



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

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Executive Summary

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

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

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

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 issue¹. 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.

¹ 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 DAST10² (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:

² 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)³.

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.

³ 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 at intake (n = 48), and employees who did not self present, but had a positive score on the AUDIT or DAST10 measures (n = 72). The vast majority (77.1%) of employees who self presented with a substance use 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

employees who self-presented with risky substance use problems, employees who were assessed with risky use on the AUDIT and/or DAST10 (but did not self-present) tended to be younger (41 versus 45 years), had served slightly less time with their current employer (8.0 versus 8.6 years), were more likely to be female (51% versus 41%), and were more likely to have sought services in Denver (61% versus 54%); however, none of the demographic characteristics differed significantly between the groups ($p > .05$). Table 4 presents descriptive information on age and years of occupation with current employer for each group and in total. Table 5 presents information on the number and percentage of employees by gender and location of C-SEAP office.

Table 4: Age and years of employment information for C-SEAP clients, by risky substance use identification method (self presented or assessed positive from AUDIT or DAST10) and total overall.

	Self presenting substance use			Assessed positive for substance use			Total		
	n	Mean	SD	n	Mean	SD	n	Mean	SD
Age	48	45.1	10.6	72	41.6	9.7	120	43.0	10.2
Years with current employer	47	8.5	8.1	72	8.0	7.4	119	8.2	7.7

Table 5: Gender and location (by C-SEAP office) for C-SEAP clients by risky substance use identification method (self presented or assessed positive from AUDIT or DAST10) and total overall.

	Self presented substance use issue		Assessed positive for risky substance use		Total	
	n	Percent	n	Percent	n	Percent
Gender						
Female	20	41.7	37	51.4	57	48.0
Male	28	58.3	35	48.6	63	53.0
Location (by C-SEAP office)						
Denver	26	54.2	44	61.1	70	58.0
Other	22	45.8	28	38.8	50	42.0

Summary: Evaluation Question #2

The results of the statistical analyses did not support the premise that employees identified with at-risk substance use through routine screening and assessment, using SBIRT guidelines, had different demographic characteristics compared to those employees that self-presented with a substance use issue. However, it is possible that the small number of employees in each category limited the power of the analyses to detect statistically significant differences between the groups.

Evaluation Question #3: Does SBIRT Increase Session Attendance?

Did employees engage in more C-SEAP sessions with counselors following SBIRT implementation compared to prior to SBIRT implementation?

To assess whether employees engaged in more C-SEAP services following SBIRT implementation, we examined the number of sessions in which the employee and counselor had direct and meaningful interactions with each other. We consulted with C-SEAP staff to identify appropriate categories of service type. For our analyses, we included those sessions labeled by the counselor as: “*Counseling*,” “*Crisis Intervention*,” “*Evaluation/Assessment*,” “*Follow-Up*,” and “*Monitoring*.” The total number of these sessions was summed for each employee and the totals from 2008-09 (pre-SBIRT) were compared to those from 2009-10 (post-SBIRT). Only employees who were served exclusively in either 2008-09 or 2009-10 were included in the analyses; any employee served by C-SEAP during both time periods was excluded.

Comparison of all Employees in 2008-09 to all in 2009-10

Of the entire group of employees enrolled in C-SEAP (n = 2,661), 1,667 had attended at least one of the sessions mentioned above and had no overlapping C-SEAP services between pre- and post-SBIRT implementation; 657 in 2008-09 and 1,010 in 2009-10. Table 6 presents descriptive information for the number of sessions and hours spent in sessions. Across both years, employees attended an average of 2.8 sessions for an average of 3.1 hours. It is important to note, however, that there was a lot of variability in the patterns of service delivery, with some employees receiving only one short session, while others received over 100 hours of service.

Table 6: Descriptive information on number of sessions and hours spent in sessions⁴ for pre-SBIRT, post-SBIRT, and overall for employees who had engaged in at least one session.

	2008-09 (n = 657)				
	Mean	Median	SD	Min	Max
Number of sessions	2.5	2.0	1.8	1	14
Hours spent in sessions	3.3	2.0	9.9	0	106
	2009-10 (n = 1010)				
Number of sessions	2.9	2.0	2.1	1	18
Hours spent in sessions	3.0	2.2	3.8	0	101
	Total (n = 1667)				
Number of sessions	2.8	2.0	2.0	1	18
Hours spent in sessions	3.1	2.0	6.9	0	106

The number of sessions and hours spent in sessions were not normally distributed (both were positively skewed). This indicated that more scores were lower than the mean score and fewer scores were higher than the mean score. There were many employees who had just a couple of sessions and/or hours, and fewer employees that had many sessions and/or hours. The few employees in the latter group pulled the average number of sessions and hours to a higher number than would be expected if the distribution of scores was normally distributed. Thus, we conducted two independent samples Mann-Whitney U tests to determine whether differences in session and hour data across years were statistically significant. The Mann-Whitney U is a nonparametric test appropriate for non-normal distributions that is based on the rank ordering of the scores.

Results of analyses indicated that employees in 2009-10 (post-SBIRT) received significantly more sessions than employees in 2008-09 (pre-SBIRT), $z = -4.1, p < .01$. In addition to the total number of sessions overall, the total number of hours each employee spent in sessions was also significantly higher in 2009-10 as compared to 2008-09, $z = -5.5, p < .01$. Although these results are statistically significant, this may have been due to large sample sizes rather than meaningful differences between pre- and post-SBIRT. In fact, the observed differences were small (e.g., the median number of sessions in each year was 2.0).

⁴ Although inclusion criteria required employee participation in at least one of the sessions included in our analyses, some sessions were listed with a duration of 0 (zero) hours; thus, minimum values are also zero.

Comparison of Employees with Substance Use Issues in 2008-09 and in 2009-10

In order to better understand whether SBIRT implementation was associated with an increase in session time and attendance, a similar set of analyses were conducted examining only those individuals who presented or were assessed with substance use issues. Please note that only employees that received at least one of the session types described above and did not have overlapping services across years were included in analyses. As such, sample sizes of employees with substance use issues were smaller in these analyses than those described above.

First, we compared employees identified with risky substance use in the pre-SBIRT period ($n = 27$) to those in the post-SBIRT period ($n = 112$ – employees self-presenting and/or positive on AUDIT and/or DAST10) on the number of sessions attended and the number of hours spent in sessions. The second test compared post-SBIRT employees who self identified with substance use ($n = 41$) and post-SBIRT employees who were assessed with risky substance use on the AUDIT and/or DAST10, but did not self-present ($n = 71$). Results indicated that there were no statistically significant differences in the number or length of sessions across years, or as a function of self-presentation versus identification through SBIRT screening. However, the non-significant results may have been due to low sample sizes in both tests. Table 7 presents the mean, median, standard deviation (SD), minimum, and maximum number of sessions and hours spend in sessions, for employees for both pre and post SBIRT implementation and by whether employees self presented or were assessed with risky substance use.

Table 7: Number of sessions and hours spent in sessions for employees for both pre- and post-SBIRT implementation and method of substance use identification (self presented or assessed).

	2008-09 Self Presented (n = 27)				
	Mean	Median	SD	Min	Max
Number of sessions	2.9	2.0	2.1	1	10
Hours spent in sessions	2.6	1.3	2.6	0.0	11.0
2009-10 Self Presented (n = 41)					
Number of sessions	2.9	2.0	2.0	1	9
Hours spent in sessions	2.8	2.5	1.8	0.0	7.1
2009-10 Assessed (n = 71)					
Number of sessions	3.1	2.0	2.0	1	8
Hours spent in sessions	3.1	2.5	2.2	0.0	8.5
2009-10 Total (n = 112)					
Number of sessions	3.0	2.0	2.0	1	9
Hours spent in sessions	3.0	2.5	2.0	0.0	8.5
Overall Total (n = 139)					
Number of sessions	3.0	2.0	2.0	1	10
Hours spent in sessions	2.9	2.0	2.2	0.0	11.0

Referral Patterns for Employees with Substance Use Issues

Finally, to explore the pattern of referrals for employees with substance use issues, we examined the rates of counselor referrals to “mental health resources” (which also encompasses referrals for substance use issues). Of the 27 employees in the 2008-09 group, 1 person (3.7%) was referred to a mental health resource. Of the 112 employees in the 2009-10 group, one person (2.4%) who self presented with substance use issues was provided a referral and three people (4.2%) who were assessed with risky substance use were provided a referral.

Summary: Evaluation Question #3

Results provided limited support for the hypothesis that employees engaged in more C-SEAP sessions after SBIRT implementation. The number of sessions and amount of time spent in sessions was significantly higher following SBIRT implementation. It may be that techniques C-SEAP counselors

learned in SBIRT trainings contributed to the detected increase in session attendance and time. However, observed increases were very small and likely significant due to the large sample size in the analysis. In addition, when we examined session attendance and time for only those with substance use issues in the pre- and post-SBIRT period, there were not significant differences between the groups on session attendance. However, sample sizes were very small in the pre-SBIRT period due to the small number of employees that self-presented with substance use issues. Thus, future research is needed to better understand whether SBIRT practices are associated with different patterns of service delivery. Finally, very few referrals to additional services were documented by counselors for employees with substance use issues. As noted earlier in examination of AUDIT and DAST10 data, very few employees scored in the high risk and possible dependence categories, so this finding is not surprising.

Conclusions

The goals of evaluation efforts were 1) to work with C-SEAP to develop a data infrastructure for a continuous quality improvement system to collect data to assess the effectiveness of SBIRT in EAP settings and 2) to conduct preliminary data analyses evaluating SBIRT in C-SEAP. This report summarizes findings of results of three evaluation questions that could be explored using historical data from a pre-SBIRT implementation to a post-SBIRT implementation time period. Results indicated that a noteworthy number of individuals that did not self-present with substance use issues were identified as engaging in risky use through systematic screening protocols. Historically, 3-4% of employees present with a substance use issue when seeking C-SEAP services. Our data indicated that approximately 30% pre-screened with a possible substance use issue and 43% of those were further assessed to be engaging in hazardous or harmful use. Identifying these individuals through standardized screening methods provides an avenue for C-SEAP counselors to integrate substance use into the conversation and directly address substance use behaviors as part of their clinical services. The data indicated that many employees that were engaging in risky substance use behaviors presented with “mood disturbance” or “personal relationship” issues. It is likely that their substance use behaviors are tied to these issues, and SBIRT provides a means for counselors to identify early in their work with employees how substance use may be affecting employees’ work and personal lives. Data are currently being collected on workplace productivity and healthcare utilization that will allow an examination of SBIRT screening and its impact on other employee outcomes.

Furthermore, 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. It may have been difficult to detect differences because sample sizes were relatively small in these analyses. In addition, the number of sessions received and number of hours of services did increase from 2008-09 to 2009-10, but these increases were relatively small and it is not clear from the study design whether these changes can be attributed to SBIRT implementation. Collecting outcome data from employees after receiving SBIRT services will provide a more straightforward means to assess the impact of SBIRT. Funding opportunities to support the collection of outcome data and further analysis of intake data assessing workplace productivity and healthcare utilization are currently being explored.

Appendix A: Data Cleaning Methods

C-SEAP provided OMNI with a dataset of 3,754 participants: 1,065 were non-employees (e.g., employees' spouses, dependents, etc.) and were excluded from all analyses. Twenty more were excluded because they had incomplete data. Two were excluded because they had multiple intake sessions and they had sessions in both the 2008-09 and 2009-10 periods (thus, it was unclear whether they received SBIRT services). Finally, 6 participants were excluded because they started utilizing EAP services in the 2008-09 period, yet the data indicated that they also received some or all SBIRT screening questions (2 utilized services only in 2008-09, the other 4 in both 2008-09 and 2009-10).

Appendix B: SBIRT Screening Questionnaires

Substance	Questions	Positive Screen
Alcohol*	When was the last time you had more than 3 (for women/men >65 yrs.)/4 (for men) drinks in one day?	In the past 3 months
	How many drinks do you have per week?	More than 14 (men), More than 7 (women, men >65 yrs.)
Drugs and Tobacco	In the past 12 months, have you used drugs other than those required for medical reasons?	Yes
	Do you currently smoke or use any form of tobacco?	Yes

*Any alcohol use is a positive screen for patients under 21 years or pregnant women. A standard drink in the U.S. is any drink that contains about 14 grams of pure alcohol. One drink = 12 oz. beer, 5 oz. wine, 1.5 oz. liquor

Questions taken from:

<http://www.coloradoguidelines.org/pdf/guidelines/sbirt/SBIRT%20Guideline%20-%208-6-08.pdf>

Appendix C: Adult Use Disorders Identification Test (AUDIT) and Drug Abuse Screening Test (DAST10)

AUDIT Scale:

Questions	0	1	2	3	4
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
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
How often do you have four or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
How often during the last year have you found that you were unable to stop drinking once you started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
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
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
How often during the last year have you felt guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
How often during the last year have you been unable to remember what happened the night before because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
Have you or someone else been injured as a result of your drinking?	No		Yes, but not in the last year		Yes, during the last year
Has a friend, relative, or doctor or other health worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year

Questions taken from: <http://www.coloradoguidelines.org/pdf/guidelines/sbirt/SBIRT%20AUDIT%20-%208-6-08.pdf>

DAST10 Scale:

In the past 12 months:	Circle response	
Have you used drugs other than those required for medical reasons?	Yes	No
Do you abuse more than one drug at a time?	Yes	No
Are you always able to stop using drugs when you want to?	Yes	No
Have you had "blackouts" or "flashbacks" as a result of your drug use?	Yes	No
Do you ever feel bad or guilty about your drug use?	Yes	No
Does your spouse (or parents) ever complain about your involvement with drugs?	Yes	No
Have you neglected your family because of your use of drugs?	Yes	No
Have you engaged in illegal activities in order to obtain drugs?	Yes	No
Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes	No
Have you had medical problems as a result of your drug use (e.g., memory loss, hepatitis, convulsions, bleeding, etc.)?	Yes	No

Questions taken from:

<http://www.coloradoguidelines.org/pdf/guidelines/sbirt/SBIRT%20DAST1010%20-%208-6-08.pdf>