

Spotlight: Mistaken Attribution, Diagnostic Misstep

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Case Objectives

- List the patient safety events that are unique to inpatient psychiatry.
- State the most common error in inpatient psychiatry units' supervision in the context of clinical training.
- Define "medically stable for psychiatric admission."
- Describe the appropriate evaluation of patients who are being screened for admission to an inpatient psychiatry facility.
- List the patient safety interventions that inpatient psychiatry units can implement to improve safety.

The Case

A 45-year-old woman with history of bipolar disorder and schizophrenia presented to the emergency department (ED) with active paranoid hallucinations. In the ED, she was afebrile but had mild tachycardia and a few transient hypoxic episodes. Over the course of a few hours, the hypoxia resolved but the tachycardia persisted. Her agitation and hallucinations impaired her ability to communicate or answer review of systems questions.

The on-call psychiatry resident evaluated the patient and felt she needed hospitalization in the inpatient psychiatric facility. He attributed the persistent tachycardia and the transient hypoxia to her underlying agitation.

The patient was admitted to the inpatient psychiatric facility, and treatment was initiated for agitation and hallucinations. Over the next few days, she required multiple different medications, including benzodiazepines and mood stabilizers (olanzapine), to control her symptoms. These medications caused somnolence and drowsiness, so the patient was bedbound most of the day. She had persistent tachycardia over these few days that continued to be attributed to her agitation and psychiatric disease.

On the morning of hospital day 5, the nurse found the patient to be unresponsive. She had a fever, worsening tachycardia (heart rate 140s), tachypnea, and more severe hypoxia (oxygen saturation 80% on

room air). On examination, she had diffuse myoclonus and increased muscle tone. She was barely arousable and confused, and she was transferred to the intensive care unit (ICU) of the regular hospital.

After an evaluation by the critical care provider, a CT scan of the chest revealed bilateral pulmonary emboli that were felt to explain the ongoing tachycardia and hypoxia. She was also diagnosed with neuroleptic malignant syndrome, a rare and life-threatening reaction to some psychiatric medications. It is characterized by fever, muscular rigidity, myoclonus, and altered mental status, all of which were present in this patient. She was treated with heparin for the pulmonary embolism and supportive care and she slowly improved. After 4 days in the ICU, she was transferred to a regular medical ward. A few days later, she was able to be transferred back to the inpatient psychiatric facility.

A formal root cause analysis of the case found many errors that led to the adverse events. The director of the inpatient psychiatric unit used the case as an opportunity to broadly consider not only medical complications but all of the patient safety issues involving the unit.

The Commentary

Commentary by Timothy R. Kreider, MD, PhD, and John Q. Young, MD, MPP, PhD

The past 20 years have seen the emergence of a national movement to improve hospital-based safety in the United States. Even though patient safety events are common in psychiatry and can harm patients, much of the foundational work and subsequent research has neglected inpatient psychiatry.

The types of patient safety events that can occur on the inpatient psychiatric unit are analogous to those on medical or surgical units. For example, medication errors (such as administering the wrong drug, at the wrong dose, or at the wrong time) are similar in psychiatry as in other settings, as are adverse drug events, which can occur from psychiatric medications or from nonpsychiatric medications used to manage medical comorbidities. At the same time, there are event types particular to inpatient psychiatry, often linked to the abnormal behaviors associated with psychiatric illness. Safety events that may result from such behaviors include self-harm (e.g., suicide attempts), assault, sexual contact, injury or trauma from seclusion or physical restraint, elopement, and smuggling of contraband (e.g., razors) onto the unit.⁽¹⁾

Rates of patient safety events in inpatient psychiatry have recently been reported from 40 psychiatric units in Veterans Affairs (VA) hospitals.⁽²⁾ From this analysis of electronic health records, the rate of any safety event was calculated as 27.9 per 100 patient discharges; this overall rate is comparable to nonpsychiatric hospital units, where safety events have been found at 30%–35% of discharges.⁽³⁾ The most common events reported in VA psychiatric units were medication errors (17.2 per 100 discharges), adverse drug events (4.1), and falls (2.8).⁽²⁾ Regarding psychiatry-specific events, rates per 100 discharges were calculated for self-harm (0.5), assault (1.0), sexual contact (0.1), elopement (0.2), and contraband (0.7). Fortunately, the vast majority (95%) of patient safety events caused minimal or no harm. The most harmful events were self-harm (24% caused moderate harm) and adverse drug events (15% caused moderate or severe harm).

Of these events, particular attention has been paid to preventing suicide attempts in inpatient psychiatry units. Analysis of 12 years' worth of root cause analysis reports from all VA hospitals in the US identified

243 suicide attempts on a psychiatric unit.(4) Of these attempts, 29 resulted in patient death. Hanging, strangulation, and asphyxiation together accounted for about 60% of attempts and 24 deaths. The second most common method was cutting with a sharp object, contributing to 23% of attempts but no deaths. The authors of this study include a list of the objects and structures in the unit that were used in each hanging attempt. Such data should inform safety initiatives aimed at eliminating potentially lethal means in the unit milieu.(4)

The above case involves diagnostic error, one of the most common types of errors across specialties.(5) Diagnostic errors are common in inpatient psychiatric units. For example, studies show that the chart diagnosis of psychiatric inpatients frequently differs from the diagnosis obtained by a structured tool, such as Structured Clinical Interview for DSM-5 (SCID-5).(6,7) Diagnostic tools like SCID-5, which is a semistructured interview that methodically assesses DSM-5 diagnostic criteria, are the gold standard for use in research studies but require too much training and administration time to be feasible in routine clinical practice. In the absence of a standardized diagnostic approach, variability is to be expected. Some specific psychiatric diagnoses, such as schizoaffective disorder, are likely overdiagnosed in acute settings. The diagnosis of schizoaffective disorder may seem like a good fit for a given acute presentation but may not apply when the full history of the illness is appreciated (major mood episodes must be present for more than 50% of the duration of psychotic illness, according to DSM-5). Other psychiatric diagnoses, such as posttraumatic stress disorder (8) and borderline personality disorder (9), are commonly underdiagnosed in routine practice. Limitations in time or information available in the acute setting may predispose clinicians to missing these diagnoses. Compounding the problem is that initial diagnoses (made with incomplete data) may be "copied forward" in the record as the patient moves from ED to inpatient to outpatient, even if new information warrants a different, additional, or more specified diagnosis. Future quality improvement efforts aimed at reducing psychiatric misdiagnosis should focus on standardizing the existing diagnostic process, for example by incorporating patient self-report symptom scales (tools that are more sustainable than SCID-5) into routine practice. Nudges from a thoughtfully designed electronic health record could also help physicians update the diagnosis as more clinical data is available.

This case demonstrates a distinct and particularly frightening form of diagnostic error in psychiatry: attributing symptoms to a psychiatric disorder when in fact they are due to a nonpsychiatric medical condition. The psychiatry resident consulting in the ED and clinicians on the unit attributed the patient's tachycardia to her agitation and underlying psychiatric disease. The medical cause of her symptoms was determined only after she worsened and was transferred to the ICU. The frequency of medical misdiagnosis in the setting of acute psychiatric symptoms is not well known, with the exception of missing the diagnosis of delirium in elderly patients presenting with behavior change, which can be as high as 80% and is more likely when the patient has a mental health history.(10,11) Errors in misdiagnosis can occur in the ED, on the psychiatric unit, or during a transition in providers, so quality improvement projects may usefully target multiple points along a patient's journey through levels of care.

Medically Stable for Psychiatric Admission

The case raises questions about how providers and institutions optimally determine if a patient is medically stable for admission to an inpatient psychiatric unit. By *medically stable*, we mean that the emergency

physician has judged that a patient in the ED with a psychiatric condition requires no medical intervention except for those that can be safely (and nonurgently) administered on the psychiatric unit or after discharge from that unit. In other words, medically stable means that admission to a psychiatric unit is safe and appropriate from a medical standpoint. Medical stability should be viewed separately from the question of whether medical etiologies have been ruled out as a cause for the psychiatric presentation. For some potential medical etiologies (e.g., delirium, seizure, cerebral vascular event, severe infection), ruling them out may be necessary for a patient to be appropriately judged medically stable. In other instances, if the likely acuity is low and further workup and treatment can be continued as part of routine management on the psychiatric unit, then the ED might safely defer the workup for other potential etiologies or medical comorbidities to the inpatient psychiatry team.

Of note, the terms *medically cleared* and *medical clearance* are prone to misunderstanding and therefore should be avoided. These terms may suggest that all potential medical etiologies have been ruled out by the ED workup, or that any existing (nonacute) medical conditions require no attention, potentially creating a false sense of security on the psychiatric unit. The recommended phrase is "medically stable for psychiatric admission."

Useful principles can be drawn from expert consensus guidelines published by the American Association for Emergency Psychiatry (12,13) and the American College of Emergency Physicians (14), based on review of the literature on both the clinical utility and the cost effectiveness of medical screening for psychiatric ED patients. The first principle is that a medical evaluation comprised of history, review of systems, physical examination (including neurological and cognitive exam), and vital signs should guide the diagnostic evaluation. Second, routine laboratory testing, including urine toxicology, is not indicated in a patient presenting with psychiatric symptoms only and who is alert, oriented, and cooperative and has otherwise normal vital signs, review of systems, and physical examination. Policies of routine testing for such patients—sometimes required by psychiatric units as a condition for admission—result in regional variation (15) and increased health care costs without improved medical outcomes.(16) Third, targeted laboratory testing may be indicated for patients older than 65, patients older than 45 with new-onset psychiatric symptoms, and any patients with findings on history, review of systems, physical examination, or vital signs that suggest active substance abuse or a medical problem that could be contributory or may need intervention. Elderly patients are particularly at risk to have overlooked delirium (10,11), which can either mimic or occur comorbidly with another psychiatric illness.

In this case, the patient's hypoxia, persistent tachycardia, and inability to fully cooperate with a history and review of systems should have prompted the ED physician to consider additional diagnostic testing prior to judging the patient medically stable. As the case illustrates, missing an acute medical condition puts a psychiatry inpatient-bound patient at risk for severe consequences. Psychiatric units vary in the availability of resources to recognize and treat acute medical problems; to appreciate this, just consider the contrast between a psychiatric unit located in an academic general hospital with a free-standing psychiatric facility. Behavioral health staff in free-standing psychiatric hospitals may have limited access to physicians or medical consultants at certain times, such as overnight or on weekends. Many psychiatric units have no ability to administer intravenous medical or fluids, and advanced medical monitoring (e.g., telemetry) is typically unavailable. Such limitations mean that an error in diagnosis or treatment of medical conditions in the ED is less likely to be caught once the patient reaches the inpatient psychiatry ward. This raises the

stakes regarding the ED clinician's certifying that the patient is medically stable for psychiatric admission. Guidance on the medical evaluation of psychiatric ED patients is available (17), and quality improvement efforts can support and standardize such practice.

Improving Safety in Inpatient Psychiatry

Any of the types of safety events described above can be the target of a quality improvement effort in the inpatient psychiatry setting. For example, many units have improvement projects aimed at reducing the need for restraint and seclusion (18), which may involve increasing staff–patient ratios and providing staff training in behavioral de-escalation.(19) As described above, data on which methods of self-harm (e.g., hanging, cutting with a sharp object, etc.) are most common on the unit can help prioritize improvement efforts in the unit environment, such as elimination of fixtures that can be used as anchors for hanging attempts. Errors related to diagnosis can be addressed with protocols and tools that standardize the diagnostic process to reduce variability and increase adherence with best practice guidelines.

A target for improvement that has salience for this case is communication between providers about patients who are at risk for complications. Patient handoffs occurring at transitions between providers—either across levels of care or at change of shift—represent vulnerable points for error, particularly for patients with unusual acuity or complexity. In inpatient psychiatry, most patients are medically stable most of the time, and a presumption of stability can make providers less vigilant for the uncommon exceptions. Standardization of the patient handoff can reduce variability and help maintain the good habits necessary to manage such exceptions.(20) Examples of standardizing team communication during patient handoffs has been reported for psychiatry (21), and it remains a growth area.(22)

Additional ways to improve patient safety in psychiatry would be to enhance the culture of safety. Unlike in other medical disciplines, morbidity and mortality conferences are uncommon in psychiatry.(23) Moreover, error reporting systems—and the culture of using them—lag behind in psychiatry.(24) Psychiatrists working in graduate medical education may face the dilemma of needing to give trainees knowledge, skills, and attitudes about patient safety and quality improvement that are not yet common throughout the department. Whenever possible, trainees should be integrated into existing hospital safety and quality processes, which can be a win–win scenario as the trainees simultaneously learn, work, and push the status quo.(25) Psychiatry cannot remain siloed—failure to integrate behavioral health with the rest of medicine contributes to errors like the one in this case. The time is ripe for psychiatry to fully embrace the patient safety movement.

Take-Home Points

- Patient safety events particular to the inpatient psychiatry unit include self-harm and suicide attempts, assault, sexual contact, injury or trauma from seclusion or physical restraint, elopement, and smuggling of contraband onto the unit.
- The medical evaluation of a patient with acute psychiatric complaint should include history, review of systems, physical examination, and vital signs.

- The decision to trust a trainee is driven by characteristics of the learner, risks involved in the task, practice context, the general propensity of the supervisor to trust learners, and the relationship between supervisor and learner.
- A patient's inability to cooperate fully with the medical evaluation should heighten suspicion for any abnormal findings.
- Areas for improvement in patient safety within inpatient psychiatry include standardizing processes in diagnosis, handoff, and error reporting.

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