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Science-based Solutions for Tobacco Cessation

Thursday, July 18th l 1 pm ET

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Welcome from the NBHN team!

Youlim Song
Project Coordinator,
Practice Improvement

Samara Tahmid
Project Manager,
Practice Improvement

Tamanna Patel, MPH
Director,
Practice Improvement

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Housekeeping

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- For audio access, participants can either dial into the conference line or listen through your computer speakers.
- You can enable your closed captioning by selecting "CC" icon located in your bar.
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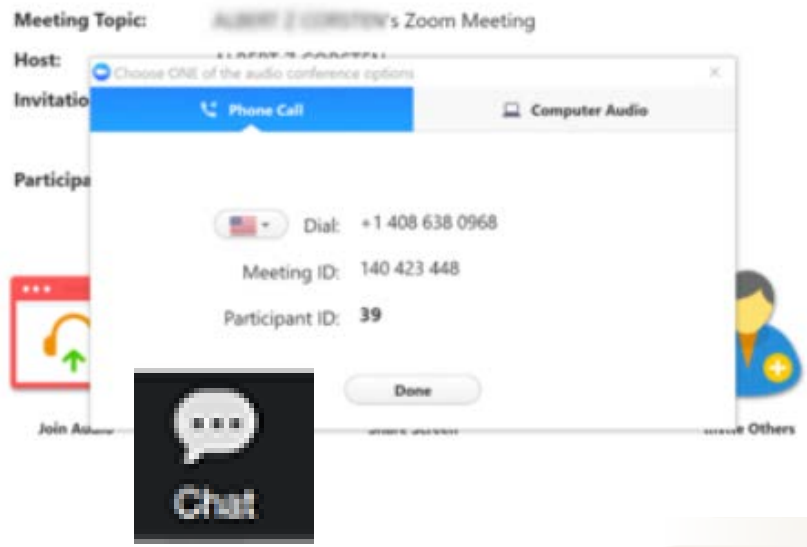

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National Behavioral Health Network for Tobacco & Cancer Control

- Jointly funded by CDC's *Office on Smoking & Health & Division of Cancer Prevention & Control*
- Provides resources and tools to help organizations reduce tobacco use and cancer among individuals experiencing mental health and substance use challenged
- 1 of 8 CDC National Networks to eliminate cancer and tobacco disparities in priority populations

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A Note on Language & Terminology

- **Mental wellbeing:** thriving regardless of a mental health or substance use challenge.

- **Commercial tobacco use/tobacco use:** The use of commercial tobacco and nicotine products (including electronic nicotine devices, otherwise known as ENDs).*

- **All references to smoking and tobacco use is referring to commercial tobacco and not the sacred and traditional use of tobacco by some American Indian and Alaskan Native communities.**

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Objectives

- Understand and explore the neuroscience of addiction and tobacco use disorder.
- Discuss science-based solutions for tobacco cessation among individuals with mental health and substance use challenges.
- Examine practical applications across public health, mental health, substance use and addiction recovery organizations.

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Today's Featured Speakers

Tamanna Patel, MPH
Director,
Practice Improvement

Nick Szubiak, MSW, LCSW
Principal, Consultant
NSI Strategies

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Greetings!

NSI STRATEGIES
Consulting Support for
Integrated Healthcare Environments

Nick Szubiak, MSW, LCSW

Integrated Health Consultant

nick@nsistrategies.com

(808) 895.7679

www.nsistrategies.com

twitter.com/nszubiak (not sure – very toxic)

linkedin.com/in/nick-szubiak

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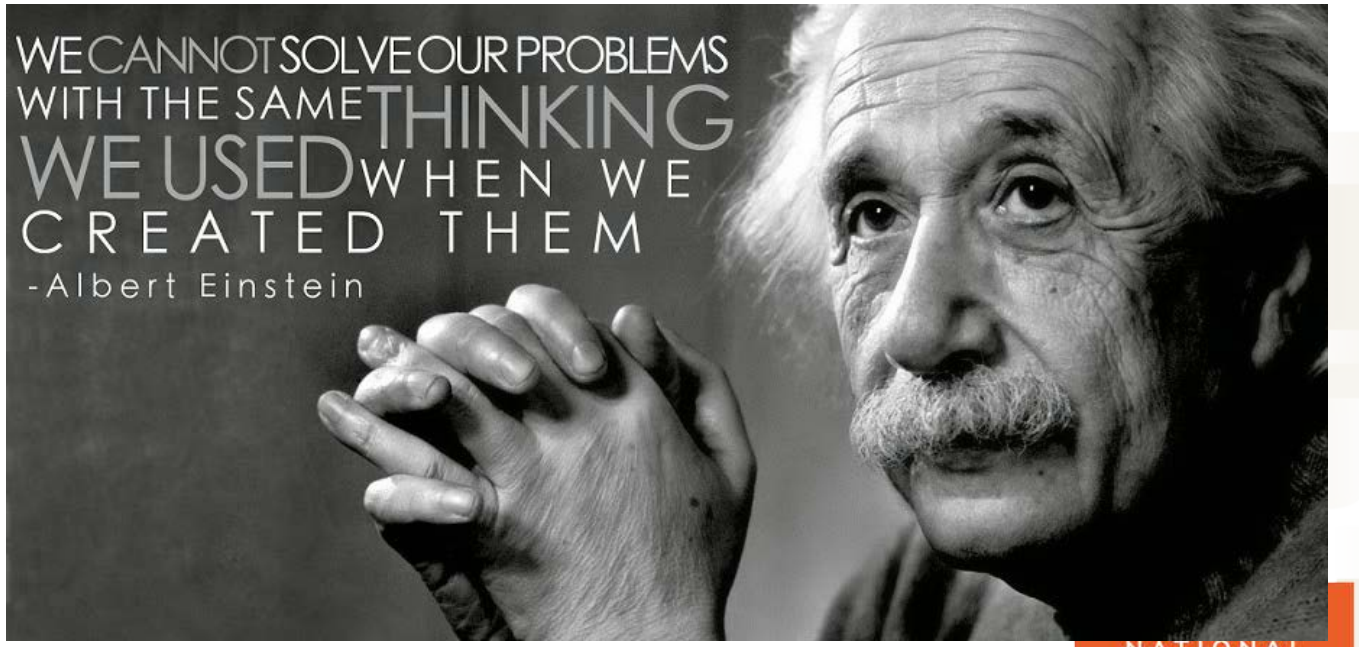
Changing the ways we think about addiction



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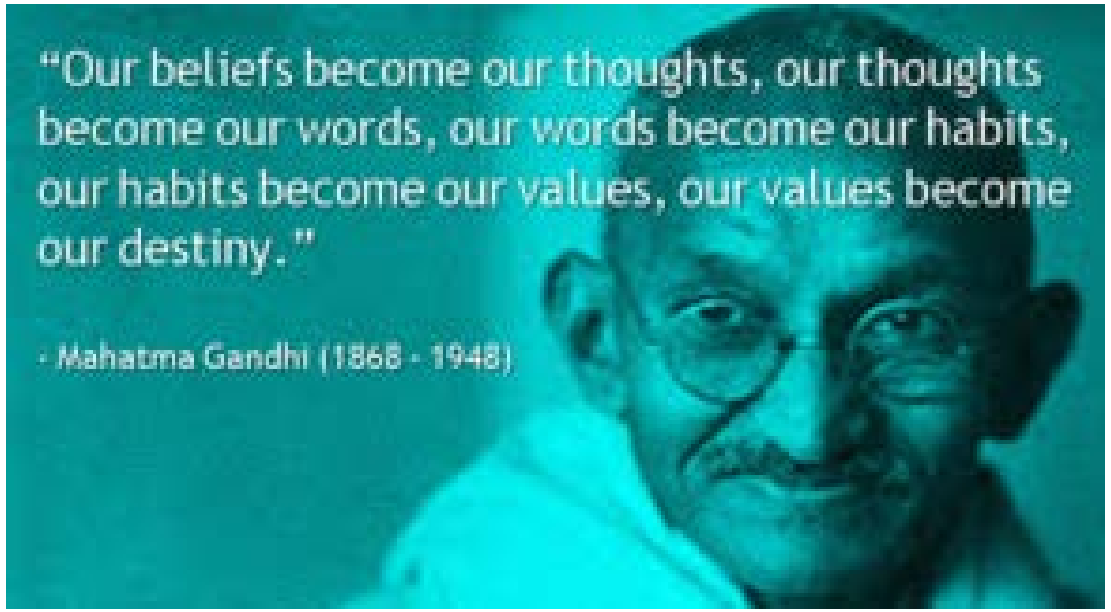
Beliefs



Perceptions

Bias, Stigma, and Discrimination

- Stigma refers to **negative stereotypes**
- Discrimination is the **behavior that results** from the negative stereotype
- Discrimination in this case means treating someone less favorably than someone else because he or she has a disability

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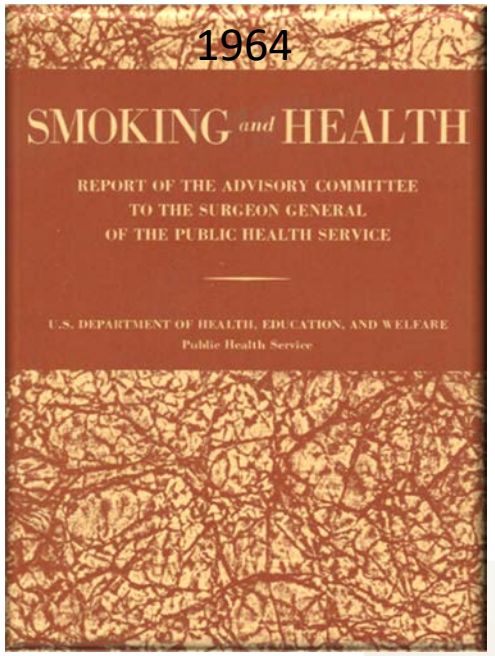
Bias, Stigma, and Discrimination

- Stigma is defined as an **attribute, behavior, or condition** that is socially discrediting.
  - No other conditions are more stigmatized than addiction.
- Stigma is influenced by two main factors: cause and controllability.
  - **Cause**, to the extent people believe an individual is ***not responsible*** for the attribute, behavior, or condition (i.e., "It's not their fault"), stigma is diminished.
  - **Controllability**, to the extent that people believe that the attribute, behavior, or condition is ***beyond the individual's personal control*** (i.e., "they can't help it"), stigma is lessened.
- Continued stigma is because many people still perceive addiction as a "choice" and that addicted individuals really can control it **("why can't they just stop?")**

Reviewing what we know.



- Tobacco smoking is the leading cause of preventable disease, disability, and death in the United States (U.S. Department of Health and Human Services [USDHHS] 2014).
- Smoking harms nearly every organ in the body and costs the United States billions of dollars in direct medical costs each year (USDHHS 2014).
- Surgeon General's report was released in 1964 (USDHHS 2014), in 2018, 13.7% of U.S. adults (34.2 million people) were still current cigarette smokers (Creamer et al. 2019).
- Why – Nicotine, a drug found naturally in the tobacco plant, is highly addictive, as with such drugs as cocaine and heroin
- Past-year quit attempts and recent and longer term cessation have increased over the past 2 decades among adult cigarette smokers.
- In the United States, more than three out of every five adults who were ever cigarette smokers have quit smoking.

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What we know…

- Marked disparities in cessation behaviors, such as making a past-year quit attempt and achieving recent successful cessation, persist across certain population subgroups defined by educational attainment, poverty status, age, health insurance status, race/ethnicity, and geography.

- Advice from health professionals to quit smoking has increased since 2000; however, four out of every nine adult cigarette smokers who saw a health professional during the past year did not receive advice to quit.

- Use of evidence-based cessation counseling and/or medications has increased among adult cigarette smokers since 2000; however, more than two-thirds of adult cigarette smokers who tried to quit during the past year did not use evidence-based treatment.
- A large proportion of adult smokers report using non-evidence-based approaches when trying to quit smoking, such as switching to other tobacco products.

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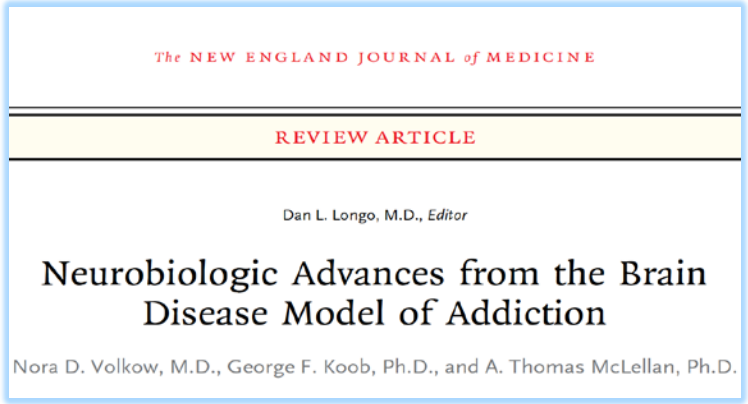
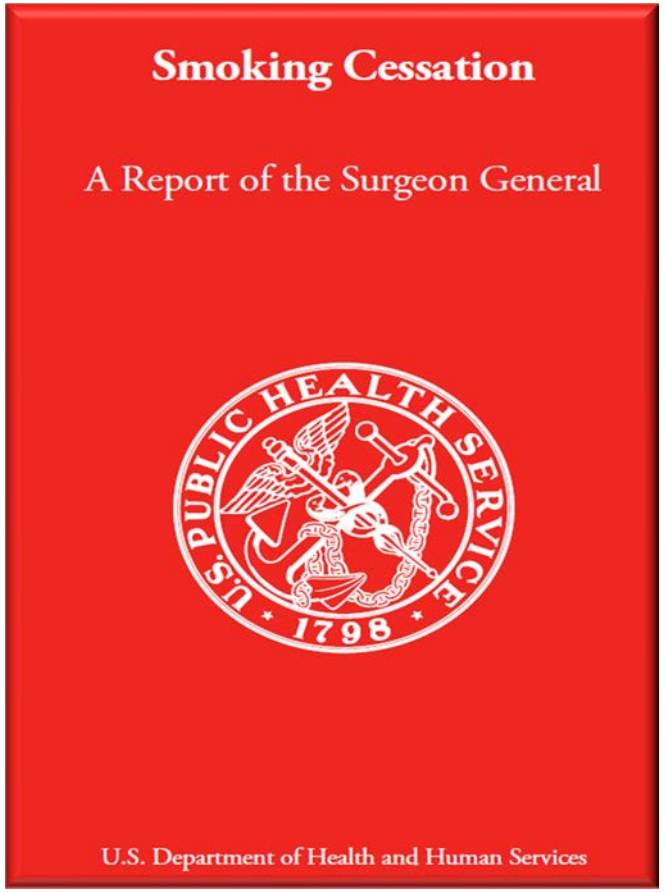
Changes and shifts over time.

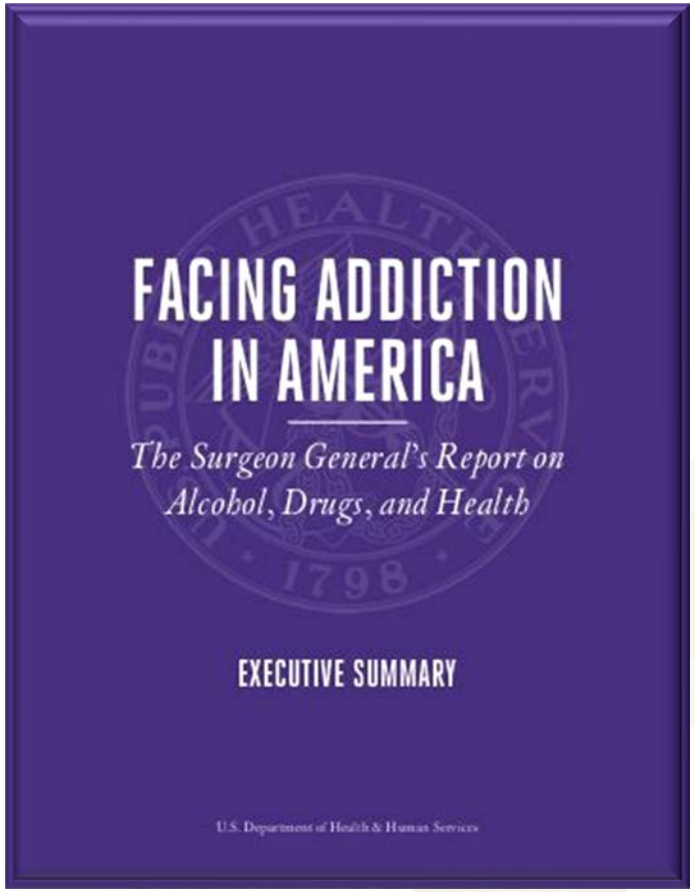
- Enhanced health benefits of quitting
- Pharmacotherapy for smoking cessation was not introduced until the 1980s
- behavioral and other counseling approaches were slow to develop and not widely available at the time of the 1990 report because few were covered under health insurance
- programs such as group counseling sessions were hard for smokers to access, even by those who were motivated to quit
- As of October 16, 2019, the U.S. Food and Drug Administration (FDA) has approved five nicotine replacement therapies (NRTs) and two non-nicotine oral medications to help smokers quit, and the use of these treatments has expanded, including stronger integration with counseling support (Fiore et al. 2008).
- Quitlines, Internet based applications and other tech platforms,
- And this diversity could have several different impacts: electronic nicotine delivery systems (ENDS) e-cigarettes/novel tobacco products

So We Know What to Do…

What the heck happens??







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Terms

- **Addiction:** Common name, severe SUD; associated with compulsive or uncontrolled use of one or more substances. *Addiction is a chronic brain disease that has the potential for both recurrence (relapse) and recovery.*
- **Dependence:** The state in which an individual only functions normally in the presence of a substance, experiencing physical disturbance when the substance is removed.
    - A person can be dependent on a substance without being addicted. AND dependence sometimes leads to addiction.
- **Tolerance:** Alteration of the body's responsiveness to alcohol or a drug such that higher doses are required to produce the same effect achieved during initial use.
- **Withdrawal:** A set of symptoms and signs that are experienced when discontinuing use of a substance. The person is dependent or addicted.
    - **Negative emotions** such as stress, anxiety, or depression
    - **Physical effects** such as nausea, vomiting, muscle aches, and cramping
    - Symptoms often lead a person to use the substance again

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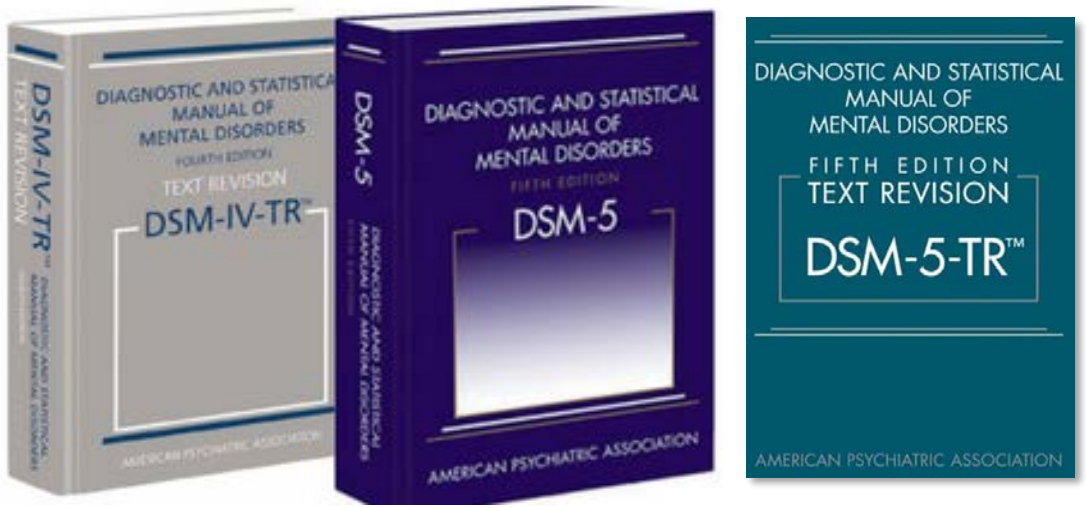
DSM *IV* to DSM *5*



Axis, Abuse and dependence are GONE! Please help them get going.

Spectrum

- Mild: 2-3 symptoms
- Moderate: 4-5
- Severe: 6 or more

Drug cravings added

Problems with law enforcement eliminated because of cultural considerations

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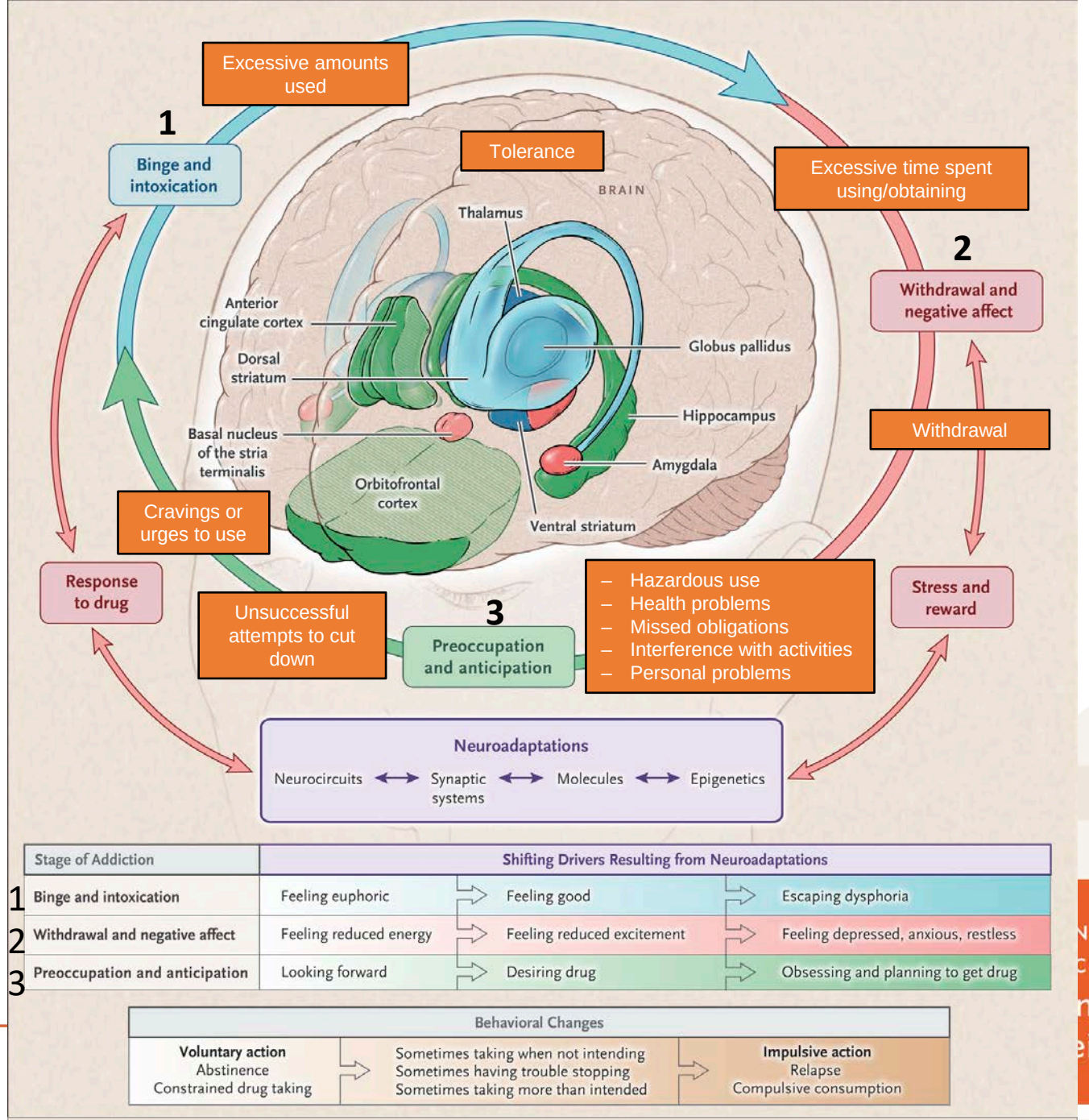
No. Nope, it's not. This is a fried egg.

Three Stages of Addiction

1. Binge and intoxication

2. Withdrawal and negative affect

3. Preoccupation and anticipation

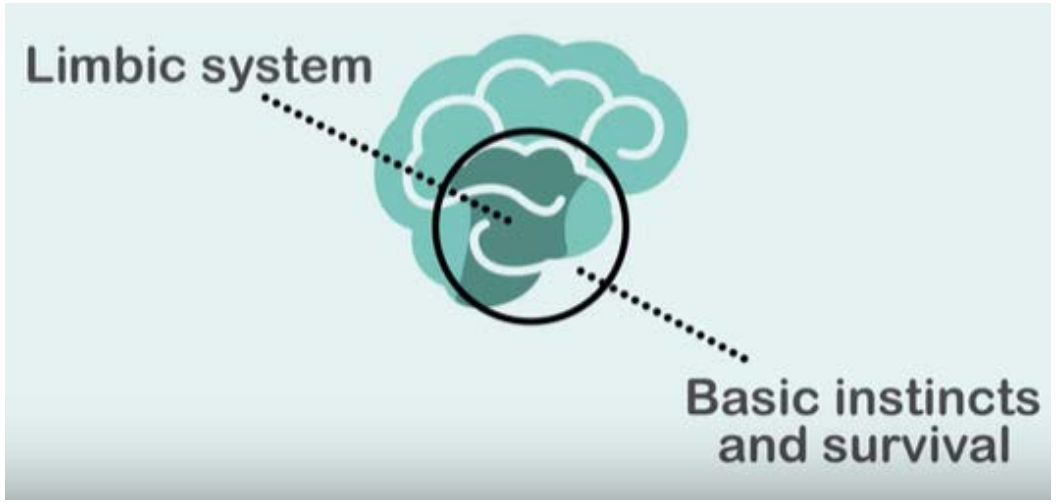


	Stage of Addiction	Shifting Drivers Resulting from Neuroadaptations		
1	Binge and intoxication	Feeling euphoric	Feeling good	Escaping dysphoria
2	Withdrawal and negative affect	Feeling reduced energy	Feeling reduced excitement	Feeling depressed, anxious, restless
3	Preoccupation and anticipation	Looking forward	Desiring drug	Obsessing and planning to get drug

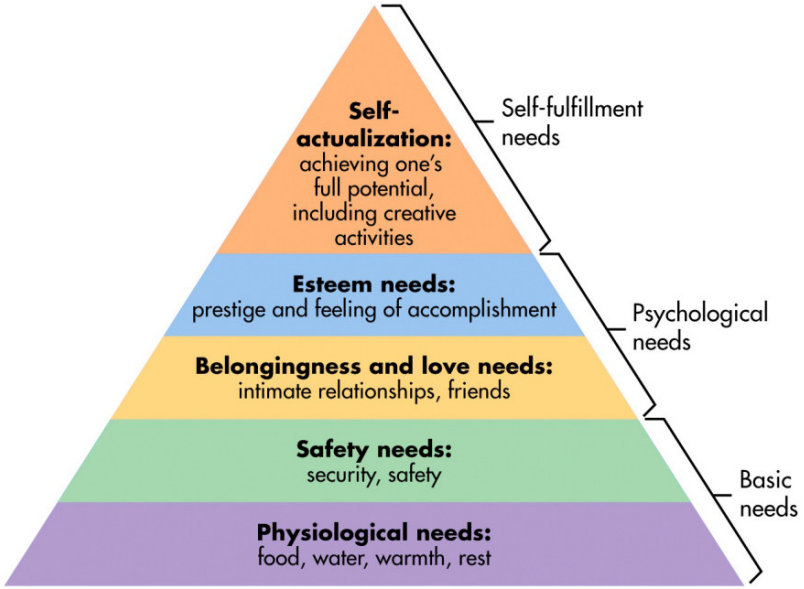
Behavioral Changes		
Voluntary action Abstinence Constrained drug taking	Sometimes taking when not intending Sometimes having trouble stopping Sometimes taking more than intended	**Impulsive action** Relapse Compulsive consumption

Figure 1. Stages of the Addiction Cycle

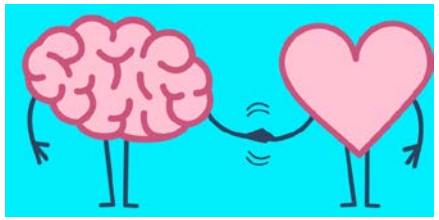
Limbic System – Our Survival Hardwiring



- Eat
- Drink
- Take care of kids
- Relationships
- Sex
- Shelter

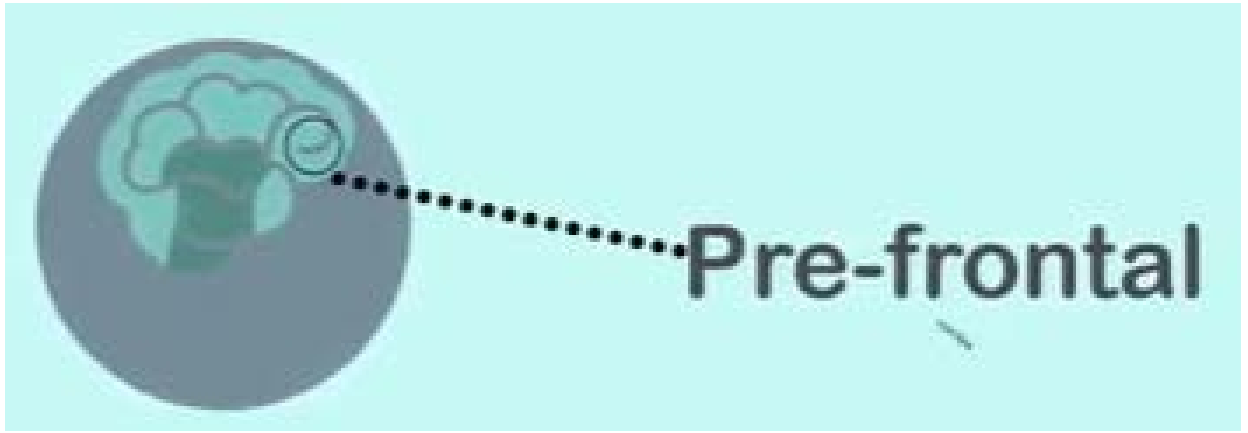


Amygdala and Hippocampus = Memory

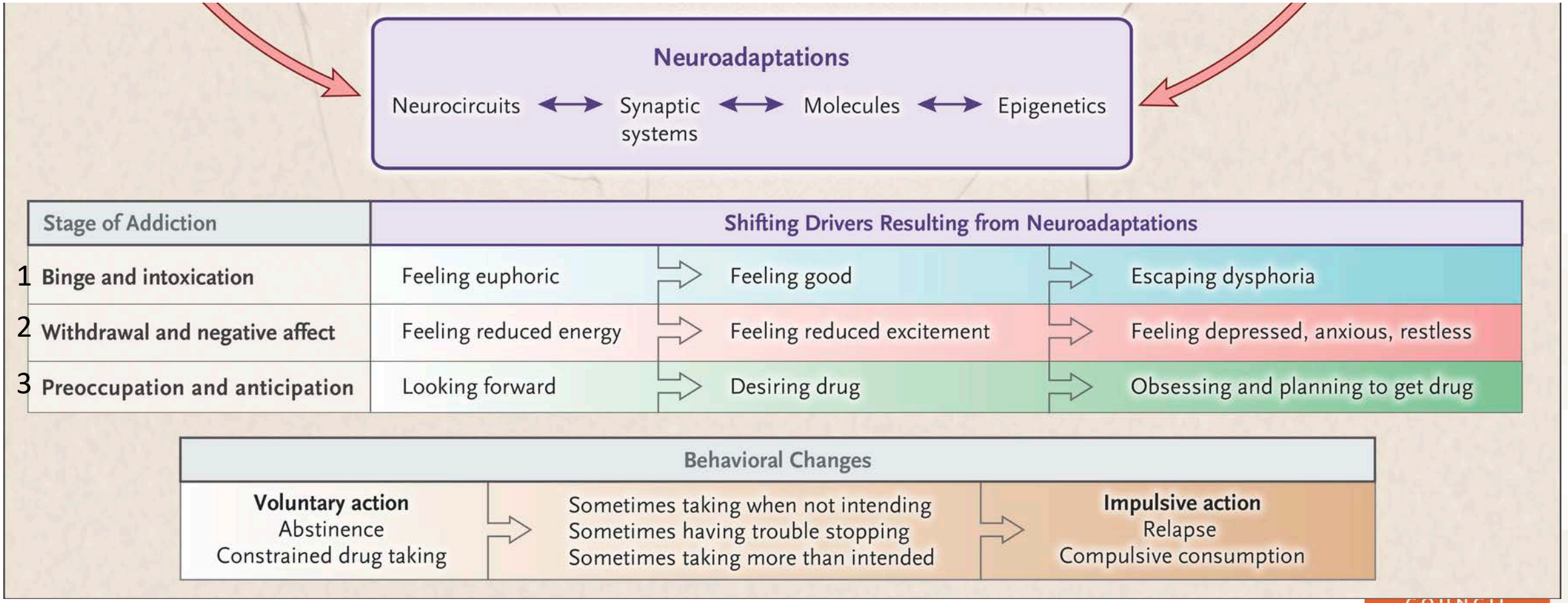


Pre-frontal Cortex

- Decision making and impulse control part of the brain
- Hijacks, usurps those primary drivers; I believe the need to survive is the drug



Three Stages of Addiction



8 Steps Along the Pathway to Addiction

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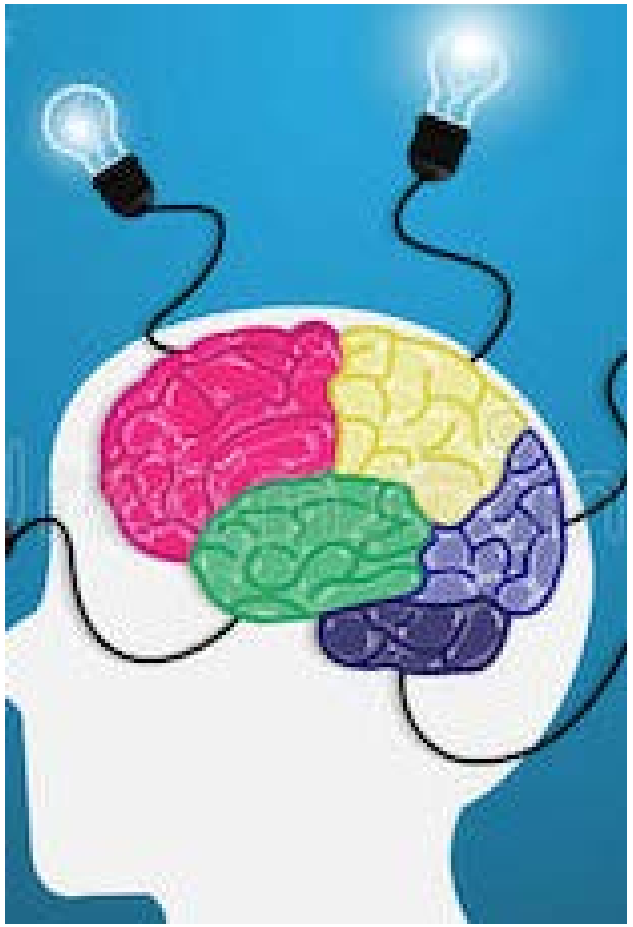
Step 1: Disruption



Addictive Substances begin to disrupt the function of the brain circuits involved in obtaining natural **rewards such as food and water.**

- Motivation
- Decision making
- Memory

Normal brain - the **mesolimbic dopamine pathway** allows a person to experience pleasure in response to stimuli such as food and social interactions, and therefore encourages and motivates an individual to seek out these stimuli.

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All That and a Bag of Chips……

CRINKLE…CRINKLE

people, places, and things associated with the reward.

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Step 2: Changes in the Systems

Addictive substances mimic, interfere (both) the brain's regulation of its natural chemicals - this CHANGES the **reward system**.

The primary need for survival is changing to the drug.

Step 3: Changes to Cues and Triggers

Connections between mesolimbic (reward) pathway **dopamine** and memory circuits enable a person to remember the **people, places, and things** associated with the reward.

What are you thinking, feeling, experiencing, noticing, seeing? What is happening?

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Step 4: Activating at a Higher Level

Addicting substances activate mesolimbic dopamine pathways **more powerfully** than natural rewards.

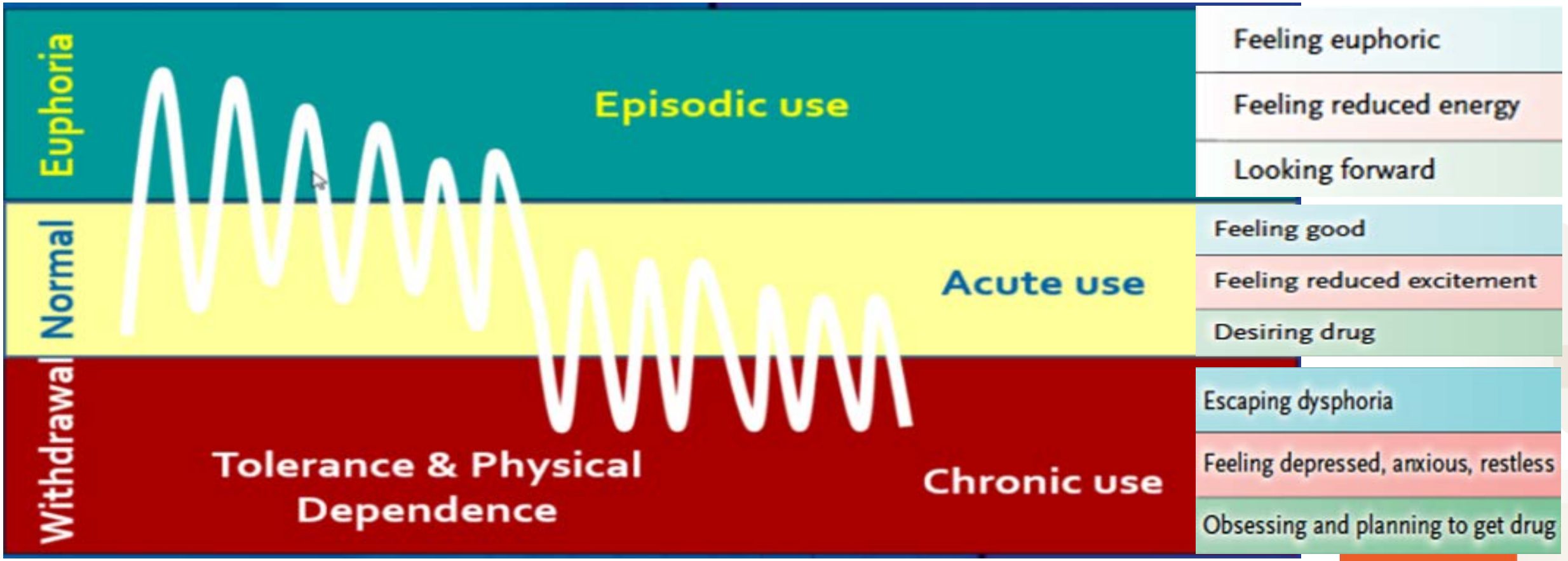
Step 5: What Goes Up, Must Come Down

In patients with substance use disorder (SUD), the mesolimbic pathway responds to cues that addictive substances are available…

...while its response to the drug itself and to natural rewards diminishes.

“I need more of the drug to activate the same level of reward,” while brain tissue becomes increasingly damaged.

A Natural History of Opioid Use Disorder



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Step 6: Erosion of Control

Simultaneously, repeated substance use erodes the ability to exert inhibitory control.

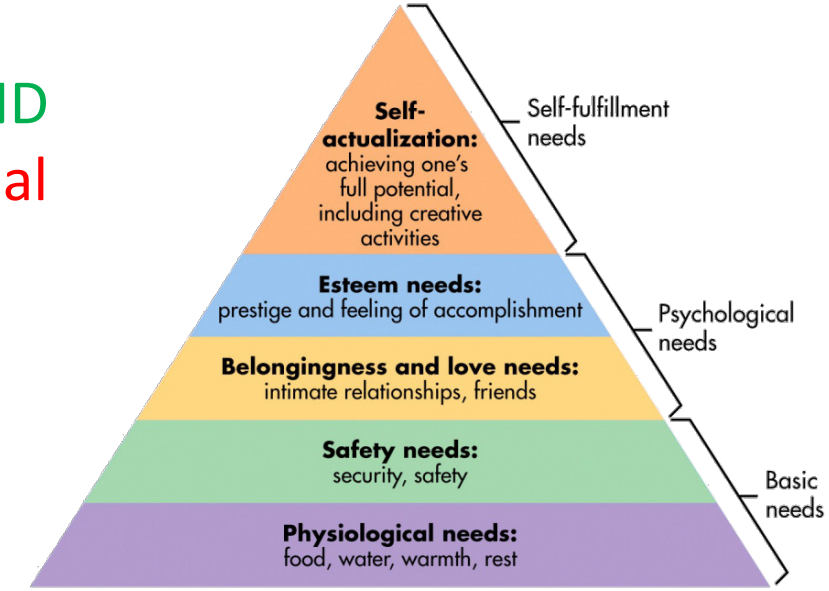
Go and Stop Circuits – Compulsion that DRIVES Behavior

Reward/Control Pathway = Two Parts – Gas and the Brake

- GO - survival driven (old brain)
- STOP - shuts down the do it more messages (new brain)

The altered brain chemistry from a SUD

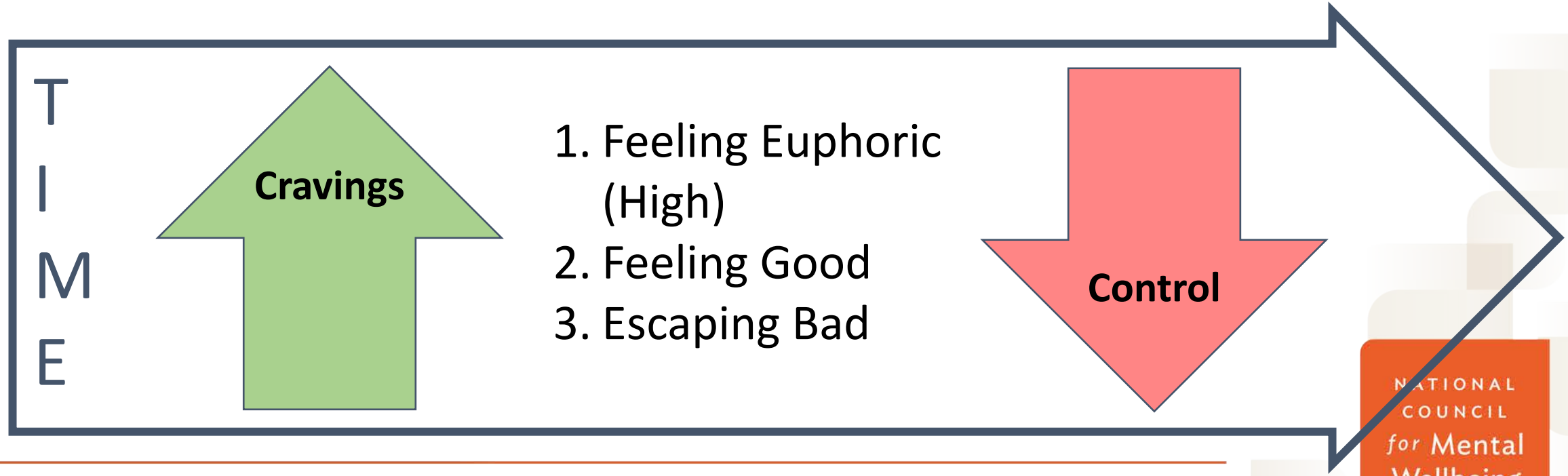
- the GO circuits become overactive AND
- the STOP circuit becomes dysfunctional



Step 7: Time Both Increases and Decreases

Over time…

- substance-related cues become *more salient*, drug craving becomes *more compelling* AND
- the individual is *less able to inhibit impulses* to use substances… as the "high" experienced is diminishing



Step 8: Erosion of Voluntary Control

This path leads to impairment in substance-related decision making that leads to many of the DSM-5 symptoms of a SUD.

Substance Use Disorder is…

- **not** a moral or spiritual failing
- **not** lack of will or responsibility
- **not** a character defect
- **not** an addictive personality type
- **does not** have personality components such as **denial**, **rationalization**, evasion, **defensiveness**, **manipulation**, and **resistance** or any abnormally robust defense mechanisms

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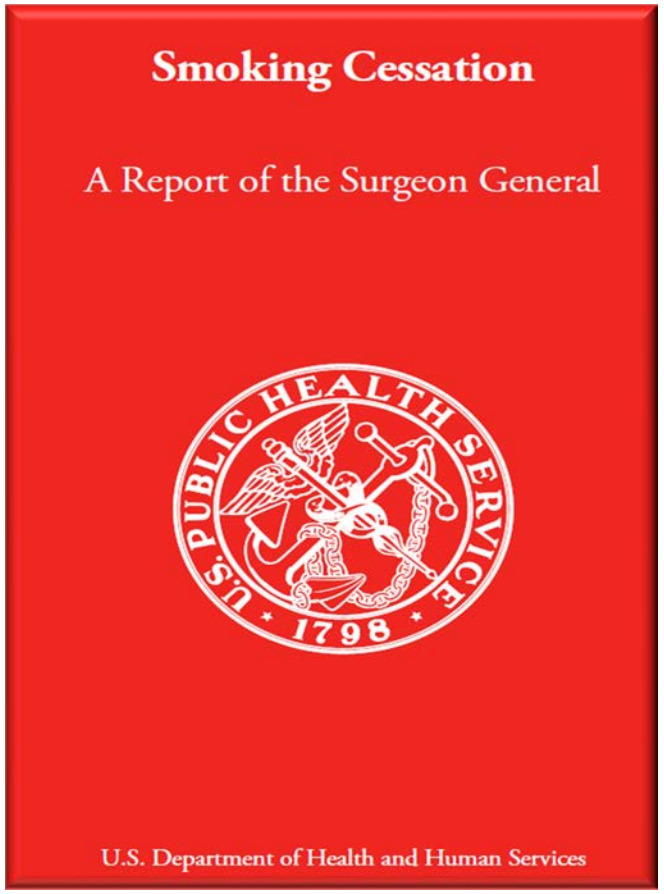
Evidenced Based Perspectives on SUD

- In fact, approximately **half the risk for addiction** is conferred by genetics.
- Most people do not develop addiction. Because initial experimentation and use is mostly rewarding with few negative consequences, use continues.
- With repeated exposure and **un-aware** by the person using the substance, person with SUD's *ability to self-regulate impulses to use the drug increasingly is **impaired**.*
- Individuals actually are using the **drug against their will**. The majority of cigarette smokers (68%) want to quit smoking completely (Babb et al. 2017)
  - Often unable to honor **their own sincere and genuine desire to abstain or moderate use**
  - Despite the threat of **severe consequences**
- We now understand SUDs are the ***radical decay*** in the rational **ability to regulate impulses to use** substances **despite the threat of harm**
- Why don't "those people" stop? BECAUSE - **functional and structural changes in the brain affect the neurocircuitry of impulse control, judgment, reward, memory and motivation**



"Reaching the finish line will require coordination across federal government agencies and other government and non-government stakeholders at the national, state, and local levels.

To achieve success, we must work together to maximize resources and coordinate efforts across a wide range of stakeholders."

Obstacles and Obstructions to Smoking Cessation

Coming up in discussion groups – What are the barriers – obstacles you and your organization/community face?

SUD Treatment Continuum of Care

Enhancing Health

- Promoting optimum physical and mental health and wellbeing through health communications and access to health care services, income and economic security and workplace certainty

Primary Prevention

- Addressing individual and environmental risk factors for substance use through evidence-based programs, policies and strategies

Early Intervention

- Screening and detecting substance use problems at an early stage and providing brief intervention, as needed, and other harm reduction activities

Treatment

- Intervening through medication, counseling and other supportive services to eliminate symptoms and achieve and maintain sobriety, physical, spiritual and mental health and maximum functional ability

Recovery Support

- Removing barriers and providing supports to aid the long-term recovery process. Includes a range of social, educational, legal and other services that facilitate recovery, wellness and improved quality of life

U.S. Department of Health and Human Services (HHS), Office of the Surgeon General. (2016, November). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health.

Health Professional Barriers

- Lack of time
- Lack of reliable reimbursement for provision of services
- Lack of acceptance that addressing tobacco dependence is part of a physician's job
- Lack of training and/or comfort addressing problems with substance abuse
- Lack of reliable, accessible referral resources
- High prevalence of smoking, meaning that even brief interventions significantly affect clinic flow, as the interventions may need to be implemented with a large number of patients (Vogt et al. 2005; Association of American Medical Colleges 2007; Blumenthal 2007); and
- Privacy concerns, fear of losing patients, the discouraging belief that most patients will not be able to stop, and concern about stigmatizing the smoker (Schroeder 2005).

Group Break Out

- Please do a brief introduction:
  - Name
  - Location
  - Organization
  - Groups will stay the same
- One or two volunteers to take some notes for large group report outs and summaries
- What are (1-3) of the barriers, obstacles, obstructions in your organization/community?
- Are these unique? Shared with colleagues? Culturally unique?

Report Out

Second Group Exercise

Using the lens of our understanding the neuroscience of addiction, what are the policies, practices, approaches that may be out of step with our science.

Are we doing what we are doing because of culture? Because that the way we always did it? Myths? Or just no longer matches the science?

Report Out

Final Exercise -What are potential opportunities for change?

Do our treatment approaches match the science and evidence base of SUDs?

- Based on what we now know about the neuroscience of addiction, are there workflows, clinical pathways, approaches, policies, marketing that may need to change or shift?

The Continuum: Opportunities for Change

- Prevention
- Screening
- Brief Interventions
- Treatment
- Psycho Social Supports

In 2017, the prevalence of current cigarette smoking was 20.0% or higher for certain groups:

- 36.8% among those who had obtained a General Educational Development (GED) certificate but went no further in their education;
- 35.2% among persons with serious psychological distress, a proxy variable for mental illness;
- 24.7% among persons with no health insurance;
- 24.5% among Medicaid enrollees;
- 24.0% among American Indians/Alaska Natives; and
- 0.3% among lesbian, gay, and bisexual adults (Wang et al. 2018a).

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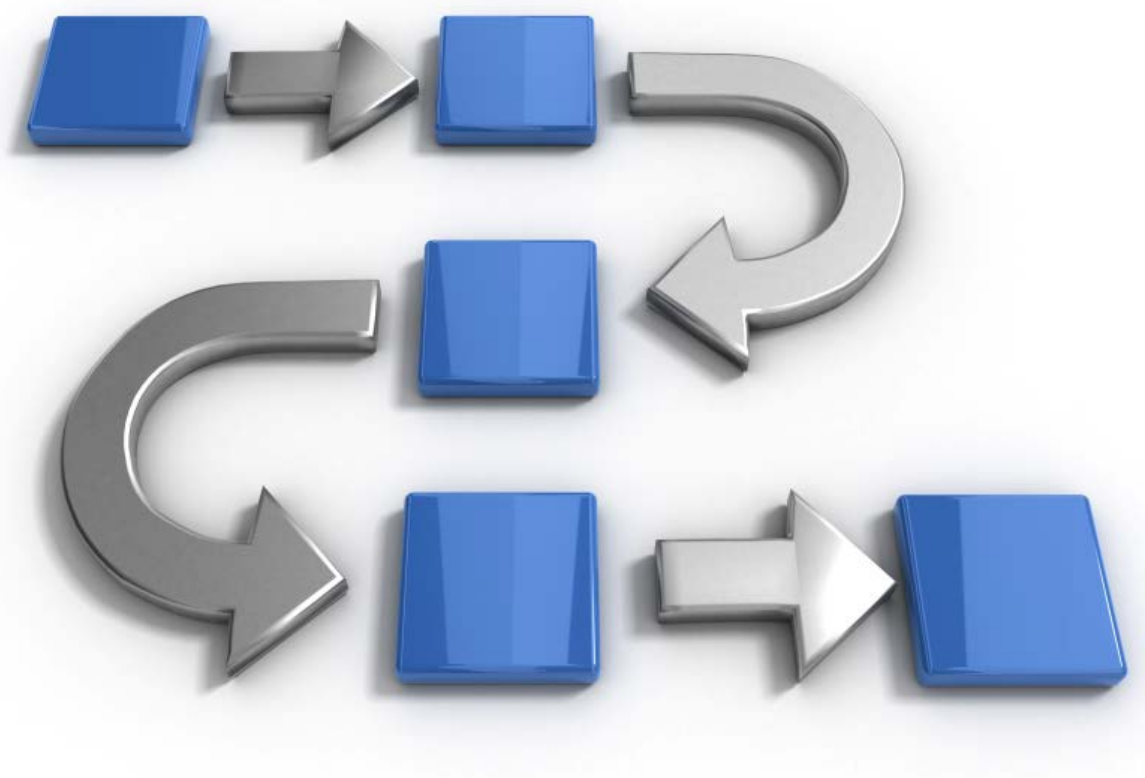
Building Recovery Capital

- The sum of the strengths and supports that are available to a person to help them initiate and sustain long-term recovery.
  - *Granfield and Cloud, 1999, 2004; White, 2006*
- Domain:
  - Social – family and social networks
  - Physical – tangible assets
  - Human – internal, intangible assets
  - Cultural – values, principles, beliefs
    - *Best & Laudet (2010)*

Implications for Treatment and Policy



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Group Break Out – “just” one thing

What is one thing you can take from today and bring back to your organization/community to do.

Report Out

Questions?

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Virtual Goodie Bag

- Identifying and Addressing Health Disparities Related to Tobacco Use Among Individuals with Mental Health and Substance Use Disorders: An Implementation Toolkit for Statewide Tobacco Control Programs

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Thank you for joining us!

Please complete a brief survey at:
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Contact

Nick Szubiak, MSW, LCSW
Integrated Health Consultant, NSI Strategies

nick@nsistrategies.com
(808) 895.7679

www.nsistrategies.com
twitter.com/nszubiak
linkedin.com/in/nick-szubiak

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