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## Medical Clearance of Psychiatric Patients

*My county has a Regional Behavioral Health Authority or RBHA. The Arizona Department of Health Services contracts with four RBHAs that cover the state to maintain a comprehensive network of behavioral health providers that deliver prevention, intervention, treatment, and rehabilitative services to a variety of populations, including: adults and children with Medicaid coverage, adults with serious mental illnesses (SMI), adults with general mental health disorders (GMH), and persons with substance use disorders. Thus, most hospitals in my county have limited on-site or in-house behavioral or psychiatric resources; most patients are assessed in the emergency department (ED) and then transferred to mental health crisis centers or, if available, inpatient psychiatric units. The most common question by the accepting provider is, "Is this patient medically cleared?" This question and the discussion it initiates highlight the different perspectives that the two specialties—emergency medicine and psychiatry—have regarding the purpose of the medical assessment of the patient with psychiatric symptoms in the ED. This issue reviews the concept of and the evidence for "medical clearance."*

— J. Stephan Stacpynski, MD, FACEP, Editor

## Introduction

"Medically clear." What does this mean? Who makes this decision? What are the implications of this term? Aside from protecting a psychiatric patient from him- or herself and others in the ED, making the decision as to whether or not the patient is "medically clear" is often the principal task in the overall management. As discussed later, some have, in fact, recommended using the term "focused medical assessment" instead as a description of the process of excluding illness that requires acute medical care. A psychiatric patient may present with severe depression, mania, anxiety, suicidal or homicidal ideations, psychotic disturbances, or other changes in behavior that may dictate admission to a psychiatric ward. It is important that potentially life-threatening illnesses be detected in the ED before a patient is admitted to a definitive psychiatric care unit, where resources for diagnosis and medical treatment modalities may not be readily available.

Many psychiatrists view the patient's initial presentation to the ED as the only opportunity to diagnose an underlying organic process that would otherwise go undetected and potentially lead to morbidity or even mortality if missed. One author states, "Considerable evidence indicates that mentally ill patients often do not receive adequate recognition, monitoring of, or care for their medical illnesses."<sup>1</sup> Moreover, discovery of major medical abnormalities can alert psychiatrists and emergency physicians to the possibility that complaints appearing psychiatric in origin may, in fact, be the manifestations of underlying medical conditions.<sup>2</sup>

It has been estimated that the psychiatric patient population represents 2% to 12% of ED visits, and behavioral problems have been listed as the presenting complaint in 4% of ED visits.<sup>3-8</sup> Furthermore, the number of patients

## Executive Summary

- If the patient cannot provide a cogent history, use extended resources, such as family, friends, social workers, case managers, and prior records.
- The physical examination should include a mental status evaluation.
- Disorientation indicates an organic cause for the altered mental status or abnormal behavior.
- The threshold for routine testing should be lowered in the elderly, patients with a history of substance abuse, patients without a history of psychiatric disorder, and patients with co-existing medical conditions.

requiring medical clearance has increased. From 1992 to 2001, 53 million psychiatric-related ED visits were reported, which represents an increase from 17.1 to 23.6 per 1000 visits.<sup>8</sup> Distinguishing whether the patient is presenting with signs and symptoms resulting from a purely psychiatric illness, if there is a medical disease that coexists, or if a medical disease is the underlying etiology for the patient's presentation is a daily task in any busy ED.

### Psychiatric Emergencies Defined

According the American Psychiatric Association, a psychiatric emergency is defined as "an acute disturbance in thought, behavior, mood, or social relationship, which requires immediate intervention as defined by the patient, family, or social unit."<sup>9</sup> Interestingly, this umbrella classification covers both functional and organic disease processes. It is important to recognize the following disorders commonly seen in the ED and begin to think of how medical roots can potentially play a role.

#### Schizophrenia and Other Psychoses.

These diagnoses are marked by the presence of delusions (fixed false beliefs that are not amenable to arguments) and by hallucinations (false perceptions experienced in a sensory modality). There is loss of reality testing; however, consciousness is clear. Schizophrenia is characterized by deterioration in functioning, classically with continuous signs of the disturbance for more than 6 months. Onset is usually prior to age 40. By definition, the disturbance is not attributable to substance

abuse or to a medical disorder. Active-phase symptoms include hallucinations, delusions, disorganized speech or behavior, and catatonic behavior. Negative symptoms may predominate, and include social withdrawal, difficulty in functioning in school or at work, lack of volition, blunting of emotion, anhedonia, inattention, flattened affect, poor abstract thinking, or apathy. Positive symptoms include delusions, hallucinations, excitement, paranoid thinking, hostility, and grandiosity. Loose associations, such as loss of normal logical connections between one thought and the next, may be evident. Speech is rambling, disjointed, and nonsensical, and orientation may be impaired.<sup>10</sup>

**Schizophreniform Disorder.** This diagnosis can be made if the patient meets criteria for schizophrenia but symptoms have been present for less than 6 months.

**Anxiety.** This disorder is characterized by apprehension, fear, and excessive worry. The patient may report feelings of panic or stress. These feelings can be accompanied by autonomic hyperactivity out of proportion to any real danger to the integrity of the patient's health. It is unlikely that there would be serious consideration for admission to a psychiatric service for anxiety alone. Anxiety can be induced by a wide variety of legal and illegal substances. Caffeine and nicotine are prominent among these, as are phencyclidine and cocaine. Over-the-counter medications for cough and colds, including ephedrine and antihistamines, can induce anxiety, as can withdrawal from alcohol, benzodiazepines, barbiturates, and beta-blockers.

Palpitations and frank arrhythmias can induce anxiety. Apprehension can be associated with other significant medical illnesses such as hyperthyroidism, hypoglycemia, and hypoxemia.<sup>11</sup>

**Panic Disorder.** This is an anxiety disorder characterized by a sudden surge of anxiety and dread, with changes in autonomic vital signs. Palpitations, tachycardia, chest tightness, shortness of breath, sweating, tremulousness, and subjective dizziness can be present. This disorder is defined by the presence of four or more of the following: palpitations, accelerated heart rate, sweating, trembling or shaking, dyspnea, feeling of choking, chest pain, nausea or other abdominal distress, feeling of losing control or going crazy, fear of dying, paresthesias, dizziness, chills, and hot flashes in the absence of an organic etiology. Organic etiologies, especially those entities that may cause cardiac or respiratory compromise, should be excluded first.

**Major Depression.** This diagnosis is characterized by persistent dysphoric mood or sadness present most of the day lasting longer than 2 weeks. There is often a family history of depression or suicide. The lifetime risk of suicide in depressed patients is approximately 15%.<sup>12</sup> To make the diagnosis, symptoms should not be attributable to bereavement or to direct physiologic effects of a substance. Women are generally affected more frequently than men, with symptoms causing more significant impairment in important areas of functioning. Patients with major depression without suicidal ideation typically do not meet admission criteria; however, if the depression

is severely limiting the patient's functioning and activities of daily living, further inpatient care may be deemed necessary by the psychiatric consultant.

**Bipolar Disorder.** This disorder is characterized by the occurrence of mania (elation or irritability) and grandiosity. An elevated, expansive, or irritable mood should be present for at least 1 week to make the diagnosis. Patients can exhibit a decreased need for sleep, increased activity, rapid or pressured speech, and racing thoughts. They tend to be more talkative than usual, with flight of ideas and distractibility. The onset is usually in the third and fourth decades of life. To make this diagnosis, the symptoms must not be caused by a general medical condition or substance.

**Delirium.** This diagnosis has also been termed organic brain syndrome, metabolic encephalopathy, toxic encephalopathy, and acute confusional state.<sup>13</sup> It is characterized by global impairment in cognitive function with clouded consciousness and impaired attention. Deterioration is acute, measured in hours or days — not months. Hallucinations tend to be visual. Attention and concentration can fluctuate.<sup>14</sup> Psychiatric disorders do not impair consciousness or cognitive function. As such, by definition, delirium has a medical cause. Changes in cognition and thinking can fluctuate during the day and tend to be more pronounced at night.

**Dementia.** This diagnosis describes a pervasive disturbance in cognitive functioning in memory, judgment, abstract thinking, personality, and higher cortical functions such as language. Polypharmacy, renal failure, pulmonary disease, endocrine disorders, normal pressure hydrocephalus, slowly growing intracranial mass, hepatic failure, nutritional disease, infectious disease, inflammatory disease, and depression should be considered as possible reversible causes. Consciousness is not clouded. Ability to carry out motor functions can be impaired.<sup>15</sup> Impairment in abstract thinking and

**Table 1:** Characteristics of Delirium, Dementia, and Psychiatric Illness

Characteristic	Delirium	Dementia	Psychiatric Illness
Onset	Acute: hours/days	Gradual: months/years	Acute
Attention	Impaired	Normal	Disorganized
Consciousness	Decreased	Alert	Alert
Hallucinations	Visual	Absent	Auditory
Speech	Rapid, incoherent, hesitating, slow	Inability to find words	Typically coherent
Orientation	Usually impaired	Usually impaired	Rarely impaired
Vital signs	Usually abnormal	Usually normal	Usually normal

judgment can be present, along with personality change. Agnosia (the failure to recognize or identify objects) can be present. There is a baseline gradual loss of cognitive abilities such as memory or computational skills.<sup>10</sup> Since dementia is a risk factor for development of delirium, and there are patients with delirium who do not recover baseline mentation even after many months, there clearly may be overlap between the two concepts. Characteristics of delirium, dementia, and psychiatric illness are enumerated in Table 1.

Because emergency physicians must always think in terms of the most lethal diagnoses as opposed to the most likely ones, another approach is to consider what entities the emergency physician can least afford to miss when admitting a patient to a psychiatric ward. What are the “can’t miss” medical diagnoses? Several medical entities that can cause serious morbidity or mortality can masquerade as psychiatric disease and should be excluded before emergency physicians can safely “clear” these patients for admission to a psychiatric service. These range across a wide variety of medical disciplines, including endocrine, infectious, central nervous system, and cardiovascular disorders. Some of these entities are listed in the Table 2.

A partial list of substances that might cause psychosis includes digitalis, corticosteroids, nonsteroidal anti-inflammatory drugs, isoniazid,

disulfiram, cyclic antidepressants, cimetidine, anticonvulsants, benzodiazepines, amphetamines, cocaine, other recreational drugs, narcotics, barbiturates, methyldopa, levodopa, anticholinergic medications, jimson weed, and diphenhydramine. (See Table 2.) Polypharmacy, especially including the aforementioned agents, as well as others such as selective serotonin reuptake inhibitors (SSRIs), should be considered in the differential of alteration in mental status. Medications such as furosemide and digoxin may have anticholinergic effects that cause or contribute to acute psychiatric symptoms in the elderly.<sup>16</sup>

Among the systemic illnesses that can cause psychosis are systemic lupus erythematosus, tertiary syphilis, and pancreatitis. Depression can be caused by drugs such as narcotics, alcohol, and other sedatives; by antihypertensive agents and corticosteroids; and by disease entities such as thyroid disorders and Cushing syndrome.<sup>17</sup> Unfortunately, emergency physicians, constrained by time and money, cannot fully exclude these conditions on all patients — the work-up would be too extensive (lumbar puncture, metabolic evaluation, drug and alcohol screening, neuroimaging, neurologic consultations, and endocrine testing, etc.). However, once the clinical diagnosis of delirium or alteration in mental status is made, the patient should be considered for a more extensive work-up.

**Table 2:** Drugs and Illnesses that Can Produce Psychiatric Symptoms

Symptom	Drugs	Medical Illness
Psychosis	Phencyclidine, LSD, corticosteroids, marijuana, MDMA, heroin, cocaine, ACE inhibitors, etc.	Alcohol withdrawal, meningitis, hepatic encephalopathy, prolonged ICU stay, etc.
Depression	Alcohol, benzodiazepines, contraceptives, antihypertensives, statins, anticonvulsants, barbiturates, etc.	Migraines, chronic pain, terminal disease process, thyroid disturbances, SLE, brain tumors, etc.
Altered mental status	Opiates, benzodiazepines, anti-epileptics, anti-depressants, etc.	Diabetic emergencies, sepsis, UTI, pneumonia, hypercapnia, head injuries, etc.
Agitation/anxiety	Anticholinergics, alcohol, amphetamines, "bath salts," Ritalin, SSRIs, MAOIs, etc.	Thyroid disturbances, gross electrolyte abnormalities, TIAs, angina, pulmonary embolism, arrhythmias, etc.

As between dementia and delirium, there is overlap in characteristics of primarily psychiatric and primarily organic illness. A useful mnemonic for discriminating organic from functional psychoses is the MADFOCS scale. This is summarized in Table 3.<sup>18,19</sup>

## Medical and Psychiatric Illness Coexist

Historically, medical findings have been described in 24% to 80% of psychiatric patients.<sup>2,20</sup> According to one study of 298 patients admitted to a psychiatric ward from the ED, 12 (4%) required medical therapy within 24 hours of admission. Of these, the authors believed that the medical problems in 10 should have been detected on physical examination. In this same study, "medically clear" was documented in 80% of patients in whom it was deemed that a medical disease should have been identified. Surprisingly, patients younger than the age of 55 years had a four times greater chance of having a missed medical diagnosis than did elderly patients. Some of the missed diagnoses were significant, including caustic burns, pneumonia, septicemia, and gastrointestinal bleed.<sup>21</sup>

Another report analyzed 64 cases

deemed to have been inappropriately admitted to psychiatric units from an ED. Although the most frequent diagnoses were related to drug or alcohol intoxication, prescription drug overdose, or substance withdrawal, there were many diagnoses that could not reasonably be considered to be within the scope of psychiatric practice. These included uremic and hepatic encephalopathy, pneumonia, sepsis, urinary tract infection, and diabetic emergencies. The authors suggested that inadequate physical examination (44%), failure to obtain indicated laboratory studies (34%), and failure to obtain available history (34%) most commonly accounted for missed diagnoses. An additional 8% of cases included failure to address abnormal vital signs.<sup>22</sup> In a separate study of 137 ED patients, only 33% had a history of present illness recorded, 32% had abnormal vital signs, 64% had a general appearance reported in the physical exam, 8% had a fully documented neurologic exam, and 8% had no physical examination noted.<sup>2</sup> A recent quality improvement analysis at a large psychiatric teaching hospital indicated that there was a wide variation in documentation across family physicians, nurse practitioners, psychiatry residents, medical

students, and emergency medicine physicians with regard to completing a physical exam to assess for an underlying medical illness.<sup>23</sup>

The literature is widely disparate with regard to the prevalence of organic etiologies in patients with psychiatric symptoms. One report found that 63% of patients with psychiatric symptoms had an organic etiology for their presentations.<sup>24</sup> Another paper reported finding an organic etiology in 19% of 352 patients with psychiatric complaints seen over a two-month period.<sup>25</sup> Yet another study stated that co-existing medical diseases occur in up to 50% of patients who present with psychiatric emergencies.<sup>26</sup> A significant fraction, cited variously as 34% to 46%, of inpatients on a psychiatric ward have medical disorders causing or exacerbating psychiatric illness.<sup>27,28</sup>

Changes in mental status resulting in psychosis, anxiety or panic, depression, mania, delirium, and dementia have been associated with a broad base of underlying medical etiologies. Historically, these have been categorized into five main groupings: metabolic/endocrine, medications, substances, infectious, and central nervous system.<sup>4,29,30</sup> Examples of each respective grouping are found in Table 2.

## History of Present Illness

Given such a large differential for medical conditions masquerading as psychiatric or behavioral symptoms, it can become difficult to separate organic from functional disease. However, this distinction can many times be revealed by taking a good, thorough history. At times this can be very difficult if the patient is not easily redirected. If the patient is unable to provide a thorough history, it may be obtained from family, police, witnesses, or other health care providers. It becomes useful to determine if the patient has a history of psychiatric or medical disease, if there are any new medications, an estimate of the patient's baseline level of alertness and ability to perform activities of daily living, the acuity of onset, and whether any

**Table 3:** MADFOCS Mnemonic for Discriminating Organic from Functional Psychosis

Characteristic	Organic	Functional
M: memory deficit	Recent impairment	Remote impairment
A: activity	Hyperactive, hypoactive, tremor, ataxia	Repetitive activity, rocking
D: distortions	Visual hallucinations	Auditory hallucinations
F: feelings	Emotional lability	Flat affect
O: orientation	Disoriented	Oriented
C: cognition	Lucid thoughts, perceives/attends/focuses occasionally	No lucid thoughts, unfiltered perceptions, unable to attend/focus
S: some other findings	Age > 40 Sudden onset Physical exam abnormal Vital signs abnormal Social immodesty Aphasia Consciousness impaired Confabulation	Age < 40 Gradual onset Physical exam normal Vitals normal Social modesty Intelligible speech Awake/alert Ambivalence

substances are involved. Clues suggesting medical illness rather than a primarily psychiatric diagnosis are listed in Table 4.

Of all the clues that point to a medical illness, the most highly suggestive are age (younger than 12 or older than 40 for onset of symptoms), abnormal vital signs, impaired cognition, and no previous history of psychiatric disease.<sup>31</sup> Conversely, patients between the ages of 13 and 40 years with symptoms of gradual onset, psychiatric history, auditory hallucinations, and a normal physical examination are more likely to have a functional cause for their psychiatric symptoms. Any family history of psychiatric disorder should be elicited and can be helpful in distinguishing functional from organic disorder.

## Physical Exam

Further clues that may delineate functional from organic etiologies can be elucidated from the physical exam, which begins with the vitals. Any abnormal vital sign needs to be explained and should not be dismissed.<sup>32</sup> Abnormal vital signs should automatically raise the suspicion that a medical component is playing a role in the patient's presentation. It has been reported that clinically significant vital sign abnormalities were seen in 25% of patients with psychiatric presentations.<sup>33</sup> A complete

neurological examination should also be performed, including cranial nerves, muscle strength, sensation, reflexes, cerebellar function, and orientation assessment.

Impaired mental status can be the manifestation of a wide range of medical conditions. Failure to perform a mental status examination has been noted in more than 50% of emergency psychiatric admissions.<sup>21</sup> There are standard accepted tests for evaluation of mental state.<sup>34-36</sup> The Quick Confusion Scale (QCS) has been touted as preferable to the Mini-Mental State Examination (MMSE) for emergency use because it does not require pencil and paper and is quicker to administer.<sup>34,37</sup> The QCS may also be useful in determining alteration of cognition. The QCS is listed in Table 5. It is a battery of six questions and may be more practical than an MMSE in the ED setting.<sup>38-40</sup>

The physical exam can illuminate two out of the three salient features of delirium.<sup>15,41</sup> One is disturbance of consciousness. A second is memory deficit, disorientation, or language disturbance. The third is any disturbance that develops over a short period of time, which can be clarified by the history. If substance abuse or withdrawal is implicated, it should be temporally related to the disturbance. In psychosis, the level

of alertness is not decreased. The psychotic patient should not be disoriented, somnolent, or obtunded. These considerations emphasize the importance of a mental status examination.

The remainder of the physical exam should be a head-to-toe assessment looking for evidence of trauma, a funduscopic exam looking for papilledema, evidence of prior craniotomy or shunts, enlarged thyroid, carotid bruits, meningismus, evidence of pneumonia, asterixis, costovertebral angle tenderness, track marks, distended abdomen, urinary retention, etc.

## Routine Testing

Although psychiatric consultants may request a myriad of specific tests and possibly certain periods of observation while the patient is in the ED, it is the emergency physician who is ultimately responsible for deeming a patient "medically clear." If asked what this term means, an emergency physician will often offer a much different definition from that of a psychiatrist. For instance, the term may indicate to the emergency physician that the patient does not currently have a condition requiring emergent medical care, whereas the term may be interpreted by the psychiatrist to mean that there is a complete absence of any medical

**Table 4:** Clues Suggesting Medical Illness Rather than a Psychiatric Diagnosis

- No previous psychiatric history
- Extremely sudden onset
- Onset before the age of 12 or after the age of 40
- Disorientation
- Depressed level of consciousness
- Abnormal vital signs
- Focal neurologic deficits
- Presence of specific physical abnormalities
- Visual or tactile hallucinations
- Evidence of exposure to toxins or suspected ingestion

condition that may require ongoing management, such as diabetes or hypertension. Despite the nebulous connotation of the term “medically clear,” its usage ultimately determines the disposition of a patient and its documentation is often required by many accepting psychiatrists under whom the patient will ultimately be admitted. Some authors disagree with the practice of documenting “medically clear” in the chart and may decide to replace it with a note including history, physical exam, and treatment plan for medical diagnoses.<sup>20</sup> The American College of Emergency Physicians (ACEP) suggests that “Focused Medical Assessment” better suits the process of determining if a medical disease is the cause of the patient’s symptoms or if a medical condition needs to be acutely treated.<sup>42</sup> Regardless of semantics, little has changed in recent years with regard to identifying patients who are appropriate for admission or transfer to a psychiatric unit. According to Weissberg, there are three scenarios in which a psychiatric patient may be cleared.<sup>43</sup> These include:

1. No physical illness is found in the patient;
2. Coexisting medical problems are determined not to be the primary cause of the acute psychiatric emergency;
3. An acute medical condition was stabilized.

A controversial topic in medical clearance of psychiatric patients is routine laboratory testing. The evidence to support or refute routine

testing comes mostly from small studies of specific populations analyzed according to the biases of the specialists involved and is not generalizable to the entire population of ED patients undergoing “medical clearance.” Examples of studies from the psychiatric literature that support the value of routine testing include one from 1960 in which Herridge found nearly a 50% incidence of physical morbidity in 209 consecutive patients admitted to a psychiatric unit.<sup>44</sup> A report in 1978 found medical disorders productive of psychiatric symptoms in 9.1% of cases in a study of 658 psychiatric outpatients.<sup>45</sup> A later analysis from 1980 of 100 patients on a research ward of a state psychiatric hospital revealed 46 cases in which medical illnesses were thought to have caused or exacerbated patients’ psychiatric symptoms; another 34 patients were found to be suffering from medical illnesses requiring treatment. In each of these studies, the authors recommended an extensive diagnostic work-up on all acutely ill psychiatric patients. It is notable that the authors were quite liberal in their interpretation of medical illnesses causing or exacerbating psychiatric symptoms. For example, hepatitis, anemia, vaginitis, and cardiac arrhythmias were listed as exacerbating or causing symptoms of paranoid schizophrenia. Primary syphilis, hepatitis, and anemia were listed as causing or exacerbating manic-depressive illness.<sup>46</sup>

In another study evaluating the utility of routine laboratory testing in 250 psychiatric inpatients, a mean of

27.7 tests per patient were ordered. Eleven patients (4%) had “important” medical problems discovered, and less than one test in 50 yielded any clinically useful information. Of the 11 “positive” results, two were significant because they diagnosed latent syphilis. The other nine were suggestive of anemia, abnormal liver function tests, hematuria, or hyperthyroidism — all of which were of uncertain clinical relevance in the emergency setting. Thus, the conclusion was made that extensive routine laboratory testing was unnecessary.<sup>47</sup>

The fact that these reports appeared in the psychiatric literature may account, to some extent, for the demand by psychiatrists for extensive medical testing that emergency physicians might view as expensive, time consuming, and irrelevant to a patient’s presenting complaint.

More recently, especially in the emergency medicine literature, there are relatively small studies on the value of routine testing under certain circumstances. Henneman published a prospective study in 1994 of 100 ED patients undergoing medical clearance and found that clinically significant abnormalities were found in the chemistry panel and CBC in 10% and 5% of the patients, respectively. It was concluded that patients who present with a psychiatric complaint for the first time most likely have a medical etiology, for the prevalence of medical illness in their report was 63%. However, in this study there were a large number of patients with delirium and a large number of patients had alteration of vital signs.<sup>24</sup> A separate study from 1997 showed that out of 345 patients who presented to the ED with a psychiatric complaint, clinically significant values were found in 8% of SMA-7s and 4% of CBCs. Nineteen percent of these patients had an acute medical condition. The history had a sensitivity of 94% for picking up the medical conditions found to be present in that report.<sup>25</sup>

A study published in 2000 of 212 patients older than the age of 16 years who presented to an ED with a psychiatric complaint and required a

psychiatric consultation, there were 80 with isolated psychiatric complaints coupled with a documented past psychiatric history.<sup>48</sup> None of these patients had significant findings on physical examination or positive screening laboratory or radiographic results. The screening tests included urine and blood toxicology screen, chest radiograph, pregnancy testing, BUN, creatinine, electrolytes, and CBC in addition to a physical examination, including vital signs. There were only two laboratory results that were abnormal in this group: one positive pregnancy test and one finding of mild leukocytosis that was shown not to be clinically significant.<sup>48</sup>

Although mandatory routine testing has been shown to be of low yield, expensive, and time consuming, one recent survey found that such testing was required of 35% of a sample of emergency physicians randomly selected through ACEP membership rolls. Of those required to perform routine testing, 16% were required by ED protocol and 84% by the psychiatric service or referral institute. The most commonly required tests were serum alcohol and urine toxicology, each of which was required approximately 85% of the time when any testing at all was demanded.<sup>3</sup>

Routine drug and alcohol testing on patients with behavioral problems has been considered appropriate in the distant past due to the assumption that these patients would be reluctant to admit drug or alcohol abuse. One study of male patients at an urban walk-in clinic revealed that 39% had positive urine tests for cocaine, even though 72% of them denied recent cocaine use.<sup>49</sup> In another study of emergency patients, only 7% of patients with positive drug screens reported substance abuse. The authors recommended drug screening as a more effective way for detecting substance abuse.<sup>50</sup> However, more recently, it has been noted that patient self-reporting was quite accurate regarding drug and ethanol use. Self-reporting had a 92% sensitivity and 94% negative

**Table 5:** Quick Confusion Scale

Question	Reponse	Weight	Score
What year is it?	0 or 1	×2	
What month is it?	0 or 1	×2	
Give memory phrase	John Brown, 42 Market Street, New York (no score given for repetition of phrase)		
What time is it?	0 or 1 (1 if within one hour, 0 if not)	×2	
Count backward from 20 to 1	0, 1, or 2 (2 if no errors, 1 if one error, 0 if two or more)	×1	
Say the months in reverse	0, 1, or 2 (2 if no errors, 1 if one error, 0 if two or more)	×1	
Repeat the phrase	0, 1, 2, 3, 4, 6 (score each portion remembered as 1 point)	×1	
For each response, count the number of errors and multiply by the weight to determine the total. The possible score ranges from 0 to 15. A score of less than 12 suggests a need for further evaluation, and a score of 7 indicates almost certain cognitive impairment.			

predictive value for identifying those with a positive drug screen and a 96% sensitivity and 98% negative predictive value for identifying those with a positive ethanol level.<sup>23</sup>

A study by Shihabuddin and colleagues showed that out of 875 pediatric patients (age 0-20 years) who had a urine drug screen, 547 (62.5%) had presented for psychiatric evaluation, 182 (20.8%) had at least one positive result, and 115 (13.1%) had a documented history of illicit drug use. All of the patients in this study were medically cleared and there was no change in medical management.<sup>51</sup> Similar results were seen in a recent study by Fortu. Of 652 charts reviewed, 267 urine toxicology screens were determined to be medically indicated, and 385 were routine-driven. Of the routine-driven toxicology screens, 95% of patients had negative screens, there was no influence on management and no significant difference in the disposition between those with positive and negative screens. In addition, testing was shown to potentially increase

both ED cost and time. It was concluded that “patients with straightforward psychiatric complaints may be medically cleared without a urine toxicology screen.”<sup>52</sup>

The psychiatric consultant may ask for blood alcohol levels on patients prior to starting their assessment to ensure that the patient is not intoxicated, as this may greatly impair one’s ability to perform a legitimate psychiatric exam. In fact, a patient cannot be medically “cleared” if he or she is impaired by alcohol. However, there remains no evidence-based literature supporting the notion that there is a specific blood alcohol concentration at which patients regain decision-making capacity or when psychiatric symptoms become more apparent as opposed to the confounding influence of alcohol. Moreover, there is no evidence supporting the practice of obtaining an alcohol level prior to beginning the psychiatric evaluation of a patient if the vital signs are normal, the patient is alert and oriented, and the history and physical are

unremarkable. Cognitive function should be assessed on a case-by-case basis if alcohol is involved. This is a clinical judgment as to when an accurate psychiatric evaluation is possible.

Presumably, a focused history and physical examination will indicate a suggested work-up for patients with acute mental status change. It is notable that patients with chronic mental status alteration may derive medical benefit from laboratory testing. In Ferguson and Dudley's series, 17% of laboratory tests were abnormal, but only two were not predicted by the history and physical exam. Thus, it was determined that laboratory testing should only be done selectively based on the clinical need and pretest probability that there is an underlying medical condition causing the psychiatric presentation.<sup>53</sup> This is further supported by White and Baracough's report of laboratory abnormalities found in 10.2% of patients with psychiatric complaints — most clinically insignificant.<sup>54</sup> In a separate survey of emergency physicians, 58% of residency-trained respondents did not think that any test should be mandated as part of a medical screening examination.<sup>3</sup> For the most frequently ordered test — urine drug screening — one report from 1992 indicated that in only 2% of cases was the urine drug screen helpful either in treatment or in influencing disposition.<sup>55</sup>

## The Role of Imaging

The role of imaging in the evaluation of the patient with a psychiatric disorder is evolving. A recent case series of eight patients with brain lesions who presented with only psychiatric symptoms was published. These lesions included meningiomas, intracerebral cysts, anaplastic oligodendrogloma, multiform glioblastoma, and occlusive hydrocephalus.<sup>56</sup> With regard to routine computed tomographic (CT) head scans in psychiatric patients, there has been little proven benefit. One study illustrated that out of 127 healthy military recruits with new onset psychosis, there were no clinically significant findings on head CT.<sup>57</sup> In a separate

study of 168 patients with new onset psychosis, 1.2% had clinically significant findings on head CT.<sup>58</sup> A more recent study by Agzarian involved 397 patients who presented with psychiatric complaints with no focal neurological findings. Ninety-five percent of the CT scans showed no abnormality. Specific abnormalities were seen in 5%, all of which were deemed not related to the patient's condition. In all, the pretest probability of a space-occupying lesion or any other relevant abnormality was not greater than finding one in the general population.<sup>59</sup> Head CTs should, in general, be reserved for patients with HIV, a history of trauma or cancer, focal neurologic findings, or altered behavior or mental status changes, and possibly for those with a history of familial neurodegenerative disease. If a head CT is truly indicated, the patient should probably not be primarily managed on a psychiatric service.

## Bottom Line

In all, if the patient is awake, alert, with no medical complaints, an unremarkable physical exam, and a psychiatric explanation for the patient's presentation, routine laboratory tests and imaging studies are generally of low yield. It has been suggested that there are four groups of patients who are at high risk of medical illness: the elderly; patients with a history of substance abuse; patients without a psychiatric history; and patients with pre-existing medical disorders.<sup>33,60</sup> The threshold for testing should be lowered in these individuals.

## Summary

The clinician should pay close attention to the patient's history. Patients with alterations in mental status should receive an appropriate medical diagnostic work-up. Any abnormal vital signs should be addressed, although it may ultimately be accurate to attribute tachycardia to anxiety or agitation, the patient should be monitored closely for changes. It is inadvisable to admit a patient with unexplained abnormalities in temperature, pulse,

or respiratory rate to a psychiatric service. History and physical examination findings have been noted to detect more than half of organic causes found for "new" psychiatric presentations.<sup>23</sup> Any medication that a patient is taking should be suspected for causing untoward effects. This includes any recent adjustments to dosages, as well as any herbal medications or nonprescription drugs.

Testing should be guided by the history and physical examination findings. No single battery of tests will pick up every metabolic or structural abnormality that might affect patient behavior. The vast majority of medical problems and substance abuse in emergency psychiatric patients can be identified by a history and physical examination that includes a mental status examination. Universal laboratory and toxicologic screening of all patients with psychiatric complaints has a low yield and generally does not affect the disposition. In the absence of history and physical examination findings, laboratory testing does not have high sensitivity or specificity to detect urgent medical conditions. In cases of altered behavior, a bedside blood glucose reading should be obtained. It is desirable to coordinate protocols for screening with the desires and needs of one's psychiatric service. Nonetheless, patients with no physical complaint, normal vital signs, and normal neurologic findings probably do not require routine testing in the ED.<sup>10</sup>

Because psychiatric disorders such as schizophrenia and bipolar disorder typically present earlier in life, the practitioner should be wary of making a diagnosis of new-onset psychotic psychiatric illness in patients older than the age of 40 years. Acute changes in behavior, in mentation, or in level of consciousness are of medical origin until proven otherwise. Finally, it is notable that the term "medical clearance," while evolving in definition, cannot ensure that a patient is indeed "clear" of all medical conditions. A medical screening examination has inherent limitations. The emergency physician has the primary responsibility for the rapid

assessment and stabilization of all patients regardless of complaint, as well as the accurate triage of patients to an appropriate destination. This will be a daily task in any busy ED, and understanding the previously mentioned principles will help to make this process more efficient and more effective in catching “can’t miss” diagnoses.

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2. Behavioral problems have been estimated to be the primary complaint in approximately what percentage of ED visits?
- 0-2%
  - 4%
  - 10%
  - 20-25%
  - 40%
3. Which of the following does *not* characterize schizophrenia?
- deterioration in functioning
  - delusions
  - onset prior to age 40
  - onset after age 40
  - signs of disturbance for more than 6 months
4. Which of the following would be considered a positive or active-phase symptom of schizophrenia?
- blunting of emotion
  - lack of volition
  - disorganized speech or behavior
  - anhedonia
  - flattened affect
5. Which of the following is characteristic of delirium?
- onset over hours to days
  - onset over months or years
  - normal attention
  - alert consciousness
  - auditory hallucinations
6. Which among these are "can't miss" diagnoses in the ED prior to psychiatric referral?
- sepsis
  - meningitis
  - serotonin syndrome
  - neuroleptic malignant syndrome
  - all of the above
7. Which of the following pharmaceutical agents has *not* been implicated in causing psychosis?
- digitalis
  - isoniazid
  - acetaminophen
  - corticosteroids
  - anticholinergic medications
8. In discriminating organic from functional illness, which characterizes organic illness?
- remote impairment
  - auditory hallucinations
  - gradual onset with age < 40
  - visual hallucinations with emotional lability
  - normal physical exam
9. Which characterizes medical, as opposed to psychiatric, diagnosis?
- no prior psychiatric history
  - onset before age 12 or after age 40
  - depressed level of consciousness
  - disorientation
  - all of the above

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- "Medical clearance" for the emergency physician most closely entails:
  - detection of any medical disorder
  - detection of potentially life-threatening illnesses or organic processes that might lead to morbidity and mortality if missed prior to turning the patient over to a psychiatric service
  - routine performance of a wide variety of toxicologic testing on all patients
  - chemical, endocrinologic testing on all patients with a history of psychiatric disorder
  - routine cranial imaging on patients with behavioral disorders

## Emergency Medicine Reports

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Upon completion of this educational activity, participants should be able to:

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- apply state-of-the-art diagnostic and therapeutic techniques to patients with the particular medical problems discussed in the publication;
- discuss the differential diagnosis of the particular medical problems discussed in the publication;
- explain both the likely and rare complications that may be associated with the particular medical problems discussed in the publication.

10. Which statement is *least* accurate?
- There is no evidence-based literature supporting the notion that there is a specific blood alcohol concentration at which a patient lacks decision-making capacity.
  - It is inadvisable to admit a patient to a psychiatric service with unexplained abnormalities in vital signs.
  - There is a universal battery of tests that will pick up every structural or chemical abnormality.
  - There is no universal set of tests that can confidently exclude significant medical illness.
  - Psychiatric disorders in life, such as schizophrenia or bipolar disorder, typically present prior to age 40.

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# Emergency Medicine Reports

The Practical Journal for Emergency Physicians

## Medical Clearance of Psychiatric Patients

### Characteristics of Delirium, Dementia, and Psychiatric Illness

Characteristic	Delirium	Dementia	Psychiatric Illness
Onset	Acute: hours/days	Gradual: months/years	Acute
Attention	Impaired	Normal	Disorganized
Consciousness	Decreased	Alert	Alert
Hallucinations	Visual	Absent	Auditory
Speech	Rapid, incoherent, hesitating, slow	Inability to find words	Typically coherent
Orientation	Usually impaired	Usually impaired	Rarely impaired
Vital signs	Usually abnormal	Usually normal	Usually normal

### Drugs and Illnesses that Can Produce Psychiatric Symptoms

Symptom	Drugs	Medical Illness
Psychosis	Phencyclidine, LSD, corticosteroids, marijuana, MDMA, heroin, cocaine, ACE inhibitors, etc.	Alcohol withdrawal, meningitis, hepatic encephalopathy, prolonged ICU stay, etc.
Depression	Alcohol, benzodiazepines, contraceptives, antihypertensives, statins, anticonvulsants, barbiturates, etc.	Migraines, chronic pain, terminal disease process, thyroid disturbances, SLE, brain tumors, etc.
Altered mental status	Opiates, benzodiazepines, anti-epileptics, anti-depressants, etc.	Diabetic emergencies, sepsis, UTI, pneumonia, hypercapnia, head injuries, etc.
Agitation/anxiety	Anticholinergics, alcohol, amphetamines, "bath salts," Ritalin, SSRIs, MAOIs, etc.	Thyroid disturbances, gross electrolyte abnormalities, TIAs, angina, pulmonary embolism, arrhythmias, etc.

### MADFOCS Mnemonic for Discriminating Organic from Functional Psychosis

Characteristic	Organic	Functional
M: memory deficit	Recent impairment	Remote impairment
A: activity	Hyperactive, hypoactive, tremor, ataxia	Repetitive activity, rocking
D: distortions	Visual hallucinations	Auditory hallucinations
F: feelings	Emotional lability	Flat affect
O: orientation	Disoriented	Oriented
C: cognition	Lucid thoughts, perceives/attends/focuses occasionally	No lucid thoughts, unfiltered perceptions, unable to attend/focus
S: some other findings	Age > 40 Sudden onset Physical exam abnormal Vital signs abnormal Social immobility Aphasia Consciousness impaired Confabulation	Age < 40 Gradual onset Physical exam normal Vitals normal Social modesty Intelligible speech Awake/alert Ambivalence

### Clues Suggesting Medical Illness Rather than a Psychiatric Diagnosis

- No previous psychiatric history
- Extremely sudden onset
- Onset before the age of 12 or after the age of 40
- Disorientation
- Depressed level of consciousness
- Abnormal vital signs
- Focal neurologic deficits
- Presence of specific physical abnormalities
- Visual or tactile hallucinations
- Evidence of exposure to toxins or suspected ingestion

## Quick Confusion Scale

Question	Response	Weight	Score
What year is it?	0 or 1	×2	
What month is it?	0 or 1	×2	
Give memory phrase	John Brown, 42 Market Street, New York (no score given for repetition of phrase)		
What time is it?	0 or 1 (1 if within one hour, 0 if not)	×2	
Count backward from 20 to 1	0, 1, or 2 (2 if no errors, 1 if one error, 0 if two or more)	×1	
Say the months in reverse	0, 1, or 2 (2 if no errors, 1 if one error, 0 if two or more)	×1	
Repeat the phrase	0, 1, 2, 3, 4, 6 (score each portion remembered as 1 point)	×1	
For each response, count the number of errors and multiply by the weight to determine the total. The possible score ranges from 0 to 15. A score of less than 12 suggests a need for further evaluation, and a score of 7 indicates almost certain cognitive impairment.			

Supplement to *Emergency Medicine Reports*, October 24, 2011: "Medical Clearance of Psychiatric Patients." **Authors:** Jonathan Glauser, MD, Faculty, MetroHealth Medical Center Residency, Emergency Medicine, Associate Professor, Emergency Medicine, Case Western Reserve University, Cleveland, OH; and Mark Marshall, DO, MPH, Emergency Medicine Resident, MetroHealth Medical Center, Cleveland, OH.

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