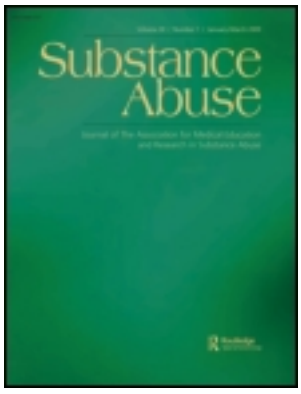

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Developing and Implementing a Multispecialty Graduate Medical Education Curriculum on Screening, Brief Intervention, and Referral to Treatment (SBIRT)

Jeanette M. Tetrault MD [a], Michael L. Green MD [a], Steve Martino PhD [b], Stephen F. Thung MD [c], Linda C. Degutis DrPHMSN [d], Sheryl A. Ryan MD [e], Shara Martel MPH [d], Michael V. Pantalon PhD [b], Steven L. Bernstein MD [d], Patrick G. O'Connor MDMPH [a], David A. Fiellin MD [a] & Gail D'Onofrio MDMS [d]

[a] Department of Internal Medicine, Yale University School of Medicine, New Haven, Connecticut, USA

[b] Department of Psychiatry, Yale University School of Medicine, New Haven, Connecticut, USA

[c] Department of Obstetrics and Gynecology, Yale University School of Medicine, New Haven, Connecticut, USA

[d] Department of Emergency Medicine, Yale University School of Medicine, New Haven, Connecticut, USA

[e] Department of Pediatrics, Yale University School of Medicine, New Haven, Connecticut, USA

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Michael V. Pantalon, PhD
Steven L. Bernstein, MD
Patrick G. O'Connor, MD, MPH
David A. Fiellin, MD
Gail D'Onofrio, MD, MS

ABSTRACT. The authors sought to evaluate the feasibility and acceptability of initiating a Screening, Brief Intervention, and Referral to Treatment (SBIRT) for alcohol and other drug use curriculum across multiple residency programs. SBIRT project faculty in the internal medicine (traditional, primary care internal medicine, medicine/pediatrics), psychiatry, obstetrics and gynecology, emergency medicine, and pediatrics programs were trained in performing and teaching SBIRT. The SBIRT project faculty trained the residents in their respective disciplines, accommodating discipline-specific implementation issues and developed a SBIRT training Web site. Post-training, residents were observed performing SBIRT with a standardized patient. Measurements included number of residents trained, performance of SBIRT in clinical practice, and training satisfaction. One hundred and ninety-nine residents were

Jeanette M. Tetrault, Michael L. Green, Patrick G. O'Connor, and David A. Fiellin are affiliated with the Department of Internal Medicine; Steve Martino and Michael V. Pantalon are affiliated with the Department of Psychiatry; Stephen F. Thung is affiliated with the Department of Obstetrics and Gynecology; Linda C. Degutis, Shara Martel, Steven L. Bernstein, and Gail D'Onofrio are affiliated with the Department of Emergency Medicine; and Sheryl A. Ryan is affiliated with the Department of Pediatrics, Yale University School of Medicine, New Haven, Connecticut, USA.

Address correspondence to: Jeanette M. Tetrault, MD, Department of Internal Medicine, Yale University School of Medicine, 367 Cedar Street, 4th Floor, New Haven, CT 06510, USA (E-mail: jeanette.tetrault@yale.edu).

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trained in SBIRT: 98 internal medicine, 35 psychiatry, 18 obstetrics and gynecology, 21 emergency medicine, and 27 pediatrics residents. To date, 338 self-reported SBIRT clinical encounters have occurred. Of the 196 satisfaction surveys completed, the mean satisfaction score for the training was 1.60 (1 = very satisfied to 5 = very dissatisfied). Standardized patient sessions with SBIRT project faculty supervision were the most positive aspect of the training and length of training was a noted weakness. Implementation of a graduate medical education SBIRT curriculum in a multispecialty format is feasible and acceptable. Future efforts focusing on evaluation of resident SBIRT performance and sustainability of SBIRT are needed.

KEYWORDS. Brief intervention, graduate medical education, screening

INTRODUCTION

Alcohol and other drug use and misuse cause significant morbidity and mortality in the United States and worldwide (1). According to the 2008 National Survey on Drug Use and Health, roughly 20 million Americans over 12 years of age were current illicit drug users. Heavy drinking (defined as drinking 5 or more drinks on the same occasion on each of 5 or more days in the past 30 days) was reported by 17 million people (7% of the US population); and 15 million people met criteria for alcohol abuse or dependence (2). During this same year, only 9% of patients in need of treatment for unhealthy alcohol or other drug use actually received specialty care, leaving 21 million people in need of treatment but not receiving it.

Recognizing the effectiveness of Screening, Brief Intervention, and Referral to Treatment (SBIRT) approaches for alcohol (3–7), the US Preventive Services Task Force and the Joint Commission have recommended routine alcohol screening during medical encounters (8, 9). There are fewer published studies regarding the efficacy of SBIRT with drug use, but there is a growing body of literature, which is promising (10–14). Investigator-initiated research by J. Bernstein reported the efficacy of SBIRT for drug use in an urgent care ambulatory setting (14), and another study by E. Bernstein demonstrated that a trial of SBI promoted marijuana abstinence and reduced consumption among emergency department (ED) patients 14–21 years old (13). Madras and colleagues also demonstrated that SBIRT services implemented in a range of medical settings across 6 states was feasible and the self-reported patient status at 6 months indicated significant improvements over baseline for illicit drug use and heavy alcohol use (11). The World Health Organization (WHO) sponsored a study of screening and interventions for illicit drug (marijuana, cocaine, amphetamine-type stimulants, opioid). This randomized controlled, multinational study yielded significant short-term reductions (∼3 months) in illicit drug use in combined data from 731 participants (15). However, many physicians still do not screen for the spectrum of unhealthy alcohol or other drug use, defined as the spectrum for at-risk use to dependence, nor refer those in need of specialty treatment (3, 5, 16–22). A variety of barriers have been identified including lack of knowledge, time, and training resources (23).

To begin to resolve these implementation barriers, the Substance Abuse and Mental Health Services Administration (SAMHSA) launched the SBIRT initiative to promote the systematic identification of patients with alcohol and other drug use; provision of brief counseling (including advice and motivational enhancement) where appropriate; and referral of patients in need to specialty treatment (11, 24). Six months after a federally funded SBIRT training program was implemented in 6 different states, both alcohol and other drug use decreased in participants screening positive at baseline (11).

Regarding physicians in training, brief intervention curricula have proven feasible and effective in a variety of medical education settings, including emergency medicine residency programs (21, 25), psychiatry residency programs (26), and medical schools (27). However, few graduate medical education programs offer established addiction or SBIRT curricula. A survey of 1183 program directors in emergency

medicine, family practice, internal medicine, obstetrics and gynecology, osteopathic medicine, pediatrics, and psychiatry found that roughly 56% of programs had training in substance abuse with a median number of 7 hours (interquartile range 4–15) of training devoted to the curriculum throughout the length of the residency (28).

This report describes the development, implementation, and initial evaluation of a SAMHSA-funded multispecialty (internal medicine [traditional, primary care, medicine/pediatrics], psychiatry, obstetrics and gynecology, emergency medicine, and pediatrics) graduate medical education SBIRT curriculum at the Yale University School of Medicine.

METHODS

Curriculum Development

The core curriculum was developed using established criteria in medical education curriculum development (29, 30). Namely, we (1) performed a targeted needs analysis of patients and learners; (2) reviewed and catalogued existing expertise at our institution; (3) reviewed curricula published in the medical literature; (4) assembled a multispecialty SBIRT faculty; and (5) developed and implemented our curricula attending to individual programmatic needs, anticipated implementation barriers, and curriculum sustainability.

We began with a targeted analysis to identify the particular needs of our patients, and our resident learners. Our residents care for patients with a high prevalence of unhealthy alcohol and other drug use (31). Connecticut ranks in the top 20% of states for alcohol abuse and dependence in persons 12 years of age and older, and in the top 20% for marijuana use, cocaine use, and nonmedical use of prescription pain relievers among persons 18 to 25 years old (2, 32). Only 8% and 2% of the state population who are in need of treatment for alcohol and other drug abuse/dependence, respectively, are receiving it (33). Many patients with unhealthy alcohol and other drug use are uninsured or underinsured and are cared for disproportionately by our residency programs (31).

Regarding learners, residents nationally have identified the need for more training in how to screen for and treat alcohol and other substance use (26, 34, 35) and this also has been the case at our institution. To address this need, members of our SBIRT core senior faculty previously developed and implemented brief intervention curricula using standardized patient scenarios for practitioners in the emergency department (36) and for medical students (27). Trainee's knowledge and skills in SBIRT increased after participation in these curricula (27, 37), demonstrating that brief intervention can be effectively taught to medical trainees. Given the demographics of alcohol and other drug use in our state and the demonstrated efficacy of SBIRT knowledge and skill acquisition in residents at our institution, this widespread curriculum to teach residents how to screen for and treat unhealthy alcohol and other drug use was established to help close the treatment gap in our state (38).

We next reviewed the literature to identify instructional strategies with demonstrated effectiveness and potential barriers to SBIRT curriculum implementation (11, 21, 25–28, 37). Locally, we identified existing curricula, resources, and faculty expertise and availability. Various components of addiction medicine education had already been in place in the internal medicine (traditional, primary care, medicine/pediatrics), psychiatry, obstetrics and gynecology, emergency medicine, and pediatrics residency programs at Yale University School of Medicine. SBIRT core senior faculty took the following steps: (1) convened a series of discussions to garner support from the Graduate Medical Education committee for this multispecialty project; (2) engaged experts and opinion leaders in each department; (3) secured participation from residency program directors and clinical service directors; (4) assembled the multispecialty SBIRT project faculty—team leaders within each specialty to function as experts and opinions leaders/role models (Figure 1); and (5) outlined and articulated learning objectives (Table 1) and instructional strategies.

In developing the instructional strategies, we coordinated, expanded, and standardized existing efforts in our residency programs while attending to "contextual variables" (39)

FIGURE 1. Flowchart of SBIRT faculty.

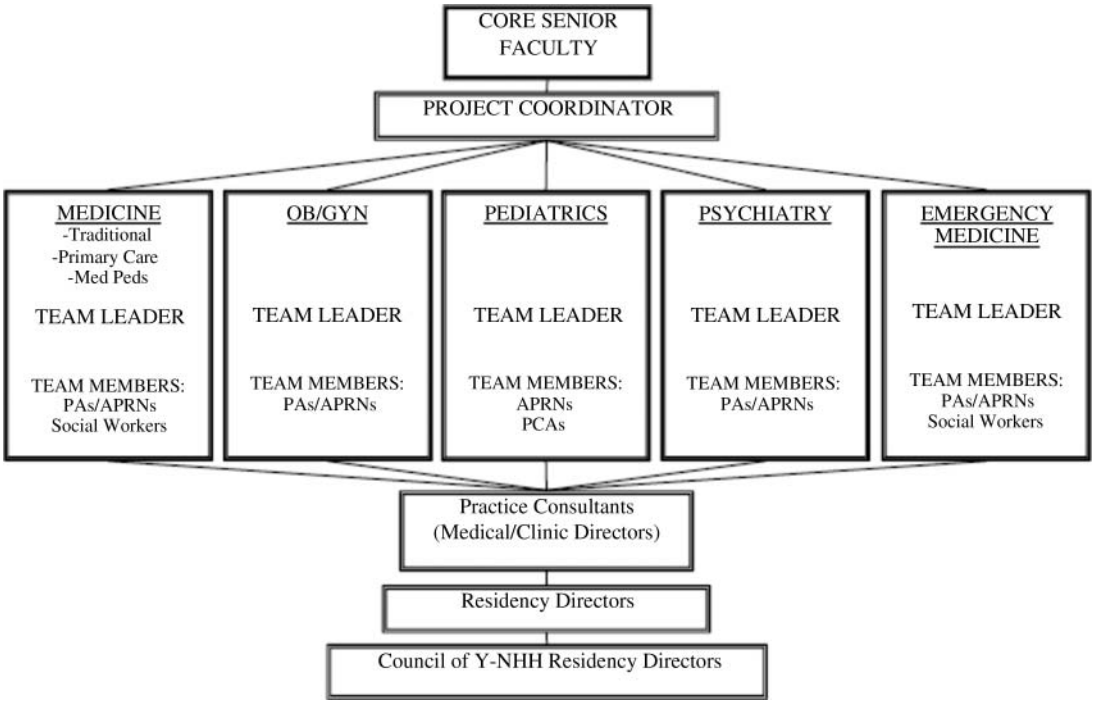


TABLE 1. SBIRT Curriculum Objectives

Programmatic objectives:

1. To expand and adapt our SBIRT curriculum for alcohol and other drugs for residents and practitioners (nurses, physician associates) in the specialties of medicine, pediatrics, medicine/pediatrics, obstetrics and gynecology, emergency medicine, and psychiatry.
2. To modify the microsystems in each respective specialty practice site to ensure long-term adoption of SBIRT.

Learner objectives:

1. Understand the neurobiology, epidemiology, screening, diagnosis, and management of unhealthy alcohol use. (*Knowledge*)
2. Demonstrate competence in screening patients for alcohol and other drug use, performing brief interventions, and referring appropriate patients for specialized care. (*Skill*)
3. Appreciate that unhealthy alcohol and other drug use is a condition with a biochemical basis and that relapse should not be consider a "failure" but rather an expected course of a chronic disease. (*Attitude*)
4. Perceive fewer barriers to screening for alcohol and other drug use and performing brief interventions. (*Attitude*)
5. Improve actual practice performance in screening patients for alcohol and other drug use and performing brief interventions. (*Behavior*)

(resources, schedules, values, patient demographics, accreditation requirements, etc.) in the individual programs. In particular, we designed our curriculum to address the Accreditation Council for Graduate Medical Education's (ACGME) core competencies (29, 34, 40). The SBIRT curriculum was designed to augment patient care and medical knowledge and proficient use of SBIRT skills would enhance professionalism, interpersonal and communication skills, practice-based learning and improvement, and systems-based practice.

As part of the development process, we anticipated several barriers (41) to translating SBIRT training into several diverse clinical settings and populations. We considered practitioner-level, patient-level, and system-level barriers (41). Practitioner resistance to SBIRT has been reported in multiple disciplines (42–44). Factors cited for such resistance have included lack of knowledge about SBIRT and local referral sources, lack of knowledge of efficacy of SBIRT, time constraints in busy and chaotic medical settings, and discomfort with counseling (44).

Our approach was to increase knowledge of SBIRT and local referral sources and convince residents and faculty of the feasibility of performing SBIRT within a busy clinical encounter.

Patient level barriers were also considered and integrated into the curriculum. We anticipated that residents would be most concerned about patients who were resistant to changing their alcohol or other drug use. To address this motivational enhancement challenge, the curriculum included specific instruction and practice of strategies to engage patients with little motivation or commitment to change their alcohol or other drug use (36).

Finally, at the system level, we recognized that each program had different approaches to medical education and time allotted to didactic and case based teaching. With multiple competing topics in graduate medical education, we kept the SBIRT curriculum compact, requiring no more than 3 hours of instruction. Our incorporation of program-specific team leaders into the curriculum development process and early engagement from the residency program directors aided the prioritization of SBIRT training in each specialty program.

To promote sustainability, residency program faculty in the internal medicine, obstetrics/gynecology, and pediatrics programs who directly supervised residents were offered an hour-long faculty development session that included elements of the SBIRT training and observation tools to monitor residents in clinical practice. Additionally, SBIRT project faculty in all programs met with clinic directors and supervisors to be sure that processes within the clinical setting were developed to ensure successful implementation of SBIRT into the day-to-day operation of the clinic.

Core Curriculum

Although program-to-program variation occurred in the curricula (Table 2), there was a common core shared by all disciplines. The core curriculum consisted of 2 distinct parts: the didactic/practice portion and the standardized patient portion. The didactic/practice portion of the core curriculum consisted of 1 to 1.5 hours of instruction and began with a review of the epidemiology and public health impact of alcohol and other drug use. For screening, residents were taught to use the National Institute on Alcohol Abuse and Alcoholism quantity/frequency questions (45) and the CAGE (46, 47), modified to screen for unhealthy alcohol and and other drug use (48), in the internal medicine, psychiatry, obstetrics and gynecology, and emergency medicine programs and the CRAFFT (49) in the pediatrics program. The residents were then introduced to the Brief Negotiation Interview (BNI). The BNI, a type of brief intervention, is a manual-guided 5-step interviewing technique to reduce alcohol and other drug use among patients presenting in medical settings (25, 36, 37, 50). The BNI included instruction on how to raise the subject of alcohol and drug consumption, provide feedback on the patient's drinking and drug use levels, enhance motivation to reduce or stop drinking and drug use, and negotiate and advise a plan of action. All residents were provided with a laminated pocket card outlining screening techniques on one side and the full BNI on the other side (see Figure 2). Residents first viewed a 10-minute video clip of the BNI and then learned each step.

Next, residents practiced the BNI in triads, role playing discipline-specific cases in which each resident took turns playing the role of the physician, patient, and observer. SBIRT project faculty circulated during the role-play exercise and provided direct feedback. Residents were also provided with discipline-specific instruction regarding referral sources to be used in cases where screening revealed more severe alcohol or other drug use disorders (i.e., abuse or dependence) (51). Residents were provided with an updated listing of national, state, and local referral sources for them to directly refer patients to if they have identified to have more severe alcohol or other drug use.

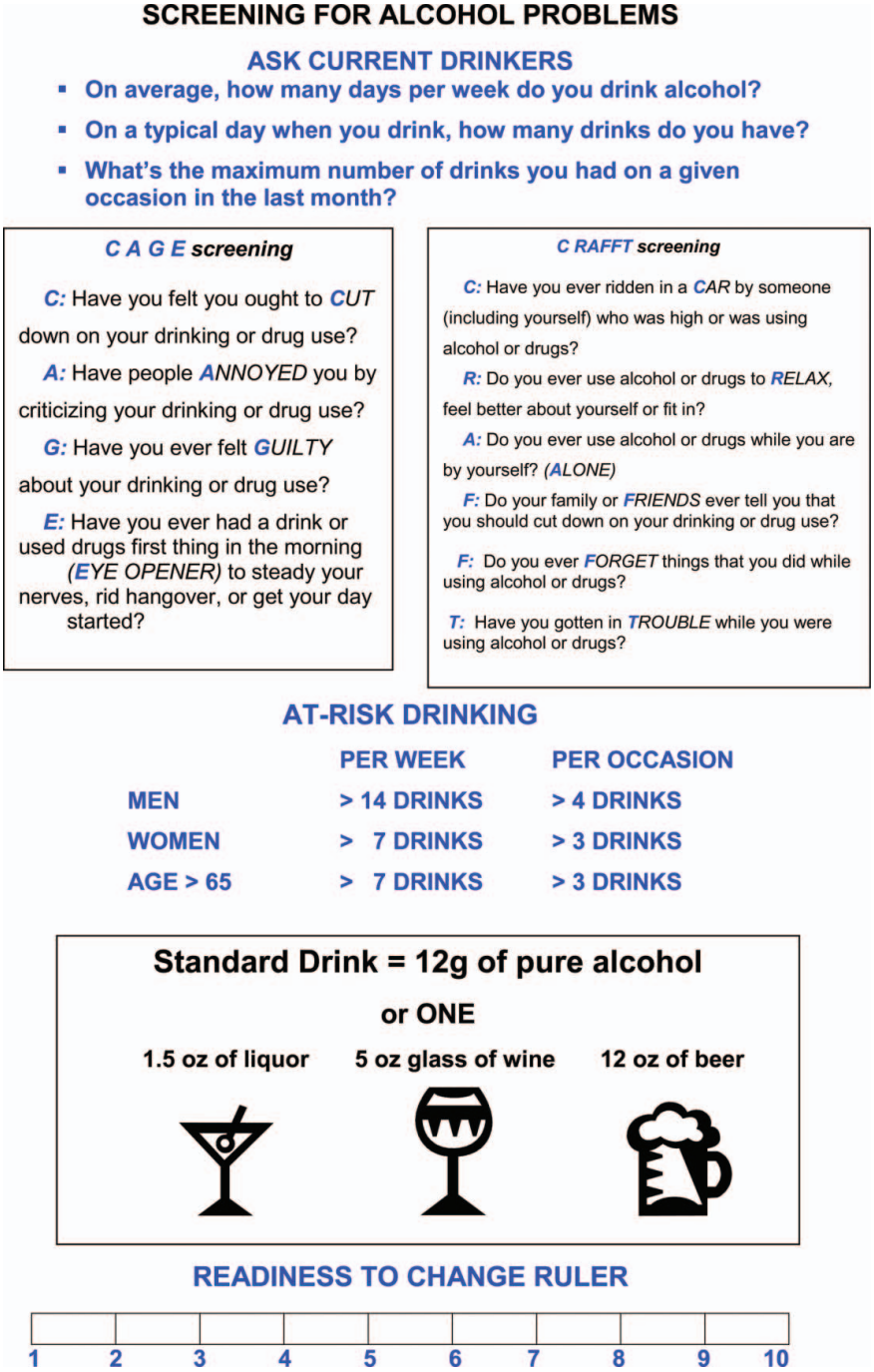
After the initial training, residents demonstrated their acquired BNI skills within a standardized patient case. The standardized patient portion of the curriculum took 1 to 1.5 hours of time and was broken up into 15-minute time slots

TABLE 2. Program-Specific Curriculum Components

	Medicine	Ob/Gyn	Pediatrics	Psychiatry	Emergency medicine
Pre-training assessments					
Knowledge-based alcohol and drug survey	X	X	X	X	X
Standardized patient encounter		X	X	X	
Core curriculum					
- Class size	• 5–9	• 9–11	• 2–4	• 17–19	• 8–13
- Length of training	• (2) $1\frac{1}{2}$ or (1) 3-hour sessions	• (1) 3-hour session	• (1) 2-hour session	• (2) $1\frac{1}{2}$ hour sessions	• (1) 3-hour session
- Scope of the problem	• Initial and follow-up use m primary care	• Substance use during and beyond pregnancy	• Use of CRAFFT and substance use in adolescent population	• Substance use and psychological problems	• Trauma and other substance use related ED visits
- Screening tools					
- Evidence for SBIRT					
View “The Emergency Practitioner and The Unhealthy Drinker” DVD (Brief Intervention)	X	X	X	X	X
Faculty observed resident role plays	X	X	X	X	X
Post-training assessments	1–7 days	1 month	2–3 weeks	1 week and 30 days	2–4 weeks
Standardized patient encounter					
Training Satisfaction survey (GPRA)*	X	X	X	X	X
1 Month post-training					
30 day training satisfaction survey (GPRA)*	X	X	X	X	X
Knowledge-based alcohol and drug survey	X	X	X	X	X
1 Year post training					
Standardized patient encounter	X	X	X	X	X
Knowledge-based alcohol and drug survey	X	X	X	X	X
3 Years post-training					
Knowledge-based alcohol and drug survey	X	X	X	X	X

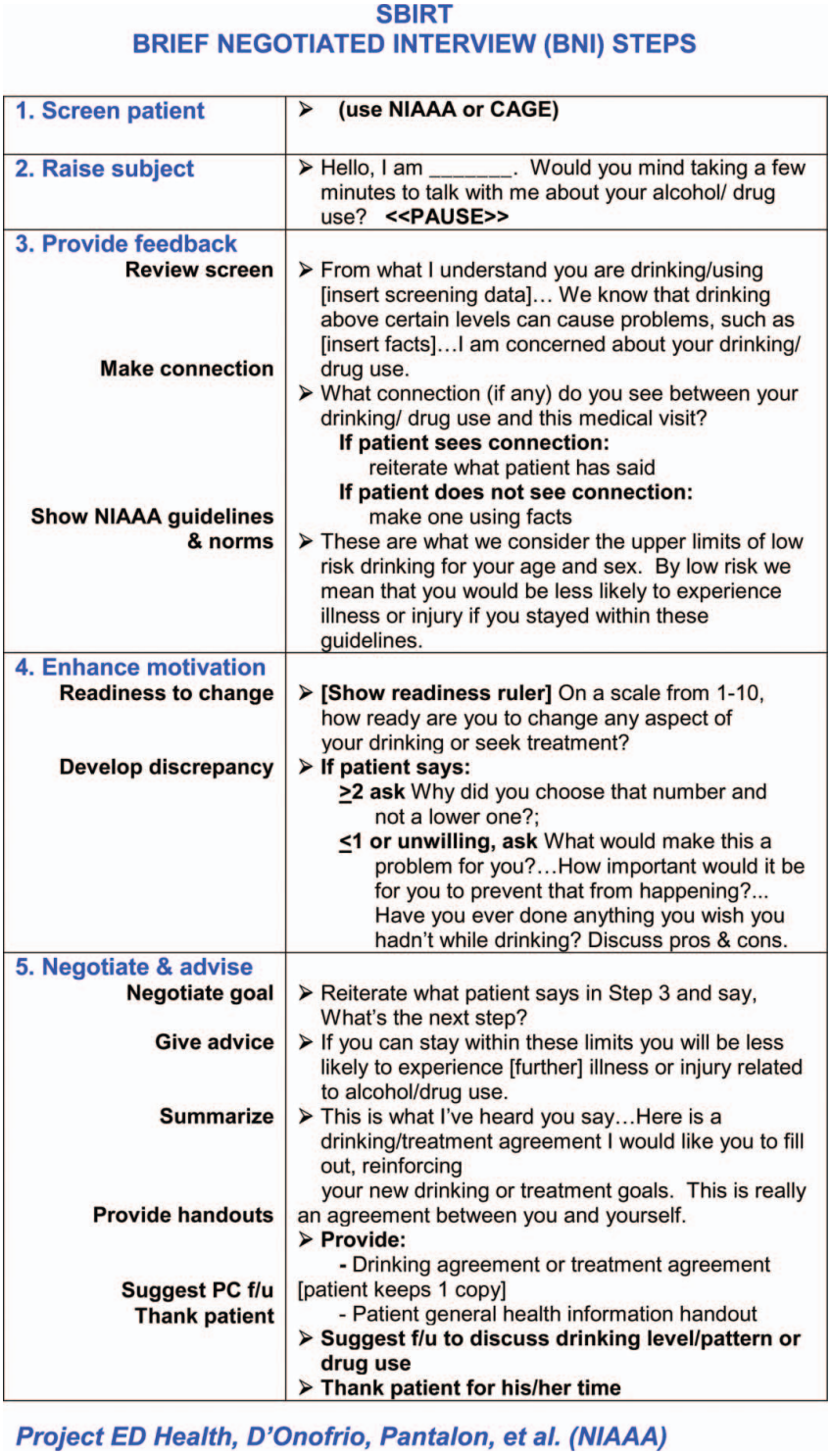
*Govemment Performance Results Act.

FIGURE 2. Laminated pocket card of screening and BNI steps (Color figure available online).



per resident. For larger groups of residents, 2 standardized patients were run at the same time. Cases were discipline specific and standardized patient actors were trained by the core senior faculty. Standardized patient sessions were either directly observed by SBIRT project faculty and feedback provided at the time of the encounter or the sessions were taped and feedback was provided to the residents within 2 weeks time via e-mail.

FIGURE 2. (Continued)



SBIRT
BRIEF NEGOTIATED INTERVIEW (BNI) STEPS

1. Screen patient	➢ **(use NIAAA or CAGE)**
2. Raise subject	➢ Hello, I am _____. Would you mind taking a few minutes to talk with me about your alcohol/ drug use? **<<PAUSE>>**
3. Provide feedback	
Review screen	➢ From what I understand you are drinking/using [insert screening data]… We know that drinking above certain levels can cause problems, such as [insert facts]…I am concerned about your drinking/ drug use.
Make connection	➢ What connection (if any) do you see between your drinking/ drug use and this medical visit? **If patient sees connection:** reiterate what patient has said **If patient does not see connection:** make one using facts
Show NIAAA guidelines & norms	➢ These are what we consider the upper limits of low risk drinking for your age and sex. By low risk we mean that you would be less likely to experience illness or injury if you stayed within these guidelines.
4. Enhance motivation	
Readiness to change	➢ **[Show readiness ruler]** On a scale from 1-10, how ready are you to change any aspect of your drinking or seek treatment?
Develop discrepancy	➢ **If patient says:** **≥2 ask** Why did you choose that number and not a lower one?; **≤1 or unwilling, ask** What would make this a problem for you?…How important would it be for you to prevent that from happening?... Have you ever done anything you wish you hadn't while drinking? Discuss pros & cons.
5. Negotiate & advise	
Negotiate goal	➢ Reiterate what patient says in Step 3 and say, What's the next step?
Give advice	➢ If you can stay within these limits you will be less likely to experience [further] illness or injury related to alcohol/drug use.
Summarize	➢ This is what I've heard you say…Here is a drinking/treatment agreement I would like you to fill out, reinforcing your new drinking or treatment goals. This is really an agreement between you and yourself.
Provide handouts	➢ **Provide:** - Drinking agreement or treatment agreement [patient keeps 1 copy] - Patient general health information handout
Suggest PC f/u	➢ **Suggest f/u to discuss drinking level/pattern or drug use**
Thank patient	➢ **Thank patient for his/her time**

Project ED Health, D'Onofrio, Pantalon, et al. (NIAAA)

Prior to curriculum implementation, this project was approved by the Human Investigations Committee at Yale University School of Medicine.

Curriculum Implementation

The SBIRT faculty consisted of a group of senior, multispecialty core faculty experts and leaders in the field of addiction medicine and a project coordinator. The core faculty enlisted the interest and support of residency directors to assist with facilitating the mechanics of collating residents for training, and practice consultants who were responsible for assisting with integrating the processes identified to facilitate SBIRT into the specific practice setting. Specialty-specific project faculty were then identified and supported by the grant in each specialty (Figure 1). Following an established method, the senior core faculty organized several "train the trainer" sessions for the team leaders, who then took responsibility for organizing and training the residents and residency program faculty when possible to enhance continual role modeling and resident observation in the clinical setting (52). In addition, the SBIRT faculty (core and project faculty) developed a curriculum Web site (www.yale.edu/sbirt), which included specialty-specific modules and cases, training manuals, readings, screening tools, slide presentations, and video clips of real patient scenarios of the BNI. Implementation occurred in the 2008–2009 and 2009–2010 academic years and was discipline specific (see Table 2).

Internal Medicine

All 148 residents in the 3- to 4-year residency cycles of the internal medicine programs (traditional, primary care, and medicine/pediatrics) were targeted for training. Residents were trained on the ambulatory block and in either two $1\frac{1}{2}$-hour sessions separated by 1 week (traditional residency program) or two $1\frac{1}{2}$-hour sessions broken up throughout a day-long "addiction medicine" curriculum day (primary care and medicine/pediatrics residency programs).

Psychiatry

All of the second-year psychiatry residents ($n = 35$) were offered SBIRT training in two $1\frac{1}{2}$-hour sessions separated by 1 week as part of their traditional core curriculum that prepares them to deliver a variety of empirically supported psychosocial treatments.

Obstetrics and Gynecology

Obstetrics and gynecology is a 4-year residency training program consisting of 25 residents. Within the obstetrics and gynecology program, residents have one full afternoon of protected didactic time on a weekly basis. All available residents were trained together in a 3-hour session.

Emergency Medicine

Residency training in emergency medicine (EM) involves a 4-year program that includes 13 residents in each of the 4 years for a total of 52 residents. As most of the EM residents in the third and fourth years of the program had received SBIRT training previously, we specifically targeted the first- and second-year residents, and the few third- and fourth-year residents who had not been available for previous training, for a total target group of 30. First-year residents received the training during their orientation to the emergency medicine program, and other residents received the curriculum in a 2-hour session during an allotted weekly 5-hour resident education block.

Pediatrics

The pediatrics residency is a 3-year training program. We offered SBIRT training to all residents during either their second-year pediatrics ($n = 20$) or third-year medicine-pediatrics ($n = 4$) residency. Training occurred in one $2\frac{1}{2}$-hour session during the required adolescent medicine rotation.

Curriculum Evaluation Methods

Number of Residents Trained and Performance of SBIRT in Practice

We tracked numbers of residents trained. Additionally, 30 days post-training, we evaluated skill translation into clinical practice by documenting resident's performance of alcohol and other drug use screening and brief interventions. In the internal medicine, obstetrics/gynecology, and emergency medicine programs, residents documented their screens and BNIs in clinical practice using the online procedure log tracking mechanism in E*Value (www.e-value.net). In the obstetrics and gynecology programs, residents documented alcohol and other drug use screens and BNIs performed through the electronic medical record. Additionally, residents in all training programs were sent e-mail reminders and required to fill out an electronic survey to track the numbers of self-reported screens and BNIs they performed in the clinical setting. Resident-specific assessment and evaluation took place in the form of a standardized patient interview where residents performed screening and brief intervention using a discipline-specific case and were evaluated using a standardized checklist (37).

Training Satisfaction

After the training, residents then completed a satisfaction survey, the Government Performance and Results Act (GPRA) Client Outcome Measures for Discretionary Programs (11). As part of the satisfaction evaluation, residents were encouraged to leave comments regarding the strengths and weaknesses of the training. We collected resident feedback from the comments section of the training satisfaction survey to evaluate both elements of success and criticisms.

Barriers and Proposed Solutions

Barriers to implementation were cataloged individually by the SBIRT project faculty and brought to the senior core faculty to discuss and brainstorm possible solutions.

RESULTS

Number of Residents Trained and Use of SBIRT in Practice

To date, 199 residents have been trained across all specialties, representing 78% of the total number of residents we had originally targeted (Table 3). Forty-five percent of residents were male and 65% were white. Twenty-seven percent were postgraduate year (PGY)-1, 53% PGY-2, 18% PGY-3, and 2% PGY-4.

Since the trainings began in January of 2009, residents have reported performing 338 BNIs in clinical practice: 105 in internal medicine, 105 in psychiatry, 18 in obstetrics/gynecology, 81 in emergency medicine, and 29 in pediatrics. Translation of BNIs performed into patient-level data regarding use of alcohol or other drugs is beyond the scope of this report.

Training Satisfaction

Residents were very satisfied with the training. Out of 196 satisfaction surveys returned (98% response rate), the mean satisfaction score was 1.60 (1 = very satisfied to 5 = very dissatisfied). Overall, residents felt that this training addressed a void in their education. Residents reported that the role-play exercises were very useful; direct performance feedback given by faculty at the end of these exercises was a noted strength. Other strengths included the provision of the laminated pocket card, brevity of the approach, and utility with patients resistant to changing their alcohol and other drug

TABLE 3. Residents and Performance

Specialty	Number of residents targeted to train	Number of residents trained to date % (*n*)	SBIs performed
Internal medicine	148	66% (98)	105
Psychiatry	35	100% (35)	105
Emergency medicine	30	70% (21)	81
Ob/Gyn	25	72% (18)	18
Pediatrics	24	100% (24)	29
Total	254	78% (199)	338

use. Some residents felt that the training would have been more effective if an additional session was included with more role play and standardized patient scenarios. However, others felt that the training repeated some curricular content they received during medical school training and, therefore, felt that less time could have been spent on the training.

Barriers and Proposed Solutions

Despite securing support from residency program administrators, lack of time in the curriculum to deliver SBIRT training and difficulties coordinating resident's schedule given work-hour restrictions remained a significant implementation barrier. To overcome this barrier, team leaders maintained flexibility with scheduling and offered additional trainings throughout the year. Any resident who missed training was referred to the SBIRT Web site for self-directed study prior to the standardized patient session. Tracking completed screens and BNIs in clinical practice also proved to be difficult, particularly in those residency programs where electronic tracking of procedures was not already in place. In an effort to promote tracking, team leaders in several of the programs worked with members of information technology teams to establish clinical reminders and checklists within the various electronic medical records at the outpatient sites. Finally, supporting the residents' use of BNI in clinical practice was challenging because it may have occurred in other clinical settings where core program faculty might not be able to observe their practice or encourage its application. Faculty development was offered in several of the programs to promote curricula sustainability and to create an opportunity for observation-based feedback. These faculty participants were encouraged to observe screening and BNI performance in all clinical settings. We used e-mail reminders to faculty to promote this process and further marketed their adherence by noting how it could satisfy the requirements for resident observation mandated by residency accreditation committees.

Some unique barriers arose per discipline. In psychiatry, residents found the BNI to be too formulaic in its stepwise approach, in contrast to the clinical flexibility they felt they had within other psychotherapeutic interventions. SBIRT project faculty coached these residents on how to use the BNI steps to guide rather than rigidly dictate what they might say or do with patients who might have alcohol or other drug use problems. Moreover, project faculty encouraged the use of SBIRT as most relevant in acute care psychiatric settings where time constraints might dictate rapid screening, brief intervention, and referral.

In pediatrics, residents do not routinely encounter patients with unhealthy alcohol and other drug use, and the opportunity to engage in intervention is more limited than with adult populations. However, pediatrics residents have numerous opportunities in primary care outpatient settings, emergency settings, and inpatient wards to perform screening for alcohol and other drug use. The tracking procedure for the pediatrics program did not capture screening, but only BNIs that were performed on patients with a positive screen. Additional methods to capture screening efforts are being instituted through the electronic medical record systems for use in both the inpatient and outpatient settings. As a potential result of the fewer numbers of BNIs performed with the pediatric populations, residents' skills were at risk for degradation from nonuse. To overcome this barrier, monthly reminders and annual faculty development were provided to maintain skills among the residents.

CONCLUSIONS

We describe the development, implementation, and preliminary evaluation of a novel multispecialty graduate medical education SBIRT curriculum at a single institution. Our results suggest that implementation of a comprehensive SBIRT curriculum is feasible across residency programs in multiple specialties. Residents were highly satisfied with this training and integrated these techniques in their clinical practices. Despite barriers that arose throughout different phases of implementation, we found that open communication, problem solving among the SBIRT core faculty, and involvement of the Graduate Medical Education committee,

residency program directors, and clinical service directors were critical to the successful implementation of this program.

Certain unique features of our results should be highlighted. The pediatrics and psychiatry programs were both able to train 100% of the residents originally targeted for training while the other programs continue to train residents. Additionally, the SBIRT curriculum was folded into required coursework, which occupied protected didactic time in these 2 disciplines, allowing for improved attendance. Residents in the PGY-2 level seemed to be the most accessible for training and the psychiatry and pediatrics programs specifically targeted residents at this level of training. By the time trainees have reached the PGY-2, in many of the primary care–based disciplines, they are following a cohort of patients and have had significant exposure to patients with alcohol and other drug use, allowing for greater interest in topics such as SBIRT.

Given the significant burden of alcohol and other drug use and the lack of recognition and treatment of these conditions by the health care system, it is important for medical educators to consider the public health impact of screening and brief intervention as part of a comprehensive teaching program for house staff (2, 3, 19, 53). A recent systematic review pooling data from 1992 to 2004 found that although alcohol screening and counseling was one of the most cost-effective preventive services (ratio of $1755/quality-adjusted life-years), it was among the preventive services least frequently delivered by physicians (54). A recent evaluation of a large, multisite SBIRT initiative found that of 459,599 patients screened, 23% of patients screened positive for alcohol and other drug use with 16% receiving a brief intervention (11). Although this large-scale service initiative showed that SBIRT could be implemented in many diverse sites and populations, ours, to our knowledge, is the first report of the successful implementation of a multispecialty graduate medical education SBIRT curriculum. Other reports have described feasibility of implementing SBIRT curricula within medical school training, single residency training programs, or clinical settings (26, 27, 37), but to our knowledge, this is the first to describe the development, implementation, and initial evaluation of such a curriculum across multiple specialties. Additionally, our program is unique in its systematic approach to curriculum development and implementation, its tracking of resident performance, and its approach to cataloguing barriers and proposed solutions to curriculum implementation. Given that alcohol and other drug use are amenable to effective screening and intervention, it is imperative that medical educators give resident physicians the tools necessary to effectively deliver this cost-effective and underutilized service (54).

This report has several limitations. The unique aspects of this multispecialty program and the significant infrastructure for training in addiction medicine already in place at our institution may compromise generalizability. Additionally, we do not know how many residents actually conducted the 350 BNIs or the impact on patients' successful treatment referral or alcohol or drug use outcomes. Finally, we have not reported on the extent to which the curriculum positively impacted on the residents' SBIRT knowledge and skill acquisition. A more extensive evaluation of the effectiveness of our program is underway. We have been measuring SBIRT knowledge before and after training using standardized surveys that have been used in prior studies (21, 36, 55, 56). We also have been collecting recorded samples of the residents' BNI performance within standardized patient encounters pre- and post-training. These will be independently rated for adherence to the SBIRT approach using a standardized checklist (37). We plan to contact residents 1 year and 3 years post-training to assess again their BNI adherence and the frequency of SBIRT usage in clinical practice.

Despite these limitations, implementation of a multispecialty graduate medical SBIRT curriculum is feasible and acceptable. Given its integration across multiple specialty areas of medicine and the involvement of key faculty members within each program, the program is likely to be sustainable at our institution and could be adapted by GME programs at other institutions (29). By providing residents with the skills to appropriately identify and treat unhealthy alcohol and other drug use, a multispecialty SBIRT curriculum has the potential to make a profound impact on the health of patients in various settings and populations.

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