Medical Clearance in the Emergency Department: *Is Testing Indicated?*

Feyi N. Emembolu, MD, and Leslie S. Zun, MD, MBA

**ABSTRACT**

The medical clearance process is variable, depending on practice setting and referral pattern for psychiatric patients. The medical clearance process must be completed properly so the patient can have the appropriate placement. There is much controversy in determining which laboratory tests are needed in order for a patient to be “medically cleared.” Medical clearance protocols have been found to be useful adjuncts for emergency physicians as well as psychiatrists when a patient with psychiatric symptoms presents to the emergency department. This article reviews the medical clearance process to establish a standard protocol that should be used as a guide in emergency medicine and psychiatry.

**INTRODUCTION**

When a patient with an acute psychiatric illness presents to the emergency department, the emergency physician is responsible to “medically clear” the patient. This process must take place prior to admission or transfer of that patient to a psychiatric facility. This process of medical clearance is variable and may change with different practitioners and referral institutions. The purpose of medical clearance is two-fold. First, the emergency physician must determine whether the patient has a medical condition that is causing or exacerbating the abnormal behavior or thought processes. Second, the emergency physician must identify incidental conditions that may require treatment. The use of a medical clearance protocol may facilitate this process.

The medical clearance process is the first step of evaluation and treatment of the psychiatric patient in the emergency department. As noted in Figure 1, some of these patients will need a medical work-up, an inpatient medical evaluation, or to be psychiatrically hospitalized. This article reviews the initial steps in the process to determine if a patient needs a medical evaluation and testing.

**FOCUS POINTS**

- Medical versus psychiatric causes of patients presenting with psychiatric symptoms must be evaluated before medical stability can be concluded.
- A thorough history and physical exam, including neurologic and mental status, must be completed when determining medical stability of the psychiatric patient.
- Standardization of testing via protocol application for patients with psychiatric symptoms may be beneficial to the emergency physician as well as the psychiatrist.

**DIFFERENTIAL DIAGNOSIS**

There are many medical conditions that may cause a patient to have abnormal behavior or thought process. Conditions such as delirium; dementia; hypoglycemia; drug and alcohol intoxication or withdrawal; infection; and central nervous system disease, such as normal pressure hydrocephalus and complex migraine, are part of a large differential for a medical etiology. Delirium and dementia are both states of altered mental status that have very different characteristics. Delirium is an acute, transient disorder with impairment of attention and cognition. Treatment is focused on treating the underlying medical condition. Dementia, in contrast, is an insidious disorder that is characterized by a loss of mental capacity evidenced by failing cognitive abilities and behavioral problems. Treatment of dementia involves medications as well as environmental or psychosocial interventions.

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To determine if psychiatric symptoms are due to a psychiatric or medical process, emergency physicians can use many clues in the history and physical exam. Dubin and colleagues identified four criteria that can be used to identify a medical cause of psychiatric symptoms: age of patient >40 years of age without prior psychiatric history, abnormal vital signs, recent memory loss, and clouded consciousness. Table 1, adapted from Williams and Shepherd, lists clues to a medical or a psychiatric etiology for behavioral symptoms.

It is also up to the emergency physician to identify and treat any incidental or co-existing medical problems of a patient with abnormal behavior. This is very important when it comes to the accepting psychiatric facility. A co-existing condition such as well-controlled diabetes that will require insulin administration and glucose checks is not a problem unless the receiving facility does not have those capabilities. It is important for the emergency physician to identify co-existing and/or incidental medical conditions that will need to be addressed in the near future. Ability to perform things such as laboratory draws, maintenance of urinary catheters, oxygen administration, and fracture care will need to be verified prior to transfer.

New diagnostic entity has been reported in the literature to explain patients with excited delirium states (American College of Emergency Physicians (ACEP)). The features of this disorder include significant pain tolerance, tachypnea, sweating, agitation, and tactile hypothermia. The disorder is associated with stimulant drug use, psychiatric illness, psychotrophic drug withdrawal, and metabolic disorders. The recommended treatment includes benzodiazepines for agitation, antipsychotics, and ketamine. Hyperthermia, acidosis, and rhabdomyolysis should be sought and treated aggressively.

**MEDICAL CLEARANCE**

Medical clearance, or more accurately stated, medical stability, is determined by taking a thorough history as well as performing a good physical and mental status exam and laboratory testing. The key reasons for performing a medical work up is to make sure the patient is ultimately sent to the right place. For example, a patient with psychiatric symptoms caused by a medical condition should not be sent to a psychiatric facility. It is up to the emergency physician to thoroughly evaluate each patient to ensure the proper disposition. The history of a patient with psychiatric symptoms should be taken like any other emergency department patient, paying special attention to the psychiatric symptoms. Obtaining the history can be difficult because although many patients are forthcoming with the details of their complaints, many are unable or unwilling to give any history. Independent of whether the patient is able to give a good history or not, the emergency physician must obtain additional history from family, friends, police, or emergency medical service. Not only must the emergency physician obtain history on the psychiatric symptoms, they must obtain history on any medical symptoms as well. For example, questions about neurologic, cardiovascular, and endocrine systems must be asked to ascertain if there could be an organic cause for the psychiatric symptoms. Questions about prescription drugs, nonprescription drugs, and alcohol abuse must be asked as intoxication or acute withdrawal may contribute to the psychiatric complaints. After obtaining the

**TABLE 1**

<table>
<thead>
<tr>
<th>Organic Clues</th>
<th>Functional Clues</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;12 or &gt;40 years of age</td>
<td>13–40 years of age</td>
</tr>
<tr>
<td>Sudden onset (hours to days)</td>
<td>Gradual onset (weeks to months)</td>
</tr>
<tr>
<td>Fluctuating course</td>
<td>Continuous course</td>
</tr>
<tr>
<td>Disorientation</td>
<td>Scattered thoughts</td>
</tr>
<tr>
<td>Decreased consciousness</td>
<td>Awake and alert</td>
</tr>
<tr>
<td>Visual hallucinations</td>
<td>Auditory hallucinations</td>
</tr>
<tr>
<td>No psychiatric history</td>
<td>Psychiatric history</td>
</tr>
<tr>
<td>Emotional lability</td>
<td>Flat affect</td>
</tr>
<tr>
<td>Abnormal vitals/physical exam</td>
<td>Normal physical examination findings</td>
</tr>
<tr>
<td>findings (eg, nystagmus, ataxia,</td>
<td></td>
</tr>
<tr>
<td>diaphoresis, etc)</td>
<td></td>
</tr>
<tr>
<td>History of substance abuse or</td>
<td></td>
</tr>
<tr>
<td>toxins</td>
<td></td>
</tr>
</tbody>
</table>

history from the patient, the emergency physician must question if they feel the patient is reliable. Can the answer patients give when asked about drugs and alcohol or suicidal thoughts and ideations be trusted? Testing for alcohol level and toxicological screening can assist the emergency physician in determining truth to the patient’s statements. Oshaker found that the reliability of patient self-reported drug use had a sensitivity of 92% and specificity of 91%. The reliability of self-reported alcohol use was 96% sensitive and 87% specific.

The physical exam for the psychiatric patient should be as thorough as any other emergency department patient. A complete physical includes vital signs, general appearance, and a head-to-toe exam including a neurologic exam. The neurologic exam must be complete, including cranial nerves, gait, strength, and so forth. It is a well-known fact that patients presenting with mainly psychiatric symptoms do not receive as thorough of an exam as other emergency department patients. In a study performed in a 600-bed community teaching hospital, the most medical evaluation process deficiency was failure to document a neurologic exam. In this study, 4% of the patients had missed diagnoses, including femur fracture, multiple sclerosis, and HIV encephalopathy. Most (83%) of these medical issues could have been discovered with a thorough history and/or physical exam.

After the physical exam, a mental status exam should be performed. To date, there is no consensus on which type of mental status exam should be performed on the patient with psychiatric symptoms. There are various short tests of mental status; most have not been used nor tested in the emergency setting (Table 2).

The traditional 30-item Mini-Mental State Exam is not always feasible in a busy emergency department, but some type of assessment of behavior and cognition is warranted. There are many different short tests of mental status but only one has been studied in emergency medicine. Kaufman and Zun studied the use of the Brief Mental Status Questionnaire in an emergency department of a large urban hospital. Emergency physicians gave 100 emergency department patients that needed an evaluation of their mental status the Brief Mental Status Questionnaire (BMSE). The study found that the scores obtained from the BMSE correlated with the emergency physicians’ assessment of a patients mental status and competence. This study also found the BMSE is a valid and useful tool for assessing mental status in the hospital setting.

**TESTING**

The last component of the medical clearance process, and likely the most debatable, is the testing. Some say with a good history and physical, the laboratory testing can be minimal. Others say laboratory testing is always required because the history and physical are not always thorough.

When comparing emergency physicians and psychiatrists, the ordering practice was very different. Emergency physicians generally ordered fewer required tests than psychiatrists which contributed to a lower cost. Weisburg stated that non-psychiatrists are too quick in saying a patient is medically clear because of their discomfort with psychiatric patients. On the other side, psychiatrists require more testing to assure the patients are medically stable prior to acceptance to hide their discomfort with the medical assessment.

The drive for ordering tests, whether medically indicated or not, come in part from the accepting psychiatric facility. Many of these facilities have a list of laboratory tests that must be complete even before consideration for transfer is given. In this scenario, the emergency physician is forced to order many laboratory tests, which de-emphasize the history, physical, and mental status exam. There is evidence for and against testing. In a study by Hall, 100 patients admitted to a psychiatric facility all had electrolytes, electrocardiogram, electroencephalogram, urine drug screen, and urinalysis performed. Of the 100 patients, 46% had unrecognized medical illnesses and 80% of those needed treatment. Patients with physical illnesses or alcohol and substance abuse were eliminated from the study. In a retrospective study performed by Tintinalli and colleagues, 298 charts of emergency voluntary psychiatric admissions were reviewed. Twelve (4%) of those patients had an acute medical condition that required intervention. In each of these cases, the history and physical was deficient and did not identify the acute medical condition. Perhaps in these cases further testing with labs could have identified the medical condition the history and physical did not. In 1994, Henneman and colleagues found that 63% of patients with psychiatric symptoms were found on testing to have a medical etiology for their symptoms. There is some evidence that shows a thorough history and physical are very sensitive for detecting medical illness. In patients with psychiatric complaints, the majority of medical illness can be identified by a history and physical exam and that universal laboratory screening

<table>
<thead>
<tr>
<th>Item</th>
<th>Errors</th>
<th>Weight</th>
<th>Score (Weight = Score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What Year is it now?</td>
<td>0 or 1</td>
<td>4</td>
<td>?</td>
</tr>
<tr>
<td>2. What month is it now?</td>
<td>0 or 1</td>
<td>3</td>
<td>?</td>
</tr>
<tr>
<td>3. About what time is it?</td>
<td>0 or 1</td>
<td>3</td>
<td>?</td>
</tr>
<tr>
<td>4. Count backwards from 20 to 1</td>
<td>0 or 1 or 2</td>
<td>2</td>
<td>?</td>
</tr>
<tr>
<td>5. Say the months in reverse</td>
<td>0 or 1 or 2</td>
<td>2</td>
<td>?</td>
</tr>
<tr>
<td>6. Repeat memory phrase*</td>
<td>0,1,2,3,4, or 5 (each underline is worth 1 error)</td>
<td>2</td>
<td>?</td>
</tr>
</tbody>
</table>

*Present memory phase after item number 2: John Brown, 42 Market Street New York

is low yield.¹³ Olshaker and colleagues discovered a medical etiology in <.05% of patients with psychiatric complaints. Another study,¹⁴ concluded that patients with primary psychiatric complaints with other negative findings do not need ancillary testing in the emergency department. This conclusion was drawn after 212 patients were evaluated with comprehensive testing, none of which was positive.

Should testing be clinically driven or should it be routine? Which tests should be performed? Broderick and colleagues,³ collected surveys from 298 emergency physicians that showed many clinicians believed that certain tests were unnecessary as part of the medical screening exam. Surveys collected from psychiatrists and emergency physicians showed both groups ordered similar routine tests, which included a complete blood count, alcohol level, and urine drug screen. The emergency physicians tended to order one to four routine tests whereas the psychiatrists ordered five to eight. The emergency physicians had a lower estimated cost compared to the psychiatrists, $101–$200 versus $201–$300, respectively.¹⁵ Although both emergency physicians and psychiatrists order urine drug screens and alcohol levels as the most frequent required tests, the ACEP guidelines do not always support this behavior. If a patient is awake, alert, and cooperative, routine drug testing does not change emergency department management. Additionally, a patient’s cognitive ability should be assessed rather than a blood alcohol level as blood alcohol concentrations do not correlate to the degree of intoxication. This only applies if the patient is stable and can provide the clinician with a history and cooperate with a physical exam.

Should testing be minimized and clinically driven in patients with new psychiatric symptoms? In 1994, Henneman and colleagues followed 100 patients who presented with new psychiatric symptoms. All patients received an extensive laboratory evaluation. A computerized tomography (CT) scan was performed on all patients with the exception of 18 patients that had positive drug screens and resolution of their symptoms. A lumbar puncture was performed on febrile patients. Of the 100 patients, 63 were found to have a medical disease, 30 of which were from a toxicologic cause. They concluded that patients with a new psychiatric complaint require an extensive and comprehensive medical work-up including a CT head and/or a lumbar puncture. A previous psychiatric history must be taken into account on the history and physical. In a retrospective, observational study by Olshaker and colleagues, the history and physical exam had a sensitivity of 94% and 51%, respectively, in identifying medical illness in psychiatric patients. Laboratory testing had a sensitivity of only 20%. In comparison, the American Psychiatric Association (APA), encourages psychiatrists to request or initiate further general medical testing that emerge from the psychiatric evaluation.¹⁶ The APA recommends testing for the acute presentation but also testing that may guide the therapies or medications offered to the patient. The APA acknowledges that emergency physicians and psychiatrists have different opinions on the utility of laboratory screening. The laboratory testing that is important for a psychiatrist to safely treat a patient may not change the emergency department management and, thus, may not be looked upon as necessary to the emergency physician. A medical clearance process must be established that is quick enough for the emergency physician but thorough enough for the psychiatrist to safely treat a patient.

Many authors have stated that the term “medically clear” is inaccurate, misleading, and ambiguous.⁴ Tintinalli and colleagues recommend that the term not be used rather a detailed description of patient’s clinical condition would be preferred. Some clinicians use the term “medically stable” instead of “medically clear” to avoid the confusion.

**PROTOCOL**

A protocol for the rapid and thorough evaluation of the patient with psychiatric symptoms would be beneficial for many reasons. Using a protocol as a guide and communication tool, the care for a patient with psychiatric complaints will be standardized. The emergency physician will use the protocol as a reference when evaluating a patient. One may say that the use of a protocol will take away the autonomy of the emergency physician. As stated earlier, the medical clearance process includes a history and physical, mental status exam, and ancillary testing. The emergency physician must use data gathered from the history, physical, and mental status exam and apply it to the protocol. This will allow the emergency physician to still have control over the patient but at the same time provide standardized care. Utilizing a protocol is advantageous for the receiving facility in addition to the emergency department. If psychiatrists know the patient they are receiving from the emergency room will always have a certain workup given certain complaints, they will feel more comfortable accepting the patient. A protocol that is accepted by emergency physicians and psychiatrists alike has the potential to decrease the time spent in the emergency room for the patient by only performing a focused work-up. Standardized care by using a protocol is advantageous from a patient perspective as well. Patients will get the evaluation and testing they need and hopefully an expeditious disposition.

The specific protocol will need to incorporate the history, physical, mental status, ancillary tests, and the receiving facility capabilities. Each protocol used can vary slightly from state to state but the key elements must be the same. The following protocol was implemented in Maine Health Hospitals in December 2007.¹⁷ For patients with a known psychiatric history, laboratory evaluation was optional. In the Illinois protocol, laboratory evaluation was
FIGURE 2
MEDICAL CLEARANCE CHECKLIST

<table>
<thead>
<tr>
<th>Patient’s name</th>
<th>Race</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of birth</td>
<td>Gender</td>
<td>Institution</td>
</tr>
</tbody>
</table>

1. Does the patient have a new psychiatric condition?        Yes No
2. Any history of active medical illness needing evaluation? Yes No
3. Any abnormal vital signs prior to transfer?
   Temperature >101°F
   Pulse outside of 50 to 120 beats/min
   Blood pressure <90 systolic or >200; >120 diastolic
   Respiratory rate >24 breaths/min (For a pediatric patient, vital signs indices outside the normal range for his/her age and sex)
4. Any abnormal physical exam (unclothed)?
   a. Absence of significant part of body, eg, limb
   b. Acute and chronic trauma (including signs of victimization/abuse)
   c. Breath sounds
   d. Cardiac dysrhythmia, murmurs
   e. Skin and vascular signs: diaphoresis, pallor, cyanosis, edema
   f. Abdominal distention, bowel sounds
   g. Neurological with particular focus on:
      i. ataxia
      ii. pupil symmetry, size
      iii. nystagmus
      iv. paralysis
      v. meningeal signs
      vi. reflexes
5. Any abnormal mental status indicating medical illness such as lethargic, stuporous, comatose, spontaneously fluctuating mental status?        Yes No
   If no to all of the above questions, no further evaluation is necessary. Go to question #9
   If yes to any of the above questions go to question #6; tests may be indicated.
6. Were any labs done?        Yes No
7. What lab tests were performed?_______________________________
   What were the results? ________________________________
   Possibility of pregnancy?_______________________________
   What were the results? ________________________________
8. Were x-rays performed?
   What kind of x-rays performed?_______________________________
   What were the results?_______________________________
9. Was there any medical treatment needed by the patient prior to medical clearance?
   What treatment?______________________________________________
10. Has the patient been medically cleared in the ED?        
11. Any acute medical condition that was adequately treated in the emergency department that allows transfer to an SOF?
   What treatment?______________________________________________
12. Current medications and last administered?_______________________________
13. Diagnoses:     Psychiatric________________________________
   Medical_________________________________
   Substance abuse_______________________________________
14. Medical follow-up or treatment required on psych floor or at SOF: __________
15. I have had adequate time to evaluate the patient and the patient’s medical condition is sufficiently stable that transfer to ____SOF or ____ psych floor does not pose a significant risk of deterioration. (check one)
   ________________________
   MD/DO

Physician Signature

ED=emergency department; SOF=state-operated facility; MD=medical doctor; DO=doctor of osteopathic medicine.

required of all patients. In December 2008, New Jersey enacted a statement that states standardized admission protocols shall include routine laboratory and diagnostic testing based on the standard of care and clinical presentation.16 Under this statement, the psychiatrist at the receiving facility cannot request additional testing based on abnormal values. The emergency physician may expand on their work-up as needed. The generic diagram provided in Figure 1 can be used in any emergency department. Many of the protocols that have been established so far are some form or variation of this diagram.

Another protocol was developed in Illinois in 1995 by a team of Illinois psychiatrists and emergency physicians which coordinated transfer to state-operated facilities (Figure 2).7 The accuracy of this medical clearance protocol was evaluated by Zun and colleagues.13 Four Chicago emergency departments that transfer a large number of patients to state-operated psychiatric facilities were chosen for the study. The checklist was prospectively applied to 330 patients presenting with psychiatric symptoms for 6 months. The number of patients that were sent back to the emergency department before and after use of the protocol was audited. There was no significant difference in patients sent back to the emergency department before and after the use of the protocol. Application of the medical clearance protocol did not result in more emergency department bounce backs but it did result in a reduced cost of evaluation. The throughput time in the emergency department was unchanged.19

CONCLUSION

Psychiatric patients presenting the emergency department deserve a thorough evaluation just as any other patient that presents to the emergency department. A precise history, physical, and mental status exam should be performed that should help rule in or rule out any other causes of the psychiatric symptoms. The history and physical should guide the ancillary tests performed. Special attention should be given to the patient presenting with new psychiatric symptoms, as these patients will need a more extensive medical work up. The medical clearance protocol is a useful tool for the emergency physician, psychiatrist and patient. The protocols will vary slightly depending location, but the basics are the same. The emergency physician should use the protocol as a guide and apply specifics of the protocol when indicated. The implementation of a standard protocol that can be used on all patients with psychiatric complaints is desired but can only be accomplished when leaders in psychiatry and emergency medicine come together. PP

REFERENCES