



Washington State Substance Use Outcomes

4.60.WA.2007.1 Preliminary Report: All WASBIRT Sites



Use of Alcohol and Other Drugs Declined Among Emergency Department Patients who Received Brief Interventions for Substance Use Disorders through WASBIRT

Six-Month Follow-up Survey for Participants from All WASBIRT Sites
April 12, 2004 – March 31, 2006

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The Washington State Screening, Brief Intervention, Referral and Treatment (WASBIRT) Program was implemented in nine hospital emergency departments to screen patients for alcohol and drug use, to provide brief interventions to those with substance use disorders, and to refer patients with more serious disorders to brief therapy or more traditional forms of chemical dependency (CD) treatment. Out of 15,291 patients who received at least a brief intervention, 2,648 were randomly selected for follow-up telephone interviews six months after the intervention. Of those selected, 2,057 completed the survey—a 78 percent response rate. Analyses were based on 1,943 patients with complete information on alcohol use items and 1,939 patients with complete information on drug use items (see Technical Notes).

The effects of receiving brief interventions on subsequent substance use among hospital emergency department patients who participated in this study were overwhelmingly positive. The average days of reported recent alcohol and drug use declined and abstinence rates increased in each of three groups defined based on the patient's level of risk and the level of intervention or treatment the patient received for substance use disorders.

Among patients who received at least a brief intervention, substance use reported in the six-month follow-up interview changed significantly compared to use reported at screening.

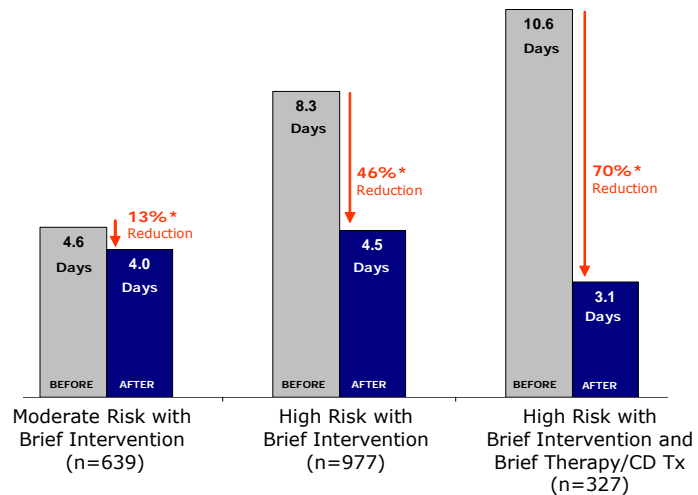
- 80% of 1,398 patients who drank alcohol reduced the number of days of drinking in the past 30 days, with the overall average declining from 10.4 to 5.3 days ($p < .05$).
- The percent of patients reporting abstinence from alcohol in the past 30 days increased from 28% to 47% ($p < .05$).
- 87% of 857 patients who reported bingeing in the last 30 days reduced the number of heavy drinking days, with the average declining from 10.1 to 2.9 days ($p < .05$).
- 84% of 878 patients who reported drug use in the past 30 days reduced the number of days of use, with the overall average declining from 13.7 to 6.5 days ($p < .05$).
- The percent of patients reporting abstinence from illegal drugs in the past 30 days increased from 55% to 71% ($p < .05$).
- Among patients with a high risk for substance use disorders, declines in alcohol use and in illegal drug use were significantly greater for those who also received brief therapy or CD treatment than for those who only received a brief intervention, with demographic characteristics and risk scores held constant ($p < .05$).
- Illegal drug use declined among high risk patients who used various kinds of drugs, including marijuana, cocaine, methamphetamines, heroin, and other opiates ($p < .05$).
- Among high risk patients who used marijuana, cocaine, or methamphetamines, declines in overall drug use were greater for those who also received brief therapy or CD treatment than for those who only received a brief intervention ($p < .05$).

Alcohol Use Outcomes

Average days of alcohol use in the past 30 days declined significantly

The average number of days of drinking in the last 30 days declined significantly:

- From 4.6 to 4.0 days (13% decrease) for patients with moderate risk who got a brief intervention,
- From 8.3 to 4.5 days (46% decrease) for patients with high risk who got a brief intervention, and
- From 10.5 to 3.1 days (70% decrease) for patients with high risk who got a brief intervention plus brief therapy or CD treatment.

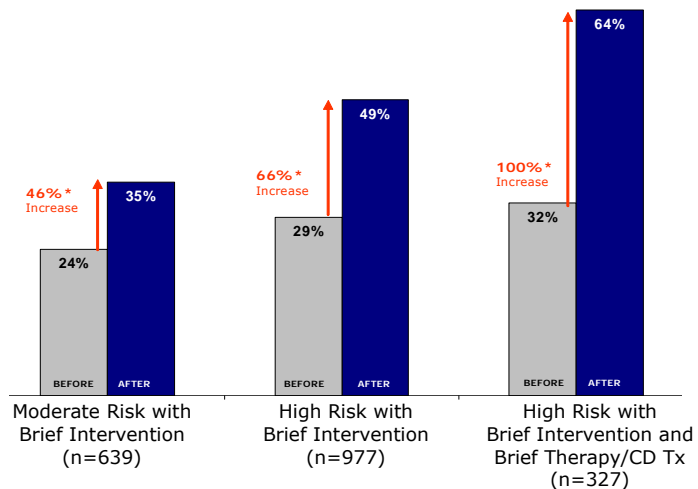


*p < .05

Abstinence from alcohol in the past 30 days increased significantly

Abstinence increased significantly:

- From 24% to 35% of 639 moderate risk patients who got a brief intervention (+46% increase),
- From 29% to 49% of 977 high risk patients who got a brief intervention (+66% increase), and
- From 32% to 64% of 327 high risk patients who got a brief intervention plus brief therapy or CD treatment (+100% increase).



*p < .05

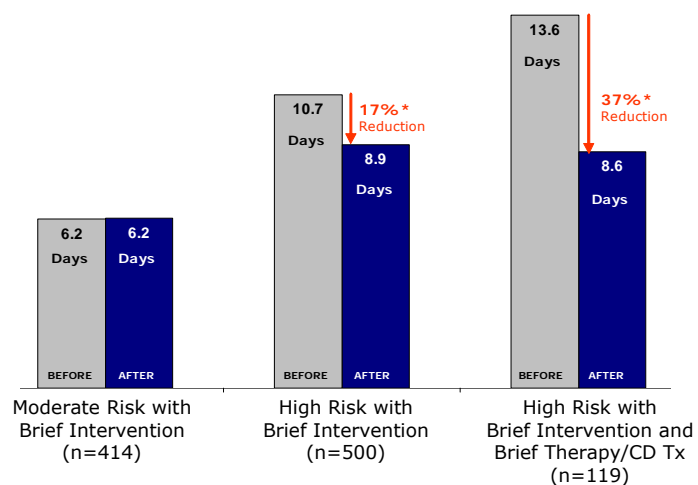
Among those who reported drinking in the follow-up period, average days of drinking declined significantly in the two higher risk groups

Of the 1,943 patients who received at least a brief intervention, 1,033 (53%) reported drinking in the last 30 days in the follow-up survey.

- Average days of drinking remained constant at 6.2 days for those in the moderate risk group.

Recent days of drinking declined:

- From 10.7 to 8.9 days among high risk participants who only got a brief intervention and
- From 13.6 to 8.6 days for those who also got brief therapy, CD treatment, or both.

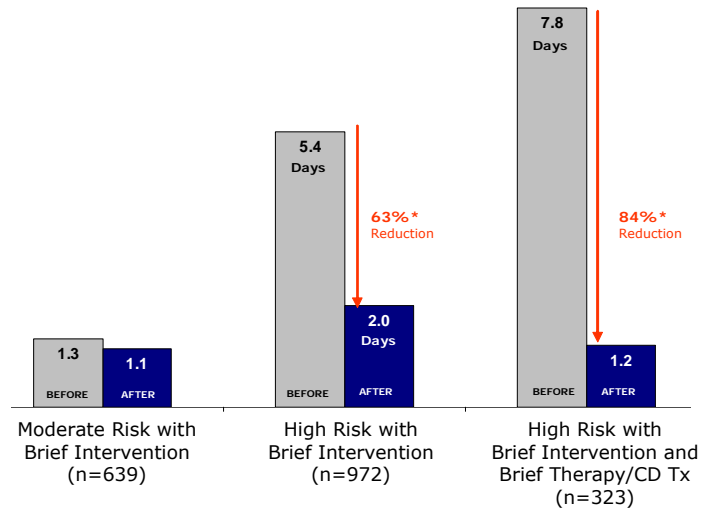


*p < .05

Binge drinking in the past 30 days declined significantly in high risk groups

Binge drinking was counted as having five or more drinks in one sitting in the last 30 days.

- Binge drinking remained constant at slightly over 1 day for the moderate risk group,
- Bingeing dropped from 5.4 to 2.0 days (63% decrease) for high risk patients who got a brief intervention, and
- Bingeing dropped from 7.8 to 1.2 days (84% decrease) for high risk patients who got a brief intervention plus brief therapy or CD treatment.



*p < .05

Among drinkers in the high risk groups, receiving brief therapy or CD treatment was associated with greater declines in alcohol use compared to receiving a brief intervention alone

Among patients with a high risk for substance use disorders, declines in alcohol use were significantly greater for those who received brief therapy or CD treatment than for those who only got a brief intervention, with other characteristics held constant in multiple regression analyses (p < .05). Specifically, when age, gender, and baseline risk scores were held constant, receiving brief therapy or CD treatment was associated with a significant decline in recent alcohol use. Independently of the effects of receiving treatment, declines in alcohol use were also associated with increasing age and higher alcohol risk scores at baseline.

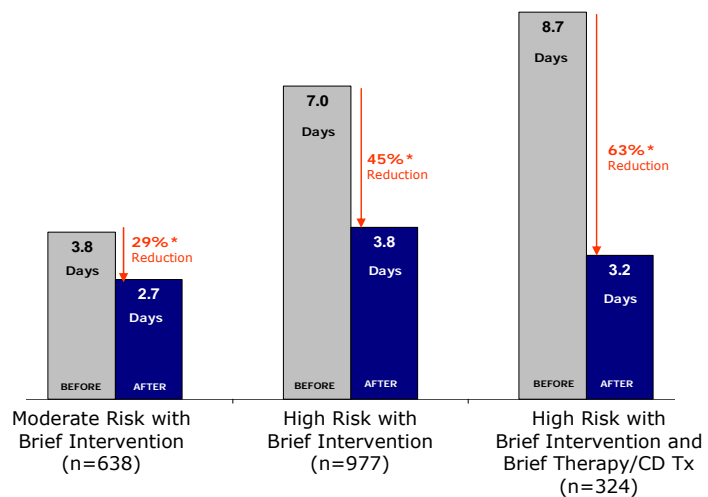
Additional regression analyses were performed separately for patients in the high risk groups who used only alcohol and those who used both alcohol and other drugs. In each of these groups, receiving brief therapy or CD treatment was associated with significantly greater declines in alcohol use than receiving brief intervention alone, although the effect was greater for those who only used alcohol (p < .05).¹

Drug Use Outcomes

Average days of drug use in the past 30 days declined significantly

Out of 1,939 patients who received at least a brief intervention, the average number of days of drug use in the past 30 days declined significantly:

- From 3.8 to 2.7 days (29% decrease) among moderate risk users who received a brief intervention,
- From 7.0 to 3.8 days (45% decrease) for high risk users who got only a brief intervention, and
- From 8.7 to 3.2 days (63% decrease) for high risk users who got a brief intervention plus brief therapy and/or CD treatment.



*p < .05

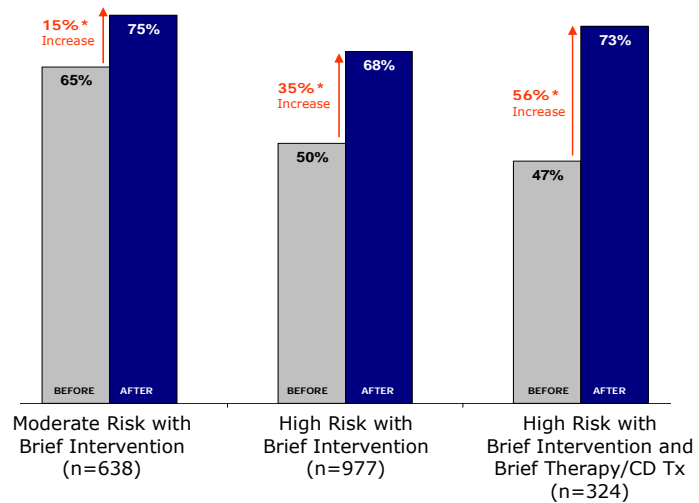
¹ See results from regression analyses in "Analyses of Change in Alcohol and Other Drug Use" in the Technical Notes section (page 8).

Abstinence from drug use in the past 30 days increased significantly

Abstinence increased significantly:

- From 55% to 71% of 1,943 patients at all risk levels,
- From 65% to 75% of 638 moderate risk patients who got a brief intervention (+15% increase),
- From 50% to 68% of 977 high risk patients who got a brief intervention (+35% increase), and
- From 47% to 73% of 324 high risk patients who also got brief therapy, CD treatment, or both (+56% increase),

*p<.05

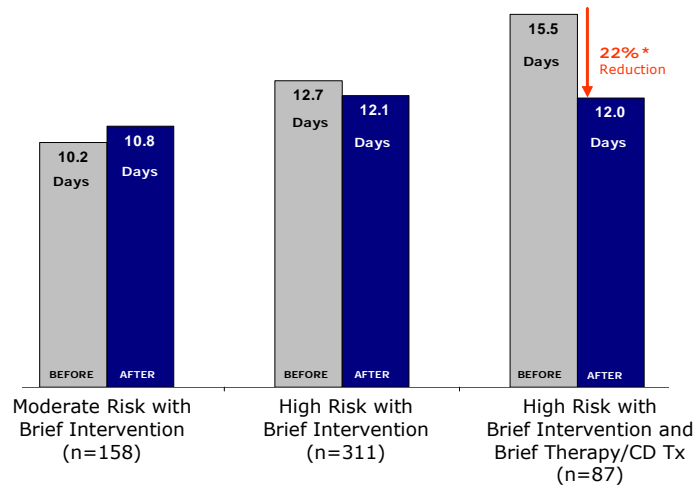


Among persons who were using drugs in the follow-up period, only those who got brief therapy or CD treatment reduced the number of days of use

Of the 556 who reported using drugs during the 30 days before the follow-up survey, the average number of days of drug use:

- Had not changed significantly in the moderate risk group from the use reported at baseline,
- Had not changed significantly in the high risk group that got a brief intervention, but
- Dropped from 15.5 to 12.0 days for those who got a brief intervention plus brief therapy, CD treatment, or both.

*p<.05

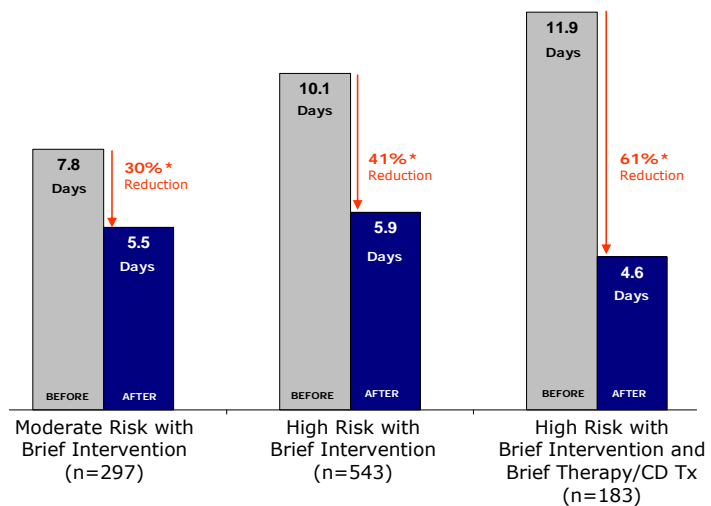


Average days of drug use declined for marijuana users at all risk levels

Among marijuana users, the average number of days of drug use in the past 30 days declined significantly:

- From 7.8 to 5.5 days (30% decrease) among moderate risk users who received a brief intervention,
- From 10.1 to 5.9 days (41% decrease) for high risk users who got only a brief intervention, and
- From 11.9 to 4.6 days (61% decrease) for high risk users who got a brief intervention plus brief therapy, CD treatment, or both.

*p < .05

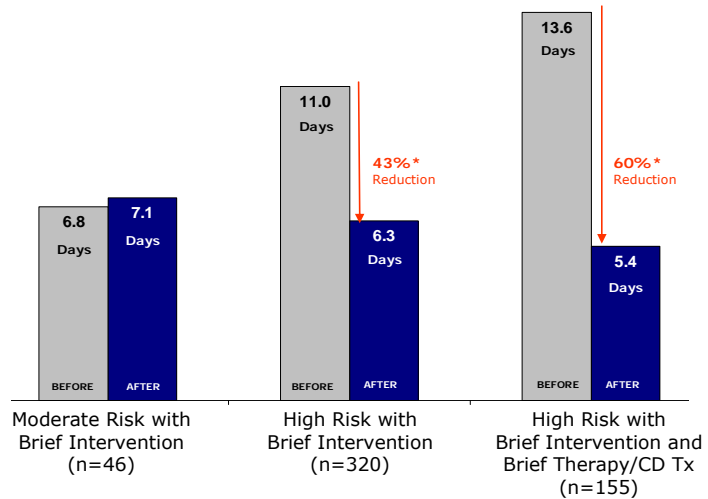


Average days of drug use declined for high risk cocaine users

Among cocaine users, the average number of days of drug use in the past 30 days:

- Did not change significantly among moderate risk users who received a brief intervention,
- Dropped from 11.0 to 6.3 days (43% decrease) for high risk users who got only a brief intervention, and
- Dropped from 13.6 to 5.4 days (60% decrease) for high risk users who got a brief intervention plus brief therapy, CD treatment, or both.

*p < .05

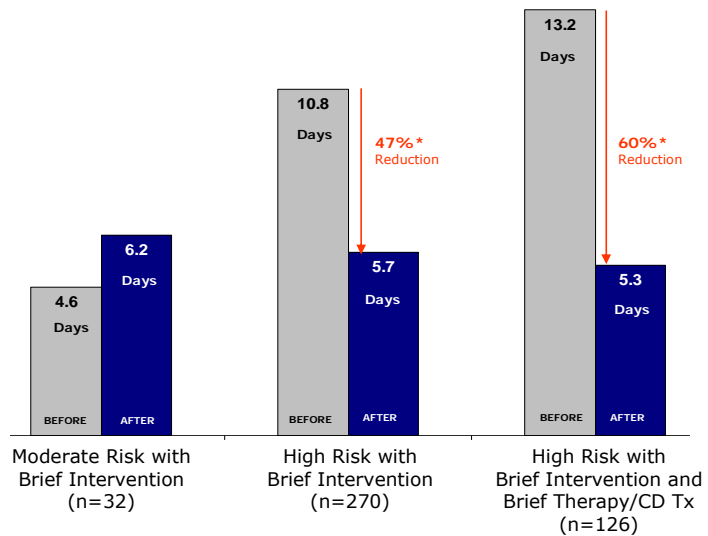


Average days of drug use declined for high risk methamphetamine users

Among methamphetamine users, the average number of days of drug use in the past 30 days:

- Did not change significantly among moderate risk users who received a brief intervention,
- Dropped from 10.8 to 5.7 days (47% decrease) for high risk users who got only a brief intervention, and
- Dropped from 13.2 to 5.3 days (60% decrease) for high risk users who got a brief intervention plus brief therapy, CD treatment, or both.

*p < .05

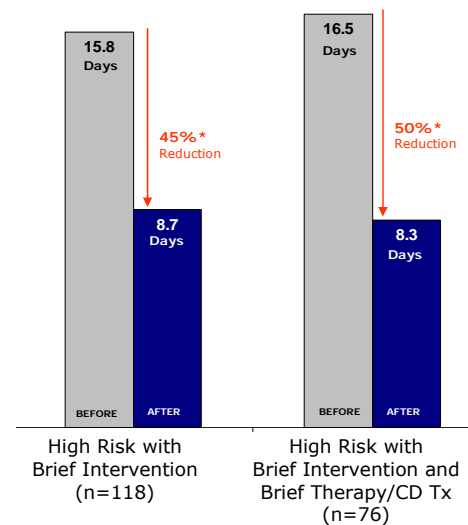


Average days of drug use declined for heroin users with high risk scores

The average number of recent days of illegal drug use declined significantly for those who had used heroin:

- From 15.8 to 8.7 days (45% decrease) for high risk users who got only a brief intervention, and
- From 16.5 to 8.3 days (50% decrease) for high risk users who got a brief intervention plus brief therapy, CD treatment, or both.
- Abstinence from any drug increased from 20% to 49% for those who received only a brief intervention (p<.05) and from 21% to 51% for those who also got treatment (p<.05); abstinence from heroin use rose from 45% to 67% and from 45% to 74%, respectively (p<.05). These findings are consistent with those in a clinical control study which found that abstinence from heroin and cocaine use increased significantly six months after a brief intervention.²

*p < .05

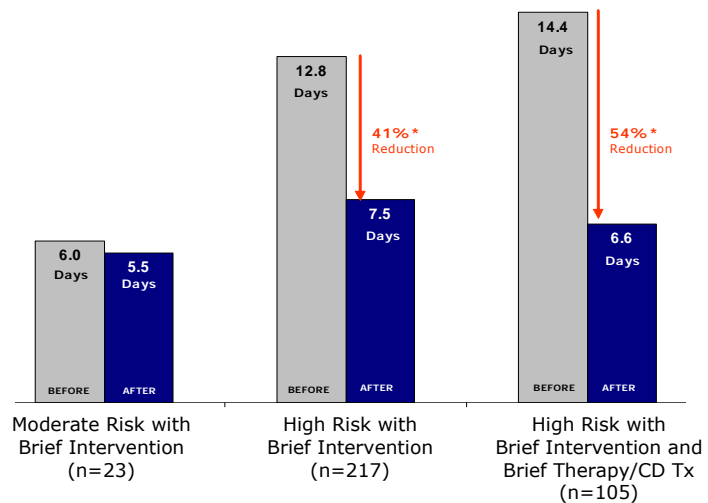


² J Bernstein, E Bernstein, K Tassiopoulos, T. Heeren S. Levenson, R. Hingson. 2005. Brief motivational intervention at a clinic visit reduces cocaine and heroin use. *Drug and Alcohol Dependence* 77:49-59.

Average days of drug use declined for high risk users of other opiates³

Among users of opiates other than heroin, the average number of days of drug use in the past 30 days:

- Did not change significantly among moderate risk users who received a brief intervention,
- Dropped from 12.8 to 7.5 days (41% decrease) for high risk users who got only a brief intervention, and
- Dropped from 14.4 to 6.6 days (54% decrease) for high risk users who got a brief intervention plus brief therapy, CD treatment, or both.



*p < .05

Among illegal drug users in the high risk groups, receiving brief therapy or CD treatment was associated with greater declines in illegal drug use compared to receiving a brief intervention alone

Among high risk illegal drug users, receiving brief therapy or CD treatment contributed to even greater declines in drug use beyond the reductions that appear to occur due to the brief intervention alone. Specifically, in regression analyses with age, gender, and risk scores for substance use disorders held constant, receiving brief therapy or CD treatment was found to be significantly related to greater declines in recent illegal drug use ($p < .05$).

Additional regression analyses were performed separately for patients in the high risk groups who used only illegal drugs and those who used both alcohol and other drugs. For the relatively few drug users who used illegal drugs but no alcohol ($n=79$), the regression analysis did not show any additional reduction in drug use associated with receiving brief therapy or CD treatment. Among those who used alcohol and other drugs, however, receiving brief therapy or CD treatment was associated with significantly greater declines in drug use than receiving brief intervention alone ($p < .05$).

The effects of receiving brief therapy or CD treatment on declines in illegal drug use were found for patients who used various kinds of drugs, including marijuana, cocaine, and methamphetamines ($p < .05$).⁴

TECHNICAL NOTES

Six-Month Follow-up Survey Procedures

Out of 15,291 patients with moderate or high risks for substance use disorders, a sample of 2,648 patients was selected for the follow-up survey. Interviews were completed with 2,057 of the sample—a 78 percent response rate. The response rate excludes 25 people who died by the time the follow-up interview was due.

Between April 2004 and June 2005, the sample was drawn from patients who received at least a brief intervention. Some patients with low risk scores were included in the sample due to harmful use patterns, being in recovery, or other risk factors identified by the counselor (e.g., underage drinking). In July 2005 the Center for Substance Abuse Treatment required all SBIRT sites to use an “intent to treat” method for sample selection. Using this method, WASBIRT randomly drew the sample based solely on risk scores.

Follow-up interviews were conducted at the Research and Data Analysis Division using standard survey techniques that included mailing of advance contact letters and repeated attempts at telephone calls for hard-to-reach respondents. Contact information was gathered from the patient at baseline and augmented by administrative records to update and alternate contacts based on permissions granted by the patient.

³ Opiates other than heroin include morphine; Oxycodone; Demerol; Dilaudid; Percocet; Darvon; Codeine; Tylenol 2, 3, or 4; and non-prescription methadone.

⁴ See results of the regression analyses in the Technical Notes section.

Measures of Substance Use

Change in substance use is based on self-reported information gathered as part of the Baseline Screening Survey and the Six-Month Follow-up Survey from answers to the following questions:

During the past 30 days, how many days have you ...

- *Used any alcohol?*
- *Had 5 or more drinks in one sitting?* (This was used as a measure of binge drinking.)
- *Used any illegal drugs?* (Use of illegal drugs included misuse of prescription drugs.)

Self-reports of alcohol and drug use in clinical settings have been found to be reliable compared to biological measures.⁵ WASBIRT was conducted using validated screening instruments that rely on objective measures of substance use that also improve accuracy of self-reported information.⁶

Classification of Risk and Intervention Groups

Study participants were divided into moderate and high risk categories based on their scores on the alcohol and drug screening instruments (Alcohol Use Disorders Identification Test (AUDIT) and Drug Abuse Screening Test (DAST)). The high risk participants were further divided into two groups based on whether or not they entered brief therapy or CD treatment after receiving a brief intervention.

Identification of who received brief therapy or CD treatment was from WASBIRT study records, Division of Alcohol and Substance Abuse's Treatment and Report Generation Tool (TARGET), or the Medicaid Management Information System (MMIS). These records were linked to the WASBIRT survey data for 1,953 participants who gave permission to use administrative records. Of the 328 people classified as receiving brief therapy or CD treatment, 128 received only brief therapy through the WASBIRT program and 200 were found to have received publicly funded CD treatment within 120 days of receiving a brief intervention.

Criteria for Defining Risk and Intervention Groups

For analysis purposes, participants were placed into risk categories (Low, Moderate, or High) based on their AUDIT and DAST scores. A person would be placed in the category that represented the highest level of risk based on either their AUDIT or DAST scores. If a patient whose AUDIT and DAST scores would place them in the low risk group also had indicators of bingeing or used alcohol prior to an injury being treated in the emergency department, then he or she was moved up to the moderate risk group. In addition, if a person in the moderate risk group said yes to one of three indicators of chemical dependency on the AUDIT survey, he or she was moved to the high risk level. Participants in the high risk pool were divided into two groups based on whether they received only a brief intervention or they entered brief therapy, CD treatment, or both within 120 days of receiving a brief intervention.

	Low Risk with Screen Only (not in follow-up)	Moderate Risk with Brief Intervention	High Risk with Brief Intervention	High Risk with Brief Intervention Plus Brief Therapy or CD Treatment
Screening scores				
AUDIT - Female	Less than 7	7 – 15	16 – 40	16 – 40
AUDIT - Male	Less than 8	8 – 15	16 – 40	16 – 40
DAST	0	1 – 2	3 – 10	3 – 10
Additional criteria				
Binge drinking		X		
Pre-injury alcohol use		X		
Alcohol dependence condition			X	X
Average scores				
AUDIT	1	5	15	19
DAST	0	1	4	5

Of the 2,057 respondents who completed the follow-up interview, 13 (0.6%) were excluded from analyses because they did not get a brief intervention for various reasons (e.g., not interested, already in treatment, counselor thought score was too low). Another 91 (4%) who got a brief intervention were excluded from analyses because they could not be placed in the above analysis categories because they did not give permission for the use of their treatment records (n=56) or their risk scores were below the minimum cut-points for receiving a brief intervention (n=21) or additional treatment (n=14). For the 91 patients who received a brief intervention, we found significant decreases in alcohol use (from 10.4 to 5.3 days (p<.05)) and drug use (from 13.7 to 6.5 days (p<.05)). Also, 32 (1.6%) cases were excluded when their answers on alcohol use, bingeing, or drug use questions were missing in either the baseline or follow-up survey.

⁵ J Brown, HR Kranzler, FK Del Boca. 1992. Self-reports by alcohol and drug abuse inpatients: Factors affecting reliability and validity. *Addiction* 87 (7) 1013-1024. LC Sobell, MB Sobell. 2003. Alcohol consumption measures. In *Assessing Alcohol Problems: A Guide for Clinicians and Researchers*, 2nd Edition. National Institute on Alcohol Abuse and Alcoholism.

⁶ TF Babor, JC Higgins-Biddle, JB Saunders MG Monteiro. 2001. *The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care*. 2nd Edition. World Health Organization, Department of Mental Health and Substance Dependence.

Analyses of Change in Alcohol and Other Drug Use

Statistical significance values shown in bar charts on prior pages were based on paired t-tests for changes in average days of substance use and Fisher's Exact Test for changes in abstinence.

Regression analyses presented in the following table were used to assess the effects of receiving treatment in addition to a brief intervention on days of alcohol and other drug use among patients with high risk scores.

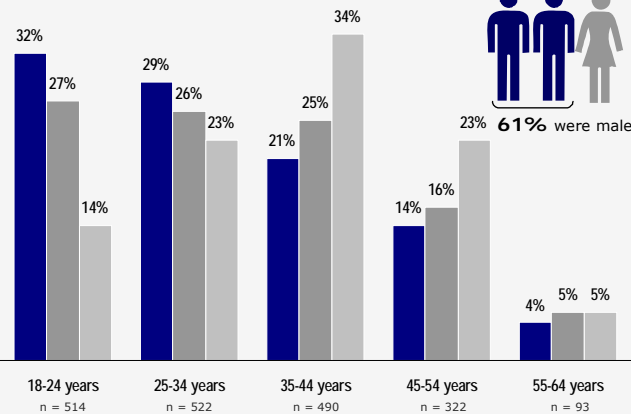
Effects of Brief Therapy and Chemical Dependency Treatment on Alcohol and Other Drug Use Among Emergency Department Patients with High Risk for Substance Use Disorders						
	Number	Demographics		Risk Indicators		Brief Therapy or CD Treatment
		Age	Gender	AUDIT	DAST	
Use of Alcohol						
Alcohol and/or Drug Use	1,235	-0.08	-0.15	-0.38	0.16	-1.95
Alcohol Use Only	547	-0.14	0.26	-0.35		-2.13
Alcohol and Drug Use	688	-0.05	-0.42	-0.43	-0.12	-1.08
Use of Drugs						
Alcohol and/or Drug Users	972	0.04	-1.21	0.10	-1.01	-1.76
Drug Use Only	265	0.09	0.06		-0.81	0.29
Alcohol and Drug Use	707	0.04	-1.48	0.05	-1.10	-2.45
Drug Used in Year Before Screening*						
Marijuana	725	0.04	-1.25	0.10	-0.93	-2.20
Cocaine	472	0.05	-2.64	0.10	-1.02	-2.72
Methamphetamines	396	0.09	-1.58	0.16	-0.92	-2.66
Heroin	194	0.14	-0.32	0.20	0.11	-1.99
Other Opiates	322	0.09	-2.04	0.16	-0.97	-2.03

p < .05 - numbers shown in bold
 *Persons who used more than one type of drug are included in each category of drug used.

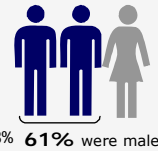
Demographics

Age Distribution

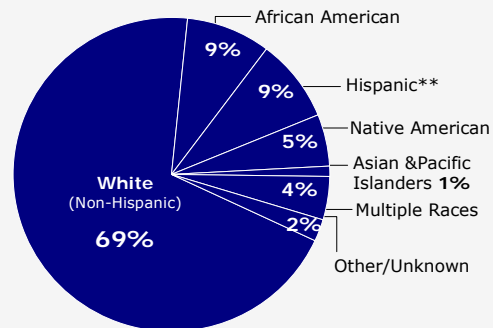
TOTAL = 1953*



Gender



Race | Ethnicity*



* Race/ethnicity is shown for the total sample since the counts in some intervention categories are too small to distribute by race.

** Persons of Hispanic Origin are counted only under the "Hispanic" category.

■ Moderate Risk and Brief Intervention Only, Average Age = 33
 ■ High Risk and Brief Intervention Only, Average Age = 35
 ■ High Risk and BI Plus Brief Therapy or CD Treatment, Average Age = 38

* Includes 12 people aged 65 or above

Additional copies of this paper may be obtained from: <http://www1.dshs.wa.gov/RDA/> or <http://www1.dshs.wa.gov/dasa/> or through the Washington State Alcohol|Drug Clearinghouse by calling 1-800-662-9111 or 206-725-9696 (within Seattle or outside Washington State), by e-mailing clearinghouse@adhl.org, or by writing to 6535 Fifth Place South, Seattle, Washington 98108-0243.

This report was funded through grant number 1 UD1 TI15962-01 from the Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment to the Office of the Governor.



Research and Data Analysis Division Report Number 4.60.WA.2007.1