

IMPLEMENTING A SCREENING TOOL AND REFERRAL PROCESS FOR SUBSTANCE USE DISORDERS IN THE EMERGENCY DEPARTMENT: A QUALITY IMPROVEMENT PROJECT

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Abstract

Introduction: Substance misuse in the United States has continuously proven to be a public health issue. The impact of substance use disorder and the injury and illness it produces creates challenges in the public health sector. This quality improvement project aimed to increase screening and referral rates in a rural emergency department.

Methods: The CAGE-AID screening tool was implemented into the triage process in the Meditech Expanse system; 1077 patients were included in this quality improvement project. This initiative used Plan-Do-Study-Act cycles, collecting data weekly.

Results: There were 1077 patients available for the new screening process. This included 468 males (43.5%) and 609 females (56.5%). Of the 1077 patients, all (100%) were screened with the leading question. All patients (100%) were subsequently screened with the 4-item CAGE-AID tool if they answered “yes” to the leading question. Of these patients, 962 screened negative (89.3%) and 115 screened positive

(10.7%). For those 115 positive screens, 63 denied referrals (54.8%) and 52 (45.2%) accepted referral. Of those 52 who accepted referral, 9 (17.3%) scheduled themselves for a follow-up appointment within 30 days of the new process going live.

Conclusion: It is possible for substance use disorder screening and referral to be implemented in every emergency department across the nation and beyond to help identify patients struggling with substance misuse and refer them to the appropriate treatment upon discharge. Substance use disorder screening and referral are an evidence-based method, and sufficient evidence supports the current practice of emergency departments implementing routine substance use disorder screening and referral as standard of care.

Key words: Emergency department; Screening; Referral; Addiction; Substance use; Triage

Introduction

Substance use is the leading cause of injury-related death that is preventable in the United States.^{1,2} ED visits for drug overdoses were up 45% in 2020 compared with 2019, with specifically opioid overdoses up 29% during this time frame.³ On average there are 261 deaths per day

relating to drinking too much alcohol, with more than half of these deaths being related to drinking too much over time.^{4,5} According to the Substance Abuse and Mental Health Services Administration 2019 National Survey on drug use and health, more than 60% of those 12 years and older used a substance (alcohol, marijuana, illicit substance) in the past month. Substance use may be underreported despite its clinical significance owing to the time constraints.^{6,7} An estimated 1 in 5 children grows up in a home where a parent misuses drugs or alcohol, which has long-lasting effects on the child’s quality of life and overall mental health.⁸ The estimated annual cost for emergency departments and inpatient admissions associated with substance misuse amounts to an estimated \$13 billion and continues to rise.^{9,10} The high expenses owing to substance misuse include medical care, costs related to crime, lost employment, social and familial damage, injuries, and deaths.¹¹

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In Southwest Missouri in 2019, an estimated 5163 patients were treated and discharged from the emergency department for substance use disorder (SUD)-related concerns.¹² In 2022, Greene County and Polk County saw an estimated 137 drug overdose related deaths and 631 drug overdose inpatient visits.¹² At Citizens Memorial Hospital in Bolivar, Missouri, there have been an estimated 208 visits to the emergency department for SUDs related injury and illness in 2021.

Patients at risk of overdose and death frequently use the emergency department, and implementing an intervention at this point could be an effective strategy to prevent overdose.¹³ In 1 study, 95% of those with SUD did not feel they needed treatment.¹⁴ Barriers to care for those who do want to engage in treatment include transportation, restrictive policies, work issues, mental health problems, inability to find a local provider, long wait times, and lack of connection between emergency care and outpatient treatment.^{11,13} In response, emergency departments in the United States have devised innovative ways to help patients with SUDs, initiate treatment, and refer them to treatment upon discharge.¹⁵

RATIONALE

Evidence reflects that SUDs can be reliably identified through validated screening tools, such as the CAGE-AID¹⁶ questionnaire, which can be applied in a variety of different settings.⁸ Patients frequently come to the emergency department in need of care, which provides a unique opportunity to identify and refer patients with substance misuse.¹⁷ Emergency nurses can help save lives by identifying and referring patients to local providers who are adequately trained and equipped to treat SUDs. Considering the evidence on the magnitude of this clinical problem, implementing a form of screening, brief intervention, and referral to treatment in the emergency department is a viable option to help contribute to a solution.

The purpose of this project was to increase patient screening for SUDs and improve referrals to local treatment. The goal benchmarks of this 30-day project were to ask 75% of patients the single leading question in triage, 75% of patients would be subsequently screened after answering “yes” to the leading question, 20% of patients who screened positive would be referred, and 10% of patients who were referred would make an appointment within 30 days. This is the first step in fixing the local problem in Bolivar, Missouri, to help reduce the number of deaths and disabilities related to SUD. Before the intervention was implemented, the emergency department in Bolivar was not

performing any screening or referrals for patients with substance use problems. There were patients presenting to the emergency department for a primary or secondary diagnosis of SUD and only being referred to primary care providers who were not specialized in substance use treatment. If the patients did not have a primary care doctor, no referrals or resources were provided. The vicious cycle of these patients falling through the cracks of the health care system continued.

Methods

CONTEXT

This project took place in the emergency department at Citizens Memorial Hospital in Bolivar, Missouri. The emergency department is in a rural area and is the only emergency department within 30 miles of the nearest level 1 trauma center for 3 surrounding counties. There are approximately 1500 patients on average seen per month in this emergency department, with a predominantly white population. The ED staffing consists of 23 registered nurses, 5 ED physicians, and 8 patient care technicians.

INSTRUMENT

The CAGE-AID was implemented into the triage process of the Meditech Expanse system. The CAGE-AID is a brief and reliable instrument that focuses on lifetime substance use. This questionnaire has a sensitivity of 79% and specificity of 77% when 1 or more “yes” responses are recorded.^{16,18} When there are 2 or more “yes” responses, sensitivity is 70% and specificity rises to 85%.^{16,18} Although it is not a diagnostic instrument, it can help indicate whether a substance use problem exists. The CAGE-AID was chosen over other screening tools because it is collectively reliable and very brief, with only 4 “yes” or “no” questions. Many screening tools focus solely on opioids, other drugs, or alcohol, whereas the CAGE-AID screens for all substances. The briefness of the CAGE-AID was also appealing for the ED setting, given that it could be completed by the triage nurses in less than one minute.

The questions on the CAGE-AID screening tool include “Have you ever felt you should cut down on your drinking or drug use?” “Have people annoyed you by criticizing your drinking or drug use?” “Have you ever felt bad or guilty about your drinking or drug use?” and “Have you ever had a drink or used drugs first thing in the morning to steady your nerves or get rid of a hangover?”^{16,17} Responses on the

CAGE-AID are scored 0 for “no” or 1 for “yes,” with a maximum score of 4. The higher the score, the higher the risk of a substance use problem. A score of 2 or greater is considered clinically significant and subsequently classifies patients as having a positive screen. Some research shows that a score of 1 is clinically significant.

INTERVENTION

Every patient who enters the emergency department is subsequently triaged by a nurse. As part of the new quality improvement (QI) process, if the patient was between 18 and 65 years old, awake, and able to answer questions, they met criteria to be asked a leading question, “Do you use drugs or alcohol?” If the patient answered yes, the CAGE-AID was subsequently implemented. If they were not able to answer questions owing to their condition, such as being a level 1 trauma, the leading question was bypassed. If a patient screened positive for being at risk of SUDs and agreed to receive resources, the nursing staff gave the patient information about the hospital-affiliated addiction clinic and the physician added this as an official referral in their discharge paperwork.

STUDY OF THE INTERVENTION

This QI project used Plan-Do-Study-Act cycles, collecting data weekly. A retrospective review was done on all medical records of patients triaged in the emergency department for the 30-day evaluation window. After the new practice change went live, every week there was a chart review to collect the gender and the screening results of the patients for data collection. There was a review with the addiction clinic’s staff to see whether patients were making new appointments from their ED referrals.

MEASURES

The total number of eligible patients, the number of patients asked the leading question, and the number of patients screened and subsequently referred were extracted from the electronic medical record. Descriptive data included participant gender only. The number of appointments made was collected from the electronic medical record.

ANALYSIS

To calculate the screening rate, the raw number of patients available for the leading question was divided by the number of patients subsequently screened positive. To calculate the

accepted referral percentage rate, the raw number of patients who screened positive was divided by the number of patients who accepted a referral to the outpatient clinic. To calculate the percentage rate of follow-ups scheduled, the raw number of patients who accepted referral was divided by the number of patients who scheduled themselves at the outpatient clinic by the 30-day mark. Data were aggregated by sex (male and female patients). Individual patient data were not collected. Descriptive statistics (n, %) were computed using IBM SPSS version 29 (IBM Corp, Armonk, NY) and presented using a table and bar graph.

Results

There were 1077 patients seen in triage who met the criteria for the new screening and referral process. This included 468 males (43.5%) and 609 females (56.5%). Of the 1077 patients, all (100%) were screened with the leading question. This was possible owing to implementing the leading question as a mandatory part of triage in the Meditech Expanse computer system. All patients (100%) were subsequently screened with the 4 CAGE-AID questions if they answered “yes” to the leading question. Of those, 962 screened negative (89.3%) and 115 screened positive (10.7%). For those 115 positive screens, 63 denied referrals (54.8%) and 52 (45.2%) accepted referral. Of those 52 who accepted referral, 9 (17.3%) scheduled themselves for a follow-up appointment within 30 days of the new process going live. These results are presented in a bar chart (Figure) and a table (Table). There were no changes in flow as reported by the triage nursing staff. The screening tool took less than a minute for most patients, thereby not increasing triage times by a notable amount.

Discussion

The current project sought to improve referral rates by screening patients for substance misuse in the emergency department. All benchmark goals of this project were met. This project had a significant impact on the facility because of the clear gap it helped fill for identifying and referring this patient population to proper treatment. This intervention raised awareness within the community of the clinic’s existence, given that many patients had not heard of it. The ED directors decided to keep this process in place permanently to continue pressing toward the goal of decreasing injuries, deaths, and the financial burden on the community. This intervention led to more efficient

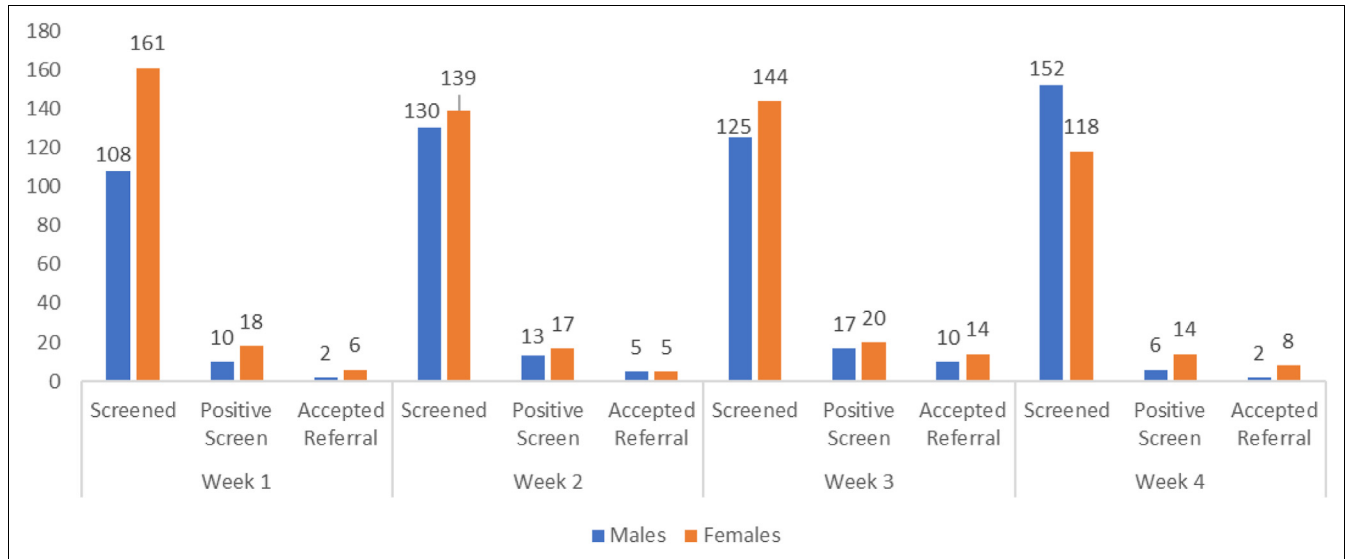


FIGURE
SUD screening and referral. SUD, substance use disorder.

throughput and can help prevent future use of emergency services.

Other QI projects have sought to implement screening tools in various health care settings; however, most used different screening tools and did not refer to a hospital-affiliated clinic.^{2,7,18-22} The other studies that took place in emergency departments implemented buprenorphine initiation or peer recovery coaching and used the screening tools DAST-10 or AUDIT-C.^{2,7,19,20} Staff in other emergency departments can adapt and build on this project to begin the process of identifying patients for substance misuse, connect those who want it to proper treatment, and start to lessen the profound impact this chronic illness has on America. Although clinical examination and patient history are the gold standards for diagnosing SUDs in the emergency department, a screening tool can be effective in helping identify patients at risk and, if the patient is willing, refer them to proper treatment up on discharge. Emergency departments are in a strategic position

to identify and connect patients to treatment, and it is imperative to have a streamlined process in place to do so.

INTERPRETATION

The patients who accepted the referral had to make the addiction clinic appointment completely on their own. It may have been helpful if there was a follow-up phone call from social work the week after discharge or the ED front desk was able to make the appointment for them when the patient was checking out of the emergency department. The follow-up rates could have been higher had this been the case. Offering an outpatient referral seems to be a plausible first step in getting patients the treatment they need. Once this has been established, more robust interventions, such as initiating buprenorphine in the emergency department for opioid dependence and direct transfer to inpatient facilities, can be implemented to help reduce illicit drug use.

Category	Accepted referrals					Made a follow-up appointment n (%)
	Week 1	Week 2	Week 3	Week 4	Total	
Males	2	5	10	2	19	6 of 19 (31.9)
Females	6	5	14	8	33	3 of 33 (9.1)

Evidence has shown patients with SUDs often refuse treatment; therefore, this project had a modest aim of 10% of patients making an appointment with the clinic. Although this might be considered an optimistic goal, nursing staff participating were dedicated to educating patients who were open to resources about the importance of outpatient treatment. In addition, the screening alone may have a positive effect on helping patients realize they may be at risk. This no cost intervention of emergency nurses screening and showing concern for patients who screen positive may have a positive influence on the patient's trajectory toward recovery.

Limitations

The answers to the screening tool were dependent on the honesty of respondents. The screening tool is limited to ages 18 to 65 years. This project was done at a single site and was limited to a specific geographic location; therefore, results are not generalizable. However, as a QI project, it could be transferable and adapted to similar settings. The project period was more than 30 days; therefore, information is limited on long-term engagement in treatment.

Implications for Emergency Nurses

The intervention used in this initiative can be scaled and replicated in all emergency departments throughout the country to help identify patients who are at risk of SUDs. This intervention should be added to the important role of emergency nurses because it is a quick and efficient way that can help contribute to a solution to the substance use crisis. This intervention helps the substance misuse problem because it is the first step in identifying patients with SUDs and connecting emergency care with outpatient treatment. As the number of injuries and deaths caused by SUDs continues to rise, emergency nurses have a clear opportunity to swiftly screen and refer to treatment, which is an important harm reduction step to reduce the burden and loss of life associated with SUDs.

Conclusion

It is possible for SUDs screening and referral to be implemented in every emergency department across the nation and beyond to help identify patients struggling with substance misuse and refer them to the appropriate treatment

upon discharge. This intervention is scalable and replicable and can be applied to all emergency departments. SUD screening and referral are an evidence-based intervention, and sufficient evidence supports the current practice of emergency departments beginning to implement routine screening and referral to resources as standards of care. This QI project screened more than 1000 patients, and more than 100 could have been referred to treatment for SUDs. It is highly unlikely that the screening and referrals would have taken place in the absence of this project. Screening and referral for SUDs to identify patients and link them to treatment should be considered as part of a large initiative in the public health sector. It is possible that implementing these streamlined efforts can begin to get more patients linked to treatment for hazardous alcohol and drug use and in turn have wide-scale, positive implications on the nation's health and wellness. Providing several interventions for patients in the emergency department may be beneficial for their engagement in substance misuse treatment during their visit and subsequent discharge.

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Author Disclosures

Conflicts of interest: none to report.

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