

# Opioid Epidemic Update - 2018

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Pine Rest

# What are Opioids?

- Opiates are alkaloid compounds naturally found in the opium Poppy plant. *Papaver somniferum*
- The psychoactive compounds found in the opium plant include **Morphine**, **Codeine** and **Thebaine**.
- There are Opioid receptors on nerve cells all over the body and in the brain. They regulate pain and the reward center.
- When stimulated these receptors decreases pain, reduce anxiety, creates a sense of well being and indifference to physical and emotional pain.

# What are Opioids?

- Long term use of opiates produces molecular changes in nerve function and genetic processes some of which may be long lasting.
- The euphoric effects of these drugs are what attracts people to recreational use.
- The severity of withdrawal symptoms after developing tolerance is what keeps people addicted.
- The craving for opiates is often a life long experience

# The 10 most deadly drugs in 2014 were:

- **Heroin** (23 percent of overdose deaths);
- Cocaine (12.4 percent)
- **Oxycodone**, (11.5 percent)
- Alprazolam/Xanax (9 percent)
- **Fentanyl** (8.9 percent)
- **Morphine** (8.5 percent)
- Methamphetamine (7.9 percent)
- **Methadone** (7.4 percent)
- **Hydrocodone/Vicodin** (7 percent)
- Diazepam/Valium (3.7 percent)

# Are Americans in more pain than any other population around the world?

- Approximately 80 percent of the global opioid supply is consumed in the United States.

**Some states have more opioid prescriptions per person than others.**



SOURCE: IMS, National Prescription Audit (NPA™), 2012.

# Opioid Epidemic - Facts

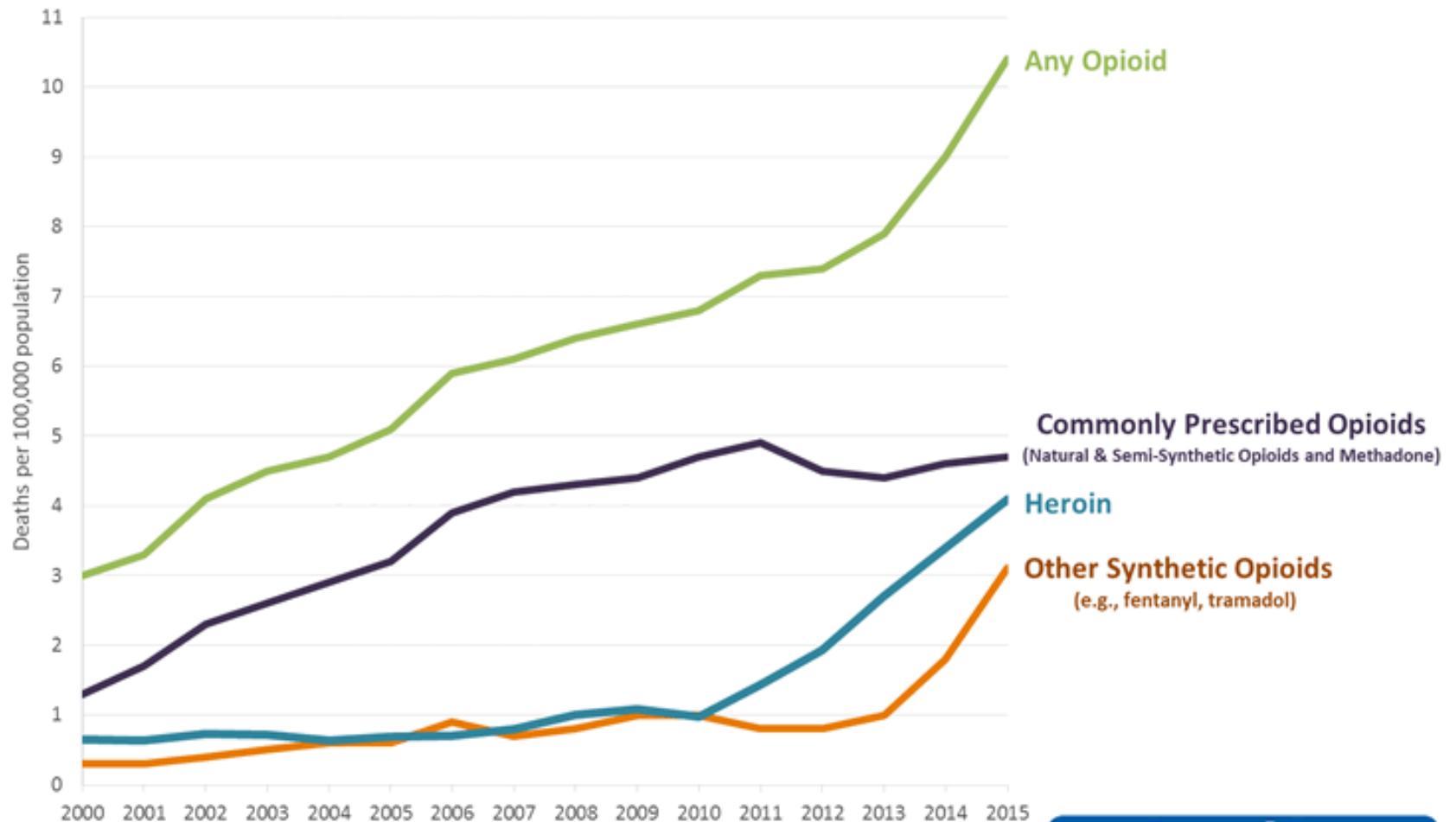
- Drug overdose deaths and opioid-involved deaths continue to increase in the United States.
- 64,000 deaths due to drug overdoses in 2016.
- Now : 1 person dies every 19 minutes from drug overdose.
- 91 Americans die every day from an overdose.
- The supply of prescription painkillers is larger than ever. The quantity of prescription painkillers sold to pharmacies, hospitals, and doctors' offices was 4 times larger in 2010 than in 1999

# Opioid Epidemic - Facts

- Among new heroin users, approximately **three out of four** report abusing prescription opioids prior to using heroin. (80% SAMSHA)
- The increased availability, lower price, and increased purity of heroin in the US have been identified as possible contributors to rising rates of heroin use.
- The CDC noted, in its national update released Dec 2016 in the *Morbidity and Mortality Weekly Report*, that more than 300,000 Americans have lost their lives to an opioid overdose since 2000



## Overdose Deaths Involving Opioids, United States, 2000-2015



SOURCE: CDC/NCHS, National Vital Statistics System, Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human Services, CDC; 2016. <https://wonder.cdc.gov/>.

**www.cdc.gov**  
Your Source for Credible Health Information

# If these are the facts then why is our response not appropriate?

- Do we not have treatments?
- Stigma?
- Are we still struggling with the age old question of is addiction a disease or a choice?

# Disease:

- A condition that impairs normal functioning
- Has specific signs and symptoms
- Not directly a result of a physical injury

In humans, disease is often used to refer to any condition that causes Pain, Dysfunction, Distress, Social problems or Death.

# Illness:

A period of sickness that affects body or mind.

# Addiction the Disease

- For centuries addiction has been viewed as a lack of will power, a personal failure or a choice.
- Punished rather than treated.
- Frowned upon rather than cared for.
- Addiction is a chronic disease no different than Diabetes, Hypertension, Asthma or Cancer.

# Addiction the Disease

- Genetic predisposition.
- Caused by combination of Biological, Behavioral and Environmental factors.
- Leads to Biochemical changes, Structural changes, Behavioral changes.
- Has specific signs and symptoms
- It damages various body systems as well as families, relationships, schools, workplaces and neighborhoods.

# Addiction the Disease

- Addiction is a chronic complex disease of the brain.
- Addiction disrupts regions of the brain that are responsible for reward, motivation, learning, judgment and memory.
- If untreated leads to worsening of physical and mental health disorders

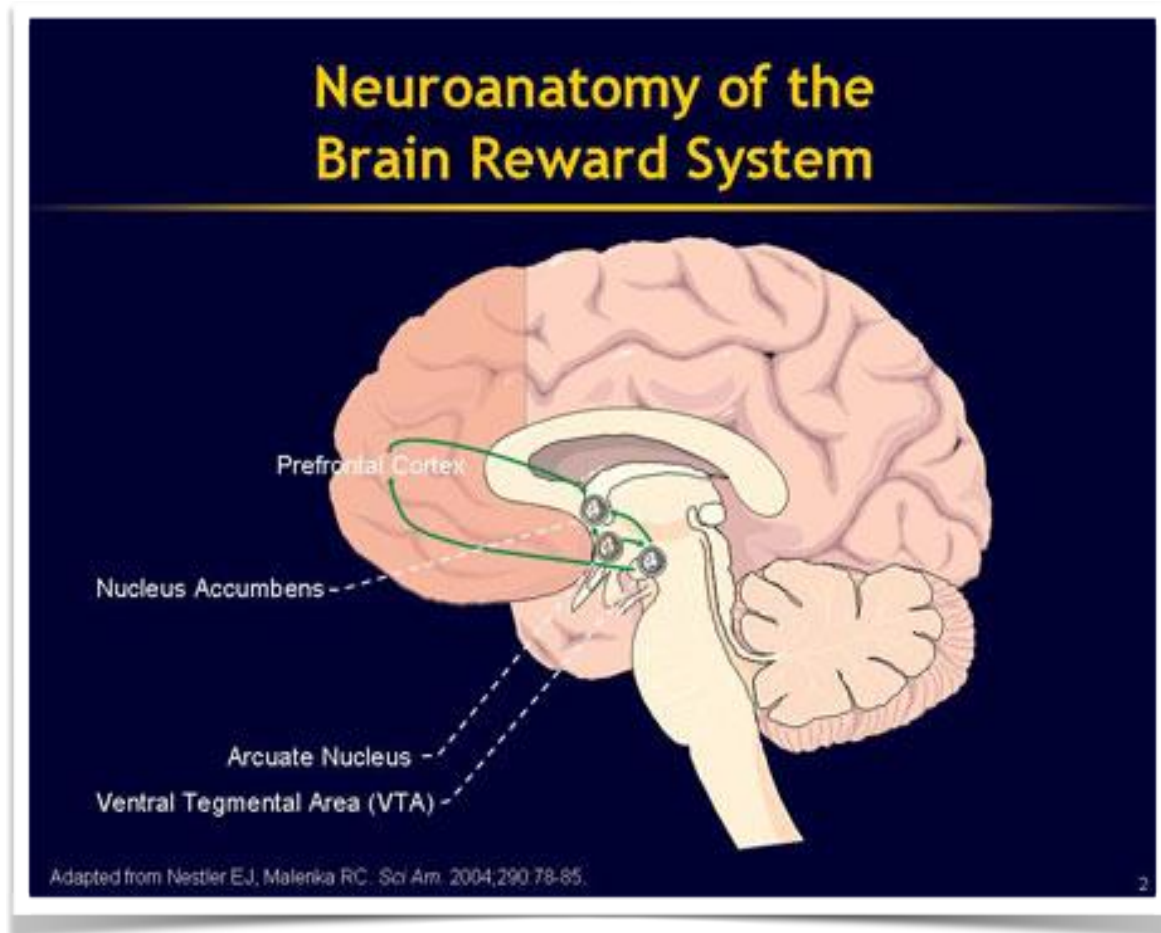
# Addiction and Genetics

- Multiple animal model studies, human studies and twin studies have proved that Addiction has a strong genetic influence.
- But the influence is something other than Mendelian mode.
- There is a necessary component of gene-by-environment interaction.

A person *cannot* become substance dependent without exposure to the substance, regardless of genetic constitution.

The VTA - NA pathway is activated by all drugs of abuse; also by eating, drinking sleeping and sex.

Dopaminergic neurons in VTA project to Nucleus Accumbens, Prefrontal cortex and other areas.

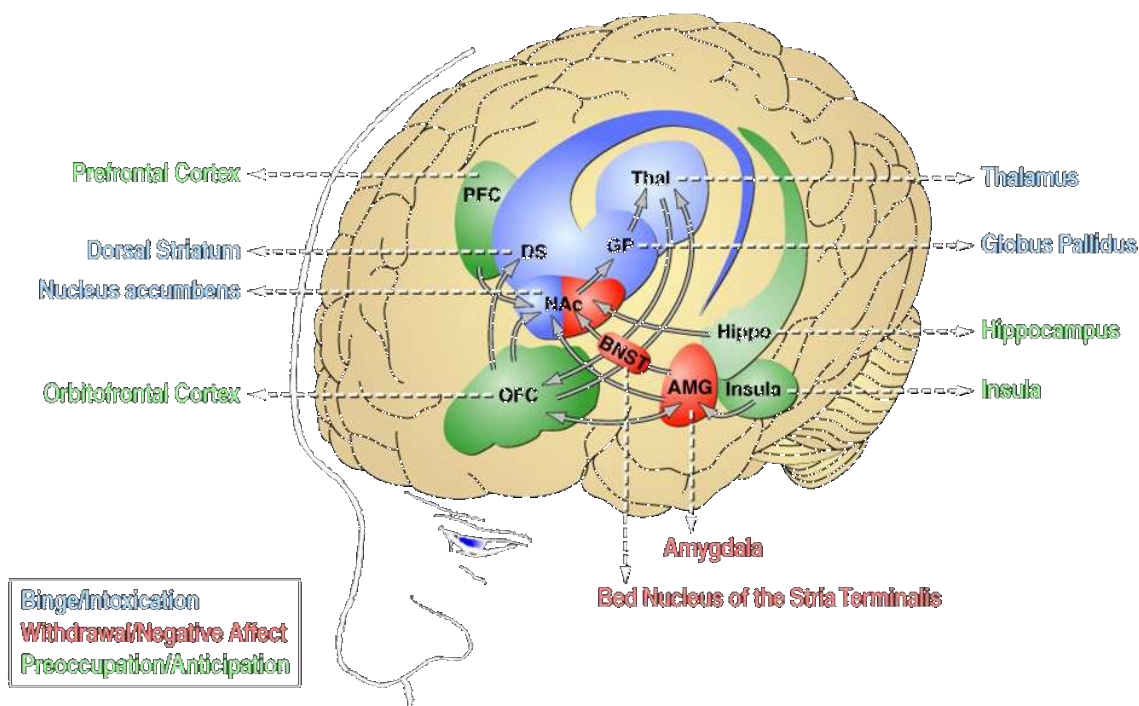




# Brain Structures

## Neurobiology of Addiction

- **Nucleus Accumbens**  
Reward
- **Prefrontal Cortex**  
Impulse Control
- **Orbitofrontal Cortex**  
Motivation
- **PFC / OFC**  
Judgement
- **Amygdala**  
Emotional Response
- **Hippocampus**  
Memory



# Opiates and Psychiatry

- Opioids cause short term and long term changes in the brain which can mimic and actually cause mental illness.
- There is bi-directional pathway between opioid use and several mood and anxiety disorders, such as Major depressive disorder, Bipolar Disorder, Posttraumatic Stress disorder, Panic disorder and Generalized anxiety disorder.

# Opiates and Psychiatry

- Opioid use can worsen preexisting psychiatric disorders
- Opiate use also interferes with treatment of psychiatric disorders
- Opioid use is usually complicated by other drugs of abuse.
- Rates of alcoholism and antisocial personality are found to be elevated in comparison with those found in a community population.
- Increased risk of suicide

# Addiction is a Family disease

- The ripple effects of addiction extend far beyond an individual.
- Addiction destroys the entire family and affects friends, co-workers, neighbors and employers.
- Family members often enter into an unhealthy co-dependency with the substance user.
- Addiction treatment is also more effective when family and loved ones are involved.

Thank you for listening.