



A PRELIMINARY EVALUATION OF SBIRT  
IMPLEMENTATION IN THE COLORADO STATE EMPLOYEE  
ASSISTANCE PROGRAM

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## **Executive Summary**

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Peer Assistance Services, Inc. (Peer Assistance) contracted with the OMNI Institute to conduct a preliminary evaluation of screening, brief intervention, and referral to treatment (SBIRT) implementation in the Colorado State Employee Assistance Program (C-SEAP). By July 1, 2009, Peer Assistance had trained C-SEAP counselors on SBIRT protocols to assist C-SEAP in implementing an evidenced-based, systematic process for identifying and serving Colorado State employees with risky substance use. The goals of the preliminary evaluation were twofold: 1) to work with C-SEAP to develop a data infrastructure for a continuous quality improvement system to assess the effectiveness of SBIRT in EAP settings and 2) to conduct preliminary data analyses evaluating SBIRT in C-SEAP using historical data.

To achieve the first evaluation objective, an ACCESS database was developed to collect SBIRT screening data, workplace outcomes data, and health utilization information at intake and at a 90 day follow-up assessment. The system is currently being used by C-SEAP staff to collect intake data in these additional domains. To achieve the second objective, C-SEAP provided OMNI with historical data to answer the following evaluation questions developed through collaboration with Dr. Eric Goplerud from George Washington University, Peer Assistance, and C-SEAP:

1. Did routine screening, using SBIRT guidelines, increase detection rates of at-risk substance use among employees utilizing C-SEAP services; compared to non-routine, non-standard assessments of substance use?
2. Did employees identified as at-risk substance users through SBIRT possess socio-demographic characteristics different from employees who self-identified with a substance use problem?
3. Did employees engage in more C-SEAP sessions with counselors following SBIRT implementation compared to prior to SBIRT implementation?

## **Methods**

Information was analyzed from a total of 2,661 employees who sought C-SEAP services from July 1, 2008 to June 30, 2010: 1,298 employees first contacted C-SEAP in 2008-09 (pre-SBIRT implementation) and 1,363 employees contacted C-SEAP in 2009-10 (post-SBIRT implementation). In the pre-SBIRT period, substance use issues were identified when an employee self-presented with a substance use issue at intake. In the post-SBIRT period, substance use issues were identified through the following SBIRT screening protocols. During each employee's initial intake with a C-SEAP staff member (usually over the telephone), he or she was administered six screening questions, two of which were about alcohol use and one of which was about illicit substance use. When an employee screened positive on the initial screening questions, the protocol was for C-SEAP counselors to administer the appropriate evidence-based tool (i.e., the AUDIT for alcohol; the DAST10 for drugs) to assess the level of risk/severity and the appropriate clinical intervention. Data on whether an employee presented with a substance use issue, SBIRT screening results, and sessions attended were analyzed to answer the evaluation questions.

## **Results**

In each year, 3-4% of employees presented with a substance use issue when seeking C-SEAP services. Through SBIRT screening in 2009-10, 30.7% of employees were identified as possibly engaging in risky substance use behaviors, and 43.6% of those who were further assessed using validated tools scored as engaging in hazardous, harmful, risky or dependent patterns of use. Thus, assuming all employees that pre-screen positive for substance use are subsequently administered the AUDIT and/or DAST10, SBIRT screening processes will identify approximately 13% percent of employees engaging in harmful, risky substance use behavioral patterns (43.6% of a 30.7% pre-screen detection rate). Thus, the detection rate of hazardous substance use approximately triples with the use of standardized SBIRT protocols (3-4% to an estimated 13%). There was no statistical evidence that employees presenting with a substance use issue had different socio-demographic characteristics than employees identified through SBIRT screening assessment tools. However, small sample sizes for these analyses may have precluded the detection of underlying differences observed in the data. Finally, there was limited evidence that employees engaged in more C-SEAP sessions after SBIRT implementation, but increases were relatively small and it is unclear whether SBIRT implementation contributed to observed changes over time.

## **Conclusions**

There was a noteworthy increase in the detection of substance use issues in employees seeking C-SEAP services as a result of SBIRT implementation. A substantial body of research has been conducted assessing the efficacy of SBIRT in healthcare settings, and the evidence base for screening and brief intervention (SBI) for alcohol in primary care is robust. For example, the U.S. Preventive Services Task Force (USPSTF) currently recommends screening and behavioral counseling interventions in primary care settings for adults engaging in alcohol misuse. This study demonstrated that C-SEAP will be in a position to help many more employees with alcohol and drug problems. By integrating substance use into the conversation in a standardized non-threatening way, counselors will be able to address the impact of substance use on the employee, even in cases where the employee had not previously connected substance use problems to the issue for which he or she was seeking services. In addition, most employees that screened positive for hazardous substance use did not screen in the dependent or high risk category, suggesting that C-SEAP counselors will be in a position to intervene to prevent substance use problems from escalating. Currently, information on workplace productivity and healthcare utilization is being collected by C-SEAP, which will allow for a more robust evaluation of the impact of SBIRT services in employee assistance programs.

## Introduction

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Screening, brief intervention, and referral to treatment (SBIRT) is a public health approach to improve the lives and health of individuals by providing early substance use screening and intervention in healthcare settings. The SBIRT Colorado program is a statewide initiative of the Office of the Governor and is funded by the Substance Abuse and Mental Health Services Administration (SAMHSA). The initiative is administered by the Colorado Department of Human Services/Division of Behavioral Health. The Division of Behavioral Health has partnered with the Colorado Department of Public Health and Environment/Prevention Services Division for implementation, and the initiative is managed by Peer Assistance Services, Inc. (Peer Assistance).

Peer Assistance contracted with the OMNI Institute (OMNI) to conduct a preliminary evaluation of SBIRT implementation in the Colorado State Employee Assistance Program (C-SEAP). By July 1, 2009, Peer Assistance had trained C-SEAP counselors on SBIRT protocols to assist C-SEAP in implementing an evidenced-based, systematic process for identifying and serving Colorado State employees with risky substance use behaviors. The goals of evaluation efforts were twofold: 1) to work with C-SEAP to develop a data infrastructure for a continuous quality improvement system to assess the effectiveness of SBIRT in EAP settings and 2) to conduct preliminary data analyses evaluating SBIRT in C-SEAP.

To achieve the first evaluation objective, an ACCESS database was developed to collect SBIRT screening data, workplace outcomes data, and health utilization information at intake and at a 90 day follow-up assessment. The system was pilot tested and is currently being used by C-SEAP staff to collect intake data in these domains. To achieve the second objective, C-SEAP provided OMNI with historical data to answer evaluation questions developed through collaboration with Dr. Eric Goplerud from George Washington University, Peer Assistance, and C-SEAP. The questions were as follows:

1. Did routine screening, using SBIRT guidelines, increase detection rates of at-risk substance use among employees utilizing C-SEAP services; compared to non-routine, non-standard assessments of substance use?
2. Did employees identified as at-risk substance users through SBIRT possess socio-demographic characteristics different from employees who self-identified with a substance use problem?
3. Did employees engage in more C-SEAP sessions with counselors following SBIRT implementation compared to prior to SBIRT implementation?

Data from 2008-09 (pre-SBIRT implementation) and 2009-10 (post-SBIRT implementation) were analyzed to answer the evaluation questions. The following report focuses on results of the analyses.

## Methodology

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### Participants

Information was collected from a total of 2,661 employees who sought C-SEAP services from July 1, 2008 to June 30, 2010: 1,298 employees first contacted C-SEAP during the 2008-09 time period (pre-SBIRT implementation) and 1,363 employees contacted C-SEAP in the 2009-10 time period (post-SBIRT implementation). Although family members of employees are eligible for and receive services, only employees were considered for this study. Appendix A includes information on data cleaning procedures and selection of employees for inclusion in the study.

At intake, employees provided demographic information including age, gender, office location, occupational description and length of employment. Table 1 presents the following descriptive information for age and years of service: the number of employees providing information (n), the mean value for the group (the arithmetic average), the median value for the group (half of the observed scores fall above the median and half of the observed scores below), the standard deviation (SD; a measure of the variability within the group around the mean), the lowest observed score for the group (minimum), and the highest observed score for the group (maximum).

Table 1: Age and years of service for C-SEAP clients, displayed by time period (pre or post SBIRT implementation) and total overall.

	2008-09					
	n	Mean	Median	SD	Min	Max
Age	1285	42.6	43.0	10.1	18	73
Years with current employer	1296	7.4	5.0	7.2	0	34
2009-10						
Age	1351	43.2	43.0	10.1	17	70
Years with current employer	1358	7.5	5.0	7.3	0	47
Total						
Age	2636	42.9	43.0	10.1	17	73
Years with current employer	2654	7.4	5.0	7.2	0	47

Note. In 2008-09 there were 13 missing values for age and 2 inaccurate values for employment length. In 2009-10 there were 12 missing values for age and 5 inaccurate values for employment length.

Table 2 presents information on the number and percentage of employees by gender, C-SEAP office, and occupation type.

Table 2: Gender, location (by C-SEAP office), and occupational group for C-SEAP clients, displayed by time period (pre or post SBIRT implementation) and total overall.

	2008-09		2009-10		Total	
Gender	n	Percent	n	Percent	n	Percent
Female	836	64.4	877	64.3	1713	64.4
Male	462	35.6	486	35.7	948	35.6
Total	1298	100.0	1363	100.0	2661	100.0
Location (by C-SEAP office)	n	Percent	n	Percent	n	Percent
Denver	832	64.1	797	58.5	1629	61.2
Pueblo	128	9.9	148	10.9	276	10.4
Grand Junction	111	8.6	104	7.6	215	8.1
Colorado Springs	68	5.2	110	8.1	178	6.7
Other	159	12.3	204	14.8	363	13.8
Total	1298	100.0	1363	100.0	2661	100.0
Occupational group	n	Percent	n	Percent	n	Percent
Professional Services (PS)	405	31.2	443	32.5	848	31.9
Admin Support & Related (ASR)	289	22.3	245	18.0	534	20.1
Enforcemt & Protect Svcs (EPS)	235	18.1	283	20.8	518	19.5
Labor, Trades, & Crafts (LTC)	117	9.0	101	7.4	218	8.2
Health Care Services (HCS)	102	7.9	128	9.4	230	8.6
Other	149	11.6	160	11.7	309	11.7
Total	1297	100.0	1360	100.0	2657	100.0

Note. In 2008-09 there was 1 missing value for occupation. In 2009-10 there were 3 missing values for occupation.

In sum, across both years, there were more females (64.4%) than males (35.6%) and the average age of employees was approximately 42 to 43 years. Nearly two-thirds of the employees were from Denver, with an additional 8 to 10% each from Pueblo and Grand Junction. Almost one-third of the employees worked in professional services and employees had served in their positions for an average of approximately 7.5 years. Demographic characteristics of employees were similar across years.

## Measures and Procedure

On July 1, 2009, systematic, universal screening for depression and risky substance use (i.e., tobacco, alcohol, and illicit substances) was implemented by C-SEAP. During each employee's initial intake with a C-SEAP staff member (usually over the telephone), he or she was administered six screening questions recommended by HealthTeamWorks (see Appendix B). Two of these questions are about alcohol use: 1) "When was the last time you had more than 3 (for women/men >65 yrs.)/4 (for men) drinks in one day?" and 2) "How many drinks do you have per week?" The screen was scored as a positive screen when the employee indicated consuming either more than 3 drinks (for women men>65yrs) or 4 drinks (for men) in one day in the prior 3 months, or more than 7 (for women/men>65) or 14 (for men) drinks in a week. Employees were also asked one question about their illicit substance use: "In the past 12 months, have you used drugs other than those required for medical reasons?" where a 'yes' response was scored as a positive screen. The remaining three screening questions inquired about tobacco use and about symptoms of depression (this report focuses on alcohol and illicit substance use). During the first session with a C-SEAP counselor, the protocol was for counselors to follow-up on all positive screens using evidence-based tools to assess the level of risk/severity and identify the appropriate clinical intervention (i.e., whether a brief intervention using motivational interviewing techniques was recommended and whether a referral for additional services was warranted). When an individual initially screened positive for risky alcohol use, he or she was administered the 10 question AUDIT scale; when an individual screened positive for illicit substance use, he or she was administered the DAST10 scale. A copy of each scale can be found in Appendix C.

## Results

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### **Evaluation Question #1: Does SBIRT Increase Detection of Risky Substance Use?**

*Did routine screening, using SBIRT guidelines, increase detection rates of at-risk substance use among employees utilizing C-SEAP services; compared to non-routine, non-standard assessments of at-risk substance use?*

To assess whether SBIRT implementation increased the detection rate for risky alcohol and illicit substance use we compared detection rates in 2008-09, before SBIRT implementation, to detection rates in 2009-10, after SBIRT implementation. Before SBIRT implementation, detection of a substance use issue was generally documented when an employee presented with a substance use issue at his or her intake assessment. Post SBIRT, risky use was documented according to results of the SBIRT standard screening questions and, when appropriate, employees' scores on the AUDIT and/or DAST10. Thus, we

were able to compare a non-standard measure of risky substance use (2008-09) to a standard, routine measure (2009-10), to assess whether detection rates increased with the latter. In addition, in 2009-10, we were able to identify the number and percentage of individuals who did not self-identify with a substance use issue, but were identified as having risky substance use through SBIRT screening protocols.

### **Clients Presenting with Substance Use Issues**

Rates of self presented substance use problems were similar both prior to and post SBIRT implementation. Specifically,

- Prior to SBIRT implementation (2008-09), 54 employees out of 1,298, or 4.2% presented with a substance use issue.
- After SBIRT implementation (2009-10), 48 employees out of 1,363, or 3.5% presented with a substance use issue.

Thus, in each year, approximately 3 to 4% of employees presented with a substance use issue as either a primary, secondary, or tertiary reason for seeking C-SEAP services.

### **Clients Initially Screened Positive for Substance Use Issues in 2009-10**

In 2009-10, employees seeking C-SEAP assistance (n = 1,363) were asked two screening questions about their alcohol use and one about illicit drug use (described above). Results indicated the following:

- 29.6% of employees (n = 403) screened positive for potential risky alcohol use (indicated a positive response on at least one of the two alcohol questions).
- 2.8% of employees (n = 38) screened positive for potential risky drug use (indicated a positive response on the illicit substance use question).
- 30.7% of employees (n = 419) screened positive for either alcohol or drug use.

Thus, 30% of employees were identified as possibly having a substance use (either alcohol or drug) issue through SBIRT pre-screen questions. Some of these individuals also self-presented with a substance use issue<sup>1</sup>. In order to identify how many additional employees the screening questions identified, we examined the percentage of employees that screened positive but did not present with a substance use issue:

- 27.7% of employees (n = 378) did not self-present with a substance use issue, but screened positive for possible risky alcohol or illicit drug use in 2009-10 through SBIRT screening.

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<sup>1</sup> 7 of the 48 employees that self-presented with a substance use issue screened negative on the screening questions and thus are not included in the 419 that screened positive.

Thus, SBIRT screening identified an additional 27.7% (n = 378) of employees served by C-SEAP that may have substance use issues that would not have been identified prior to SBIRT implementation.

### Clients Further Assessed with Risky Substance Use

In general, employees who screened positive on the SBIRT items for risky alcohol use at intake were subsequently administered the AUDIT at the first counseling session; those who screened positive for illicit drug use were administered the DAST10<sup>2</sup> (see Appendix C). For individuals who were administered the AUDIT (n = 202) and/or the DAST10 (n = 53), the number and percentage of employees that scored in each category of risk are presented in Table 3 below. Most employees scored in the healthy range, followed by the lowest risk category of each measure.

Table 3: Number (n) and percentage of employees that scored in each category of the AUDIT and the DAST10 measures.

AUDIT	n	Percent
Less than 8	125	61.9
7 to 15 (W) / 8 to 15 (M): Hazardous Use	48	23.8
16 to 19: Harmful Use	13	6.4
More than 20: Possible Dependence	16	7.9
Total	202	100.0
DAST10	n	Percent
0: No problems reported	31	58.5
1-2: Low Level	18	34.0
3-5: Moderate Level	2	3.8
6-8: Substantial Level	2	3.8
Total	53	100.1

When an employee scored in the range indicating alcohol use that was hazardous, harmful, or reflected possible dependence on the AUDIT (8+ for men, 7+ for women), he or she was considered a positive screen on the AUDIT. When an employee indicated any problems on the DAST10 (1+), he or she was considered a positive screen on the DAST10. Results from these measures indicated the following:

<sup>2</sup> Some employees with positive pre-screens *were not* administered the AUDIT (n=226) or DAST10 (n=22) and some with a negative pre-screen *were* administered the AUDIT (n=25) or DAST10 (n=37). Analyses using AUDIT and DAST10 data include *all* employees who were administered the measures, regardless of pre-screen results.

- Of the 202 employees who were administered the AUDIT, 38.1% (n = 77) scored positive (5.6% of the total 2009-10 employee population served by C-SEAP).
- Of the 53 employees who were administered the DAST10, 41.5% (n = 22) scored positive (1.6% of the total 2009-10 employee population served by C-SEAP).
- Of the 220 employees who were administered the AUDIT and/or DAST10, 43.6% (n = 96) scored positive on either measure (7.0% of the total 2009-10 employee population served by C-SEAP)<sup>3</sup>.

Thus, of those administered a follow-up assessment, approximately 43.6% screened positive (or 7% of all employees receiving C-SEAP services in 2009-10). Some of the employees that were assessed positive on the AUDIT and/or DAST10 also self-presented with a substance use issue. Thus, to calculate the identification rate of employees engaging in hazardous or harmful substance use behaviors using the AUDIT or DAST10 as the criterion for detection that would not have been detected before SBIRT implementation, we examined the percentage of employees scoring positive on either measure who did not present with a substance use issue:

- 32.7% (n=72) of employees that were administered the AUDIT and/or DAST10 scored positive and did not self-present with a substance use issue (5.2% of the total employee population).

Thus, using the AUDIT and DAST10 as the criterion for risky use, an additional 5.2% of employees served by C-SEAP were identified as engaging in risky substance use behaviors that would not have been identified previously.

### **Summary Evaluation Question #1**

In 2009-10, 3.5% of employees (48 out of 1,363) self presented with a substance use issue. The addition of routine and standardized SBIRT questions identified an additional 27.7% (378 employees) who did not self-present but pre-screened with possible risky substance use. Using positive AUDIT and DAST10 scores as criteria for identifying employees engaging in risky substance use behaviors, an additional 5.2% (72 employees) were identified above and beyond the 3.5% of employees that self-presented in 2009-10. However, over one-half of employees who pre-screened positive at intake were not administered a follow-up assessment, likely because SBIRT was newly implemented in 2009-10 and it took time for counselors to be implementing fully with fidelity to the model (in general, counselors did not systematically administer the AUDIT and/or DAST10 until October 2009). Thus, it is likely that the detection rate of risky use from the AUDIT and DAST10 will be greater in subsequent years when more patients that pre-screen positive are administered these measures.

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<sup>3</sup> 35 employees were administered both the AUDIT and the DAST10.

Prior to SBIRT implementation, only 4.2% of employees were documented as presenting with a substance use issue. Post SBIRT, 30.7% of employees were identified as possibly engaging in risky substance use behaviors; 43.6% of those who were further assessed using validated tools scored in the risky use range. Assuming all employees that pre-screen positive for substance use are subsequently administered the AUDIT or DAST10, SBIRT screening processes will identify approximately 13% percent of employees engaging in hazardous or harmful substance use (43.6% of a 30.7% pre-screen detection rate). Thus, the detection rate of hazardous substance use approximately triples with the use of standardized SBIRT protocols (3-4% to an estimated 13%).

In sum, the use of routine screening, using SBIRT guidelines notably increased the detection rate of at-risk substance use, compared to non-routine, non-standard assessments of substance use. Finally, of those employees who did screen positive on the AUDIT or DAST10, very few scored in the high risk range or in-need of a referral for additional services suggesting that C-SEAP counselors may be in a position to help many employees reduce use before substance use problems escalate.

### **Evaluation Question #2: Who Does SBIRT Identify?**

*Did employees identified with at-risk substance use through routine screening and assessment, using SBIRT guidelines, have different demographic characteristics compared to non-routine, non-standard assessments of at-risk substance use?*

To answer this question, we focused on two groups in the post-SBIRT implementation (2009-10) time period: employees who self-presented with either a primary, secondary, or tertiary substance use issue. Employees who self-presented with substance use as their primary problem had "substance abuse-self" as their primary problem (the rest had substance use as a secondary or tertiary problem). Most employees who did not self present with substance use but scored positive on the AUDIT and/or DAST10 were coded at intake with "personal relationship problem" (30.6%) or "mood disturbance" (23.6%) as their primary problem.

### **Demographic Data Comparison between Employees who Self Presented with Substance Use Issues and Those Assessed with Substance Use Issues**

We compared employees who self-presented with substance use issues to employees who did not present but were assessed with substance use issues on several demographic variables. In addition, we conducted chi-square analyses and independent samples t-tests when appropriate to test for statistically significant differences in demographic characteristics between the two groups. Compared to