

Iowa's Center of Excellence for Behavioral Health

Webinar 1: Foundations of Prevention Science

FOUNDATIONS IN BEHAVIORAL HEALTH PREVENTION WEBINAR SERIES

July 11, 2025

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Disclaimer

This training is hosted by Iowa's Center of Excellence for Behavioral Health (CEBH). While Iowa CEBH is partly sponsored by the Iowa Department of Health and Human Services (Iowa HHS), please note that the views, opinions, and content shared in today's training are those of our trainings and do not necessarily reflect the views, opinions, or policies of Iowa HHS.

Learning Objectives

- *OBJECTIVES:*
 1. Describe prevention science and explain its relevance to behavioral health.
 2. Identify the role of risk and protective factors in behavioral health outcomes.
 3. Understand how addiction impacts the brain.

Icebreaker Question

Question: What field of Prevention are you working in?

Icebreaker Question

Question: How comfortable would you say you are with Prevention?

Icebreaker Question

Question: When we utilize the word 'Prevention' what comes to mind for you?

Introduction to Prevention & History

What is Prevention?

- **The River Story**
 - In illustrating primary prevention, a well-known parable called the 'River Story' credited to a Medical Sociologist, Irving Zola has been commonly used as a representation of the fundamental challenge facing our health care delivery system.



What is Prevention? Cont'd

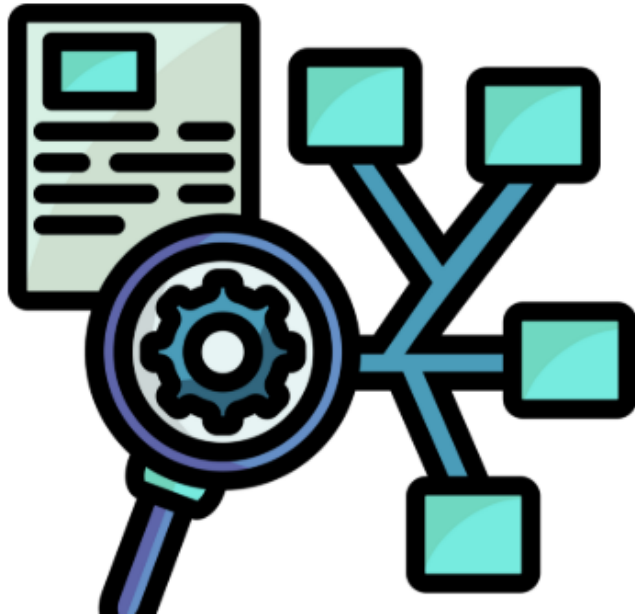


- **Prevention**

- The story similarly goes like this:

- Anthony is canoeing in a river and hears the cry of a drowning man. So, he jumps into the river and puts his arms around him and manages to pull him to shore safely. Just when Anthony is relieved from his efforts in saving this man, there is another cry for help. So, he jumps into his canoe back into the river to reach the second individual and pulls them to shore. Then just as Anthony is relieved from saving this second individual, another cry for help occurs. So back in the river again, reaching, pulling, and then another yell. Again and again, without end, goes the sequence. Anthony is busy jumping in, pulling them to shore that he has no time to see what is upstream causing them all to fall in.

What is Prevention? Cont'd



- In the story, the main character, Anthony sees a host of people in the river drowning and starts to pull each drowning victim out from the water but finds his efforts to be impossible to continue. As he works at quickly saving those he can, he realizes he is prevented from traveling upstream to determine the root cause of why so many people have fallen into the river in the first place.

What is Prevention? Cont'd

- With this, it is recognized that prevention efforts should be delivered prior to the onset of a disorder. Prevention strategies are intended to prevent or reduce the risks of developing a behavioral health problem, such as underage alcohol use and both prescription and illicit drug misuse.



What is Prevention? Cont'd

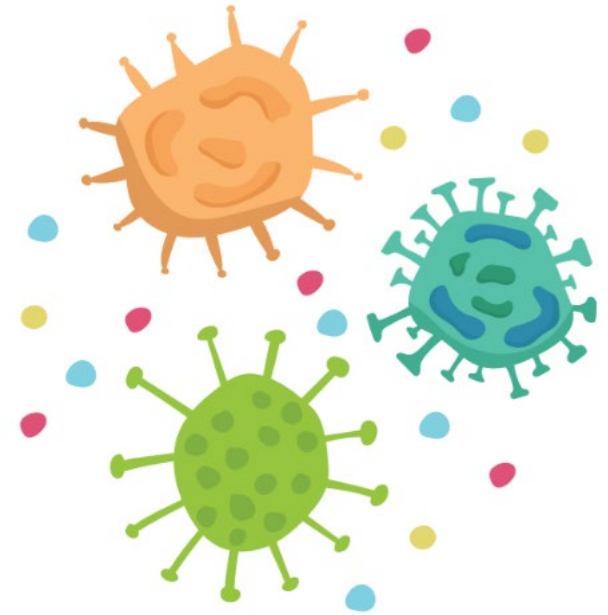
In effort to further explain what prevention is, we have a video to share with you:



Created by: Falcia Beck

History of Prevention

- **An Overview of the History of Prevention**
 - It is largely noted that the cause of death in the 19th and early 20th century were due to infectious diseases. With the improvement in public health prevention practices such as sanitation and immunizations, there was a significant increase in the average life expectancy of individuals in the United States.



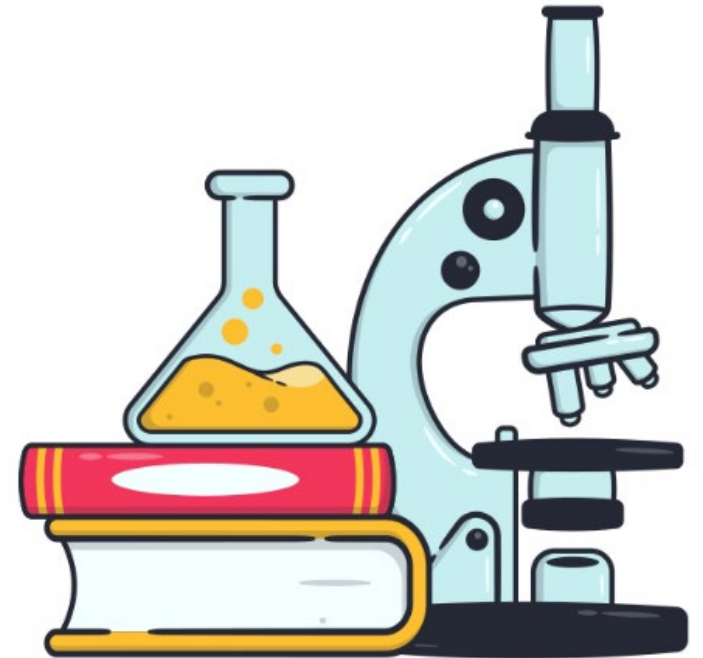
History of Prevention Cont'd



- Since these improvements have been made, historically, public health authorities have emphasized the importance of prevention in the public's health nationally and have even noted how there is not a more profitable investment of it's means than in the expenditures for promoting the public health by both preserving and improving it.

History of Prevention Cont'd

- Overtime there have been two factors which have shaped our modern public health system.
 - The growth of scientific knowledge about sources of disease and means of controlling them.
 - And the growth of public acceptance of disease control as both a possibility and a public responsibility.

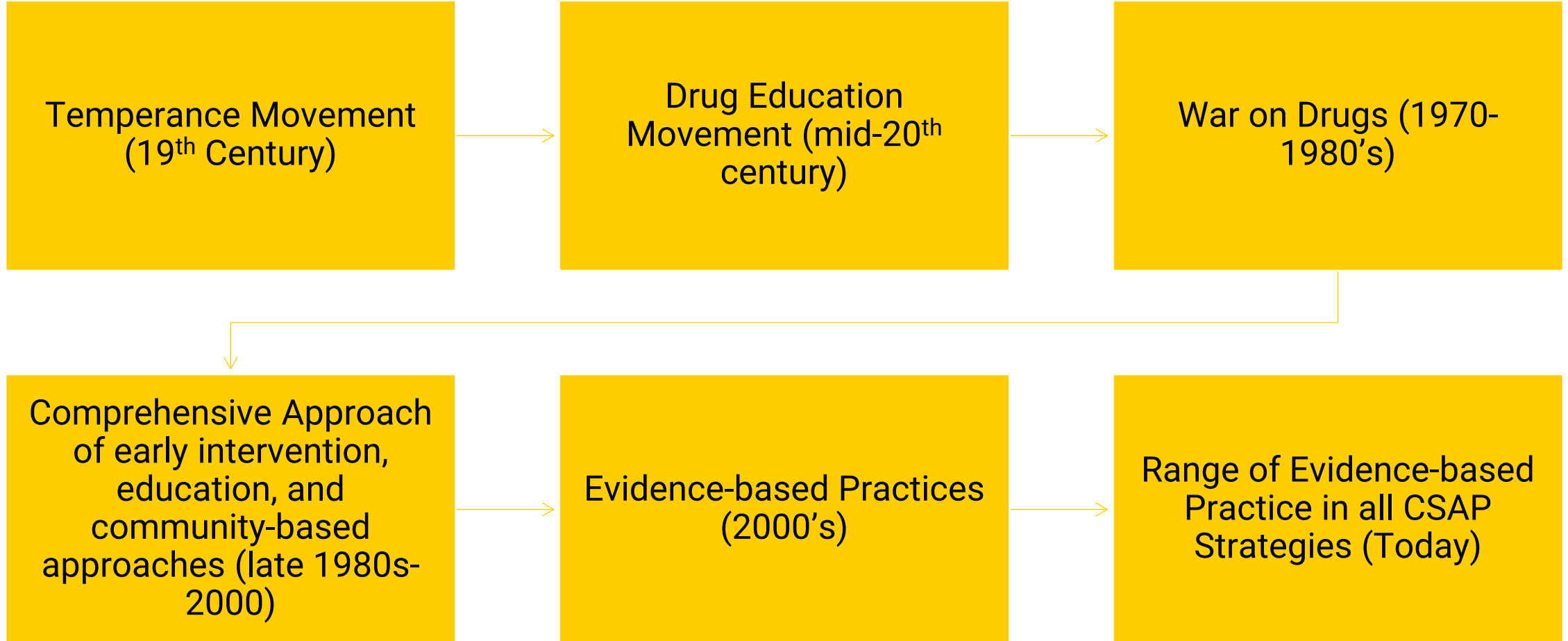


History of Prevention Cont'd



- With the growth in scientific knowledge, the responsibilities of public authorities expanded as well to handle new tasks, including sanitation, immunization, regulation, health education, and personal health care.

History of Prevention in US Timeline



The Prevention Practice

- **An Overview of the Prevention Practice**
 - Prevention practice includes the identification and assessment of health risks along with the development and testing of strategies aimed at reducing harmful exposure, disease onset, and progression.



The Prevention Practice Cont'd



- The practice of prevention corresponds to the natural history of disease classification which includes, underlying, susceptible, subclinical, clinical, and recovery/disability/death.
- Concurrently, in prevention, these stages include primordial, primary, secondary, and tertiary prevention. Depending on one's scope in prevention, one's work can be targeted at any of these stages.

CSAP Strategy

An Overview of the CSAP Strategy

- There are six strategies for the delivery of prevention services through a comprehensive approach developed by the Center for Substance Abuse Prevention (CSAP). These six strategies include:
 1. Information Dissemination
 2. Education
 3. Alternatives
 4. Environmental
 5. Community-Based Process
 6. Problem Identification and Referral



Information Dissemination



- Information dissemination
 - As its name reveals, this strategy provides awareness and knowledge of a given topic whether it is alcohol, tobacco and drug use, abuse or addiction. It shares the nature and extent of its impact on individuals, families and communities.
 - Examples: Brochures, public service announcements (PSA's), speaking engagements, information resource centers and media campaigns etc.

Education

- Information dissemination
 - This strategy is a two-way strategy involving an educator/facilitator and the participants. It is distinguished from information dissemination in this way with activities instead aimed to affect the critical life and social skills of individuals.
 - Examples: Educational programs, classroom/small group sessions, parenting or family management classes and the delivery of evidence-based programs.



Alternatives



- Alternatives
 - This strategy offers effective activities for specific populations in efforts to discourage the use of alcohol and other drugs by the implementation of technical assistance or consultation and support methods.
 - Examples: Alcohol, tobacco, other drug and problem gambling free events, community drop-in centers and mentoring programs.

Environmental

- Environmental
 - This strategy influences the incidence and prevalence of the abuse of alcohol, tobacco, other drugs, and problem gambling used in the population by changing or establishing new community standards, codes, and attitudes.
 - Examples: Product pricing strategies, promoting policies in schools and modification of advertising practices.



Community-Based Process



- **Community-Based Process**
 - This strategy offers collaborative group opportunities to more effectively provide prevention services such as for substance misuse and or problem gambling.
 - Examples: Systematic planning, multi-agency coordination and collaboration, community team-building, community and volunteer training, as well as technical assistance to coalition members.

Problem Identification and Referral

This strategy does not determine an individual's need for treatment but instead aims to identify individuals who have either indulged in illegal or age-inappropriate use of tobacco or alcohol and those who have indulged in the first use of illicit drugs, other substances and problem gambling, in order to assess the reversal of their behavior through proper education.

Examples: Student/employee assistance programs, risk reduction education and court-mandated alcohol or drug awareness education programs.



Prevention Core Competencies

- Core Competencies
 - Cross-Cutting Competencies
 - Domain 1: Assessment
 - Domain 2: Capacity Building
 - Domain 3: Planning
 - Domain 4: Implementation
 - Domain 5: Evaluation



Prevention Core Competencies Cont'd



- What are competencies?
 - A competency is defined as the capability of applying or using a set of related knowledge, skills and abilities (KSA's) required to successfully perform critical work functions or tasks in a defined work setting. Competencies can be broken down into KSA's which contribute to both an individual's and organization's performance.

Prevention Core Competencies Cont'd

Prevention core competencies offer professional direction into the prevention field by serving as a starting point for both articulating and analyzing skills, needs and providing a foundation for the development of human resource solutions to address those needs. They also provide a framework for ongoing coaching and mentoring.



Cross-Cutting Competencies

There are certain competencies which cut across the main five-domain competency structure. These competencies are foundational to the profession and have been placed in the cross-cutting domain.



- Competencies in this domain include:
 - Interdisciplinary foundations (substance use disorders and mental health)
 - Role of multiple systems and systems thinking
 - Family dynamics
 - Ethical practice and professional responsibility
 - Basic knowledge
 - Communication

Domain 1: Assessment

- The assessment domain focuses on the ability to carry out the ongoing process that can include the regular and systematic collection, assembly, analysis, and distribution of information on the needs, resources and community readiness of the population to be served.
- Competencies in this domain include:
 - Data gathering
 - Needs and resource identification
 - Problem definition
 - Analysis



Domain 2: Capacity Building



- The Capacity building domain involves the ability to engage in the long-term process of mobilizing individuals and implementing organizational and financial resources in order to sustain intended outcomes.
- Competencies in this domain include:
 - Collaboration
 - Organizational advocacy
 - Organizational cultural proficiency

Domain 3: Planning

The Planning domain consists of dimensions that involve developing measurable goals and objectives in response to the assessment of needs and assets.

- Competencies in this domain include:
 - Collaborative planning
 - Cultural inclusion
 - Systematic thinking
 - Evidence-informed approaches
 - Facilitation
 - Strategic planning



Domain 4: Implementation



The Implementation Domain focuses on the ability to carry out the various components of the prevention plan in an effective, efficient, culturally sensitive, and ethical manner, as well as identifying and overcoming any potential barriers.

- Competencies in this domain include:
 - Cultural responsiveness
 - Collaboration
 - Change management

Domain 5: Evaluation

- The Evaluation domain focuses on the ability to determine the reach, effectiveness, and impact of the implementation of the strategic plan and of the programs, processes, policies, and practices involved.
- Competencies in this domain include:
 - Evaluation methods
 - Data interpretation and use



Prevention in the Iowa Behavioral Health Services System (BHSS) Strategic Plan

As stated in the Iowa Behavioral Health Services system strategic plan, changes with a new integrated system will ensure consistent, statewide access to behavioral health prevention, early intervention, treatment, recovery and crisis services.



Prevention in the Iowa Behavioral Health Services System (BHSS) Strategic Plan Cont'd

- Prevention strategies for the success of the system wide transition include:
 - Creating and following an integrated, system-wide approach to behavioral health promotion and prevention.
 - Creating and using a system-wide communication plan to make behavioral health visible, prevent behavioral health conditions, promote behavioral health services, and reduce stigma.
 - Creating and following steps for success in building an integrated, statewide behavioral health promotion and prevention system for mental health, suicide, and addictive disorders.
 - Helping the behavioral health prevention workforce increase their knowledge and skills.



Risk and Protective Factors

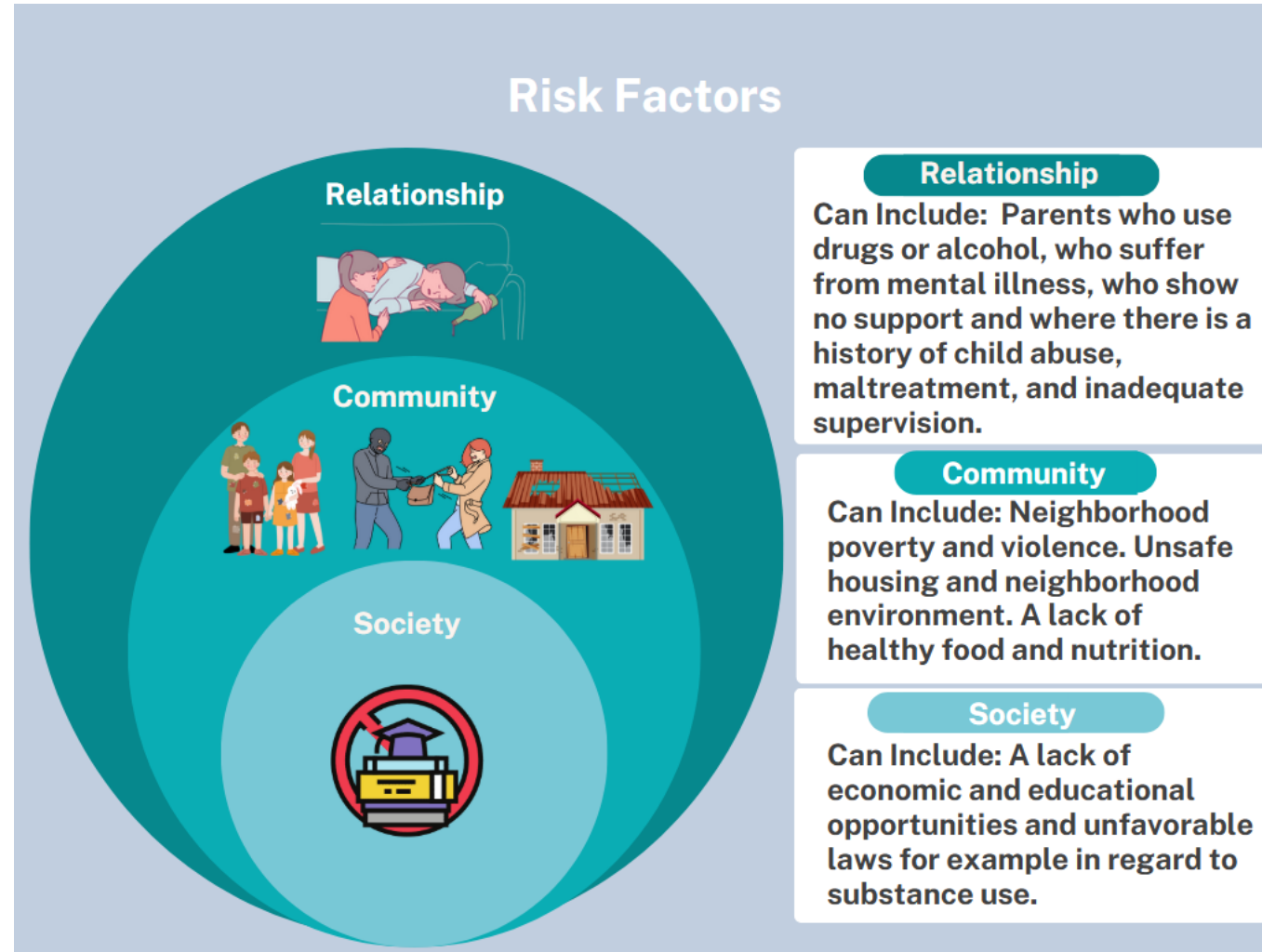
Risk & Protective Factors



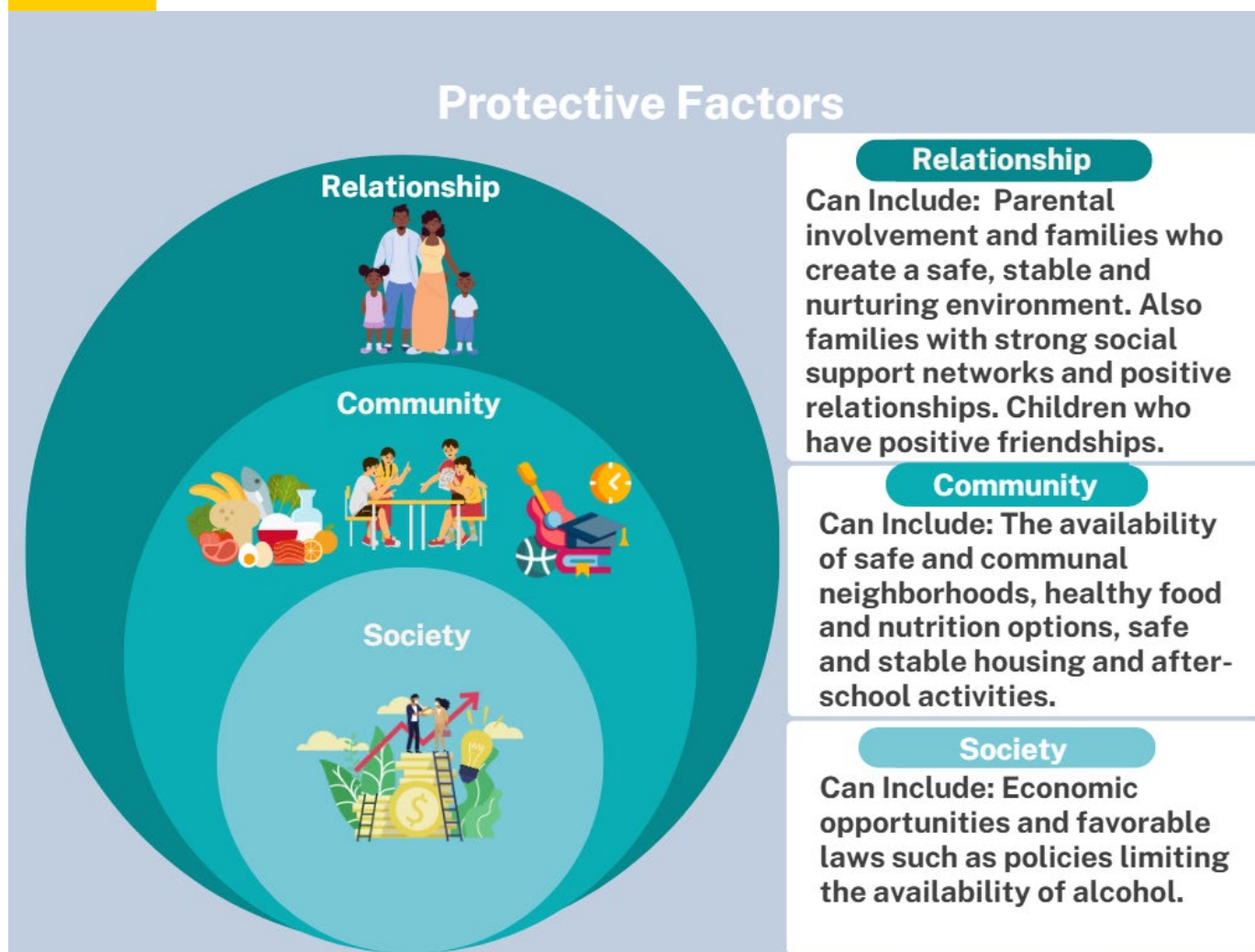
- An Overview of Risk and Protective Factors
 - Risk and protective factors vary greatly according to age, social and psychological development, ethnic/cultural identity, and surroundings.

Risk & Protective Factors Cont'd

- Risk Factors
 - Risk factors are characteristics which can contribute to a higher likelihood of negative outcomes in an individual's life.



Risk & Protective Factors Cont'd



- Protective Factors
 - Protective factors are characteristics that contribute to a lower likelihood of negative outcomes in an individual's life.

Risk & Protective Factors Cont'd

- Addressing Risk and Protective Factors
 - To address risk and protective factors, primary prevention should be the goal with a focus on young, school-aged children and their families before negative behaviors and family problems become deep-rooted issues.

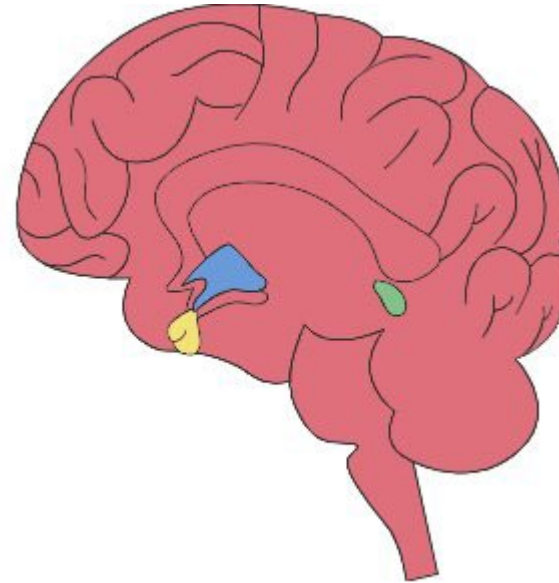


BREAK

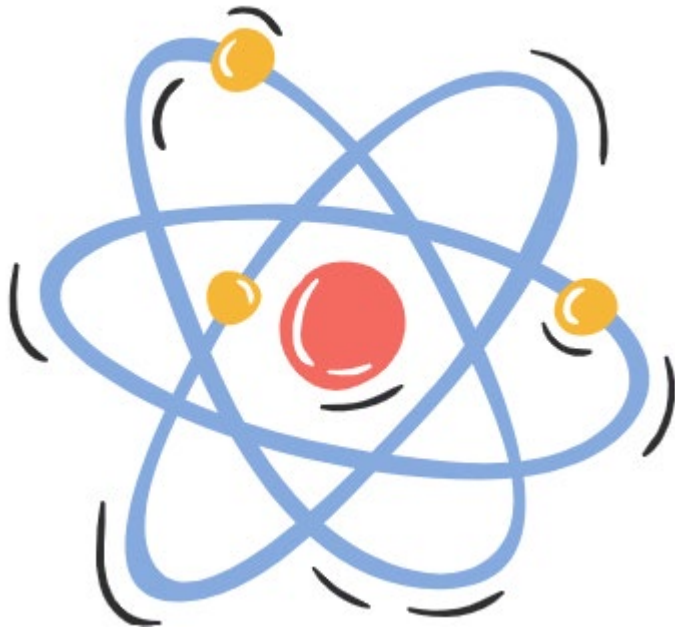
Addiction and the Brain

Addiction in the Brain

- What is Substance Use Disorder (SUD)?
 - Substance Use Disorder is a chronic, relapsing disorder characterized by compulsive drug seeking and use despite adverse consequences. It is an addictive disorder that brings about functional changes to the brain circuits which involve reward, stress, and self-control often causing a long-term impact even after a person has stopped using drugs.



Addiction in the Brain Cont'd



- History of SUD
 - The study of addictive behavior began for scientists in the 1930's. During this time, there was a lack of emphasis on prevention and treatment in society and more of an emphasis on punishment for lack of willpower and perceived moral failure. Since then, scientific research has discovered that addiction effects the brain and changes behavior identifying both biological and environmental risk factors to addiction. With these discoveries, science has been able to develop effective drug prevention and treatment approaches.

Addiction in the Brain Cont'd

- Susceptibility to SUD
 - An early use of drugs for adolescence can increase their chances of developing an addictive behavior. Since their brains are still developing, they are at greater risks.
 - It is noted also that during times of significant transitions in life such as, a change of school, loss of job or divorce etc., the risk of drug use increases greatly. This is particularly true for teenagers who leave high school and live independently away from certain protective factors that were previously in their lives.



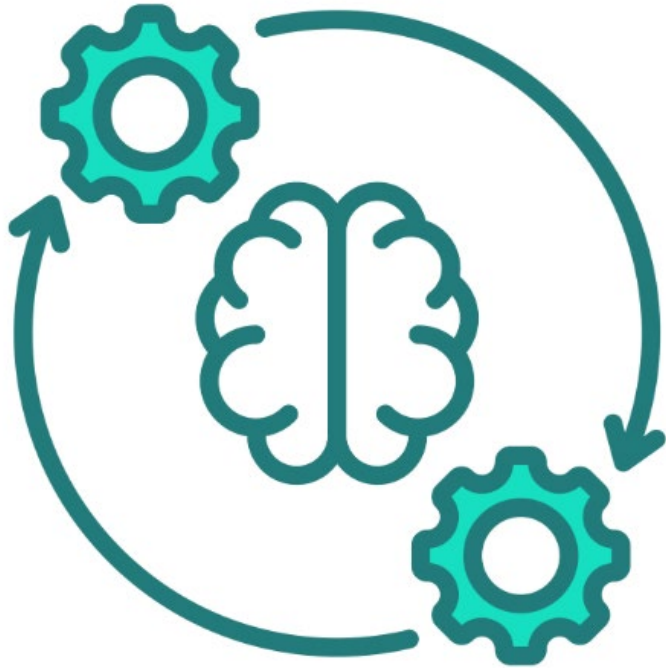
Addiction in the Brain Cont'd



- SUD Summary
 - In summary, drugs are able to alter areas of the brain that are necessary for life sustaining functions which can drive the compulsive drug use that causes addiction.
 - Some drugs such as opioids are able to disrupt parts of the brain which includes the brainstem that controls one's heart rate, breathing and sleeping, all which are basic functions to critical life.
 - Even with the significant developments in science compulsive drug use is still a mystery with it not being fully known why some individuals develop addictions to drugs while others do not.

Behavioral Health Priority Areas

Behavioral Health Priority Areas



From the Iowa Behavioral Health Services System (BHSS) Statewide Plan:

- Mental Health
- Substance Use
- Suicide Prevention
- Problem Gambling
- Tobacco

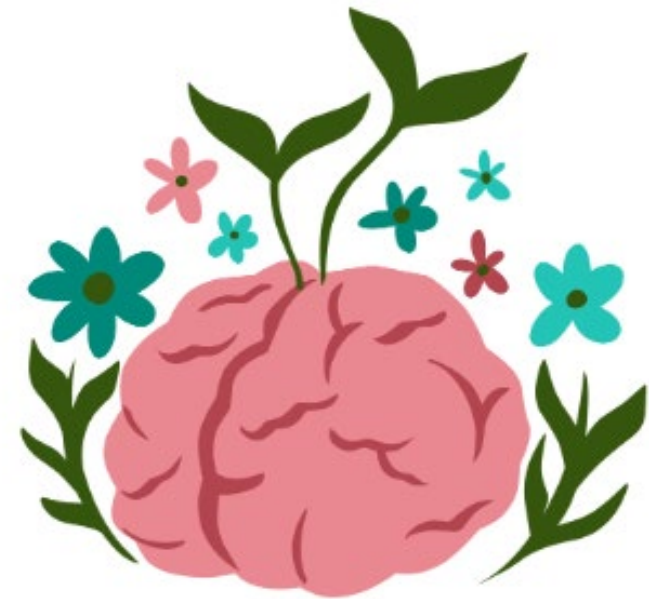
Mental Health

- Mental Health
 - Typically refers to one's:
 - Emotional
 - Psychological
 - Social wellbeing
 - It also involves how one thinks, feels, acts, and makes choices.



Mental Health Cont'd

- Iowa Mental Health Data
 - Based on the 2023 National Survey on Drug Use and Health (NSDUH), among U.S. adults aged 18 or older, 22.8% (or 58.7 million people) had a mental illness (AMI) in the past year. According to the 2025-2027 Behavioral Health Service System Statewide Plan, within the past year more adult Iowans received mental health treatment than the national average.



Factors that Contribute to Mental Health

Factors	Examples
Adverse Life Experiences	<ul style="list-style-type: none">-Traumatic life experience like violence.-A history of abuse.-Losses of any kind such as due to death or estrangement.-Significant changes in relationship with others.
Biological/Health Related Factors	<ul style="list-style-type: none">-Genes or brain chemistry.-Family history of mental health problems.-Battle with cancer or diabetes.-Starting a new medication.
General Stressors	<ul style="list-style-type: none">-Social stressors such as real or perceived discrimination.-Work and school related stressors.-A lack of understanding from peers or co-workers.
Substance Misuse	<ul style="list-style-type: none">-The misuse of alcohol or drugs.-Stopping medication or missing doses.

Mental Health Disorders – DSM 5-TR

Schizophrenia, Other Psychotic Disorders

Schizophrenia, Schizoaffective, Delusional, Schizotypal, Substance/Medication Induced Psychotic Disorder

Anxiety Disorders

Generalized, Social, Separation; Panic Disorder, Agoraphobia, Substance/Medication Induced

Bipolar and Related Disorders

Bipolar I, Bipolar II, Substance/Medication Induced Bipolar

Obsessive-Compulsive Disorders

Obsessive-Compulsive, Hoarding Disorder, Substance/Medication Induced, Hair-Pulling

Depressive Disorders

Major Depressive, Persistent Depressive, Disruptive Mood Dysregulation, Substance/Medication Induced Depressive

Trauma- and Stressor-Related Disorders

Reactive Attachment, Posttraumatic, Acute Stress, Adjustment

Common Mental Health Disorders

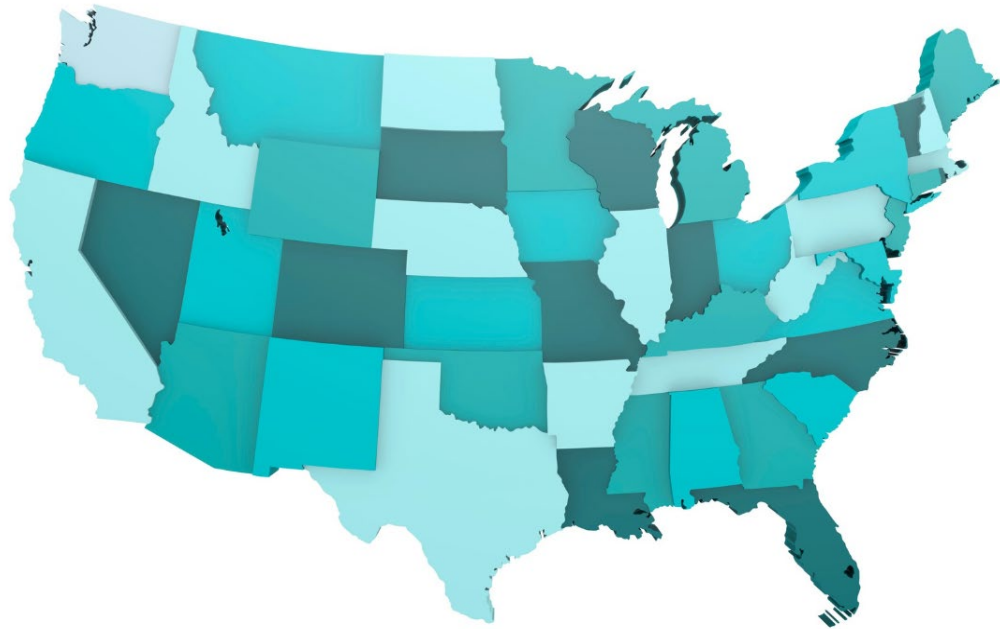
Depression	Anxiety	Post-Traumatic Stress Disorder (PTSD)	Obsessive-Compulsive Disorder (OCD)
Risks Factors <ul style="list-style-type: none"> - Family history - Experience of trauma - Stress - Major life changes 	Risks Factors <ul style="list-style-type: none"> - Genetics - Brain function and chemistry. - Development. 	Risks Factors <ul style="list-style-type: none"> - Traumatic events such as war, natural disaster, sexual assault, physical abuse, and an accident. 	Risks Factors <ul style="list-style-type: none"> - Family history. - Stressful life event. - Genetics. - Environmental factors.
Signs/Symptoms <ul style="list-style-type: none"> - Feelings of sadness and hopelessness. - Lack of interest or joy in hobbies and activities. 	Signs/Symptoms <ul style="list-style-type: none"> - Rapid heartbeat. - Sweating. - Shortness of breath. 	Signs/Symptoms <ul style="list-style-type: none"> - Trouble sleeping. - Losing interest in activities. - Feeling sad, worried, or guilty. 	Signs/Symptoms <ul style="list-style-type: none"> - Persistent and intrusive thoughts - Repetitive behaviors - Fear of losing control

Substance Use

- Drugs
 - The use of drugs are on the rise in U.S. adults. These drugs include, marijuana, cocaine, methamphetamine, as well as the misuse of prescription drugs and illicit opioids. With the continued use of these drugs, an individual can develop a dependency which can lead to various issues such as health problems, addiction, injury and accidents, sleep issues and others.



Substance Use Cont'd



- U.S. and Iowa Drug Use Data
 - According to the 2025-2027 Behavioral Health Service System Statewide Plan, national estimates indicate that Iowa substance use was similar to the U.S. overall. However, overdose mortality rates were lower in Iowa than the U.S. Iowa's overdose mortality rates were almost half the U.S. rates for adults from 2018 to 2023.

Types of Substances – Drugs

Cocaine

Health Risks

- ✓ Highly addictive drug involved in nearly 1/5 overdose deaths.
- ✓ Can cause an increased risk of HIV.

Signs/Symptoms

- ✓ Asthma.
- ✓ Bowel decay.

Methamphetamine (Meth)

Health Risks

- ✓ Devastating health effects and sometimes death.

Signs/Symptoms

- ✓ Body systems overload.
- ✓ Anxiety.
- ✓ Confusion.
- ✓ Insomnia
- ✓ Paranoia
- ✓ Aggression.

Prescription and Illicit Opioids

Health Risks

- ✓ Highly addictive and known to be the top cause of overdose deaths.

Signs/Symptoms

- ✓ Confusion.
- ✓ Nausea.
- ✓ Constipation.
- ✓ Coma.
- ✓ Brain damage.

Marijuana

Health Risks

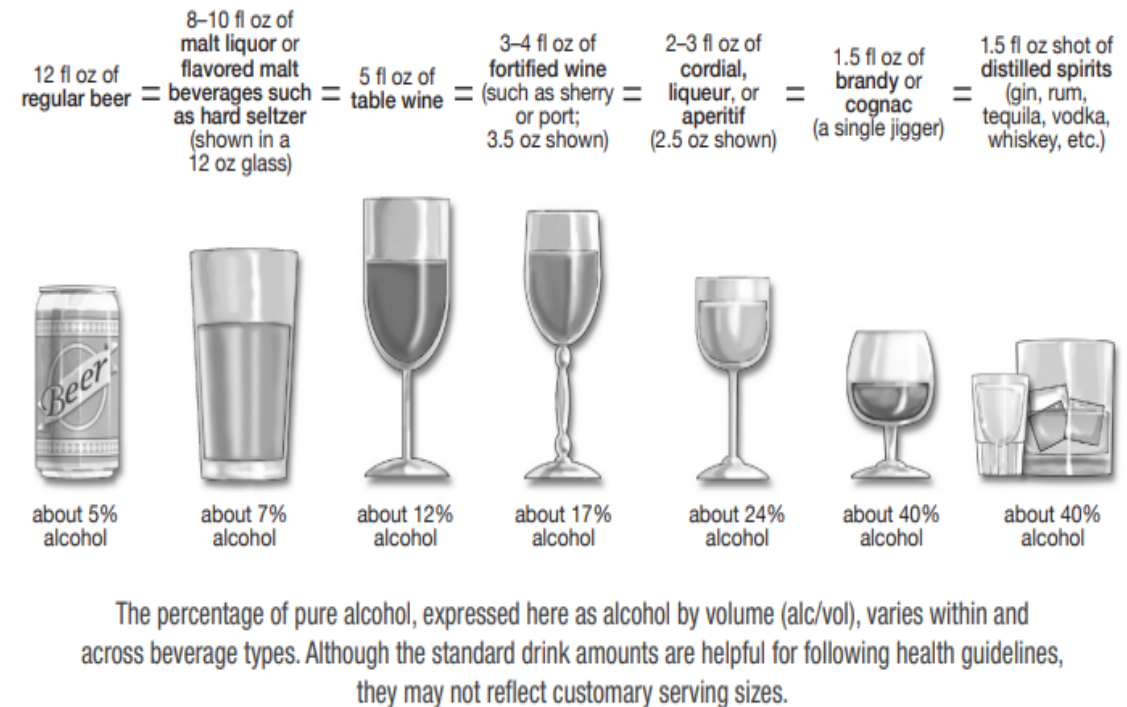
- ✓ Though legal in many states and most commonly used, it is linked to various negative outcomes.

Signs/Symptoms

- ✓ Depression.
- ✓ Anxiety.
- ✓ Suicide ideation.
- ✓ Psychotic episodes.
- ✓ Impact on movement and coordination.

Types of Substances – Alcohol

- Alcohol
 - Alcohol misuse increases one's risk of harmful consequences such as developing an alcohol use disorder (AUD). The misuse of alcohol includes binge drinking and heavy drinking. In the U.S. the “standard drink” (also known as an alcoholic drink equivalent) is defined as any beverage containing 0.6 fluid ounces or 14 grams of pure alcohol.



NIH. (Apr., 2024). *Rethinking Drinking Alcohol and Your Health*. Retrieved from, [RethinkingDrinking.niaaa.nih.gov](https://www.rethinkingdrinking.niaaa.nih.gov)

Types of Substances – Alcohol cont'd



- As defined by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), binge drinking is a pattern of drinking alcohol that brings blood alcohol concentration (BAC) to 0.08%—or 0.08 grams of alcohol per deciliter—or more. This typically happens if a woman has four or more drinks, or a man has five or more drinks, within about two hours. Heavy drinking on the other hand is described as:

- For women—four or more drinks on any day or eight or more per week
- For men—five or more drinks on any day or 15 or more per week

Types of Substances – Alcohol cont'd

- U.S. and Iowa Alcohol Use Data
 - According to the 2025-2027 Behavioral Health Service System Statewide Plan, national estimates indicate adult Iowans drink more alcohol than the U.S. overall. Current data from the Behavioral Risk Factor Surveillance System (BRFSS) reveals that Iowans are ranked third highest in the nation for adult binge drinking and adult Iowans died by alcohol-induced deaths at a higher rate than the U.S. average.



Types of Substances – Alcohol cont'd

Condition	Health Risks	Signs/Symptoms
Alcohol Misuse	<ul style="list-style-type: none">✓ Fatalities and injuries.✓ Alcohol related blackouts.✓ Liver disease✓ Breast cancer✓ Esophageal cancer✓ Cardiovascular diseases✓ Depression✓ Stomach bleeding✓ Birth defects✓ AUD	<ul style="list-style-type: none">✓ Drinking more, or longer than intended.✓ A desire to cut down or stop drinking.✓ A strong desire to drink.✓ Interference with responsibilities.✓ Cutting back on important activities.✓ Withdrawal symptoms such as: Trouble sleeping, shakiness, restlessness, nausea, sweating, racing heart, dysphoria.

Suicide Prevention

- Suicide Prevention
 - Suicide is considered to be death caused by injury to oneself with the intention to die while a suicide attempt is an intentional harming of oneself without completing an end to one's life. Suicide was among the top 8 leading causes of death in 2023 for people ages 10-64 and the second leading cause of death for people ages 10-34.



Suicide Prevention Cont'd

- U.S. and Iowa Suicide Data
- In 2023, almost 50,000 people died by suicide in the U.S. In 2022, there was an estimated 12.8 million adults who had suicide ideation while 3.7 million planned a suicide attempt and 1.5 million attempted suicide. According to the 2025-2027 Behavioral Health Service System Statewide Plan, Iowans died by suicide at a higher rate than the U.S. overall.



Suicide Prevention Cont'd

Condition	Health Risk	Sign/Symptoms
Suicide	<ul style="list-style-type: none">✓ Serious injury or death.✓ Mental health concerns.✓ Serious emotional and physical impacts.	<ul style="list-style-type: none">✓ Depression.✓ Anxiety.✓ Prolonged grief, shock, guilt from loved ones.

Problem Gambling



- Problem Gambling
 - Problem gambling behavior can have negative effects on an individual, impacting their family, daily life and career experiences. It is sometimes referred to as, gambling “addiction” or “disorders”. Gambling disorders are known to be comorbid with mental health and substance use disorders and are often hidden addictions with low perceptions of harm.

Problem Gambling Cont'd

- U.S. and Iowa Problem Gambling Data
 - Statistics show that $\frac{3}{4}$ college students gambled in the past year and 10% of them experienced problem gambling.
 - The Iowa Department of Health and Human Services (HHS) SFY- Annual Report, 2024 revealed that 1,363 individuals contacted Your Life Iowa in 2024 for problem gambling assistance.



Problem Gambling Cont'd

Condition	Health Risk	Signs/Symptoms
Problem Gambling	<ul style="list-style-type: none">✓ Produces the same effects on the brain as euphoria inducing drugs.	<ul style="list-style-type: none">✓ Gambling despite negative consequences.✓ Bankruptcy.✓ Legal problems.✓ Job loss.✓ Family loss.✓ Thoughts of gambling.✓ Having the feeling of a need to bet more money and more often.

Problem Gambling Cont'd

Forms of Gambling Activities
Lottery
Scratch Tickets
Dice games
Sports betting
Arcade games
Video games
Bingo
Racetracks
Private wagering
Raffles
Blackjack

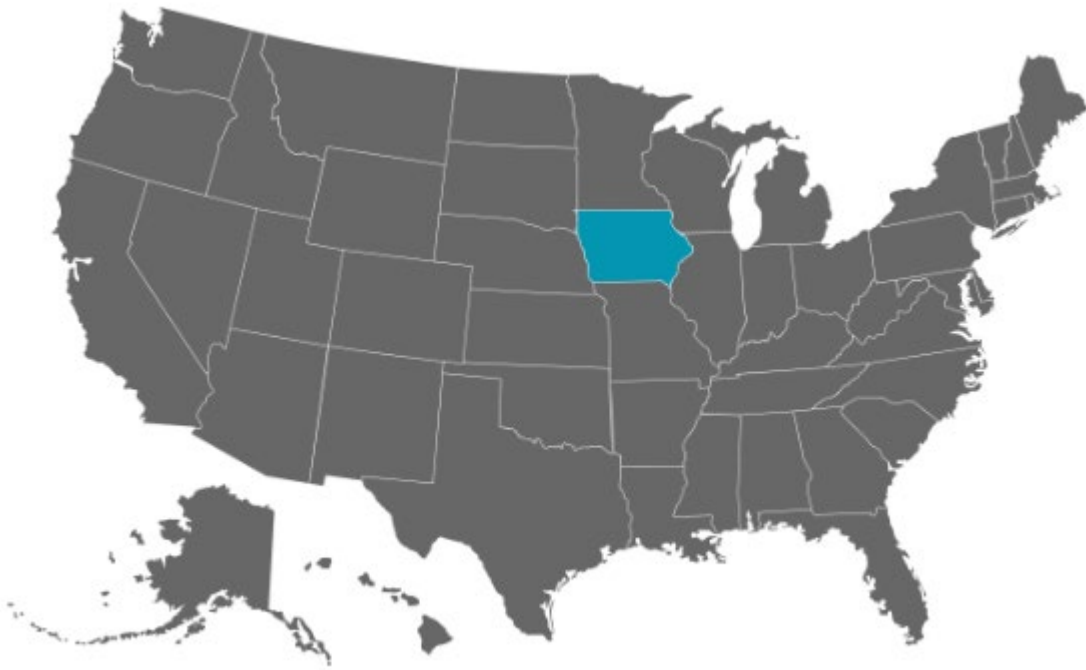
Tobacco

- Tobacco
 - Tobacco -Cigarette smoking is the leading preventable cause of disease, death, and disability in the United States. It is a major public health concern with over 16 million Americans impacted by it.



Tobacco Cont'd

- U.S. and Iowa Tobacco Data
 - According to the 2025-2027 Behavioral Health Service System Statewide Plan, there were slightly more current cigarette smokers in Iowa than the U.S. average, and more adult Iowans reported daily smoking than the U.S. overall from 2018-2023 (2025 BRFSS Data).



Tobacco Cont'd

Condition	Health Risk	Signs/Symptoms
Tobacco	<ul style="list-style-type: none">✓ Harms nearly every organ in the body: Heart, lungs, bones, eyes, teeth, gums, reproductive organs.✓ It causes cancer, heart disease, lung disease, type 2 diabetes and immune system diseases.	<ul style="list-style-type: none">✓ Shortness of breath.✓ Increased Co2 in blood.✓ Chest Pain.✓ Anxiety.✓ Depression.✓ Stress.

Questions and Evaluation Link



Thank you

→ iowacebh.org/prevention

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