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Impact of a Brief Training on Medical Resident Screening for Alcohol Misuse and Illicit Drug Use

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Abstract

Educational initiatives are needed to improve primary care substance use screening. This study assesses the impact on 24 medical residents of a 2.5-day curriculum combining experiential and manual-based training on screening for alcohol misuse and illicit drug use. A retrospective chart review of new primary care outpatients demonstrated that nearly all were asked about current alcohol use before and after curriculum participation. Adherence to national screening guidelines on quantification of alcohol consumption modestly improved ($p < .05$), as did inquiry about current illicit drug use ($p < .05$). Continued efforts are needed to enhance educational initiatives for primary care physicians.

INTRODUCTION

Alcohol and illicit drug use are major preventable causes of morbidity and mortality in the United States,¹ and primary care physicians are favorably situated to identify substance-using patients and intervene.^{2–5} Integrating alcohol and other drug screening into medical settings is a priority of the U.S. National Drug Control Strategy.⁶ The National Institute on Alcohol Abuse and Alcoholism (NIAAA) and U.S. Preventive Services Task Force (USPSTF) recommend routine screening in primary care for alcohol misuse, defined by the USPSTF as risky or harmful drinking without criteria for DSM-IV dependence.^{3,7} While not specified by the USPSTF, harmful use has been categorized as analogous to DSM-IV alcohol abuse.⁸ Regarding illicit drug use screening, the USPSTF recommends general inquiry during general health assessment of adult patients.² However, alcohol misuse and illicit drug use screening and recognition are often inadequate in primary care settings.^{9–16} A national survey of practicing primary care physicians found a lack of familiarity and adherence with NIAAA screening guidelines.¹⁷ In addition, nearly one-third of physicians do not routinely inquire about illicit drug use, and among those who do, primary care physicians have lower rates of inquiry compared to other specialists.¹¹ Physicians report greater hesitance and difficulty discussing substance use compared to other lifestyle risks,^{16,17} even though patients may be receptive to such discussions.¹⁸

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The need for improvement in primary care substance use screening warrants expansion of educational initiatives for physicians-in-training, such as that recently undertaken by the American Medical Association (AMA) and National Institute on Drug Abuse (NIDA).¹⁹ The importance of substance use training is recognized in internal medicine Residency Review Committee (RRC) training requirements and American Board of Internal Medicine (ABIM) board exam questions.^{20,21} However, given the profound costs to society and the individual,¹ substance use is disproportionately underemphasized relative to other medical conditions. For example, the ABIM allots only 2% of its certification exam to the topic of substance use.²¹ Perhaps as a consequence, training varies widely among medical residency programs, with a past survey revealing that only half of programs had a required substance use curriculum.²²

Although a supervised clinical experience may be a preferable training method for housestaff,^{23,24} time constraints limit the ability of program directors to develop comprehensive addiction medicine rotations.^{22,25} Brief skills-based curricula for physicians-in-training may be logistically more feasible and have been found to be efficacious in studies utilizing chart review, standardized patient assessment, and self-report.^{26–32} Alternatively, curricula may utilize experiential training through brief rotation at a substance treatment facility, an approach that is consistent with the American College of Physicians Education Committee recommendations to encourage subspecialty sessions during ambulatory block rotations among medical residents.³³

Previously at our institution, medical resident skills assessed by standardized patients improved after a five-day ambulatory block rotation at Hazelden New York residential substance treatment program.³¹ The curriculum at Hazelden was later condensed due to residency time constraints into a two-day abbreviated session supplemented by a half-day of small-group discussions led by addiction specialists. Given that primary care program directors are often limited by a lack of experienced faculty when developing substance use curricula,^{22,25} addiction psychiatrists and other specialists often will have an important role in general medical residency education. The purpose of the current study is to assess the impact of the abbreviated combined curriculum on changes in medical housestaff screening for alcohol misuse and illicit drug use. The results will inform the development of educational initiatives that may be feasibly integrated into residency training, and hopefully lead to an improvement in substance use screening in primary care.

METHODS

Curriculum

During the 2001–2002 academic year, second-year residents in the Medical Housestaff Training Program of Columbia University participated in the Resident Training Program on Addiction (RTP), a two-day experiential training at Hazelden New York rehabilitation program that was part of the standard ambulatory block curriculum for all second-year housestaff. During the RTP, housestaff attended group therapy sessions and an Alcoholics Anonymous meeting, and they met informally with Hazelden clients. They also participated in small group discussions with Hazelden staff on the 12-Step model, levels of care, group process, and spirituality. The RTP goals were to establish substance use disorders as chronic medical conditions, demonstrate the process and effectiveness of treatment, and improve communication skills through interaction with patients and trained staff. It was hoped that the abbreviated program, similar to the goals of the past five-day program at Hazelden, would increase the likelihood that trained housestaff would assess and initiate management for substance-using patients once they returned to their clinical training site.³¹

The RTP was followed by a half-day of small group discussions led by faculty from the Division on Substance Abuse, Department of Psychiatry, at Columbia University on substance use screening and intervention. One session was based on an NIAAA manual, "Training Physicians in Techniques for Alcohol Screening and Brief Intervention."³⁴ Guidelines recommend the quantification of alcohol consumption to detect those who are at-risk drinkers (e.g., more than 4 drinks per occasion and 14 drinks per week in men age 65 or less, and more than 3 drinks per occasion and 7 drinks per week in women and men over age 65).^{7,34} The USPSTF recommends similar quantification cutoffs when screening for alcohol misuse, which they define as including both at-risk and "harmful" consumption without dependence.³ The NIAAA manual was modified with instructions to use the CAGE screening instrument³⁵ prior to quantifying alcohol consumption for possible improvement in sensitivity.³⁶ Housestaff were instructed about DSM-IV criteria for alcohol abuse and dependence,³⁷ which was subsequently incorporated into more recent NIAAA guidelines.⁷ Housestaff received a pocket card on the NIAAA guidelines from the American Society of Addiction Medicine. Illicit drug training focused primarily on opioid and cocaine use, with instruction about diagnostic assessment using DSM-IV criteria among those with current illicit drug use. They also were provided information about behavioral and pharmacologic treatment approaches.

Medical Record Review

Housestaff eligible for the study included those who participated in the combined curriculum between July 2001 and June 2002 and whose outpatient practice was located at Associates in Internal Medicine (AIM) primary care clinic of Columbia University Medical Center. Housestaff were not included in the study if their clinic was located offsite, where records were not accessible. Medical records were reviewed for new patient visits, as routine health screening for substance use typically takes place during initial visits as part of the social history. Up to five charts were reviewed per resident during the six-month period before curriculum participation and during months two through seven after participation. To minimize potential for housestaff exposure to substance use education beyond the intervention, as well as modeling on prior research,²⁶ the review period was limited to a six-month interval. Additionally, records closest in temporal proximity to the training were reviewed when more than five new charts were found for a resident during the review period. We did not begin the review of the post-curriculum charts until one month had elapsed after the training to enhance our ability to gauge retention of acquired skills over the months following participation compared to prior studies that used immediate post-curriculum assessments.^{27,29,31}

Medical records were identified using an outpatient-scheduling program and obtained by a research assistant blinded to study design. After photocopying the housestaff intake note, all patient- and physician-identifying information was deleted, and the record assigned a unique identifier designating pre- or post-curriculum status. No link existed between patient or housestaff identity and unique identifier. Data extraction was performed by one of the investigators (EWG) blinded to pre- or post-participation status and was later confirmed by an outside internist unaware of the study design. The Institutional Review Board of Columbia University Medical Center and the New York State Psychiatric Institute approved the study with a waiver of informed consent.

Statistical Analysis

Primary outcome measures assessed before and after the educational intervention included the rate of documented inquiry about current alcohol use, including specific alcohol quantity-frequency questions and the use of a screening instrument. The documentation of occasional or social alcohol was not deemed quantification unless the number of drinks for

daily, weekly, or maximum use per occasion was recorded. Documented evidence for problematic drinking or current alcohol dependence was also recorded. Documentation of inquiry about current illicit drug use was another primary outcome measure. Additional patient data extracted from the records included demographics, current medical and psychiatric conditions, and current and past substance use. Statistical significance was determined using independent samples *t* test for continuous variables and chi-square tests for the dichotomous primary outcome measures of rate of documented screening. Analysis was performed using SPSS 10.0 (SPSS, Inc., Chicago, Illinois, USA).

RESULTS

Charts were obtained from 24 of 29 residents (83%) who completed the RTP. Four residents were excluded due to scheduling conflicts with the small group discussion component and one for illegible notes. Of 110 pre- and 86 post-curriculum patients, there were no differences in demographics (mean age 50.8 ± 15.4 years, 64% female), prevalence of medical or psychiatric diagnoses, or substance use history (see Table 1). Housestaff documented patient alcohol use in 101 (92%) pre- vs. 80 (93%) post-curriculum patients. However, they were more likely to adhere to NIAAA screening guidelines after training by quantifying daily or weekly consumption in 5/34 (15%) pre- vs. 9/24 (38%) post-curriculum patients who drank ($p < .05$). They also were more likely to document the maximum number of drinks consumed per drinking occasion, 2/34 (6%) pre-vs. 7/24 (29%) post-curriculum ($p < .05$; see Figure 1). No CAGE screens were documented pre-curriculum, while only one was documented among the 24 post-curriculum patients who drank. Documented inquiry about illicit drug use improved after training, present in 71 (65%) pre- vs. 67 (78%) post-curriculum charts ($p < .05$). Only 3% of patients had documentation suggesting alcohol misuse or dependence (6/196) or current illicit drug use (5/196), too low a sample to compare pre/post-curriculum intervention rates.

DISCUSSION

Medical housestaff screening for alcohol misuse and illicit drug use modestly improved after participation in a relatively brief curriculum that may be feasibly implemented into residency training. The curriculum combined two days of experiential training at a substance treatment program with a half-day of small-group discussions led by addiction specialists, one of which was based on an NIAAA physician-training manual.³⁴ Outcome assessment examined changes in practice behavior as documented in the medical record at a primary care clinic. New patient visits were selected, as substance use screening typically occurs during the initial patient visit as part of a general social history; this fits within the framework of national recommendations for routine assessment.^{2,3,7}

Nearly all housestaff asked new clinic patients about their current drinking before and after curriculum participation. However, after participation, housestaff increased their adherence with NIAAA and USPSTF screening recommendations to quantify routine and heavy episodic alcohol consumption among current drinkers. Quantification improved two- to threefold, a magnitude of change consistent with improvement observed in a similarly designed study of a half-day curriculum for emergency medicine residents.²⁶ This improvement is encouraging given that the quantification of consumption enables the detection of patients engaging in unhealthy or at-risk drinking who may not meet criteria for abuse or dependence.⁸

Although quantification improved significantly, house-staff only documented such inquiry in one-third of current drinkers after training. Underestimation of guideline adherence may have resulted from the conservative classification of documented social or occasional

alcohol use as non-quantification. However, housestaff did not use the CAGE screening instrument despite instruction to do so, further indicating a need to improve training. While the 1997 NIAAA screening approach taught to housestaff has been validated to detect alcohol use disorders,³⁸ the quantification questions have not been validated to detect at-risk consumption. Future curricula should emphasize standardized approaches such as the AUDIT-C³⁹ or other validated brief questions to detect risky drinking.^{40,41} These brief questions could be used in conjunction with the CAGE, or housestaff should be encouraged to incorporate the full 10-question AUDIT,⁴² an instrument recommended in more recent 2005 NIAAA guidelines that can be completed by the patient before an office visit.⁷ Combining a clinic systems intervention with physician training, such as having patients complete screening instruments before the office visit with dedicated support staff, could be used to augment brief curricula and potentially prompt greater physician engagement.⁴³⁻⁴⁷ Future studies should examine the impact of brief curricula with or without clinic systems interventions.

In addition to improvement in alcohol screening, housestaff were more likely to screen for illicit drug use after curriculum participation. Documented inquiry among new clinic patients significantly increased from 65% to 78%, consistent with USP-STF recommendations.² As the illicit drug use component was not manual-based, the factors that led to improvement are less clear but may have included increased familiarity with DSM-IV diagnostic criteria taught by addiction specialists during the small group sessions. In addition, the curriculum may have improved housestaff confidence or treatment optimism, factors found to be associated with routine illicit drug use inquiry during new outpatient visits in a national survey of practicing physicians.¹¹ Previous studies have demonstrated improvement in primary care and pediatric housestaff skills regarding the assessment of illicit drug use through objective structured clinical exams (OSCEs).^{28,29} To our knowledge, the present study is the first to report changes in illicit drug use screening in a clinical practice setting after a curricular intervention.

Although the current study suggests that the abbreviated curriculum led to improved housestaff screening, there are several limitations. Change in practice was measured by medical record review, and it is possible that housestaff screened more thoroughly than was documented.^{48,49} However, NIAAA guidelines specifically recommend documentation of screening results in the medical record,⁷ and chart entry could prompt an assessment or intervention at future visits. In addition, chart review is increasingly being used as a measure of healthcare quality. For example, the Physician Consortium for Performance Improvement, sponsored by the American Medical Association (AMA), has developed physician performance measures that specifically include documentation of alcohol abuse screening, including quantification questions.⁵⁰ These quality measures are intended to assist physicians in enhancing quality of care and have been adapted by the Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services.⁵¹

Another limitation of the study is the pre-post design. Although the residency program lacked any other formal substance use training during the medical record review period, there could have been other influences on the results, such as non-formalized instruction during other clinical rotations or from outside educational sources. The diffusion of information among residents is also possible; however, this risk is minimized as housestaff rotated in small groups, attending the curriculum together during the ambulatory block as well as when on other services. In addition, with the retrospective study design, housestaff were unaware that an outcome assessment would take place. This limits social desirability bias in which practice change results from the inclination to be favorably viewed by the investigators, rather than from the educational intervention itself.

The study assessed practice change in a relatively small number of housestaff that comprised second-year residents from a single academic year. While sample size is a limitation, curriculum participation rates among the residency class were high. As the curriculum was a required component of residency training, those housestaff who missed curricular components did so due to scheduling conflicts rather than by choice, reducing the potential for participation bias.

To conduct the study with a waiver of informed consent, we were unable to collect data that would enable housestaff identification. This limited the ability to compare housestaff across demographics or other measures, and also could impact the ability to generalize findings to cohorts of medical residents at other institutions. Future study could also attempt to correlate housestaff feedback and subjective ratings with clinical outcome data to help enhance curriculum development.

Overall, the results of the present study indicate that medical housestaff who participated in a brief curriculum modestly improved their substance use screening of new outpatients. By assessing practice improvement during clinical care, the findings add to a growing body of evidence demonstrating the efficacy of brief educational interventions for primary care physicians. The abbreviated two-and-a-half-day curriculum may be feasibly integrated into residency training and is of relevance to residency program directors and addiction specialists involved in curriculum development and education. Continued efforts are needed to enhance the efficacy and availability of educational initiatives to improve primary care assessment and management of substance-using patients, a currently underserved population.

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FIGURE 1.

Quantification of alcohol consumption before and after curriculum participation. Rate of quantification of daily/weekly and maximum per occasion alcohol consumption among patients who drink pre- and post-curriculum participation ($p < .05$).

TABLE 1

Patient Characteristics (N = 196)

Characteristic	Pre-curriculum	Post-curriculum
Records reviewed	110 (56%)	86 (44%)
Female	73 (67%)	52 (60%)
Age (years)	51.0 ± 15.5	50.5 ± 15.2
Mood disorder	30 (27%)	25 (29%)
Cardiac disease	19 (17%)	24 (28%)
Hepatic disease	7 (6%)	6 (7%)
Pulmonary disease	15 (14%)	11 (13%)
Hypertension	43 (39%)	43 (50%)