Towards a Comprehensive Framework for Marijuana Prevention, Treatment and Recovery:

"Facing Addiction in America--The Surgeon General's Report on Alcohol, Drugs, and Health"

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Towards a Public Health Approach
Rationale

• The Surgeon General’s Report was created because of the important health and social problems associated with alcohol and drug misuse in America.
• The Surgeon General’s Report on Alcohol, Drugs, and Health was issued to help inform policymakers, health care professionals, and the general public about effective, practical, and sustainable strategies to address these problems.
• The health care system has historically treated substance misuse and disorders as moral failings rather than chronic diseases.

Vision for the Future:
A Public Health Approach

• Provides concrete, evidence-based recommendations on how to reduce substance misuse and related harms in communities across the U.S.
• Implications for policy and practice are discussed for each finding.
• Outlines the role of specific stakeholder groups in changing the culture, policies, and practices specific to addressing substance misuse.

Five Overarching Messages

1. Both substance misuse and substance use disorders harm the health and well-being of individuals and communities. Addressing them requires implementation of effective strategies.
2. Highly effective community-based prevention programs and policies exist and should be widely implemented.
3. Full integration of the continuum of services for substance use disorders with the rest of health care could significantly improve the quality, effectiveness, and safety of all health care.
Five Overarching Messages, Cont

4. **Coordination** and **implementation** of recent health reform and parity laws will help ensure **increased access to services** for people with substance use disorders.

5. A large body of research has clarified the **biological, psychological, and social underpinnings** of substance misuse and related disorders and described **effective prevention, treatment, and recovery support services**. Future research is needed to guide the **new public health approach** to substance misuse and substance use disorders.

The Surgeon General’s Report is Composed of Tools For Change and Opportunities for Research
Each Chapters Provides You With A Challenge For Action

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Chapter 6: Health Care Systems and Substance Use Disorders
Chapter 7: Vision for the Future: A Public Health Approach
A PUBLIC HEALTH MODEL FOR ADDRESSING SUBSTANCE MISUSE AND DEPENDENCE AND RELATED CONSEQUENCES

• Define the problem through the systematic collection of data on the scope, characteristics, and consequences of substance misuse.

• Identify the risk and protective factors that increase or decrease the risk for substance misuse and its consequences, and the factors that could be modified through interventions.

• Work across the public and private sectors to develop and test interventions that address social, environmental, or economic determinants of substance misuse and related health consequences;
A PUBLIC HEALTH MODEL FOR ADDRESSING SUBSTANCE MISUSE AND DEPENDENCE AND RELATED CONSEQUENCES

• Support broad implementation of effective prevention and treatment interventions and recovery supports in a wide range of settings; and,

• Monitor the impact of these interventions on substance misuse and related problems, as well as on risk and protective factors.

• Work across the public and private sectors to develop and test interventions that address social, environmental, or economic determinants of substance misuse and related health consequences;
Chapter One Surgeon General Report
Cost of Substance Use and Substance Use Disorders

Cost Comparison to the United States each year

<table>
<thead>
<tr>
<th>Substance Misuse and Disorders</th>
<th>Billions</th>
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<tbody>
<tr>
<td>Diabetes</td>
<td>$245</td>
</tr>
<tr>
<td>Alcohol Abuse &amp; Dependence</td>
<td>$249</td>
</tr>
<tr>
<td>Drug Abuse &amp; Dependence</td>
<td>$193</td>
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| Marijuana, A Changing Legal and Research Environment

- The Surgeon General’s Report notes that marijuana is the most commonly used illicit drug in the United States with 22.2 million people aged 12 or older using it in the past year.
- The report observes that marijuana has become more socially acceptable among both adults and youth, while perceptions of risk among adolescents of the drug’s harms have been declining over the past 13 years.

States where Marijuana is Legalized for “Medical or Medical plus Recreational Use”
Need to Strengthen Our Understanding of the Effects and Consequences of Marijuana Use

- Research
  - For Individual Users
  - For Public Health and Safety
- State laws and policies vary
  - Decriminalization Model
    - Production and sale are illegal
  - Marijuana for Medical Use
    - Different models dictating how marijuana is dispensed
      - Marijuana for adult "recreational" use
        - All production and sales of marijuana for personal use

There have been no changes in the Federal Controlled Substances Act for Marijuana

- Marijuana remains a Schedule I drug under the Federal Controlled Substances Act (CSA)
- The CSA does not recognize any legal medical use for marijuana
- In addition, no state has legalized "recreational" marijuana

Missouri Marijuana Ballot Initiatives

- The Missouri Marijuana Legalization Initiative (2018) may appear on the ballot as an initiated constitutional amendment on November 6, 2018
- There are two versions of the initiative filed for circulation Measure 2018-179 and Measure 2018-223
- Supporters of the initiative are required to collect at least 160,199 valid signatures by May 6, 2018 in order for a measure to appear on the November 6, 2018 ballot.
Marijuana Use in Lifetime among Persons Aged 12 or Older: Percentages, 2002-2016

Between 2002 and 2016, there was a 3.4% increase in the percentage of people who use marijuana in their lifetime.

Marijuana Use in Lifetime among Persons Aged 12 or Older: Numbers in Thousands, 2002-2016

The number of people who used marijuana in their lifetime grew by 23.5 million from 2002 to 2016.

Marijuana Use in the Past Month among Persons Aged 12 or Older: Percentages, 2002-2016

Between 2002 and 2016, current marijuana use among those 12 and older increased by 2.7%.
Marijuana Use in the Past Month among Persons Aged 12 or Older: Numbers in Thousands, 2002-2016

- Approximately 10 million more people used marijuana in the past month in 2016 than in 2002.

Marijuana Use in the Past Month among Persons Aged 12 to 17: Percentages, 2002-2016

- Between 2002 and 2016, Current Marijuana Use among those 12 to 17 decreased by 1.7%.

Marijuana Use in the Past Month among Persons Aged 12 to 17: Numbers in Thousands, 2002-2016

- Approximately 414,000 fewer people, aged 12-17, used marijuana in the past month in 2016 than in 2002.
Youth Strongly Disapproved or Somewhat Disapproved of Peers’ Marijuana Use Behaviors among Persons Aged 12 to 17: Percentages, 2002-2016

Youths Felt That Parents Would Strongly Disapprove of Youth’s Marijuana Use Behaviors among Persons Aged 12 to 17: Percentages, 2002-2016

Past Month Marijuana Use in US and Missouri, by Age Group: Percentages Annual Average Based on 2015-2016 NSDUH
The SG Report Notes that both the potency and the formulations of Marijuana are changing

- The average potency of marijuana has more than doubled over the past decade.
  - There are marijuana plant strains with THC content over 30%
- The SG report also notes that the way marijuana is used is also changing
  - Smoking
  - Vaporizing devices
  - Edibles
    - Baked goods
    - Candies
    - Beverages
  - High-potency extracts and oils ("dabbing")

Marijuana Products and Methods are often unregulated even in the 29 states that have some form of marijuana legal status

- Users may not have accurate information
  - About dosage or potency
  - About health consequences
  - About Risks
- Marijuana can lead to hospitalization for the vulnerable or the unwitting
  - Psychosis
  - Overdose-related symptoms
- Marijuana use can impair driving skills and increase accident risk
- Marijuana risk is compounded with co-use with alcohol

Potential Therapeutic Value of Marijuana’s Constituent Cannabinoid Chemicals

- The SG report acknowledges that there is research suggesting potential benefit of marijuana’s constituent cannabinoid chemicals for certain health conditions including
  - Pain
  - Nausea
  - Epilepsy
  - Obesity
  - Wasting disease
  - Autoimmune disorders
- Evidence collected so far in clinical investigations of the marijuana plant is still insufficient to meet FDA standards
  - For Safety
  - For Efficacy
The SG Report notes that FDA has approved three synthetic cannabinoids

- Marinol capsules and Syndros oral solution
  - Both contain dronabinol
  - Identical in chemical structure to THC
- Cesamet capsules
  - Contains nabilone
  - Similar in structure to THC
- These products can be used to treat severe nausea and wasting in certain circumstances, for instance in AIDS patients
- On April 19, 2018, an FDA advisory panel recommended the approval of Epidiolex (cannabidiol) for Lennox-Gastaut syndrome and Dravet syndrome—two forms of childhood epilepsy

Different Models of Legalization

- Although there continues to be a disagreement between the State and Federal governments about the legal status of marijuana, research is needed on the impact of different models of legalization and how to minimize harm based on what has been learned from legal substances subject to misuse, such as alcohol and tobacco.
- Continued assessment of barriers to research and surveillance will help build the best scientific foundation to support good public policy while also protecting the public health.

The Surgeon General’s Report is Composed of Tools For Change and Opportunities for Research
Each Chapters Provides You With A Challenge For Action
Chapter 2
The Neurobiology of Substance Use, Misuse, and Addiction

This Chapter describes the neurobiological framework underlying substance use and why some people transition from using or misusing alcohol or drugs to substance disorders. It explains how these substances produce changes in brain structure and function that promote and sustain addiction and contribute to relapse.

Chapter 2
ACTIONS OF ADDICTIVE SUBSTANCES ON THE BRAIN

The Report discusses that despite diverse initial actions, addictive substances produce some common effects on the VTA and NAc. Stimulants directly increase dopamine (DA) transmission in the NAc. Opioids, alcohol, and inhalants do the same indirectly. Alcohol also activates the release of opioid peptides. Opioids directly activate opioid peptide receptors. Nicotine activates dopamine neurons in the VTA. Cannabinoids may act in the VTA to activate dopamine neurons but also act on NAc neurons.

Chapter 2
THE NEUROBIOLOGY OF SUBSTANCE USE, MISUSE, AND ADDICTION: Some Key Findings

- Continued substance use produces dramatic changes in brain function that reduce a person’s ability to control his or her substance use
- Brain changes persist long after substance use stops
  It is not known how much these changes may be reversed or how long it takes
- Adolescence is a critical “at-risk period” for substance use and addiction
  All addictive drugs have especially harmful effects on the adolescent brain, which is still undergoing significant development
This chapter reviews well-supported scientific evidence that exists for robust predictors (risk and protective factors) of substance use and misuse from birth through adulthood. These predictors show much consistency across gender, race, ethnicity and income. Well-supported scientific evidence demonstrates that a variety of prevention programs and alcohol policies that address these predictors prevent substance initiation, harmful use, and substance use-related problems, and many have been found to be cost effective.

**Chapter 3**

**Prevention Programs and Policies**

- Over 60 prevention programs and policies have been shown to prevent substance use problems in rigorous research
- Communities are an effective organizing force for bringing evidence-based policies and programs to scale to improve public health

**Chapter 3**

**Prevention Works**

- Policies to reduce availability of alcohol
- Policies to reduce underage drinking
- Policies to reduce drinking and driving
- Policies for those convicted of a DUI
- Policies to reduce prescription drug misuse
Chapter 3
Need for Future Prevention Research

• Future research should
  • develop and evaluate new prevention interventions, both programs and policies, and
  • continue to assess the effectiveness of existing interventions about which little is known.
• This research will help guide the field toward strategies with the greatest potential for reducing substance misuse and related problems

Public Health Impact of Marijuana Policies: Prevention Research

The public health impact of marijuana decriminalization, legalization of medical marijuana, and legalization of recreational marijuana on marijuana, alcohol, and other drug use, as well as policies to reduce prescription drug misuse, should be monitored closely.

2015 HIGH TIMES US Cannabis Cup
Denver: Highest THC Strains

Primus by Green Tree Medicinals – THC 24.6%
Cal Kush Farms Emperor Cookie Dough by Greenwolf LA – THC 31.1%
Chem D.O.G. by Next Harvest – THC 32.13%

Dutch MG by Greenwolf LA with Ghost Czar – THC 25.83%
Ghost Train Haze by Greenman Cannabis – THC 25.74%
Veganic Strawberry Cough by Private Stock for Buds and Roses – THC 28.31%

THC CONTENT OF VARIOUS MARIJUANA CONCENTRATION METHODS

<table>
<thead>
<tr>
<th>Product</th>
<th>Production</th>
<th>THC Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kief</td>
<td>Trichomes broken away from the dried plant material via specialized filtering screens</td>
<td>20-60%</td>
</tr>
<tr>
<td>Rosin</td>
<td>Dried buds, trim, or lower-grade water hash/kief heated quickly between parchment sheets with hair straightener</td>
<td>50-70%</td>
</tr>
<tr>
<td>CO2 Oil</td>
<td>Carbon dioxide compressed at high pressures to strip oils</td>
<td>50-75%</td>
</tr>
<tr>
<td>Water Hash</td>
<td>Plant material mixed with cold water and ice, then break off the now- brittle trichome heads</td>
<td>50-80%</td>
</tr>
<tr>
<td>Butane Hash Oil</td>
<td>Butane is pressurized in a vessel and washed over plant material</td>
<td>60-90%</td>
</tr>
</tbody>
</table>

ARE STATES GETTING HOOKED ON DOPE MONEY?

Research Questions about Marijuana

- Although the SGR report does not examine the issue of marijuana legalization, its continually evolving legal status is worth mentioning because of implications for both research and policy.
- 24 million people, aged 12 or older admit to being current users (Past Month) of Marijuana and/or Hashish.
- 28 States and DC have “medical marijuana” laws
- 9 States and DC have “legalized recreational marijuana.”
- It is critical to strengthen understanding of the effects and consequences for individual users and for public health and safety.
CHAPTER 4
Early Intervention, Treatment, and Management of Substance Use Disorders

This chapter provides an overview of the scientific evidence supporting the effectiveness of treatment interventions, therapies, services, and medications available to identify, treat, and manage substance use problems and disorders.

Missouri Admissions aged 12 and Older by Primary Substance of Abuse: 2004-2014

Primary Marijuana Admissions Aged 12 and older, by US and Missouri: Admissions per 100,000 population, 2004-2014
CHAPTER 4
Early Intervention, Treatment, and Management of Substance Use Disorders

• Well-supported scientific evidence shows that substance use disorders can be effectively treated, with recurrence rates no higher than those for other chronic illnesses such as diabetes, asthma, and hypertension.

• With comprehensive continuing care, recovery is an achievable outcome.

• Only about 1 in 10 people with a substance use disorder receive any type of specialty treatment.

• The great majority of treatment has occurred in specialty substance use disorder treatment programs with little involvement by primary or general health care.
Chapter 4
Screening and Brief Intervention

Substance misuse screening should occur for everyone in every health care settings, including primary, urgent, psychiatric, school health clinics, and emergency care

Brief interventions should be provided to adolescents and adults who are at risk of or show signs of substance misuse

Ongoing monitoring is important to build a trusting relationship with a clinician to promote either a reduction of substance use or abstinence

Chapter 4
Risk Reduction and Engagement

Engage individuals who are active substance users and offer treatment as indicated. Strategies include:

- Naloxone to reverse opioid overdoses
- Syringe services to reduce the transmission of HIV or Hepatitis C
- Withdrawal management to minimize medical consequences of cessation
- Outreach and education to encourage seeking help

Chapter 4 Treatment
Medication Management of Substance Use Disorders

- The U.S. Food and Drug Administration (FDA) has approved three medications to treat alcohol use disorders and three others to treat opioid use disorders.
- However, an insufficient number of existing treatment programs or practicing physicians offer these medications.
- To date, no FDA-approved medications are available to treat marijuana, cocaine, methamphetamine, or other substance use disorders.
Pharmacotherapies Used to Treat Opioid Use Disorders

<table>
<thead>
<tr>
<th>Medication</th>
<th>Formulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buprenorphine/naloxone</td>
<td>Sublingual film, sublingual tablet, buccal film</td>
</tr>
<tr>
<td>Buprenorphine</td>
<td>Sublingual tablet, implants, and depot</td>
</tr>
<tr>
<td>Methadone</td>
<td>Tablet, injection</td>
</tr>
<tr>
<td>Naltrexone</td>
<td>Tablet and extended release injectable suspension</td>
</tr>
</tbody>
</table>

CHAPTER 4 Treatment
Behavioral Therapies for Substance Use Disorders

• Behavioral therapies can be provided in individual, group, and/or family sessions in virtually all treatment settings.
• These structured therapies help patients recognize the impact of their behaviors – such as those dealing with stress or interacting in interpersonal relationships – on their substance use and ability to function in a healthy, safe, and productive manner.
• These therapies also teach and motivate patients in how to change their behaviors as a way to control their substance use disorders.

CHAPTER 4 Treatment
Behavioral Therapies for Substance Use Disorders

• For evidence-based behavioral therapies to be delivered appropriately, they must be provided by qualified, trained providers.
• Despite this, many counselors and therapists working in substance use disorder treatment programs have not been trained to provide evidence-based behavioral therapies, and general group counseling remains the major form of behavioral intervention available in most treatment programs.
• Unfortunately, despite decades of research, it cannot be concluded that general group counseling is reliably effective in reducing substance use or related problems.
### Chapter 4: Treatment
#### Qualities of Effective Substance Use Disorder Treatment
- Individualized treatment plans
- Goals that are person-centered and strength-based
- Targeted efforts to keep the individual engaged in care
- Care that considers both physical and mental health
- Culturally competent care that considers age, gender identity, race and ethnicity, language, health literacy, religion, sexual orientation, culture, physical health problems, and co-occurring conditions

### Chapter 4: Treatment
#### The Promise of Technology
**Technology** can:
- Increase access to care in previously underserved areas and settings
- Enable service providers to care for more clients
- Provide alternative care options for individuals who are hesitant to seek in-person treatment
- Increase the chances that interventions are delivered as they were designed and intended
- Decrease treatment costs

### Chapter 5: Recovery
#### Recovery: The Many Paths to Wellness
- Recovery from substance use disorders has had several definitions. Although specific elements of these definitions differ, all agree that recovery goes beyond the remission of symptoms to include a positive change in the whole person.
- In this regard, “abstinence,” though often necessary, is not always sufficient to define recovery.
Chapter 5: Recovery
The Many Paths to Wellness

• Remission from substance use disorders—the reduction of key symptoms below the diagnostic threshold—is more common than most people realize.
• “Supported” scientific evidence indicates that approximately 50 percent of adults who once met diagnostic criteria for a substance use disorder—or about 25 million people—are currently in stable remission (1 year or longer).
• Remission from a substance use disorder can take several years and multiple episodes of treatment, RSS, and/or mutual aid.

Chapter 5: Recovery
Recovery Support Services

• Mutual Aid Groups
• (Peer) Recovery Coaching
• Recovery Housing
• Recovery Management
• Recovery Community Centers
• Recovery-based Education

Chapter 5: Recovery
State of the Science

• Well-supported scientific evidence demonstrates the effectiveness of 12-step mutual aid groups focused on alcohol and 12-step facilitation interventions.
• Evidence for the effectiveness of other recovery supports (educational settings, drug-focused mutual aid groups, and recovery housing) is promising.
• Many other recovery supports have been studied little or not at all.
Chapter 6: Health Care Systems and Substance Use Disorders

• Well-supported scientific evidence shows that the traditional separation of substance use disorder treatment and mental health services from mainstream health care has created obstacles to successful care coordination.

• Efforts are needed to support integrating screening, assessments, interventions, use of medications, and care coordination between general health systems and specialty substance use disorder treatment programs or services.

Chapter 6: Health Care Systems and Substance Use Disorders

• Supported scientific evidence indicates that closer integration of substance use-related services in mainstream health care systems will have value to both systems.

• Substance use disorders are medical conditions and their treatment has impacts on and is impacted by other mental and physical health conditions.

• Integration can help address health disparities, reduce health care costs for both patients and family members, and improve general health outcomes.

Chapter 6: Health Care Systems and Substance Use Disorders

• Use of Health IT is expanding to support greater communication and collaboration among providers, fostering better integrated and collaborative care, while at the same time protecting patient privacy.

• It also has the potential for expanding access to care, extending the workforce, improving care coordination, reaching individuals who are resistant to engaging in traditional treatment settings, and providing outcomes and recovery monitoring.
Chapter 6
Health Care Systems and Substance Use Disorders

• Well-supported evidence shows that the current substance use disorder workforce does not have the capacity to meet the existing need for integrated health care, and the current general health care workforce is undertrained to deal with substance use-related problems.
• Health care now requires a new, larger, more diverse workforce with the skills to prevent, identify, and treat substance use disorders, providing “personalized care” through integrated care delivery.

CHAPTER 7
VISION FOR THE FUTURE: A PUBLIC HEALTH APPROACH

1. Both substance misuse and substance use disorders, including marijuana misuse and marijuana use disorders, harm the health and well-being of individuals and communities. Addressing them requires implementation of effective strategies.
2. Highly effective community-based prevention programs and policies exist and should be widely implemented for marijuana use and other substances of misuse
3. Full integration of the continuum of services for substance use disorders with the rest of health care could significantly improve the quality, effectiveness, and safety of all health care.

4. Coordination and implementation of recent health reform and parity laws will help ensure increased access to services for people with substance use disorders, including marijuana use disorders.
5. A large body of research has clarified the biological, psychological, and social underpinnings of substance misuse and related disorders and described effective prevention, treatment, and recovery support services
6. Marijuana use disorders can be prevented and treated with recovery following.
Disclaimer

- This presentation was made, in part, by contract on behalf of the Substance Abuse and Mental Health Services Administration (SAMHSA).
- Dr. Clark is not a federal employee, and this presentation does not represent any official position of SAMHSA.

QUESTIONS

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THE END