Addiction = Chronic Disease

Joe Sepulveda, M.D., ABPN, ABPM, FAPA, FASAM
Assistant Medical Director, Family Health Centers of San Diego
Medical Director, Substance Use Disorder Services
Medication-Assisted Treatment (MAT) Program
Psychiatric Nurse Practitioner Program
Voluntary Assistant Clinical Professor, UCSD Health Sciences—Dept. of Psychiatry
Diplomate of the American Board of Psychiatry and Neurology
Diplomate of the American Board of Preventive Medicine—Addiction Medicine
Fellow of the American Psychiatric Association
Fellow of the American Society of Addiction Medicine
Agenda

• Stigma vs. Health
• Genetics role in addiction
• Addiction = Chronic Brain Disease
• Addiction is treatable
• Models for treating addiction in Primary Care
• Panel discussion
The Stigma of Addiction

“Addiction is primarily a social problem, not a health problem.”

Reality... Addiction is a Medical Disease
Genetic Heritability

Twin and adoption studies confirm a genetic role

• Account for between $\frac{1}{2}$ and $\frac{3}{4}$ of the risk for addiction.

• Twins (Monozygotic) > Dizygotic

Genetic factors appear to be stronger drivers than environmental factors for initiation of substance use at an early age.
## Genetic Heritability

### "Traditional" Medical Diseases

- **HTN** $\rightarrow$ 0.25-0.5
- **Diabetes Type 1** $\rightarrow$ 0.30 to 0.55
- **Diabetes Type 2** $\rightarrow$ 0.80
- **Adult-onset Asthma** $\rightarrow$ 0.36-0.70

### Substance Use Disorders

- **Heroin** $\rightarrow$ 0.34
- **Marijuana** $\rightarrow$ 0.52
- **Alcohol** $\rightarrow$ 0.52
- **Cigarette** $\rightarrow$ 0.61

*0.0 = genetics are not a contributing factor at all
**1.0 = genetics are the only factor
Addiction = Chronic Brain Disease

1. **Brain diseases** → some form of behavioral expression
   - Alzheimer’s = memory loss
   - Schizophrenia = unusual perceptions of reality and mood changes
   - Opioid addiction = cravings which lead to uncontrollable compulsion

2. Precipitated by fundamental, long-term, changes to the biological structures and functioning of this organ
Addiction and Changes to biological structures

Decreased Brain Metabolism in *Drug Abuse Patient*

Control

Cocaine Abuser

Decreased Heart Metabolism in *Heart Disease Patient*

Healthy Heart

Diseased Heart
Neurobiology of Addiction

**Binge/intoxication**
- ventral striatum (VS), including nucleus accumbens
euphoria, reward
- dorsal striatum (DS)
habits, perseveration
- globus pallidus (GP)
habits, perseveration
- thalamus (Thal)
habits, perseveration

**Withdrawal/negative affect**
- amygdala (AMG), bed nucleus of the stria terminalis (BNST), together also known as the “extended amygdala”
malaise, dysphoria, negative emotional states
- ventral striatum (VS)
decreased reward

**Preoccupation/anticipation**
- anterior cingulate (AC)
- prefrontal cortex (mPFC), orbitofrontal cortex (OFC)
subjective effects of craving, executive function
- basolateral nucleus of the amygdala
conditioned cues
- hippocampus (Hippo)
conditioned contextual cues
Addiction can happen to anyone

1. The longer you are prescribed an opioid the greater likelihood you’ll develop addiction.

   - Prevalence rates as high as 50% for an opioid use disorder on chronic opioid therapy
   - Opioid therapy >90 days at >120 MME = 100x’s as likely to develop OUD
2. ...they chose to try it for the first time = their fault

- Initial voluntary misuse does **NOT** make their condition any less the result of disease

- Addiction = INVOLUNTARY COMPULSIVE USE, cravings CANNOT be controlled = Chronic Condition
You relapsed = You’re not serious or committed

Percent of Patients Who Relapse

- Drug Addiction: 40 to 60%
- Type II Diabetes: 30 to 50%
- Hypertension: 50 to 70%
- Asthma: 50 to 70%
It takes time for your brain to recover

HEALTHY CONTROL

PATIENT WITH METHAMPHETAMINE USE DISORDER

1 MONTH OF ABSTINENCE

14 MONTHS OF ABSTINENCE
Selective forgiveness and understanding

3. What other choices lead to chronic disease

- Diet and Exercise → Diabetes, Hypertension and Congestive Heart Failure to name a few.
Addiction is a treatable disease—Buprenorphine

Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies

Luis Sordo,1,2,3 Gregorio Barrio,4 Maria J Bravo,1,2 Bilcay Indave,1,2 Louisa Degenhardt,5,6 Lucas Wiessing,7 Marica Ferri,7 Roberto Pastor-Barriuso1,2

THM: Buprenorphine for OUD is associated with a 50% or greater reduction in the probability of overdose death.

THM: Buprenorphine at all doses is more effective than placebo in retaining patients in treatment
Addiction is a treatable disease—Naltrexone

THM: Naltrexone added to standard federal probation lead to 70% less opioid use and 50% less incarceration
THM: Few receive anything that approximates evidence-based care

THM: In contrast, 70%-80% of people with diseases such as HTN and DM receive care
You are making a big difference

THM: Approx. 48% of X-waivered physicians prescribe on average 5 patients per provider
Starting or Expanding your MAT Services
The clinical champion
Different MAT clinic types

- Integrated Primary Care Clinic
- Integrated Behavioral Health Clinic
- Group MAT Visits
- Dedicated MAT Clinic
- Walk-In Clinic for MAT

Office inductions

Home inductions
• Integrated vs. standalone
• OTP hub your site spoke
• Internal hub and spoke
• Each site a hub
• Strategic hubs with surrounding spokes
References

8. National Institute on Drug Abuse Advancing Addiction Science