Alcohol Screening and Brief Intervention: A Role in Injury Prevention?

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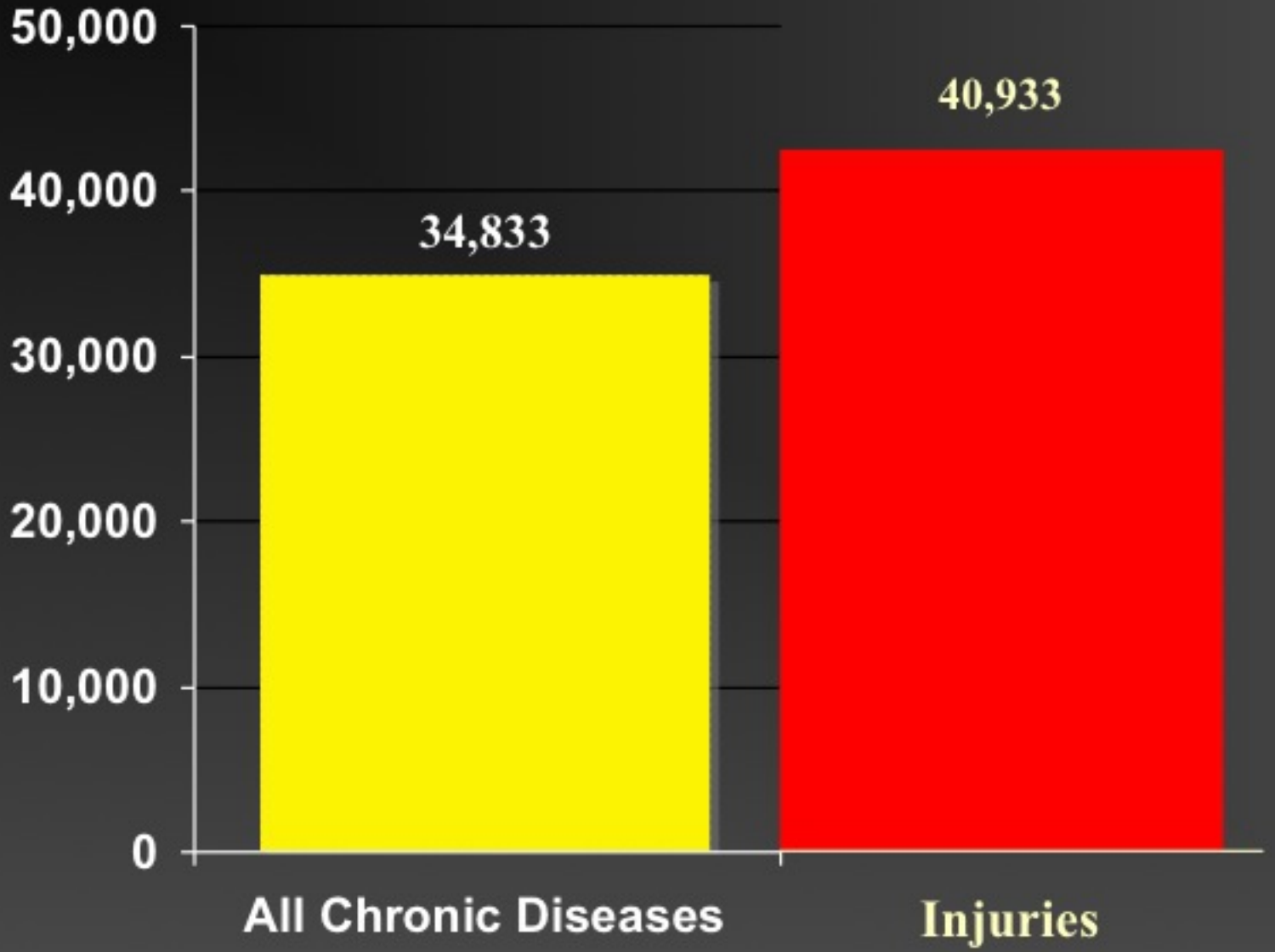
Introduction

- Magnitude of the Problem
- Why do this?
- What is a brief intervention and how to administer it?
  - Detecting patients who have alcohol related injuries
- Does it work?

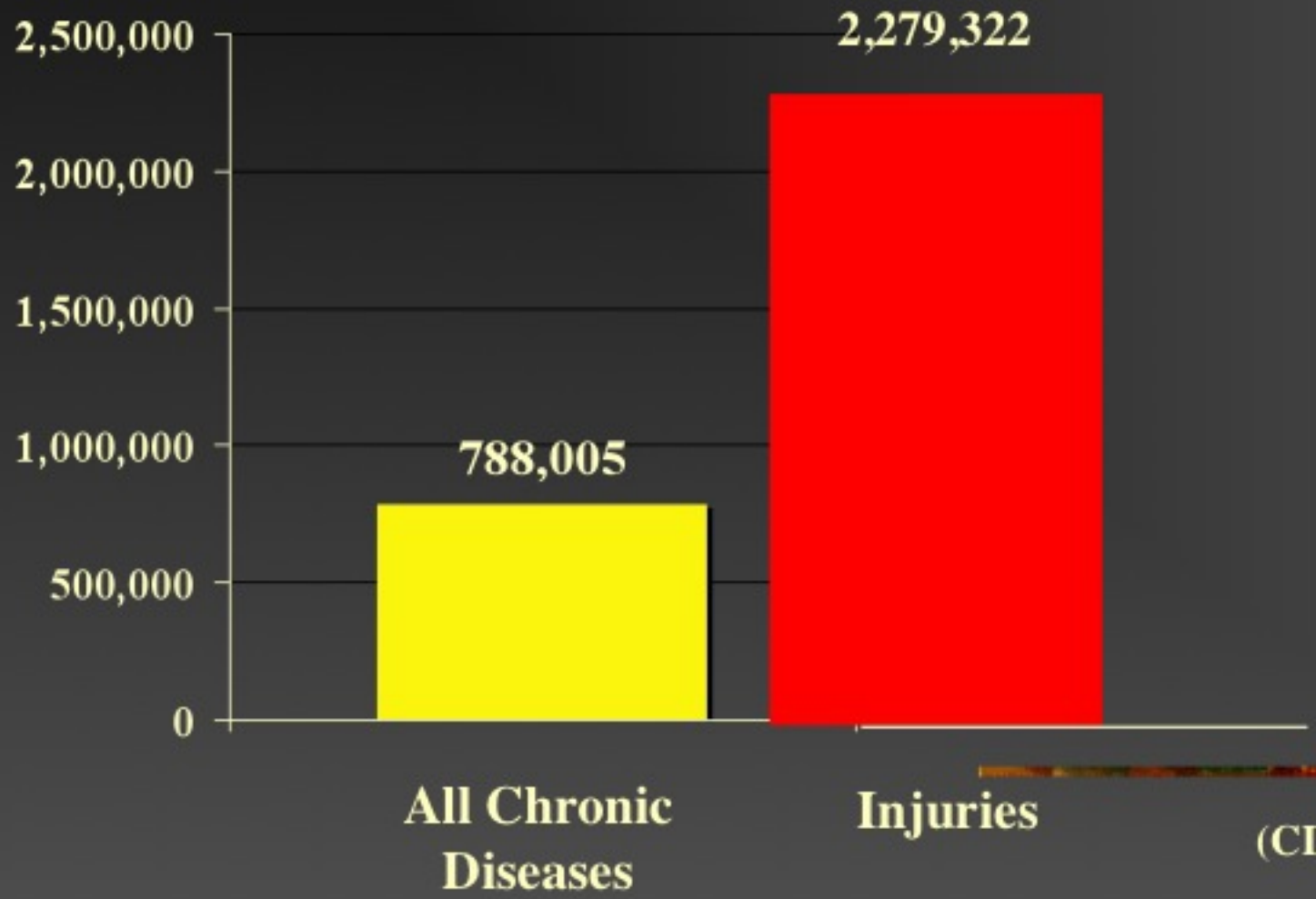
The Magnitude of the Problem

Alcohol-Related Mortality U.S.



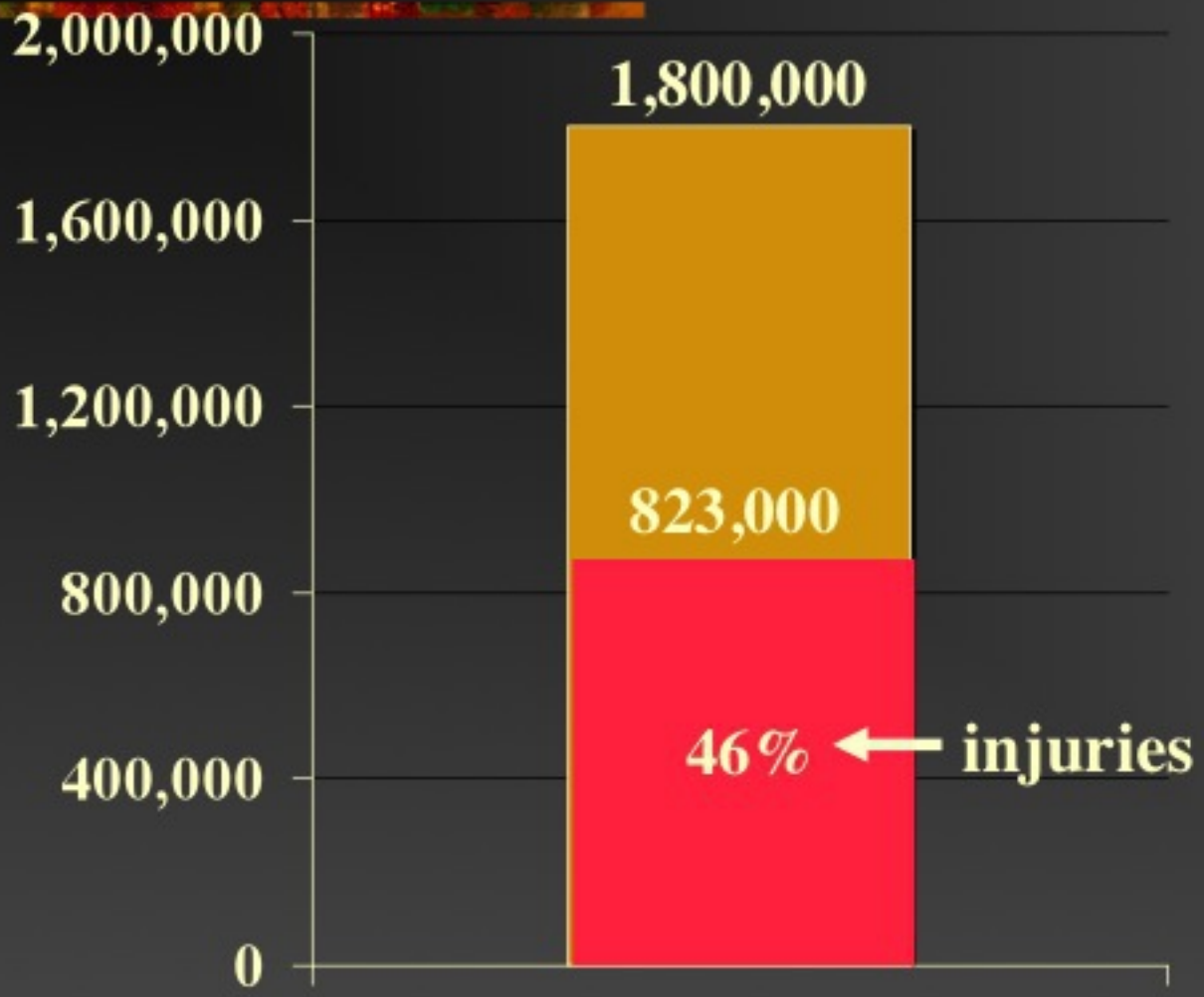
(CDC - MMWR, 2004)

Alcohol-Related Years of Potential Life Lost - U.S.



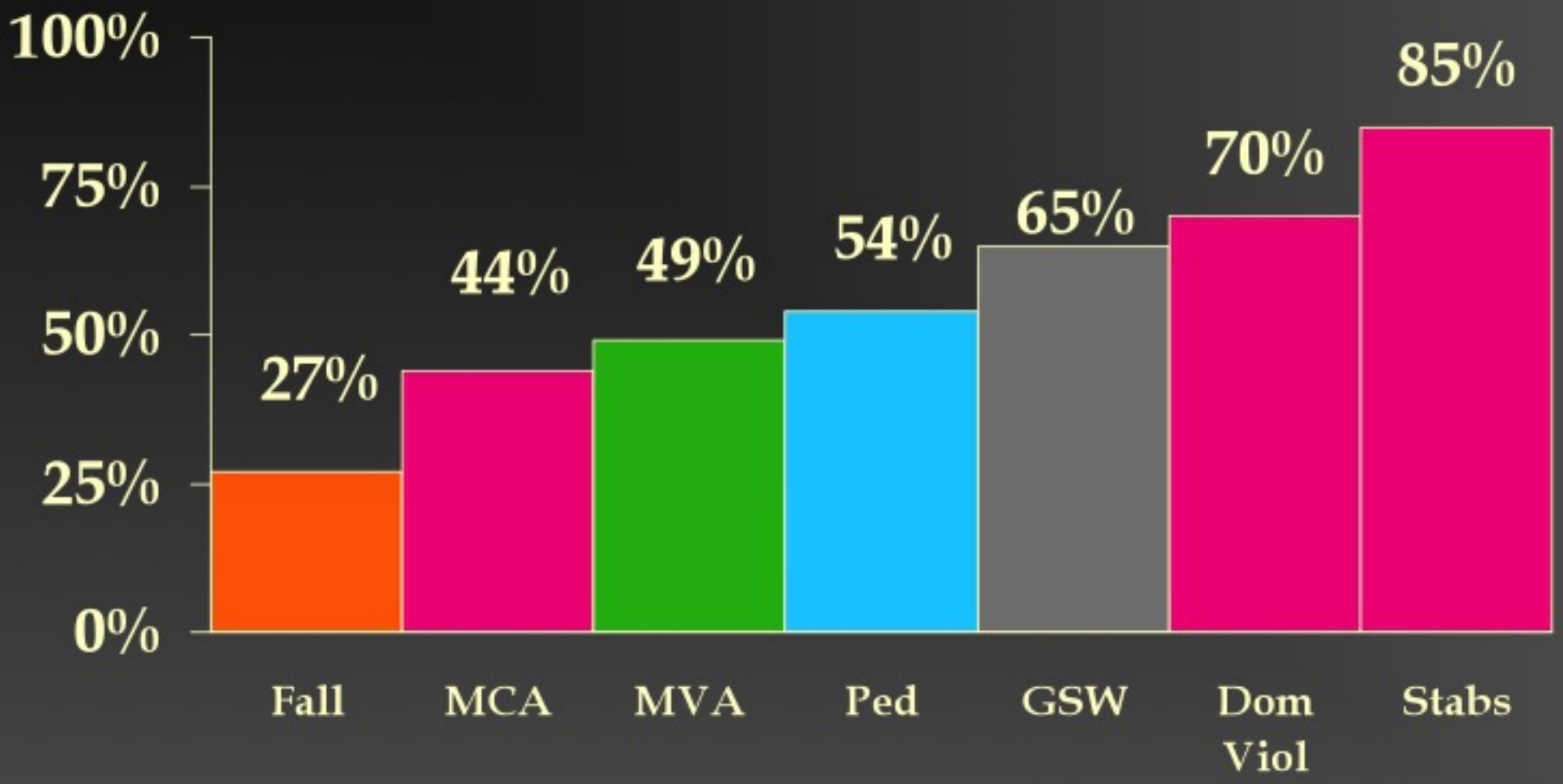
(CDC 2004)

Alcohol-Related Deaths Worldwide



WHO Collaborative Study on Alcohol and Injury 2007

Alcohol and Trauma



(Gentilello, Am J Surg 1988)

Why do it?

Public Health Paradigm

- The primary goals of alcohol screening and brief intervention are to:
  - Reduce alcohol use to low-risk levels
  - Encourage abstinence in persons who are alcohol dependent.

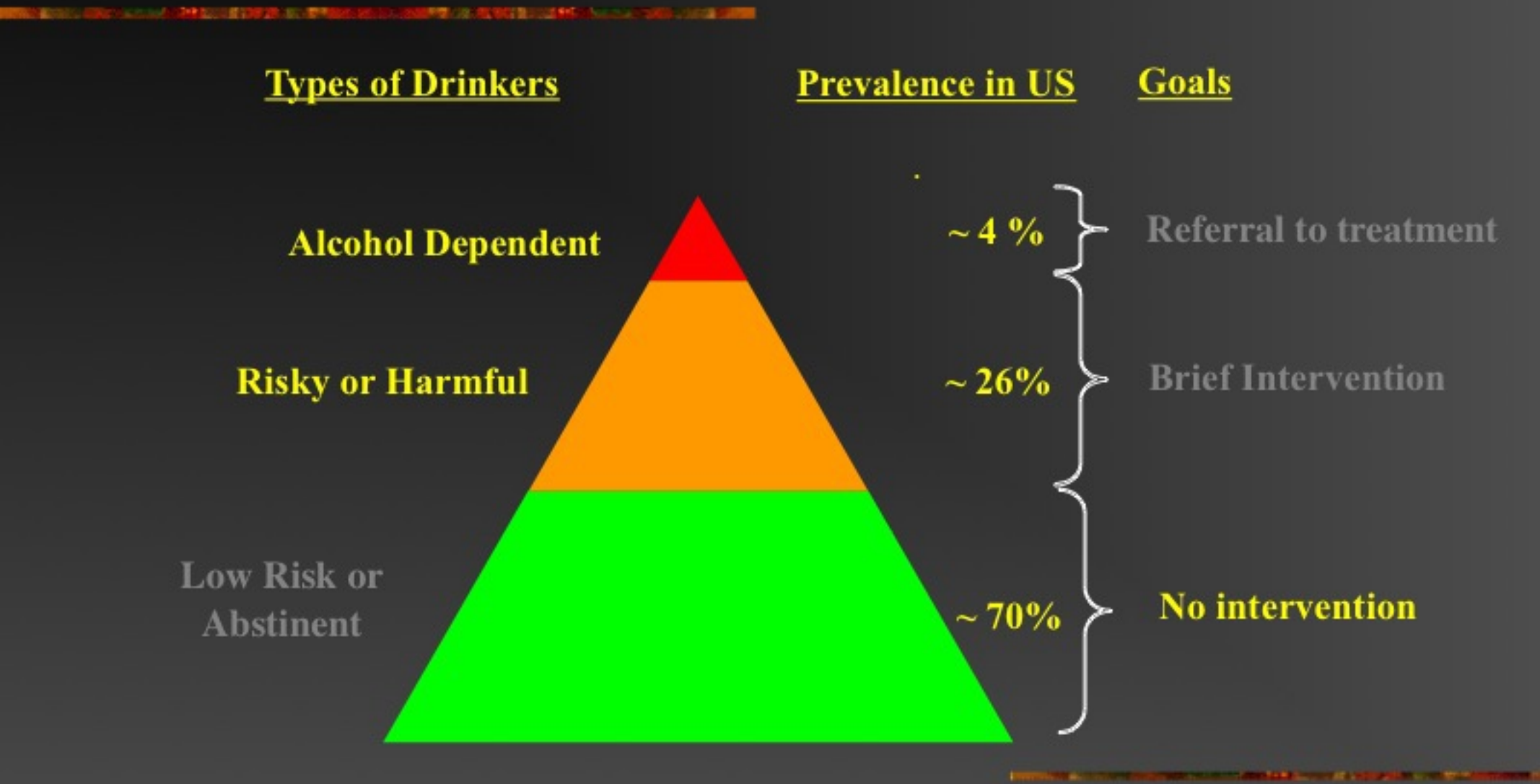
Why Should Health Care Providers, Systems, and Purchasers Care?

- Reduce risk
  (e.g., motor vehicle accidents)
- Reduce alcohol-related problems
  (e.g., depression, suicide, hypertension, strokes)
- Reduce alcohol-medication interactions
  (e.g., Xanax. Prozac, Coumadin, Tylenol)

Why Should Health Care Providers, Systems, and Purchasers Care?

- Reduce alcohol-related family violence and family stress
- Reduce workplace problems
  (e.g., accidents, performance)
- Save money
- Reduce liability risks

Drinking Pyramid



What to do?

FEASIBILITY

Is it feasible to:

Integrate SBIR services as part of the health care institutional culture?

Implementation

- Screening
  - BAC levels on everyone
  - Screening
- Intervene
  - Train healthcare team member in Brief Intervention
- Monitor
  - Evaluate program

Biological Markers

- Blood Alcohol Level (BAL)
- Gamma-Glutamyl Transferase (GGT)
- Mean Corpuscular Volume (MCV)
- Carbohydrate-Deficient Transferrin (CDT)

Steps for Alcohol Screening and Assessment

Step I - Ask about alcohol use

- **Consumption**
- **CAGE**

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If consumption is:

Men:	>14 drinks/week or >4/occasion
Women & older adults:	>7 drinks/week or >3/occasion
Men & women:	1 or more positive CAGE responses

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Step II - Assess for alcohol-related problems

- **Medical**
- **Behavioral**
- **Alcohol dependence**
- **Readiness to change**

↓

Steps for Brief Intervention and Referral

Alcohol Screening: To Detect At-Risk and Problem Drinkers

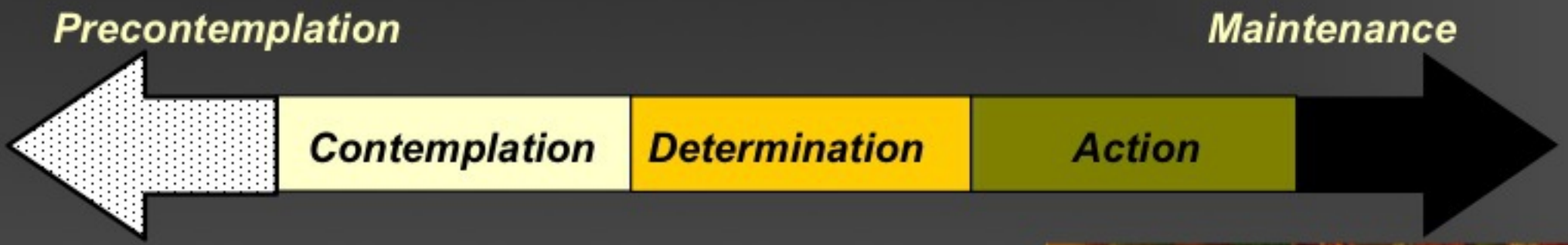
- Single question test
- Consumption Questions
  - Quantity, frequency, binge
- CAGE family of questionnaires
  - CAGE, T-ACE, TWEAK, CAGE-AID
- Alcohol Use Disorders Inventory Test (AUDIT)

Alcohol Assessment Tools (Self-Administered, Pencil and Paper)

- Alcohol Dependence Scale (ADS)
- Michigan Alcoholism Screening Test (MAST)
- Self-Administered Alcohol Screening Test (SAAST)

Brief Intervention or Talk Therapy

- Commonly used by clinicians to talk to patients about chronic health problems or medications.
- Not unique to the alcohol field.
- Helps move people along the readiness to change continuum



Components of Brief Intervention

- Assessment and direct feedback
- Negotiation and goal setting
- Behavioral modification techniques
- Self-directed bibliotherapy
- Follow-up and reinforcement

Does it work?

Hypothesis

Alcohol interventions as a routine component of trauma care will reduce subsequent alcohol intake, and decrease the rate of trauma recidivism

Alcohol Interventions in a Trauma Center

- Study design
  - Harborview Medical Center, Seattle
  - NIH/NIAAA sponsored RCT
  - patients screened with blood alcohol and questionnaire
  - screen positive patients randomized
    - 15 - 30 minute intervention plus follow-up letter
    - standard trauma care

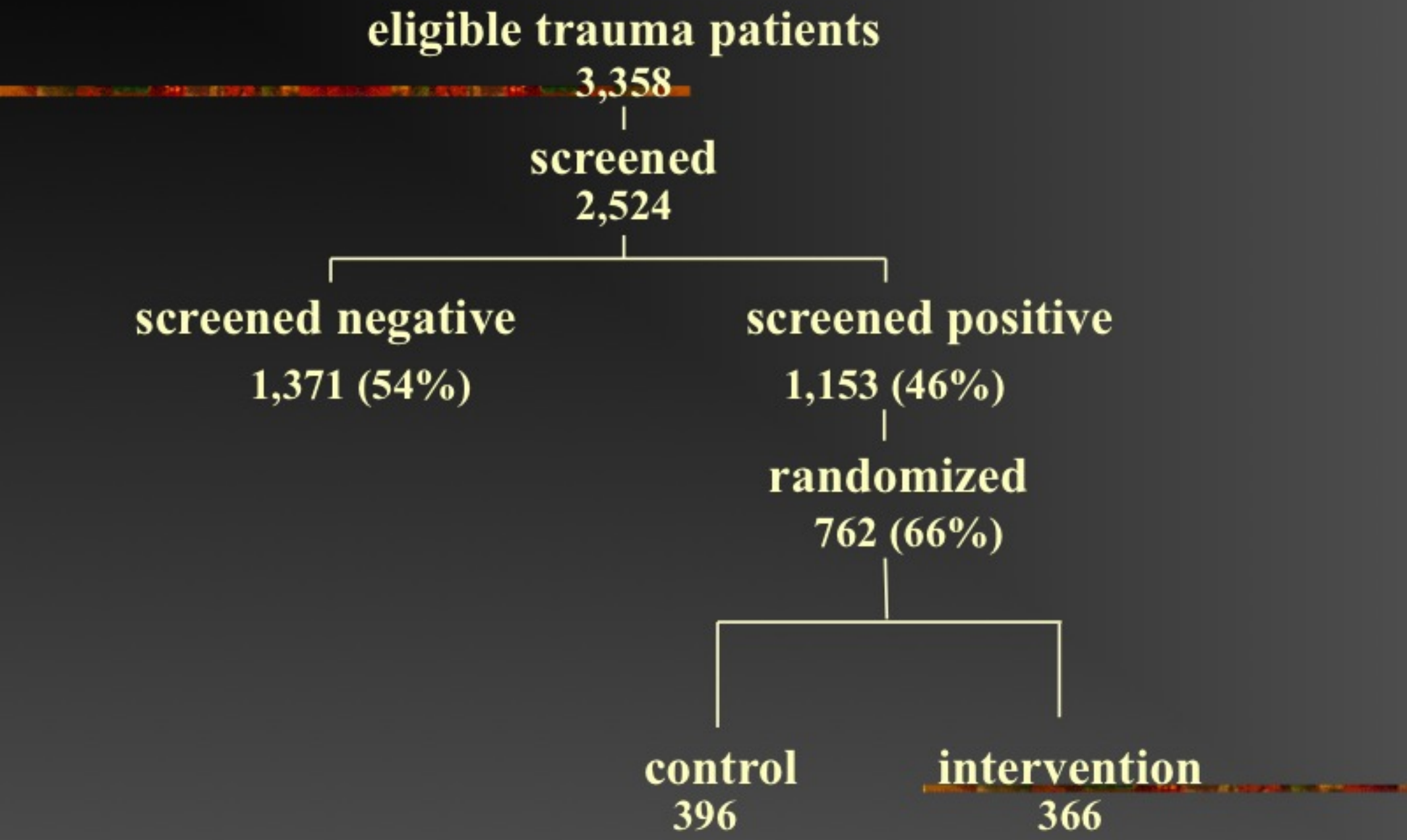
Brief Intervention Elements

- No confrontation, labeling, stereotyping
- Open-ended questions
- Reflective listening
- Offer information in a non-personal manner
- Make connection between drinking and injury
- “What do you like about drinking?”
- “What do you like less about drinking?”

Follow-up

- Objective
  - Harborview ED records for one year after discharge
  - statewide database of all trauma admissions
  - police department records
  - Department of Licensing records (motor vehicle)
- Self-report
  - 6 and 12 month patient interviews
  - corroboration interviews with family members

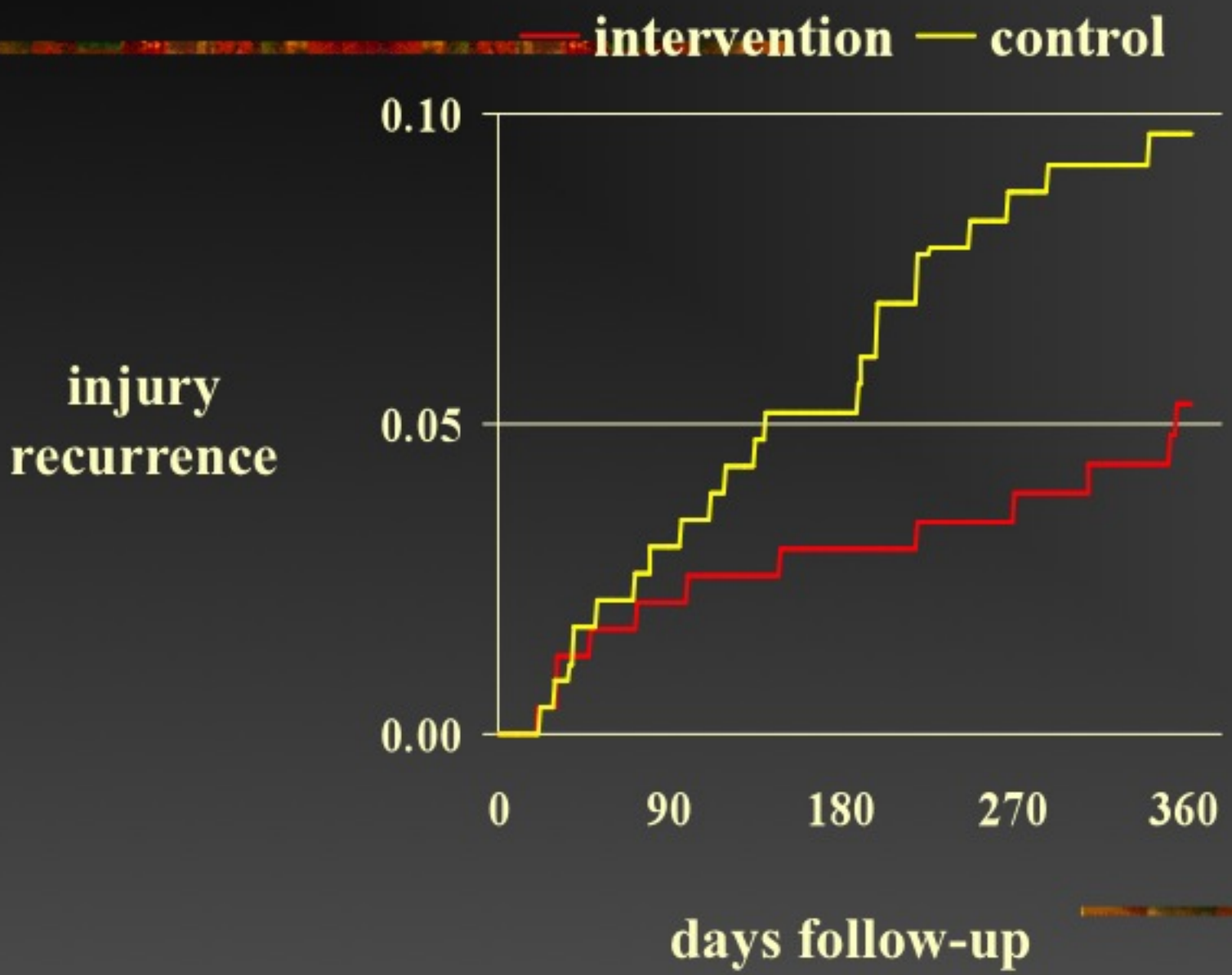
Patient Enrollment



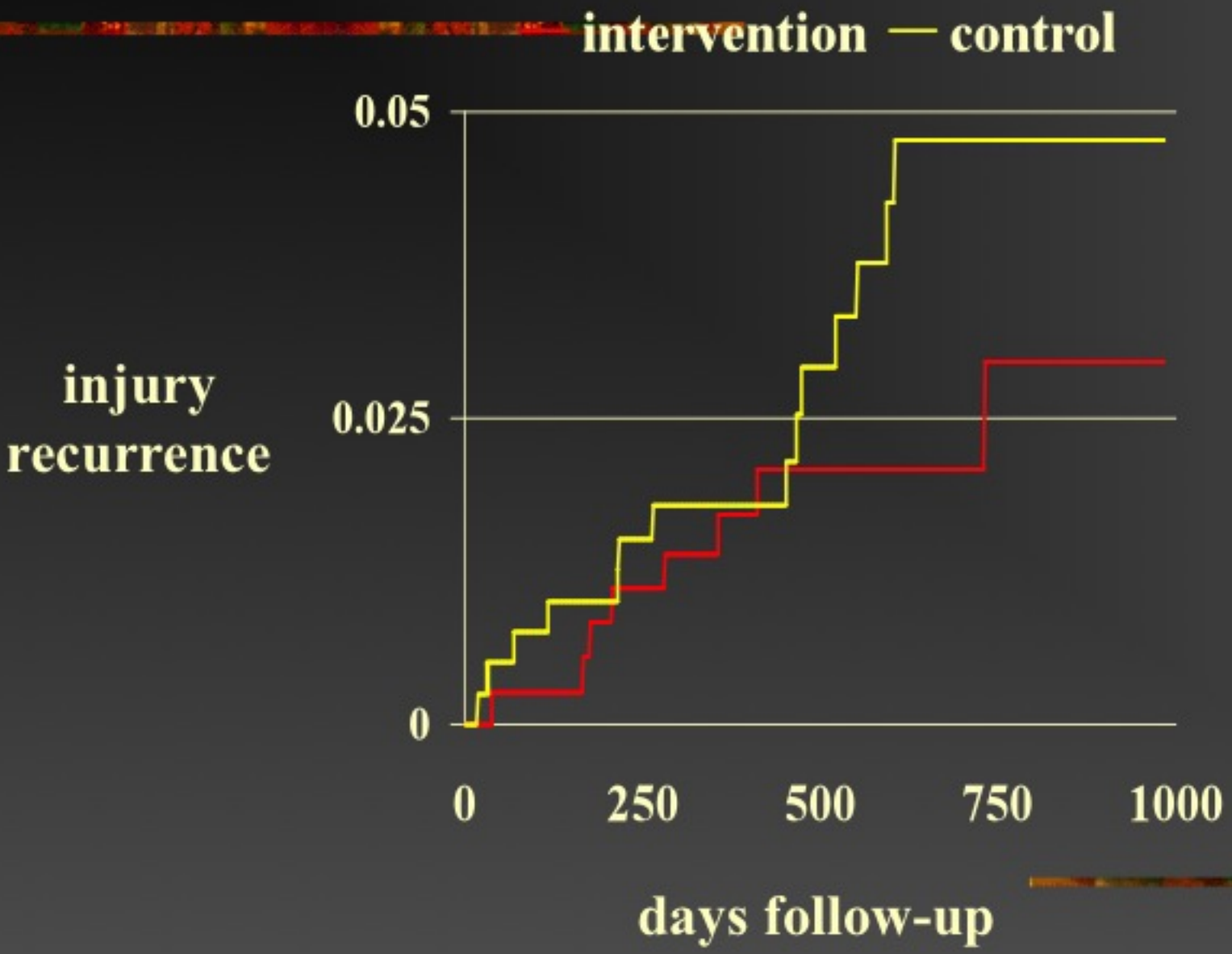
Baseline Characteristics

	intervention	control
Age (years)	35.4	36.8
male	82	82
married	15%	14%
high school or less	53%	51%
employed	52%	48%
drug use	47%	53%
BAC (mean)	153 mg%	151 mg%
sMAST score >8	20%	15%

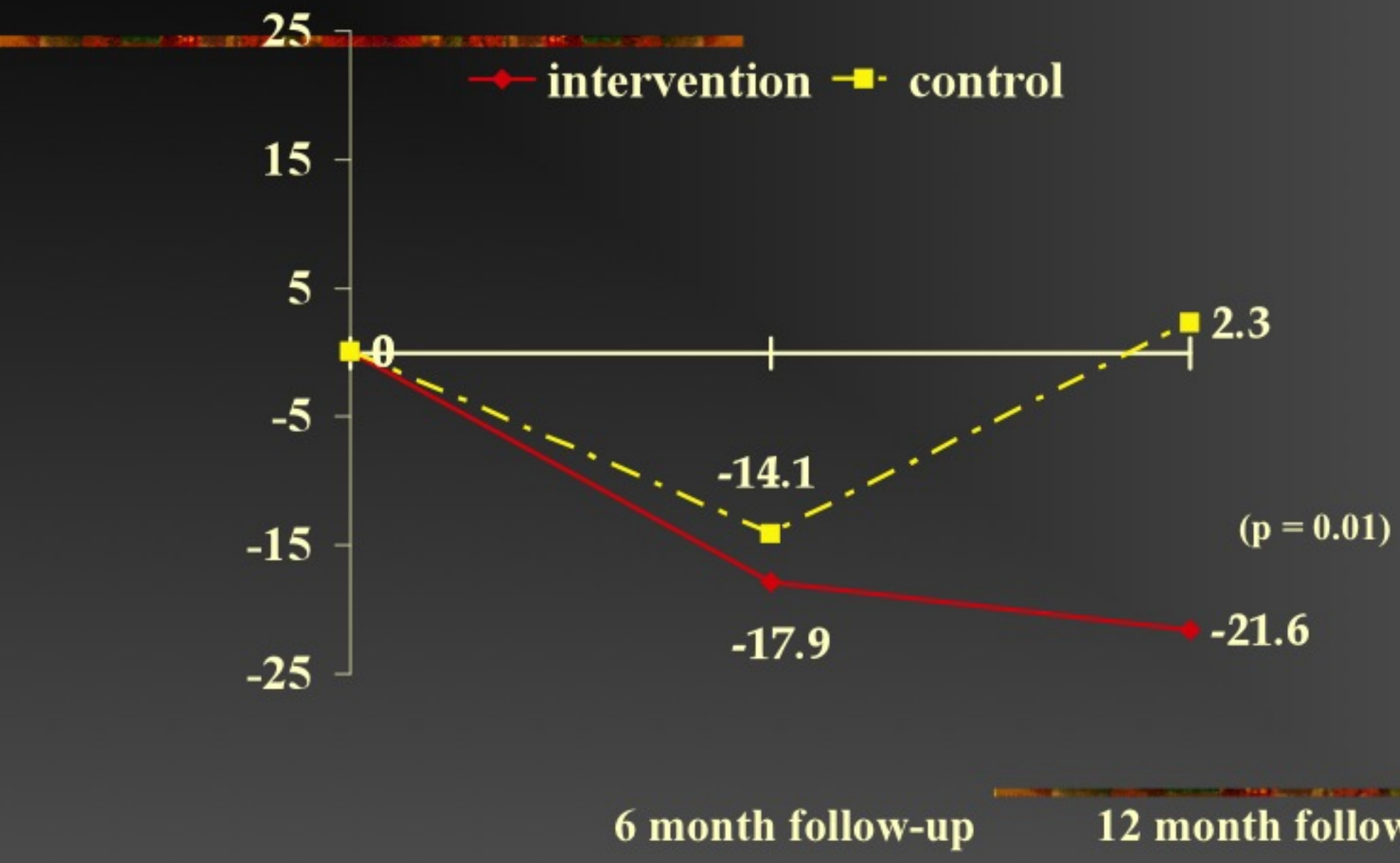
Trauma Recidivism - HMC



Trauma Recidivism - Statewide



Changes in Alcohol Intake



Alcohol Interventions for Trauma Patients Treated in Emergency Departments and Hospitals

A Cost Benefit Analysis

Larry M. Gentilello, MD, Beth E. Ebel, MD, MPH,†‖ Thomas M. Wickizer, MPH, PhD,‡ David S. Salkever, PhD,§ and Frederick P. Rivara, MD, MPH†‖*

Objective: To determine if brief alcohol interventions in trauma centers reduce health care costs.

Summary Background Data: Alcohol-use disorders are the leading cause of injury. Brief interventions in trauma patients reduce subsequent alcohol intake and injury recidivism but have not yet been widely implemented.

Methods: This was a cost-benefit analysis. The study population consisted of injured patients treated in an emergency department or admitted to a hospital. The analysis was restricted to direct injury-related medical costs only so that it would be most meaningful to hospitals, insurers, and government agencies responsible for health care costs. Underlying assumptions used to arrive at future benefits, including costs, injury rates, and intervention effectiveness, were derived from published nationwide databases, epidemiologic, and clinical trial data. Model parameters were examined with 1-way sensitivity analyses, and the cost-benefit ratio was calculated. Monte Carlo analysis was used to determine the strategy-selection confidence intervals.

Results: An estimated 27% of all injured adult patients are candidates for a brief alcohol intervention. The net cost savings of the intervention was $89 per patient screened, or $330 for each patient offered an intervention. The benefit in reduced health expenditures resulted in savings of $3.81 for every $1.00 spent on screening and intervention. This finding was robust to various assumptions regarding probability of accepting an intervention, cost of screening and intervention, and risk of injury recidivism. Monte Carlo simulations found that offering a brief intervention would save health care costs in 91.5% of simulated runs. If interventions were routinely offered to eligible injured adult patients nationwide, the potential net savings could approach $1.82 billion annually.

Conclusions: Screening and brief intervention for alcohol problems in trauma patients is cost-effective and should be routinely implemented.

(*Ann Surg* 2005;241: 541–550)

Alcohol intoxication is the leading risk factor for injury.[1–3] As a result, it offers the most promising and obvious target for injury-prevention programs. Brief alcohol interventions in trauma patients have been shown to reduce subsequent alcohol intake and injury recidivism.[4–8] Given accumulating evidence to support their use, a variety of expert and consensus group panels have concluded that the scientific basis for their routine provision in hospitals and emergency departments has been established, and it is time to move towards national implementation.[7,9–16]

Collaborative Project on Identification & Treatment of Persons with Harmful Alcohol Consumption

(WHO Brief Intervention Study Group, Am J Public Health. 1996;86:948-55)

Site	WHO collaborating centers in 10 countries
Population	Men and women 18-70 seeking care in hospital, ER, primary care, and health screening settings.
Selection criteria	>50 g/day men, >32 g/day women
Sample size	Brief counsel n=576, simple advice n=496, cont n=486
Intervention	Brief counseling: 20-min health interview + alcohol pamphlet + 15 mins of counseling. Simple advice: 20-min interview + 5 min advice + alcohol pamphlet. Control: 20-min health interview.
Follow-up	75% at 9 months
Results	Decreased alcohol use & binge in male counseling & advice groups. Reduction in all groups for women. Simple advice as effective as brief counseling.

Alcohol Interventions in a Trauma Center to Reduce Injury Recurrence *(Gentilello, Ann Surg 1999:230:473-480)*

Site	Level 1 trauma center at the Univ of Washington
Population	Men and women ages 18+ presenting to the trauma center
Selection criteria	Patients screening positive by BAC, GGT, & SMAST
Sample size	Exp. n= 366, cont. n= 396
Intervention	Exp: 30 min motivational interview with psychologist on or near day of discharge and follow-up summary letter mailed one month later. Cont: Routine care.
Follow-up	75% at 6 months, 54% at 12 months
Results	Significant reduction in weekly alcohol consumption in exp group. Also showed 47% reduction in new injuries & 48% reduction in hospital readmissions.

Project Health *(Ockene, Arch Intern Med 1999:159:2198-2205)*

Site	21 physicians & 7 nurse practitioners from 4 primary care internal medicine sites at the U of Massachusetts
Population	Men and women ages 21-70 seeking routine care
Selection criteria	>12 drinks/week or 5+/occasion for men; >9 drinks/ week or 4+/occasion for women; 2+ positive CAGE
Sample size	Exp. n= 274, cont. n= 256
Intervention	Exp: 5-10 min physician or nurse practitioner patient-centered counseling visit, one follow-up visit, and general health booklet. Cont: General health booklet.
Follow-up	91% at 6 months
Results	Significant reduction in weekly alcohol consumption by both groups. Suggestion of a significant decrease in number of binges in experimental group.

Screening & Brief Intervention for High-Risk College Student Drinkers *(Marlatt, J Consult Clin Psychol 1998:66;604-15)*

Site	University of Washington
Population	Males and females in their senior year of high school who were accepted to the University of Washington
Selection criteria	At least 5-6 drinks on 1 occasion in past month or 3 alcohol-related problems on 3-5 occasions in past 3 years on the RAPI.
Sample size	Exp. n= 174, cont. n= 174, normative group n=115
Intervention	Exp: Motivational brief intervention session with psychologist in freshman year. Cont: No treatment.
Follow-up	83% at 2 years.
Results	Significant reductions in drinking rates and harmful consequences in experimental group.

What We Know About Brief Intervention

- Can decrease alcohol use for 12 months
- The effect size is similar for men and women
- No difference in effect by age

What We Know About Brief Intervention

- Can decrease emergency department visits
- Can reduce hospital days
- Can reduce accidents and injuries
- Can reduce costs

What We Don't Know About Brief Intervention

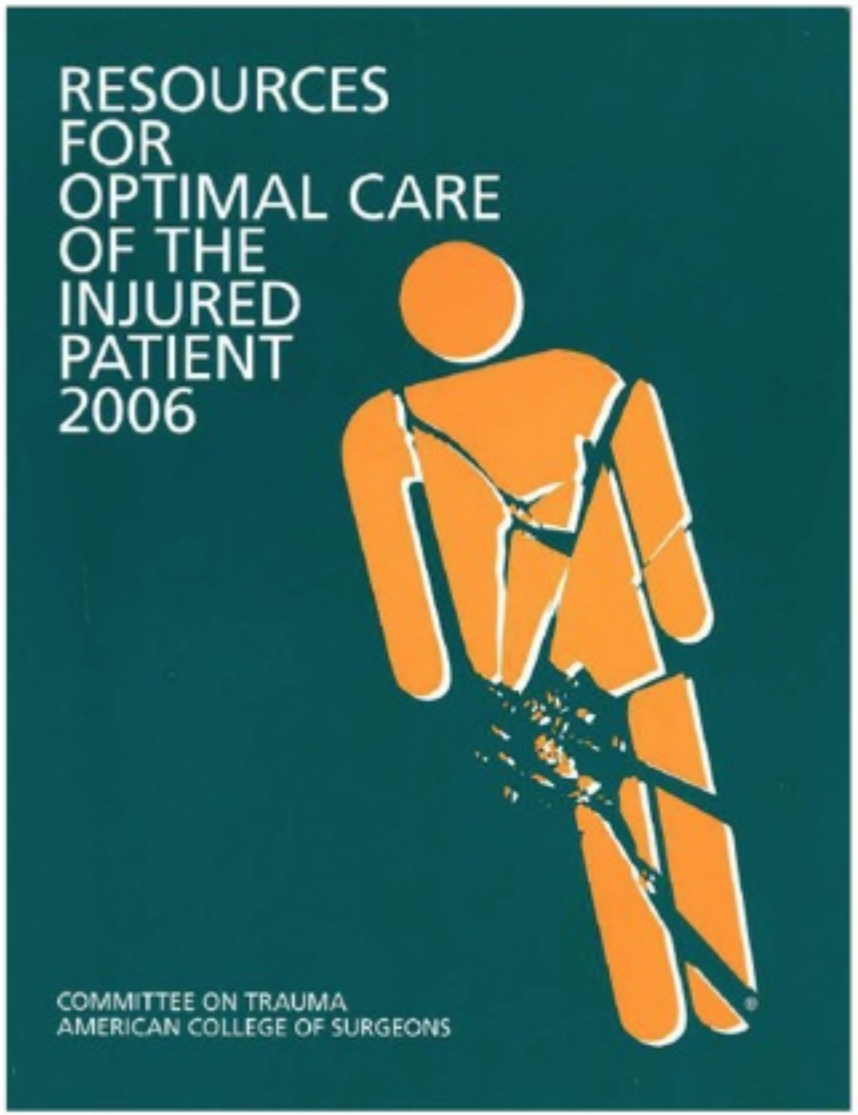
- **Does brief intervention:**
  - work for special populations?
  - work for more than 12 months?
  - reduce morbidity and mortality?
  - work in different health care settings?
  - work better when combined with pharmacotherapy?

Trauma Center Designation

Chapter 18- Prevention

The trauma center must have a mechanism to identify patients who are problem drinkers.

The trauma center must have a mechanism to provide an intervention for patients identified as problem drinkers.



Does Alcohol Screening Have a Role in Injury Prevention?

Yes!