Incorporating Screening, Brief Intervention, and Referral to Treatment Into Emergency Nursing Workflow Using An Existing Computerized Physician Order Entry/Clinical Decision Support System

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Introduction: The objective of this study was to evaluate whether screening, brief intervention, and referral to treatment (SBIRT) could be incorporated into the emergency nursing workflow using a computerized physician order entry/clinical decision support system. We report demographic and operational factors associated with failure to initiate the protocol and revenue collection from SBIRT.

Methods: We conducted a retrospective, observational cohort analysis of a protocol adding SBIRT to the emergency nursing workflow of a single, tertiary care urban emergency department for all adult patient visits in 2012. Emergency nurses prescreened for unhealthy alcohol or drug use during triage assessment and, when positive, administered SBIRT during treatment area care, all documented in the computerized physician order entry/clinical decision support system. Using multivariable logistic regression, we report demographic and operational factors associated with failure to initiate the protocol. From October 2012, we submitted charges for brief interventions and analyzed collection results.

Results: The inclusion criteria were met for 47,693 visits. Of these, 39,758 (83.4%) received triage protocol initiation. Variables associated with decreased odds of protocol initiation were younger age (odds ratio [OR] for rising age, 1.044; 95% confidence interval [CI], 1.042-1.045), arrival by ambulance (OR, 0.37; 95% CI, 0.35-0.40), and higher triage acuity (OR, 0.08; 95% CI, 0.07-0.09). Of visits with protocol initiation, 21.4% were documented as positive for at-risk alcohol and/or drug use. However, brief interventions were only administered during 971 visits. During the billing period, $3617.53 was collected on charges of $10,829.15 for 262 completed brief interventions.

Discussion: In this study electronic documentation of adults with at-risk alcohol and/or drug use was feasible by emergency nurses, but SBIRT execution and subsequent revenue collection were challenging.

Key words: SBIRT; Emergency department; Nursing; CPOE; CDS; Alcohol; Drug

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The Centers for Disease Control and Prevention estimates that 80,000 deaths per year are attributable to excessive alcohol use.[1] In 2011 the Substance Abuse and Mental Health Services Administration National Survey on Drug Use and Health reported that 22.5 million Americans had used an illicit drug in the month before the survey and that 20.6 million individuals could be classified with substance dependency or abuse disorders.[2] For many of these individuals, their entrance to the health care system is through the emergency department. As of 2006, 1.2 million ED visits in the United States were the result of excessive alcohol use.[3] Between 2004 and 2010, there was a 94% increase in the number of ED visits related to illicit drug use, reaching an estimated 5 million visits.[4]

To address the public health and economic burdens that result from alcohol and drug misuse, screening, brief intervention, and referral to treatment (SBIRT) protocols have been implemented and shown to be effective in the ED setting.[5–8] However, these trials have largely been dependent on sustained external grant funding and additional personnel placed into the normal workflow of emergency departments to perform and maintain SBIRT protocols. As a result, the translation of knowledge on SBIRT from research trials to day-to-day operational utilization has been rightly identified as a barrier to the wider dissemination of this important public health practice in emergency departments across the United States.[9]

The hypotheses of this study were that SBIRT could be embedded into the normal workflow of emergency nurses assisted by the use of a computerized physician order entry (CPOE)/clinical decision support (CDS) system and that demographic and logistical barriers to protocol initiation could be identified. A secondary objective of this trial was to report the revenue generated by this activity through billing of payer sources as a measure of its sustainability in a non–externally funded environment.

Methods

We conducted a retrospective, observational cohort analysis of a protocol incorporating SBIRT into the normal emergency nursing workflow of a single, tertiary care urban emergency department with an annual census of approximately 50,000 visits from January 1 to December 31, 2012. All arriving ED patients aged 18 years or older met the inclusion criteria for protocol initiation. This trial was approved by the institutional review board of our center.

PARTICIPANTS AND SBIRT PROTOCOL IMPLEMENTATION

Beginning in 2009, at quarterly scheduled emergency nurse in-service days, the study investigators trained all emergency registered and licensed practical nurses on the use of the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) and the motivational interviewing skills needed to conduct brief interventions.[10] The training method consisted of lectures and demonstrations by the investigators. During this training, the emergency nurses were shown how to administer the ASSIST, to calculate the resulting ASSIST score, to determine the appropriate type of intervention based on that score, and where appropriate, to facilitate a referral to treatment or recovery support services. Throughout 2011, training was repeated for newly hired nurses and reinforced with existing staff. By the end of 2011, all emergency nurses had completed 3 rounds of training lasting approximately 2 hours for each session.

In 2011, in discussion with the emergency nurses, social workers, and medical staff, we developed an SBIRT protocol to use for all adult patients arriving to the emergency department (aged ≥18 years). The protocol consisted of a 3-part prescreening questionnaire, modified from the National Institute on Alcohol Abuse and Alcoholism's maximum drinking limits for men and women[11] and the National Institute on Drug Abuse's Quick Screen,[12] that would be incorporated into the standard social history obtained at triage. The 3 questions were as follows:

1. In the past year, have you had more than 14 alcohol beverages in 1 week for men or more than 7 alcohol beverages in 1 week for women?
2. Have you ever accidently overdosed?
3. Have you used any drugs in the past year? (If the patient answered yes, choices in the electronic note for nursing documentation were only indicated as positive for drugs that were not prescribed to the patient or used for reasons or in dosages other than as prescribed.)

For patients who answered yes to any of these questions or if, on emergency nursing assessment at triage, it was clear that the patient had drunk alcohol to excess or unintentionally overdosed on a drug (eg, the patient arrived after responding to naloxone for a respiratory arrest) and in cases in which the patient could not respond to the prescreen questions, the appropriate prescreen question would be marked as positive at triage, and the full ASSIST would be administered during ED treatment. If the ASSIST was positive (≥4 for drugs or overdose, ≥11 for alcohol), then the protocol called for a brief intervention by the treatment nurse at an appropriate point in the patient's ED course.

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