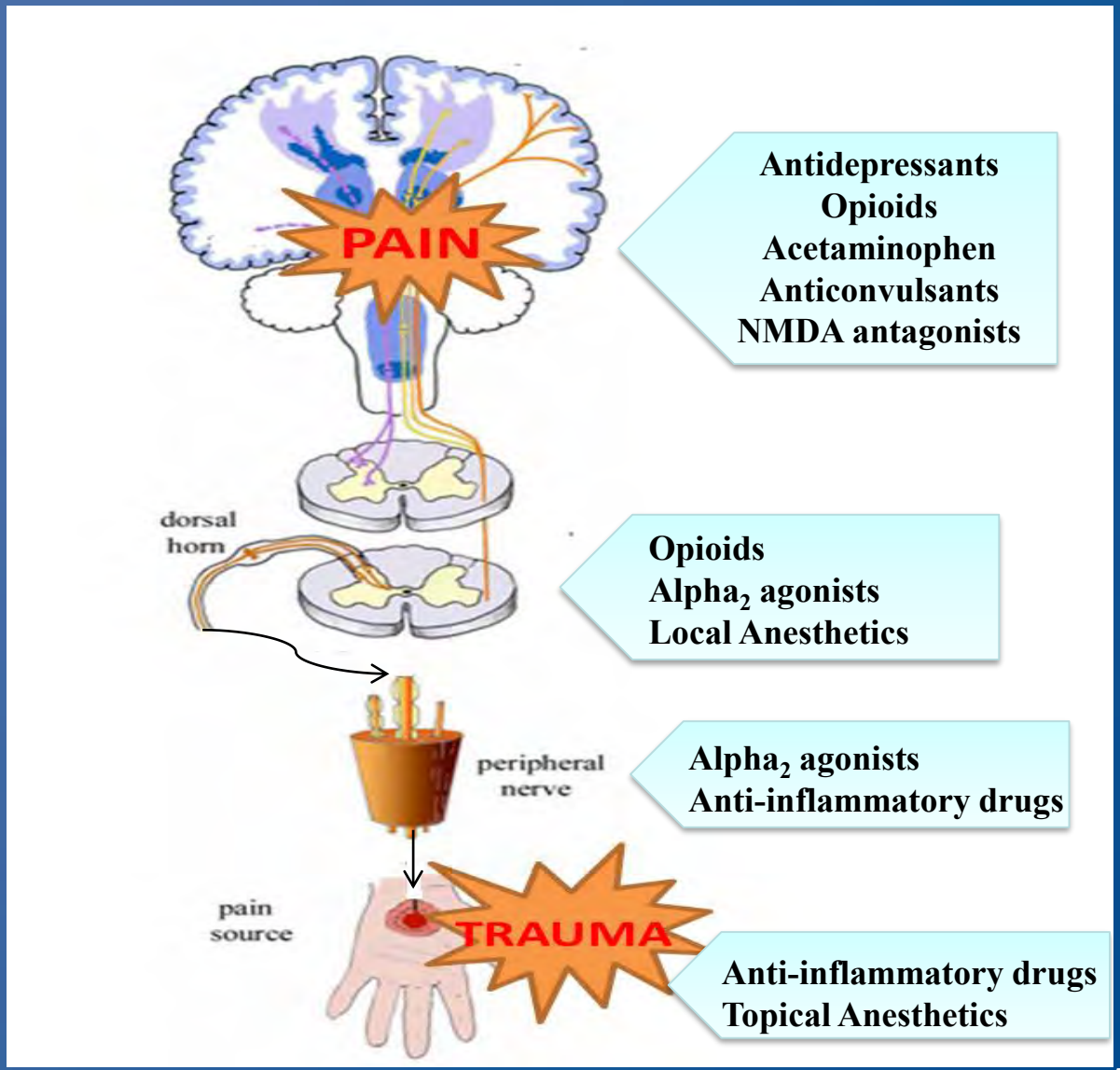
Objectives

- Identify psychiatric treatments that can impact pain
- Review management strategies for patients with psychiatric illness and pain disorders

Treatment strategies

- Medications
- Psychotherapy
- Interventions/Injections
- Stimulators
- Education
- Biofeedback
- Physical therapy
- Group therapy
- Exercise
- Family therapy

Multimodal therapy



Adapted from M. Hanna

Goals of behavioral therapy

- Not directed at elimination of pain *per se*
  - Pain may diminish because of reconditioning and rehabilitation
- Improve function
- Improve quality of life
- Decrease iatrogenic morbidity

Select treatment approaches

Step	Goal	Example
Describe diagnosis in terms that make it clear to the patient that this is a treatable condition, that the treatment is medical, and that you are going to help them	Describe chronic (as opposed to acute) pain	"In this kind of pain, your tissue is not being injured even though it feels like as if it is."
Delineate treatment goals in a therapeutically optimistic way	A clear description of the behavioral goals ,such as function, quality of life, and longevity	"Let's discuss some of the talents that you have and how you might be able to use them when you get well."

Step	Goal	Example
Treat comorbidities	Obtain a comprehensive history and treat comorbid mood disorders, addictive behaviors, and complicating life problems.	“We need to treat your depression aggressively, as it is likely further destabilizing the situation.”
Reward desired behavior	Make a fuss and applaud success	“Even though you were feeling upset, you still came into your appointment today. I am so proud of you! You are doing an amazing job.”

Steps for opioid detoxification

1. Stop the behavior

2. Prevent withdrawal

3. Diminish craving

Pharmacologic treatment for withdrawal

- Suppression of specific symptoms
  - Clonidine
  - Dicyclomine (Bentyl)
  - anticholinergics
  - NSAIDs
  - Methocarbamol (Robaxin)
  - Antihistamines

Toolbox of therapies

- Behavioral Approaches
- Relaxation
- Imagery
- Self hypnotic analgesia
- Distraction techniques
- Graded physical recovery exercises
- Assertiveness training

Pharmacotherapy

Selective Serotonin-Norepinephrine Inhibitors

venlafaxine, duloxetine, milnacipran, desvenlafaxine, levomilnacipran

Tricyclics

nortriptyline, desipramine, imipramine, amitriptyline

Antiepileptics

valproic acid, lamotrigine, carbamazepine, oxcarbazepine, gabapentin, pregabalin

Others

bupropion, mirtazapine, trazodone

Finnerup NB Lancet Neurol 2015
Tayeb BO Pain Med 2016
Tompkins DA Drug Alc Depen 2017

Collaboration is key

- Management of chronic pain and psychiatric disorders cannot be accomplished in silos
- Contact other physicians and providers involved
  - Pain management
  - Substance abuse treatment
  - Primary care
  - Physical/occupational therapist
  - Review the PDMP even if you aren't prescribing
- The goal is to create a unified plan of care!

Opioid Maintenance Therapy

- retention in treatment
- reduction in illicit opiate use
- decreased cravings
- reduced mortality
- improved social function including criminal activity
- recent studies with oral naltrexone ER show promise

methadone

buprenorphine

naltrexone

Mattick-RP Cochrane Database Syst Rev 2014
Bukten-A BMC Psychiatry 2013 Skeie-I BMJ Open 2011
Tanem-L JAMA Psychiatry 2017

Methadone

- Full μ-opioid receptor agonist
  Usual therapeutic dosage ranges from 60-120 mg daily.
- Induction usually starts at 30 mg daily with increases by 10 mg every 3-5 days, as needed.
- In the U.S., methadone for opioid dependence must be dispensed at a specially licensed center (daily).
- Side effects: constipation, dizziness, sweating, nausea, vomiting, sedation, increased appetite, decreased libido
- May cause prolonged QT interval at higher dosages (>100 mg daily). Consider baseline EKG and EKG monitoring.
- Analgesic properties last ~6h (split dosing for pain management)

Buprenorphine

- Partial μ-opioid receptor agonist
- Usual dosage 8 -24mg; often split BID dosing
- Buprenorphine/naloxone (4:1) combination used to prevent diversion by IV use.
- May be prescribed by buprenorphine-certified physicians in office-based setting or dispensed at methadone maintenance centers
- May precipitate withdrawal:
  - Give first dose 8-12 hours after last use of a short-acting opioid, 12-72 hours after the last use of a long-acting opioid, or when the patient shows signs/symptoms of moderate opioid withdrawal.
  - Monitor withdrawal using COWS (Clinical Opioid Withdrawal Scale) or CINA (Clinical Institute Narcotic Assessment)

Conclusion

- Comorbidity is common, but causality is unclear
  - It is almost always “and,” not “or”
- Collaboration is key, don’t go alone
  - Avoid treating in silos

Shameless (self) promotion

- ***Johns Hopkins Pain Treatment Program***
- E-mail: psychiatryadmissions@jhmi.edu
- Our philosophy of pain treatment is based on our experience that patients suffer more when their functioning and quality of life are impaired. Our goal is to increase the functional ability of each patient to the highest possible level.

Acknowledgements

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- Traci Speed
- Pat Carroll
- Paul Nestadt

Thanks!

- Questions?
- Keep in touch!
  - lizprince@jhmi.edu