Where's the Rock and Roll?: Sex, Drugs, and HIV

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HIV Data

- **50K new HIV transmissions a year**
- **2006 – 2009 # transmissions stable, however:**
  - 21% ↑ in people 13-29 years
  - 34% ↑ in young MSM
  - Young, African American MSM most affected
- **1/3 of people with known HIV *not in care***
  - An undetectable VL one of the greatest sources of HIV prevention

CDC, 2009, Mugavero, et al, 2010

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Substance Abuse USA

- **Substance abuse directly affects >17 million Americans** (Archives of General Psychiatry, August 2004)
- **53% of population will meet criteria for dx of substance abuse or dependence**
  - 35% of males
  - 18% of females
- **10% of population consider themselves in recovery from alcohol or other drugs (population 311,591,917 in July 2011** (the Partnership at Drugfree.org, March 2012, based on national study in 2011)

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Substance Abuse USA

- **40 million more are indirectly affected**
  - Alcohol responsible for ↑ 33K traffic deaths in 2010 (CDC)
  - Responsible for 630K traffic-related injuries (2004)
- **Cost in dollars is inestimable**

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- **We pay social costs**
  - Lost productivity
  - Domestic violence/child abuse
  - Crime
- **Criminal justice costs**
- **Child welfare costs**
- **Health related services costs**

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Cost Benefit Analysis

Iowa State University study presented to United Nations, March 16, 2009:

For each $1 spent on substance abuse treatment, the taxpayer is saved $10 in health, welfare and criminal justice costs!

Spoth & Guyll, 2009

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Substance Abuse & Mental Health

- 1 in 5 adults in the United States - nearly 50 million people - experienced mental illness in the past year
- Adults w/ any mental illness in past year were ↑ than 3X as likely to have met the criteria for substance dependence or abuse compared with those without mental illness (20% vs 6.1%)
- People w/ serious mental illness in the past year had a rate of substance dependence or abuse of 25.2%
- SAMHSA, 2012

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Co-Occurring Disorders

- At least 50-75% of Americans seeking substance abuse treatment have a co-occurring mental health disorder
- Treating either without treating the other predicts poor outcome for both
- Integrated tx by specially trained providers is crucial

Center for Substance Abuse Treatment, 2012

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What Constitutes Substance "Abuse"?

- **Any use of any illicit substance?**
- **Marijuana as well as hard drugs?**
  - Even one joint?
- **What about licit substances?**
  - Tranquilizers, pain medications, alcohol
- **What is an "alcoholic"?**

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The DSM IV Recognizes

- Intoxication
- Abuse
- Dependence

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Intoxication

A reversible substance-specific syndrome due to the recent ingestion of or exposure to a substance

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Abuse

Maladaptive pattern of substance use manifested by recurrent and/or significant adverse consequences related to repeated use of substances

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Dependence

Abuse definition plus a pattern of repeated self-administration that results in tolerance, withdrawal, and compulsive drug-taking behavior

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Behaviors That Increase HIV/STI/HBV/HCV Risk

- Injection practices
- Syringe in/availability
- Sexual behavior
- Beliefs about risk of HIV in rural areas
- Fear of HIV testing
- STIGMA

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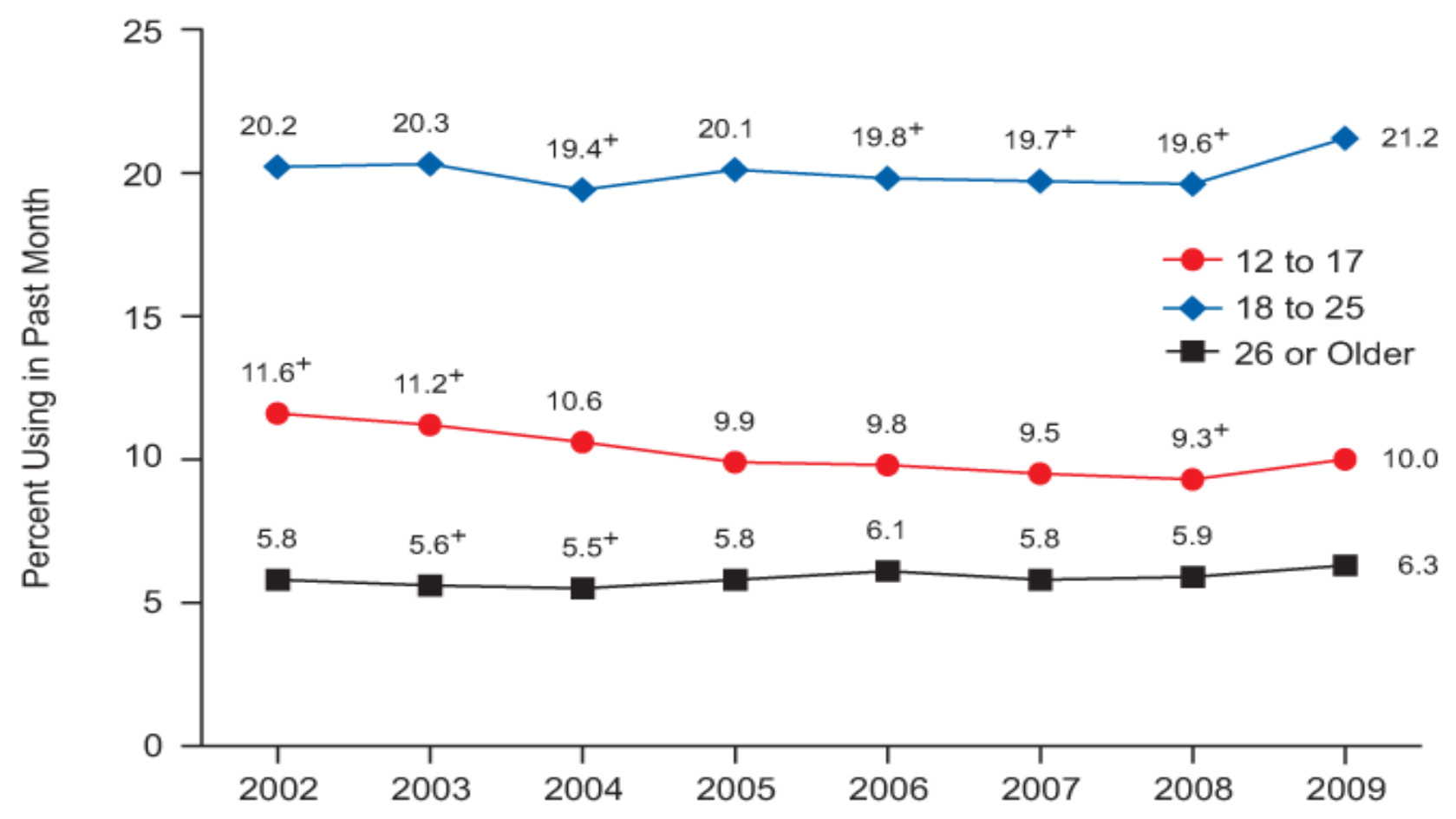
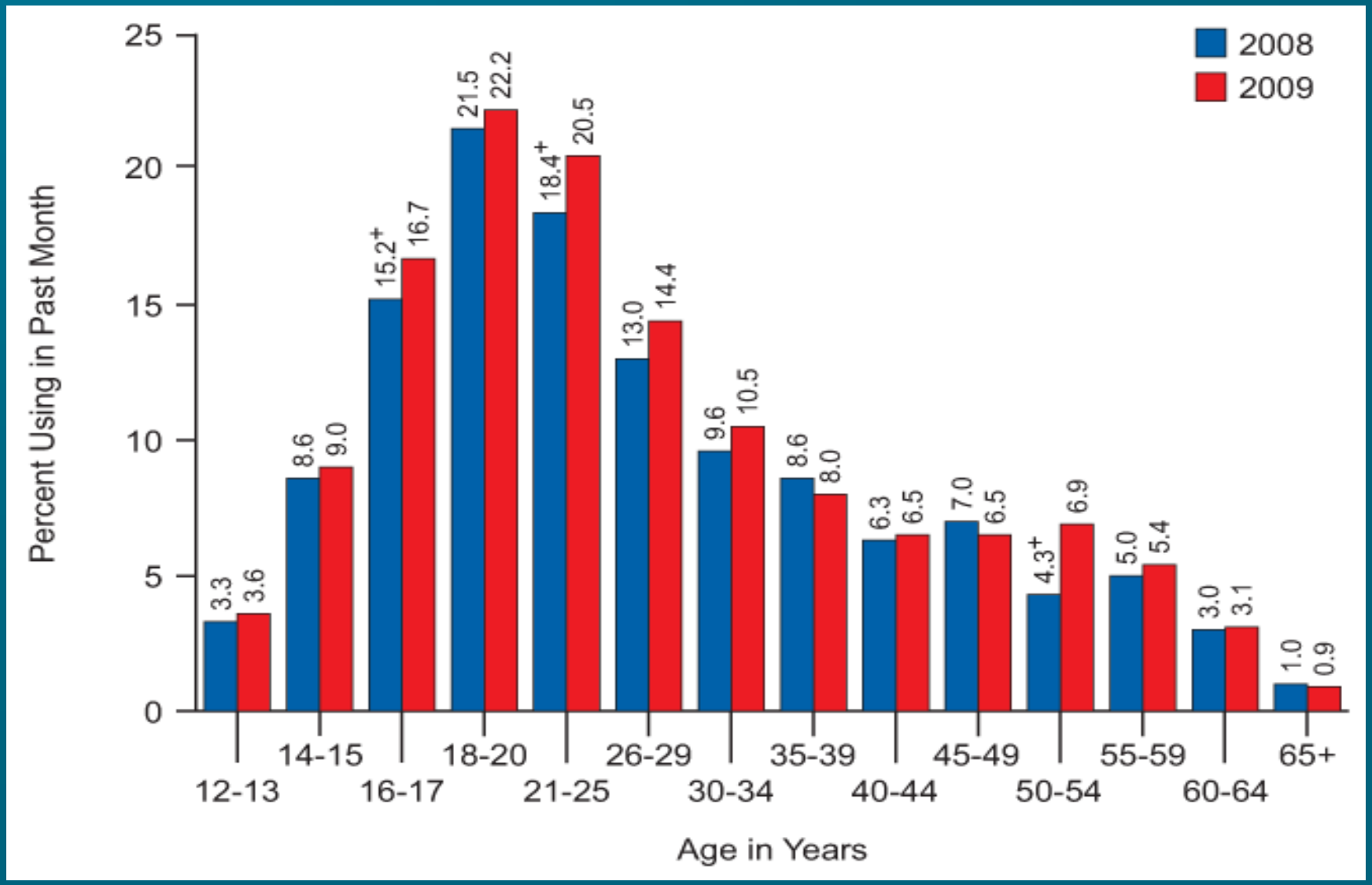
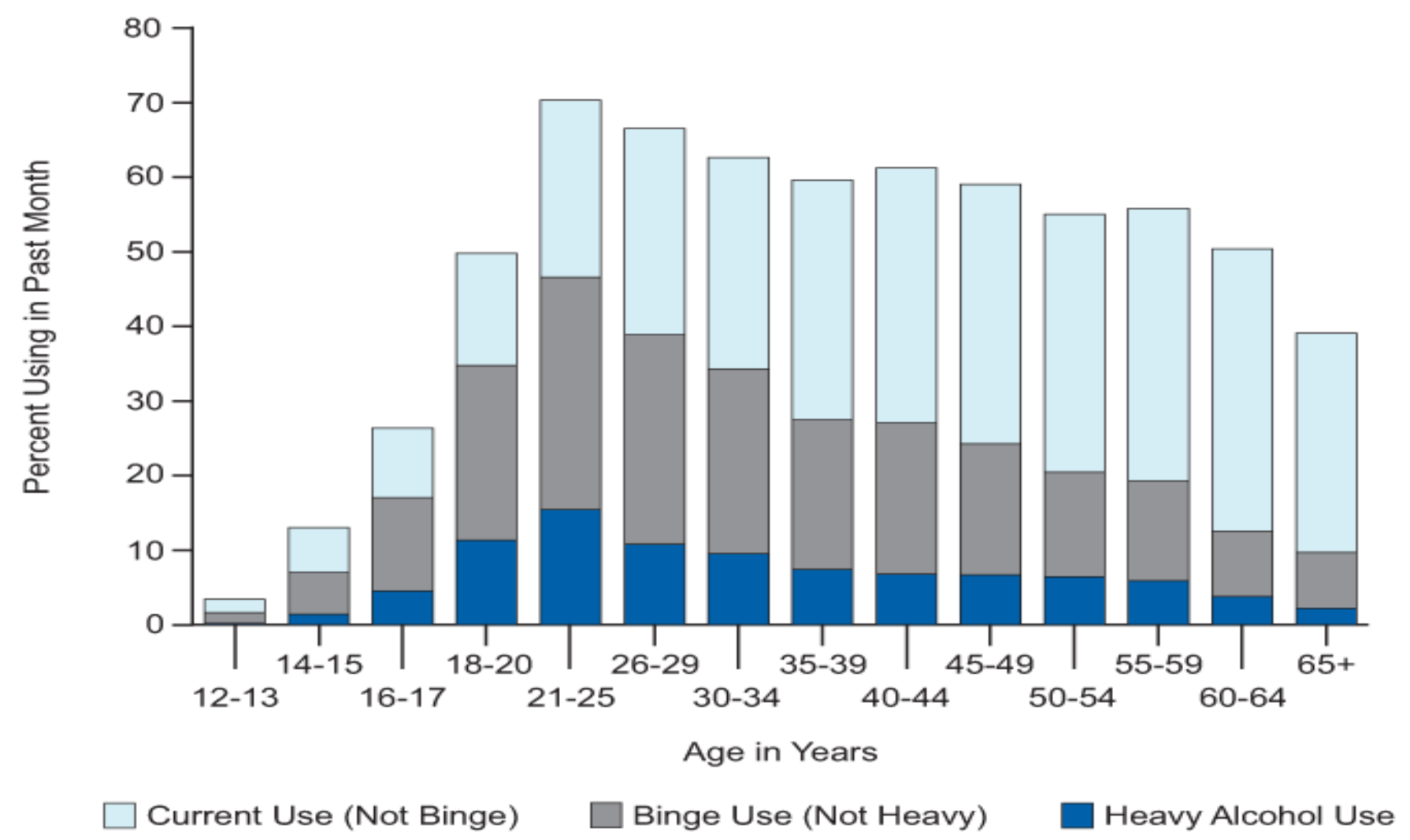
Illicit Drug Use Ages 12 years+, by percent of population, SAMHSA 2009



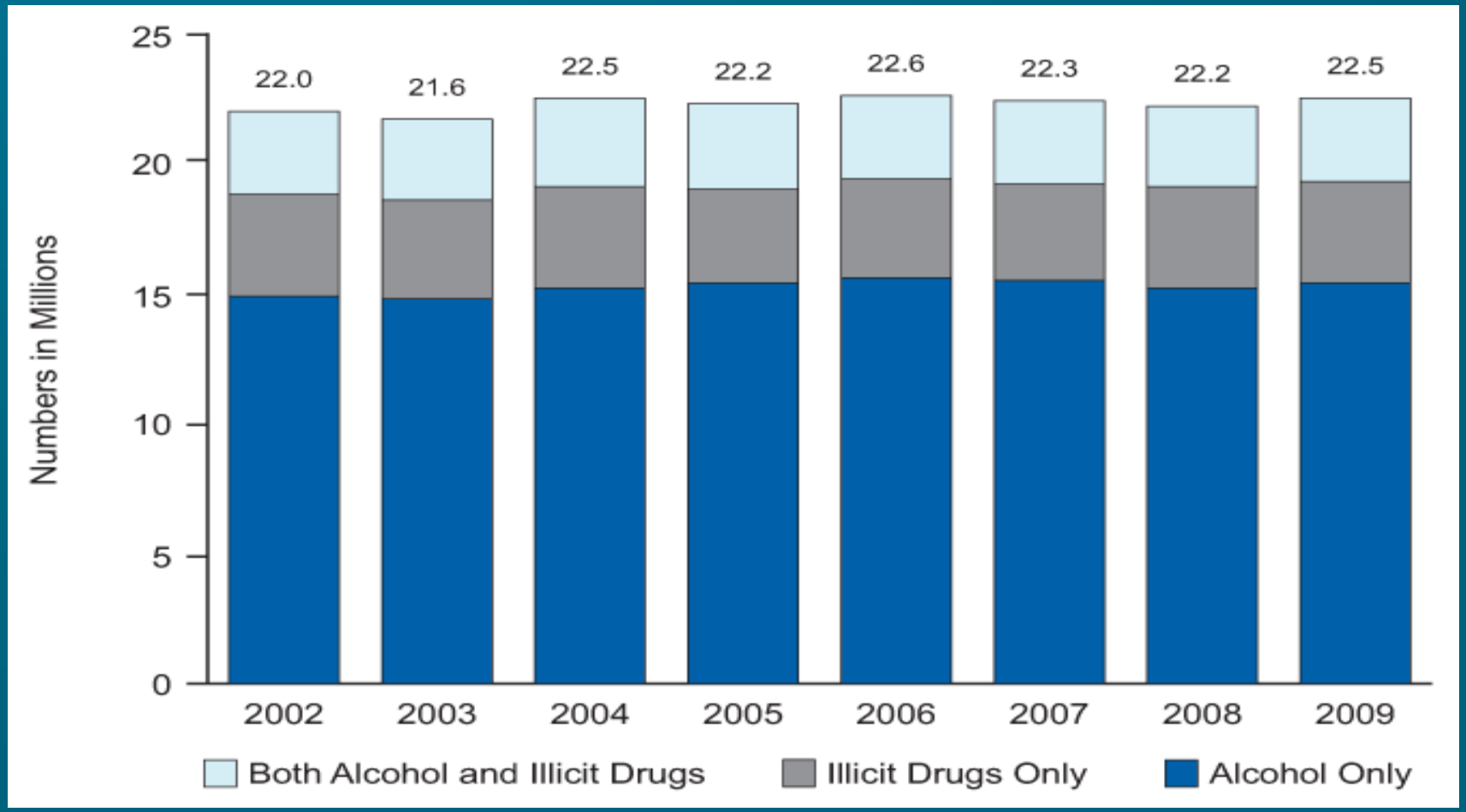
Illicit Drug Use Adults 08/09



Alcohol Use 12 years+, SAMHSA 2009



Dependence/Abuse of Illicit Drugs/Alcohol the Past Year, Ages 12+: SAMHSA 2009



Binge Drinking

From MMWR, January 2012

- Defined as ≥ 4 drinks for ♀, ≥ 5 drinks for ♂
- Accounts for ↑ ½ of 80K average annual deaths
- *1 in 6* adults binge drink = 17% = 38 *million* American adults
- Highest prevalence in households w/ incomes ≥ $75K
- Highest frequency & intensity in households ≤ $25K

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Top Binge Drinking States

- ND #1 (followed by MT, CO, SD, NE, MN)
- ND #1 for alcohol abuse/dependence
- ND #3 for methamphetamine use (after SD, MT; 4th is WY)
- ND #1 in underage drinking

SAMHSA, 2009

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Alcohol and Women

- Female alcoholics score lower than their male counterparts in tests that assess working memory, visual-spatial skills and psychomotor speed
- Female drinkers experience accelerated damage to the liver, heart and muscles, compared with male alcoholics

Alcoholism: Clinical and Experimental Research, May 2007

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Alcohol and Youth

- Major worldwide risk factor for disability in those aged 10-24 years is alcohol
- Even when risk factors (like alcohol) don't affect health in adolescence, they have long term consequences on health & quality of life as one ages

The Lancet, June 6, 2011

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Alcoholism & Children

- New government report - 7.5 million children in US —10.5% —live with a parent who has experienced an alcohol use disorder in the past year
- According to the SAMHSA, 6.1 million of these children live with two parents, one or both of whom have experienced an alcohol use disorder in the past year
- The other 1.4 million children live in a single-parent home, with a parent who has had an alcohol use disorder in the same time period, (Reuters, 2012). Of these children, 1.1 million lived in households headed by a female

Children of Alcoholics Week, February 12-18, 2012

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Alcohol and HIV

- Positively associated with high risk sexual behaviors and injection drug use
- ~ Meta-analysis of studies determined 60% of HIV-infected patients meet diagnosis for alcohol abuse or dependence
  Fiellin, 2004
- Once infected, this population has higher vulnerability to virus progression

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Alcohol and HIV

- **Increased risk of streptococcal pneumonia & TB**
- **May increase severity of AIDS-related dementia**
- **Negative correlation between alcohol use and medical adherence**
  - 50% ↓ adherent than non-drinkers
  - Affected more by quantity of alcohol than frequency of drinking

Henderson, et al., J. of Acquired Immune Deficiency Syndromes. August 7, 2009

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Alcohol and STIs

Binge drinking long associated with STIs. John's Hopkins STD Clinic study 2008:

- Female binge drinkers 2X as likely to engage in anal sex
- 2X as likely to have multiple sex partners
- Female binge drinkers had 6X gonorrhea rate
- Among males, rates of all risky sexual behaviors were high, but did not differ by alcohol use
- Among males, no association found between alcohol use and STDs

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Inhalants

- Cheap, easy to get
- Prevalent among youth, poor & NAs living on reservations
- Produce sense of euphoria
- Physical consequences can include
  - Organ damage (liver/renal)
  - Cardiac arrest
  - Neurologic damage
  - Fetal abnormalities

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Street Drugs

- Cannabis: marijuana
- Stimulants: cocaine, amphetamine, MDMA (ecstasy)
- Depressants: GHB

  benzodiazepines, barbiturates
- Opiates: heroin, pain meds (percodan, darvon, vicodin, oxycontin, dilaudid)

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Marijuana

- **Street names:** MaryJane, pot, grass, weed, ganja, tea, reefer
- **Use:** smoked or oral (in food or tea)
- **Effects:** relaxation, sense of well-being, can induce paranoia, loss of concentration, impaired perception & judgment

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Teens and Pot

- 1 in 5 teens (19 percent) have gotten behind the wheel after smoking marijuana
- National study of 2,300 11th/12th-graders commissioned by Liberty Mutual Insurance (2012)
- Other studies, (University of Michigan's "Monitoring the Future" of 47,000 8th -12th graders) reflect same trend. That study showed MJ use rose in 2011 for the 4th straight year, with daily use at a 30-year peak level among high school seniors

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Cocaine

- **Street names:** coke, rock, crack, snow, blow, toot, flake, C, bump
- **Use:** injected, snorted, smoked
- **Effects:** euphoria, alertness, aggression, energy; increased heart rate, bp, metabolism; abdominal pain, headache, post-use depression

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Crack/Cocaine Use & HIV Progression

- **Study sample: 222 HIV-positive drug users who were recruited in Miami between 2002 and 2005.**
- **Finding #1: crack/cocaine users had poorer adherence to antiretroviral treatment**
- **Finding #2: crack/cocaine users who were taking anti-HIV drugs experienced:**
  - More rapid falls in CD4 cell count
  - Increases in viral load

Baum, et al. *J Acquired Immune Deficiency Syndrome*, 2009

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Added Danger: Cocaethylene

- When people consume cocaine and alcohol at the same time, they compound the danger each drug poses
- The human liver combines cocaine and alcohol to produce a third substance, cocaethylene, which intensifies cocaine's euphoric effects
- Cocaethylene is associated with a greater risk of sudden death than cocaine or alcohol alone

Harris DS, et al. , Drug Alcohol Depend 72(2):169–182, 2003.

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Spice & Bath Salts

- Synthetic stimulant
- Made from cathinones, sold in plant feeders, insect repellent & stain removers
- Onset 15 min, high lasts 4 – 6 hrs
- Effects = ↑ energy
- Effects = agitation combative behavior, confusion,psychosis increased heart rate, hypertension, death or serious injury

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MDMA (methylenedioxymethamphetamine)

- **Street names**: ecstasy, E, X, XTC, Eve, Adam, lover's speed, peace
- **Use**: swallowed
- **Effects**: mild hallucinogenic, ↑ tactile sensitivity, euphoria, sensation of peace/good will; ↑ heart rate, bp; disorientation, anxiety

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"Sextasy"

- **Ecstasy combined with Viagra or other ED meds**
  - Peace
  - Goodwill
  - A long-lasting erection
- **HIV implications?**

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Benzodiazepines & Barbiturates

- **Street names:** reds, yellows, blues, dolls, rainbows, downers, goofballs
- **Use:** usually oral
- **Effects:** sedation, drowsiness, depression of CNS

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Heroin/Opiates

- **Street names:** H, smack, skag, China, white, horse, Charley, brown sugar
- **Use:** inject, smoke, snort; oral use for pain pills
- **Effects:** dreamy state of warmth and well-being; CNS/respiratory depression

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Prescription Drug Abuse

- One person dies every 19 minutes from prescription drug abuse in the United States
- An estimated 27,000 unintentional drug overdose deaths occurred in 2007
- The rise in unintentional drug overdose deaths has been driven by an increase in use of opioids
- Number of prescription painkiller deaths has tripled in past 10 years

Centers for Disease Control, 2011

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Methamphetamine

- **Street names:** crystal, Chrissie, crank, glass, ice, meth, speed, tweak
- **Use:** injected, swallowed, smoked, snorted, inserted
- **Effects:** exhilaration, energy, increased sexuality; increased heart rate, bp, metabolism; delirium, panic

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What is it?

- Highly addictive stimulant
- Powder or crystallized solid
- Activates Dopamine (pleasure) and Norepinephrine (fight or flight) pathways in brain
- Half-life 10 -12 hours

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Small Meth Labs

- Methamphetamine is increasingly being made in the United States in small labs that are easy to move and hide
- These "one-pot" labs use a two-liter soda bottle and ingredients that can be bought through a single trip to a pharmacy
- These small labs are spreading at a time when budget cuts are reducing police forces, making it more difficult for police to close down these labs
- The labs only produce small amounts of meth, but they are toxic, highly explosive, & can cause fires and deaths
- Incidents related to meth production increased to 11,239 last year, after falling to 6,095 in 2007

Drug Enforcement Agency, 2011

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“Shake & Bake” Lab

- Combines raw, unstable ingredients in a 2-liter soda bottle. If the cap is removed too soon or the plastic is accidentally punctured, the bottle can explode, causing serious damage or even death.
- ≈ 1/3 of patients in some burn units were injured while making meth. Most did not have health insurance. Treating meth-related burns costs an average of $130,000 per patient—60 percent more than other burn patients.

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Shake & Bake con't

- Costs of meth-related burns are overwhelming some hospitals, and have contributed to the closure of some burn units. Nationally, at least 7 burn units have closed in past 6 years, in part due to treatment of uninsured patients, including patients with meth-related burns.
- Shake and bake is popular because it requires less of the cold medicine ingredient pseudoephedrine than the older method. It also takes less time to make, is less expensive, and is easy to hide in a backpack.

Associated Press, January 2012

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Brain Functioning

- While methamphetamine operates in many areas of the brain, a key area of impact is the reward center of the brain (nucleus acumbens)
- This area is responsible for the good feelings a person has when s/he encounters pleasing things

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Monkey Brains

- Study of monkey brains. In this slide the closer to red, the more brain activity
- Monkeys never exposed to meth had their brains scanned showing normal activity (egg shape areas in the center)
- Researchers gave monkeys high doses of methamphetamine for 10 days, waited a month and rescanned
- Worse at 6 months
- Better at one year, but still different from baseline. Not different from baseline at 2 years
- Take-home message—recovery takes a long time

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Substance Use & Sexual Behavior

Sex & drugs are inextricably linked for many people. Substances that especially fuel STI/HIV risk are alcohol & methamphetamine

- Stimulants make sex more exciting
- Alcohol makes sex less frightening
- Alcohol commonly associated with all forms of substance use and high risk sex behaviors

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Meth ↑ Viral Replication

- **Increases production of protein that promotes the spread of HIV in infected users**
  - Increase in receptor that allows the virus to invade the immune system

Medical Research News, Aug 4, 2006

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Tips for HIV Clinicians Working with Methamphetamine Users

- Maintain calm and create an accepting environment
- Be prepared to refer to specialists; familiarize yourself with COD and local medical professionals who treat COD
- Maintain support and vigilance for depression

SOURCE: http://www.aidsetc.org/pdf/p02-et/et-03-00/methusers.pdf

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More Tips for Clinicians Working with Methamphetamine Users

- Write down instructions/explain instructions visually
- Address issues of meth use and HIV medications
- Discuss issues of sex, sexuality, HIV disclosure, and stigma
- Know your community support services

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A Note Regarding Poly Drug Use

- **Use of two or more psychoactive drugs in combination to achieve a particular effect**
- **Associated w/ greater risk than seen w/ use of a single drug**
- **In many cases, one drug is used as a base/primary/preferred drug, w/ additional drugs used to:**
  - Leaven or compensate for the side effects of the primary drug
  - Make the experience more enjoyable with drug synergy effects
  - Supplement for primary drug when supply is low

National Institute of Drug Abuse, medscape.com

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Taking a Substance Use History

- Start with alcohol
- Move to marijuana
- Over the counter and Rx medications
- Street drugs

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CAGE

- Have you ever felt the need to CUT DOWN on your drinking?
- Have you ever felt ANNOYED by criticism of your drinking?
- Have you ever felt GUILTY about your drinking?
- Do you ever take a drink as a morning EYE-OPENER?

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Alcohol Screening and Brief Intervention

From the National Institute of Alcohol Abuse and National Institute of Health – a pocket guide for download:

http://pubs.niaaa.nih.gov/publications/practitioner/pocketguide/pocket_guide.htm

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Screening for Drug Use in General Medical Settings

NIDA online screening tool:

http://nida.nih.gov/nidamed/index.php

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SBIRT

What is SBIRT?

- Screening: Identify people at risk for a condition
- Brief Intervention: Low intensity, short duration counseling for those who screen positive based on MI techniques
- Referral to Treatment: For those with more serious problems

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SBIRT Target Population

SBIRT is designed to target people with *nondependent* use, and to provide effective strategies for intervention prior to the need for more intensive treatment

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WHY SBIRT?

Among other reasons:

- Clinically effective and cost efficient
- Associated w/decreased alcohol consumption & reduced risk of recidivism
- PLWH more likely to experience substance abuse problems
- Earlier detection and intervention would likely offset the increased medical costs incurred by PLWH

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SBIRT Toolkit

This toolkit will provide emergency and trauma nurses and other emergency health care professionals with the information needed to implement the SBIRT procedure in emergency care settings. The toolkit incorporates evidence-based concepts from the National Institute on Alcohol Abuse and Alcoholism, American College of Surgeons, Centers for Disease Control and Prevention, and many other renowned experts in the field.

http://www.ena.org/ipinstitute/SBIRT/ToolKit/toolkit.asp

Publication Year: 2008

Publisher

Emergency Nurses Association Website: http://www.ena.org/

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Treatment Implications

- Client-centered
- Culturally appropriate
- Risk reduction focused
- Specialized for substance of abuse
- Long Term (in many cases – especially for stimulants)
- AVAILABLE

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Special Considerations For:

- Homeless, chronically mentally ill and/or those with high levels of psychiatric symptoms at admission
- Youth
- Women/Girls
- MSM (at very high risk for HIV, hepatitis, & STIs)

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Making Treatment Referrals

National source for state-by-state referrals:

http://dasis3.samhsa.gov/

Site has state maps and FAQs

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Taking a Sexual History

- **Don't make assumptions**
  - "I already know what my patients are doing"
  - If you don't ask, they won't tell
- **Don't worry about offending your patient**
  - Screening is part of optimal healthcare
- **Allow adequate time to ask**
- **Use normalizing questions and statements**
- **Remain calm, unflappable, nonjudgmental**

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Normalizing

- I ask these questions of *all* my patients. The reason I ask is to help determine your risk for HIV or other STIs, and to assist you in developing a safety plan if you are at risk.
- Sometimes people who are married have sex with someone other than their spouse.

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Normalizing the Patient's Experience

- Some of my patients have same-sex relationships…
- Some of my patients have been hurt or forced to have sex against their will…
- Some of my patients use alcohol or drugs to enhance their sexual experience…

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