

Magnitude and Prevention of College and Underage Drinking Problems



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Alcohol and Global Health

- In 2002, harmful alcohol use caused:
 - 2.3 million premature deaths
 - 3.7% of global mortality
 - 4.4% of global burden of disease (after controlling for protective effects of low-moderate alcohol consumption)
- Harmful use of alcohol is the 3rd leading risk factor for death and disability in developed countries

Source: World Health Organization, 2009

Alcohol and Health in the Americas

- Alcohol surpasses smoking as the most important risk factor for burden of disease
- Alcohol consumption averaged more than 50% higher than worldwide
- Alcohol consumption contributed to:
 - 279,000 deaths
 - 4.8% of all deaths
 - 9.7% of all disability years of life lost
- Intentional and unintentional injuries accounted for:
 - 50% alcohol-related deaths
 - 38% alcohol-related disease burden

Source: Rehm & Montiero, *Pan American Journal of Public Health*, 2005



Alcohol Attributable Deaths in the United States, Annual Average, 2001-2005

- 79,696
- 3rd leading cause of preventable deaths
- Injury (including poisoning): 43,731
- Chronic disease: 35,915

Source: CDC, ARDI, 2009

Disability Adjusted Life Years (DALYs)

- Alcohol is the 5th leading cause of DALYs among males
 - Ischemic heart disease
 - Road traffic injury
 - Lung cancer
 - HIV/AIDS
 - Alcohol
- Alcohol is the 11th leading cause of DALYs among women

Source: McKenna, *Am J Prev Med*, 2005



Alcohol Attributable Deaths: Acute Conditions 43,731

National Institute on Alcohol Abuse and Alcoholism

Motor Vehicle Traffic	13,819
Homicide	7,787
Suicide	7,235
Falls	5,532
Poisoning (Not alcohol)	5,416
Poisoning (Alcohol)	370
Fire Injuries	1,158
Drowning	868
Other	1,546

Source: CDC: ARDI, 2009



Alcohol Attributable Deaths: Chronic Disease 35,915

Alcohol Liver Disease	12,219
Liver Cirrhosis, Unspecified	7,055
Alcohol Dependence Syndrome	3,857
Alcohol Abuse	2,382
Stroke	2,451
Hypertension	1,363
Pancreatitis	924
Other	5,664

Source: CDC: ARDI, 2009

- Alcohol-attributable injury deaths more often involve younger people than do chronic disease deaths
- Alcohol injury deaths account for twice as many years of life lost as chronic alcohol disease deaths

(Source: CDC, ARDI, 2009)



THE SUN



STATE



QB QUANDARY

MIKE PRESTON
»»» SPORTS
ROLLER VS. SMITH IS A BATTLE OF MEDIOCRITY

EILEEN AMBROSE »»» BUSINESS, PG 7B

NO STIMULUS CHECK?

THOSE WHO JUGGLE MARRIED, MAIDEN NAMES RISK DELAYS

Now Phelps tackles fame

Endorsements, interviews — and a rest



LOWER DRINKING AGE IS BACKED

21 'is not working,'
Md. college officials say

BY STEPHEN KIEHL
(SUN REPORTER)

Top university officials in Maryland — including the chancellor of the state university system and the president of the Johns Hopkins University — say the current drinking age of 21 "is not working" and has led to dangerous binges in which students have harmed themselves and others.

Six college presidents in Maryland are among more than 100 college and university presidents nationwide who have signed a statement calling for a public debate on rethinking the drinking age.

"Kids are going to drink whether it's legal or illegal," said Johns Hopkins President William R. Brody, who supports lowering the drinking age to 18. "We'd at least be able to have a more open dialogue with students about drinking as opposed to this sham where people don't want to talk about it because it's a violation of the law."

The presidents of the University of Maryland, College Park; Towson University; the College of Notre Dame of Maryland; Goucher College; Washington College; and the University of Maryland, Baltimore are among the signatories.

TODAY

ELDER EAGLE

WESTMINSTER
MAN EARNS
SCOUTING'S
HIGHEST HONOR
AT AGE 50







- 2,227 alcohol attributable deaths are ages 18-20
 - <3% of total
 - <4% of preventable years of life lost

- 9,625 alcohol attributable deaths are ages 25 or younger
 - 12% of deaths
 - ¼ of preventable years of life lost

Low-Risk Drinking Limits



Low-risk drinking limits		MEN	WOMEN
	On any single DAY	No more than 4 ■■■■ drinks on any day	No more than 3 ■■■ drinks on any day
	Per WEEK	AND No more than 14 ■■■■■■ drinks per week	AND No more than 7 ■■■■■■ drinks per week

Source: NIAAA, Rethinking Drinking: Alcohol and Your Health, 2009

Youth Ages 18-24 Are Most Likely to Exceed Low-Risk Drinking Limits

- 9% of people age 18 and older exceed both daily and weekly limits for low-risk drinking as established by the National Institute on Alcohol Abuse and Alcoholism (20 million people)
- The problem is greater among youth ages 18-24

	Percent	Number
Ages 18-20	24%	2,984,000
Ages 21-24	25%	4,193,000
Total 18-24		7,177,000

- Youth 18-24 are 16% of the population age 18 and older, but more than 1/3 of that population who exceed both daily and weekly limits



Youth Ages 18-24 Are Most Likely to Experience Alcohol Dependence

- 4% of the adult U.S. population met alcohol dependence criteria in the past year, representing 7.9 million people
- Youth are most affected
 - 12.5% of persons ages 18-20 (1.6 million)
 - 11% of persons ages 21-24 (1.8 million)
 - Total ages 18-24 (3.4 million)
- Youth 18-24 are:
 - 16% of the population age 18 and older
 - 43% of that population who met alcohol dependence criteria in the past year

Source: NIAAA, NESARC, 2002

A CALL TO ACTION:

CHANGING THE CULTURE OF DRINKING AT U.S. COLLEGES



Task Force of the National Advisory Council
on Alcohol Abuse and Alcoholism

National Institutes of Health

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

www.collegedrinkingprevention.gov



What Colleges Need to Know Now

An Update on College Drinking Research

College Drinking and Its Consequences: New Data

The comprehensive reports released by the National Institute on Alcohol Abuse and Alcoholism's (NIAAA's) Task Force on College Drinking turned a national spotlight on the problem of harmful drinking among college students. The central report, *A Call to Action: Changing the Culture of Drinking at U.S. Colleges*, has proven influential in the college alcohol and other drug (AOD) prevention and treatment field. Statistics first introduced in the report are now routinely used to convey the magnitude of college drinking problems and their consequences. Policymakers, legal experts, and organizations that provide college programming assistance have modified their efforts to reflect the Task Force recommendations.

College drinking research remains a high priority for NIAAA, and ongoing projects continue to yield important new information. This bulletin summarizes these recent findings with updated statistics, analysis, and recommendations.

As national headlines attest, students continue to be seriously injured or die as a result of drinking. Are these attention-grabbing headlines designed to simply sell newspapers, or is the problem as extensive today as it was in 2002 when the NIAAA Task Force first reported its findings?

The news is mixed. Among college students and other 18- to 24-year-olds, binge drinking (see the textbox, page 2, for a definition) and, in particular, driving while intoxicated (DWI), have increased since 1998. The number of students who reported DWI increased from 2.3 million students to 2.8 million (1). The number of alcohol-related deaths also have increased. In 2001, there were an estimated 1,700 alcohol-related unintentional injury deaths among students 18–24, an increase of 6 percent among college students (that is, per college population) since 1998 (1). In addition, it is estimated that each year, more than 696,000 students between the ages of 18 and 24 are assaulted by another student who has been drinking, and more than 97,000 students between the ages of 18 and 24 are victims of alcohol-related sexual assault or date rape (1). Clearly, alcohol-related problems on campus still exist (1).

Another line of research is examining how becoming intoxicated at a young age is linked to later drinking problems during the college years. The results showed that college students who first became intoxicated prior to age 19 were significantly more likely to be alcohol dependent and

Continued on page 2

CONTENTS

- 1 College Drinking and Its Consequences: New Data
- 2 Interventions—What Is the New Research Telling Us?
- 2 Defining Binge Drinking
- 4 Are College Students at Higher Risk?
- 5 Treatment for Alcohol Problems: An Unmet Need
- 7 College Drinking—A Global Issue
- 8 Ongoing Research and Collaborative Efforts
- 9 Tracking Students' Drinking Patterns
- 9 A Word on Alcohol Poisoning
- 10 Questions Campus Leaders Should Ask
- 11 Keep an Eye on . . .



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES • NATIONAL INSTITUTES OF HEALTH

NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM

Magnitude of Alcohol Problems on U.S. College Campuses



Dr. Margaret
Moore

Jonathan
Levy

Travis
Stedman



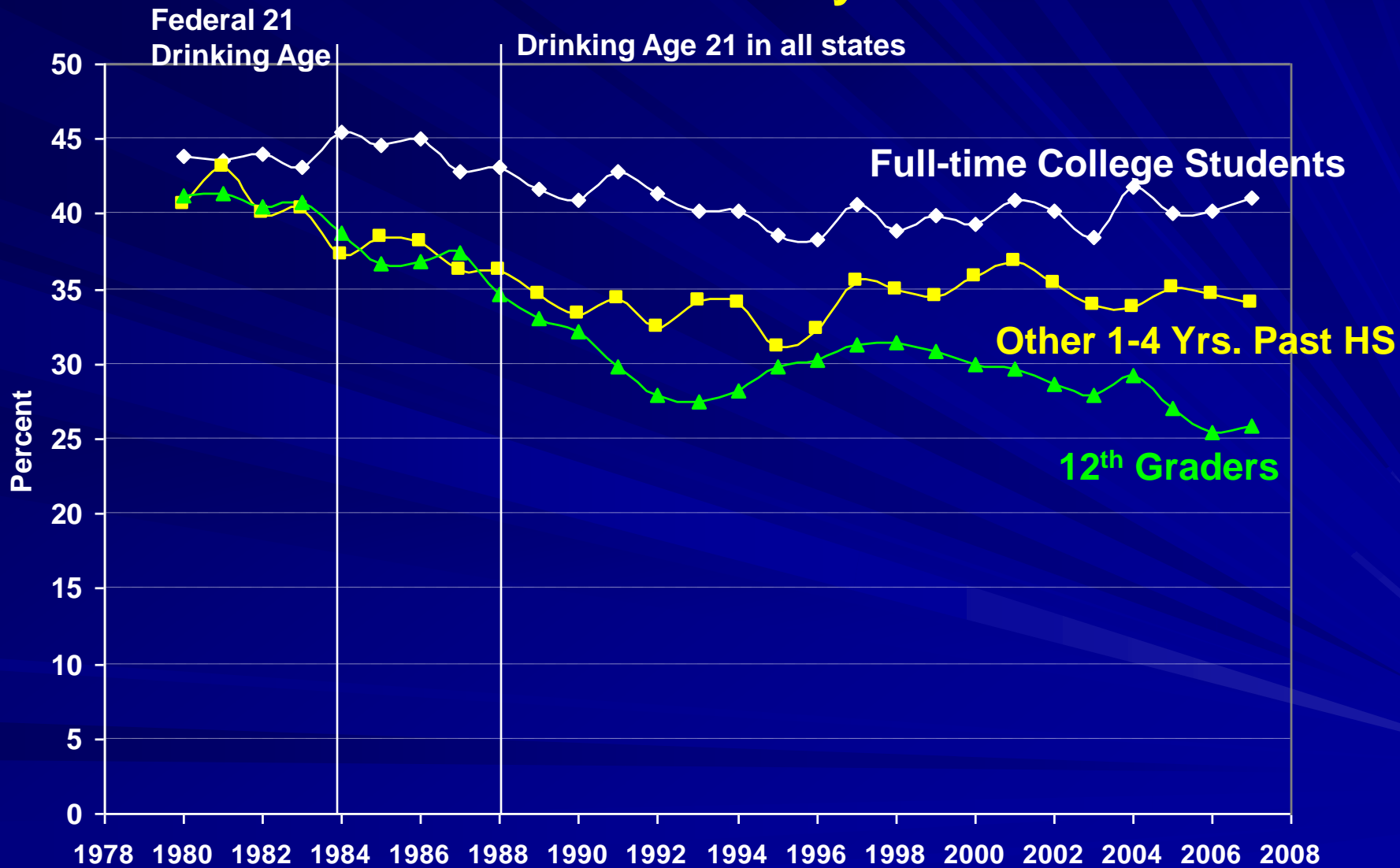
Numbers of College Students 18-24 Experiencing Alcohol Problems 2001

Alcohol Related Injury Deaths	1,700
Injured under influence of alcohol	599,000
Assaulted by another college student	690,000
Sex assault/date rape	97,000
Full time 4 year college students	6.4 million

Sources: College Alcohol Survey, National Household Survey on Drug Use and Health

Alcohol: Trends in 2-Week Prevalence of 5 or More Drinks in a Row among College Students vs. Others 1-4 Years Beyond HS

National Institute on Alcohol Abuse and Alcoholism

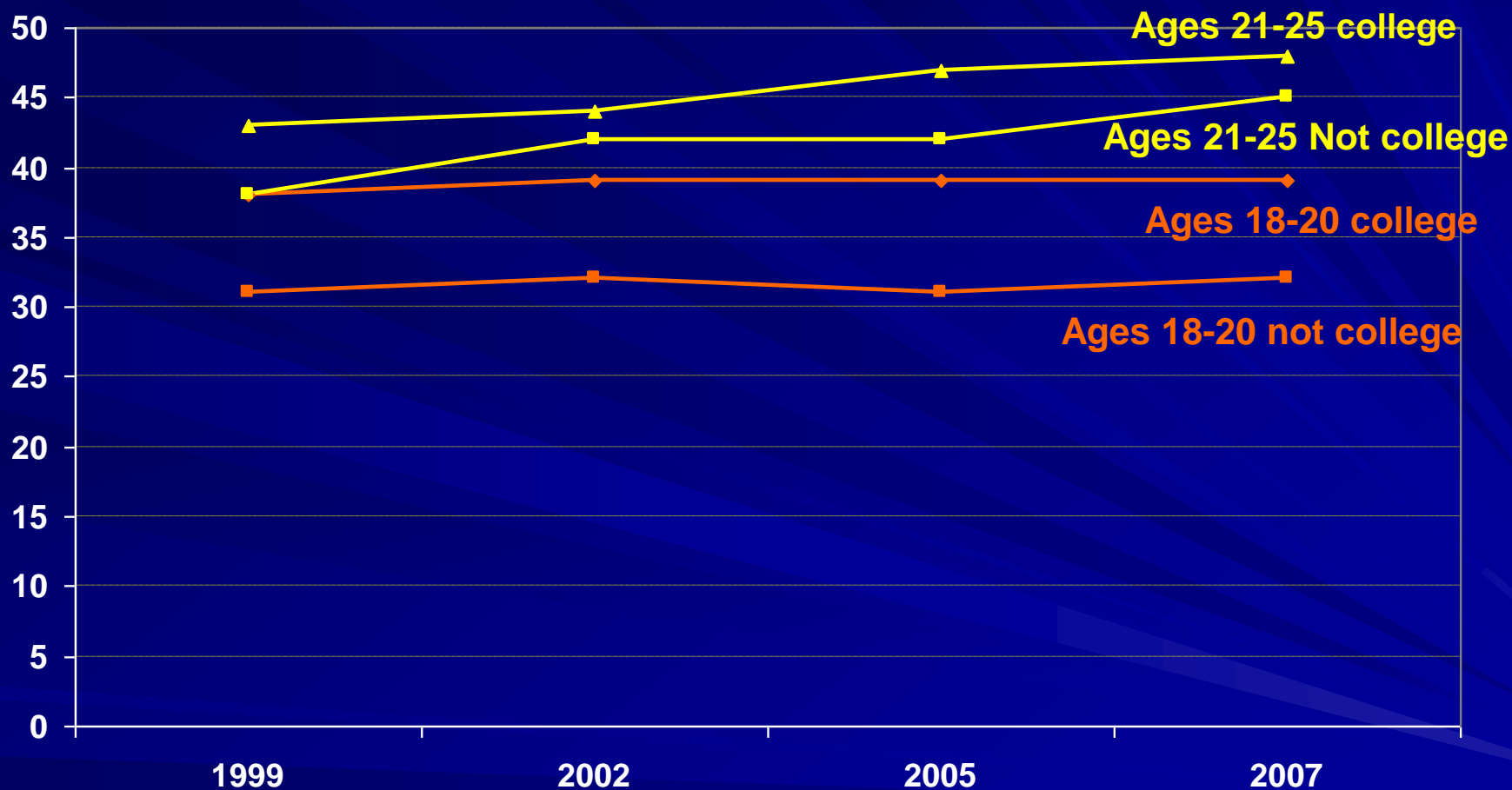


Source: Monitoring the Future, 2007



Percentage Binge Drinking, Ages 18-20 & 21-25 in College and Not in College

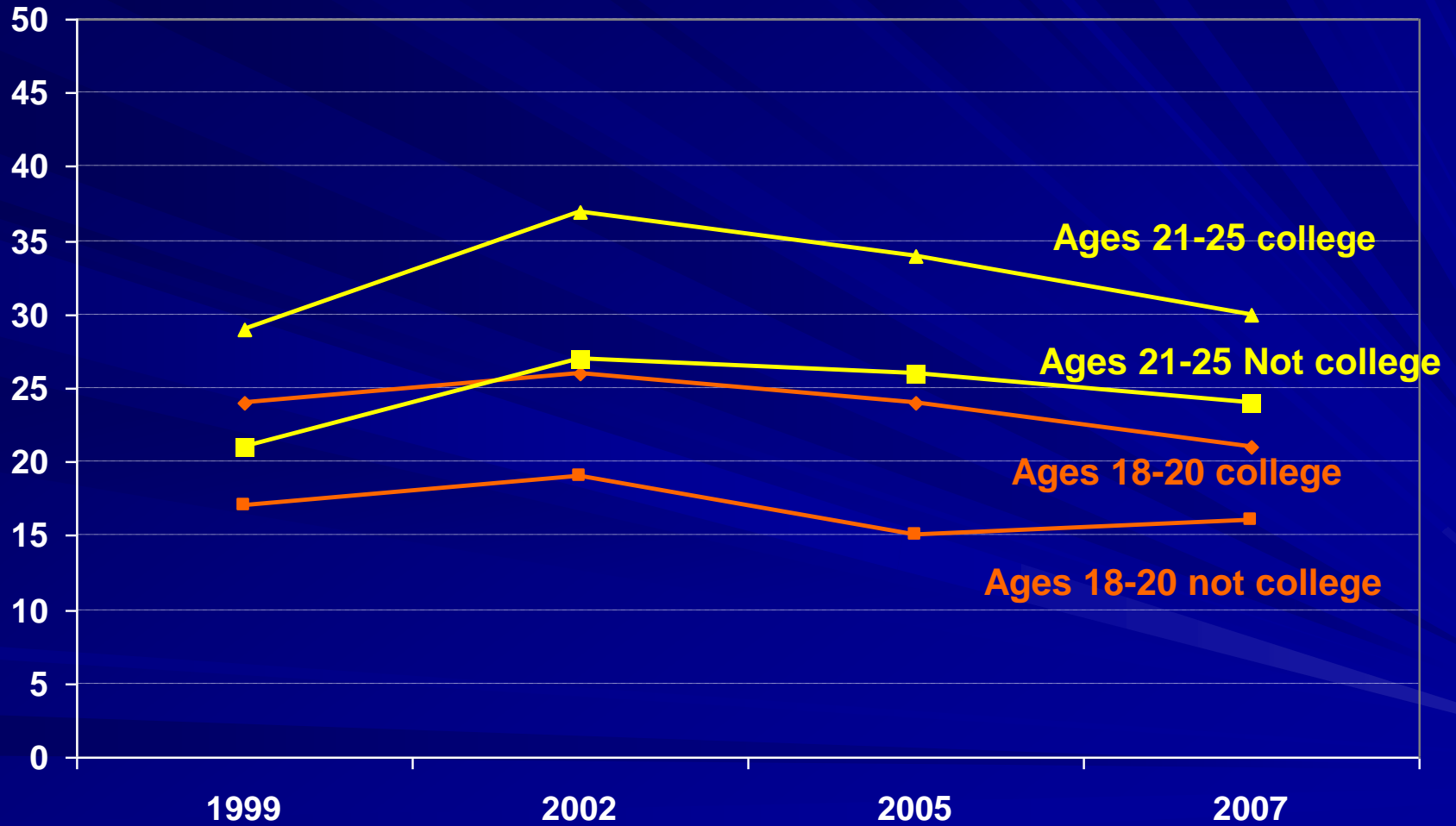
National Institute on Alcohol Abuse and Alcoholism



National Household Survey on Drug Use and Health, 2007

Percentage Drove Under the Influence of Alcohol, Ages 18-20 & 21-25 in College and Not in College

National Institute on Alcohol Abuse and Alcoholism

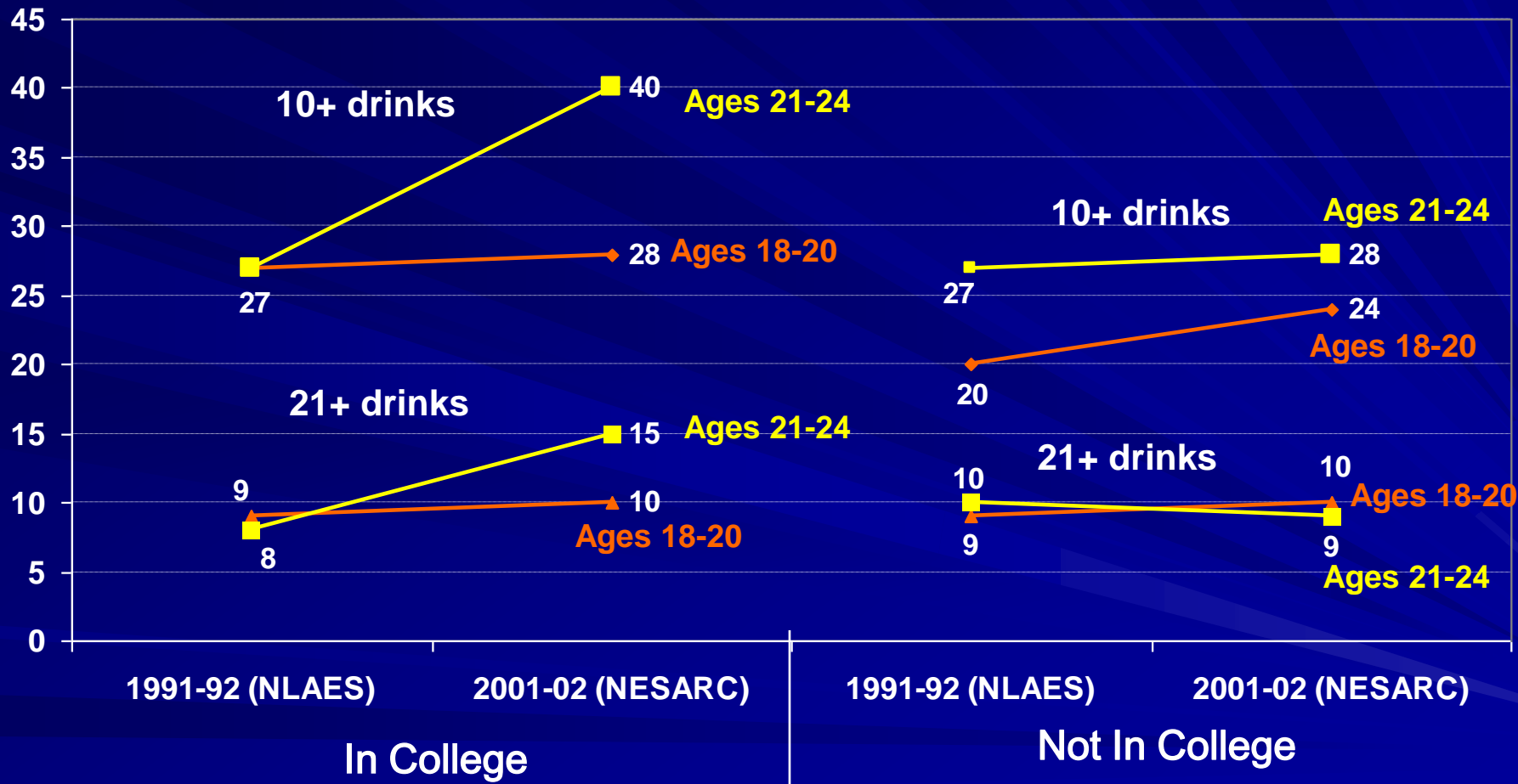


National Household Survey on Drug Use and Health, 2007



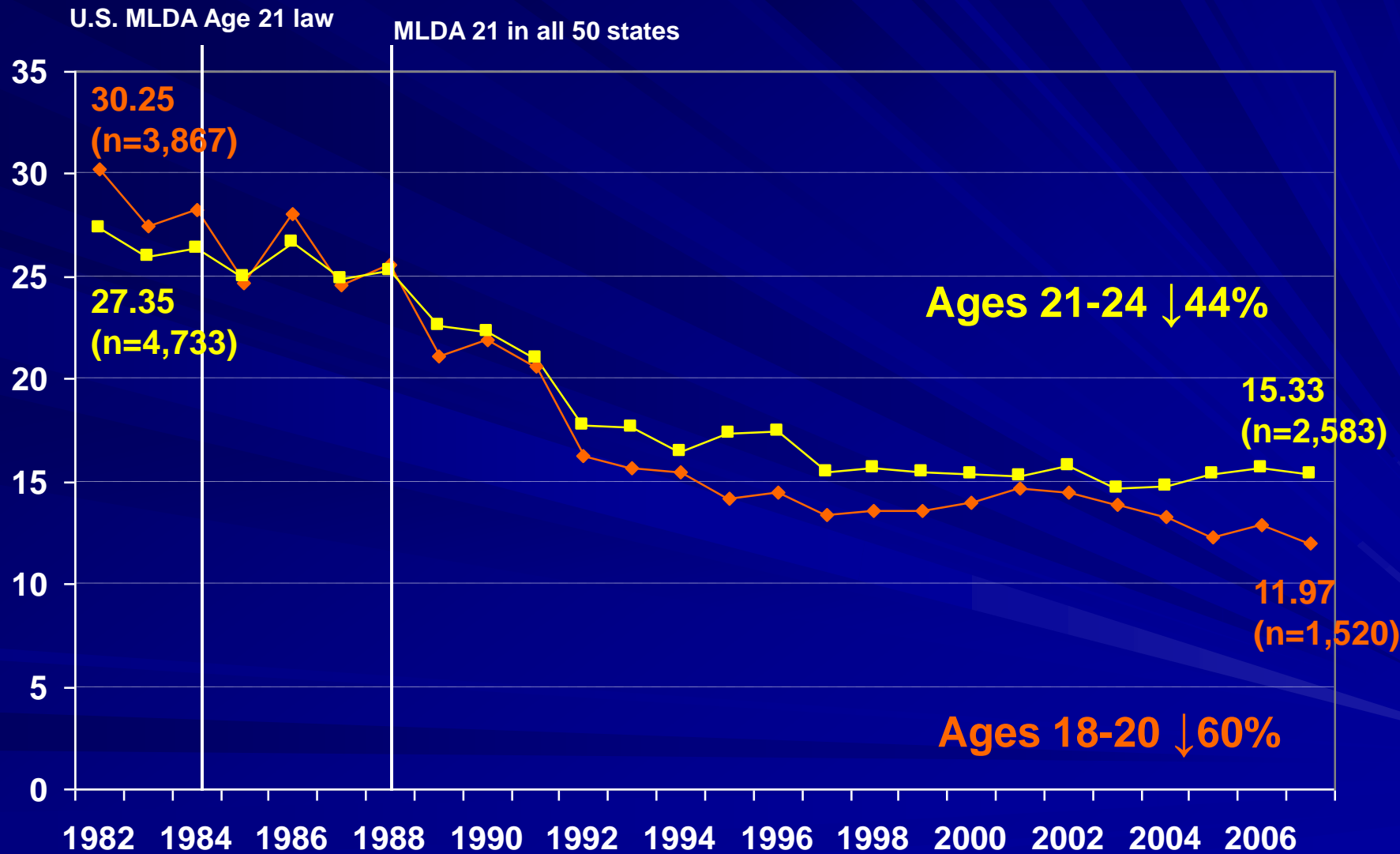
Consumption of 10+ Drinks or More or 21+ Drinks on an Occasion in Past Year by U.S. 18-20 and 21-24 Year Olds, 1991-92 vs. 2001-02

National Institute on Alcohol Abuse and Alcoholism
Percent



Alcohol-Related Traffic Fatalities, Rate per 100,000, Ages 18-20 vs. 21-24, United States, 1982-2007

National Institute on Alcohol Abuse and Alcoholism

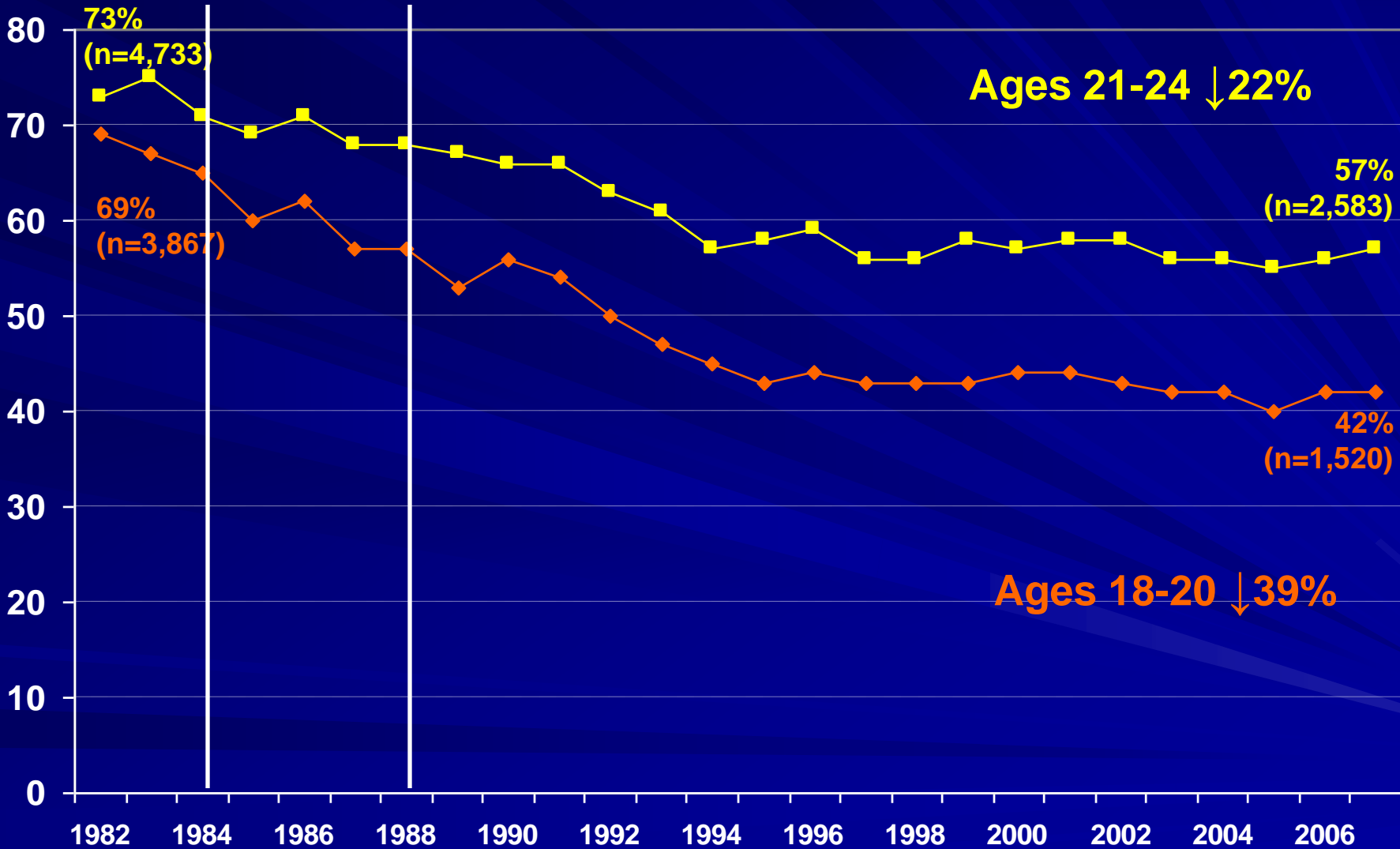




Proportion of Fatal Crash Deaths in the U.S. that were Alcohol-Related, Ages 18-20 vs. 21-24, United States, 1982-2007

National Institute on Alcohol Abuse and Alcoholism

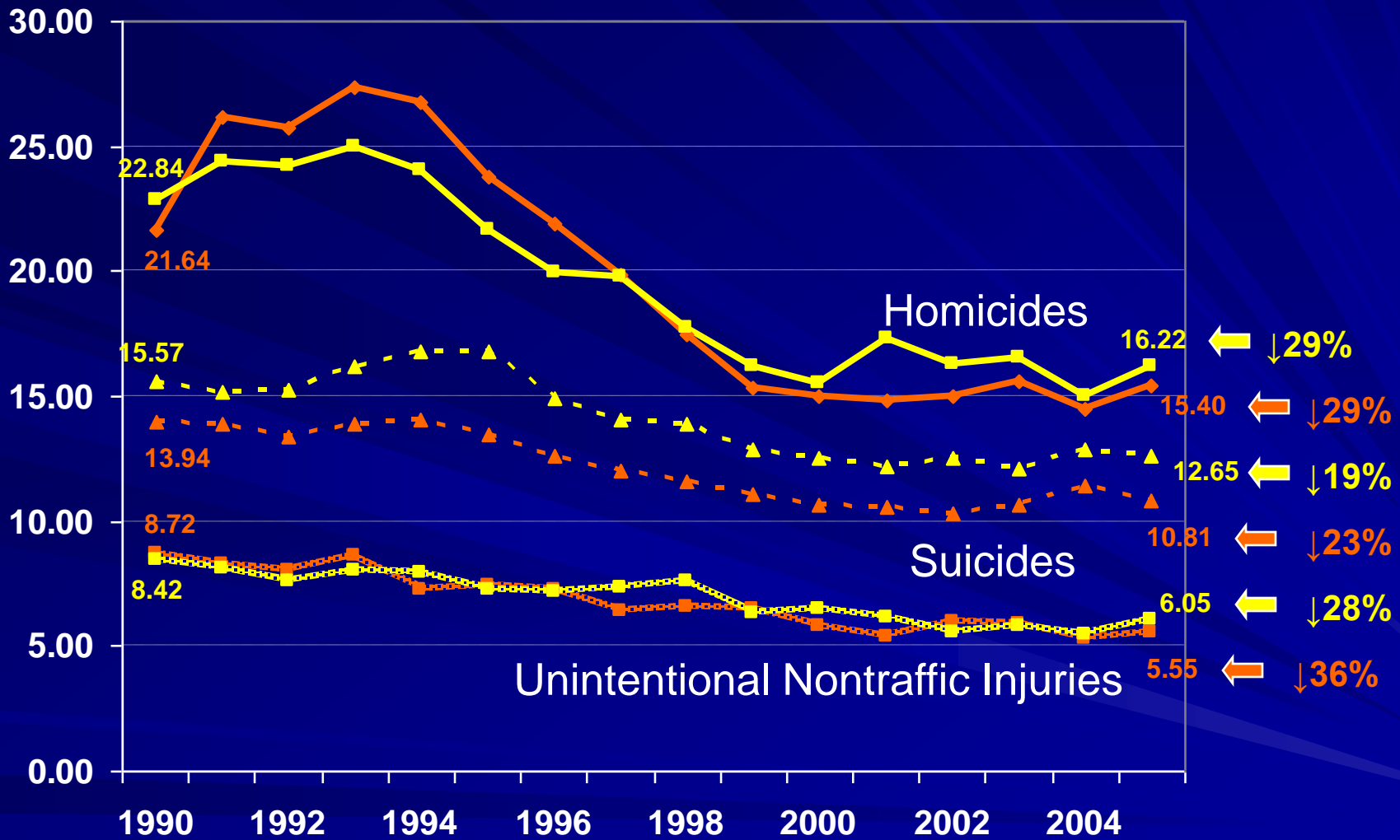
U.S. MLDA Age 21 law MLDA 21 in all 50 states





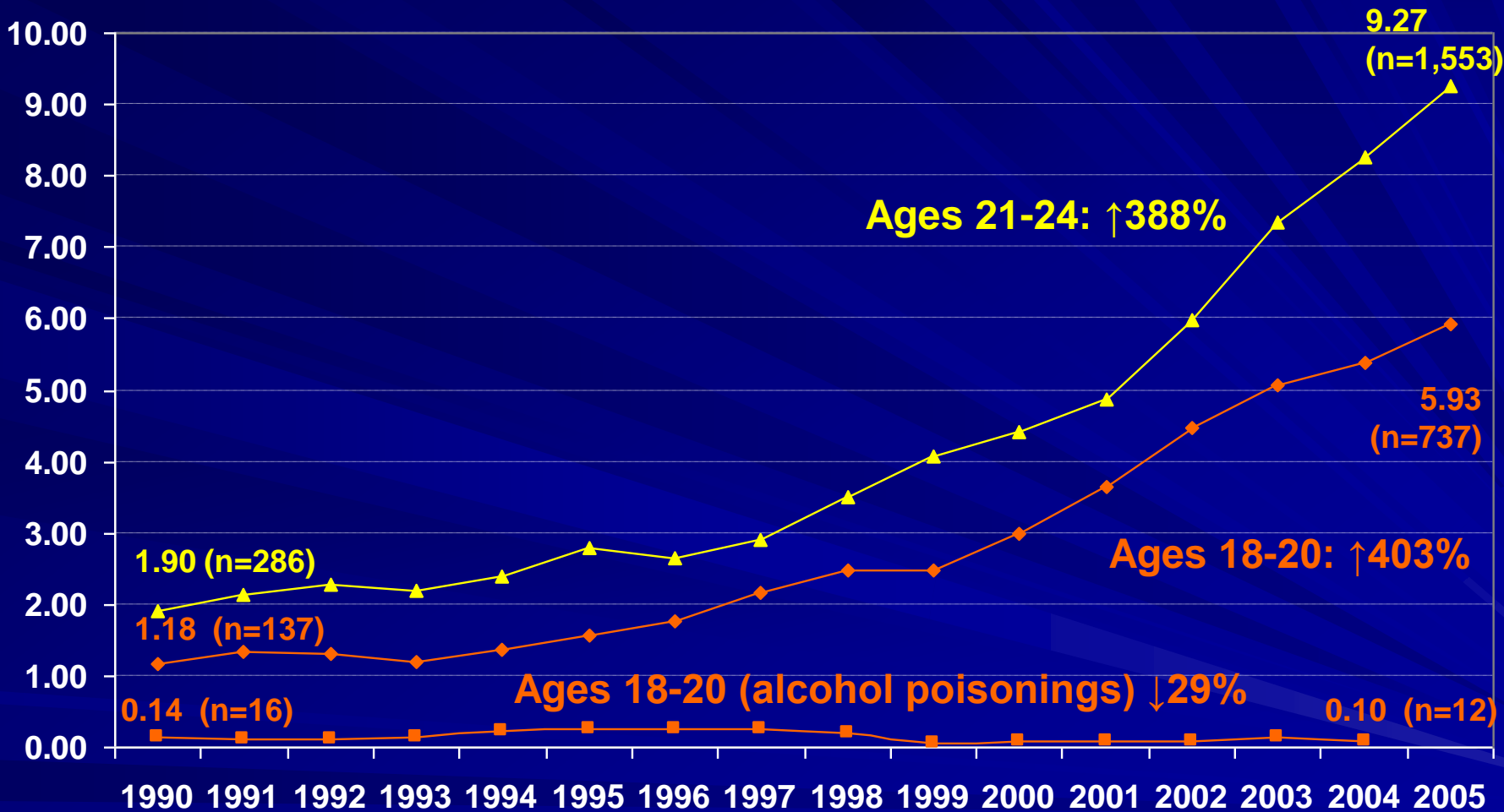
Homicides, Suicides, and Unintentional Nontraffic Injuries, Rates per 100,000, Persons Ages 18-20 vs. 21-24, United States, 1990-2005

National Institute on Alcohol Abuse and Alcoholism



Poisoning Deaths, Rate per 100,000, Ages 18-20 vs. 21-24, United States, 1982-2007

National Institute on Alcohol Abuse and Alcoholism



Source: CDC WISQARS, 2009; CDC WONDER, 2009; U.S. Census Bureau, 2009



Alcohol Related Behaviors and Consequences of 18-24 Year Olds in the U.S. 2005 (Estimates)

National Institute on Alcohol Abuse and Alcoholism

	College	Non College	Total
■ Drank 5+ on an occasion past month	4.4 million (45%)	7.9 million (40%)	12.3 million
■ Past year drove under the influence of alcohol	2.8 million (29%)	4.5 million (23%)	7.3 million
■ Died of alcohol-related unintentional injury	1,825	3,575	5,500

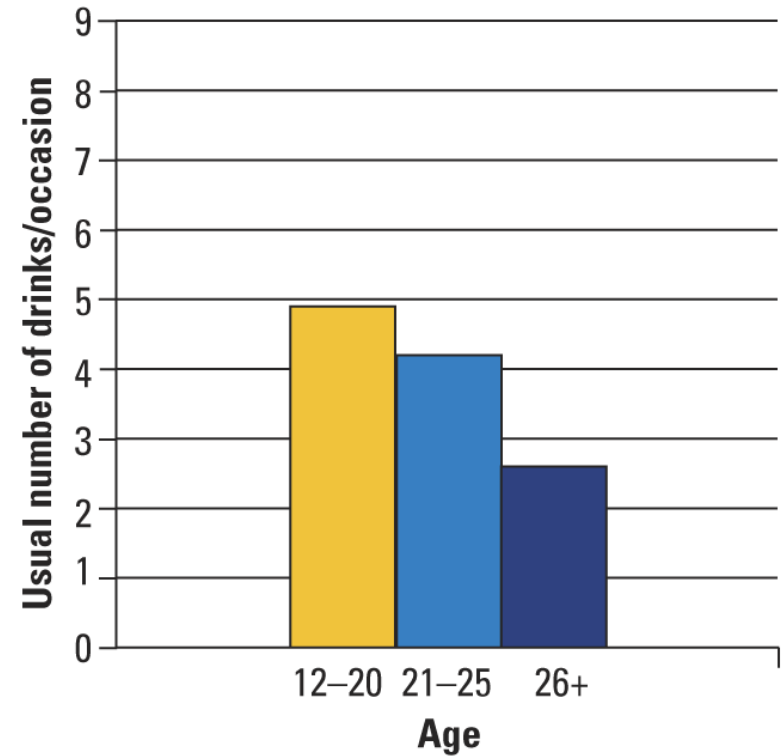
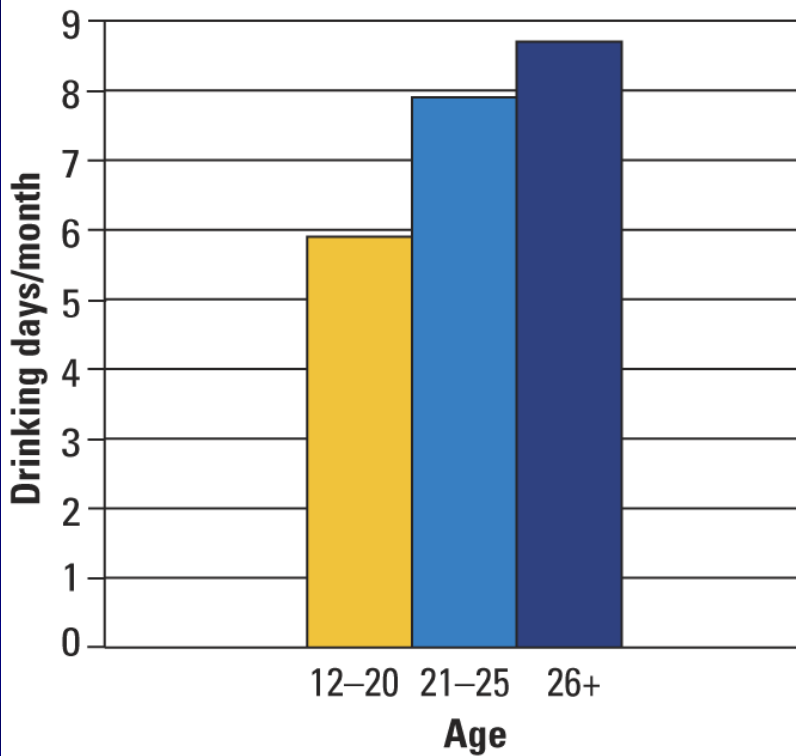
College Alcohol Study

The younger college students were when first drunk, the more likely they will experience in college:

- Alcohol Dependence
- Drive after drinking
- Alcohol related injury
- Unplanned and unprotected sex after drinking

Source: Hingson, Heeren, Winter. J. Studies on Alcohol 2003, Pediatrics 2003

Adolescents Drink Less Frequently than Adults But More Per Occasion



Source: SAMHSA National Survey on Drug Use and Health 2005

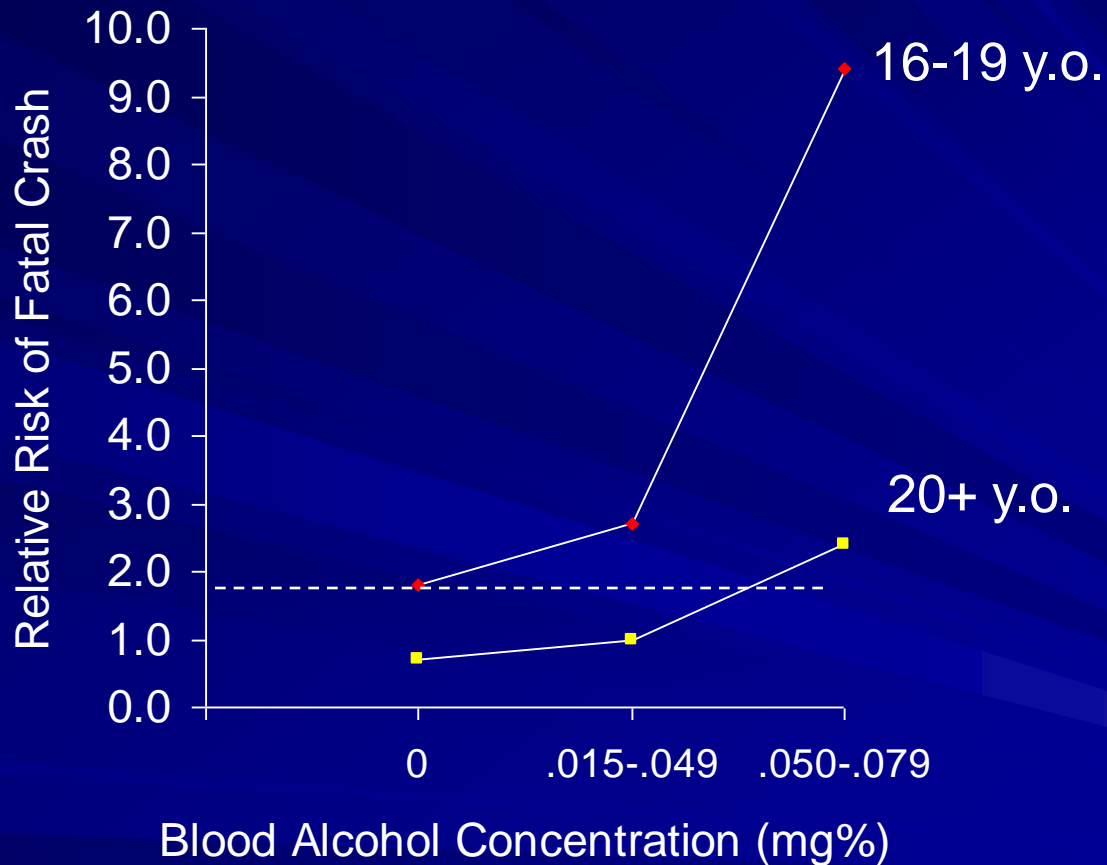
BAC and Impairment

.10		
.09		
.08	←	Concentrated Attention, Speed Control, Braking, Steering, Gear Changing, Lane Tracking, Judgement
.07		
.06		
.05	←	Tracking, Divided Attention, Coordination, Comprehension, Eye Movement
.04	←	Simple Reaction Time, Emergency Response
.03	←	Choice Reaction Time
.02		
.01		
BAC		

- Key driving functions are impaired at levels as low as .02-.04%.

Relative Risk of Fatal Crash

Drivers Age 16-19 and 20+ As a function of BAC



- The risk of fatal crash increases more with each drink among young drivers than drivers age 20 and older.

Source: Simpson, H. 1989

Increased Risk of Driver Single Vehicle Crash Death at Blood Alcohol Concentration of .08% - .10% Relative to Sober Drivers

Male	Relative Risk
Age 16-20	51.4
21-34	13.4
35+	11.4

Source: (Zador P., Krawchuck S., Voas R., J. Studies on Alcohol, 2000)



CDC Youth Risk Behavior Survey 2003

- 28% of high school students start to drink before age 13.
- They are 7 times more likely by age 17 to binge frequently (5 or more drinks/6 or more times per month).
- There are over 1 million frequent bingers in high school.



Youth Risk Behavior Survey 2003

- There are 1 million high school students who consumed 5 or more drinks 6 or more times per month. They are much more likely to
 - Ride with a drinking driver
 - Drive after Drinking
 - Never wear safety belts
 - Carry weapons/guns
 - Be injured in a fight
 - Be injured in a suicide attempt
 - Be forced to have sex
 - Had sex with 6 or more partner
 - Have unprotected sex
 - Been or gotten someone pregnant
 - Use Marijuana/cocaine
 - Ever injected drugs

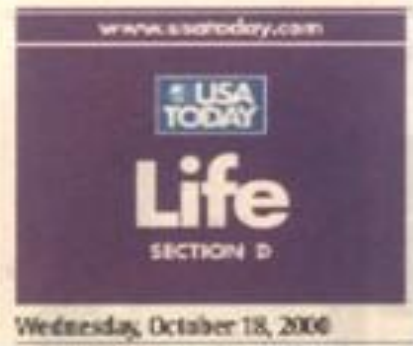
Youth Risk Behavior Survey 2003

- Frequent binge drinkers compared to abstainers in high school were much more likely in the past month to:

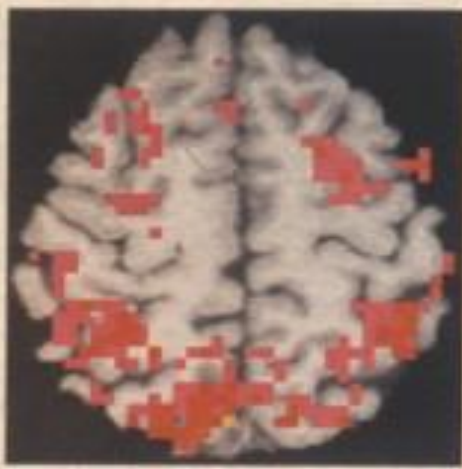
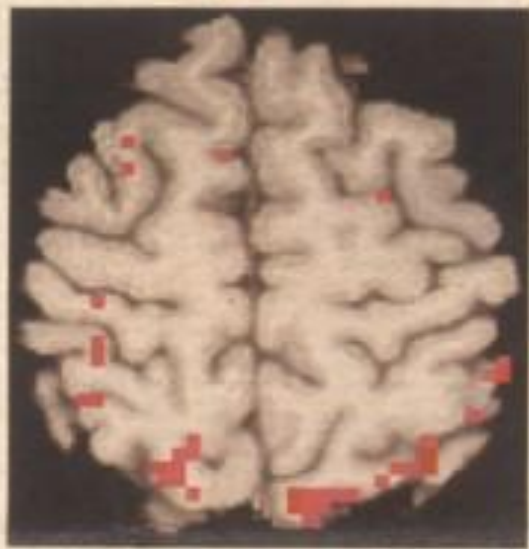
Drink at school **31% vs. 0%**

Use marijuana at school **29% vs. 1%**

Earned mostly D's and F's in school within the past year **13% vs. 4%**



Two 20-year-old women take a memory test. One of them abused alcohol. The MRI scan on the left is her brain, the lack of color indicating a sluggish mind. In contrast, the scan on the right is of the woman who doesn't have a drinking problem. The colors show lots of brain activity. Not surprisingly, she does better on the test.



Cover story

Teen drinking, thinking don't mix

Alcohol appears to damage young brains, early research finds

By Kathleen Schwabauer
USA TODAY

Teens who drink heavily face a slew of hazards, ranging from accidental injuries to death by alcohol poisoning. If early research is correct, scientists might add another danger to that list: brain damage.

Preliminary studies indicate that heavy, regular drinking can damage the developing brains of teens and young adults and perhaps delay their ability to learn, to remember and to reason.



Changing youth drinking habits, 80

will be there to do well in school or at work.

Others say it's too early to blame brain damage on alcohol abuse. They say that many teens who drink heavily also abuse other drugs and have other risk factors that could hurt the brain.

But researchers say that though the work is in the early stages, the evidence is pointing a link between alcohol and damage to young brains.

Conclusion

In the U.S. there is an urgent need to expand and improve prevention, screening and treatment programs and policies to reduce alcohol related harm

- Persons under 21
- Among college students
- Persons of similar ages not in college



109TH CONGRESS
2D SESSION

H. R. 864

AN ACT

To provide for programs and activities with respect to the prevention of underage drinking.

1 *Be it enacted by the Senate and House of Representatives*
2 *of the United States of America in Congress assembled,*

Sec. 101. Sense of Congress.
TITLE II—INTERAGENCY COORDINATING COMMITTEE, ANNUAL REPORT ON STATE UNDERAGE DRINKING PREVENTION AND ENFORCEMENT ACTIVITIES
Sec. 201. Interagency coordinating committee on the prevention of underage drinking.
Sec. 202. Annual report on State underage drinking prevention and enforcement activities.
Sec. 203. Authorization of appropriations.
TITLE III—NATIONAL MEDIA CAMPAIGN
Sec. 301. National media campaign to prevent underage drinking.
TITLE IV—INTERVENTIONS
Sec. 401. Community-based coalition enhancement grants to prevent underage drinking.
Sec. 402. Grants directed at preventing and reducing alcohol abuse at institutions of higher education.
TITLE V—ADDITIONAL RESEARCH
Sec. 501. Additional research on underage drinking.
Sec. 502. Authorization of appropriations.

7 SEC. 2. DEFINITIONS.

8 For purposes of this Act:
9 (1) The term “alcohol beverage industry”
10 means the brewers, vintners, distillers, importers,
11 distributors, and retail or online outlets that sell or
12 serve beer, wine, and distilled spirits.

•H.R. 864 EII

The Surgeon General’s Call to Action To Prevent and Reduce Underage Drinking 2007



U.S. Department of Health and Human Services

United States Alcohol and Non-Alcohol Related Traffic Fatalities Per 100,000 Population 1982-2007



Sources: Fatality Analysis Reporting System, National Highway Traffic Safety Administration; U.S. Census Bureau

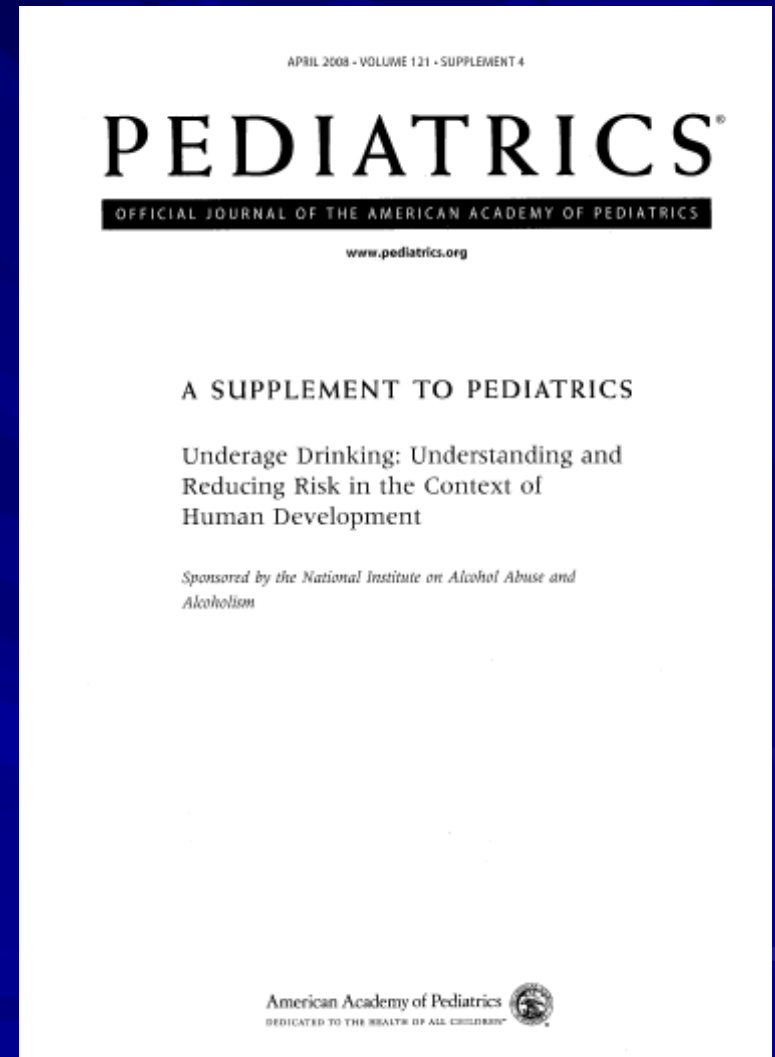
- From 1982-2001 in the U.S, 153,168 lives were saved by decreased drinking and driving. This is more than the combined numbers of lives saved, 149,318, by increased seat belt use (129,207), airbag prevalence (4,305), increase use of motorcycle helmets (6,475) and by increased use of bicycle helmets (239).

Source: Cummings, Rivara, Olson, Smith. Injury Prevention, 2006.



Interventions

- Individually oriented
- School
- Family
- Environmental
- Comprehensive Community Interventions



Gentilello

Brief Motivational Alcohol Intervention in a Trauma Center

Annals of Surgery, 1999

- 46% of injured trauma center patients age 18 and older screened positive for alcohol problems.
- Half (N=336) randomly allocated to receive 30 minute brief intervention to reduce risky drinking and offers links to alcohol treatment



Gentilello

Brief Motivational Alcohol Intervention in a Trauma Center Annals of Surgery, 1999

- Reduced alcohol consumption by an average 21 drinks per week at 1 year follow up
- 47% reduction in new injuries requiring treatment in ED
- 48% reduction in hospital admissions for injury over 3 years
- 23% fewer drunk driving arrests

Nilsen et al.

Systematic Review of Emergency Care Brief Alcohol Intervention

J. Substance Abuse Treatment, 2007

- Reviewed 14 studies of brief intervention (BI) delivered in emergency care settings
- Of 12 studies with pre-post BI comparisons, 11 observed a significant effect on some outcome
 - Alcohol intake
 - Risky drinking practices
 - Alcohol-related negative consequences
 - Injury frequency
- 7 studies showed differences between treatment conditions



Monti

Brief Intervention For Harm Reduction with Alcohol Positive Older Adolescents in a Hospital Emergency Department,

J. Consulting and Clinical Psychology, 1999

- 94 ED patients, mean age 18.4, injured after drinking
- Half randomly allocated to a 35-40 minute motivational intervention (MI) to reduce drinking and related risky behaviors such as DWI
- 89% followed at 6 months, no difference between groups: follow up rate, age, gender

Results:

- MI group had $\frac{1}{4}$
 - Drinking driving occasions
 - Alcohol-Related injury
 - 60% fewer other alcohol-related problems

U.S. Annually

- 2¼ million trauma center admissions
 - Gentilello, personal communication, 2008
- Over 40% alcohol-related
- Peak ages 15-25
 - National Trauma Data Bank, Annual Report, 2008
- 8 million alcohol-related emergency department visits (most for injuries)
 - McDonald et al., *Arch Internal Med*, 2004)
- Peak ages for injuries: 15-25
- 85% of population sees a physician at least once per year (Health United States, 2005, CDC)



Systematic Review of Randomized Trials of Brief Interventions from 1992-2004

(Solberg et al., Am. J. Prev. Med, 2008)

- “Results make alcohol screening and counseling one of the highest ranking preventive services among 25 effective services.”
- Similar score as screening for
 - hypertension
 - colorectal cancer
 - vision for adults age 65 and older

Strong Support for Individual Level Interventions Among College Students

- Reduce drinking and related problems
 - Larimer, *Addictive Behaviors*, 2007
 - Review of 18 experimental studies of brief interventions
 - Carey et al., *Addictive Behaviors*, 2007
 - Meta-analysis of 62 controlled studies
 - Face-to-face interventions most effective
 - Motivational interview
 - Personalized normative feedback

Implementation Gap

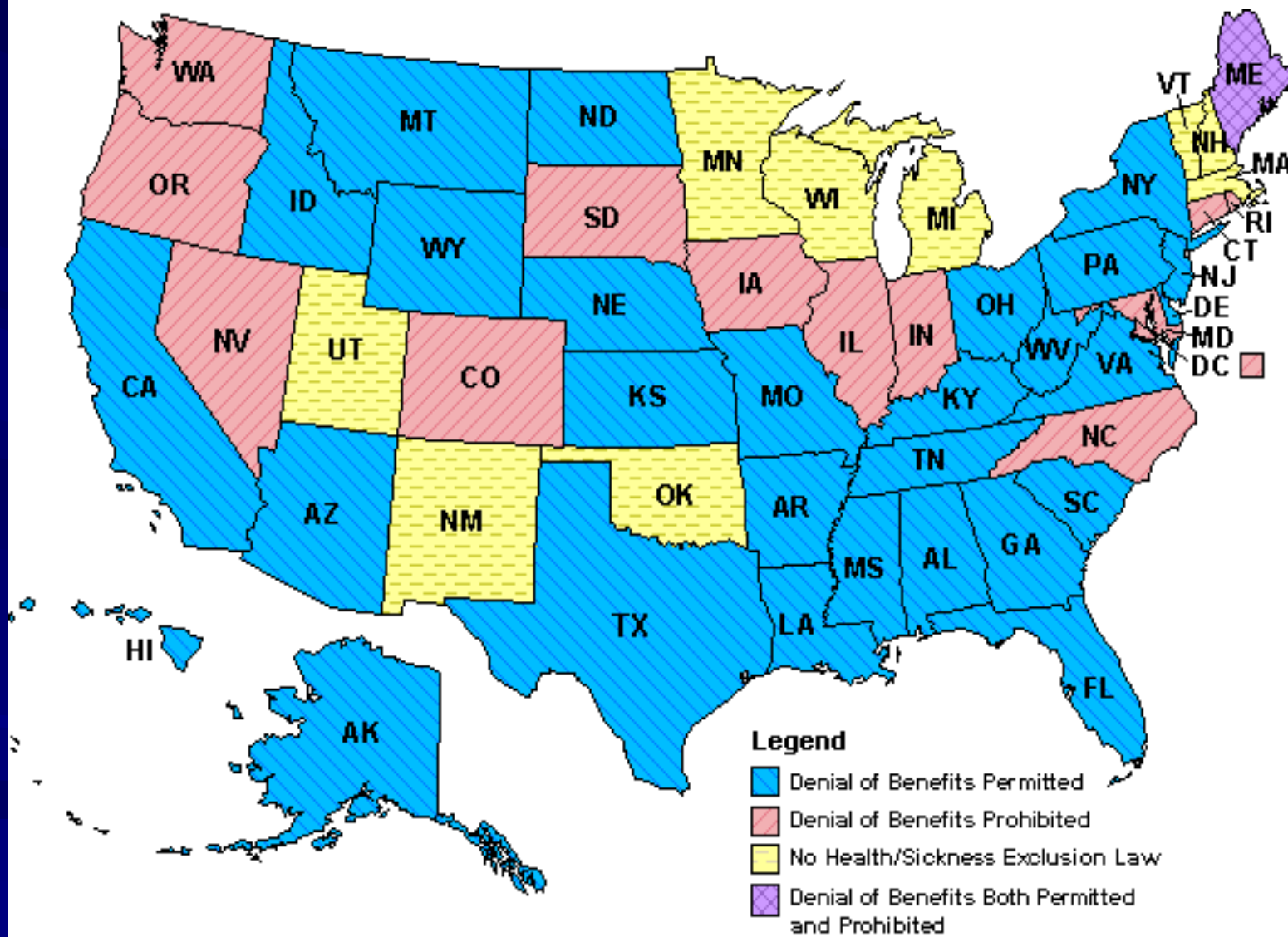
- 19% of College Students 18-24 met DSM IV Alcohol Abuse or Dependence Criteria
- 5% of them sought treatment in the past year
- 1.5 million 12-17 year olds need treatment
- Only 14% have received treatment

Source: National Epidemiologic Study of Alcohol Related Conditions 2002; National Household Survey of Drug Use and Health, 2005

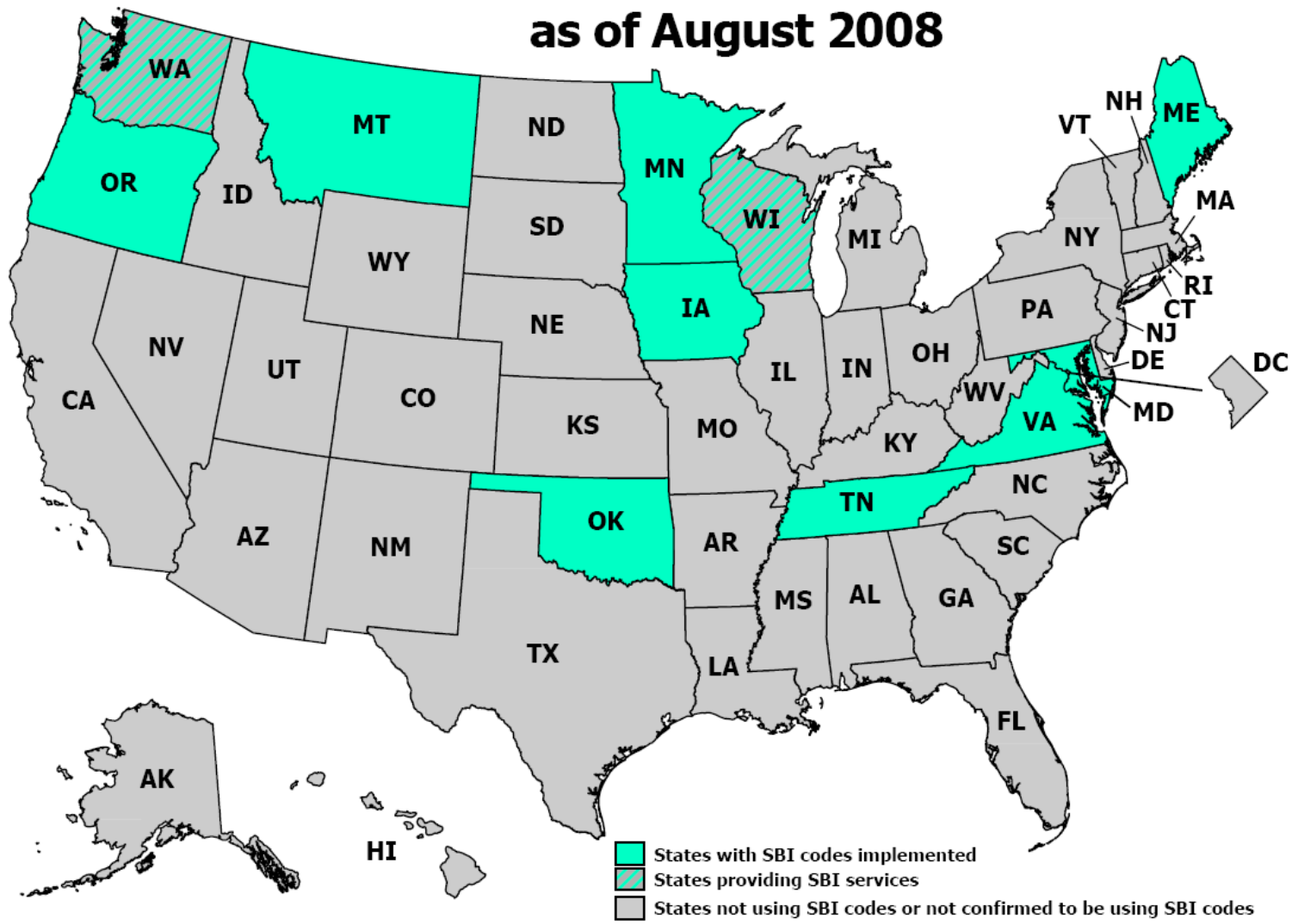
Barriers to Screening

- Time to ask questions
- Time to respond to questions
- Lack of training
- Lack of treatment centers for referral
- Reimbursement issues

Insurers' Liability for Health/ Sickness Losses Due to Intoxication ("UPPL") as of January 1, 2008



States that Have Implemented Screening and Brief Intervention Reimbursement Codes For Medicaid as of August 2008



ONDCP001786

Sources: SAMHSA and ONDCP (September 2008).



School Based Programs

- Programs that rely primarily on increasing knowledge about consequences of drinking are not effective.
- School only program effects are generally small
- Most Effective Programs :
 - Address social pressures to drink and teach resistance skills
 - Include developmentally appropriate information
 - Include peer-led components
 - Provide teacher training
 - Are interactive
 - Include community and family components (e.g. Pentz, 1989; Perry et al., 1996, 2002)

Sources: NIAAA, Alcohol and Development in Youth: A Multidisciplinary Overview, 2005; Spoth et al., 2008

Family Influences on Youth Drinking 12-20

- Children of parents who binge, compared with abstainers, are twice as likely to
 - Binge (20% vs. 10%)
 - Meet alcohol dependence/abuse criteria (10% vs. 5%)

Source: SAMHSA, Findings From the 2002-2006 National Surveys on Drug Use and Health, 2008



Family Interventions

Iowa Strengthening Families Program

Goals:

- Improve parent/child relations
- Strengthen family communication skills
- Increase child coping skills

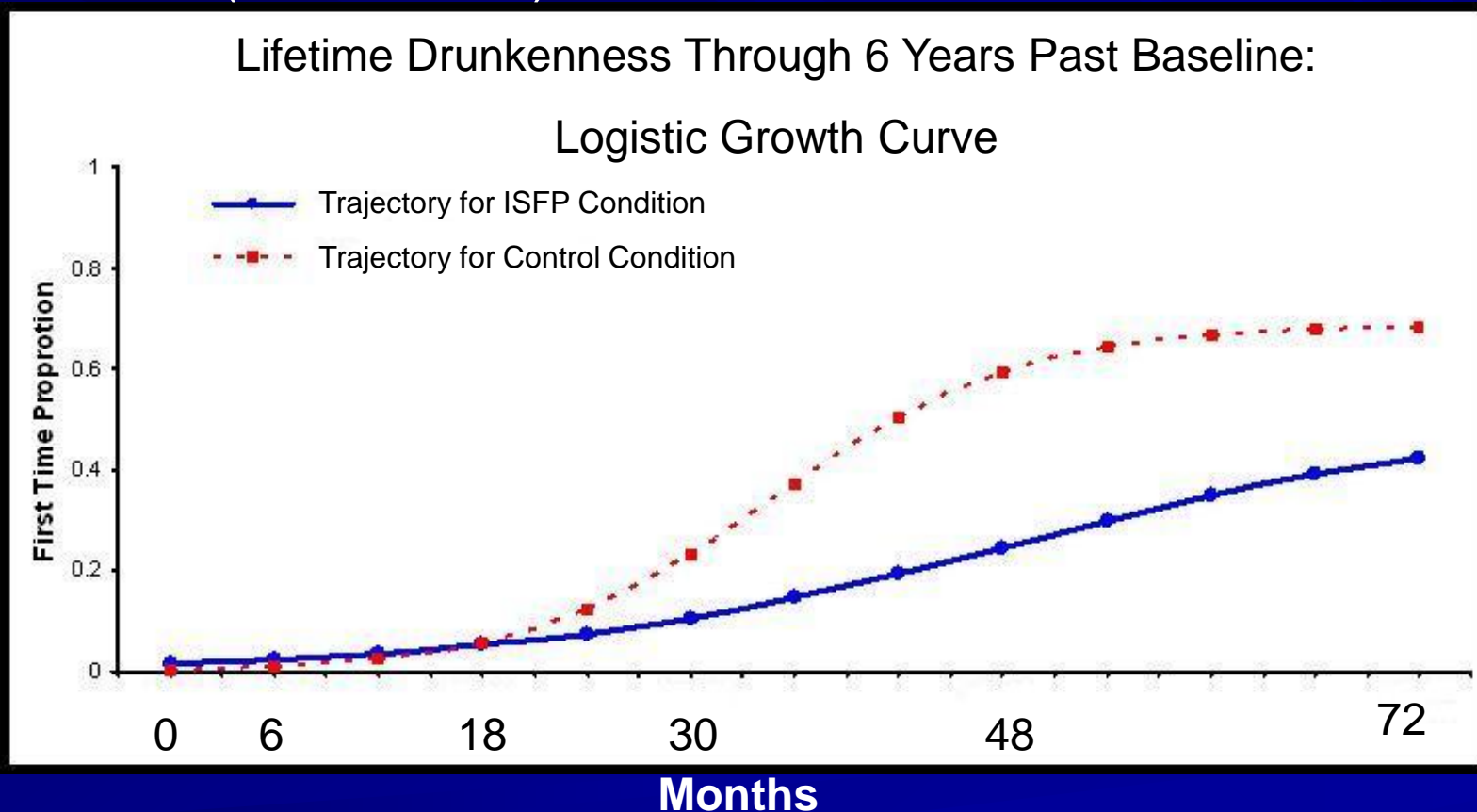
Implementation:

- 7 sessions at school
- 13 hours total
- Parent and child separately and together

Family Interventions

A randomized controlled trial with families of 6th graders:

- Iowa Strengthening Families Program (ISFP) (206 families)
- Preparing for Drug Free Years Program (PDFYP) (221 families)
- Control (221 families)



Source: Spoth, Redmond, Shin *J Consulting Clinical Psychology* (2001, 2004)



Combined Family Interventions & School Based Life skills Program

Randomized controlled trial of 7th graders from 36 rural schools:

- ISFP Plus Life Skills Training (n=549)
- Life Skills Training Only (n=517)
- Control (n=453)

Results: 2 ½ Years Later

- Weekly drunkenness rate among intervention students 1/3 lower
 - Strengthening Family plus Life Skills (p=.03)
 - Life Skills Training (p=.08)

Conclusion:

Family and school interventions combined are more effective than school interventions only

Source: Spoth, et al *Psychology of Addictive Behaviors* (2005)



Environmental Interventions

- Legislation to reduce drinking & driving
 - Criminal per se laws
 - Administrative license revocation laws
 - Mandatory assessment & treatment laws
 - Primary safety belt laws
 - Ignition interlock for first offenders
 - Lower legal blood alcohol limits for convicted offenders
 - 0.08% criminal per se BAC level laws
 - Zero tolerance laws
- Enhanced enforcement- publicized sobriety checkpoints

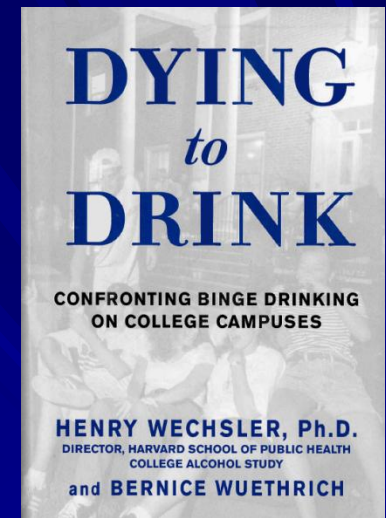
Environmental Interventions (cont.)

- Legislation to reduce availability of alcohol
 - Minimum legal drinking age
(Shults et al., *Am. J. Prev. Med.*, 2001; Wagenaar & Toomey, *J. Stud Alcohol Drugs*, 2002; Institute of Medicine, 2004)
 - Reduce alcohol outlet density
(Gruenewald & Remer, *Alcohol: Clin. Exp. Res.*, 2006)
 - Increase price
(Wagenaar et al., *Addiction*, 2009; Institute of Medicine, 2004)

Environmental Interventions

- When might it be justified to use laws to change behavior to promote health?
 - Problem is important
 - Behavior harms other people
 - Law is effective
 - Law is minimally intrusive
 - No equally effective, less intrusive alternative
 - Public supports the law

2001 Harvard School of Public Health College Alcohol Study



- To what extent do you support or oppose the following possible school policies or procedures?

Alcohol Policy	% Supportive Students
Crack down on underage drinking	67
Enforce rules more strictly	65
Crack down on drinking in Greek houses	60
Prohibit kegs	60
Hold hosts responsible for problems	55

Environmental Approaches

! WARNING ! **CRIMINAL VIOLATION**

ANY PERSON UNDER 21 YEARS

- WHO - PURCHASES ALCOHOLIC BEVERAGES
- WHO - PROCURES OR ATTEMPTS TO PURCHASE ALCOHOLIC BEVERAGES IN ANY WAY
- WHO - WILLFULLY MISREPRESENTS HIS OR HER AGE
- WHO - ALTERS, DEFACES OR FALSIFIES IDENTIFICATION WITH INTENT TO PURCHASE ALCOHOLIC BEVERAGES
- WHO - LIES ABOUT ANOTHER PERSON'S AGE WITH INTENT TO PROCURE ALCOHOL

SHALL BE PUNISHED BY A FINE OF \$300.00

M.G.L. Ch. 138B:34A LIQUOR CONTROL ACT

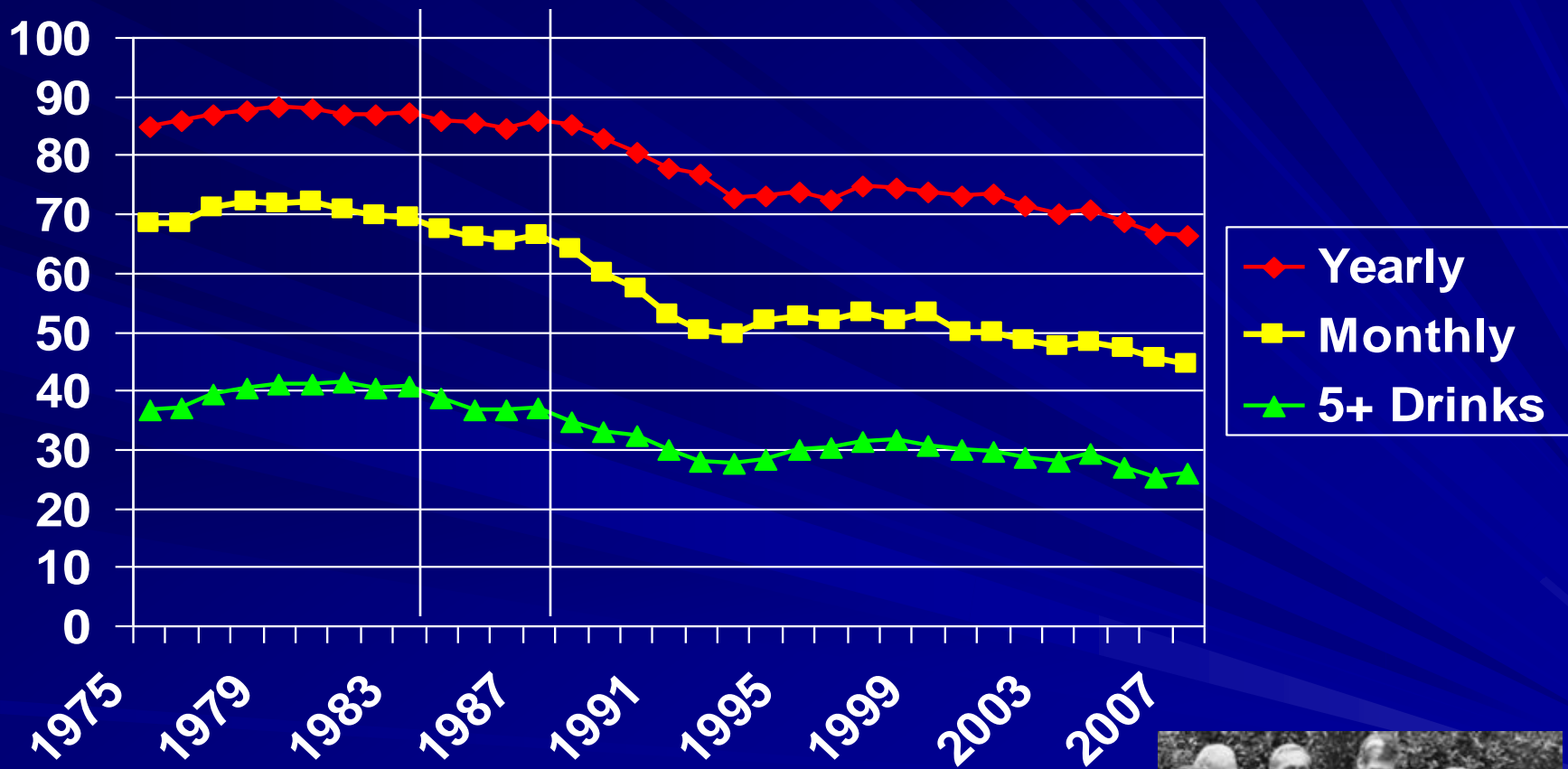
MASSACHUSETTS ALCOHOLIC BEVERAGES CONTROL COMMISSION



Drinking Trends Among High School Seniors, 1975-2007

Federal 21 drinking age Drinking age 21 in all States

National Institute on Alcohol Abuse and Alcoholism



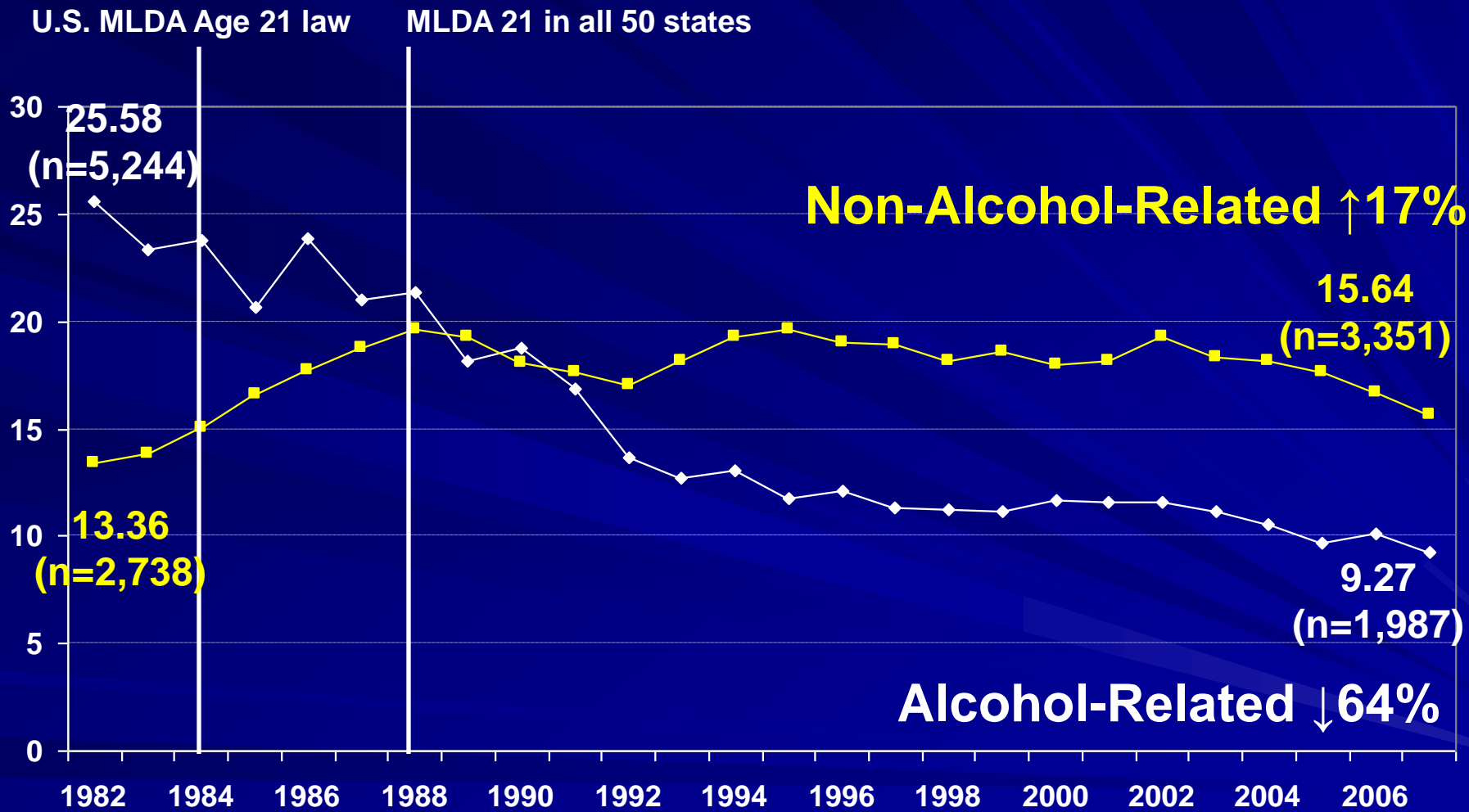
Source: Monitoring the Future, 2007





Alcohol- vs. Non-Alcohol-Related Traffic Fatalities Per 100,000 Population, Ages 16-20, United States, 1982-2007

National Institute on Alcohol Abuse and Alcoholism



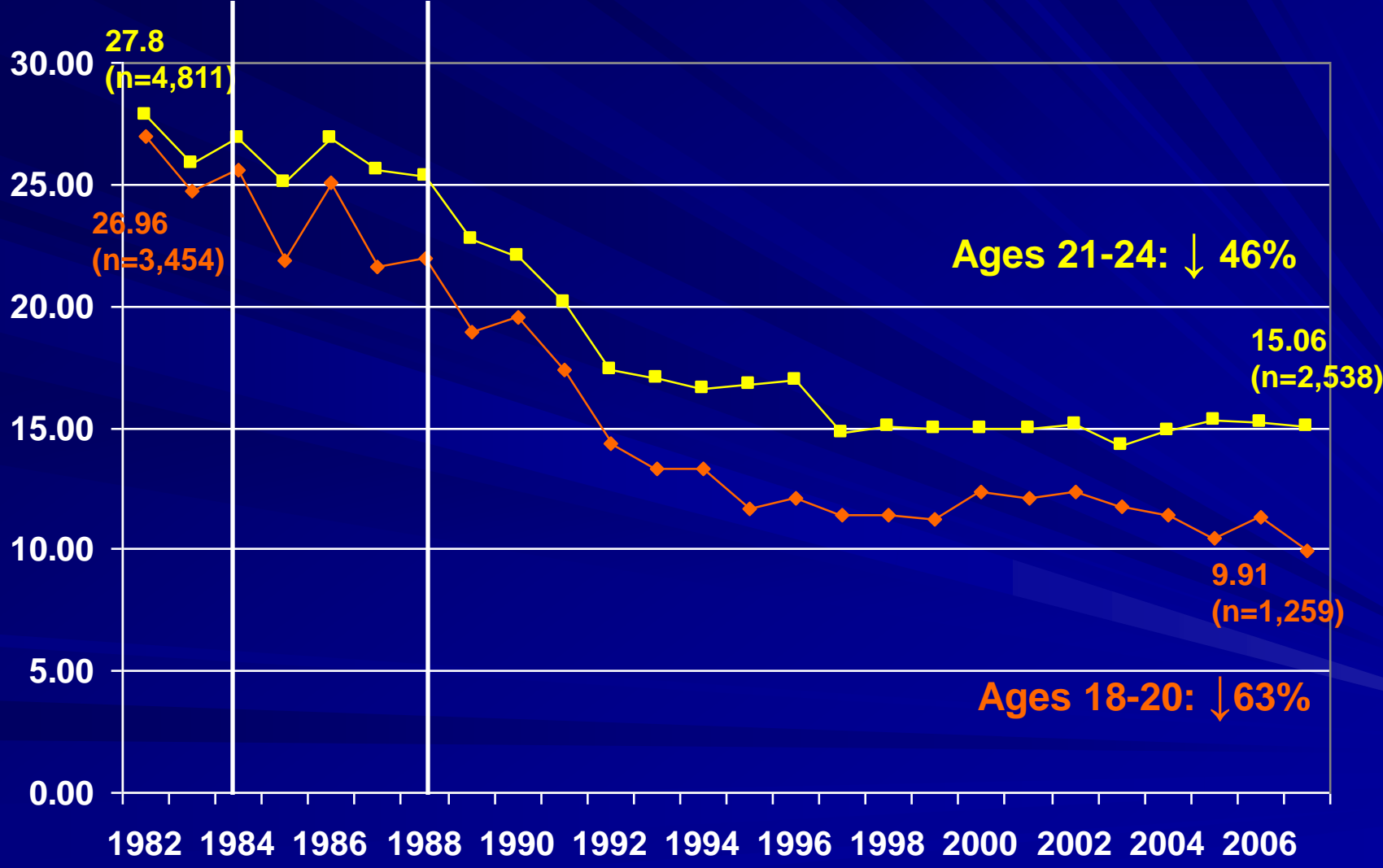
Sources: U.S. Fatality Analysis Reporting System, 2008; U.S. Census Bureau, 2009



Drivers in Fatal Crashes with Positive Blood Alcohol Concentrations, Rate per 100,000, Ages 18-20 vs. 21-24, United States, 1982-2007

U.S. MLDA Age 21 law MLDA 21 in all 50 states

National Institute on Alcohol Abuse and Alcoholism



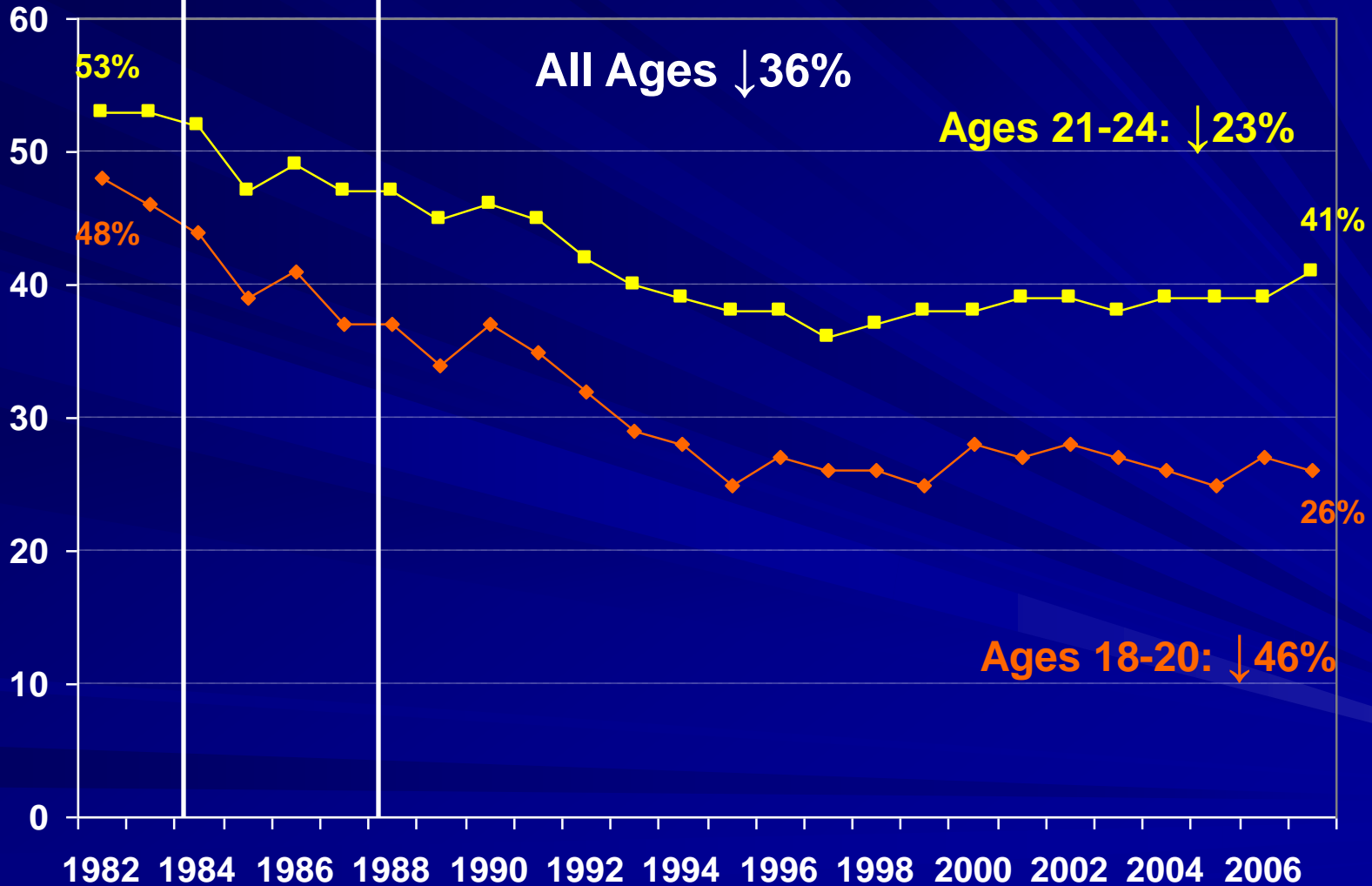
Sources: U.S. Fatality Analysis Reporting System, 2009; U.S. Census Bureau, 2009

Proportion of Drivers in Fatal Crashes with Positive Blood Alcohol Concentrations, Ages 18-20 vs. 21-24, 1982-2007

National Institute on Alcohol Abuse and Alcoholism

U.S. MLDA Age 21 law

MLDA 21 in all 50 states



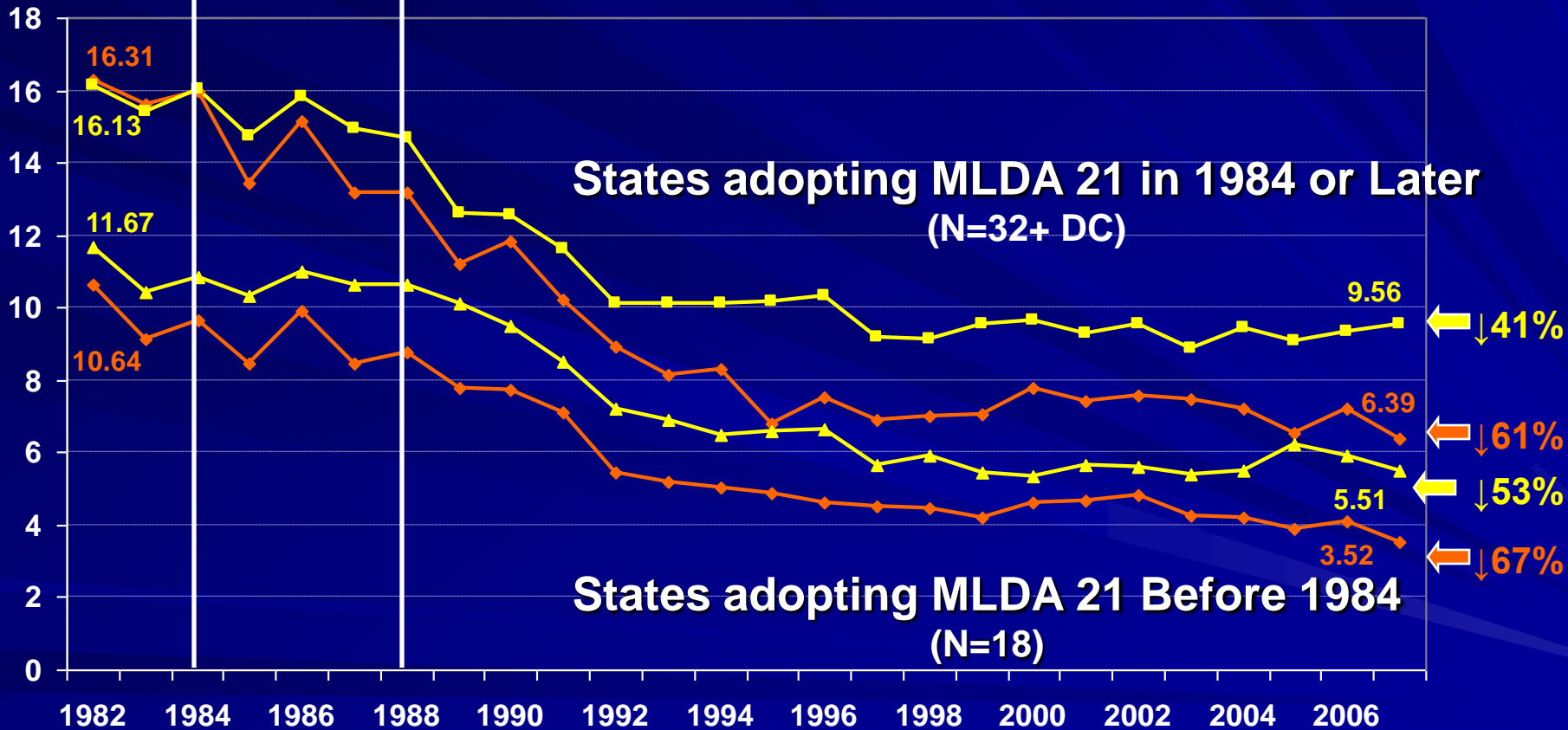


Drivers in Fatal Crashes with Positive Blood Alcohol Concentrations, Rate per 100,000, Ages 18-20 vs. 21-24, 1982-2007, States adopting MLDA 21 Before 1984 vs. in 1984 or Later

National Institute on Alcohol Abuse and Alcoholism

U.S. MLDA Age 21 law

MLDA 21 in all 50 states



Sources: U.S. Fatality Analysis Reporting System, 2009; U.S. Census Bureau, 2009

- Ages 18-20
- Ages 21-24

Legal Drinking Age Changes

- CDC reviewed 49 studies published in scientific journals
- Alcohol-Related Traffic Crashes:
 - Increased 10% when the drinking age was lowered
 - Decreased 16% when the drinking age was raised

Source: Shults et al., [American Journal of Preventive Medicine](#), 2001

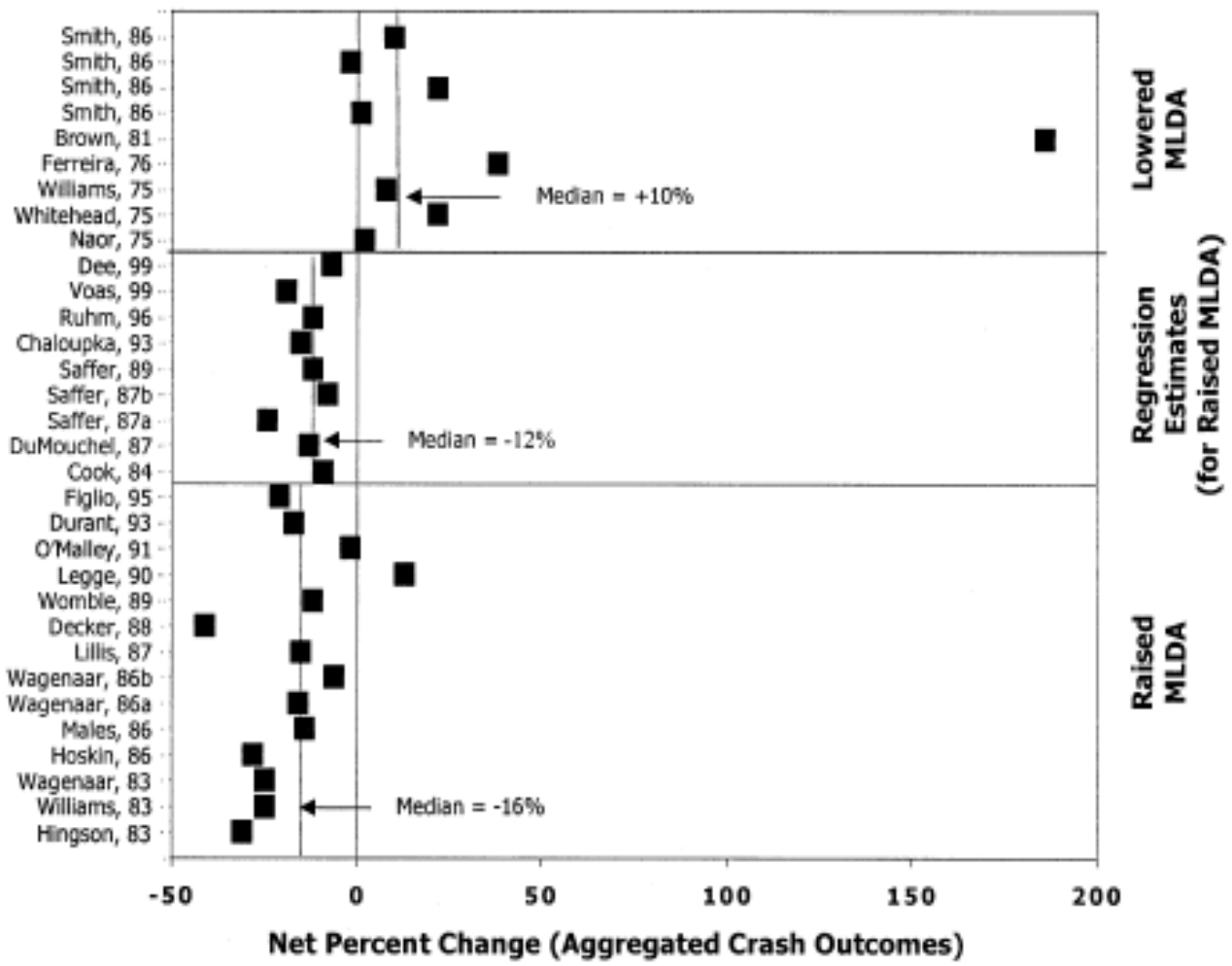


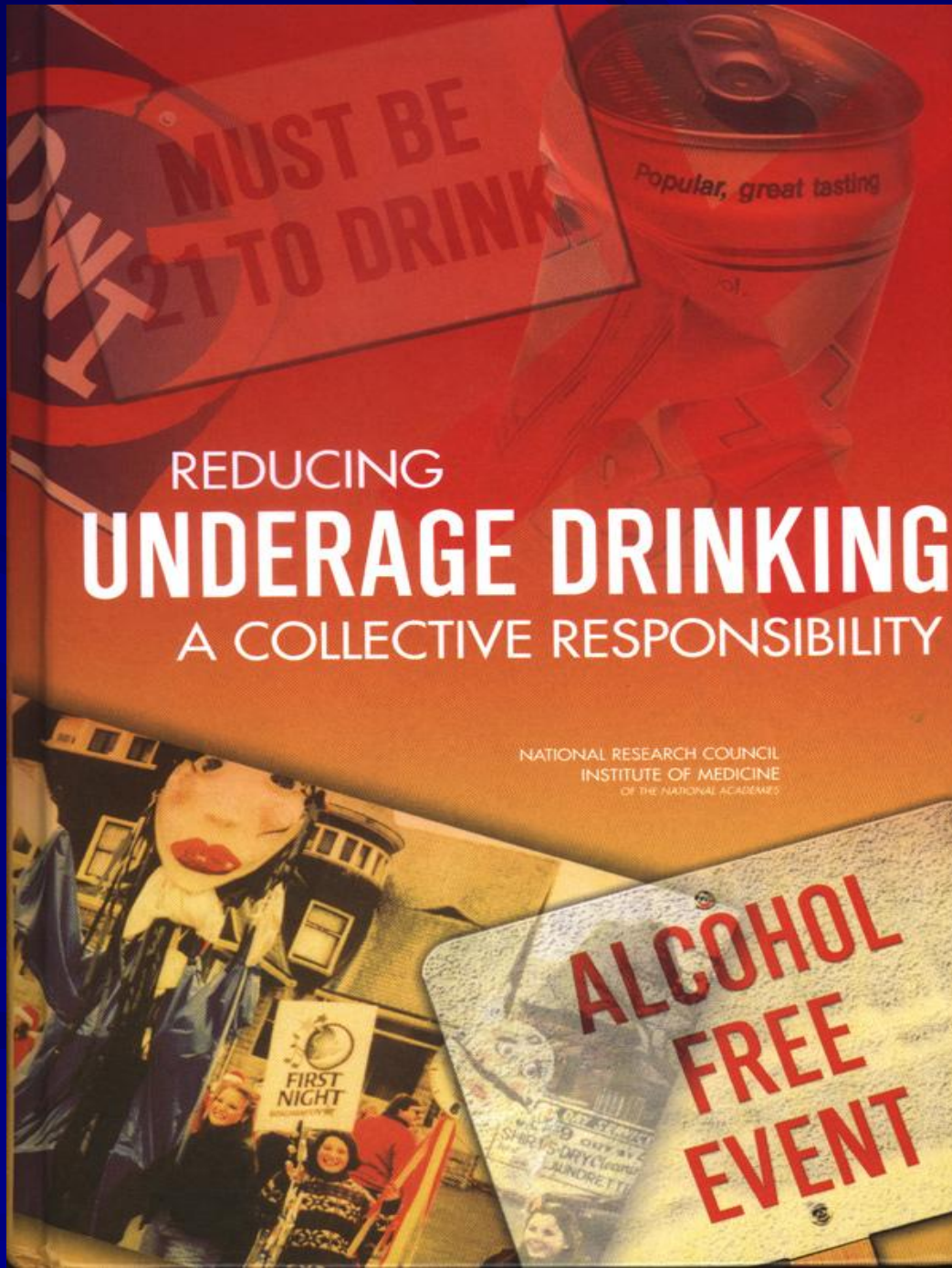
Figure 3. Percent change in aggregated crash outcomes after changes in the MLDA. The "a" and "b" in study names refer to the first or second study by the same author in that year, included in this review. Listed studies for which the author name and year are identical come from a single paper.⁶⁰



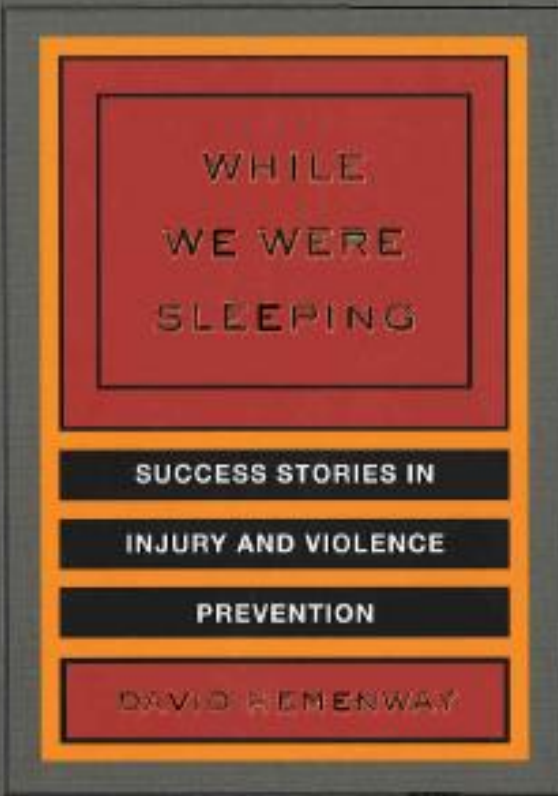
O'Malley & Wagenaar

Effects of Minimum Drinking Age Laws on Alcohol Use Related Behaviors and Traffic Crash Involvement Among American Youth: 1976-1987 *J Stud Alcohol*, 1991

- **Methods:**
 - Analysis of Monitoring the Future surveys and the Fatality Analysis Reporting System
- **Key Findings:**
 - Persons who grew up in states with drinking ages of 21 drank less both when they were younger than age 21 and between ages 21 and 25
 - College students who were high school seniors in states with a minimum drinking age of 18 drank more in college than counterparts who were high school seniors with a drinking age of 21



...[A] substantial body of scientific evidence shows that raising the minimum drinking age reduced alcohol-related crashes and fatalities among young people (Cook and Tauchen, 1984; U.S. General Accounting Office, 1987; Wagenaar and Toomey, 2002) as well as deaths from suicide, homicide, and nonvehicle unintentional injuries (Jones et al., 1992; Parker and Rebbun, 1995)...These findings reinforce the decision by Congress to act in 1984. In short, current national policy rests on the view, supported by substantial evidence, that delaying drinking reduces problem drinking and its consequences. The nation's legislators and public health leaders have reached the nearly uniform judgment that the benefits of setting it at 21 far exceed the costs of doing so.



"I wish I had written this book. It is astute, inspiring, and full of fascinating ideas, and it shows precisely how success in public health is achieved."

ATUL GAWARDE

Surgeon, New Yorker staff writer, and author of *Better: A Surgeon's Notes on Performance*

This natural experiment is the most well-studied alcohol control policy in U.S. history. At least forty-six high-quality studies find an inverse relationship between the drinking age and traffic crashes among youths 18 to 20 years old: when the drinking age goes down, traffic injuries and fatalities among youth go up, and vice versa. The relationship holds even when there has not been strong enforcement of the law and youth still have some access to alcohol. The National Highway Traffic Safety Administration estimates that traffic fatalities have fallen by over 800 deaths per year due to the higher drinking age. Raising the legal drinking age to 21 probably also reduced other injuries; one study found an 8 percent reduction in youth suicides when the drinking age rose from 18 to 21.

Lesson: Laws can have a beneficial impact, even when there is little enforcement and some people flout the law.



James Fell et al.

The Impact of Underage Drinking Laws on Alcohol-Related Fatal Crashes of Young Drivers

Alcohol Clin Exp Res, 2009

■ Methods

- Analysis of the Fatality Analysis Reporting System from 1982-2004
- Examined the effects of the minimum legal drinking age of 21 on the ratio of drinking to non-drinking drivers under age 21 in fatal crashes
- Controlled for:
 - Zero Tolerance Laws
 - Graduated License Night Restrictions
 - Use/Lose laws
 - Administrative License Revocation
 - .10, .08 BAC per se
 - Mandatory seat belt laws
 - Per capita beer consumption
 - Unemployment rate
 - Vehicle miles traveled
 - Frequency of sobriety checkpoints
 - Number of licensed drivers
 - Ratio of drinking to non-drinking drivers
 - Age 26+ in fatal crashes
 - Ratio of drinking to non-drinking drivers age 26+ in fatal crashes



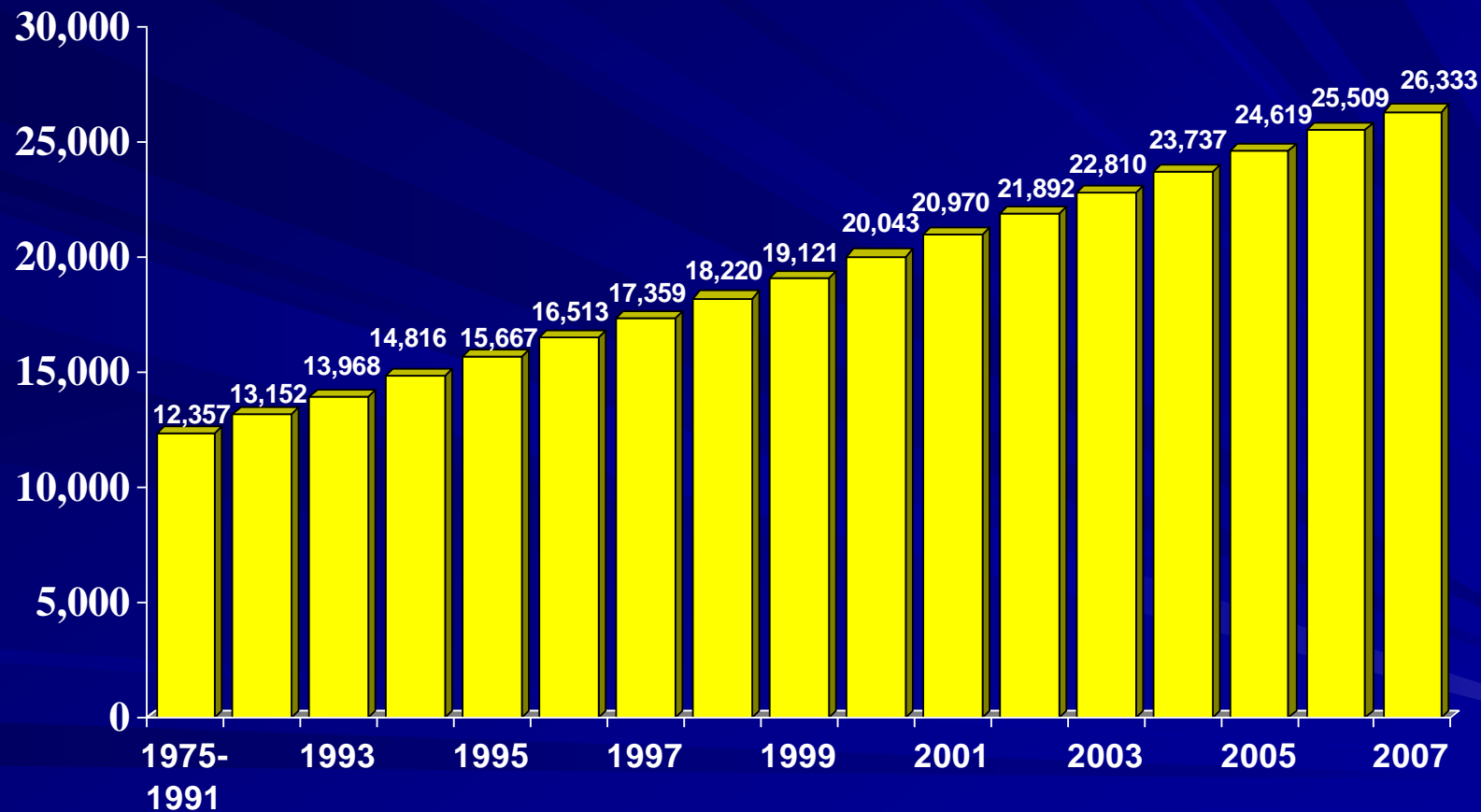
■ Results

- Minimum legal drinking age was independently associated with a 16% decline in the ratio of drinking to non-drinking drivers in fatal crashes under age 21
- Other laws that independently predicted lower involvement of drinking drivers under age 21 in fatal crashes:
 - Use/Lose laws ↓ 5%
 - Zero tolerance laws ↓ 5%
 - 0.08% BAC limit ↓ 8%
 - 0.10% BAC limit ↓ 7%
 - Administrative license revocation (ALR) ↓ 5%
 - Seat belt laws ↓ 3%

■ Conclusions

- Minimum legal drinking age of 21 reduced involvement of drinking drivers under 21 in fatal crashes (16%)
- Zero tolerance laws and Use/Lose laws targeted drivers under 21 also produced reductions
- Laws targeting drinking drivers of all ages also reduced involvement of drinking drivers under 21 in fatal crashes (0.08% and .10% BAC limits, ALR, seat belt laws)

Cumulative Estimated Number of Lives Saved by the Minimum Drinking Age Laws 1975-2007



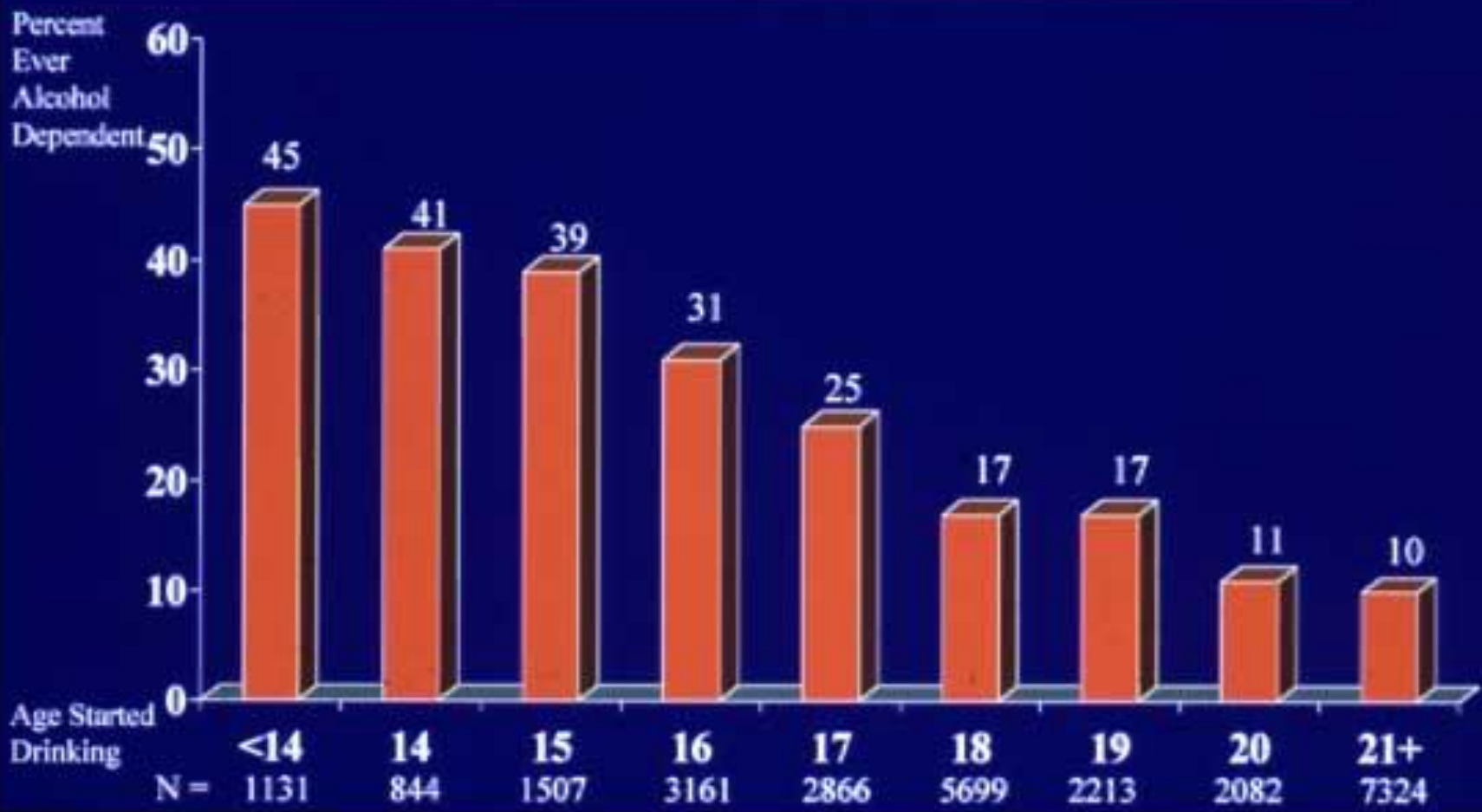
Source: National Highway Traffic Safety Administration

10 Reasons for Legal Drinking Age of 21

- Alcohol-related traffic fatalities and injuries
- Other unintentional injuries (falls, drownings, burns)
- Homicide and assault
- Sexual assault
- Suicide
- STDs, HIV/AIDS
- Unplanned pregnancy
- Alcohol dependence
- Teen drug use
- Poor academic performance



Prevalence of Lifetime Alcohol Dependence According to Age of Drinking Onset



Source: Grant and Dawson

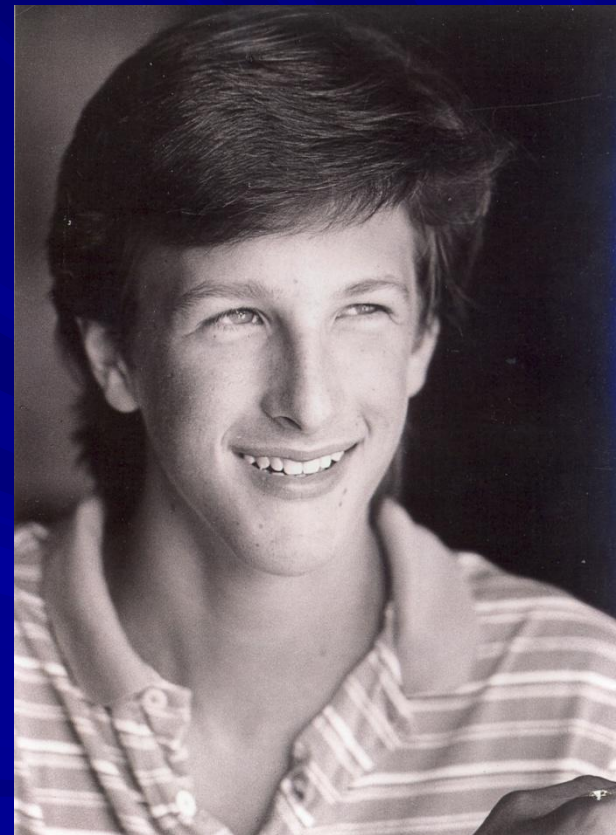
Early Drinking Onset and Alcohol Dependence: Twin Study Results

- Early age of starting to drink is significantly associated with the development of alcohol dependence comparing twins when one began to drink earlier than the other
(even among monozygotic “identical” twins, thus fully controlling for genetics)

J. Grant et al. *Psychological Medicine*, 2006

Earlier Age Drinking Onset Also Related to:

- More rapid development of dependence
- Dependence by age 25
 - Of ever dependent
 - 47% before age 21
 - 2/3 before age 25
- Chronic Relapsing Dependence
 - Longer episodes
 - Multiple episodes
 - Past year dependence
 - More symptoms
 - Early dependents less likely to seek help



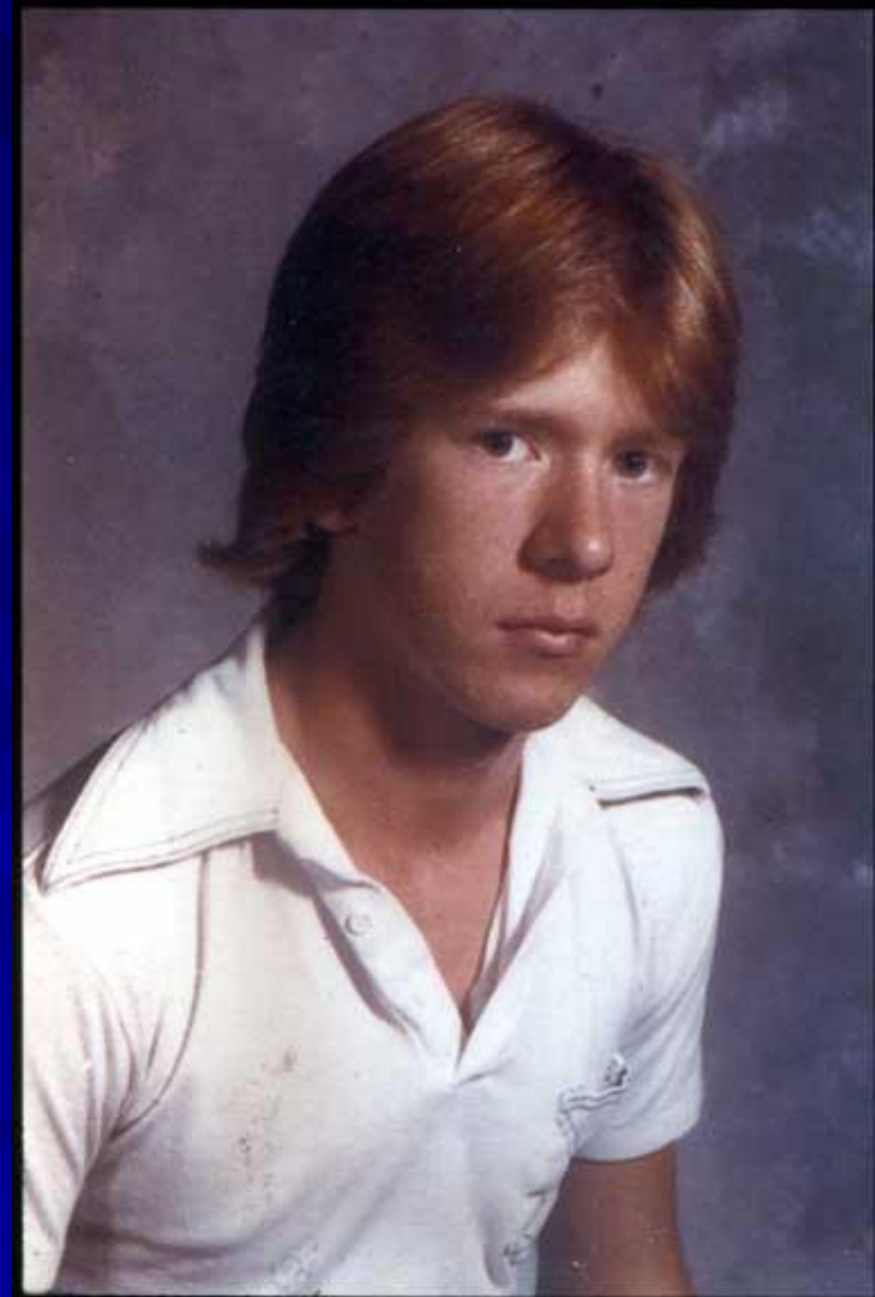
Brian Paul McKelvey

Hingson, Heeren and Winter 2006 *Archives Pediatric and Adol Med*

Hingson, Heeren and Winter 2006 *Pediatrics*

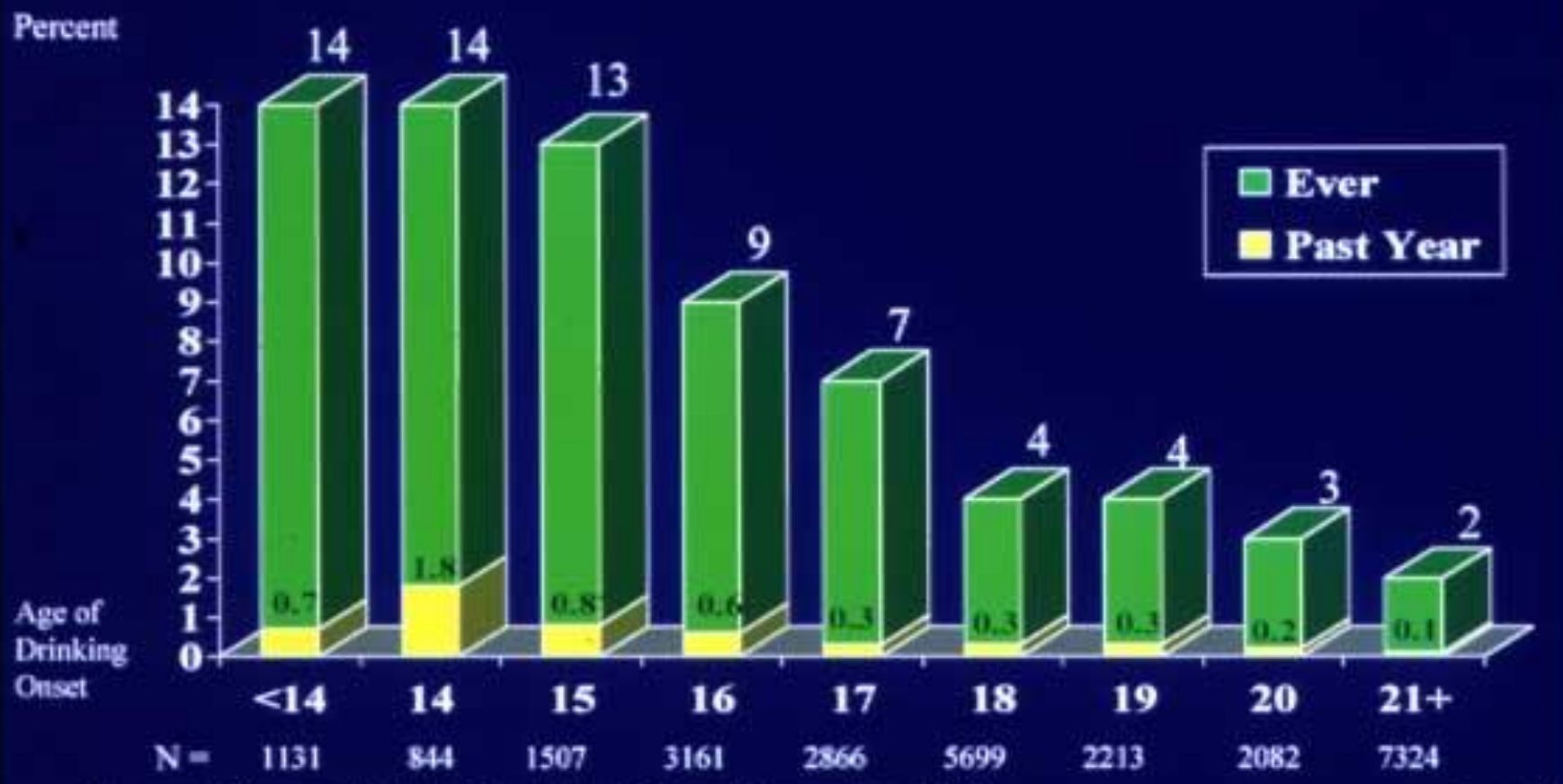
Purpose is to assess whether earlier drinking onset is related to

- Motor vehicle crashes
- Unintentional injuries
- Physical fights after drinking



Michael Timothy Wilder

Figure 1. In a Motor Vehicle Crash Because of Drinking According to Age of Drinking Onset



Source: Hingson et al., *Accident Analysis and Prevention*, 2002

P < .001

Figure 2. Injured Under the Influence of Alcohol According to Age of Drinking Onset

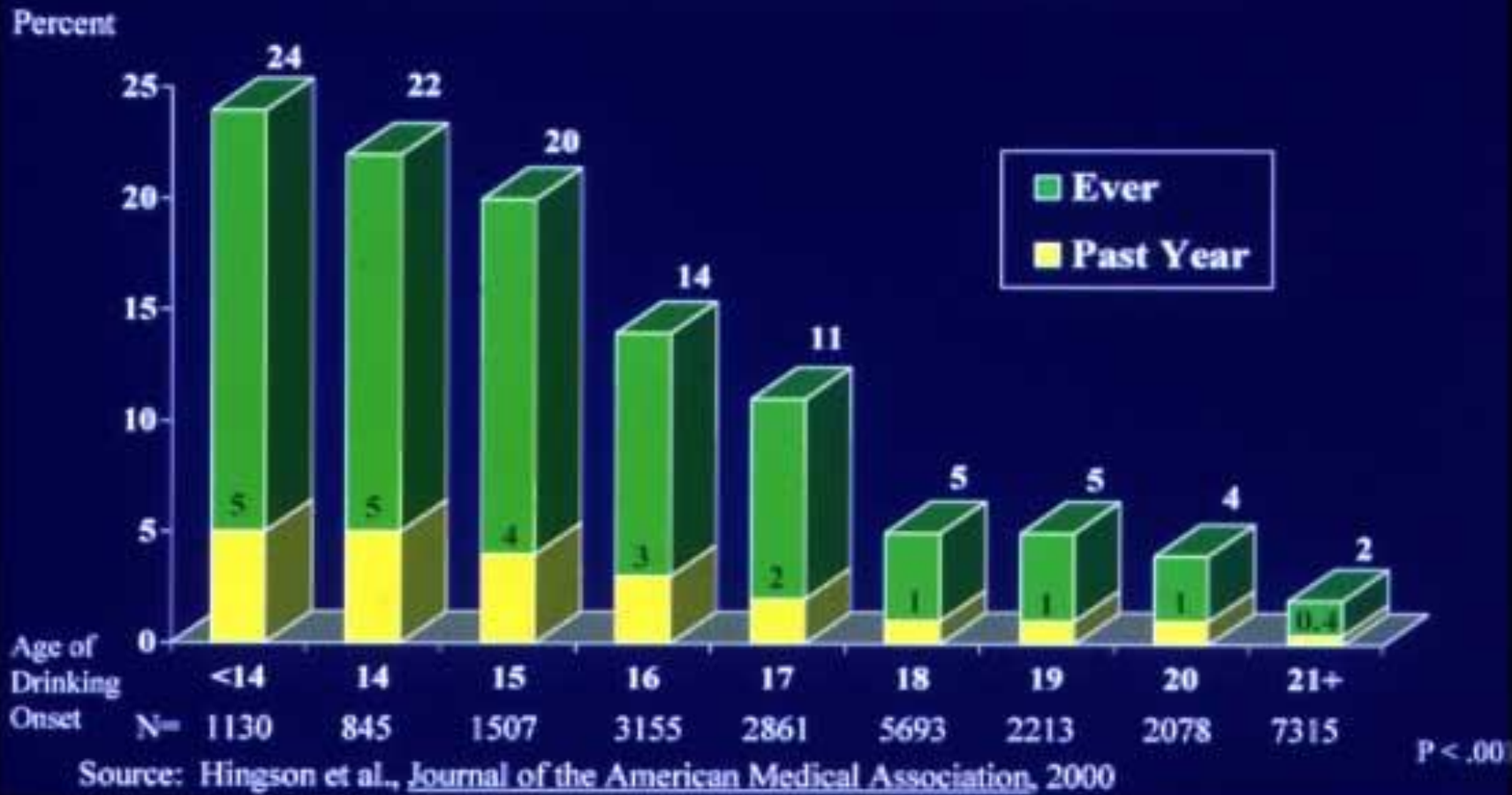
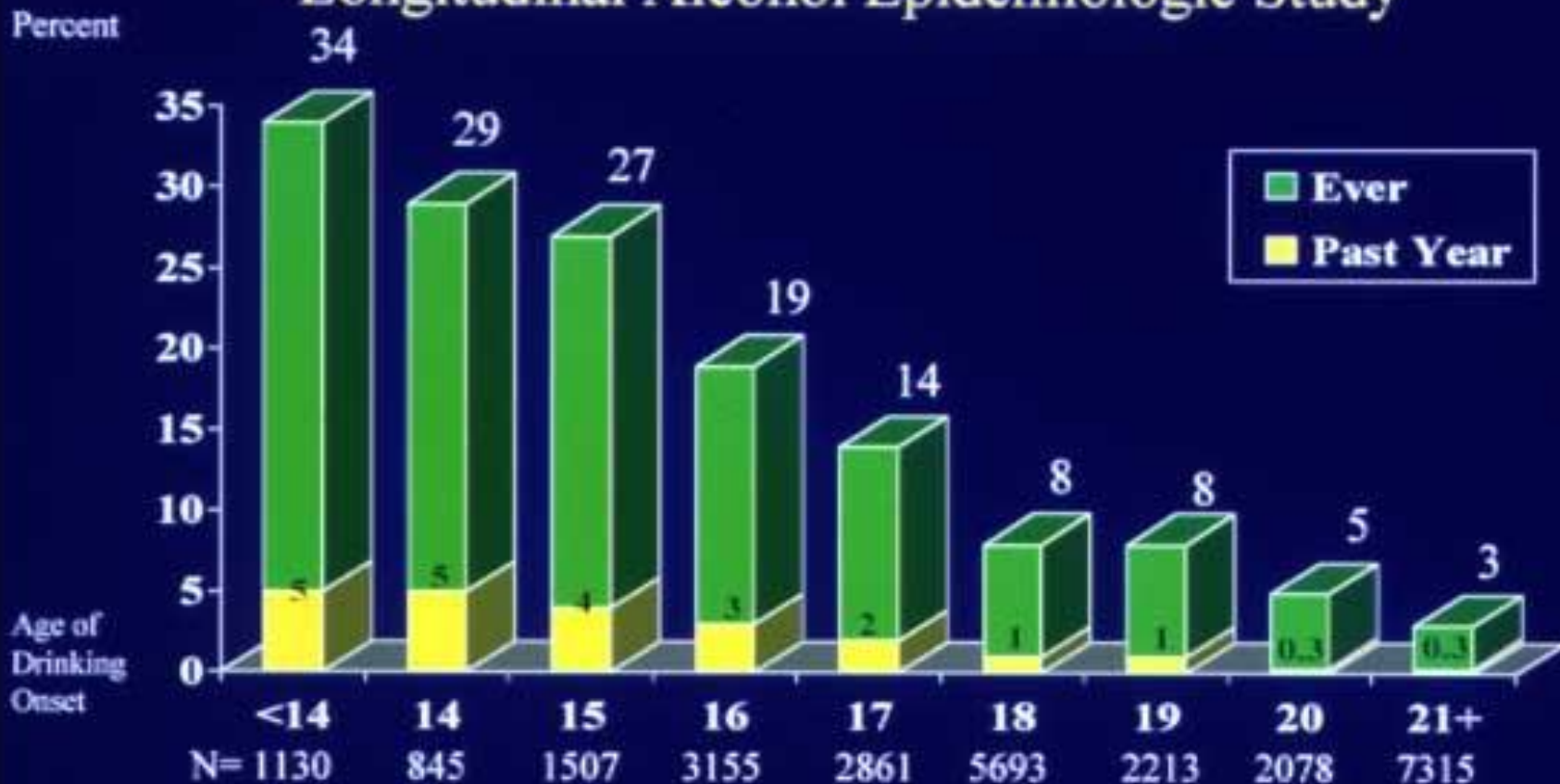


Figure 3. In a Physical Fight While or After Drinking According to Age Started Drinking, National Longitudinal Alcohol Epidemiologic Study

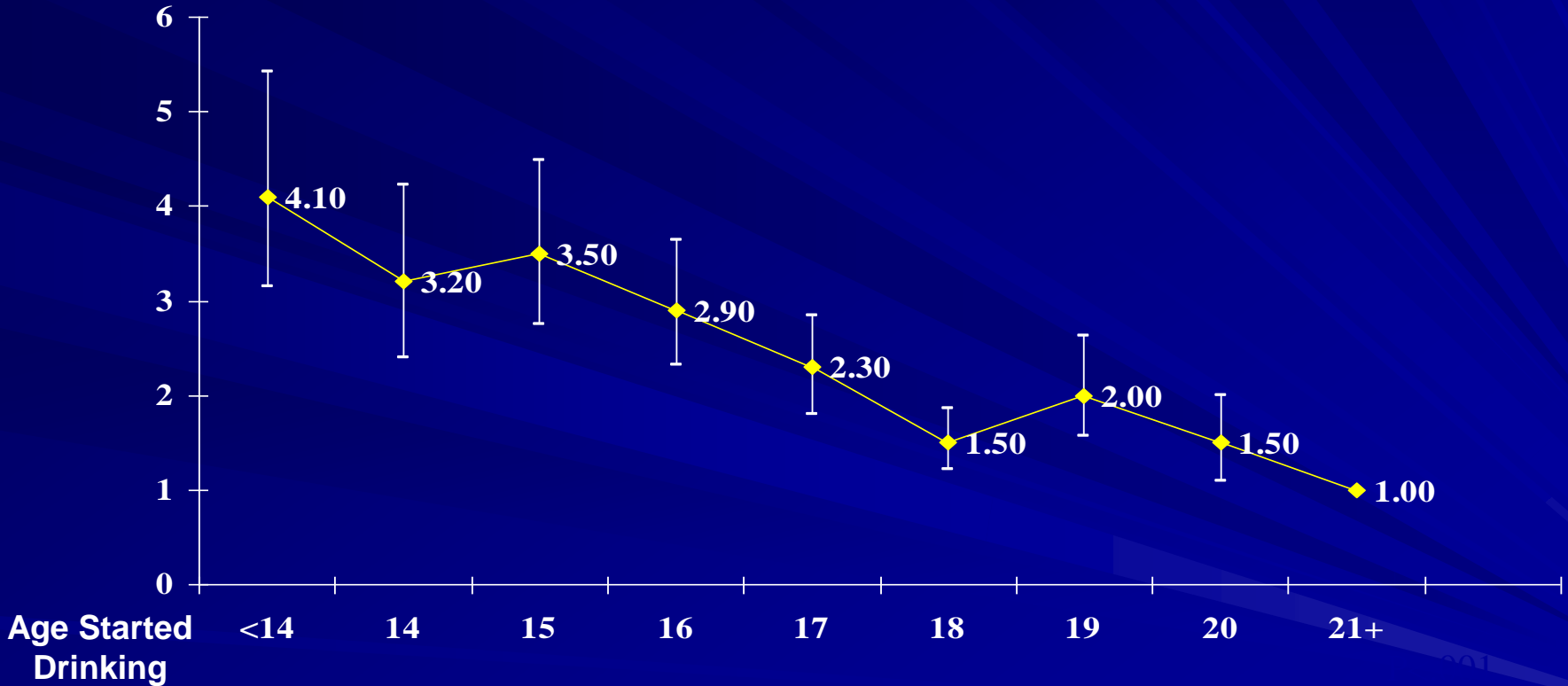


Source: Hingson et al., *Pediatrics*, 2001

P < .001

Ever in a Physical Fight While or After Drinking According to Age of Drinking Onset, National Longitudinal Alcohol Epidemiologic Survey

Odds Ratio and Confidence Intervals



Controlling for age, gender, black, non hispanic, Hispanic, other, education, marital status, current, past, never smoke current, past, never use drugs, family history of alcoholism, current, past, never alcohol dependent, frequency drank 5+ during respondent's period heaviest drinking

Age of Drinking Onset and Suicide

- Preteen drinkers were 3.0 (1.7, 5.6) times more likely to have attempted suicide

(controlling for age, gender, race/ethnicity, heavy episodic drinking, other substance use, peer drinking, depression, impulsivity, peer delinquency, and parental monitoring).

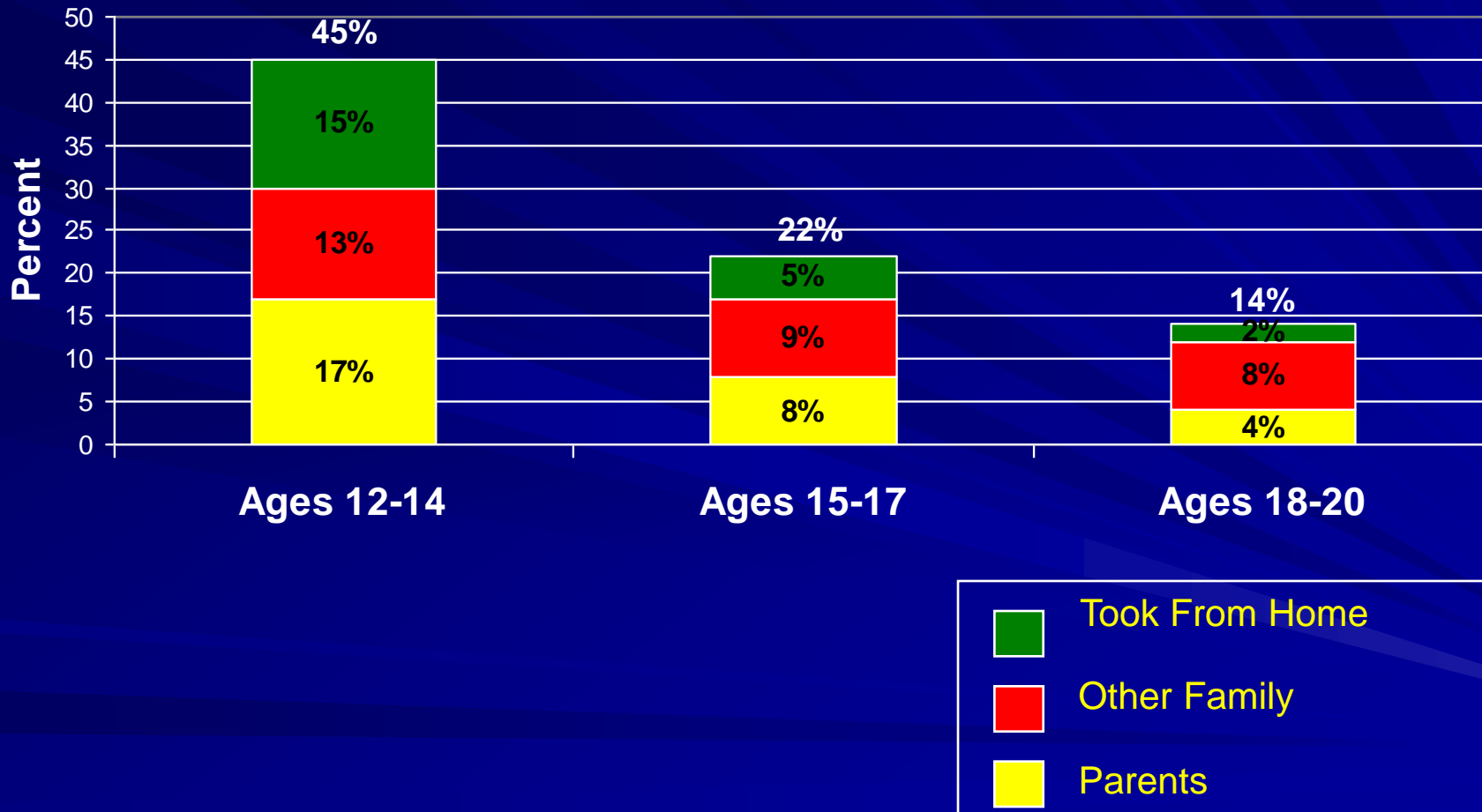
Source: Swahn et al., Pediatrics, 2008.



Early Age of Drinking Onset also Associated with:

- Injuring other people in traffic crashes and other ways after drinking
 - Hingson & Zha, *Pediatrics*, in press
- Violent behavior, including predatory violence
 - Blitstein et al., *Health Educ Behav*, 2005; Ellickson, et al., *Pediatrics*, 2003
- Dating violence/victimization
 - Ramisetty-Mikler et al., *J Sch Health*, 2006
- Criminal behavior
 - Eaton, J. *Interpers Violence*, 2007; Allan et al., *S. Afr Med J*, 2007.
- Prescription drug ,misuse
 - Hermos et al., *J. Addict Med.*, 2008
- Unplanned and unprotected sex after drinking
 - Hingson et al., *Pediatrics*, 2003

Where do Young Teens Obtain Alcohol? U.S. Drinkers, Ages 12-20, Source of Alcohol Used in Past Month, by Age, 2006





Why Are These Findings Important?

Injuries are the leading cause of death among youth 1-44

- Unintentional injuries #1 1-44
- Intentional injuries #2 8-34

Source: Centers for Disease Control and Prevention

Why Are These Findings Important?

Alcohol is involved in over 50,000 injury deaths annually* (Nearly 44,000 attributable to alcohol)

- 40% unintended injury deaths 39,000
- 47% Homicides 8,000
- 29% Suicides 8,500

Alcohol is the leading contributor to injuries, the leading cause of death among young people in the United States

**Sources: G. Smith et. al 1999;
CDC, 2009**

* Over half under age 44



Key Unanswered Legal Drinking Age Questions

- In all 50 states and the District of Columbia it is illegal:
 - For a person under 21 to **possess** alcohol.
 - To **furnish** alcohol to a person under 21.
 - To use a false ID to **obtain** alcohol.
 - For a person under age 21 to **drive** with a BAC \geq 0.02 g/dl.



Key Unanswered Legal Drinking Age Questions

- But, it's more complicated. For example, depending on the state it **CAN** be legal:
 - For persons under 21 to **possess** alcohol with parental/guardian consent and/or presence (24 States)
 - For a parent or guardian to **furnish** alcohol to a person under 21 (31 states)
 - In fact, only 31 States and DC **explicitly** prohibit **consumption** of alcohol by a person under age 21
 - In 47 states, people under 21 **can serve** alcohol
- Source: NIAAA Alcohol Policy Information System at <http://www.alcoholpolicy.niaaa.nih.gov/stateprofiles//index.asp>

Key Unanswered Questions

Explore Effects of:

- 1) Removing loopholes and exceptions in age 21 MLDA laws
- 2) Keg registration laws
- 3) Social host liability laws
- 4) Minimum legal age children can be provided alcohol by parents
- 5) Raising age youth can serve alcohol

Is Passing Laws Enough?

STATUS

INSURANCE
INSTITUTE
FOR
HIGHWAY
SAFETY

REPORT

Vol. 25, No. 3

March 25, 1992

Underage Youths Easily Buy Beer and Their Traffic Deaths Go Up

Clerks in liquor stores and other markets in Washington, D.C., rarely seek identification from 19- and 20-year-old youths who try to purchase beer, a new study by the Insurance Institute for Highway Safety reveals.

In 57 out of 100 attempts to buy a six-pack, young men 19 and 20 years of age were successful, although the legal alcohol purchase age is 21 throughout the nation.

"This is not an isolated problem," says Brian O'Neil, Institute president. "It's time to crack down and enforce the 21 drinking age laws." Alcohol-related fatalities among underage drivers are now at the five-year high following years of decline.



In previous attempts, two underage youths successfully purchase six packs in Washington, D.C.

Potential Process of Change After a Drinking Age Increase





How can you further reduce drinking and related injuries and deaths in your community?

Comprehensive Community Interventions

- Involve multiple departments of city government and private citizens
- Use multiple program strategies
 - Education
 - Media advocacy
 - Community organizing
 - Environmental policy change
 - Heightened enforcement
 - Expand alcohol treatment



Successful Comprehensive Community Interventions

- Saving Lives Program, Hingson (1996)
- Communities Mobilizing for Change, Wagenaar (2000)
- Community Trials, Holder (2000)
- A Matter of Degree, Weitzman (2004)
- Fighting Back, Hingson (2005)
- Sacramento Neighborhood Alcohol Prevention Project, Treno (2007)
- State Coalitions to Reduce Underage Drinking, Wagenaar (2006)

Communities Mobilizing for Change

- Interventions to Reduce Availability:
 - Merchants record underage buy attempts
 - Beer kegs prohibited at University Homecoming
 - Policies to discourage motels from permitting underage drinking parties
 - Security at high school dances
 - Model local ordinances to restrict underage access to alcohol
 - Compliance checks

Source: Wagenaar et al., *J. Studies on Alcohol*, 2000

Communities Mobilizing for Change

Results:

- 17% increase in outlets checking age ID
- 24% decline in bar and restaurant sales
- 25% decrease in the proportion of 18-20 year olds attempting alcohol purchase
- 17% decline in the proportion of older teens providing alcohol to younger teens
- 7% decrease in the percent under 21 who drank
- 14% decline in alcohol traffic injuries, drivers 18-20

Source: Wagenaar et al., *J. Studies on Alcohol*, 2000

A Matter of Degree (AMOD)

Weitzman et al. American Journal of Preventive Medicine. 2004

- College/ Community Partnerships
- Environmental strategies to reduce drinking problems:
 - Keg registration
 - Mandatory responsible beverage service
 - Police wild party enforcement
 - Substance free residence halls
 - Advertising bans



A Matter of Degree (AMOD)

Weitzman et al. American Journal of Preventive Medicine. 2004

- AMOD achieved reductions among college students in
 - Binge drinking
 - Driving after drinking
 - Alcohol related injuries
 - Being assaulted by other drinking college students



Fighting Back Program Selected Interventions

Limit Alcohol Availability

- Youth access compliance check surveys
- Responsible beverage service training
- Monitoring and closing problem liquor outlets
- Bill board restrictions

Expand Treatment

- Sales tax increase for expanded treatment
- New treatment programs- courts, jails, health care agencies, public housing
- Emergency department screening/brief interventions
- New inpatient, outpatient and recovery programs

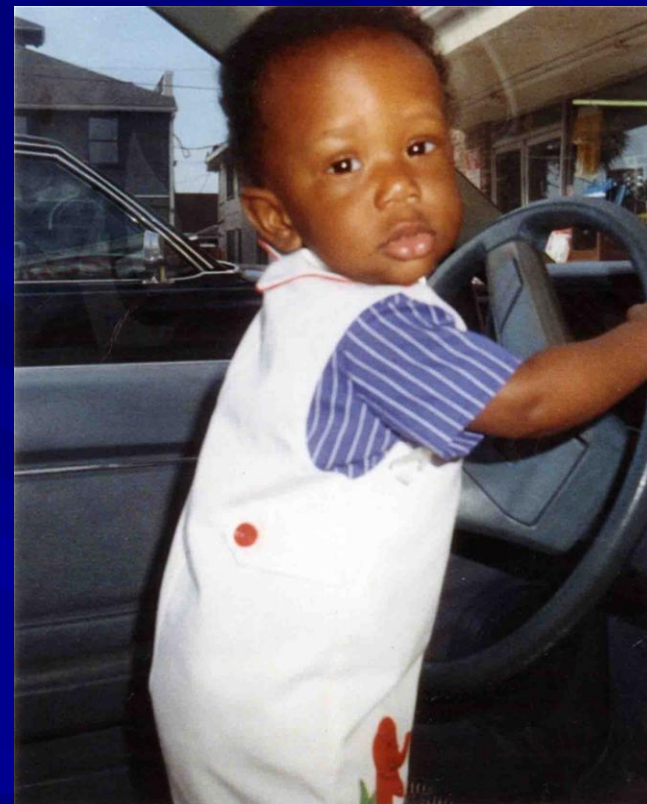
Source: Hingson et al., Injury Prevention, 2005

Greater Relative Reduction in Alcohol-Related Fatal Crashes VS Fatal Crashes with Zero BAC

National Institute on Alcohol Abuse and Alcoholism

Pooled Effects	BAC .01%+ VS Zero BAC	
Drivers	All Ages	16-20
5 FB sites VS controls	22% ↓ P=.01	26% ↓ P=.08

Communities: Kansas City, MO, *Milwaukee, WI, San Antonio, TX, *Santa Barbara, CA, and *Vallejo, CA



Courtney Birch

Source: Hingson et al., Injury Prevention, 2005

Conclusions

- Research indicates reductions in underage and college age drinking and related problems can be achieved with interventions that focus on
 - Individuals
 - Families
 - Schools
 - Environmental Changes/Legislation
- Interventions targeting multiple levels are more effective

Conclusions

- Comprehensive community interventions address college age and underage drinking at multiple levels
 - Coordinate multiple city departments
 - Clear measurable Objectives and Strategic Plans
 - Combine Education and Law Enforcement
 - Include screening and early interventions
 - Use Data to Plan and Evaluate
 - Involve Private Citizens – Be Inclusive
 - Involve Youth

Key Unanswered Questions: Comprehensive Community Interventions to Reduce Youth Alcohol Problems

- 1) Will a combination of
 - environmental interventions to reduce alcohol availability and enforce alcohol policy, e.g. DWI and drinking age laws
 - increased alcohol screening and early intervention achieve greater problem reduction than either alone?
- 2) Are programs that target both underage youth and young adults more effective in reducing youth alcohol problems than underage oriented programs only?

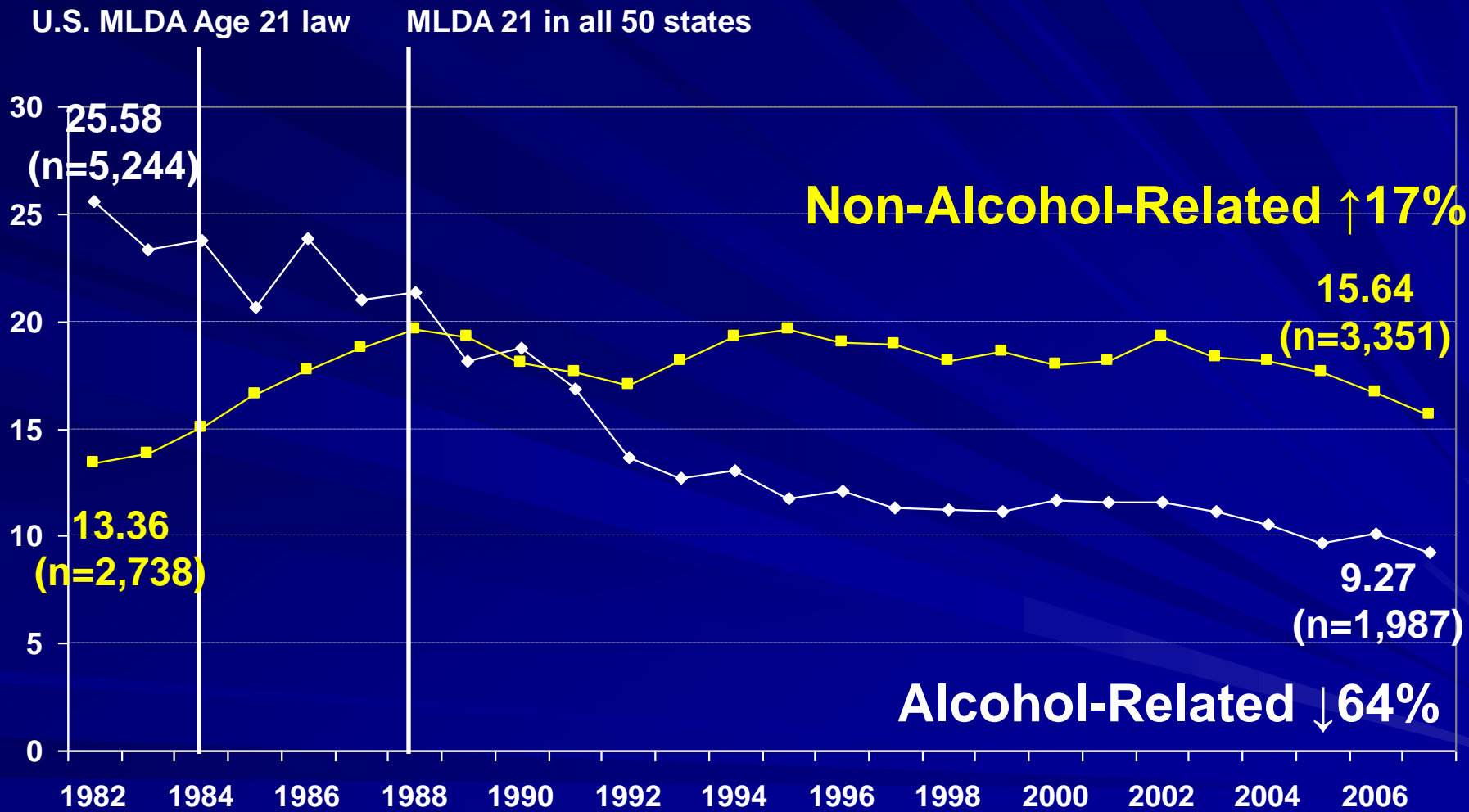
Key Unanswered Questions: Comprehensive Community Interventions to Reduce Youth Alcohol Problems

- 3) Will programs that reduce youth consumption produce carry over alcohol problem reduction in adult life?
- 4) How can effective comprehensive community interventions be sustained over time?
- 5) What types of community interventions are most effective in reducing youth alcohol problems with the least cost?



Alcohol- vs. Non-Alcohol-Related Traffic Fatalities Per 100,000 Population, Ages 16-20, United States, 1982-2007

National Institute on Alcohol Abuse and Alcoholism



Sources: U.S. Fatality Analysis Reporting System, 2008; U.S. Census Bureau, 2009



National Institute on Alcohol Abuse and Alcoholism

