

Alcohol Use and Trauma Patients:

Opportunities to Change Lives

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I have no conflicts of interest to disclose.

Objectives

- Understand the spectrum of alcohol use
- Learn different types of screening tools for alcohol
- Understand importance of screening, brief intervention, referral to treatment (SBIRT) in trauma setting
- Define brief intervention and goals, role of provider in a brief intervention

Spectrum of Alcohol Use

- Alcohol Use Disorder, Alcohol Dependence, Alcoholism
- Heavy Drinking
- Binge Drinking
- Low Risk or Moderate or “Social” Drinking
- Abstinence

Alcohol Use Disorder (DSM-5)

Two of the following in a 12 month period

- EtOH taken in larger amounts or for longer period of time than originally intended
- Persistent desire or unsuccessful efforts to cut down or control use
- Great deal of time spent to obtain, use, or recover from effects
- Cravings or strong desire to use
- Failure to fulfill major role obligations due EtOH

Alcohol Use Disorder (DSM-5)

- Continued use despite social or interpersonal problems caused/ exacerbated by EtOH
- Important activities are given up or reduced because of EtOH
- Recurrent use where it is physically hazardous
- Continued use despite having physical or psychological problem that was likely caused or exacerbated by EtOH
- Tolerance
- Withdrawal

Severity of Alcohol Use Disorder

- Mild: 2-3 symptoms
- Moderate: 4 -5 symptoms
- Severe: 6 or more symptoms

Binge Drinking

- NIAAA defines as pattern of drinking that brings BAC to 0.08 within 2 hours (typically 4 drinks for women, 5 drinks for men)
- SAMHSA defines as drinking ≥ 5 drinks for men or ≥ 4 drinks for women, on same occasion
- Binge drinking is most common pattern of excessive alcohol use in the US
 - >1 in 6 adults binge drink (38 million) (Kanny et al., 2015)
 - Typically 4 times per month
 - More than 50% of the alcohol adults drink is while binge drinking
 - More than 90% of the alcohol minors drink is while binge drinking

STANDARD DRINKS EQUIVALENT AND APPROXIMATE NUMBER OF STANDARD DRINKS



12 oz of Beer **5% Alcohol**

12 oz = 1 drink
16 oz. = 1.3 drinks
22 oz. = 2 drinks
40 oz. = 3.3 drinks



Malt Liquor **7% Alcohol**

12 oz. = 1.5 drinks
16. oz. = 2 drinks
22 oz. = 2.5 drinks
40 oz. = 4.5 drinks



5 oz glass of Table Wine **12 % Alcohol**

5 oz glass = 1 drink
a 25 oz bottle = 5 drinks



1.5 oz of Hard Liquor (whiskey, gin, rum, vodka, tequilla). **40% Alcohol**

1.5 oz. = 1 drink
a pint (16 oz.) = 11 drinks
A fifth (25 oz.) 17 drinks
1.75 Litter (59 oz.) = 39 drinks

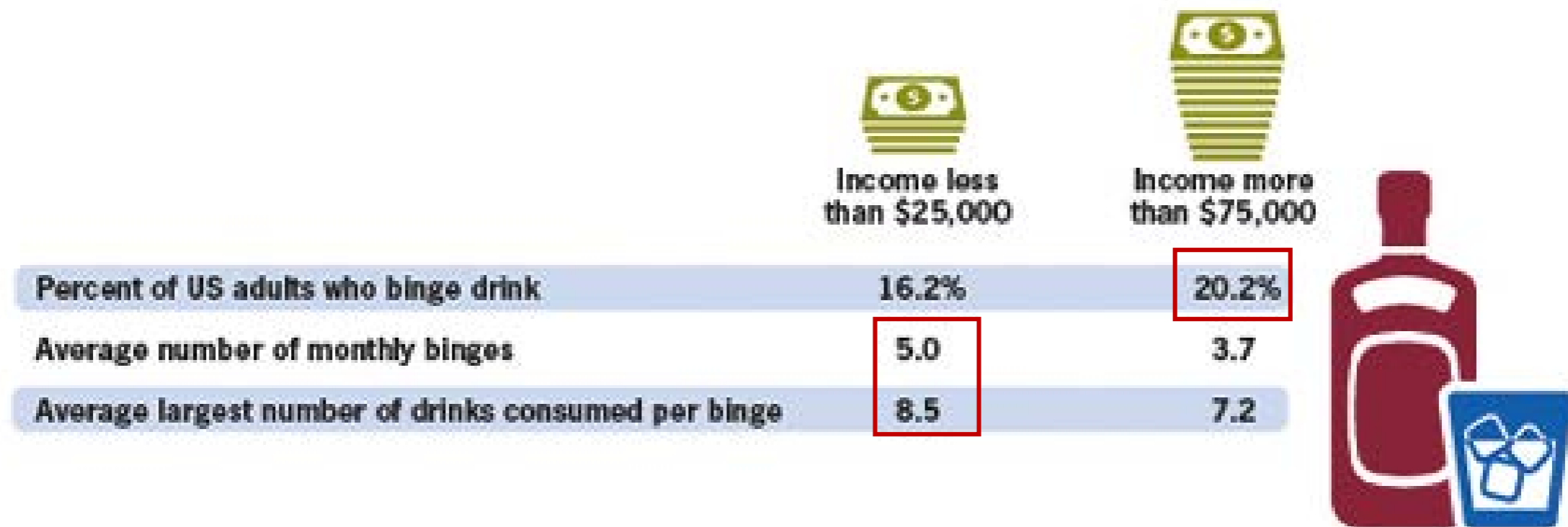




Binge Drinking

- 9 out of 10 adults who binge drink aren't alcohol dependent
- Typically, binge is 8 drinks
- More common among
 - Men
 - Caucasians
 - 18-34 year olds

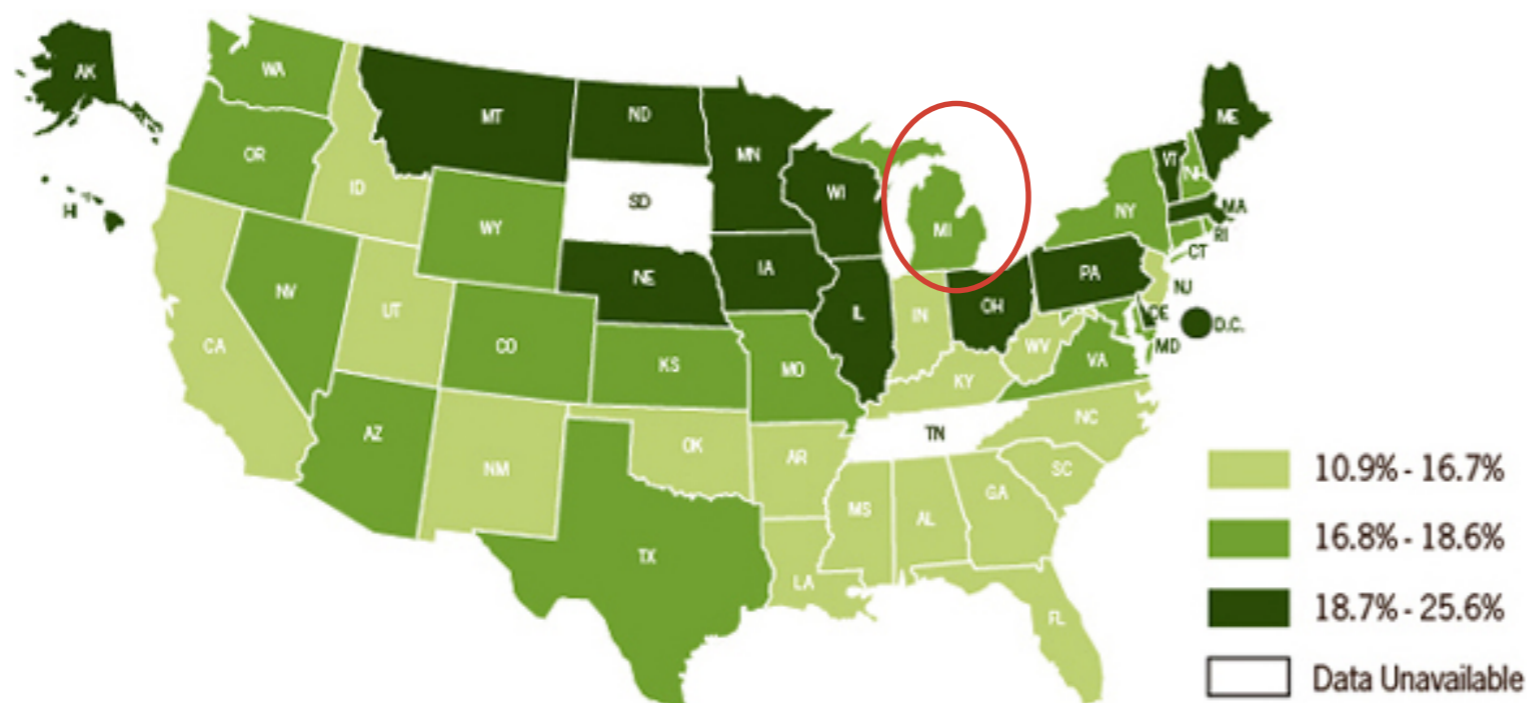
Binge Drinking by Income



SOURCE: 2010 Behavioral Risk Factor Surveillance System Combined Landline and Cell Phone Developmental Dataset, adults aged 18 and older, US

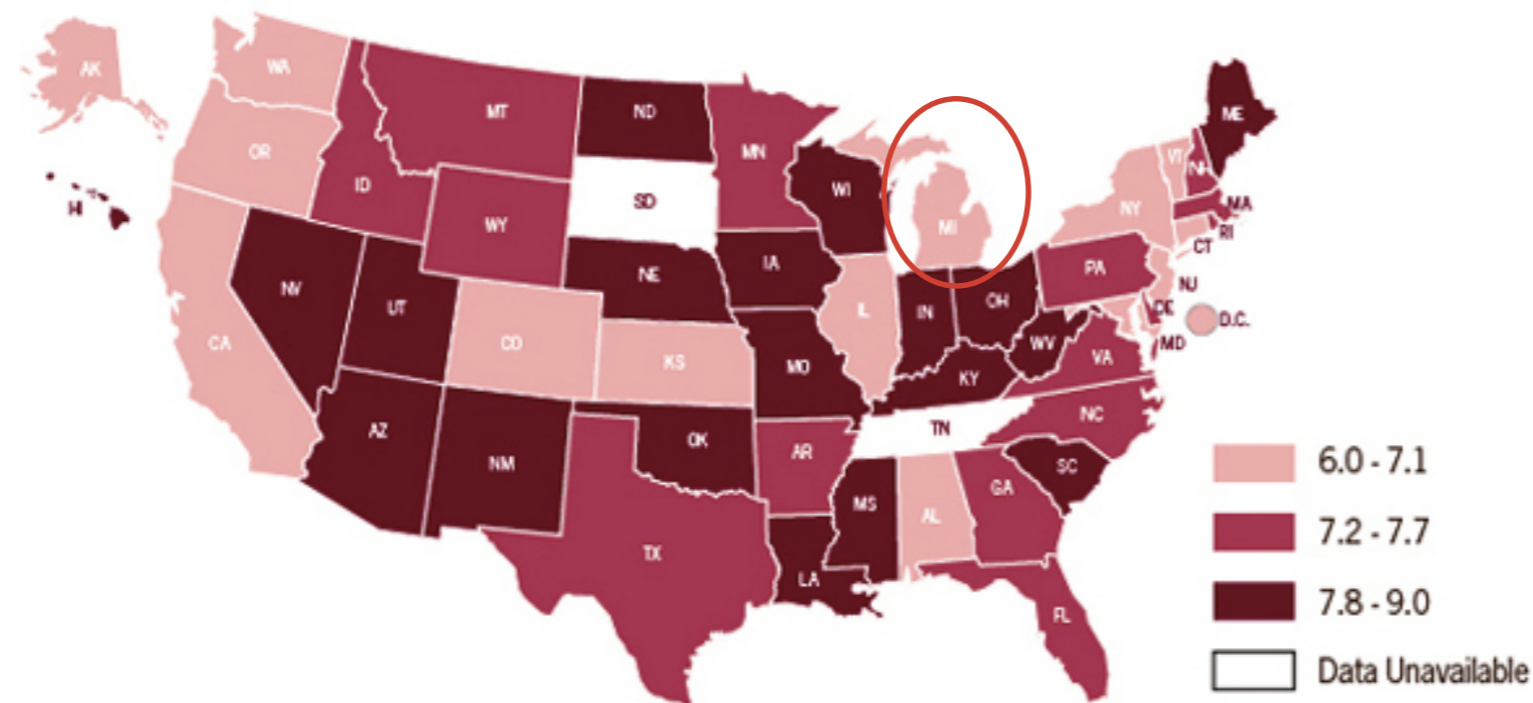
Percent of adults who binge drink

Binge drinking varies from state to state, and estimates of adults who binge drink range from 10.9% in Utah to 25.6% in Wisconsin. Binge drinking is most common in the Midwest, New England, the District of Columbia, Alaska, and Hawaii.



The average largest number of drinks within a short period of time among binge drinkers ranged from 6 drinks in the District of Columbia to 9 drinks in Wisconsin. The largest number of drinks consumed by binge drinkers is highest in the Midwest and southern Mountain states (Arizona, Nevada, New Mexico, and Utah), and some states such as Louisiana, Mississippi, and South Carolina where binge drinking is less common.

The average largest number of drinks consumed by binge drinkers on an occasion



Alcohol Morbidity & Mortality

- 88,000 deaths related to excessive alcohol use annually (not necessarily trauma-related deaths)
- Alcohol is responsible for about half of trauma related deaths and injuries in the US
- 8 million alcohol related ED visits annually
- People who die from alcohol-related causes die 30 years earlier on average
- Trauma: MVC, violence (firearms, stabbings, assaults), falls
 - ~50% of trauma admissions are related to alcohol

Alcohol & MVC

- In 2014, 9,967 Americans were killed in alcohol -impaired driving crashes (CDC, 2014)
- Average of 1 alcohol -impaired driving fatality every 53 minutes
- This accounted for 31% of all motor vehicle traffic fatalities in 2014
- 209 were children under 14 years of age



Alcohol & MVC

- About 5% of alcohol-related traffic fatalities involve alcohol use by pedestrians rather than drivers (Blincoe et al., 2010)
- Approximately 20% of teen drivers involved in a traffic fatality had alcohol in their system (CDC, 2014)
 - 81% had alcohol levels >0.08
- Total value of societal harm from alcohol-impaired driving crashes is \$201.1 billion (NCSA, 2015)

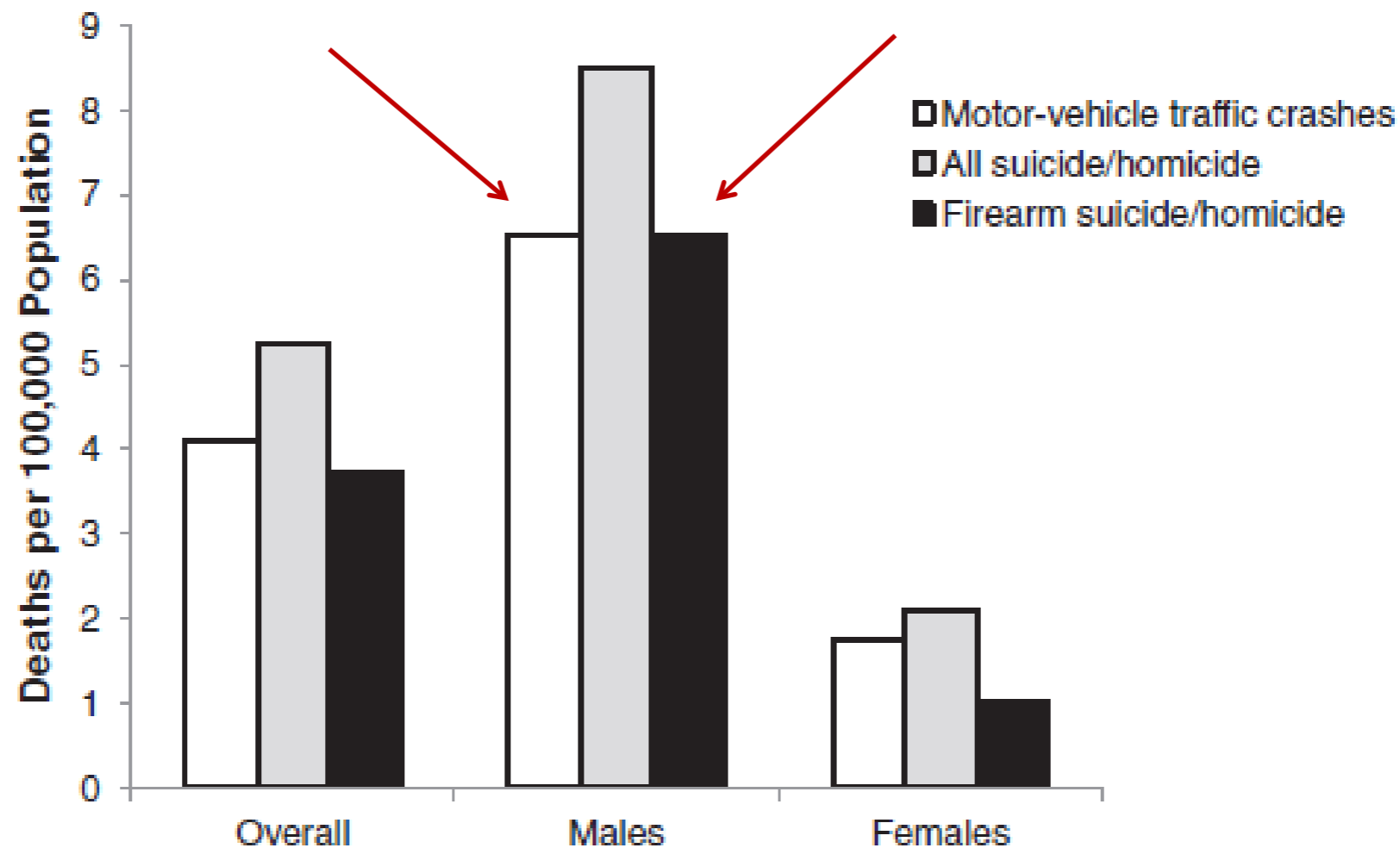


Fig. 1. Rates of alcohol-attributable death from motor-vehicle traffic crashes, suicide and homicide by all means, and firearm suicide and homicide, 2006–2010 average. Footnote to figure: These data underestimate alcohol-attributable homicide relative to alcohol-attributable motor-vehicle crash deaths. Homicide is classified as alcohol-attributable if the perpetrator is intoxicated; deaths in which the perpetrator is not intoxicated, but the victim is, are not included. Motor-vehicle crash deaths are classified as alcohol-attributable if any driver is intoxicated. Data on alcohol-attributable deaths and alcohol-attributable fraction of deaths by cause (for motor vehicle deaths, homicide, and suicide) available at http://apps.nccd.cdc.gov/DACH_ARDI/Default/Default.aspx. Data on firearm homicide and suicide available at <http://www.cdc.gov/injury/wisqars/index.html>. To prepare the figure, the alcohol-attributable fractions for homicide and suicide were applied to firearm homicide and suicide.

Suicide

- Suicide is more likely to be violent, involve firearms (Kaplan et al., 2013) and/ or hanging when alcohol is involved (Conner et al., 2014)
- One-third of decedents who died from suicide in a study of the National Violent Death Reporting System 2003-2009 were intoxicated at time of death (Kaplan et al., 2013)

Injuries by BAC

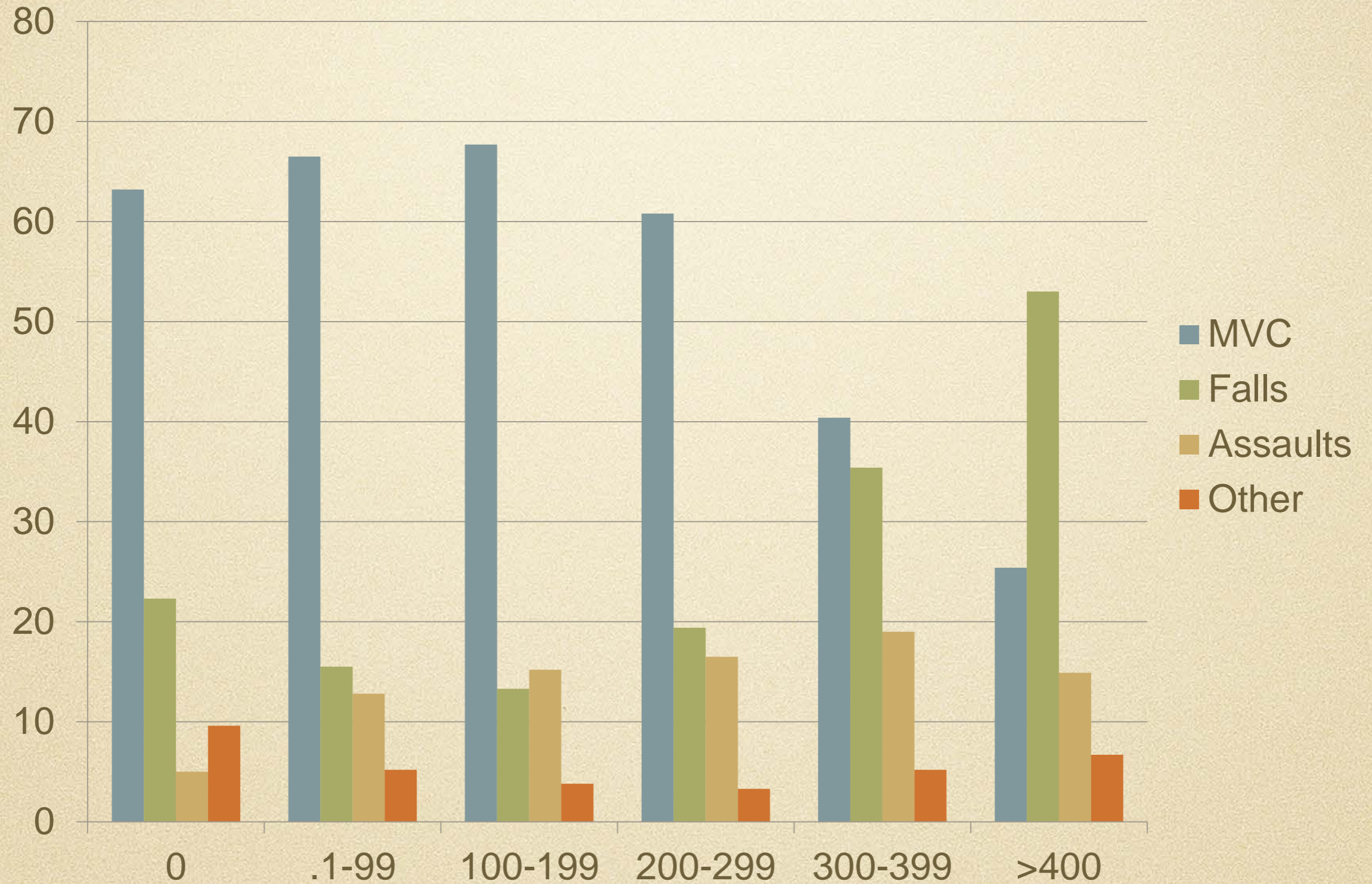
Table 1
Patient demographics and injury characteristics by BAC group (mg/dL).

Variables	Total (n=44492)	Ordered BAC						P-value
		0 (n=31957)	1-99 (n=3518)	100-199 (n=4260)	200-299 (n=3658)	300-399 (n=952)	≥400 (n=147)	
Age in year (IQR)	35 (23-49)	36 (23-52)	31 (22-45)	30 (23-43)	34 (25-46)	41 (29-50)	44 (36-49)	<0.001
Male sex (%)	31120 (70.0)	21082 (66.0)	2725 (77.5)	3397 (79.7)	2993 (81.8)	806 (84.7)	117 (79.6)	<0.001
White race (%)	26108 (58.7)	19242 (60.2)	1652 (47.0)	2428 (57.0)	2171 (59.4)	533 (56.0)	82 (55.8)	<0.001
Injury mechanism								
Blunt (%)	37658 (84.6)	27566 (86.3)	2553 (72.6)	3388 (79.5)	3155 (86.3)	862 (90.6)	134 (91.1)	<0.001
Penetrating (%)	6099 (13.7)	3803 (11.9)	916 (26.0)	829 (19.5)	466 (12.7)	78 (8.2)	7 (4.8)	
Other (%)	735 (1.7)	588 (1.8)	49 (1.4)	43 (1.0)	37 (1.0)	12 (1.2)	6 (4.1)	
Injury type (blunt)								
MVC (%)	23701 (62.9)	17410 (63.2)	1698 (66.5)	2293 (67.7)	1918 (60.8)	348 (40.4)	34 (25.4)	<0.001
Falls (%)	7972 (21.2)	6138 (22.3)	395 (15.5)	452 (13.3)	611 (19.4)	305 (35.4)	71 (53.0)	
Assaults (%)	2917 (7.7)	1372 (5.0)	326 (12.8)	514 (15.2)	521 (16.5)	164 (19.0)	20 (14.9)	
Other (%)	3068 (8.1)	2646 (9.6)	134 (5.2)	129 (3.8)	105 (3.3)	45 (5.2)	9 (6.7)	
Severe injury (%) (n=43237)	10790 (24.3)	7456 (24.1)	962 (28.0)	1185 (28.2)	925 (25.7)	233 (24.8)	29 (19.9)	<0.001
Admission GCS ≤8 (%)	3127 (7.0)	1854 (5.8)	334 (9.5)	410 (9.6)	393 (10.7)	111 (11.7)	25 (17.0)	<0.001
Serious brain injury (%)	5781 (13.0)	3892 (12.2)	483 (13.7)	625 (14.7)	592 (16.2)	167 (17.5)	22 (15.0)	<0.001
Length of stay (days)	0.6 (0.2-3.2)	0.5 (0.2-3.2)	0.7 (0.2-3.8)	0.7 (0.3-3.6)	0.6 (0.3-2.9)	0.6 (0.4-2.5)	0.7 (0.5-2)	<0.001
Disposition (%)								
Home	35313 (79.4)	25077 (78.5)	2764 (78.6)	3479 (81.7)	3071 (84.0)	798 (83.8)	124 (84.4)	<0.001
Acute care	7039 (15.8)	5301 (16.6)	535 (15.2)	597 (14.0)	473 (12.9)	115 (12.1)	18 (12.2)	
Chronic care ^a	110 (0.2)	104 (0.3)	4 (0.1)	2 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	
Other	144 (0.3)	111 (0.3)	9 (0.3)	10 (0.2)	14 (0.4)	0 (0.0)	0 (0.0)	
In-hospital death	1886 (4.2)	1365 (4.3)	206 (5.9)	172 (4.0)	100 (2.7)	38 (4.0)	5 (3.4)	

GCS= Glasgow coma score; ISS= injury severity score; BP= blood pressure; MVC= motor vehicle collision. Continuous values are presented as medians with interquartile ranges, and categorical values are presented as numbers with percentages. Severe injury defined as injury severity score ≥16. Serious brain injury is brain abbreviated injury score ≥3.

^a Chronic care: skilled nursing facility/long-term acute care.

Injury by BAC

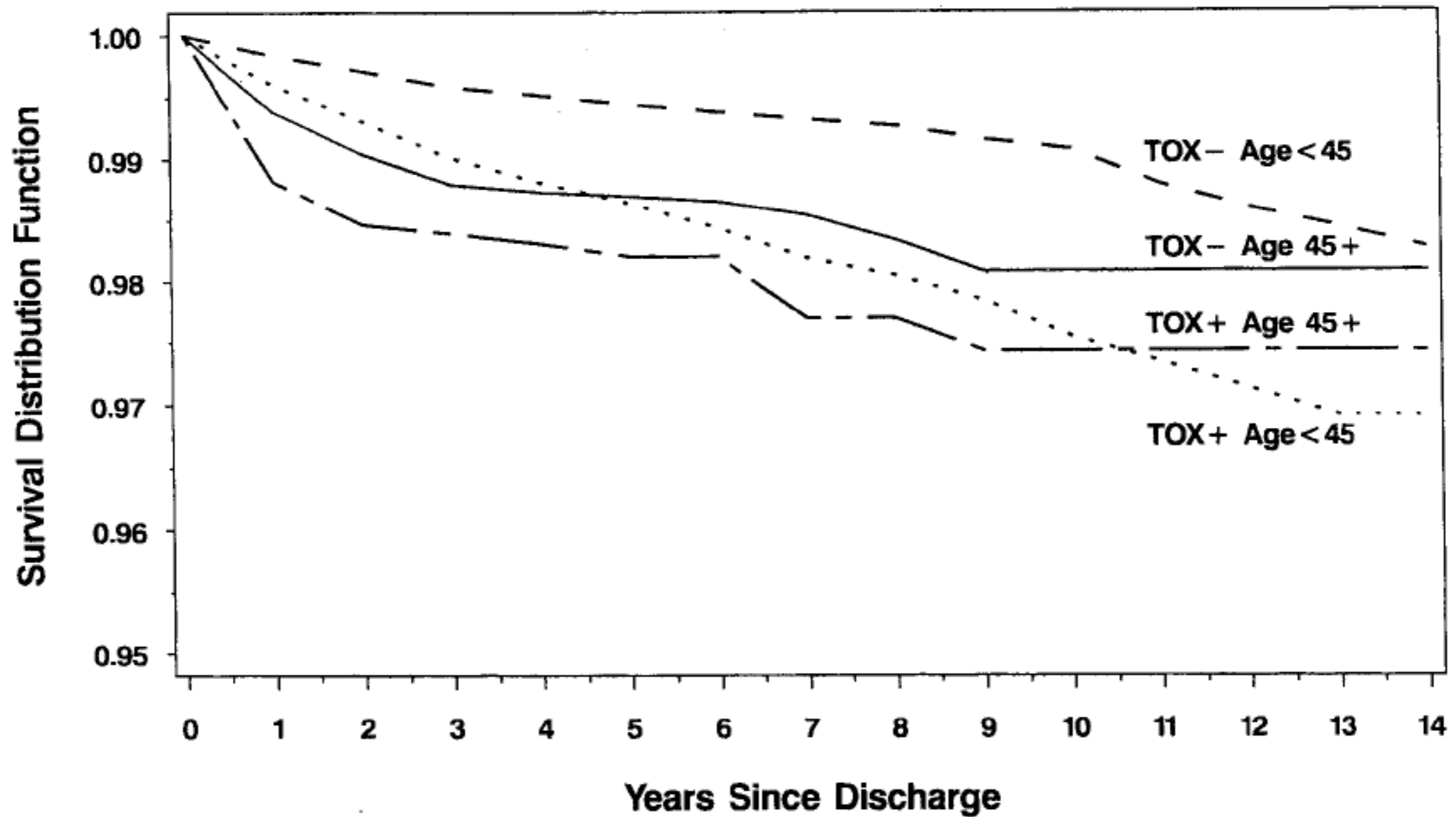


Afshar et al., 2016

Trauma and Subsequent Mortality


- Study of trauma patients admitted from 1983 to 1995, administered toxicology tests upon admission
- N=27,399 patients (15,836 tox neg; 11,563 tox pos)
- Obtained death certificates, up to 1997
- 1631 deaths overall (6%)
 - 22.7% of deaths were due to injury (6.4% of deaths in US were due to injury at that time)
 - 34.7% of deaths in tox pos patients were injury related





Cumulative Survival Rates by Tox Status & Age



What are current data?

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
		** AND **	** AND **
Per WEEK		No more than 14  drinks per week	No more than 7  drinks per week
	To stay low risk, keep within BOTH the single-day AND weekly limits.		

Men aged 66 and older should follow guidelines for women

US Dietary Guidelines: up to 1 drink/ day for women, 2 drinks/ day for men;
Don't start drinking for health reasons

Drinking patterns in U.S. adults

9%



drink more than **both** the single-day limits **and** the weekly limits

Highest risk

19%



drink more than **either** the single-day limits **or** the weekly limits

Increased risk

37%



always drink **within** low-risk limits

Low risk

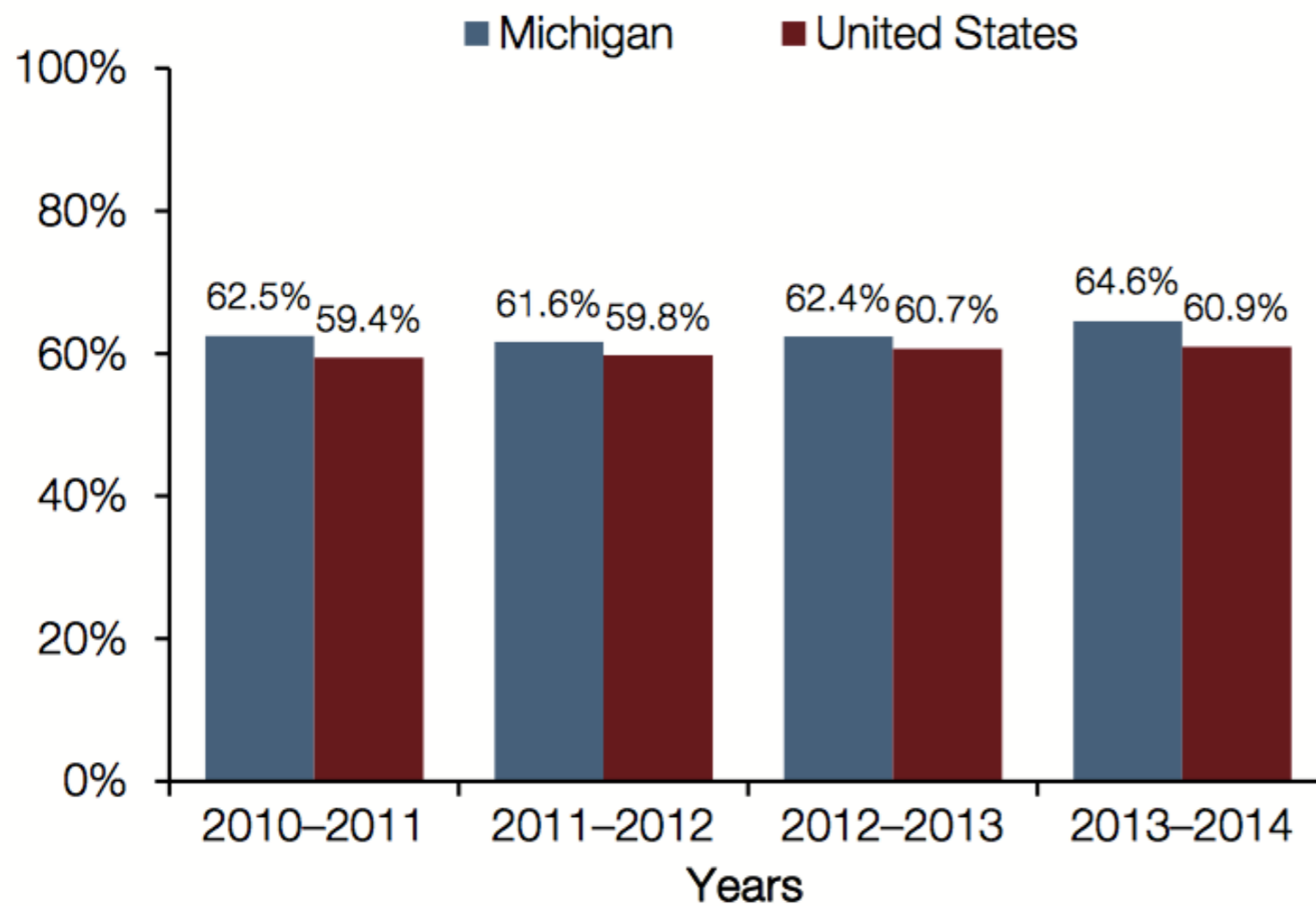
35%



never drink alcohol

—

Adolescents Aged 12–17 in Michigan and the United States Who Perceived No Great Risk from Having Five or More Drinks Once or Twice a Week (2010–2011 to 2013–2014)^{1,3}



64.6%

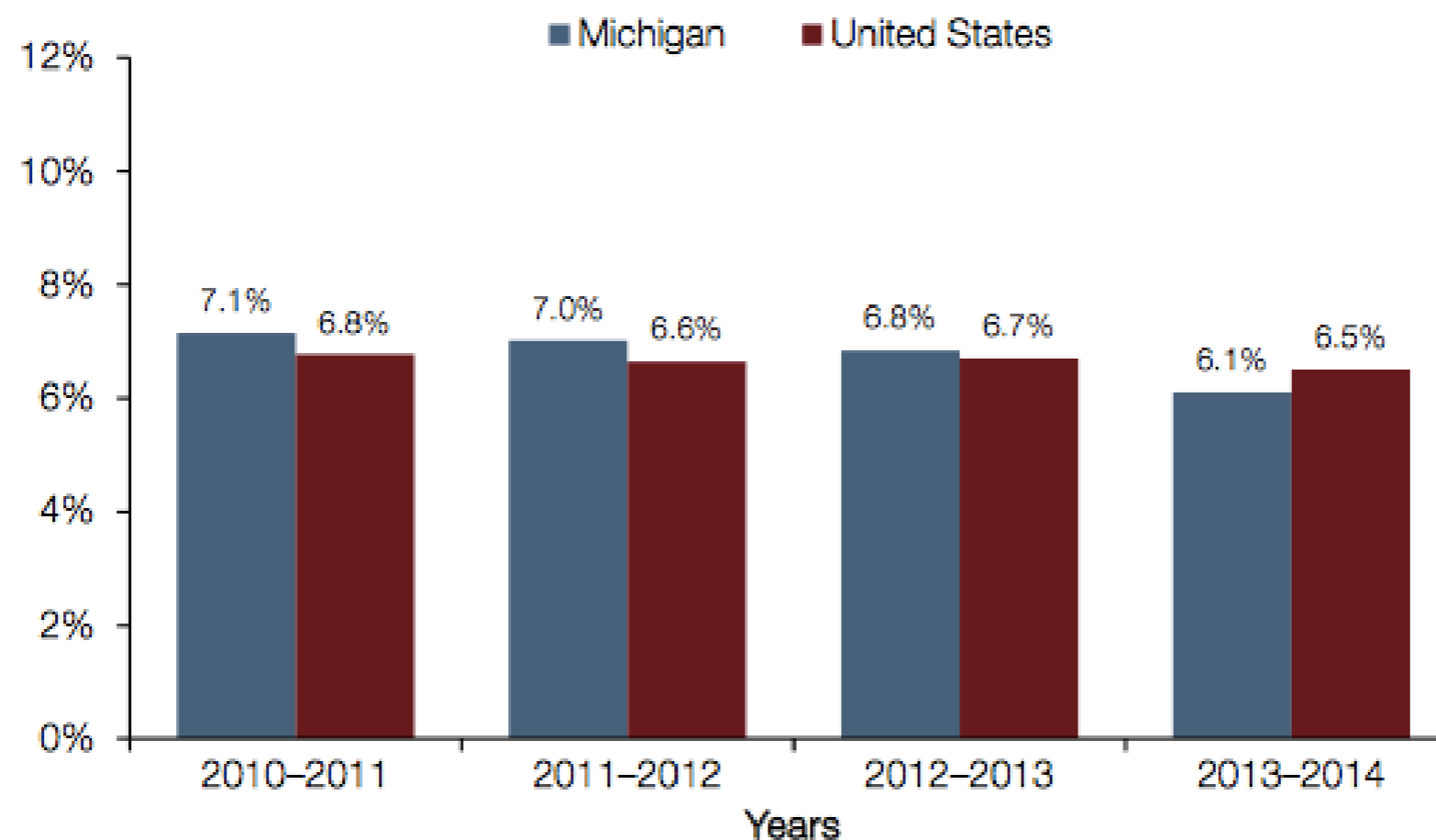
In Michigan, about 2 in 3 (64.6%) adolescents aged 12–17 in 2013–2014 perceived no great risk from having five or more drinks once or twice a week—a percentage higher than the national percentage.

The percentage of adolescents aged 12–17 in Michigan who perceived no great risk from having five or more drinks once or twice a week did not change significantly from 2010–2011 to 2013–2014.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health, 2010–2011 to 2013–2014.

Past Year Alcohol Dependence or Abuse Among Individuals Aged 12 or Older in Michigan and the United States (2010–2011 to 2013–2014)¹

Michigan's percentage of alcohol dependence or abuse among individuals aged 12 or older was similar to the national percentage in 2013–2014.

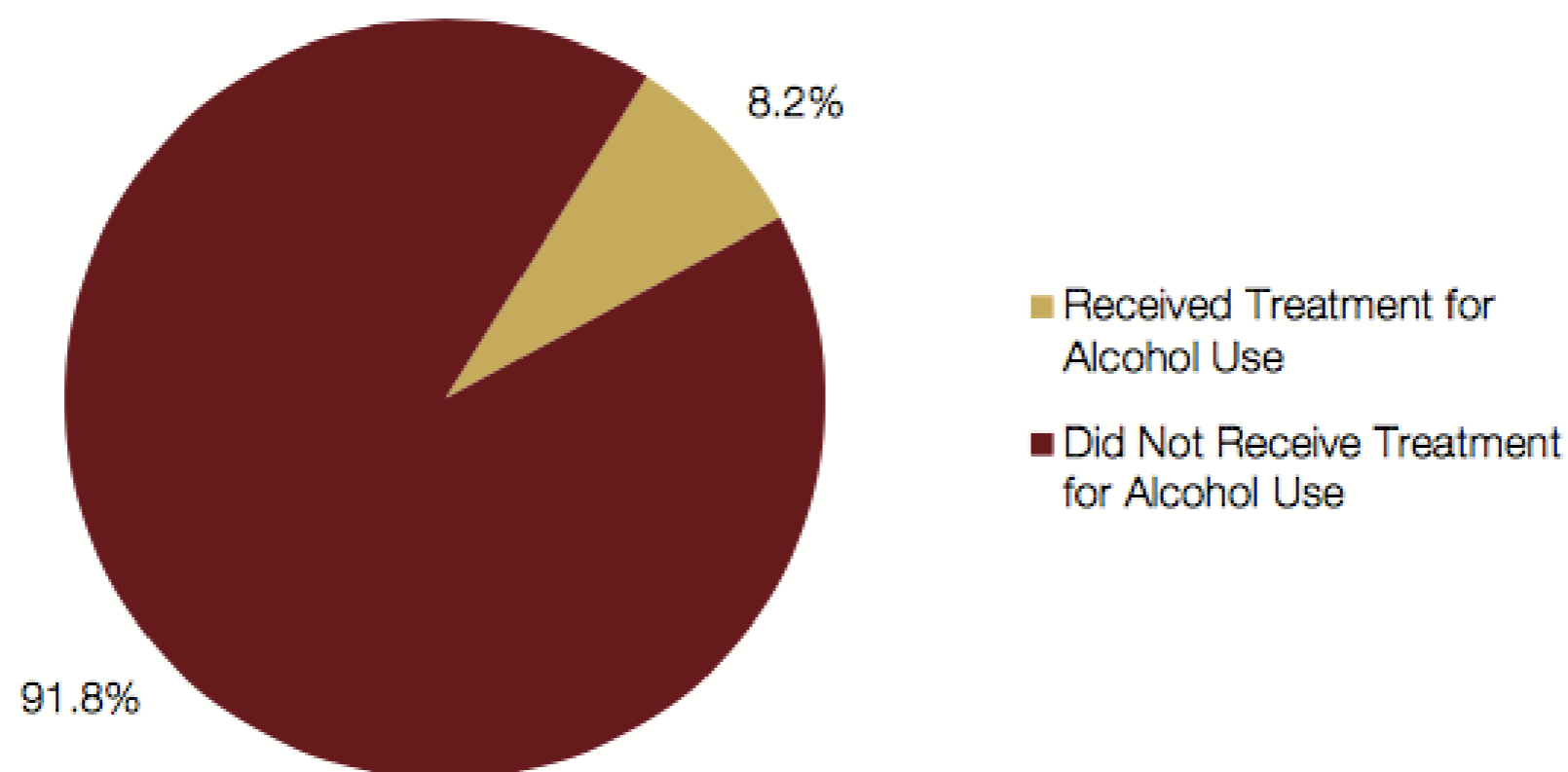


6.1%

In Michigan, about 510,000 individuals aged 12 or older (6.1% of all individuals in this age group) per year in 2013–2014 were dependent on or abused alcohol within the year prior to being surveyed. The percentage decreased from 2010–2011 to 2013–2014.

Past Year Treatment for Alcohol Use Among Individuals Aged 12 or Older with Alcohol Dependence or Abuse in Michigan (Annual Average, 2010–2014)²

Michigan's annual average of treatment for alcohol use among individuals aged 12 or older with alcohol dependence or abuse was similar to the annual average for the nation (7.3%) from 2010 to 2014.



8.2%

In Michigan, among individuals aged 12 or older with alcohol dependence or abuse, about 47,000 individuals (8.2%) per year from 2010 to 2014 received treatment for their alcohol use within the year prior to being surveyed.

ACS COT Requirement

- Resources for Optimal Care of the Injured Patient: 2006
- “Alcohol is such a significant associated factor and contributor to injury that it is vital that trauma centers have a mechanism to identify patients who are problem drinkers. Such mechanisms are essential in Level I and II trauma centers.”
- “In addition, Level I centers must have the capability to provide an intervention for patients identified as problem drinkers.”

ACS COT Requirement

- Resources for Optimal Care of the Injured Patient: 2014
- “Universal screening for alcohol use must be performed for all injured patients and must be documented.”
- “At Level I and II trauma centers, all patients who have screened positive must receive an intervention by appropriately trained staff, and this intervention must be documented.”

Impact of the Requirement

- 2006, this was first nationwide mandate for alcohol SBI in a general medical setting
- Must meet ACS criteria to get trauma center designation
- Government funding for trauma center may be dependent on being verified by ACS

Screening

- Helps rule out low/no risk users
- Identifies person's level of risk
- Does not diagnose alcohol use disorder
- Provides springboard for discussion of alcohol use
- Identifies which patients may benefit from BI
- Identifies which patients may need referral to treatment

Pre-ACS Mandate

- Survey of Level I trauma centers about pre ACS requirement SBI for alcohol (n=204)
- Responses from June 14, 2006 - November 6, 2007, >95% were before spring 2007
- 148 responded (73%)
 - 70% used lab screening (e.g., serum ethanol)
 - 39% asked screening questions
 - 34% used lab + screening questions
 - 21% used neither

Pre-ACS Mandate

Tests performed*	n	%
Blood serum	103	71.0
Urine	47	32.4
Breathalyzer	7	4.8
Other test performed	2	1.4
Institution routinely asks screening questions	57	39.3
Percent of injured patients receiving screening questions (mean \pm SD)	41 \pm 41.0	
Screening questions asked*		
CAGE	36	24.8
Other	14	9.7
AUDIT	11	7.6
MAST	4	2.8
Single item	3	2.1
Activities when patient positive for alcohol use*		
Informal discussion	40	27.6
Formal consult	38	26.2
Other unspecified routine activity	79	54.5
Nothing	8	5.5

Why use screening tools?

Use of Clinical Suspicion

- Study of 462 trauma patients
- Asked RNs and physicians if
 - patient was acutely intoxicated (>100 mg/ dL)
 - patient had alcohol abuse or dependence
- Then
 - obtained serum ethanol
 - conducted CAGE and SMAST screenings

Use of Clinical Suspicion

- 23% of acutely intoxicated patients were not identified by physicians
- Patients with neg BAC were more likely to be suspected of intoxication if
 - young
 - male
 - disheveled
 - uninsured
 - low income
- 26% were falsely identified as having an alcohol problem
- Staff identified 38% who screened positive on CAGE and 47% who screened positive on SMAST as having chronic alcohol problem

Screenings

- CAGE
- Alcohol Use Disorders Identification Test (AUDIT)
- Short Michigan Alcoholism Screening Test (SMAST)
- CRAFFT

Important Screening Tips

- State purpose of screening is for health
- Person doing screening is nonjudgmental and nonthreatening
- Patients should be assured their responses are confidential
- Patient is not intoxicated
- Patient does not need emergency care
- Show what is considered a typical drink

Standard Drink Sizes

**12 fl oz of
regular beer**

=

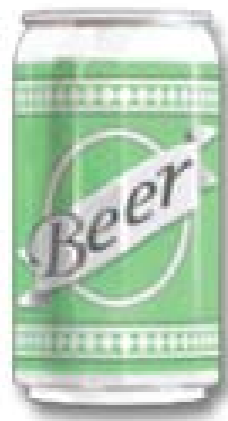
**8–9 fl oz of
malt liquor**
(shown in a
12 oz glass)

=

**5 fl oz of
table wine**

=

**1.5 fl oz shot
of 80-proof
distilled spirits**
(gin, rum, tequila,
vodka, whiskey, etc.)



about 5%
alcohol



about 7%
alcohol



about 12%
alcohol



40% alcohol

The percent of "pure" alcohol, expressed here as alcohol by volume (alc/vol), varies by beverage.

CAGE

- Have you ever felt you ought to cut down on your drinking?
- Have people annoyed you by criticizing your drinking?
- Have you ever felt bad or guilty about your drinking?
- Have you ever had a drink (eye-opener) first thing in the morning to steady your nerves or get rid of a hang-over?
- *Score of two or greater is clinically significant*

AUDIT

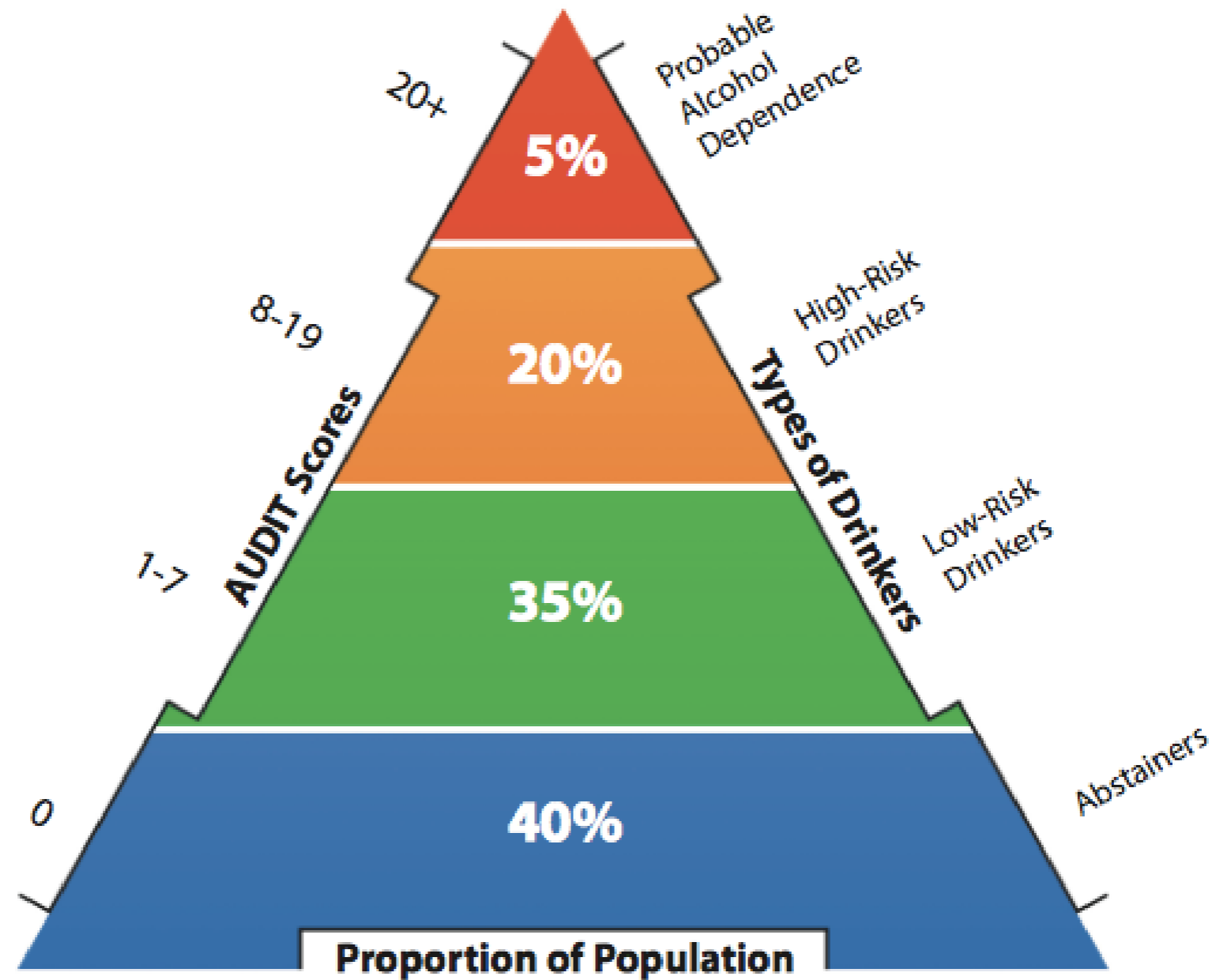
- Alcohol Use Disorder Identification Test
 - 10 items
 - Self-report
 - Interview version
- Developed by WHO in 1982 in 6 countries
- Cut-off score of 8 is considered positive
 - Sensitivity 0.9
 - Specificity 0.8

The Alcohol Use Disorders Identification Test: Self-Report Version

PATIENT: Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest. Place an X in one box that best describes your answer to each question.

Questions	0	1	2	3	4	
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
					Total	

The Drinkers' Pyramid:



Something to think about:

25% of the population will score an 8 or above on the AUDIT. That means 1 in 4 people are probably high-risk or dependent drinkers.

SMAST Scoring

The SMAST is self-administered. All questions are to be answered with "YES" or "NO" answers only.

Scoring: Each "YES" answer equals one (1) point.

Interpretations: A score of 1 or 2 indicates that there is no alcohol problem and no further action is needed at this time. A score of 3 indicates a borderline alcohol problem and further investigation is necessary. A score of 4 or more indicates that there may be an alcohol problem and that a full assessment is needed.

<u>SMAST Score</u>	<u>Degree of Problem Alcohol Involvement</u>	<u>Suggested Action</u>
0-2	No problems reported	None at this time.
3	Borderline alcohol problem reported	Further investigation is required.
4 or more	Potential Alcohol Abuse reported	A full assessment is required.

The CRAFFT Screening Questions

Please answer all questions honestly; your answers will be kept confidential.

For adolescents

Part A

During the PAST 12 MONTHS, did you:

1. Drink any alcohol (more than a few sips)?

2. Smoke any marijuana or hashish?

3. Use anything else to get high?

"anything else" includes illegal drugs, over the counter and prescription drugs, and things that you sniff or "huff"

No

Yes

If you answered NO to ALL (A1, A2, A3) answer only B1 below, then STOP.

If you answered YES to ANY (A1 to A3), answer B1 to B6 below.

Part B

No

Yes

1. Have you ever ridden in a CAR driven by someone (including yourself) who was "high" or had been using alcohol or drugs?

2. Do you ever use alcohol or drugs to RELAX, feel better about yourself, or fit in?

3. Do you ever use alcohol or drugs while you are by yourself, or ALONE?

4. Do you ever FORGET things you did while using alcohol or drugs?

5. Do your FAMILY or FRIENDS ever tell you that you should cut down on your drinking or drug use?

6. Have you ever gotten into TROUBLE while you were using alcohol or drugs?

CRAFFT Scoring

- Adolescents with no use of alcohol or drugs and score of 0
 - praise and encouragement
- Use of alcohol and drugs and score 0 or 1
 - encourage to stop and receive brief advice on adverse effects of substance use
- Score of 2 or more is positive screen and indicates adolescent is high risk for having alcohol or drug disorder
 - requires further assessment

Why bother with an intervention?

People don't really want to change or quit drinking.

Readiness to Change Alcohol Use after Trauma

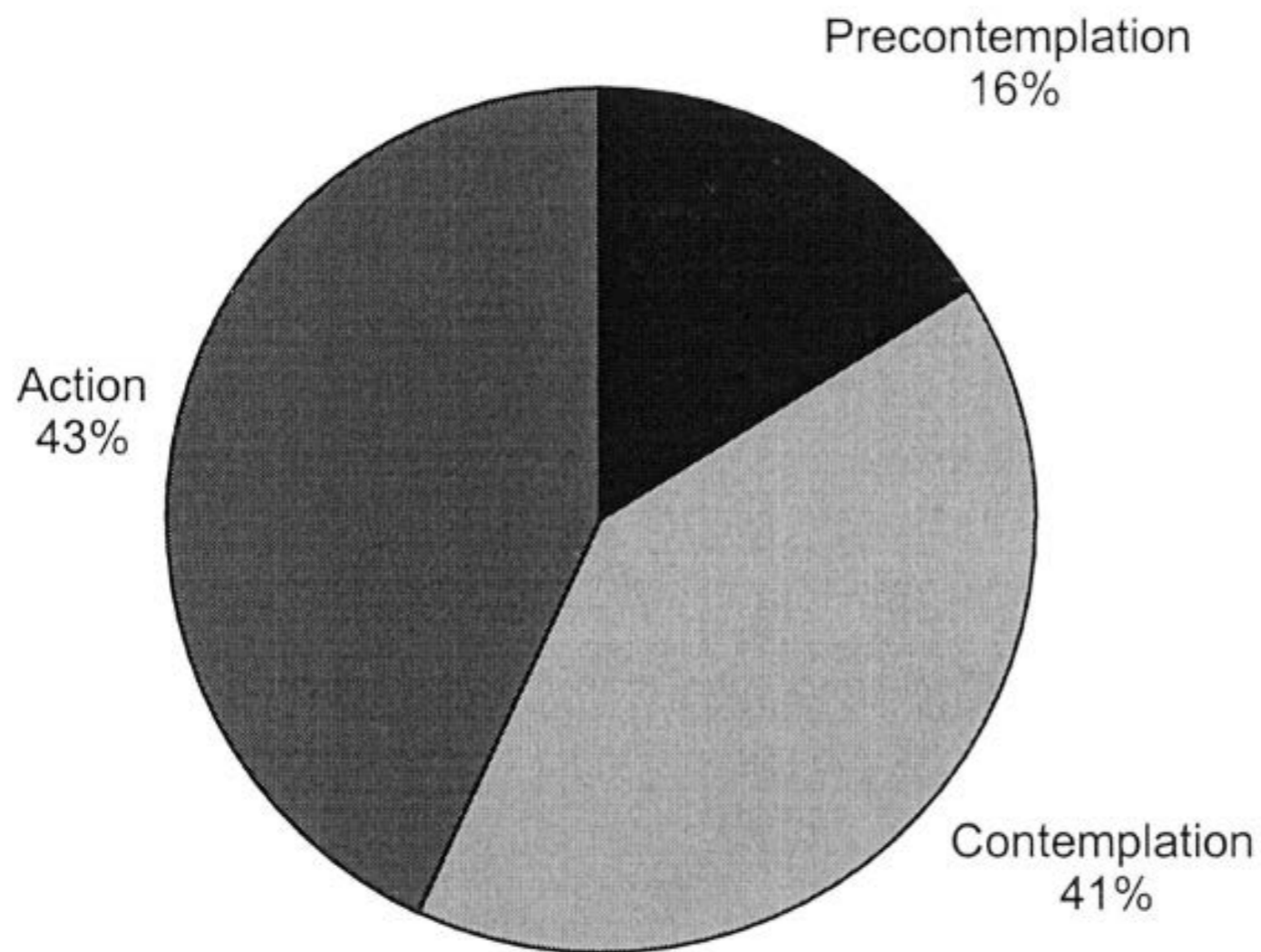


Fig. 1. *Percentage of patients assigned to each proposed stage of change.*

84%
thinking
about or
ready to
make a
change

Brief Intervention (1)

- Teachable moment following a trauma
- Provided to those who screen positive (~25%)
- Takes about 10-30 mins
- Designed for patients who still have control over their drinking; they can cut down or quit without professional help
- Brief intervention can help to motivate patients with alcohol use disorder to go to treatment

Brief Intervention (2)

- Empathic
- Nonjudgmental
- Nonauthoritarian
- Reflective statements
- Enhance patient's self-efficacy

Brief Intervention (3)

- Establish rapport
- Raise subject of alcohol use
- Review patient's drinking amounts and patterns
- Compare patient's drinking level to low risk drinking
- Make connection between drinking and trauma

Brief Intervention (4)

- Assess readiness to change
- Develop discrepancy between patient's drinking and problems related to alcohol (explore pros and cons)
- Negotiate goal
- Ask permission to give advice
- Provide hand-outs
- Suggest primary care follow-up

FRAMES

- give personalized **F**eedback
- emphasize patient's **R**esponsibility for change
- offer **A**dvice
- **M**enu of options
- demonstrate **E**mpathy
- enhance patient's **S**elf-efficacy

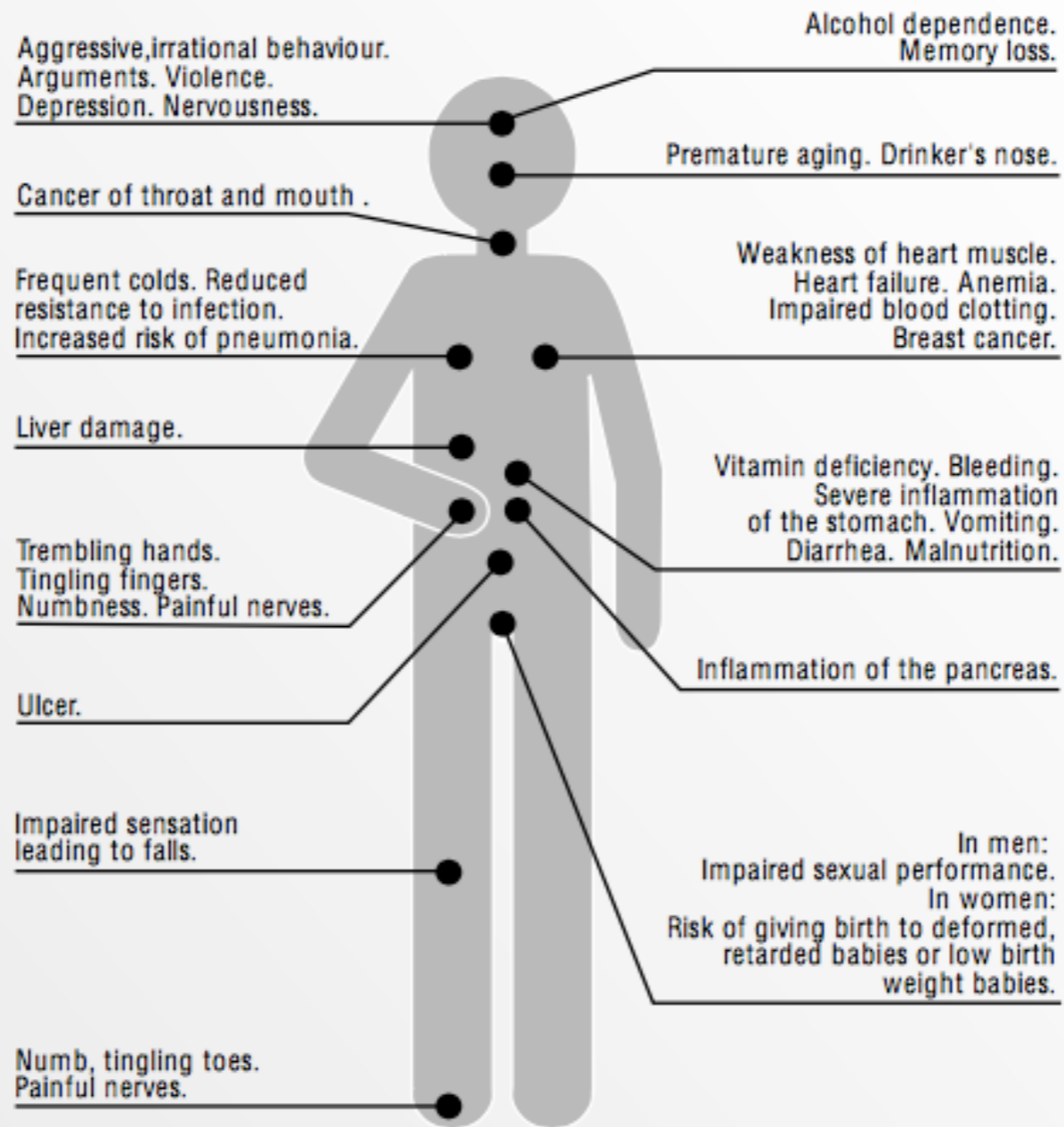
Advise Patients Not to Drink Alcohol

- When pregnant or trying to get pregnant
- When driving or operating machinery
- If taking medications that interact with alcohol (sedatives, opioids, psychiatric, some antihypertensives)
- If they have health conditions exacerbated by alcohol
- If they can't control the amount they drink

Example hand-out

Figure 1

Effects of High-Risk Drinking



High-risk drinking may lead to social, legal, medical, domestic, job and financial problems. It may also cut your lifespan and lead to accidents and death from drunken driving.



RETHINKING DRINKING

Alcohol and your health

Research-based information from the
National Institutes of Health
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
NIH...Turning Discovery Into Health®

THINKING ABOUT A CHANGE?

It's up to you

It's up to you as to whether and when to change your drinking. Other people may be able to help, but in the end it's your decision. Weighing your pros and cons can help.

Pros: What are some reasons why you might want to make a change?

- | | |
|---------------------------------------------------------|------------------------------------------------------------|
| <input type="checkbox"/> to improve my health | <input type="checkbox"/> to lose weight or get fit |
| <input type="checkbox"/> to improve my relationships | <input type="checkbox"/> to save money |
| <input type="checkbox"/> to avoid hangovers | <input type="checkbox"/> to avoid more serious problems |
| <input type="checkbox"/> to do better at work or school | <input type="checkbox"/> to meet my own personal standards |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |

Cons: What are some possible reasons why you might not want to change?

- | | |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |

Compare your pros and cons. Put extra check marks by the most important one(s).
 Is there a difference between where you are and where you want to be?

Ready . . . or not?

Are you ready to change your drinking? If so, see the next sections for support. But don't be surprised if you continue to have mixed feelings. You may need to re-make your decision several times before becoming comfortable with it.

If you're not ready to change yet, consider these suggestions in the meantime:

- Keep track of how often and how much you're drinking.
- Notice how drinking affects you.
- Make or re-make a list of pros and cons about changing.
- Deal with other priorities that may be in the way of changing.
- Ask for support from your doctor, a friend, or someone else you trust.

Don't wait for a crisis or to "hit bottom."

When someone is drinking too much, making a change *earlier* is likely to be more successful and less destructive to individuals and their families.

Evidence of Effectiveness of BI in Trauma Centers

BI at Trauma Center to Reduce Injury Recurrence

- 2,524 patients screened from a population of 3,358 eligible trauma patients in the trauma center
- 1153 screened positive for alcohol problems (BAC ≥ 100 mg/ dL or SMAST ≥ 3 ; or combination of BAC 1-99, SMAST 1-2, elevated GGT)
- 762 of these patients were randomized to control or intervention group
- 300 of the 366 patients in the intervention group completed the intervention which was 30 min motivational interview/ BI
- Outcomes: trauma recurrence after discharge; DUI and other citations; change in alcohol use at 6 and 12 months; treatment service review at 6 and 12 months

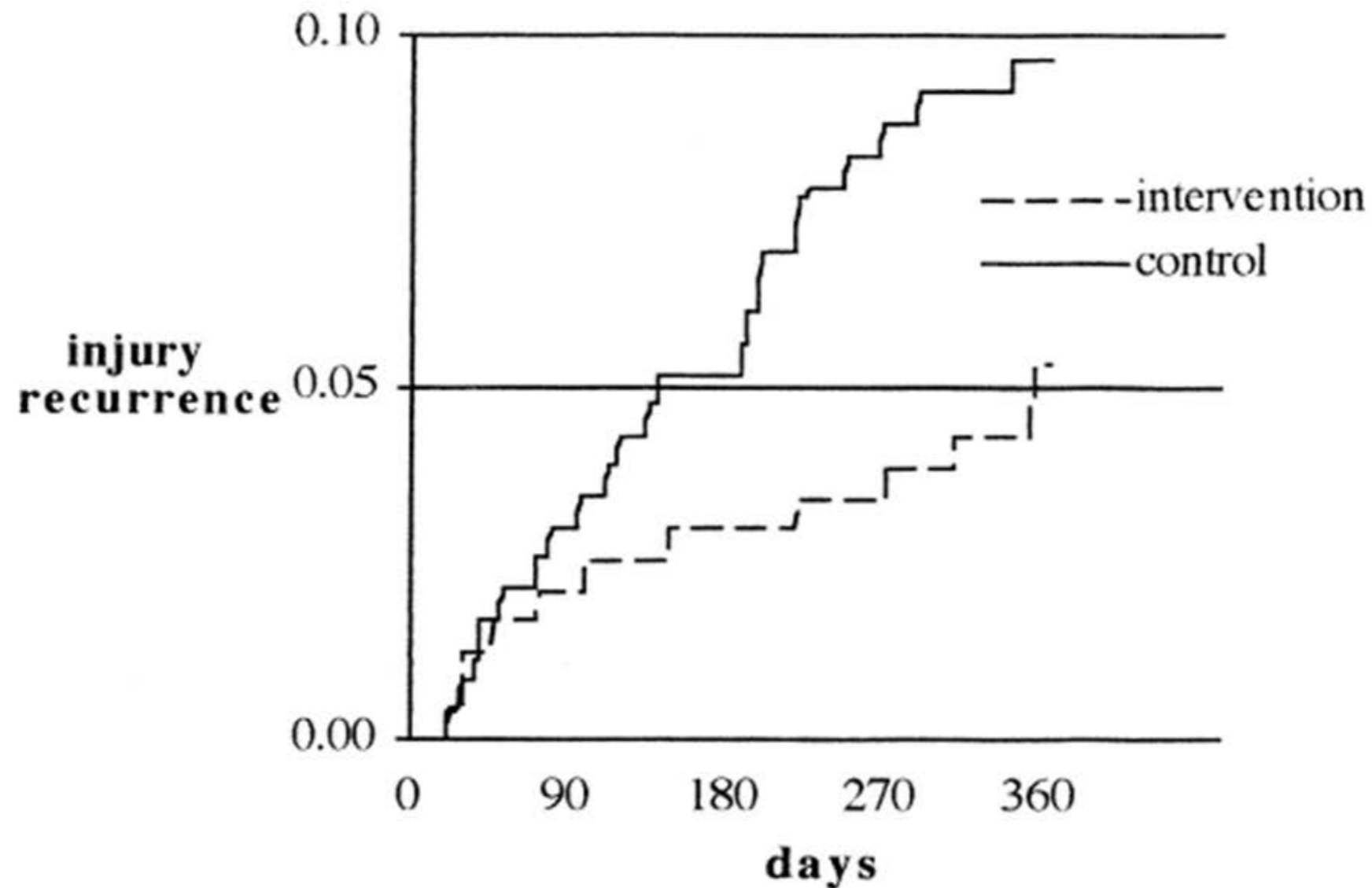


Figure 2. Risk of repeat injury requiring treatment in the Harborview Medical Center Emergency Department or admission to the trauma center. The analysis is for King County residents at 1 year follow-up and controls for gender, SMAST score, age, injury intent, and injury severity score (hazard ratio 0.53, 95% CI 0.26-1.07).

47% reduction in new injuries requiring ED or readmission in intervention group at 1 yr

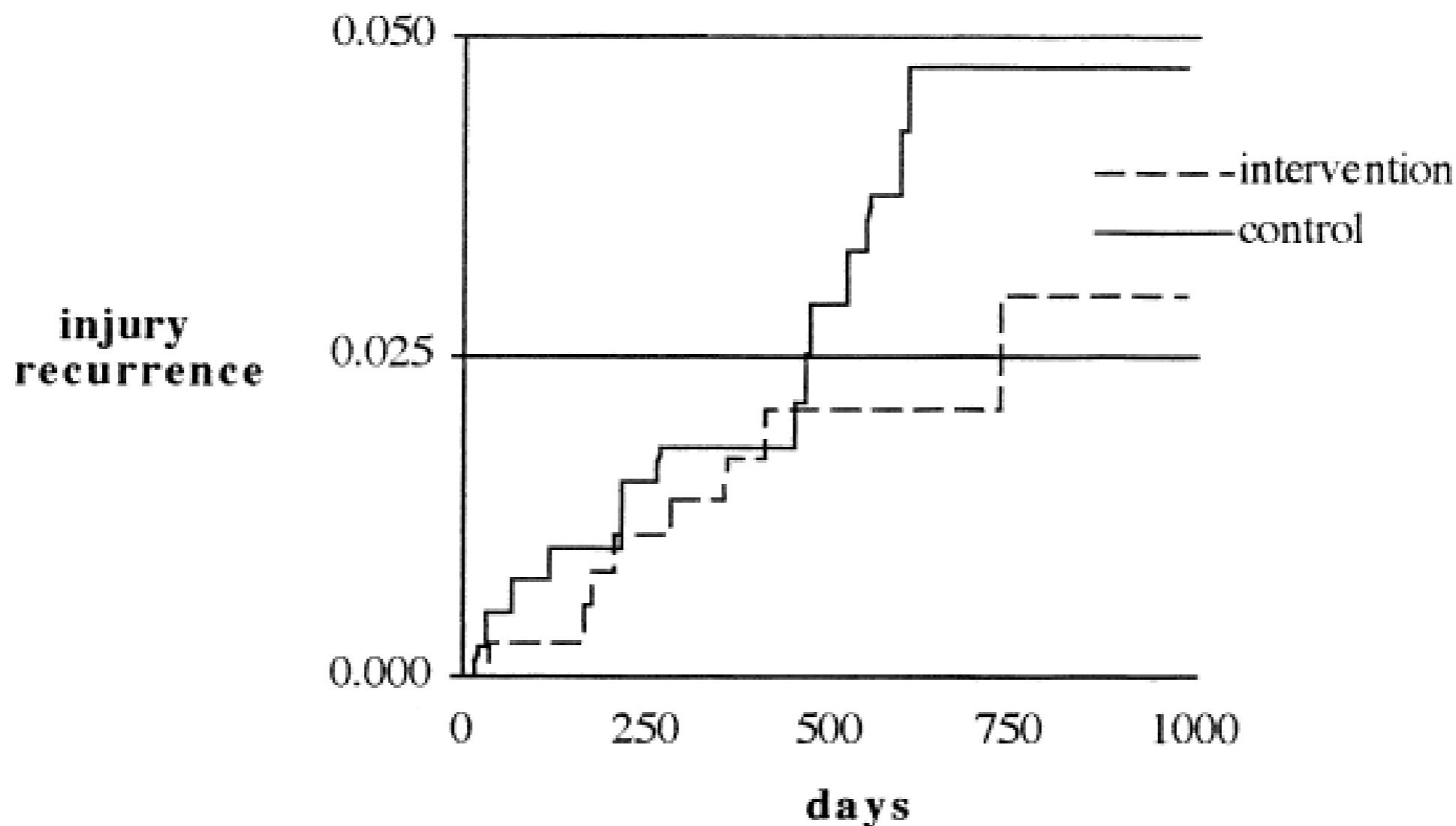


Figure 3. Risk of injury resulting in hospital readmission in Washington State. Follow-up duration was up to three years. Analysis controls for gender, SMAST score, age, injury intent, and injury severity score (hazard ratio 0.52, 95% confidence interval 0.21 to 1.29).

48% reduction in new injuries requiring ED or readmission in intervention group at 3 yrs

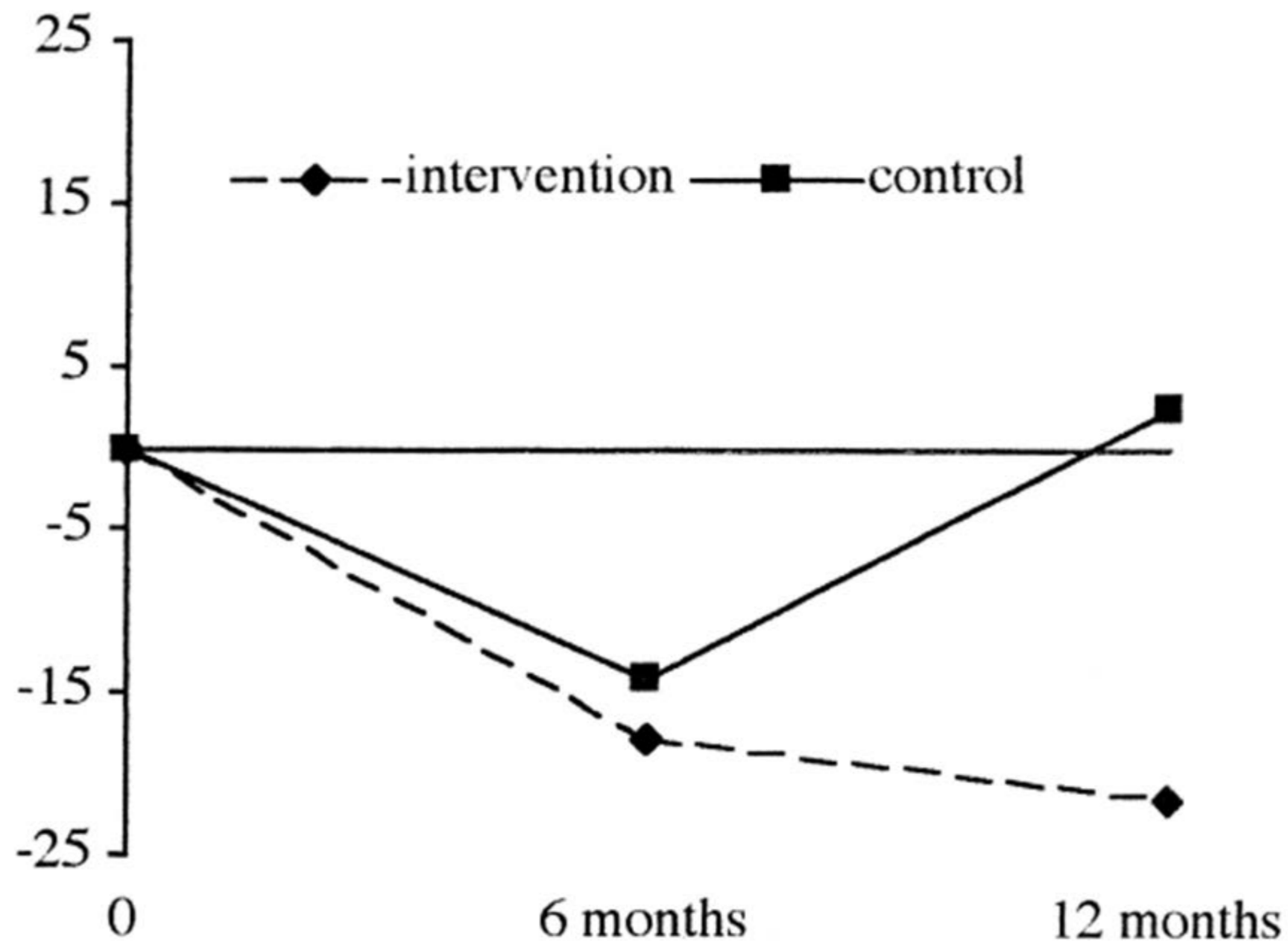


Figure 4. Changes in alcohol intake in mean number of standard drinks per week during follow-up in patients with a SMAST score of 3 to 8 ($p < 0.01$).

SMAST 3-8 = mild to moderate alcohol problems

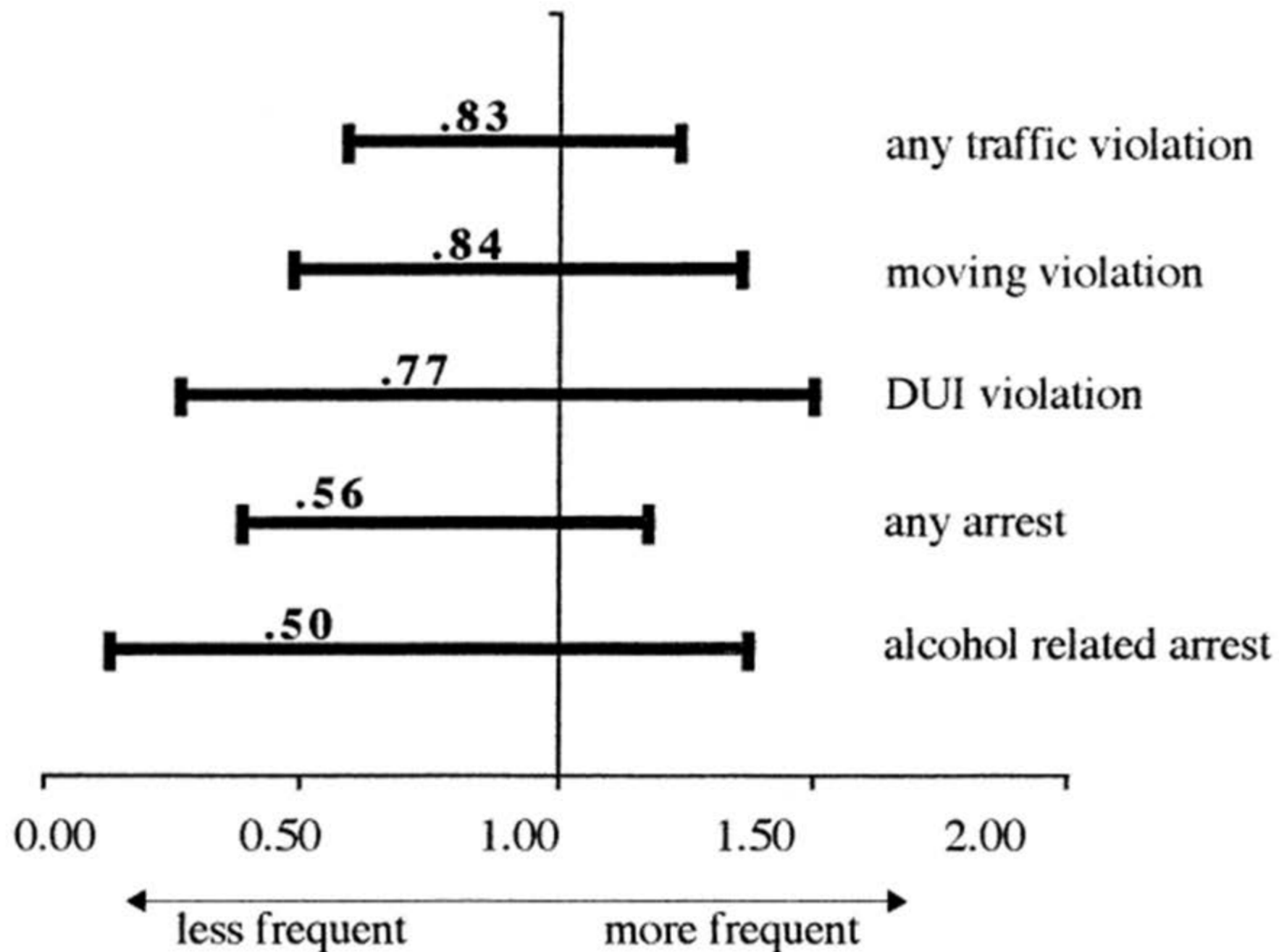


Figure 5. Odds ratio and 95% confidence interval for other outcomes at 1 year of follow-up for intervention group patients compared with controls, adjusted for SMAST, age, gender, injury severity, injury intent, and number of violations or arrests in the 6 months before injury.

Brief Intervention Decreases Subsequent DUI Arrests

- Prospective trial, randomly assigned patients to standard care or brief intervention after MVC
- Outcome measure: DUI arrest within 3 years of hospital discharge
- n=126

BI & DUI

Table 1 Enrollment Characteristics of Subjects by Treatment Allocation

Characteristic	Brief Intervention (n = 62)	Standard Care (n = 64)	p Value
Age mean (SD)	32.5 (11.6)	33.4 (11.9)	0.68
Males (%)	40 (64.5)	47 (73.4)	0.28
Drivers (%)	43 (48.3)	46 (51.7)	0.76
Race/Ethnicity			0.93
White non-Hispanic (%)	13 (21.0)	13 (20.3)	
Hispanic	31 (50.0)	34 (53.1)	
Native American	16 (25.8)	16 (21.0)	
BAC mg/dL, mean (SD)	141.2 (102.4)	165.8 (97.2)	0.19
AUDIT score, mean (SD)	15.7 (8.64)	14.9 (7.7)	0.61
Number of prior DUI arrests	0.87 (1.37)	0.98 (1.62)	0.67
Any prior DUI citation (%)	27 (43.5)	28 (43.8)	1.00
Citation for current admission	15 (35.9)	21 (45.7)	0.30

BI & DUI Results

- Within 3 years of discharge, 21 patients were arrested for at least 1 DUI
 - 14 of 64 (21%) of standard care
 - 7 of 62 (11.3%) of brief intervention (BI)
- 9.4 patients need to receive BI to prevent 1 DUI based on absolute risk reduction
- BI was strongest protective factor against DUI (OR=0.32, CI 0.11-0.96)

Reimbursement/ Billing

Reimbursement for SBIRT

Payer	Code	Description	Fee Schedule
Commercial Insurance	CPT 99408	Alcohol and/or substance abuse structured screening and brief intervention services; 15 to 30 minutes	\$33.41
	CPT 99409	Alcohol and/or substance abuse structured screening and brief intervention services; greater than 30 minutes	\$65.51
Medicare	G0396	Alcohol and/or substance abuse structured screening and brief intervention services; 15 to 30 minutes	\$29.42
	G0397	Alcohol and/or substance abuse structured screening and brief intervention services; greater than 30 minutes	\$57.69
Medicaid	H0049	Alcohol and/or drug screening	\$24.00
	H0050	Alcohol and/or drug screening, brief intervention, per 15 minutes	\$48.00

Last Updated: 06/04/2015

Important Medicare Information

SAMHSA is working with the [Centers for Medicare and Medicaid Services](#) to educate practitioners about the importance of SBIRT coverage and the Medicare billing rules around these services. SBIRT services are defined as alcohol and/or substance (other than tobacco) abuse **structured assessment** (for example, Alcohol Use Disorders Identification Test, Drug Abuse Screening Test) and brief intervention. Medicare may not pay for screening services unless specifically required by statute.

<http://www.samhsa.gov/sbirt/coding-reimbursement> accessed 4/ 3/ 16

With 10-30 minutes you can change a life!

Thank You for Your Attention

Comments? Questions?

References

- Afshar M, Netzer G, Salisbury-Afshar E, Murthi S, Smith GS. Injured patients with very high blood alcohol concentrations. *Injury*. 2016 Jan;47(1):83-8. doi: 10.1016/j.injury.2015.10.063. Epub 2015 Oct 31. PubMed PMID: 26556488.
- Apodaca TR, Schermer CR. Readiness to change alcohol use after trauma. *J Trauma*. 2003 May;54(5):990-4. PubMed PMID: 12777915.
- Banks L, Crandall C, Sklar D, Bauer M. A comparison of intimate partner homicide to intimate partner homicide-suicide: one hundred and twenty-four New Mexico cases. *Violence Against Women*. 2008 Sep;14(9):1065-78. doi: 10.1177/1077801208321983. PubMed PMID: 18703775.
- Babor TF, Higgins-Biddle JC, Saunders JB, Monteiro MG. *The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care, Second Edition*. World Health Organization. 2001.
- Blincoe, L. J., Miller, T. R., Zaloshnja, E., & Lawrence, B. A. (2015, May). *The economic and societal impact of motor vehicle crashes, 2010*. (Revised) (Report No. DOT HS 812 013). Washington, DC: National Highway Traffic Safety Administration.
- Centers for Disease Control and Prevention (CDC). Vital signs: binge drinking prevalence, frequency, and intensity among adults - United States, 2010. *MMWR Morb Mortal Wkly Rep*. 2012 Jan 13;61(1):14-9. PubMed PMID: 22237031.
- Conner KR, Huguet N, Caetano R, Giesbrecht N, McFarland BH, Nolte KB, Kaplan MS. Acute use of alcohol and methods of suicide in a US national sample. *Am J Public Health*. 2014 Jan;104(1):171-8. doi: 10.2105/AJPH.2013.301352. Epub 2013 May 16. PubMed PMID: 23678938; PubMed Central PMCID: PMC3865232.
- Danielsson PE, Rivara FP, Gentilello LM, Maier RV. Reasons why trauma surgeons fail to screen for alcohol problems. *Arch Surg*. 1999 May;134(5):564-8. PubMed PMID: 10323432.
- Dischinger PC, Mitchell KA, Kufera JA, Soderstrom CA, Lowenfels AB. A longitudinal study of former trauma center patients: the association between toxicology status and subsequent injury mortality. *J Trauma*. 2001 Nov;51(5):877-84; discussion 884-6. PubMed PMID: 11706334.
- Ewing JA. Detecting alcoholism. The CAGE questionnaire. *JAMA*. 1984 Oct 12;252(14):1905-7. PubMed PMID: 6471323.
- Gentilello LM, Villaveces A, Ries RR, Nason KS, Daranciang E, Donovan DM, Copass M, Jurkovich GJ, Rivara FP. Detection of acute alcohol intoxication and chronic alcohol dependence by trauma center staff. *J Trauma*. 1999 Dec;47(6):1131-5; discussion 1135-9. PubMed PMID: 10608546.
- Gentilello LM, Rivara FP, Donovan DM, Jurkovich GJ, Daranciang E, Dunn CW, Villaveces A, Copass M, Ries RR. Alcohol interventions in a trauma center as a means of reducing the risk of injury recurrence. *Ann Surg*. 1999 Oct;230(4):473-80; discussion 480-3. PubMed PMID: 10522717; PubMed Central PMCID: PMC1420896.
- Kanny D, Brewer RD, Mesnick JB, Paulozzi LJ, Naimi TS, Lu H. Vital signs: alcohol poisoning deaths - United States, 2010-2012. *MMWR Morb Mortal Wkly Rep*. 2015 Jan 9;63(53):1238-42. PubMed PMID: 25577989.
- Kanny D, Liu Y, Brewer RD, Lu H; Centers for Disease Control and Prevention (CDC). Binge drinking - United States, 2011. *MMWR Suppl*. 2013 Nov 22;62(3):77-80. PubMed PMID: 24264494.
- Kaplan MS, Giesbrecht N, Caetano R, Conner KR, Huguet N, McFarland BH, Nolte KB. Acute alcohol consumption as a contributing factor to suicidal behavior. *Am J Public Health*. 2013 Sep;103(9):e2-3. doi: 10.2105/AJPH.2013.301422. Epub 2013 Jul 18. PubMed PMID: 23865652; PubMed Central PMCID: PMC3780687.
- Kaplan MS, McFarland BH, Huguet N, Conner K, Caetano R, Giesbrecht N, Nolte KB. Acute alcohol intoxication and suicide: a gender-stratified analysis of the National Violent Death Reporting System. *Inj Prev*. 2013 Feb;19(1):38-43. doi: 10.1136/injuryprev-2012-040317. Epub 2012 May 24. PubMed PMID: 22627777; PubMed Central PMCID: PMC3760342.
- Knight JR, Shrier LA, Bravender TD, Farrell M, Vander Bilt J, Shaffer HJ. A new brief screen for adolescent substance abuse. *Arch Pediatr Adolesc Med*. 1999 Jun;153(6):591-6. PubMed PMID: 10357299.
- National Center for Statistics and Analysis. (2015, December). *Alcohol-impaired driving: 2014 data*. (Traffic Safety Facts. DOT HS 812 231). Washington, DC: National Highway Traffic Safety Administration.
- Schermer CR, Moyers TB, Miller WR, Bloomfield LA. Trauma center brief interventions for alcohol disorders decrease subsequent driving under the influence arrests. *J Trauma*. 2006 Jan;60(1):29-34. PubMed PMID: 16456433.
- Selzer ML, Vinokur A, van Rooijen L. A self-administered Short Michigan Alcoholism Screening Test (SMAST). *J Stud Alcohol*. 1975 Jan;36(1):117-26. PubMed PMID: 238068.
- Terrell F, Zatzick DF, Jurkovich GJ, Rivara FP, Donovan DM, Dunn CW, Schermer C, Meredith JW, Gentilello LM. Nationwide survey of alcohol screening and briefintervention practices at US Level I trauma centers. *J Am Coll Surg*. 2008Nov;207(5):630-8. doi: 10.1016/j.jamcollsurg.2008.05.021. Epub 2008 Jul 14. PubMed PMID: 18954773; PubMed Central PMCID: PMC3104599.
- Wintemute GJ. Alcohol misuse, firearm violence perpetration, and public policy in the United States. *Prev Med*. 2015 Oct;79:15-21. doi: 10.1016/j.ypmed.2015.04.015. Epub 2015 Apr 30. PubMed PMID: 25937594.