



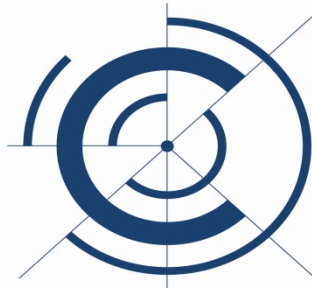
SBIRT IOWA

Iowa Army National Guard

THE IOWA CONSORTIUM FOR SUBSTANCE ABUSE RESEARCH AND EVALUATION

**Iowa Army National Guard
Biannual Report
October 2014**

**With Funds Provided By:
Iowa Department of Public Health,
Division of Behavioral Health;
Substance Abuse and Mental Health Services
Administration, Center for Substance Abuse
Treatment, Grant Number TI023466**



**THE IOWA
CONSORTIUM**
FOR SUBSTANCE ABUSE RESEARCH AND EVALUATION

**SBIRT IOWA
Army National Guard
Biannual Report
October 2014**

**Kristin White, MA
Evaluation Coordinator**

**Stephan Arndt, PhD
Director**

**Julie Palmer, BA
Associate Director**

Citation of references related to this report is appreciated.

Suggested Citation:

White, K., Arndt, S. & Palmer, J. (2014). Screening, Brief Intervention and Referral to Treatment (SBIRT). Iowa Army National Guard Biannual Report. (Iowa Department of Public Health contract #5885YM50). Iowa City, IA; Iowa Consortium for Substance Abuse Research and Evaluation.
<http://iconsortium.subst-abuse.uiowa.edu/>

EXECUTIVE SUMMARY

Nearly 4,000 Soldiers have undergone SBIRT IOWA screening since the beginning of the project. Substance use (AUDIT and/or DAST-10) and mental health (PHQ-9) screening scores were present in a little over half of the screening records. AUDIT scores differed based on sex and age, with males and those below age 25 tending to score higher than others. There were no other differences in scores based on demographics for any of the screening instruments. Deployment status also had no bearing on screening score.

Six hundred fifty-five Soldiers (16.8%) received a second SBIRT screening at the same or different SBIRT site; 408 did so within a year of their first screening. There was no statistically significant change in screening score from first to second screening for Soldiers administered the instrument at both screenings. However, a bias exists in the AUDIT and PHQ-9 scores: The average scores of Soldiers administered the screening instruments at both screenings were higher than those completing the instruments at only one screening. Therefore, these scores are not representative of the entire population of Soldiers screened in SBIRT.

Screening Instrument	Number of Soldiers	Initial Score Mean (SD)	Second Score Mean (SD)	Change Mean (SD)
AUDIT ¹	333	5.12 (2.93)	5.04 (2.98)	-0.08 (2.86)
DAST-10 ²	4	2.50 (1.29)	4.50 (1.91)	2.00 (1.83)
PHQ-9 ³	180	0.49 (1.98)	0.34 (1.91)	-0.16 (2.53)

The number of Soldiers receiving SBIRT-related substance use disorder treatment between first and second screening was too low to assess treatment effect on screening scores.

There were no statistical differences in hazardous/risky behaviors between first and second screening in the available data. However, data on many indicators was too low to effectively assess change. The Evaluators recommend collecting PHQ-9 and GPRA hazardous behavior indicator data on all Soldiers screened in order to provide more complete data on which to draw conclusions.

TABLE OF CONTENTS

Executive Summary	i
Background.....	1
Screening/Assessment Tools and Scoring Key.....	1
Table 1. Screening Tool Scoring Key	2
Screening Results	2
Table 2. Number and Percent of Records with Screening Scores	3
Screening Results by Demographics	3
Table 3. Screening Scores by Sex	3
Table 4. Screening Scores by Age	4
Table 5. Screening Scores by Race	4
Table 6. Screening Scores by Ethnicity	5
Screening Results by Deployment Status	5
Table 7. Screening Scores by Deployment Status.....	5
Change Over Time	5
Figure 1. Time Between SBIRT Screenings	6
Change in Screening Scores	6
Table 8. Screening Scores and Change Over Time	6
Treatment Effects on Screening Score	7
Change in Hazardous Behaviors	7
Table 9. Risk Category at First and Second Screening	8
Table 10. Change in Six GPRA Risk Measures from First to Second Screening	8
Conclusion	9

BACKGROUND

In July 2012, the Iowa Department of Public Health (IDPH) was awarded a five-year grant to provide Screening, Brief Intervention and Referral to Treatment (SBIRT) services by the Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Substance Abuse Treatment (CSAT). SBIRT IOWA uses a comprehensive, integrated, public health approach to incorporate universal screening into medical practice and within the Iowa Army National Guard (IAARNG) to identify, reduce, and prevent hazardous alcohol or drug use. Specially trained substance use disorder treatment staff administer prescreening and screening for alcohol and other substance use to Soldiers affiliated with the IAARNG. The staff also conduct Brief Interventions, Brief Treatment sessions, and make referrals for substance abuse treatment. The Iowa Consortium for Substance Abuse Research and Evaluation (Consortium) conducts the evaluation for the SBIRT IOWA project.

In Year Two of the project, SAMHSA approved the use of carry-over funds to conduct analyses on IAARNG screening and outcomes data. The data provided in this report cover the beginning of the project (October 25, 2012) through October 6, 2014.

Screening/Assessment Tools and Scoring Key

SBIRT IOWA staff at the IAARNG administer the 10-question Alcohol Use Disorders Identification Test (AUDIT) when a Soldier pre-screens positive for risky alcohol use, and the Drug Abuse Screening Test (DAST-10) when a Soldier pre-screens positive for drug use. (See SBIRT IOWA Year Two Annual Evaluation Report for additional information on prescreening questions.) The Patient Health Screen (PHQ) is a screening and diagnostic tool used by health care professionals for assessing mental health disorders. The PHQ-9 is the depressive disorders module of the PHQ, and is an optional screening tool for SBIRT providers.

Table 1 on the following page provides the scoring ranges, associated risk levels, and recommended services for the AUDIT, DAST-10, and PHQ-9.



Table 1. Screening Tool Scoring Key

Score	Risk Level	Recommended Service
AUDIT		
0 – 7	Low Risk/Negative	Encouragement and Education
8 – 15	Risky or Hazardous	Brief Intervention
16 – 19	High Risk or Harmful	Brief Treatment
20 – 40	High Risk	Referral to Treatment
DAST-10		
0	Low Risk	Encouragement and Education
1 – 2	Moderate Risk	Brief Intervention
3 – 5	Substantial Risk	Brief Treatment
6 – 10	Severe Risk	Referral to Treatment
PHQ-9¹		
0 – 4	Minimal Depression	Patient may not need depression treatment.
5 – 9	Mild Depression	Physician uses clinical judgment about treatment, based on patient's duration of symptoms and functional impairment.
10 – 14	Moderate Depression	
15 – 19	Moderately Severe Depression	Warrants treatment for depression, using antidepressant, psychotherapy and/or a combination of treatment.
20 – 27	Severe Depression	

RESULTS

Screening Results

A total of 3,907 Soldiers underwent SBIRT IOWA screening (meaning at least a prescreening) from October 25, 2012 through October 6, 2014. Table 2 on the following page lists the number of Soldiers' screening records with and without AUDIT, DAST-10 and PHQ-9 scores present, and the percentage of total records with those scores present.

¹UMHS Depression Guideline, August 2011. PHQ-9 Questionnaire for Depression Scoring and Interpretation Guide. Retrieved from <http://www.med.umich.edu/1info/FHP/practiceguides/depress/score.pdf>



Table 2. Number and Percent of Records with Screening Scores

	Score Present	Score Not Present	Percent with Scores
AUDIT	2260	1647	57.8%
DAST-10	73	3834	1.9%
PHQ-9	2150	1757	55.0%

Screening Results by Demographics

Tables 3 through 6 present screening scores for the instruments by demographic characteristics. The tables provide the average (mean) score, standard deviation, and number of individuals with scores. Statistical significance test values are provided below the tables.

Table 3 shows screening scores by sex of the person screened. Males scored significantly higher than females on the AUDIT. There were no statistically significant differences between the sexes on DAST-10 or PHQ-9 scores.

Table 3. Screening Scores by Sex

	Males Mean Score (SD)	Females Mean Score (SD)
AUDIT¹	4.97 (3.05) n=2007	4.20 (2.98) n=253
DAST-10²	3.32 (2.05) n=65	3.50 (2.39) n=8
PHQ-9³	0.55 (2.32) n=1846	0.47 (1.94) n=304

¹Mann-Whitney p < 0.0001

²Mann-Whitney p < 0.8324

³Mann-Whitney p < 0.4401

Table 4 on the following page presents screening scores in four age categories. Significant differences were found among the age groups in AUDIT scores, but not DAST-10 or PHQ-9 scores. AUDIT scores went down with older Soldiers. There were no individuals with DAST-10 scores in the 46 and Above age group.



Table 4. Screening Scores by Age

	Under 25 Mean Score (SD)	26 – 35 Mean Score (SD)	36 – 45 Mean Score (SD)	46 and Above Mean Score (SD)
AUDIT¹	5.04 (3.03) n=962	4.90 (3.20) n=908	4.43 (2.64) n=296	4.73 (2.93) n=94
DAST-10²	3.35 (2.16) n=43	3.44 (2.03) n=27	2.33 (1.53) n=3	- (-) n=0
PHQ-9³	0.47 (2.05) n=839	0.55 (2.29) n=817	0.65 (2.59) n=338	0.63 (2.61) n=156

¹ Kruskal-Wallis p < 0.0099

² Kruskal-Wallis p < 0.5649

³ Kruskal-Wallis p < 0.8658

Tables 5 and 6 present screening scores by race and by ethnicity, respectively. There were no differences in screening scores based on race or ethnicity.

Table 5. Screening Scores by Race

	White Mean Score (SD)	African- American Mean Score (SD)	Other Race Mean Score (SD)
AUDIT¹	4.97 (3.18) n=1937	5.13 (2.38) n=24	5.61 (2.95) n=18
DAST-10	3.39 (2.12) n=69	2.67 (0.58) n=3	2.00 (-) n=1
PHQ-9	0.54 (2.30) n=1926	1.11 (3.70) n=37	0.37 (1.12) n=19

¹ Kruskal-Wallis p < 0.3049

² Kruskal-Wallis p < 0.7337

³ Kruskal-Wallis p < 0.1941



Table 6. Screening Scores by Ethnicity

	Hispanic/Latino Mean Score (SD) (n)	Not Hispanic/Latino Mean Score (SD) (n)
AUDIT¹	5.56 (2.79) n=43	4.96 (3.17) n=1940
DAST-10²	2.25 (0.50) n=4	3.41 (2.12) n=69
PHQ-9³	0.08 (0.40) n=49	0.56 (2.35) n=1938

¹Mann-Whitney p < 0.0674²Mann-Whitney p < 0.3038³Mann-Whitney p < 0.2630

Screening Results by Deployment Status

Table 7 presents screening scores by the Soldiers' deployment status. Whether or not a Soldier had been deployed made no difference in screening scores on any of the three instruments.

Table 7. Screening Scores by Deployment Status

	Deployed Mean Score (SD) (n)	Not Deployed Mean Score (SD) (n)
AUDIT¹	4.93 (3.08) n=1195	4.85 (3.03) n=1054
DAST-10²	3.64 (2.20) n=28	3.16 (2.00) n=45
PHQ-9³	0.65 (2.63) n=1126	0.43 (1.81) n=1013

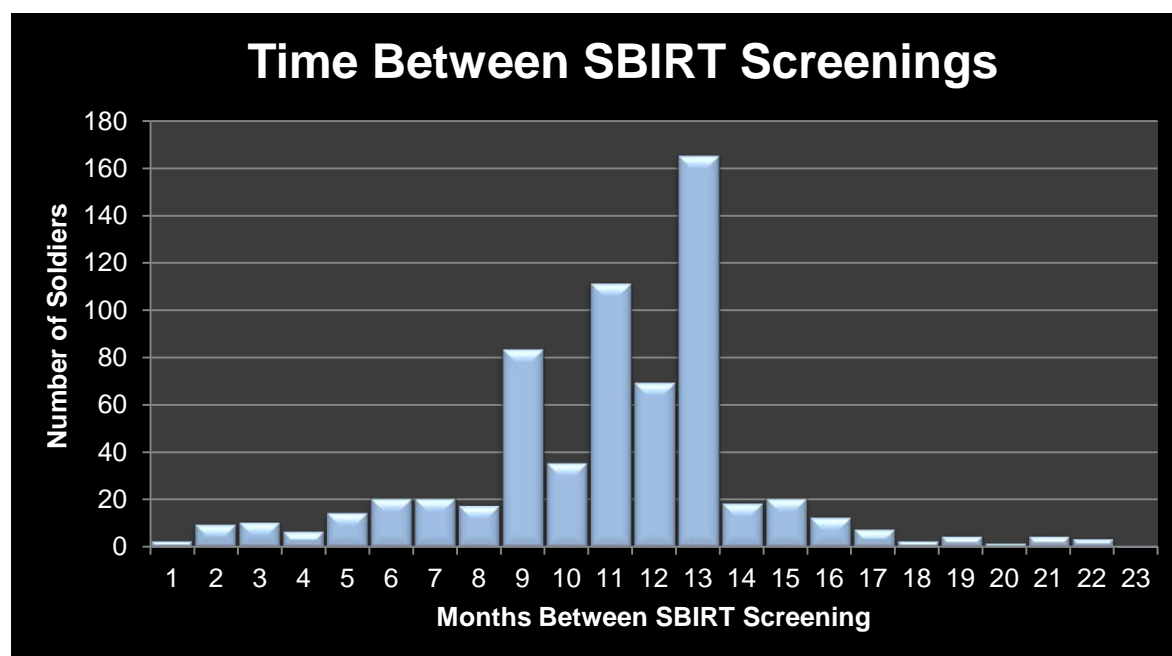
¹Mann-Whitney p < 0.3691²Mann-Whitney p < 0.2529³Mann-Whitney p < 0.4480

Change Over Time

Six hundred fifty-five Soldiers (16.8% of all Soldiers screened) received a second SBIRT screening at the same or a different SBIRT site; 408 were rescreened within 12 months of their initial screening. The median time between first and second screening for all Soldiers screened twice was 324 days. Figure 1 on the following page displays the time between the first and second SBIRT screenings, in months.



Figure 1. Time Between SBIRT Screenings



Change in Screening Scores

Of the 655 Soldiers prescreened twice, 333 received full screenings both times and 180 received the PHQ-9 both times. Table 8 presents AUDIT, DAST-10 and PHQ-9 scores and the average change from first to second screening. These changes were not statistically significant.

Table 8. Screening Scores and Change Over Time

	Number of Soldiers	Initial Score Mean (SD)	Second Score Mean (SD)	Change Mean (SD)
AUDIT¹	333	5.12 (2.93)	5.04 (2.98)	-0.08 (2.86)
DAST-10²	4	2.50 (1.29)	4.50 (1.91)	2.00 (1.83)
PHQ-9³	180	0.49 (1.98)	0.34 (1.91)	-0.16 (2.53)

¹Signed Rank p = 0.3383

²Signed Rank p = 0.25

³Signed Rank p = 0.2052

Note: There is substantial bias in the AUDIT scores provided in this table and they do not represent the entire population of Soldiers prescreened in SBIRT. Soldiers with two AUDIT screens had to have prescreened positive on both occasions. Of the 655 with repeated screenings, 63 Soldiers had AUDIT scores only for their first visit (and not on their second visit). Their average AUDIT score was 4.22 (SD = 2.47), significantly lower than the average score for Soldiers with two AUDIT scores (Mann-Whitney z = -3.35, p < 0001). Another 100 Soldiers did

not take an AUDIT on the first screening, but did take the AUDIT on their second visit. Their average AUDIT score was 3.78 (SD = 1.51), also significantly lower than the average score for Soldiers with two AUDIT screens (Mann-Whitney $z = -4.59, p < 0.0001$). Thus, those with two AUDIT screens had persistently higher values. There was no such evidence for bias in the DAST-10 scores, however the sample size was too small to draw conclusions.

There also may be some bias in the PHQ-9 scores. Soldiers who only took the PHQ-9 on their second visit but not on their first appeared to have marginally higher PHQ-9 scores (mean = 0.83, SD = 3.07; Mann-Whitney $z = -1.99, p < .0474$).

Treatment Effects on Screening Score

Only five Soldiers had an admission for substance use disorder treatment between their first and second SBIRT screening where the admission was within six months of their initial screening. (Six months post screening is the cutoff determined by a previous analysis to be attributable to the SBIRT screening.) Only two of the five soldiers had AUDIT scores at both screenings (mean change in AUDIT = -0.5) and only two had PHQ-9 scores at both (mean change in PHQ-9 = 0.0). Therefore, there were not sufficient numbers of Soldiers entering treatment to determine whether scores improve after treatment.

Change in Hazardous Behaviors

The AUDIT screening tool classifies drinking behavior into risk categories and therefore provides one way of examining change in hazardous or risky behaviors. Table 9 on the following page shows the risk category at first screening and the subsequent risk category at second screening based on AUDIT score for the 655 Soldiers with two SBIRT IOWA screenings. The numbers of Soldiers at each risk level are provided in the cells, and the percentages of total in each category are provided in the Total row and column. There is no evidence of increase or decrease in hazardous use levels from first to second screening for these Soldiers based on AUDIT scores (Generalized McNemar test, $p = 0.3$



Table 9. Risk Category at First and Second Screening

First Screen	Second Screen					Total
	Prescreen Only	Low Risk/Negative	Risky or Hazardous	High Risk or Harmful	High Risk	
Prescreen Only	159	96	4	0	0	259 (39.5%)
Low Risk/Negative	57	266	24	2	0	349 (53.3%)
Risky or Hazardous	6	23	12	1	1	43 (6.6%)
High Risk or Harmful	0	1	0	1	0	2 (0.3%)
High Risk	0	0	1	0	1	2 (0.3%)
Total	222 (33.9%)	386 (58.9%)	41 (6.3%)	4 (0.6%)	2 (0.3%)	655

The GPRA instrument contains questions regarding a variety of risk indicators and can provide additional data on change in hazardous behaviors over time. Table 10 presents available data on six GPRA measures that serve as indicators of risk. Data reflect records where the questions were asked at both the first and second SBIRT screenings. The GPRA sections administered at screening are determined by the individual's screening score, and only individuals who score as needing Brief Treatment or Referral to Treatment are administered GPRA questions beyond the substance use section. Only two of the measures contained responses at both screenings. There were no significant differences from first to second screening; however, this is expected due to the low sample size.

Table 10. Change in Six GPRA Risk Measures from First to Second Screening

	Number of Soldiers	First Screening	Second Screening	Change
Abstinence: Did not use alcohol or illegal drugs in past 30 days	14	21.4%	7.1%	-14.3
Crime and Criminal Justice: Had no past 30 day arrests	15	100%	86.7%	-13.3
Employment/Education: Were currently employed or attending school	0	--	--	--
Healthy Behaviors/Social Consequences: Experienced no alcohol/illegal drug related health, behavioral or social consequences	0	--	--	--
Social Connectedness: Were socially connected (to positive recovery support)	0	--	--	--
Stability in Housing: Had a permanent place to live in the community	0	--	--	--



Following are data for the four indicators where the relevant questions were asked at one but not both screenings. It is important to note that different people answered the questions at first screen than answered them at second screen and therefore change cannot be assessed.

- Employment/Education: Six out of seven Soldiers reported being employed or enrolled in school at first screening; twelve out of twelve Soldiers reported being employed or enrolled in school at second screening.
- Health/Behavioral/Social Consequences: Eleven out of thirteen Soldiers reported no health, behavioral, or social consequences at first screening; seven out of fifteen soldiers reported no health, behavioral, or social consequences at second screening.
- Social Connectedness: Three out of seven Soldiers reported being positively socially connected at first screening; six out of twelve reported being positively socially connected at second screening.
- Stability in Housing: Seven out of seven Soldiers reported having permanent housing in the community at first screening; twelve out of twelve reported having permanent housing in the community at second screening.

The Evaluators examined an additional risky use question not included in these GPRA measures: Emergency room treatment for alcohol or substance use in the past 30 days. Seven out of seven Soldiers reported no substance-related emergency room treatment at first screening; eleven out of twelve Soldiers reported no substance-related emergency room treatment at second screening.

CONCLUSION

Nearly 4,000 Soldiers have undergone SBIRT IOWA screening since the beginning of the project. Analyses of differences in screening scores/risk levels based on demographics reveal that AUDIT scores differed based on sex and age, with males and those below age 25 tending to score higher than others. There are no other differences in scores based on demographics for any of the screening instruments. Deployment status also had no bearing on screening score.

No differences were found between first and second screening scores for Soldiers with two SBIRT IOWA screenings. Similarly, there were no statistical differences in other hazardous/risky behaviors between first and second screening found in the available GPRA data. However, data on many indicators was too low to effectively assess change.

Collecting PHQ-9 and GPRA hazardous behavior indicator data on all Soldiers screened is recommended in order to provide more complete data on which to draw conclusions.

