



Alcohol Harm Reduction Compared To Harm Reduction For Other Drugs



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Why This Topic?

I was discussing harm reduction with one of my colleagues and mentioned that some drinkers found that avoiding drinking in public was a good harm reduction strategy, whereas others found that sticking only to social drinking was a good harm reduction strategy.

My colleague replied that she always encouraged injection opiate users not to use alone.

So I became curious as to whether there were different harm reduction strategies for different drugs. I believe that the evidence shows that the answer is “Yes.”

Risks we will examine include:

- Overdose
- Accidents
- Violence
- Withdrawal
- Illness and Disease (Chronic effects)

We will also look at specific strategies to address these risks.

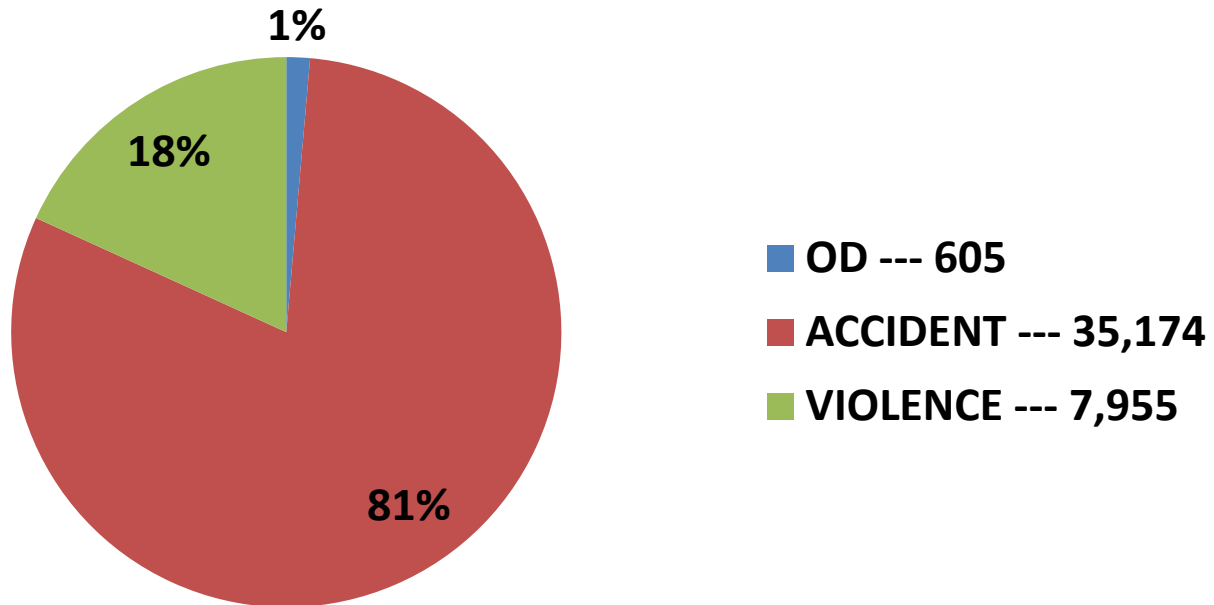
We will find that some harm reduction strategies apply across all drugs and some are specific to a given substance or a given route of ingestion.

Finally we will briefly touch on the question of drugs used in combination with each other.

Overdose

- Alcohol overdose is a relatively uncommon phenomenon, occurring in only one percent of all alcohol-related sudden deaths.
- Violence or accident account for 99% of alcohol-related sudden deaths. People who find that alcohol triggers antisocial behavior may find that drinking only alone at home is a valuable harm reduction strategy

Alcohol Related Sudden Deaths Per Annum



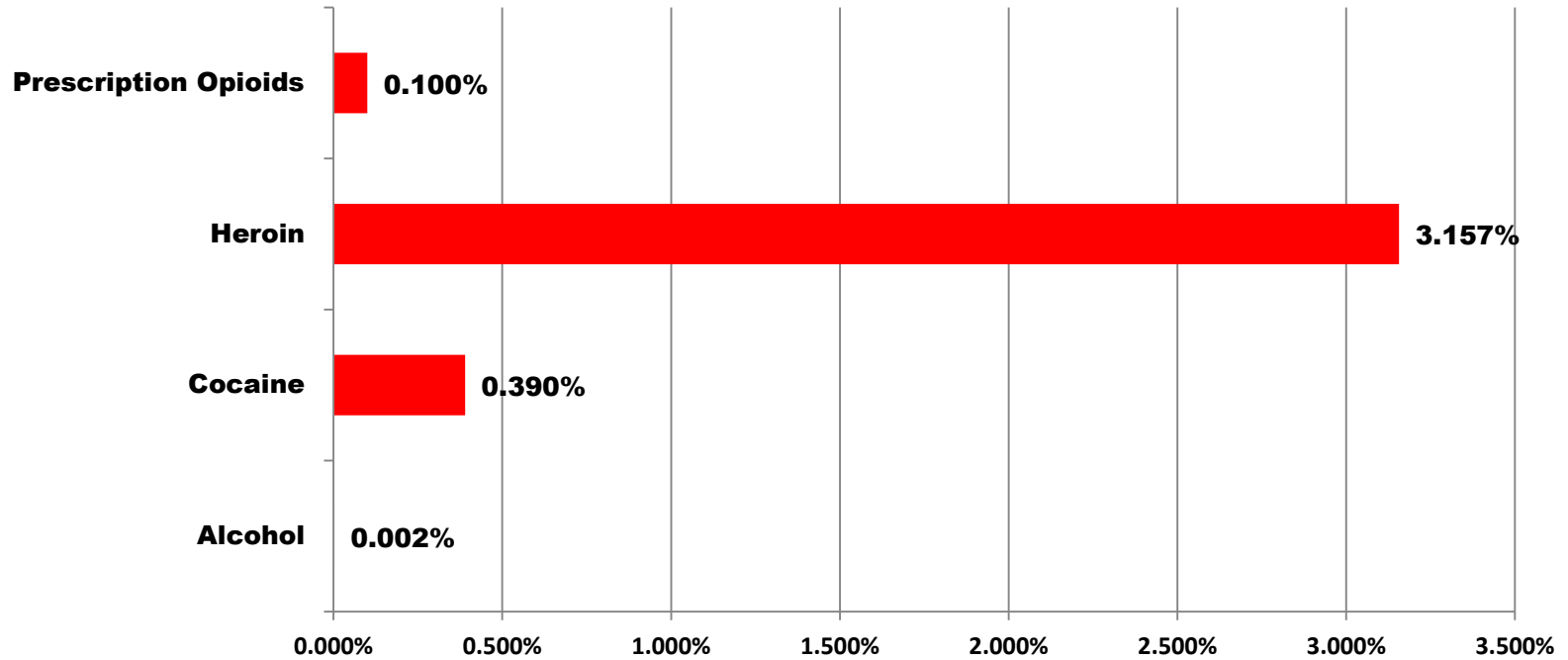
Average for United States 2001-2005

Centers for Disease Control and Prevention. Alcohol Related Disease Impact (ARDI) application, 2008.

Available at http://apps.nccd.cdc.gov/DACH_ARDI/Default.aspx

- **Alcohol Overdose includes the following categories:**
 - **Alcohol poisoning (370 people per annum)**
 - **Excessive blood alcohol level (0 people per annum)**
 - **Aspiration of vomit (204 people per annum)**
 - **Suicide by and exposure to alcohol (31 people per annum)**
- Total (605 people per annum)**

Odds of Overdose for Users with Substance Use Disorder (NESARC)



Number of past year overdose deaths divided by number of past year abusers

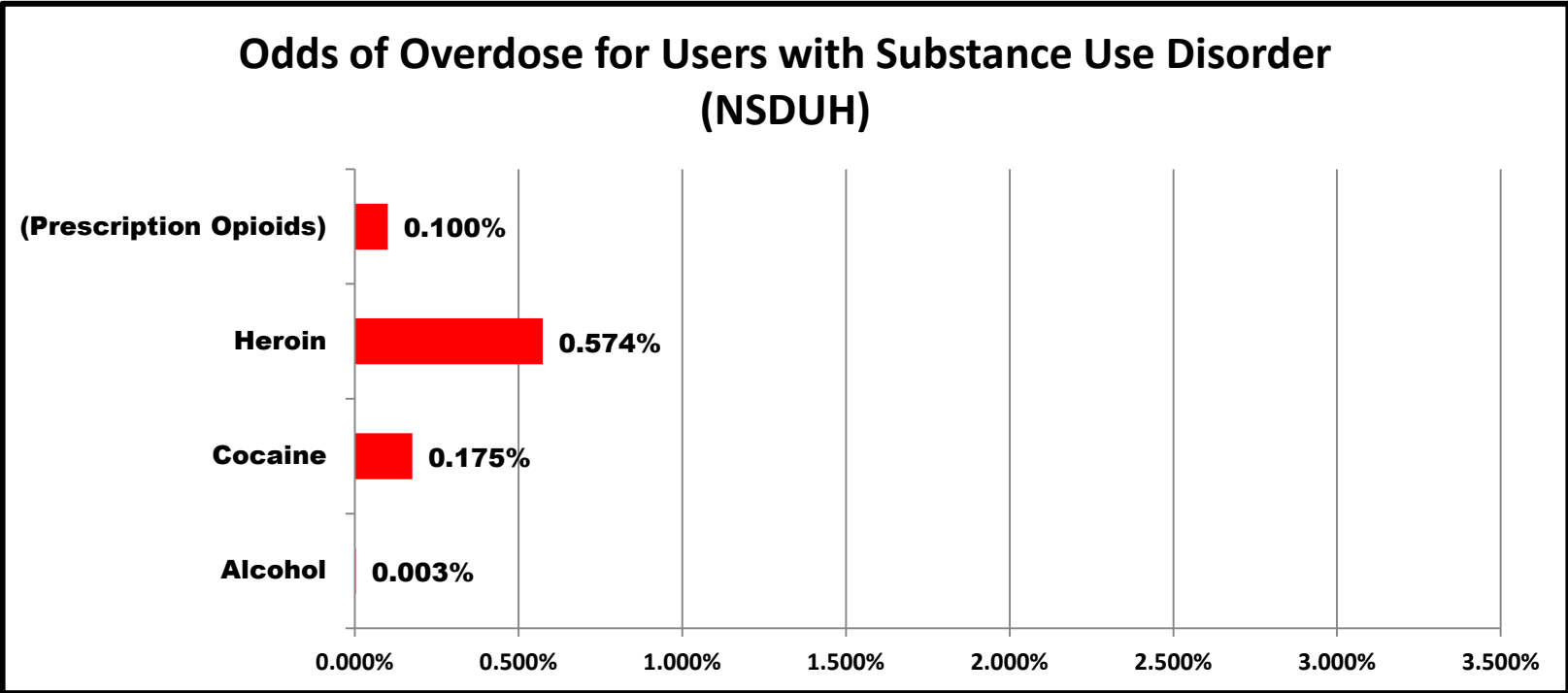
Gruzca RA, Abbacchi AM, Przybeck TR, Gfroerer JC. (2007). Discrepancies in estimates of prevalence and correlates of substance use and disorders between two national surveys. *Addiction*. 102(4):623-9.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1924971/>

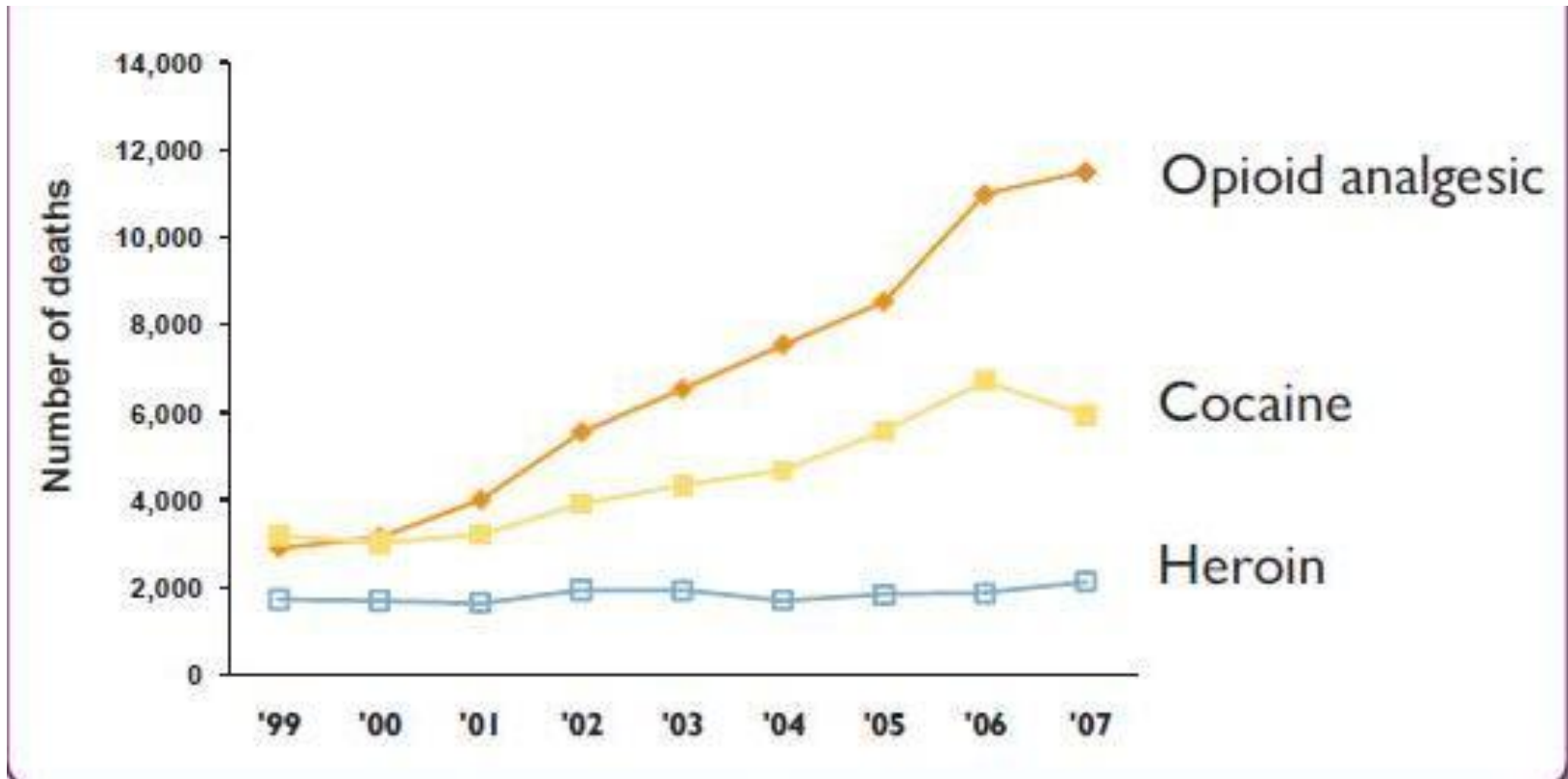
Huang B, Dawson DA, Stinson FS, Hasin DS, Ruan WJ, Saha TD, Smith SM, Goldstein RB, Grant BF. (2006). Prevalence, correlates, and comorbidity of nonmedical prescription drug use and drug use disorders in the United States: Results of the National Epidemiologic Survey on Alcohol and Related Conditions. *J Clin Psychiatry*. 67(7):1062-73.

<http://www.ncbi.nlm.nih.gov/pubmed/16889449>

National Survey on Drug Use and Health



Unintentional drug overdose deaths by major type of drug, United States, 1999-2007.



Unintentional Drug Poisoning in the United States

<http://www.cdc.gov/homeandrecreationalafety/pdf/poison-issue-brief.pdf>

Overdose Onset Time

- **Injection Opiate Overdose:** Instant death does not seem common, and in most fatal cases death is estimated to have occurred one to three hours after injection.
- **Opiate Overdose in Pill Form:** Probably longer than injection opiate overdose--probably several hours elapse before death occurs
- **Alcohol Overdose:** Probably longer than injection opiate overdose--probably several hours elapse before death occurs

Alcohol and Opiate Overdose Compared

- **Injection Heroin Overdose:** frequently occurs in company of peers
- **Alcohol Overdose:** apparently often occurs after everyone has separated and is sleeping it off in their own homes
- **Prescription Opioid Overdose:** insufficient data

BMJ. 2003 Feb 22;326(7386):442-4.

Strategies for preventing heroin overdose.

Sporer KA.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1125320/>

Avoiding Injection Opiate Overdose

- Being aware of personal tolerance changes - may result from incarceration
- Knowing drug purity
- Avoiding mixing drugs or being strategic in how, why, and the order that mixing drug happens
- Avoiding using alone
- Personal control of the drug preparation and injection process
- Using tester shots

Avoiding Alcohol Overdose

- Avoid shot drinking games/parties
- Avoid parties where you "drink your age"
- Pace your drinks and drink slowly
- Stick to lower alcohol beverages like beer rather than vodka
- Monitor anyone who passes out (this may take hours)
- Avoid unusual routes of ingestion (enema, injection)

- These strategies also work to prevent alcoholic blackout.
- Drinking with a high risk crowd can increase odds of fatal alcohol overdose - drinking with safe people or drinking alone can be safer
- Apparently alcohol overdose occurs more often in party situations where people are egged on to drink hard alcohol quickly and apparently it is rare when drinking alone; however, I lack epidemiological data to confirm this speculation

Vomit Reflex

- Alcohol irritates the stomach lining and this increases chances of vomiting
- Alcohol simultaneously suppresses the vomit reflex in the brain and prevents vomiting
- Someone who drinks a lethal dose of alcohol and fails to vomit can die of alcohol poisoning

Treatment for Alcohol Overdose

- Administration of a stomach pump and activated charcoal in the emergency room

Cocaine Overdose

- Most frequently occurs via injection but can also occur by other means of ingestion
- Treatment with benzodiazepines to reduce blood pressure and prevent seizures and heart attack
- Treatment to reduce fever
- Ventilation

Reference

<http://bestpractice.bmj.com/best-practice/monograph/340/treatment/step-by-step.html>

Treatment for Opioid Overdose

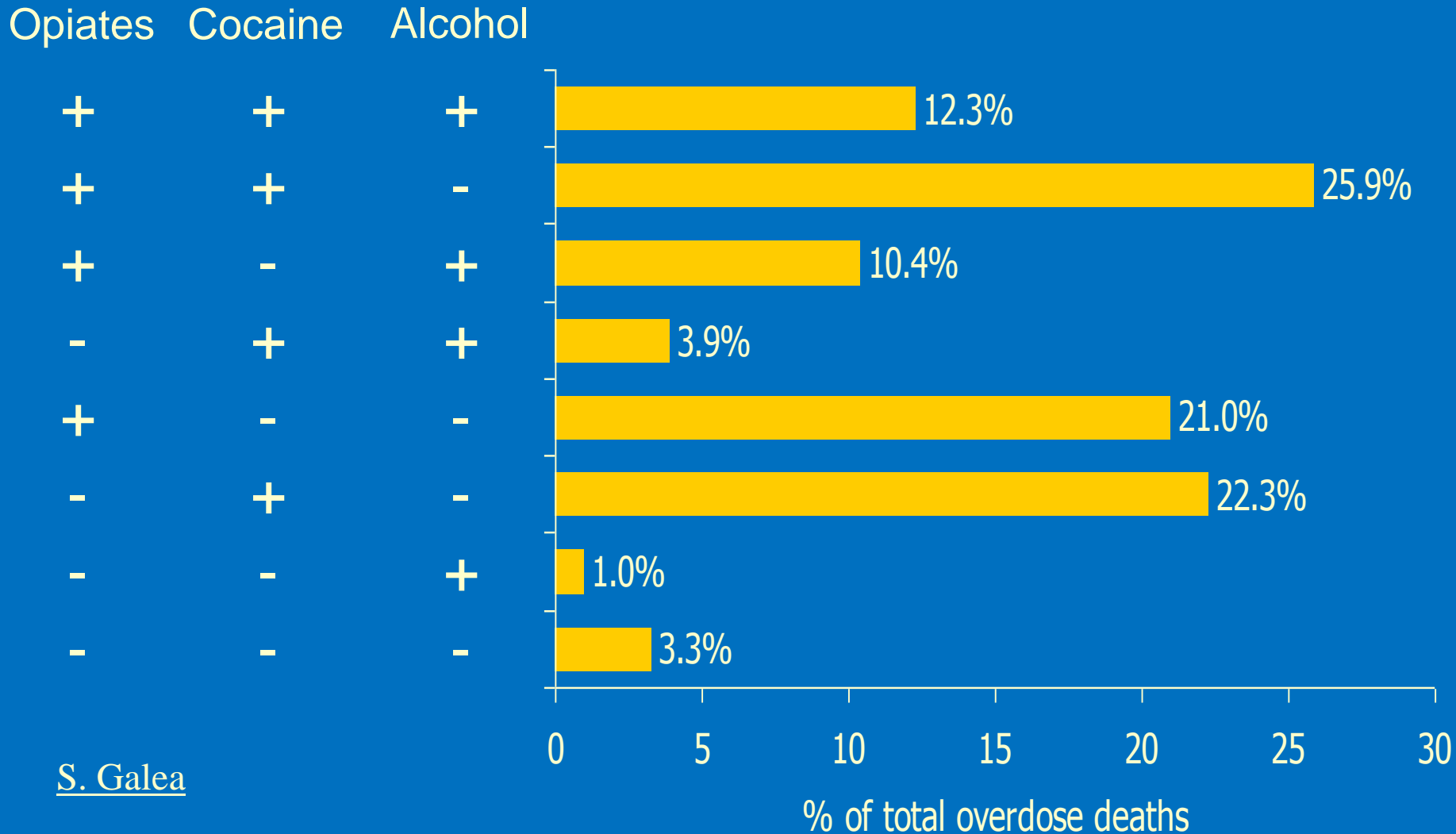
- Naloxone (Narcan)
- Ventilation

Drug Mixing

- The majority of drug overdoses are a result of mixing multiple drugs
- One plus one does not equal two--mixing drugs has a synergistic effect where the two together are more deadly than the effects of each alone combined
- Educating drug users about synergistic effects is an essential prevention strategy
- Naloxone is still effective if an opiate is one of the drugs in the combination

Drug combinations, accidental overdose deaths, New York City, 1990-2001 (n= 10,091)

1-2 deaths each day



Violence/Bad Behavior

- The majority of people do not become violent when they drink
- Alcohol increases impulsivity
- Alcohol is proven to increase tendencies to violence in people with Antisocial Personality Disorder
- Heavy drinking can result in socially embarrassing behavior even in non-violent people

Epidemiologic studies and laboratory research consistently link alcohol use with aggression. Not all people, however, exhibit increased aggression under the influence of alcohol. Recent research suggests that people with antisocial personality disorder (ASPD) may be more prone to alcohol-related aggression than people without ASPD. As a group, people with ASPD have higher rates of alcohol dependence and more alcohol-related problems than people without ASPD. Likewise, in laboratory studies, people with ASPD show greater increases in aggressive behavior after consuming alcohol than people without ASPD. The association between ASPD and alcohol-related aggression may result from biological factors, such as ASPD-related impairments in the functions of certain brain chemicals (e.g., serotonin) or in the activities of higher reasoning, or "executive," brain regions. Alternatively, the association between ASPD and alcohol-related aggression may stem from some as yet undetermined factor(s) that increase the risk for aggression in general.

Moeller FG, Dougherty DM. (2001). Antisocial personality disorder, alcohol, and aggression. *Alcohol Res Health*. 25(1):5-11.

<http://pubs.niaaa.nih.gov/publications/arh25-1/5-11.pdf>

Strategies to Avoid Alcohol-Related Violence

- Pace your drinking and stay moderate in public
- Drink around people who are not bothered by your goofy drunken remarks
- Consider drinking alone if you always get into fights when you drink

Opiates Compared To Alcohol re Violence

- Increased impulsivity is a direct psychopharmacological effect of alcohol on the brain--for some people increased violence is a direct effect of ingesting alcohol
- Increased violence is NOT a direct effect of opiates, if anything opiates have the opposite effect. However, increased violence is strongly associated with illegal opiate procurement and even more so in regard to related sex work.

Twenty-two participants died prior to age 30 years during the follow-up period for an overall crude mortality rate of 1,368 per 100,000 person-years. Overall, young IDUs were 16.4 times (95% confidence interval [CI]; 9.1–27.1) more likely to die; young women IDUs were 54.1 times (95%CI; 29.6–90.8) and young men IDUs were 12.9 times (95%CI; 5.5, 25.3) more likely to die when compared to the Canadian non-IDU population of the same age. The leading observed cause of death among females was: homicide (N = 9); and among males: suicide (N = 3) and overdose (N = 3). In Cox regression analyses, factors associated with mortality were, HIV infection (Hazard Ratio [HR]: 4.55; CI: 1.92–10.80) and sex work (HR: 2.76; CI: 1.16–6.56).

Harm Reduct J. 2007 Jan 4;4:1.

Factors associated with premature mortality among young injection drug users in Vancouver.

Miller CL, Kerr T, Strathdee SA, Li K, Wood E.

<http://www.harmreductionjournal.com/content/4/1/1>

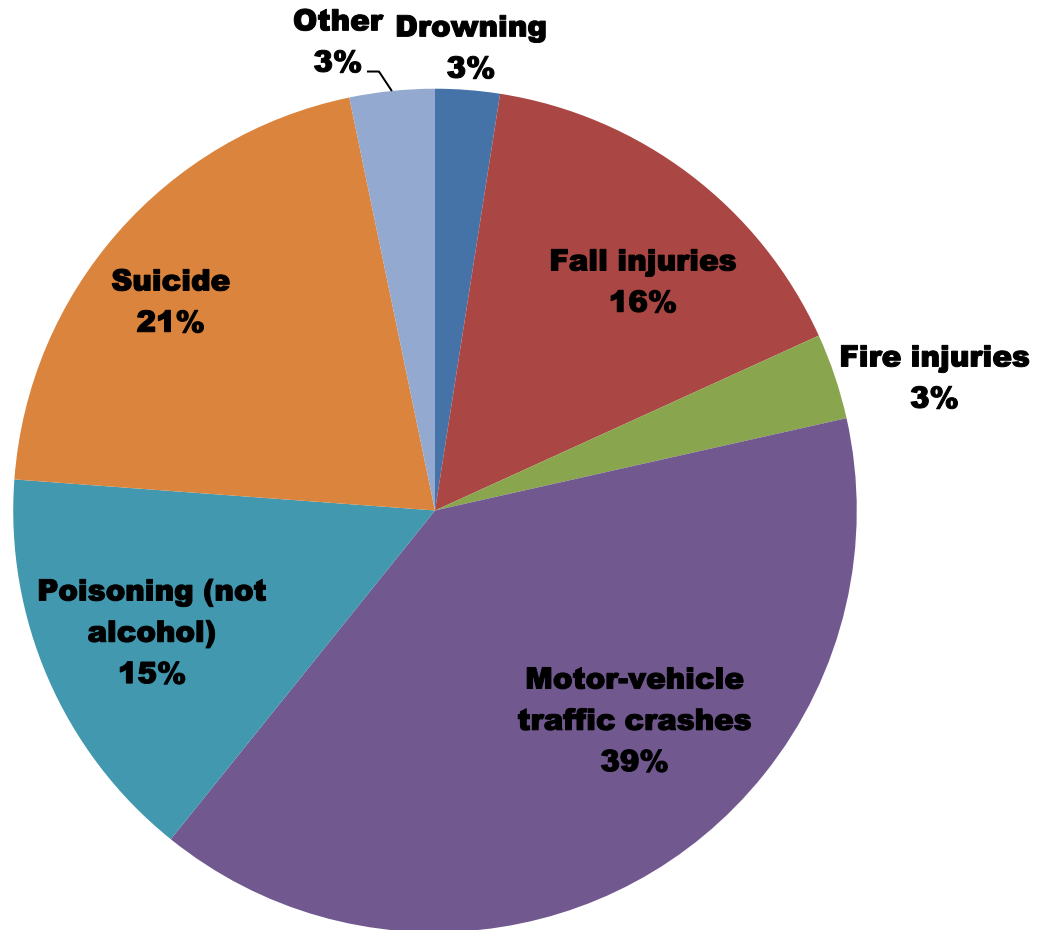
Strategies for Preventing Heroin Related Violence

- bad date list, decriminalization, legalization, opioid maintenance, heroin maintenance

Impairment and Accidents

- 81% of alcohol related sudden deaths are due to accident
- The greatest number of these are auto accidents, followed by suicide, fall injuries, and poisoning (not alcohol)
- Minor categories are fire injuries, drowning, air-space transport, firearm injuries, hypothermia, motor-vehicle nontraffic crashes, occupational and machine injuries, other road vehicle crashes, water transport

Alcohol Related Accidental Deaths



Alcohol Related HR Devices



Drugged Driving

- Other drugs may impair to a lesser degree than alcohol but operating an automobile or other machinery under the influence of drugs is still very dangerous
- One in three fatally injured drivers tested positive for drugs
- If you drug, don't drive

DOT HS 811 415 A Brief Statistical Summary November 2010
Drug Involvement of Fatally Injured Drivers
<http://www-nrd.nhtsa.dot.gov/Pubs/811415.pdf>

Chronic Deaths

- Common alcohol or drug related causes of chronic death include the following:
 - Withdrawal
 - Liver disease
 - HIV/AIDS

Alcohol Withdrawal

- 2 to 3 percent of Americans with Alcohol Dependence (1 in 300 Americans) may experience Major Withdrawal (i. e. DTs).
- Untreated DTs can kill up to one in three people.
- Alcohol withdrawal can be treated by tapering using alcohol itself or benzodiazepines
- Tapering can reduce the death rate to less than 5%

Opiate Withdrawal

- Unlike alcohol withdrawal, opioid withdrawal is not usually fatal; however, symptoms of opiate withdrawal include raised blood pressure and rapid heartbeat which could precipitate death in subjects with weak hearts or who are otherwise in a weakened condition
- Symptoms of opiate withdrawal can be safely treated with an opiate substitute such as buprenorphine or methadone or with an alpha2-adrenergic agonist such as lofexidine or clonidine

- Rapid Opiate Detoxification under anesthesia is NOT safe and has been associated with several post-withdrawal deaths due to heart attack, etc.
- A JAMA study by Eric Collins which compared Rapid Opiate Detox to standard opiate detox protocols found three life-threatening events associated with Rapid Opiate detox, but none associated with standard opiate detox protocols

Other Drug Withdrawal

- Benzodiazepine withdrawal is just as deadly as alcohol withdrawal
- Benzodiazepine withdrawal can only be treated via taper
- Cocaine withdrawal is not fatal but can lead to depression and suicidal ideation

Withdrawal References

Boston LN. Alcohol withdrawal. Lancet 1908;1:18-9.

Analysis of the Factors Determining Survival of Alcoholic Withdrawal Syndrome Patients in a General Hospital 2009.

<http://alcalc.oxfordjournals.org/content/45/2/151.full>

Delirium Tremens: Overview - eMedicine

<http://emedicine.medscape.com/article/166032-overview>

Management of Alcohol, Sedative-Hypnotic, and Opioid Withdrawal in the ICU
PCCSU Article | 12.01.10

By Harman S. Paintal, MBBS; and Geoffrey K. Lighthall MD, PhD

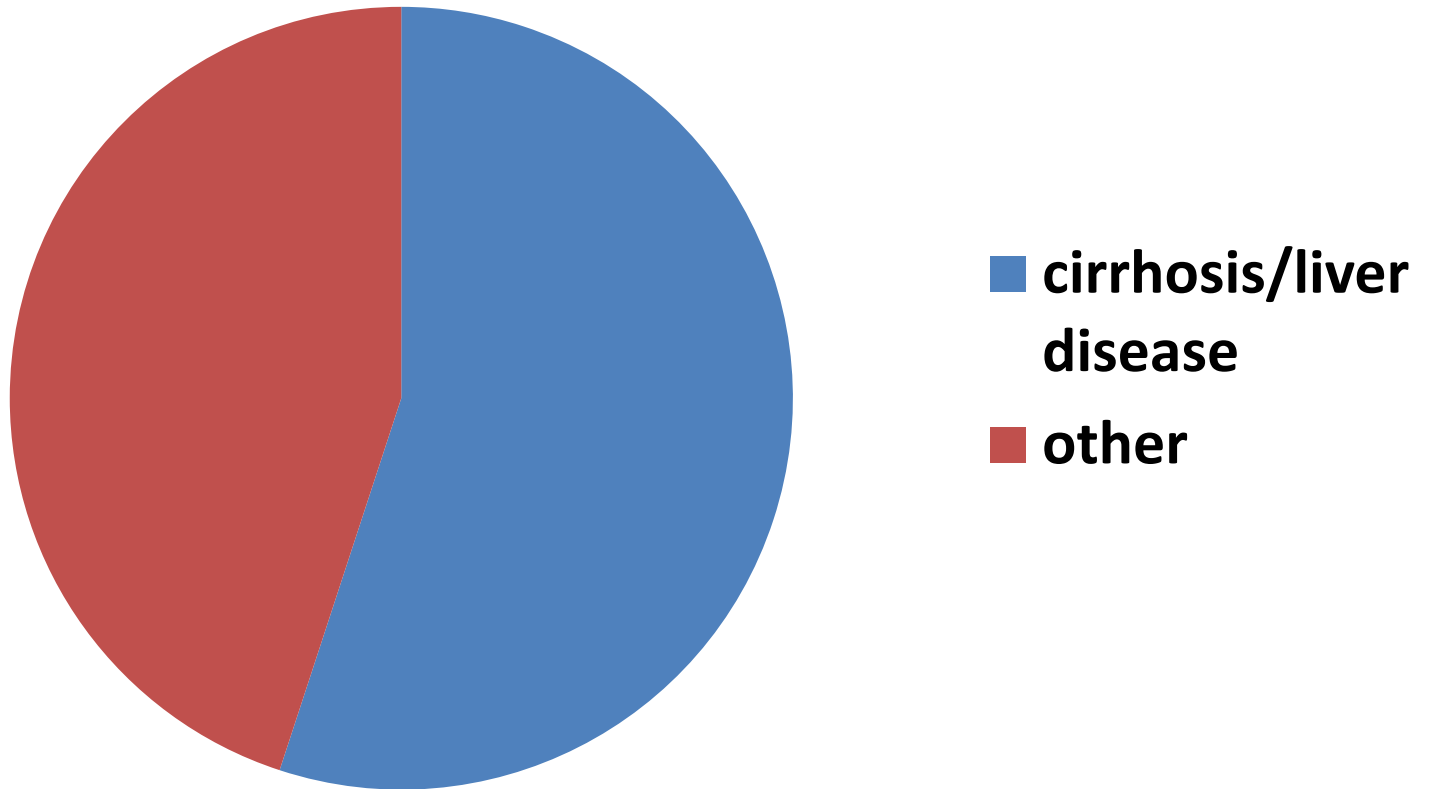
<http://www.chestnet.org/accp/pccsu/management-alcohol-sedative-hypnotic-and-opioid-withdrawal-icu?page=0,3>

Anesthesia-Assisted vs Buprenorphine- or Clonidine-Assisted Heroin
Detoxification and Naltrexone Induction A Randomized Trial FREE

Eric D. Collins, MD; Herbert D. Kleber, MD; Robert A. Whittington, MD; Nicole E. Heitler, MA

<http://jama.jamanetwork.com/article.aspx?articleid=201451>

Chronic Alcohol Related Deaths



Strategies for Liver Harm Reduction

- Prevention or Containment
 - Cannabis Substitution
 - Milk Thistle
 - Non-Daily Drinking
 - Reduced Consumption
 - Abstinence

Alcohol and HIV

- CDC does not list HIV infections caused by drunken unsafe sex
- People who drink or use drugs before having sex are less likely to use a condom
- Strategy - be sure you are carrying condoms before taking the first drink or drug
- <http://www.nyc.gov/html/doh/downloads/pdf/survey/survey-2008alcohol.pdf>

Injection Drug Use and HIV

- Needle exchange
- Bleach kits
- Condom distribution
- Drug user education

Substance Use Management

- These controlled use strategies are effective regardless of drug of choice
 - Safe use planning
 - Charting
 - Cost Benefit Analysis

Substitution Therapy

- Buprenorphine and Methadone are forms of direct opiate substitution therapy - they allow users to function without the need to acquire illegal opiates
- Alcohol has no form of direct substitution therapy, but cannabis substitution is successful for many drinkers who quit alcohol
- Cannabis substitution has also shown success with opiate users

Cannabis as a substitute for alcohol and other drugs

Amanda Reiman

<http://www.harmreductionjournal.com/content/6/1/35>

Conclusion

- Many harm reduction strategies are specific to the drug or the route of ingestion and do not generalize to other drugs or routes
- Many other strategies are not drug-specific and generalize across all drugs

Thank You!

