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An Evidence-Based Approach to Medical Clearance of Psychiatric Patients in the Emergency Department

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Abstract Medical clearance of psychiatric patients is the process whereby emergency physicians (EP) screen for medical causes of psychiatric symptoms as well as incidental comorbid illnesses in order to appropriately dispose the patient to either a medical or psychiatric unit. There is much disagreement between EPs and psychiatrists regarding the extent of workup required. It is universally accepted that an adequate history and physical exam, including complete vital signs, mental status exam, and neurological exams are crucial to this process. However, several components of the H&P, particularly the mental status and neurological exam, are often omitted by the EP. Routine labs, imaging, and toxicological screening on all psychiatric patients are low yield, and these studies should instead be guided by the history and exam. Psychiatrists and EPs need to work together to streamline the medical screening process to be safe, efficient, and evidence based.

Keywords Medical clearance · Psychiatric patients · Emergency department · Mental health · Confusion assessment method

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Introduction

Mental health visits to the emergency department (ED) comprise a large percentage of total ED visits, and the number continues to rise. In 2007, 12.5 % of all ED visits were related to mental health or substance abuse, with primary psychiatric complaints comprising approximately one-third of these [1]. When a patient presents to the ED with psychiatric symptoms, it is the duty of the emergency physician (EP) to "medically clear" the patient. In this review article, we will discuss the steps for medical clearance of psychiatric patients in the ED, as well as several controversies and recent developments within this topic.

Medical Clearance

The purpose of medical clearance is twofold: to screen for medical causes of the behavioral symptoms as well as incidental medical conditions prior to transfer to inpatient care. If there is deemed to be a medical cause of the patient's symptoms, it is inappropriate to admit to a psychiatric floor. If the patient is found to have an incidental medical condition, the treating physician must then determine if this is able to be adequately addressed in the ED for transfer to a psychiatric unit, or if the patient will require a medical admission.

Beyond this general definition, medical clearance is fraught with controversy. There is little standardization among different institutions and practitioners. There is disagreement between EPs and psychiatrists over the extent of workup necessary. The workup is often dictated by the capabilities and demands of the receiving facilities. Many experts even prefer to avoid the term "medical clearance" altogether, as it can convey a false sense of security regarding

medical risk to the subsequent providers [2]. "Medically clear" seems to imply "no medical problems," which is often not the case. Some have moved for the use of the more accurate terms "medically stable" or "focused medical assessment" [3]. Some experts feel the most effective communication is not writing "medically clear" on the chart, but rather list a summary of history, exam findings, diagnostic testing performed, and any illnesses discovered and medications administered in a discharge note [2].

Medical Mimics of Psychiatric Illness

When evaluating a patient with a psychiatric complaint, the EP must first exclude an underlying medical illness as the cause of the behavioral symptoms. These so-called "medical mimics" include delirium and dementia, which can be presented with numerous psychiatric symptoms, including depression, psychosis, mania, apathy, anxiety, personality changes, hallucinations, and agitation [4]. Dementia is a chronic, gradually progressive cognitive decline. Delirium, on the other hand, is an acute global disturbance of consciousness caused by an underlying medical illness or drug effect. Cognitive disturbances found in dementia can manifest as memory loss, language difficulties, disorientation, and/or perceptual alterations and hallucinations [5]. Given the acuity and potentially life-threatening causes of delirium, it is crucial that the EP not mistake a delirium state as a primary psychiatric condition. Delirium is not a specific diagnosis, but rather a constellation of signs and symptoms caused by an underlying medical process. It causes a disturbance in attention and cognition characterized by inability to focus, sustain, and shift attention. It is sudden in onset and typically waxes and wanes in severity. These patients can present agitated and hyper-vigilant or drowsy and lethargic. There are numerous causes of delirium which can be broken down into four major categories: primary intracranial disease, systemic disease, toxins, and drug or alcohol withdrawal [6]. There are several red flags that point toward a medical etiology of psychiatric symptoms. These include new onset of psychiatric symptoms at age greater than 45, sudden onset of symptoms, disorientation, waxing and waning mental status, non-auditory hallucinations, lack of prior psychiatric history, medical comorbidities, emotional lability, abnormal vital signs, physical exam abnormalities, and history of substance abuse [7, 8].

History and Physical

A focused but thorough history and physical are essential components of the medical screen. Unfortunately, it can often prove difficult to obtain a history from some psychiatric patients, particularly if they are uncooperative, agitated, combative, or acutely psychotic. Nevertheless, the physician should be vigilant in attempting to obtain a complete history on all psychiatric patients. In addition to interviewing the patient, one should obtain collateral information from other sources, which can include family, friends, coworkers, police, EMS, residence, and medical records if available. Particular focus should be given to any past medical or psychiatric history, the patient's baseline level of functioning, how their current presentation compares to prior psychiatric episodes it they have a psychiatric history, current medications, medication changes, substance use, and time course of symptoms. While the primary focus of the history should be on the psychiatric complaint, one must also address physical complaints the patient might have.

All psychiatric patients presenting to the ED require an adequate physical exam, and this becomes all the more crucial if they are unwilling or unable to provide a reliable history. The exam can give clues to common medical mimics, including toxidromes, overt intoxication, withdrawal syndromes, focal CNS lesions, and infectious illnesses to name a few. There are few studies quantifying which components of the physical exam are most important in ruling out medical causes, a reasonable exam includes complete vital signs, general appearance, cardiac, pulmonary, pupils, skin, mucous membranes, neurological exam, and mental status exam. However, several studies have shown that the H&P of psychiatric patients performed by the EP is often inadequate. A retrospective chart review of patients admitted to the psychiatric unit from the ED noted that the most frequent deficiency in the evaluation was lack of documentation of neurological exam. A retrospective review of 64 delirious patients who were mistakenly admitted to psychiatric units found that none of the patients had an appropriate mental status documented, 43.8 % had an inadequate physical exam, and 34.4 % failed to obtain a history [9]. These inadequate histories and exams were all significantly greater when compared to the group of 30 delirious patients sampled that were admitted to the medical unit [10]. In a 2010 study, the authors found that the clinical exam most often omitted was the cognitive exam [10]. There are several possible reasons: discomfort with psychiatric patients, prioritizing patient's perceived as sicker, and combative or uncooperative patients among other factors [11].

Agitation

The agitated patient can pose a particular challenge to the medical screening process. It is difficult to evaluate the agitated patient and they can pose a danger to the staff and

themselves. With the agitated psychiatric patients, attempts should be made to quickly assess and treat for immediately life-threatening causes of their behavior. After emergent life threats are ruled out, attempts should be made to verbally deescalate so they can participate in the evaluation. If unsuccessful, the physician may have to resort to medication or physical restraints. As it is difficult to perform an adequate history, physical, and mental status exam on a violent or combative patient (or a sedated patient), they require a more thorough workup. Once the patient is calm, a more thorough evaluation can be performed [12, 13••, 14].

Mental Status Exam and Cognitive Assessment

One function of the mental status exam in medical clearance is to exclude a delirium state as the cause of the patient's behavioral symptoms [8]. This is often omitted. There are several tests of mental status of varying length, yet no consensus regarding which is ideal for the ED [15]. In the time constrained ED, how much mental status testing should the EP be expected to perform? A survey of EPs found that the majority spend less than 5 min on the mental status exam and include piecemeal components of the mental status exam, most commonly including level of consciousness (95 %), orientation to person (84 %), place (86 %) and time (87 %), spontaneity of speech (80 %), and behavioral observation (72 %) rather than a formal screen [15]. Clearly these are important and should be documented on all psychiatric patients, and in patients with no red flags for medical mimics, this may be sufficient. However, a delirium state also involves alterations in attention and cognition, which must be assessed in patients at high risk for medical mimics. There are several tools for brief cognitive assessment that can be realistically performed in the ED. One example is the brief mental status examination. Based on the orientation–memory–concentration test, this six item, 15 point questionnaire can be performed quickly and has been prospectively studied in the ED. It was found to have a sensitivity of 76 % and specificity of 95 % in identifying cognitive impairment [16]. The quick confusion scale is another option, and similar to the brief mental status examination, but has not been validated for ED use. The clock-drawing tests are perhaps an ideal test for the ED given the speed at which it can be administered. It tests multiple cognitive domains, including executive function, praxis, attention, and visuospatial domains, and it has a sensitivity and specificity of 85 % for cognitive impairment, but again has not been validated for the ED [17]. The confusion assessment method (CAM) is another useful tool for diagnosis of delirium and consists of four criteria:

(1) acute onset and fluctuating course AND
(2) inattention AND
(3) disorganized thinking OR
(4) altered level of consciousness.

The CAM takes 5 min to perform, and has been found to have a sensitivity of 94–100 % and specificity of 90–95 % [18]. While testing cognition is crucial for ruling out delirium, other portions of the mental status exam are also important for the psychiatric assessment.

Psychiatric Evaluation

The emergency psychiatric evaluation can be thought of as an extension of both the history and mental status exam. The purpose is not to come to a specific psychiatric diagnosis, but to assess if the patient poses a potential danger to him or herself or to others, and therefore, requires further psychiatric evaluation or inpatient admission [12]. During the psychiatric evaluation, the provider must pay attention to verbal and non-verbal cues to evaluate the patient's mental status, assessing mood, affect, appearance, behavior, speech, disorders of thought (e.g., delusions), disorders of perception (e.g., hallucinations), insight, and judgment. Patients may pose a danger to themselves due to thoughts of suicide, self-harm, or grossly disorganized behavior or thinking that renders them unable to care for themselves. Other factors to consider include prior psychiatric hospitalizations, prior suicide attempts, history of violence toward others, and the availability of lethal means [12]. If they pose a danger to themselves or others, they require inpatient psychiatric treatment. If not, the patient may be appropriate for outpatient psychiatric treatment [8]. Once the safety of the patient has been assessed, an appropriate disposition and treatment plan should be developed [12].

Missed Delirium

Inappropriate admissions of patients with acute medical illnesses to psychiatric units can be dangerous. Some psychiatric facilities have limited diagnostic and treatment capabilities and are usually not equipped to recognize or treat acute medical illnesses. The rate of unrecognized delirium in the ED regardless of chief complaint has been cited anywhere from 12 to 75 % [8, 19]. A study by Hall et al. found 9.1 % of outpatient psychiatric patients had a medical cause of their psychiatric symptoms. In decreasing order of prevalence, the causes were infectious, pulmonary, thyroid, diabetic, hematopoietic, hepatic, and CNS diseases [20]. The rate of patients with delirium who end up inappropriately admitted to a psychiatric floor has been shown to be between

2.8 and 4 % [2, 10]. A retrospective review of 64 patients admitted to the psychiatric floor with missed medical causes of their psychiatric symptoms found the majority were caused by alcohol or drug intoxication (34 %), followed by withdrawal or delirium tremens (12.5 %), followed by prescription drug overdose (12.5 %). Other common etiologies were uremic encephalopathy, hepatic encephalopathy, DKA, pneumonia, lithium or anticonvulsant toxicity, and heart failure. Another retrospective review found that 83 % of the missed diagnoses that required acute intervention could have been found on physical exam [2]. Inappropriate psychiatric admissions are usually due to failure to obtain crucial pieces of the history, physical exam or mental status exam, or failure to act on abnormal findings. Delirium is more frequently missed in patients with a known psychiatric history, as their symptoms are more frequently attributed to their known psychiatric condition [10]. For these patients, the physician must determine if the current presentation is an atypical presentation of their psychiatric complaints, which can be aided by interviewing family and friends.

Laboratory Testing

There is controversy regarding what, if any, laboratory tests need to be performed in order to medically screen a psychiatric patient in the ED. It is clear that unnecessary testing creates unnecessary cost to patients, is an inefficient use of resources, increases ED stay, and increases the potential for false positives leading to further unnecessary testing and treatment. Long waits in the noisy and chaotic environment of the ED can also exacerbate and escalate the patient's underlying psychiatric problem. Psychiatrists tend to push for more workup, often because they are uneasy dealing with medical illnesses or their facilities are unequipped to do so. EPs often try to "medically clear" as quickly as possible for a multitude of reasons, including discomfort with psychiatric patients, to quickly dispose the patient in a crowded ED, and to cut down on ED resource utilization and costs. [21].

What does the evidence say regarding this? The original studies in the 1980s appear to have established the current trend of routine laboratory testing. The first major study in the area was a prospective study of 100 psych inpatients that found 46 % of these patients had unrecognized medical illnesses either causing or exacerbating their psychiatric symptoms, and 80 % had medical illnesses requiring treatment [4]. An extensive workup including history and exam, chemistry, urinalysis, ECG, and EEG revealed 90 % of the medical illnesses in this population, which the authors suggested be performed on all psychiatric patients. A descriptive case series of 100 patients in the ED with new psychiatric symptoms found that 63 were medical in etiology, and the H&P was only revealing in 33 of 63 [22]. The authors concluded "Most alert, adult patients with new psychiatric symptoms have a medical etiology" and recommend routine medical history, physical examination, chemistries, CPK, drug and alcohol screens, head CT, and lumbar puncture (for those febrile patients) as part of the medical clearance of these patients [22]. As discussed previously, newly diagnosed psychiatric complaints constitute a red flag for an underlying medical cause and only underscores the importance of maintaining a higher suspicion and doing a more extensive workup in these patients.

However, the preponderance of evidence from recent studies calls into question the necessity for routine labs. The majority of these support the conclusion that diagnostic studies should be guided by the history and physical rather than routinely done on every psychiatric patient. Olshaker et al. found the sensitivity and specificity of history and physical exam for diagnosing medical illness or intoxication of 94 and 51 %, respectively. This was compared with routine lab testing, which had a sensitivity of 20 % [23]. A retrospective chart review found that patients with isolated psychiatric complaints as well as a past psychiatric history, normal vital signs, normal physical exam, and no medical complaints all had normal labs [24]. A prospective study of 375 psych patients in the ED with primary psychiatric complaints, known psychiatric history, normal level of alertness, and orientation, which had medical screening exams including H&Ps and lab tests found that the majority (42 of 56) of the patients with lab abnormalities had an abnormal exam finding or historical clues that would lead to the result. The rest either had insignificant lab abnormalities or abnormal urinalyses that did not affect disposition or contribute to their psych complaints [25]. A multi-center observational study of 598 psychiatric patients to assess the utility of routine lab tests for medical clearance found that EPs ordered medical screening tests on 155 (25.9 %) of the patients, and psychiatrists ordered additional testing on 191 of 443 (44 %) patients. The EPs did not think required testing for medical clearance. Of the testing ordered by the psychiatrists only one had an abnormal result that changed disposition [26].

Another retrospective study was conducted to determine if any of the mandatory labs ordered on the inpatient psych floor would have resulted in change in management or disposition in the ED, where labs are ordered per discretion of the EP. 148 patients had labs ordered in the ED. The most common abnormal labs were a positive urine drug screen, anemia, and hyperglycemia. Of 502 patients, only one had any abnormal labs that required medical intervention and would have changed ED management. This was a 46-year-old female with bipolar disorder and multiple medical comorbidities whose only complaints were suicidal ideation and generalized fatigue. However, she had

a temperature of 38 °C and pulse 114 on arrival with no labs ordered on arrival. She remained on the psychiatric floor with a 4-day medicine consult [27].

EPs have also questioned the utility of routine drug and alcohol screens, arguing the clinical determination of sobriety is more important than blood alcohol level and urine toxicological studies. Different studies give mixed results regarding the reliability of self-reporting drug and EtOH use [23, 28]. Olshaker et al. found a respective sensitivity and specificity of 92 and 91 % for self-reported drug use and 96 and 87 % for self-reported alcohol use [23]. While a study by Schiller showed up to 20 % of those who denied drug use had a positive urine drug screen, this had no impact on patient treatment or disposition in the ED [28]. Even if the drug and alcohol screens are positive, they do not alter ED management or disposition.

Based on literature and expert review, The American College of Emergency Physicians guidelines came to 3 conclusions regarding medical screening in their 2006 guidelines: (1) routine labs are very low yield; (2) urine drug screens are also very low yield; and (3) sobriety should be determined by clinical exam rather than BAL in alcohol intoxication [29].

This viewpoint is in conflict with the position of the American Psychiatric Association. In the society's most recent guidelines, they state:

> [The emergency physicians] examinations usually are limited in scope and rarely are definitive…Therefore, on the basis of clinical judgment and the specific circumstances of the evaluation, the psychiatrist may need to request or initiate further general medical evaluation to address diagnostic concerns that emerge from the psychiatric evaluation [30].

Psychiatrists believe that EP's exams on psychiatric patients are often insufficient, and need to be supplemented with lab testing. Based on the evidence presented earlier, this argument has merit. Psychiatrists and EPs often differ on whether or not labs and imaging need to be performed in the ED, and it is usually the psychiatrist or the admitting psychiatric facility that has the final say in what diagnostic workup needs to be performed in the ED [31].

Medical Clearance Protocols and Screening Algorithms

Given the lack of standardization of medical screening, protocols for medical screening could potentially streamline the process, increase efficiency, and cut down on unnecessary costs and testing. A prospective study was performed in an urban hospital in Chicago applying a medical clearance protocol consisting of known psychiatric history, active medical illness, abnormal VS, abnormal physical exam, and abnormal mental status. Lab testing was not required, but recommended if clinically indicated. This resulted in reduction of cost but no decrease in throughput time. Of note, there were no statistically significant returns back to an ED from a psychiatric facility [32•].

Two recent retrospective studies developed and tested medical screening algorithms. Miller and colleagues developed a triage algorithm for medical screening in patients with psychiatric complaints. It consisted of age less than 65, normal vital signs, no history of schizophrenia, no hallucinations, no evidence of recent substance use, no medical complaints, and no history of mental retardation. They then took a random sample of 93 patients who were negative for this screen. Of this sample, 25 had lab tests ordered, none of which changed disposition or treatment [33]. The other screening tool developed by Shah and colleagues had inclusion criteria consisting of normal VS, prior psychiatric history or age less than 30, alert and oriented or Folstein less than 23, no evidence of acute medical problems on exam, and no visual hallucinations. If they met the screening criteria, they were transferred without medical testing. Of the 485 patients that met the criteria, six were sent back to the ED for further evaluation. After additional studies were performed, none of the patients required anything more than outpatient prescriptions [34]. While these screening algorithms are promising, none have been prospectively analyzed.

Conclusions

- Medical clearance, better characterized as medical screening, is a process for deciding the stability of psychiatric patients for an inpatient psychiatric unit. It involves screening for medical causes of behavioral symptoms, identifying incidental medical conditions and deciding if these can be managed in the ED or need admission to a medical or psychiatric service.
- Missed delirium is often due to an inadequate history and exam, including the frequent omission of mental status testing. EPs must perform a focused but complete H&P on all psychiatric patients, including a neurological exam and a brief mental status examination. Complete vital signs should be performed on all psychiatric patients, and abnormal VS must be addressed.
- Routine lab tests on all psychiatric patients are low yield. Diagnostic studies should instead be guided by the history and clinical exam.

- Drug and alcohol screens do not change management or disposition in the ED and should not delay admission or transfer to a psychiatric unit.
- There should be a higher index of suspicion for delirium in patients presenting with new psychiatric complaints, the elderly, patients with abnormal VS, abnormal exam findings, and medical comorbidities.
- Psychiatrists and EPs need to collaborate to better streamline the process of medical clearance to make it standardized, more efficient, evidence based, cost effective, and safe for the patient. This may include medical clearance protocols and screening algorithms.
- Screening protocols emphasizing a complete exam including vital signs, mental status exam, and neurological exam on all psychiatric patients providing decision support for testing would likely be a preferred approach than mandatory labs on all patients.

Compliance with Ethics Guidelines

Conflicts of Interest The Authors of this paper declare no conflicts of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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