**Frequent Monitoring and Behavioral Assessment: Keys to the Care of the Intoxicated Patient**

**INTRODUCTION**

Intoxicated patients and those under the influence of alcohol, regardless of care setting, pose unique challenges to healthcare providers, who must manage patient aggression, gain cooperation with treatments, and monitor the patient for changes in condition, including gradual or acute deterioration.

The World Health Organization (WHO) estimates that 38.3% of the world’s population drinks alcohol. Individuals older than 15 years drink 6.2 liters on average per year, and globally, harmful use of alcohol causes about 3.3 million (5.9%) deaths every year. Two-thirds of American adults consume alcohol, up to 10% abuse it, and acute intoxication is associated with traffic accidents, domestic violence, homicide, and suicide. A 2014 survey conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA) noted that “24.7% of people ages 18 or older reported that they engaged in binge drinking in the past month; 6.7% reported they engaged in heavy drinking in the past month.” In the United States, it is estimated that more than 600,000 emergency department (ED) visits are directly related to alcohol intoxication. The Centers for Disease Control and Prevention reports that excessive alcohol use is responsible for an annual average of 88,000 deaths and 2.5 million years of potential life lost. More than half of these deaths and three-quarters of the years of potential life lost were due to binge drinking.

Nationally, Pennsylvania ranks in the top tertile at 18.5% for age-adjusted prevalence of binge drinking among adults age 18 years or older and in the middle tertile at 7 drinks per occasion for the average largest number of drinks consumed by binge drinkers on any occasion in the past month.

Pennsylvania Patient Safety Authority analysts analyzed Serious Events associated with alcohol use, abuse, and intoxication in all care areas and found that failures or inadequacies of assessing and monitoring were associated with patient harm. Analysts sought to describe the evidence-based best practices for the assessment and management of intoxicated patients.

**METHODS**

Analysts queried the Pennsylvania Patient Safety Reporting System (PA-PSRS) database for event reports related to alcohol intoxication, including reports that described patients under the influence or abuse of alcohol in all acute level facilities, including hospitals, birthing centers, abortion clinics, and ambulatory surgical facilities in Pennsylvania submitted between January 1, 2005, and December 31, 2015. The following search terms were used to identify applicable events: alcohol, intoxicated, inebriate, ETOH, drunk, under the influence, unconscious, police, blood alcohol content, BAC, Narcan, sleep off, banana bag, and detox. The initial query resulted in 9,536 reports. The query was re-run to exclude patients age 0 to 17 years (n = 349) because of the unique needs and different treatment approaches for this population, events occurring more than 24 hours after admission (n = 2,888), and events unrelated to alcohol.

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* Binge drinking is defined as four or more drinks for a woman or five or more drinks for a man on an occasion during the past 30 days.

† Tertile: Any of the two points that divide an ordered distribution into three parts, each containing a third of the population.
intoxication (n = 3,975; e.g., events classified as skin integrity or transfusion, events involving staff or visitors, and events reporting only a past medical history of alcohol use). The revised query resulted in 2,324 reports. Analysts individually reviewed the event report narratives and excluded an additional 95 events unrelated to alcohol intoxication. Of the three main “direct mechanisms of harm caused by alcohol consumption in an individual” presented in the WHO report, the analysts focused on “intoxication, leading to impairment of physical coordination, consciousness, cognition, perception, affect or behavior,”1 because this mechanism of harm was the most prevalent in the PA-PSRS database.

Patients presenting for detoxification (n = 544) and those in withdrawal (n = 358; i.e., beyond the intoxication phase) were excluded unless the event narrative mentioned both intoxication and detoxification or withdrawal. The final sample size analyzed was 1,327 alcohol intoxication-related events.

Analysts conducted a review of the literature and an Internet search to obtain epidemiological data and information on alcohol use and abuse and to identify assessment and care management strategies to reduce the likelihood of patient harm. Interviews with addiction specialists were conducted to clarify and refine the approach to data analysis.

RESULTS

Harm
The Authority uses the harm level definitions as defined by the MCARE Act.6 Most events, 94.8% (n = 1,258)

were classified as Incidents (i.e., events, occurrences, or situations that could have injured the patient but did not) and 5.2% (n = 69) of the reports represented Serious Events (i.e., events causing temporary or permanent harm or death).*

Care Area
As seen in Figure 1, most intoxicated patients presented to the ED. Of the 926 ED patients, 7.3% (n = 68) were admitted to the hospital and more than a third (34.8%, n = 322) eloped, left before treatment was completed, or left against medical advice. In certain ancillary departments (i.e., surgical services, imaging, and outpatient clinics), instances were noted in which testing, treatments, or surgeries were cancelled because of patients arriving under the influence of alcohol or intoxicated.

The following is an example of a cancellation1:

Upon arrival to the pre-op area for a scheduled surgical procedure, nursing staff noticed that the patient had an odor of alcohol. Upon further evaluation by anesthesia, the patient admitted to ingesting alcohol prior to the procedure. Surgeon notified and the surgery was cancelled in the interest of patient safety.

Ancillary departments comprised 7.4% (n = 98) of the care areas noted. Of the 98 ancillary department events, 82.6% reports originated from the laboratory. Failure to document or properly report critical alcohol serum lab results led to delays in care. The following is an example of an improperly reported critical value event:

A critical value for serum alcohol was not called and/or documented in the computer system within the expected time frame.

Serious Events
Of the 5.2% (n = 69 of 1,327) events that were reported as Serious Events, the majority 72.5% (n = 50) as shown in Figure 2, were reported as harm score E (i.e., an event occurred resulting in temporary harm and required treatment or intervention).

Of the 69 Serious Events reported, 55.1% (n = 38) described delay or failure to observe, assess, or recognize change in condition as factors contributing to the harmful event. Reports of patient deaths accounted for 7.2% (n = 5 of 69) of the Serious Events and three of the five deaths were attributable to the aforementioned factors. The following are examples of Serious Events mentioning those factors:

Patient admitted to [unit] as a 3022. Nurse returned to room after checking lab results to find patient [had eloped]. Authorities notified.

The patient was being evaluated for possible drug and alcohol overdose. When nurse came back into room, he noticed an empty pill bottle at the bedside. The patient [allegedly] ingested more than 30 benzodiazepine tablets.

The patient, who was under the influence of alcohol, was being evaluated for right sided pain. The patient was in CT [attended] and upon return to the ED the patient’s condition deteriorated, requiring intubation.

Patient admitted to a monitored unit with alcohol intoxication and other medical co-morbidities. The patient went into a lethal cardiac arrhythmia and was

* Serious Events are events, occurrences, or situations involving the clinical care of a patient in a medical facility that either: (a) resulted in death, or (b) compromises patient safety and results in an unanticipated injury requiring the delivery of additional health care services to the patient.

† The details of the PA-PSRS event narratives in this article have been modified to preserve confidentiality. None of these event narratives came from the co-author’s facility.

‡ A 302 commitment in Pennsylvania is an involuntary commitment into a mental health institute for emergency psychiatric evaluation.
found unresponsive a couple of hours later. The patient later died.

**Associated findings.** As seen in Figure 3, findings associated with intoxication mentioned in some events are consistent with characteristics and behaviors of intoxicated patients. Seizure activity, including delirium tremens, was the most frequently mentioned finding. All of the patients experiencing seizure sustained a fall, with harm ranging from abrasion to fracture; eight occurred in non-psychiatric EDs and two on intermediate/specialty units.

Suicide, including suicide attempts and suicidal ideation, was the second most frequently mentioned finding. Of the two completed suicides, one followed an inpatient admission and subsequent ED visit; the other occurred in the facility.

Patients who took sedative-hypnotics, opioids, or other drugs; ingested hand sanitizer or mouthwash; plus those who eloped accounted for 14.5% (n = 10) of the other findings mentioned. The majority of these 10 were ED patients.

**Event type.** As seen in Figure 4, the majority, 61% (n = 42 of 69), of Serious Events were falls; 64.3% (n = 27) of the 42 falls were unobserved. Of the 35.7% (n = 15) that were observed, staff attempted, unsuccessfully, to prevent the fall. Patients experiencing seizure activity accounted for
REVIEWS & ANALYSES

23.8% (n = 10) of the 42 falls. Of the 27 unobserved falls, 7 patients experienced seizure activity, and of the 15 observed falls, 3 patients experienced seizure activity.

The following are examples of reported falls with harm events:

- Patient was intoxicated, climbed over the side rails, fell to the floor, and landed on the left hip. X-ray confirmed a fracture and patient went to surgery.
- While standing for additional x-rays, the patient fell forward, landing on [her] face. The fall resulted in a laceration and a probable [cervical] fracture.
- Patient was intoxicated upon arrival to ED and sustained a scalp laceration. CT showed an epidural hematoma. While waiting to be transferred to [an inpatient unit], the patient fell out of bed. A repeat CT showed an [increasing hematoma]. The patient was then admitted to a [critical care unit].

Reports of other/miscellaneous events accounted for 27.5% (n = 19 of 69) of the Serious Events. The following are examples of reported other/miscellaneous events that show a range of care challenges with this patient population:

- Patient was [intoxicated and violent] upon arrival to ED. The patient was placed in restraints and later found to have deep lacerations to torso. Broken glass was used by the patient to [self-inflict these injuries]. The patient was taken to the OR for exploratory surgery and there was no permanent injury sustained.
- An [intoxicated] patient became [extremely violent]. Staff was unable to [verbally] de-escalate the situation and the patient began kicking and...
A patient with a history of a psychiatric disorder was brought to the ED intoxicated. Patient was kept overnight for observation. During morning assessment patient denied that her binge drinking was a suicide attempt. Patient contracted for safety and was agreeable to inpatient treatment. Several hours later, the patient began yelling and started to vomit. She lost consciousness, stopped breathing, and required intubation. A repeat ETOH [ethyl alcohol] level was elevated. Staff noticed an empty bag of hand sanitizer in the trash. The patient was admitted to a telemetry bed.

**DISCUSSION**

**Acute Symptom Assessment**

“A person is said to suffer from alcohol intoxication when the quantity of alcohol the person consumes produces behavioral or physical abnormalities.

In other words, the person’s mental and physical abilities are impaired.”

In addition to observable impaired physical and mental abilities, alcohol levels can be measured in the breath or blood. Studies have found, however, that the level of blood alcohol concentration (BAC) correlates poorly with physical and mental impairments depending on the alcohol tolerance of the individual. An overreliance on these concentrations may hinder healthcare providers’ ability to protect these patients from harm. Assessment of signs and symptoms in a person who has been drinking have proved effective in accurately determining alcohol intoxication, and the BAC can verify a patient’s report of intoxication.

Teplin and Lutz’s Alcohol Symptom Checklist (ASC) is an observational measure of intoxication and is used in situations in which objective measures of alcohol are unavailable. The ASC is a reliable, easy, and efficient tool that can be used in lieu of a BAC when, for example, an intoxicated patient refuses diagnostic testing.

In a 2013 study by Volz et al., the authors measured the effectiveness of a behaviorally-based alcohol intoxication scale for assessing a patient’s readiness for transfer from the ED to the behavioral health unit “rather than relying solely on a BAC level.” Patients who met specific criteria in this behavioral scale were found to be medically stable after transfer.

Failure to observe, assess, or recognize changes in patient condition were associated with harmful events and deaths as identified and reported through PA-PSRS. Alcohol intoxication causes changes to several organ systems, including cardiovascular, neurological, endocrine, and pulmonary; and the degree of impact depends on the amount of alcohol consumed and the patient’s tolerance level.

Care of the patient is aimed at managing the intoxication symptomology, comorbidities, and acute injuries.

Treatment interventions include physiologic monitoring, frequent observation and rounding, supportive care, and prevention of harm or injury. Frequent rounding and direct observation, including waking sleeping patients to assess responsiveness, is associated with decreases in secondary harm.

**Reoccurrence Prevention – Screening and Brief Intervention**

Implementing screening for alcohol-dependent drinkers and providing brief
intervention for those who screen positive or at-risk for alcohol dependency is shown to reduce the quantity of alcohol consumed and revisits to the ED. Varying levels of screening, brief intervention, and follow up may be incorporated into interactions with the intoxicated patient. Initial screening serves as the basis for determining appropriate intervention.

Screening and brief intervention is supported by the American College of Emergency Physicians (ACEP), the Emergency Nurses Association, and the American College of Surgeons’ Committee on Trauma, which recommends that all trauma centers incorporate alcohol screening and brief intervention as part of routine trauma care and those with “sufficient resources” discuss or offer follow-up options.

Several screening tools are advocated, including a single alcohol screening question (SASQ), the Alcohol Use Disorders Identification Test (AUDIT), the Cutting down, Annoyance by criticism, Guilty feeling, and Eye openers (CAGE) questionnaire, the CRAFFT Substance Abuse Screening Test, and the Paddington Alcohol Test. These evidence-based screening tools are tailored for time-pressed environments such as the ED and take into account the possibility of patient underreporting of alcohol intake. Brief interventions are short counseling sessions. The goal of brief intervention is to help patients make decisions to lower their risk for alcohol-related incidents. Giving information and feedback about screening results helps point out the danger and educate patients on acceptable limits of alcohol intake. The Table identifies alcohol use screening tools and brief intervention resources found in the literature, the predictive trait of the tool, and which population they have been used to evaluate.

Understanding the patient’s perception of drinking helps enhance motivation to promote change in drinking habits. Giving advice and negotiating helps the patient take steps and commit to change. Following up reinforces the intervention and can include various forms of contact such as phone calls, appointments with primary care physicians, and referral to Alcoholics Anonymous. ED DIRECT is a mnemonic that helps providers remember components of this brief intervention. Supported by ACEP, ED DIRECT is administered in the ED to “at-risk” or “harmful” drinkers with a goal of speaking with a counselor while in the ED or referral to primary care or specialized treatment program.

Healthcare providers’ attitudes, biases, and perceptions of alcohol-intoxicated patients are associated with inadequate assessment and the lack of frequent monitoring and use of behavioral assessment scales. Ongoing staff education on the rationale and use of objective assessment scales and screening tools; in conjunction with education regarding their own attitudes and perceptions, are keys to successful implementation of these useful strategies.

**Facility Recommendations to Improve Patient Safety**

A number of recommendations were submitted in event reports specific to reported challenges. These recommendation examples are typical of those proposed by facility staff for patients who fell:

- Use fall precautions including a bed alarm and place patient on continuous observation.
- Notify family. Perform neurologic assessments frequently, closer monitoring of patients who are at increased fall risk, and place the patient in a room closer to the nurse’s station.
- Provide reminders to patient and family, maintain communication. Intoxicated patients should be assessed as high fall risk and those with gait disturbances shall have staff in attendance.

Patients who leave against medical advice (AMA) pose unique considerations for staff. As shown in these examples, facility staff need to ensure the patient arrived at the treatment facility.

When there is a delay, communicating with the patient and family frequently may help decrease frustration.

Frequently monitor patients who have mentioned the desire to leave.

A follow up phone call was made to ensure the patient arrived at the treatment facility.

The ingestion of hand sanitizer is on the rise nationally, although not prevalent in the reported events submitted through PA-PSRS, where 1.6% of all events (n = 21 of 1,327) and 4.3% of Serious Events (n = 3 of 69) involved the ingestion of hand sanitizer or other ethanol-containing products. Intoxicated patients and those with alcohol use disorders are more likely to consume this product while in the hospital because of its availability. Although most instances
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<tr>
<th>RESOURCE</th>
<th>DESCRIPTION</th>
<th>POPULATION Addressed</th>
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<tbody>
<tr>
<td>Single Alcohol Screening Question (SASQ)¹</td>
<td>A single screening question for identifying hazardous drinking and alcohol use disorders.</td>
<td>The study focused on adult patients presenting to emergency departments within 48 hours of an injury.</td>
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<tr>
<td>Alcohol Use Disorders Identification Test (AUDIT)²³</td>
<td>A screening instrument for proactive identification of hazardous and harmful alcohol consumption. The instrument is a 10-item questionnaire that covers the domains of alcohol consumption, drinking behavior, and alcohol-related problems.</td>
<td>The 1993 study focused on subjects recruited from representative primary health care facilities in six countries (age not specified).</td>
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<tr>
<td>Cutting down, Annoyance by criticism, Guilty feeling, and Eye-openers questionnaire (CAGE)³⁴</td>
<td>A screening instrument for identifying a high likelihood of the presence of alcoholism.</td>
<td>The 1984 study focused on male patients in an alcoholism rehabilitation facility.</td>
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<tr>
<td>Car, Relax, Alone, Forget, Friends, Trouble questionnaire (CRAFFT)⁵</td>
<td>A screening instrument for identifying substance-related problems and disorders.</td>
<td>The study focused on adolescents, age 14 to 18 years, coming for routine medical care to an adolescent and young adult medical practice.</td>
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<tr>
<td>Paddington Alcohol Test (PAT) and brief intervention⁶⁷</td>
<td>A screening instrument for identifying alcohol-related problems. A referral to an alcohol health worker made while the patient is still in the emergency department.</td>
<td>The May 2004 study focused on adult patients presenting to the emergency department.</td>
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<tr>
<td>Screening and brief intervention (BI) in the emergency department⁸</td>
<td>A review of four studies that offered brief interventions to patients, while still in the emergency department, whose injuries were alcohol-related. The effect of the BI was generally positive (i.e., patients decreased their alcohol consumption and alcohol-related negative consequences after the BI when assessed 3 to 12 months after their initial emergency department visit).</td>
<td>The October 2004 study focused on adult patients 18 years or older presenting to an emergency department and having a positive PAT screen.</td>
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</table>

**Notes**

of intentional hand sanitizer ingestion result in little or no harm to the patient, a literature review of published cases and a query of the National Poison Data System identified cases of moderate to severe harm. The study suggests increasing awareness by healthcare providers of this growing problem and taking steps such as removing hand sanitizers from at-risk patients’ rooms and frequent patient monitoring.

Although it was beyond the scope of this article to address the management of alcohol withdrawal, the possibility cannot be ignored that an alcohol-dependent patient may remain in the ED or hospital long enough to be at high risk for developing withdrawal even if presenting for an unrelated complaint. Researchers recommend that healthcare providers be familiar with the care and management of alcohol withdrawal, including symptom recognition, medication regimens, and supportive care such as frequent monitoring, limiting sensory stimulation, and providing reassurance.

LIMITATIONS

Relevant information is derived from the event type taxonomy and from free-text narratives; categorization and narrative detail were provided by PA-PSRS reporters. Reporters may have used the terms “intoxication,” “detoxification,” and “withdrawal” interchangeably and in combination when providing the narrative detail. Analysts sorted the events based on the use of these terms as described in the methods section and every effort was made to classify events into these categories accurately.

CONCLUSION

Caring for and safeguarding intoxicated patients poses unique challenges, including managing patient aggression, monitoring patients for deterioration, and gaining cooperation with treatments. About 5% of the intoxication-related events reported to the Authority were Serious Events (i.e., events in which patients sustained harm). Pennsylvania acute level facilities reported that among intoxicated patients, the occurrence of falls, seizures, suicide attempts, combative ness, and patients leaving against medical advice were common. Failure to adequately monitor and assess intoxicated patients contributed to the majority of harm experienced by these patients and in rare instances resulted in death. Behavioral assessments and frequent or continuous monitoring, supplemented by objective measurements such as blood alcohol concentration in combination with symptom management, are key to avoiding harm and caring for these patients.

NOTES


THE PENNSYLVANIA PATIENT SAFETY AUTHORITY AND ITS CONTRACTORS

The Pennsylvania Patient Safety Authority is an independent state agency created by Act 13 of 2002, the Medical Care Availability and Reduction of Error (“Mcare”) Act. Consistent with Act 13, ECRI Institute, as contractor for the Authority, is issuing this publication to advise medical facilities of immediate changes that can be instituted to reduce Serious Events and Incidents. For more information about the Pennsylvania Patient Safety Authority, see the Authority’s website at http://patientsafety.pa.gov.

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