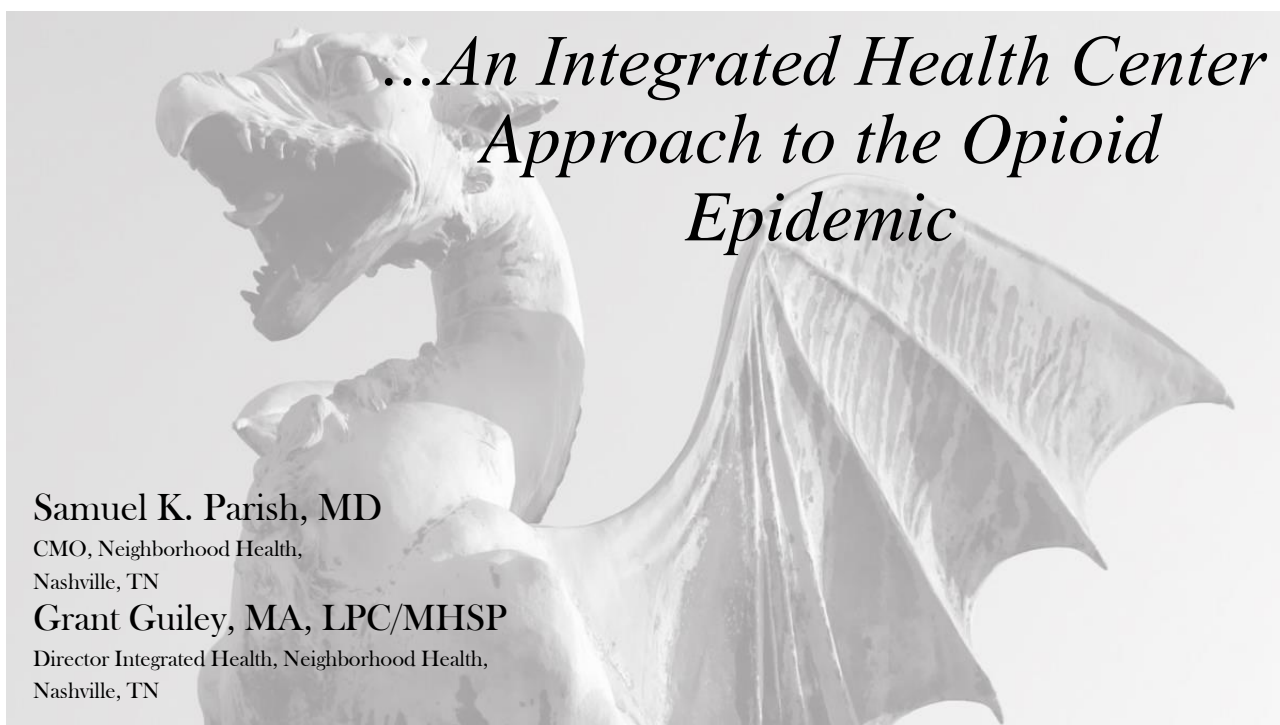


Taming the Dragon...



*...An Integrated Health Center
Approach to the Opioid
Epidemic*

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Disclosures of Conflict of Interest

Samuel K. Parish, MD:

- No financial or other conflicts

Grant Guiley, MA, LPC/MHSP:

- No financial or other conflicts

Learning Objectives:

1. Review the history of opiate use and societal responses.
2. Understand significance of the opioid epidemic in the U.S. and Tennessee.
3. Understand the Biopsychosocial Model in addiction.
4. Review the components of an Integrated Model of treatment in a community health center.
5. Discuss Medication-Assisted Treatment in an Integrated Model along with barriers to success.



Compulsive continuation of a behavior despite significant negative consequences.



Components of Addiction:



"...three factors need to coincide for substance addiction to occur: a susceptible organism; a drug with addictive potential; and stress."

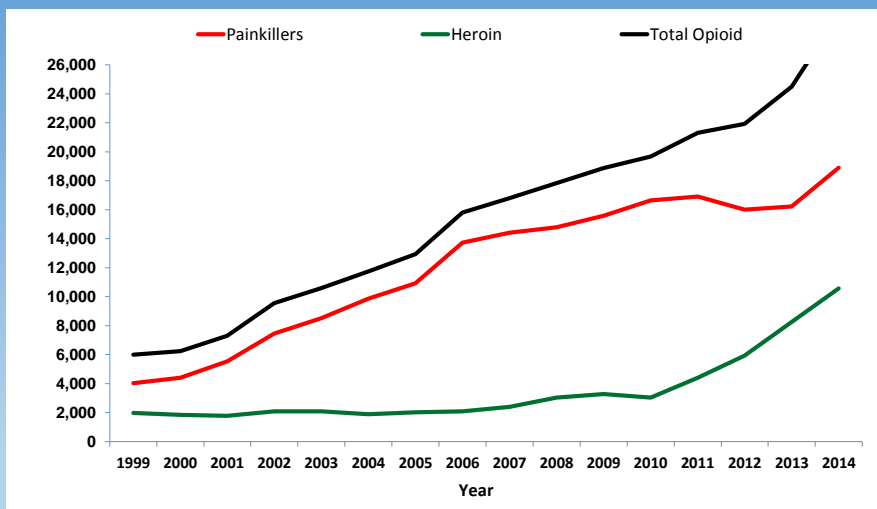
In the Realm of Hungry Ghosts: Close Encounters with Addiction
Gabor Mate, MD
2008



500,000
 drug overdose deaths
 since 1999

4x
 as many Rx opioid deaths in
 2013 as in 1999

Opioid Related Overdose Deaths: 1999-2013



CDC, National Center for Health Statistics, National Vital Statistics System, CDC Wonder. Updated with 2010 mortality data.



The Opium Poppy: *Papaver somniferum*



Opiates & Opioids

Opiates = naturally present in opium

- e.g. thebaine, codeine, morphine

Opioids = manufactured

- Semisynthetics are derived from an opiate
 - heroin from morphine
 - buprenorphine from thebaine
- Synthetics are completely man-made to work like opiates
 - methadone

The sap is extracted by slitting the pod

Highly refined Southwest Asian heroin or Southeast Asian heroin





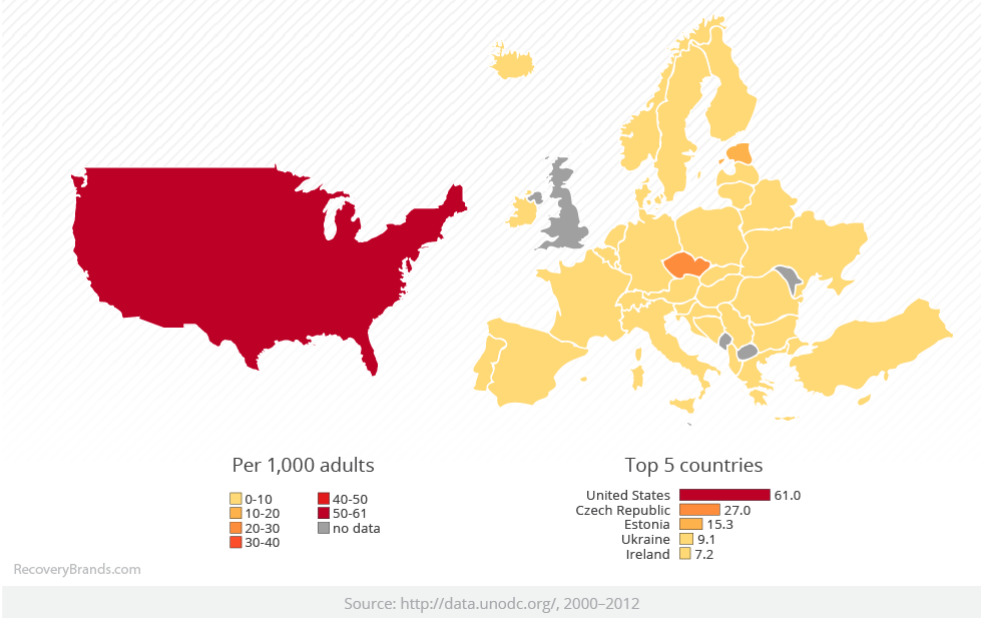

Morphine and Heroin

1895
heroin (diacetyl morphine)
was introduced by the Bayer
Company in Germany. It was
believed to lack the
dependence-producing
properties of morphine.

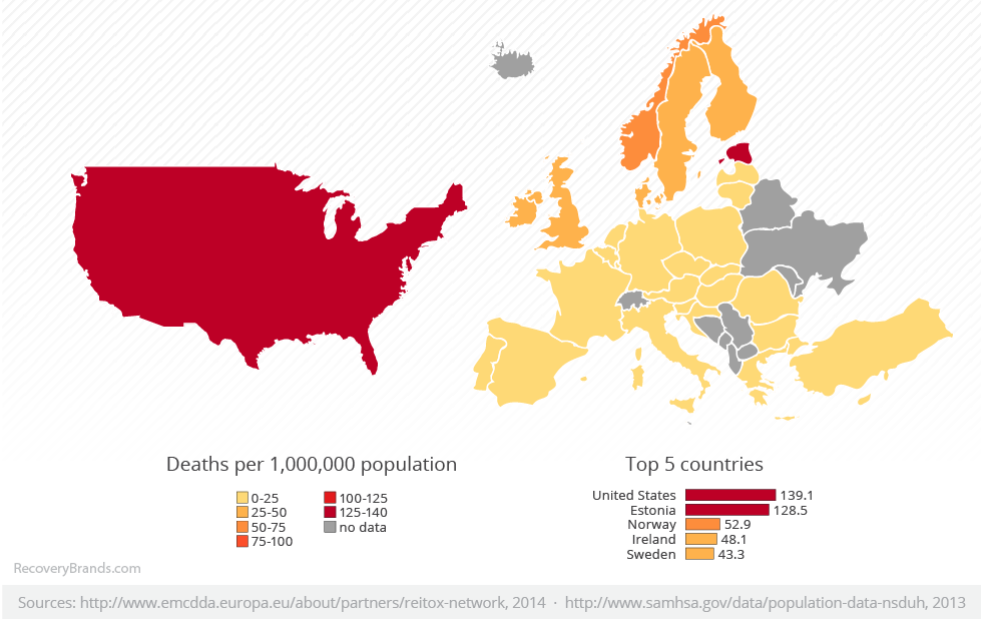
Used at turn of the century to
treat morphine addicts



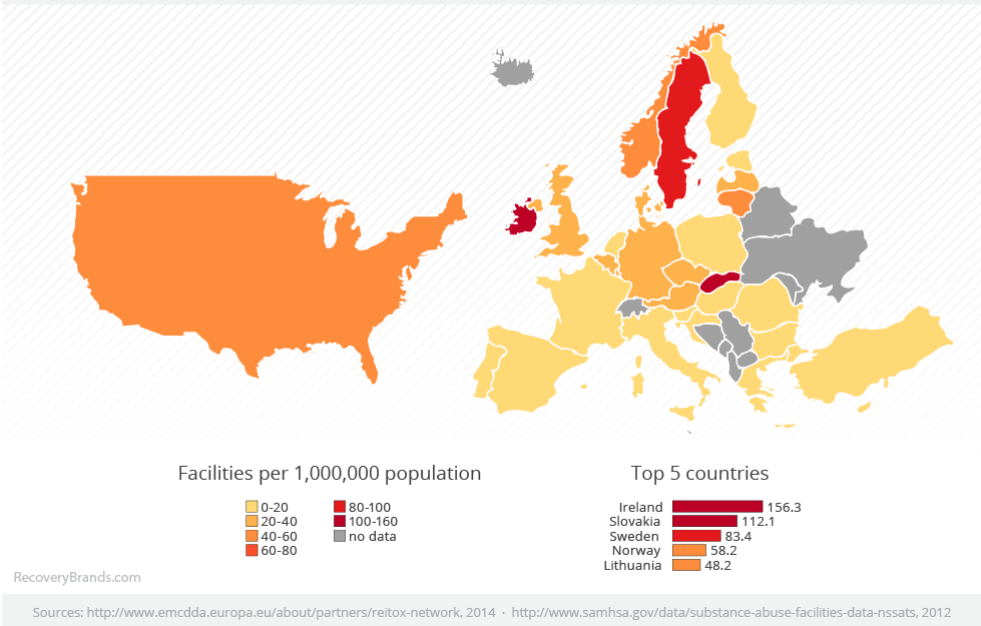
Prevalence of opioid use at least once during past year



Drug overdose deaths per year



Substance abuse treatment facilities per capita



Tennessee Overdose Deaths 2011-2014

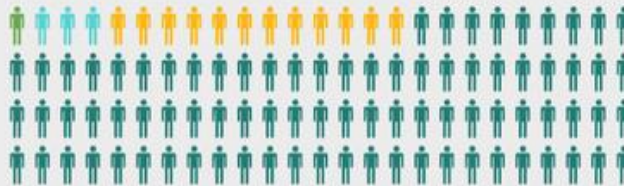


Tennessee Department of Health

1,263 people, at least, died from opioid overdose in 2014 in Tennessee

For every one person who dies there are 851 people in various stages of misuse, abuse and treatment, according to estimates from the U.S. Centers for Disease Control and Prevention.

There are at least 1,074,813 Tennesseans, or about 1 in 6, misusing or abusing opioids or in treatment, by the CDC's estimate.

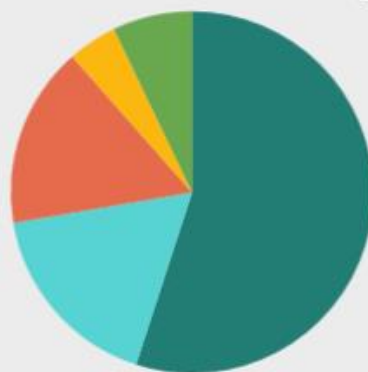


For those who died in 2014 there are

- 12,630 in treatment admissions for abuse
- 32,838 emergency room visits for misuse or abuse
- 136,404 people who abuse opioids or are dependent
- 925,779 non-medical users

Source: Tennessee Department of Health and U.S. Centers for Disease Control and Prevention

People who abuse prescription painkillers get the drugs from a variety of sources



-Free from friend or family: 55 percent

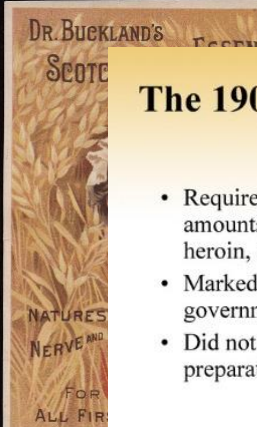
-Prescription: 17.3 percent

-Bought or stole from friend or family: 16.2 percent

-Drug dealer or stranger: 4.4 percent

-Other: 7.1 percent

Source: 2010 National Survey on Drug Use and Health via Tennessee Substance Abuse and Mental Health Services Administration



The 1900

- Require amounts heroin, cocaine
- Marked government property
- Did not require preparation

Harrison Act of 1914

- Estab. Registration & Taxation on opiates and cocaine
- Administered by U.S. Treasury Dept.
- Law interpretation/Supreme Court decisions:

- a) Penalties
- b) Arrests
- c) Redefinition
- d) Characterization

The Porter Act of 1929

- After Plea from Fed. Prison Officials
- Funded estab. Of 2 Narcotic Farms for addicts under direction of U.S. Public Health Service
- Lexington, Ky opened 1935 and Ft. Worth, Tx opened in 1938

• THE FIRST •
United
 UNITED STATES
 NARCOTIC FARM
 AT
 LEXINGTON KENTUCKY

Lexington Narcotic Farm:

- Opened 1935
- Renamed U.S. Public Health Service Hospital
- 1000 acre farm/dairy/furniture & garment production/
- Capacity: 1000-1500





Admission:

- Legal commitment from Federal Courts
- Voluntary
- Expanded for women in 1941

Daily Activities:

- Work— 4X more than therapy
- Individual therapy
- Group therapy
- Sports: outdoor fields/bowling alley
- Art classes

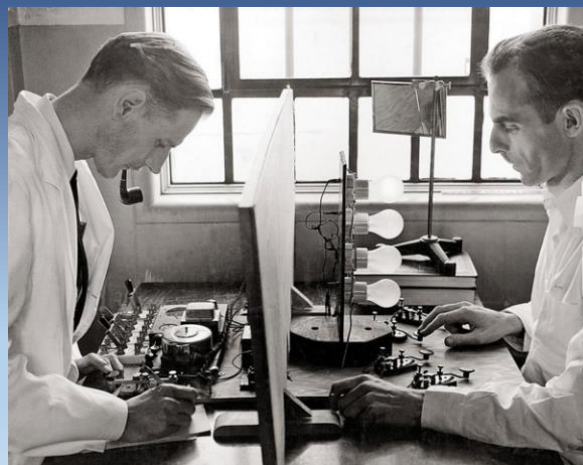


• Best Jazz in the country!



Research: the lasting legacy

- Addiction Research Center (ARC)
- Precursor to Nat'l Instit. on Drug Abuse (NIDA)--1974



Treatment Outcome Studies at Lexington and Ft. Worth

90% to 96% of treated addicts returned to active opiate addiction within 6 months of release from the federal narcotics hospitals. A more positive way of saying it is that 4% to 10% of these addicts did not return to active opiate addiction within 6 months following treatment.

Some saw this as treatment failure and some saw it as comparable to outcome studies of other chronic diseases of the day such as TB, arthritis, hypertension and diabetes.

Many saw this as fuel for the fire of prevailing public opinion that relapse was a conscious choice of moral weaklings.

How did America address the drug problem?

Declared War!



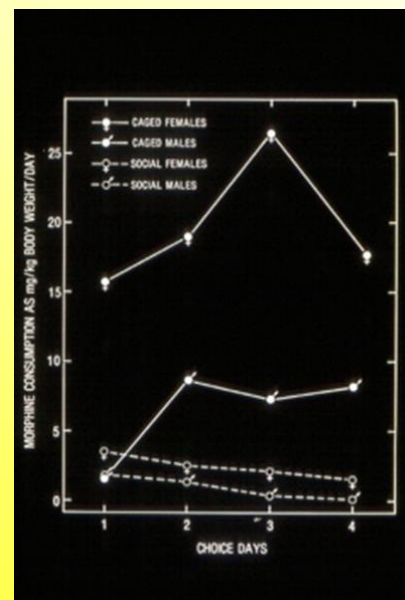
Skinner Box



Rat Park



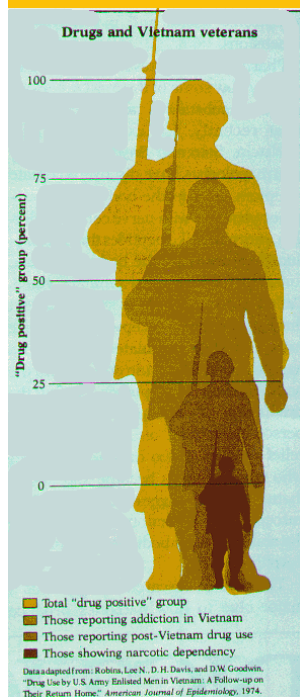
Rat Park Experiments: Dr. Bruce Alexander



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Real World correlates of Rat Park

- Lexington and Ft. Worth Narcotic Farms
- Vietnam War veterans



Vietnam Veterans and Drug/Opiate Use:

- 470 General Pop. Enlisted Men
- $\frac{1}{2}$ had tried opiate/heroin
- $\frac{1}{5}$ developed Physical Dependence
- After return to U.S.:
- 10% occas. used opiates
- <1% opiate dependence
- 495 Vets + Opiate urine screen when departing Vietnam
- $\frac{3}{4}$ reported Opiate dependence when in Vietnam
- After return to U.S.:
- $\frac{1}{3}$ occas. used opiates
- 7% Opiate Dependence

Drug Use by U.S. Army Enlisted Men in Vietnam: A Follow-Up on Their Return Home
Am. J. Epidemiol. (1974) 99 (4): 235-249.

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Real World correlates of Rat Park

- Lexington and Ft. Worth Narcotic Farms
- Vietnam War veterans
- Afghanistan

The Biopsychosocial Approach to Treatment



The Nature of Addiction/Dependence

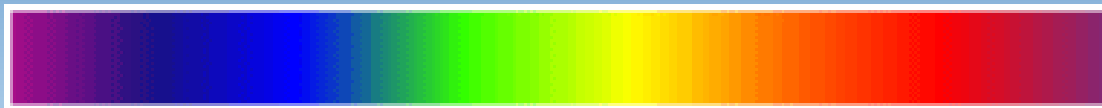
Desire/Craving

Strong Desire

Compulsion

Addiction

Dependence



The Nature of Addiction/Dependence

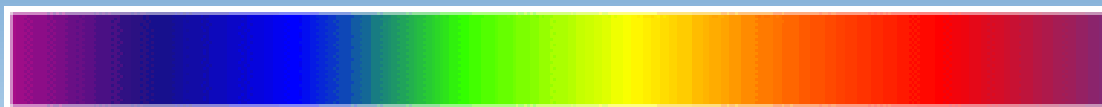
Desire/Craving

Strong Desire

Compulsion

Addiction

Dependence



Willingness to Sateiate Despite Negative Consequence

Behavior Chains



Because a single link is just a metal ring

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Willing To Bear the
Cost???



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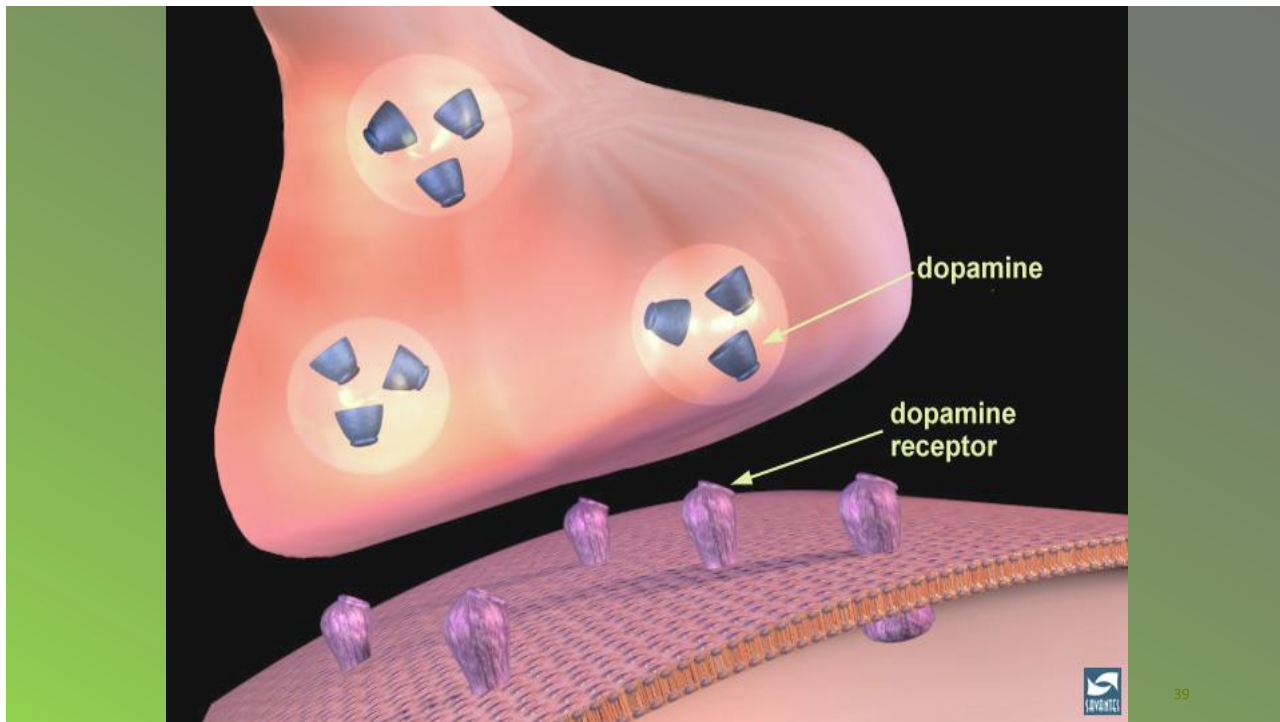
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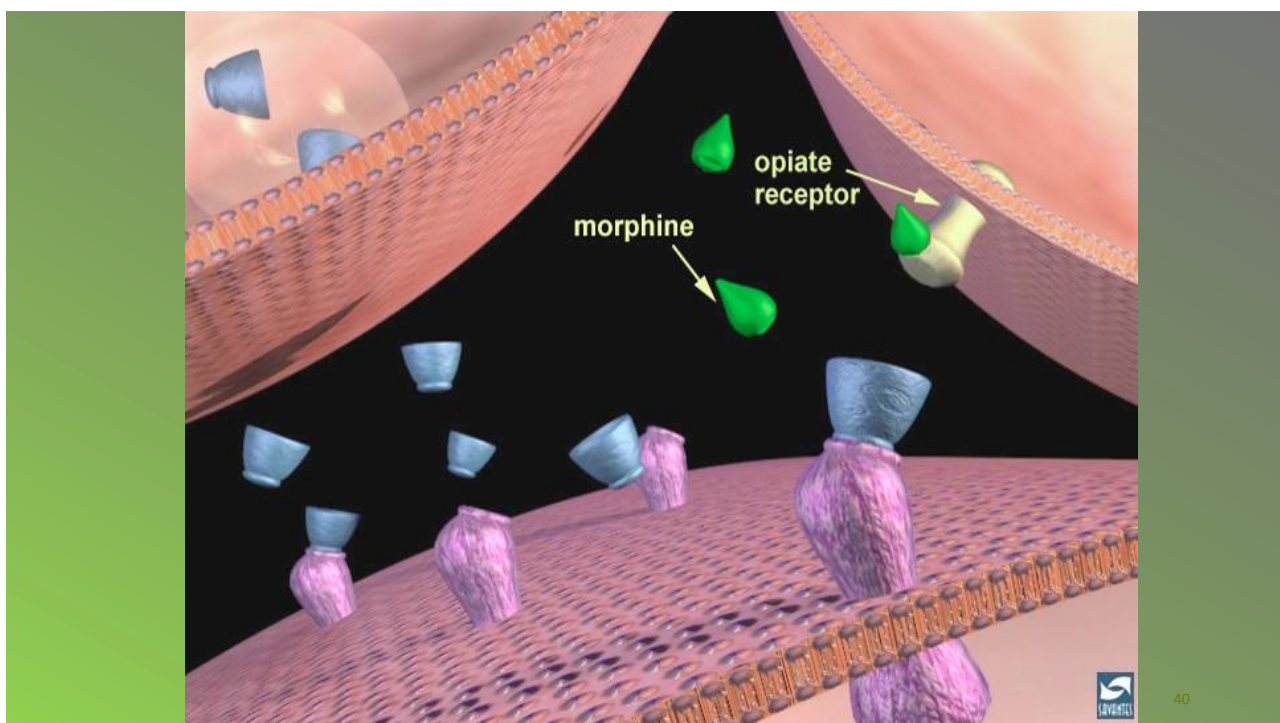
Those Are Some Nice Genes!



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The Triune Brain



Three Brains in One

- **Neocortex** - Thought (including planning, language, logic & will, awareness)
- **Limbic System** - Emotion (feelings, relationship/nurturing, images and dreams, play)
- **Reptilian Brain** - Instinct (survival, breathing/swallowing/heartbeat, startle response)

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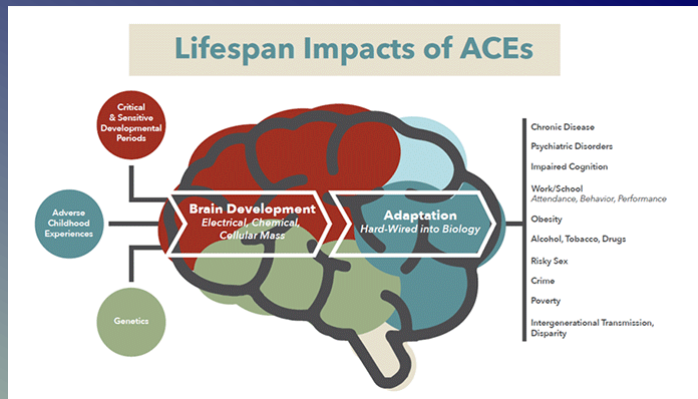
Addiction Is Like Diabetes

Diabetes- You can no longer naturally regulate sugar

Addiction- Your Brain can no longer regulate neurotransmitters



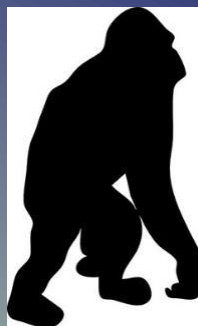
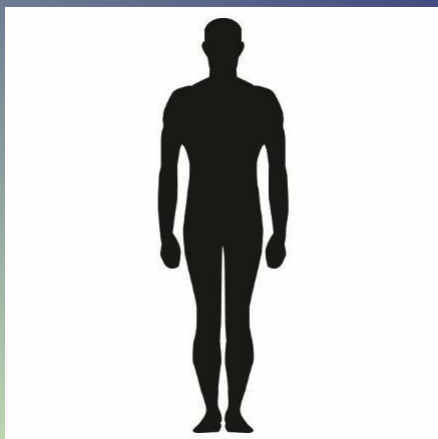
Trauma and the Brain



The ACEs study shows that trauma inhibits and delays development of our executive brain.

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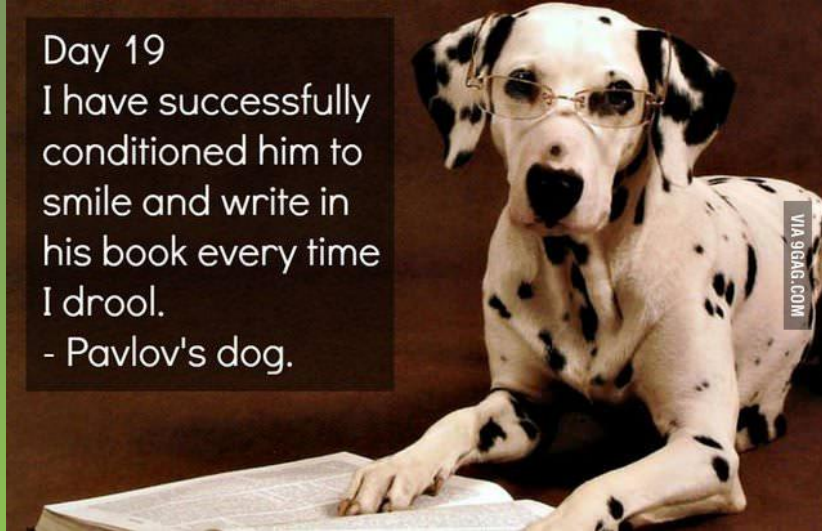
When Natural Defenses Fail!



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Hijacked Rewards and Conditioned Responses

Day 19
I have successfully
conditioned him to
smile and write in
his book every time
I drool.
- Pavlov's dog.



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Sustained stress along with a whole host of other factors push us deeper and deeper into our more primitive forms of coping...



...Treatment needs to attend to all brain levels, but especially the base levels of function rather than logic.

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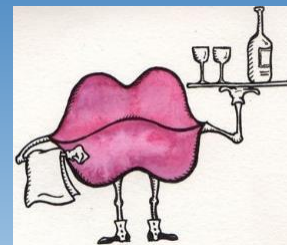
Drugs jump to the
#1 Spot
in our brains



Are you Just paying Lip Service to Biopsychosocial???

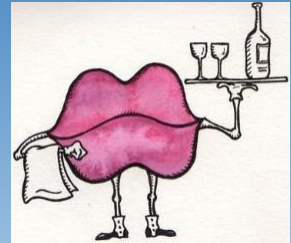
substance misuse is the net result of a complex interaction between a combination of biological, psychological, social, and spiritual determinants.

(Adult Addictions Services Branch, Alcohol and Drug Services British Columbia Ministry for Children and Families May 1996)



Are you Just paying Lip Service to Biopsychosocial???

We need to stop being overly concerned about etiology!!!!



Treatment Philosophies

- Moral Theory- Societal perspective
- Spiritual Theory- Religions perspective
- Disease Theory-12 steps perspective
- Learning Theory-Cognitive Behavioral perspective
- Chemical Dependency-Medical/Behavioral Perspective
- Symptomatic Theory-Psychoanalytic perspective
- Social Theory-Anthropology perspective

A Problem of Perspective



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Integrated Health Model Philosophy



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Medication-Assisted Treatment (MAT) is the use of medication, combined with counseling and behavioral therapies, to provide a whole patient approach to the treatment of substance use disorders.

<http://www.dpt.samhsa.gov>

Medications for Alcohol Dependence

- Naltrexone (ReVia®, Vivitrol®, Depade®)
- Disulfiram (Antabuse®)
- Acamprosate Calcium (Campral®)

Medications for Opioid Dependence

- Methadone
- Buprenorphine (Suboxone, Subutex, Bunavail, Zubsolv, Probuphine)
- Naltrexone



Opiate Receptors and effect of Agonist

Mu ₁ (μ ₁)	analgesia, euphoria
Mu ₂ (μ ₂)	constipation, respiratory depression
Kappa	spinal analgesia, dysphoria
Delta	unknown

Buprenorphine Pharmacology

- Partial agonist at mu receptor
- High affinity for mu receptor
- Can displace full opiate agonist such as heroin or methadone
 - Displacement of heroin or methadone by buprenorphine can produce opiate withdrawal symptoms

Buprenorphine in the USA

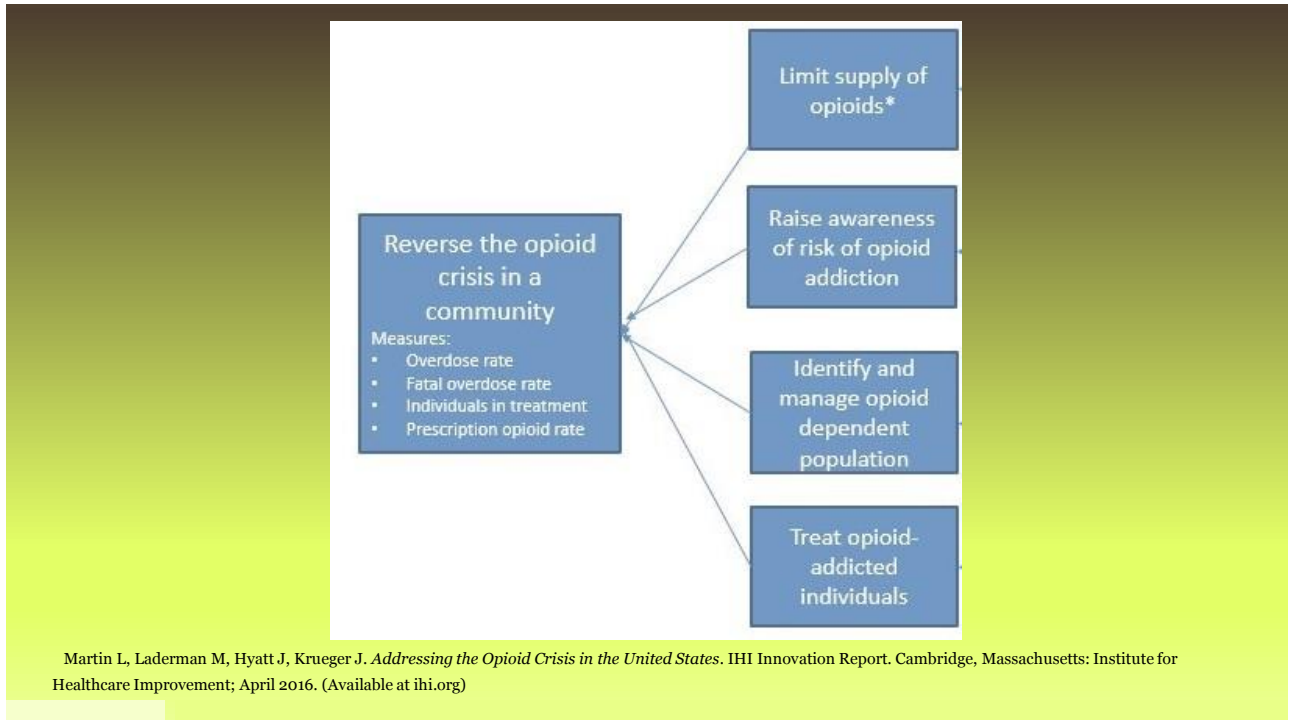
A combo product (buprenorphine/naloxone: 4/1 ratio) is introduced in the US in 2003 with restricted prescribing (training, limited # of patients)
addition of naloxone decreases but not eliminates the risk of misuse ☹

Less than 4% of US physicians are licensed to prescribe it and only half of them are prescribing,
50% of prescribers treat 5 or fewer patients ☹



Comprehensive Addiction Recovery Act (CARA)

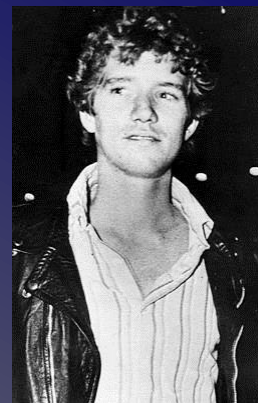
- History of CARA
- Bipartisan support
- President Obama signed in July 2016
- Patient limits: 30-100-275
- Physician
- NP/PA approved
- Overdose prevention strategy
- Diversion reduction



Barriers to Treatment:

- Negative attitude: Public, Family, about treatment process
- Lack of good information
- Misunderstanding of the disease
- Limited availability
- Cost: Insurance coverage, uninsured.
- Limited social support
- Privacy concerns
- Job concerns
- “It’s easier to get drugs than to get help”

THESE ARE THE FACES OF HEROIN



David A. Kennedy
1955 - 1984

