



Original article

Substance Use Screening, Brief Intervention, and Referral to Treatment in Multiple Settings: Evaluation of a National Initiative


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A B S T R A C T

Purpose: This study evaluated the implementation and outcomes of a multisite initiative to identify and intervene in adolescent substance use across the many settings where youth interact. This paper focuses on the implementation and intermediate outcomes of the initiative, while others in the supplement address impact and ultimate outcomes.

Methods: A mixed-methods cross-grantee evaluation was conducted from 2014 to 2019 among 56 recipients of funding from the Conrad N. Hilton Foundation to implement screening, brief intervention, and referral to treatment (SBIRT) across more than 1,266 youth-facing settings. Qualitative and quantitative data were collected from grantees on a quarterly basis, as well as from grantee proposals, progress reports, monthly grantee monitoring calls, and survey findings.

Results: Grantees reported increased capacity to provide SBIRT to youth across various settings: pediatric and primary care practices, community behavioral health organizations, juvenile justice programs, schools, and community-based organizations. Collectively, grantees screened 141,230 youth for substance use, 12,272 received a brief intervention, and 2,212 were referred to treatment. As part of the initiative, grantees provided SBIRT training to over 37,000 nursing and social work students, medical residents, addiction medicine fellows, and others. Implementation challenges included fitting screening into the workflow of primary care settings, confidentiality and consent in schools, reimbursement, and lack of specialist providers to refer to for substance use disorder treatment. Intermediate outcomes collected include total numbers of youth screened, received a brief intervention, and/or referred to more intensive treatment based on their screening scores.

Conclusions: Research on SBIRT in adolescents has been limited to date despite positive outcomes reported in adults. This mixed-methods evaluation of an initiative to expand SBIRT implementation demonstrates feasibility of expanding access to substance use screening and intervention for youth across multiple settings and identifies challenges of implementation that differ somewhat based on settings.

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IMPLICATIONS AND CONTRIBUTION

While most prior work has focused on adults, this study presents findings around the implementation of SBIRT in the adolescent population. Results highlight considerations for implementation of SBIRT in the settings where youth interact and present grantees' achievements in increasing access to screening and early intervention and preliminary outcomes for youth substance use.

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Alcohol and drug use among youth continues to be a critical problem in the United States, fueled in the last decade by the rise of misuse of prescription opioids. The 2020 National Survey on Drug Use and Health indicates 8.2% or 2.1 million youth aged 12–17 reported drinking alcohol in the month prior to the survey. One percent or one million reported binge drinking, that is, consuming three or more drinks for female youth or three to five

or more drinks for male youth in a two-hour period (This definition is provided by the National Institute on Alcohol Abuse and Alcoholism: [niaaa.nih.gov/publications/brochures-and-fact-sheets/binge-drinking](https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/binge-drinking)). In addition, 13.8% of those or 3.4 million, adolescents aged 12–17 reported illicit drug use in the year prior to the survey [1].

While substance misuse poses risks for all Americans, it is particularly dangerous for youth and young adults. Decades of research highlight the critical health and safety concerns involving substance use during adolescence, a period critical for brain development and characterized by experimentation and risk-taking [2]. It is a period when substance use can precipitate behaviors with serious and even long-term consequences—traffic accidents, poor school performance, family problems, and involvement in the criminal justice system [3]. Intervention at this point is particularly critical as research has shown that persons who misuse substances in adolescence are at greater risk of developing substance use disorders as adults [4].

Substance use among adolescents occurs along a continuum, from experimentation to increased use, and for many youths, it never progresses beyond experimentation. This progression depends on a wide range of factors: the substances consumed, individual resiliency, mental health, and family, peer, and community norms around substance use [5]. This paper provides findings from a multisite initiative funded by the Conrad N. Hilton Foundation to explore the ability to identify and intervene in adolescent substance use along that continuum by reaching youth across the multiple settings where they routinely interact. It focuses on the results of Hilton Foundation grantees' implementation and intermediate outcomes of implementation. Other papers in this supplemental volume draw on additional information gathered as part of the evaluation and deal with the longer-term outcomes and impact of the screening, brief intervention, and referral to treatment (SBIRT) protocols.

SBIRT is a public health approach designed to identify and address substance use risk. The underlying logic of SBIRT is simple: by routinely screening youth for substance use, youth-serving providers can identify risk and provide basic education, intervene in an early phase of substance use, and facilitate a referral for those in need of formal treatment. The SBIRT framework has been used effectively with adults, primarily in medical settings [6], but has been less frequently used with youth or in youth-serving settings [7–11].

The first step of the process involves screening using a brief, validated instrument designed to quickly identify any potential risk and aid the provider in determining the next steps. For adolescents indicating no substance use, the response is to reinforce current positive behaviors and share educational materials. If the screening score indicates low to moderate risk, a brief intervention (BI) is provided. If the screening indicates more acute risk, the provider refers the adolescent to specialty treatment (RT) services for further assessment and care. This sequence enables providers to screen large numbers of youth at varying stages of risk.

Based on early research, the American Academy of Pediatrics released a policy statement in 2011 recommending the use of SBIRT as part of routine pediatric care. In 2013, the Conrad N. Hilton Foundation launched a Youth Substance Use Prevention and Early Intervention Strategic Initiative (the Initiative) focused on advancing the SBIRT framework in multiple youth-serving settings. The Foundation awarded more than \$81 million to 56 grantees across the country implementing SBIRT in primary care,

schools and school-based health centers, juvenile justice programs, community behavioral health organizations, and community-based organizations. Abt Associates began the evaluation of the implementation and outcomes resulting from the Initiative in 2014 and concluded in 2019.

The evaluation questions addressed in this paper include:

- Can SBIRT increase capacity for prevention and youth access to services in these settings?
- What are the challenges of using SBIRT in these settings?

Other papers by Hilton grantees in this supplement address the third evaluation question:

- Can using SBIRT with youth in these settings prevent, delay onset, or reduce youth substance use?

Methods

The authors conducted a mixed-methods cross-grantee evaluation of the Initiative from 2014 to 2019. Evaluation components included (1) coding and analysis of independent grantee evaluation reports, grantee proposals, and annual progress report to the Foundation using NVIVO software; (2) standardized quarterly process and outcome measures collected across all grantees using a common excel format; (3) monthly monitoring phone conversations between site liaisons and grantee staff checking in on data reporting, quality and challenges; and (4) a survey of grantee leadership to gain a better understanding of the various approaches to implementation of youth SBIRT being utilized across the Foundation's diverse grantees in the Initiative. The quarterly data collection instrument each grantee filled out followed the RE-AIM framework, developed by Glasgow and colleagues, that collects data on multiple programs within the categories of Reach, Adoption, Implementation, and Maintenance (The RE-AIM framework organizes the components of program evaluation into basic data collection elements collected across all grantee programs. See Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *Am J Public Health*. 1999; 89(9):1322–1327). Data collected quarterly from each grantee included contextual information on grantee setting; staff workflow and staff training; screening and brief intervention (BI) instrumentation; numbers of youth screened, receiving a BI, or referral to treatment (RT); and (for a subset of grantees) numbers of youth rescreened/followed-up on to measure changes in outcomes. Monthly monitoring calls between site liaisons and grantee staff included a set of questions to track progress (e.g., What phase of the project are you in currently? What activities are you currently working on? Have you engaged in any dissemination activities since our last call? Have you conducted any trainings or meetings? Are you on track to meet your target numbers?), address any data collection issues, and discuss implementation successes and challenges. Notes from these conversations were recorded in a data collection database each month. The evaluation team regularly reviewed these notes but did not code them due to the wide variation in responses. Grantees submitted annual progress reports to the Hilton Foundation, which we reviewed, coded, and analyzed using NVIVO software. The Abt Institutional Review Board reviewed and approved all aspects of the project.

Results

Increased capacity for prevention and youth access

An important component of the evaluation was to determine whether SBIRT could be implemented in a variety of settings to expand youth access to prevention and intervention services, and as a result, impact youth substance use more broadly.

The evaluation involved 56 grantees implementing SBIRT in more than 1,266 sites across the country. These sites represented settings where youth routinely interact with adults, as well as places with the potential for reaching youth at higher risk. Table 1 represents the number of sites implementing SBIRT by setting: pediatric and primary care, schools and school-based health centers, community-based organizations, community behavioral health organizations, and juvenile justice programs.

Sites incorporated SBIRT into existing workflows and underwent training to increase providers' SBIRT delivery skills such as utilizing a validated screening tool and evidence-based brief intervention approaches such as motivational interviewing. Over 37,000 youth-serving providers, including frontline staff such as nurses, doctors, and social workers, were trained through the Initiative. Training efforts through the Initiative also included addiction medicine fellowships and prevention and intervention curricula for medical, nursing, and social work students.

All the sites were implementing SBIRT for the first time; therefore, the evaluation focused heavily on measuring implementation success (described in this paper) rather than tracking outcomes by following youth served. However, some of the grantees had the resources and ability to track outcomes of youth over time, and select results are presented in subsequent articles in this supplement, as well as in other journals. We discuss the RE-AIM components Reach and Implementation in this paper. Effectiveness is covered in other papers in this supplement and was part of the overall evaluation. Adoption of the protocol is reflected in the many programs and sites under the auspices of each grantee who was successful in executing the SBIRT protocol. The evaluation was not able to follow grantees beyond 2019, and therefore, we are not able to address Maintenance.

Each setting in the Initiative reached large numbers of youth (Table 2). The variation in the proportion of youth who received a BI and/or an RT represents not only variation in the proportion of higher risk youth screened at each setting (i.e., juvenile justice programs vs. primary care) but also relates to capacity of providers to implement in different settings, i.e., low reimbursement potential, competing demands, time limitations. Grantees did not report how many youths they could have potentially screened, but rather just those that they actually screened. We discuss each setting below.

Pediatric and general primary care practices are logical sites to screen a broad swath of youth, as youth receive routine health

Table 1
Number of sites implementing SBIRT by setting

Setting type	Number of sites
Primary Care	392
Schools and School-Based Health Centers	478
Community-Based Organizations	330
Community Behavioral Health Organizations	42
Juvenile Justice Programs	24
Total	1,266

Table 2
Number of youth reached per setting

Setting	Total screened	Total BI	Total RT
Primary Care	56,605	2,992	659
Schools and School-Based Health Centers	74,908	3,305	390
Community-Based Organizations	4,240	3,681	550
Community Behavioral Health Organizations	4,987	1,844	385
Juvenile Justice Programs	490	450	228
Total	141,230	12,272	2,212

services in these settings. But SBIRT has not been widely adopted in pediatric primary care due in part to the belief expressed by many physicians that specialized behavioral healthcare providers (i.e., drug and alcohol counselors, social workers, and psychologists) are better suited to dealing with the issues like drug and alcohol use [12] than physicians. However, the Initiative was able to expand SBIRT to over 392 primary care settings, including pediatric clinics and health centers where over 56,000 youth were screened; 5% of those screened received a BI, and 1% received an RT. Factors that influenced the degree to which SBIRT services were successfully implemented in primary care include limits on provider time, workflow integration, staff turnover, organizational buy-in, availability of technology (e.g. tablets for screening, electronic health records), access to specialty treatment networks, and the potential for reimbursement for services.

Community behavioral health organizations (CBHOs) are advantageous locations to reach youth as they include adolescents already accessing mental health services. Through the Initiative, CBHOs screened a total of 4,987 youth at 32 sites, provided BI to 37%, and provided an RT to 8% of those screened.

SBIRT has not been widely utilized in juvenile justice programs despite the large numbers of high-risk youth in these settings. The higher concentration of youth in this setting that may need services was evident in high rates of brief interventions and referrals to treatment uncovered in this setting. Through the Initiative, SBIRT was implemented in 24 sites serving justice-involved youth. More than 490 youth were screened in these sites; 92% received a BI, and 47% were referred to more formal treatment.

SBIRT was also successfully implemented in 478 schools and school-based health centers where 74,908 youth were screened, 4% were provided a BI, and 1% were provided an RT. Schools are a logical setting to introduce the full spectrum of prevention activities, but traditionally schools have relied predominantly on primary prevention activities such as educational messaging. Having counselors, school nurses, and providers in school-based health centers administer SBIRT, both prevention messages and direct health services could be made available to youth.

Through the 326 community-based organizations implementing SBIRT, 4,240 youth were screened, 87% received a BI, and 13% received an RT. The community-based programs of this grantee were part of a nationwide network focused on providing job skills training and leadership development opportunities for youth from high-risk circumstances. Like the juvenile detention sites, community-based organizations' screenings resulted in a higher percentage of youth screened as in need of either a BI or an RT.

Increasing access by expanding the SBIRT workforce

A core part of the Initiative's strategy was to increase the capacity of the youth-serving workforce through SBIRT training. While youth routinely cross paths with providers in each of these settings, we found that few providers had been trained to identify and respond to youth substance use once identified. This was due in part to little standardized training curricula or approaches designed especially for youth, although there are curricula appropriate for adults. One of the Hilton Foundation's first areas of investment was to support activities to (1) educate youth-serving providers about adolescent substance use as a health concern, and (2) teach providers in multiple settings how SBIRT could serve as a framework to prevent initiation and reduce escalation of use. Grantees disseminated specially developed information and training materials to more than one million individuals, including an implementation checklist; an interactive, online SBIRT training technology platform; toolkits and an adolescent SBIRT implementation guide providing operational and clinical guidance and benchmarks; fact sheets; evaluation tools; case studies; and guidance around billing and reimbursement for SBIRT services.

A key tool for the workforce expansion was the wide dissemination of curricula in health professional training programs and the establishment of addiction medicine fellowship programs. The grantees trained over 37,000 individuals, including nursing and social work students, medical residents, and addiction medicine fellows. One grantee designed and implemented a classroom-based curriculum and virtual patient-provider simulation program in more than 80 schools of nursing and social work, through which nearly 16,000 students received education on adolescent SBIRT. In addition, to date, 83 Addiction Medicine Fellowship programs have been accredited by Accreditation Council for Graduate Medical Education. Given the scope of the audiences involved in the training, the grantee was not able to follow up with an assessment of information gains or implementation of the techniques posttraining.

Challenges to implementation

Each setting provided important new access to youth. The challenges of implementing SBIRT differed across the settings, though there were common issues: difficulty with adjusting changes to workflow, confidentiality, reimbursement, the availability of referral options in their geographic area, and the need to address mental health concerns as a critical part of adolescent substance use prevention.

Pediatric primary care settings found it particularly challenging to find sufficient time to create a useable and sustainable workflow and often struggled to fit the SBIRT protocol smoothly into an already established routine of intake and various developmental and preventive screening questions. In the case of physicians conducting the protocol, the time needed in addition to the health visit proved challenging due to time constraints in primary care settings. In an implementation survey of leadership at sites, 83% of the pediatric primary care clinics reported that the primary care provider was responsible for substance use screening, and behavioral health providers (social workers, counselors, or psychologists) did the screening in 16% of primary care practices. Similarly, in 83% of the school-based health centers, primary care providers were responsible for screening. This placed the burden of finding time for the screening and potential

intervention on the physicians and/or nursing staff in the majority of these often time-constrained settings. Some sites mitigated this challenge by training intake staff in the screening protocol relieving the physician of this component of the process; one site used a tablet for the initial screening but then had a staff member (nurse or physician) take further action with the individual if needed based on screening results.

Confidentiality was also a challenge across the settings, particularly in schools, where grantees faced the issue of whether they could screen youth without notifying parents. Some schools addressed this through "passive consent" procedures that send general notices regarding a universal screening plan; if a parent does not specifically object to the screening for their child, then screening can occur. Other schools sent home a more formal consent document to parents asking for consent for a universal health screening for their child that included alcohol and substance use questions; these sites found that the majority of, although not all, parents consented when it was framed in a broader health context.

Reimbursement for SBIRT was another persistent challenge to implementation in a grant-supported arena. Billing differences by state, provider, and setting type, along with the complexity of Medicaid and licensing restrictions, made navigating this issue challenging. For example, while school health practitioners (school nurses) were generally able to use time already designated as part of their regular activities for SBIRT, pediatricians had to determine how the time could be reimbursed through specific Medicaid or insurance categories available in their state. Although many states now have approved Medicaid codes for the reimbursement for SBIRT, some do not; and in some states, the codes may only be used in medical settings, are restricted to certain professionals to use, and/or are time-based. The Initiative invested in policy analysis, advocacy, and dissemination of information regarding the use of cost-reimbursement codes and strategies across the states for reimbursement. For example, a grantee created an online, interactive map with information on billing for substance use prevention and early intervention, including information on each state's Medicaid coverage.

The referral to the treatment portion of SBIRT was a significant challenge for many sites for several reasons. First, many providers and programs had never interacted with the specialty substance use disorder service system before. Second, the availability of treatment for adolescents is more limited than what is available for adults. Third, there are often few guidelines for managing what can be a complex process of steering high-risk youth into the appropriate treatment program [12]. While it is important to note that only a relatively small proportion of youth screened required formal substance use disorder treatment, many providers felt that they had limited knowledge of available treatment options, which options are evidence-based, and the best match for the youth. As a result, many providers felt unprepared to determine the most appropriate type of referral for the youth and their families based on screening results. In some instances, grantees reported that potential sites declined to participate in SBIRT programs because they felt they did not have an adequate referral network. To address this barrier, one grantee developed a youth-specific referral network across the state, resulting in nearly 70% of participating practice sites building relationships or partnerships with other organizations, including treatment centers, behavioral health providers, and school-based student assistance program counselors.

Given that an estimated one in eight adolescents and young adults suffers from depression [13], it is not surprising that grantees repeatedly noted the need to address mental health issues as part of adolescent substance use prevention efforts. The literature highlights this need [14,15]. The implementation survey of grantees asked programs what other health and social issues they should address when screening youth for substance use (i.e., mental health, intimate partner violence, food/housing insecurity/safety, legal problems, and school conduct/performance). Across settings, respondents identified screening for mental health issues as the most critical need, although the rate of mental health screening varied considerably across settings. Ninety-five percent of primary care or pediatric settings indicated that they screen for mental health issues. School programs and school-based health centers also have high screening rates for mental health issues at 90% and 83%, respectively. However, only 76% of community-based programs were conducting mental health screenings.

The last phase of the evaluation focused on the ultimate impact of SBIRT to delay or eliminate initiation and/or reduce substance misuse. Some grantees collected short- and long-term outcomes, including using electronic health records to track outcomes for large numbers of youth over time. Other grantees conducted traditional randomized controlled studies of varying elements of SBIRT practice. Several grantees were able to follow-up with youth who had received the SBIRT protocol, while others did not have sufficient resources to conduct this type of follow-up. The results addressing the outcomes and impact of the Initiative (i.e., “Can using SBIRT for youth in these settings prevent, delay onset, or reduce youth substance use?”) are presented in subsequent articles in this supplement.

Limitations of the study

The funding offered by the Foundation as part of this Initiative was a result of its long-standing interest in preventive substance use measures for youth. Grantees submitted proposals with a wide array of goals and plans to implement SBIRT in various types of settings, ranging in size from programs with a single location to sites throughout a community or in multiple states. Because this effort focused on determining whether the SBIRT protocol could be implemented for a youth population and in settings previously not utilized for youth, the Foundation did not place data collection requirements on grantees beyond narrative progress reports. When Abt Associates undertook the evaluation of the initiative, we provided grantees with the RE-AIM structure to gather common implementation and outcome measures that we subsequently collected quarterly in simple excel formats. Grantees that were more accustomed to research collected additional data on things like numbers of youth eligible for follow-up and their follow-up data and these studies are reported in this supplement. Other grantees had challenges providing data, which resulted in limitations as to what the overall evaluation could demonstrate.

Discussion

The SBIRT framework was first utilized as a tool for screening adult patients, most often for alcohol problems and in medical settings. While there has been some work on using SBIRT with adolescents, its widespread application across youth-serving settings has been limited, and results on both the

implementation and outcomes are less represented in the literature. Testing the feasibility of reaching large numbers of youth in different settings was the goal of the Hilton Foundation's Initiative.

The Initiative succeeded in (1) introducing SBIRT into wide-ranging settings (2) preparing a large number of providers to address substance use through training, and (3) disseminating findings to the broader field. The Initiative demonstrated that a variety of providers could be specially trained to reach large numbers of youth with simple screening techniques, and early risk can be addressed through a brief intervention. Additionally, screening in a variety of youth-serving settings meets youth where they are and increases access, potentially uncovering the need for services in youth who would otherwise not have been identified. Unfortunately, without widespread screening across multiple settings, substance use concerns may not be recognized until youth face serious consequences. Of the 141,230 youth screened, over 12,000 received a brief intervention, and over 2,000 received a referral to treatment. Important challenges emerged related to implementation: workflow issues, payment options, billing, identifying treatment networks, and addressing the role of mental health issues in youth substance use. These challenges present opportunities for future implementation efforts: address sustainability of SBIRT in a wide variety of youth-serving settings, expand the lens on substance use issues to include mental health screening and services, and solidify financial support for early intervention services [16].

The evaluation also highlighted the often undetected interventions needed across settings where screening or even discussion about substance use is not occurring. Not unexpectedly, much higher levels of need were found in youth detention and community-based programming. Other places where “upstream” interventions can be useful, like school-based settings and routine primary care, also point to the need for a more universal approach to delivering SBIRT. Our results suggest that all of these settings are both feasible and critical intervention points.

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