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## In This Issue



This issue of the *Residents' Journal* features articles on a variety of topics. Victoria Pham, D.O., discusses various interventions that target frequent users of emergency departments. Next, Fernando Espi Forcen, M.D., and Arlene Shapov, M.D., provide information pertaining to the history of the diagnosis of posttraumatic stress disorder. Then, Brandon J. Cornejo, M.D., Ph.D., presents a case report and discussion on traumatic brain injury in athletes. Last, Kairav Shah, M.D., M.P.H., informs us how the use of information technology in psychiatry can assist us in providing the best level of care. We hope that these articles will be useful to you in your training, clinical practice, and research.

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# Is Text Messaging an Acceptable Treatment Modality for Patients With Psychiatric Disorders?

Monifa S. Seawell, M.D.  
Associate Editor

Once scoffed at as something best reserved for generation Y, text messaging has, for some time, been considered an acceptable, and perhaps even a preferred, form of communication. It is certainly not hard to understand why. Text messages quickly transmit information with minimal disruption, thereby allowing one to communicate while attending to other tasks. For many, texting also offers a comfortable and anonymous platform for information exchange. Thoughts or feelings that one might hesitate to verbalize may easily be expressed via text.

While fast, convenient, and discrete, text messaging has limitations. Rampant abbreviations, excessive acronyms, and haphazard use of punctuation leave texted information open to interpretation, or rather, misinterpretation. Users of text messaging may find it challenging to both convey and decipher tone and emotion.

However, given its overwhelming popularity and many positive attributes, it is not surprising that the general medical community has utilized text messaging to bridge many of the existing gaps in patient care and to improve patient compliance. Eighty-two percent of diabetic

juveniles who received text messages related to diabetic care, including dietary and medication reminders, were found to have an enhanced self-perception of their ability to successfully manage their illness (1). Text messaging has also been used to augment the care delivered to patients with psychiatric disorders. Patients who use text messaging to track their daily mood may have markedly improved compliance with mood charting, compared with patients using traditional paper mood charts (2). In one study, some young adults with hazardous drinking patterns who received texted interventions had fewer days of heavy drinking (3).

The Residents' Journal is seeking manuscripts that explore the utilization of text messaging, as well as e-mailing, in the care of patients with psychiatric disorders. Points to consider are as follows:

- In medically underserved regions, is text messaging an efficacious substitute for face-to-face clinical interactions?
- What ethical and legal issues may trainees need to navigate if communicating with patients electronically?

- In what patient populations would text messaging be an acceptable or unacceptable treatment component?

Texting has not only become a preferred form of casual communication but has also influenced the way in which patients are managed. It is important for trainees to be aware of both the benefits and potential drawbacks related to this treatment modality.

## References

1. Franklin VL, Waller A, Pagliari C, Greene SA: A randomized controlled trial of Sweet Talk, a text-messaging system to support young people with diabetes. *Diabet Med* 2006, 23:1332-1338
2. Foreman AC, Hall C, Bone K, Cheng J, Kaplin A. Just text me: using SMS technology for collaborative patient mood charting. *J Participat Med* 2011; 3:e45
3. Suffoletto B, Callaway C, Kristan J, Kraemer K, Clark DB: Text-message-based drinking assessments and brief interventions for young adults discharged from the emergency department. *Alcohol Clin Exp Res* (Epub ahead of print, December 14, 2011)



AMERICAN PSYCHIATRIC ASSOCIATION  
165TH ANNUAL MEETING

## RESIDENTS' JOURNAL FOCUS GROUP MEETING

Date: **Tuesday, May 8, 2012**

Time: **3:30 PM to 5:00 PM**

Location: **RM 109A, Level 1 of the  
Pennsylvania Convention Center**

# Interventions Targeting Frequent Users of Emergency Departments

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People come to psychiatric emergency departments seeking urgent care. However, a subgroup of psychiatric patients frequently visits these facilities in order to be connected with resources (1). Such individuals are desperate to turn their lives around and may not need inpatient hospitalization, even with an initial chief complaint of severe mood symptoms or suicidal ideation. Those who frequently visit these facilities represent a relatively small group of patients accounting for a disproportionately high number of visits to hospital emergency departments (2). A clinician may recognize a patient's needs to be connected with services, and a referral to overnight psychiatric observation or outpatient services may be warranted. Appropriate identification of the underlying needs of the patient not only facilitates an oriented recovery but also represents responsible use of health care dollars.

Overnight psychiatric observation centers are facilities or areas that observe patients with psychiatric disorders overnight, from 1 to 3 days. They may function independently as crisis centers or may be areas inside of psychiatric emergency departments. Observation centers often provide case management, a multidisciplinary team composed of nurses, social workers, and physicians to help coordinate patient care from the emergency department to outpatient status. While patients are observed at these centers, a disposition plan may be made for inpatient hospitalization or outpatient care, depending on the patient's needs after further assessment.

One study conducted at a Veteran Affairs Medical Center reported that patients with substance use disorders, psychiatric comorbidities, and a history of frequent emergency room visits had a reduction in psychiatric inpatient days after receiving

proper intervention at an observation center (3). In the 6 months before admission to the observation program, the mean number of inpatient psychiatric days was 9.8, compared with 2.7 days in the 6-month period after discharge from the program. This success was achieved by referring observed patients to residential treatment programs, homeless shelters, and community resources. No increase in suicidal gestures or attempts was observed among these patients (3). Another study reported a reduction in inpatient admissions by 16% after patients remained at an observation center (4). Additionally, in two cost-analysis studies (5, 6), the use of case management in emergency departments and psychiatric observation centers was more cost effective because it resulted in improvement in clinical and social outcomes without additional costs overall. According to these studies, the reduction in hospital costs was larger than the cost of the case management team. Okin et al. (6) reported a median reduction of \$2,406 per patient after intervention. Alcohol and drug use 12 months after intervention at such facilities were also reduced (6). By using psychiatric observation centers with case management services, good patient care will be achieved while health care cost is reduced.

Cost is one of few factors that drive health care delivery, and inpatient psychiatric care is the costliest of all services (7). Increasing availability and access to overnight psychiatric observation centers with case management may represent an effective use of limited health resources. These observation centers not only provide a safe environment for recovery while helping to control costs, but they also empower motivated patients with resources to assertively jump-start their lives.

*Dr. Pham is a first-year child and adolescent psychiatry fellow in the Department of Psychiatry, New York Presbyterian Hospital, the University Hospital of Columbia and Cornell, New York.*

## References

1. Byrne M, Murphy AW, Plunkett PK: Frequent attenders to an emergency department: a study of primary health care use, medical profile, and psychosocial characteristics. *Ann Emerg Med* 2003; 4:309–318
2. Mandelberg JH, Kuhn RE, Kohn MA: Epidemiologic analysis of an urban, public emergency department's frequent users. *Acad Emerg Med* 2000; 7:637–646
3. Francis E, Marchand W, Hart M, Carter A, Schinka J, Feldman A, Ordorica P: Utilization and outcome in an overnight psychiatric observation program at a Veteran Affairs Medical Center. *Psychiatric Serv* 2000; 51:92–95
4. Gillig PM, Hillard JR, Bell J: The psychiatric emergency service holding area: effect on utilization of inpatient resources. *Am J Psychiatry* 1989; 146:369–372
5. Shumway M, Boccillari A, O'Brien K: Cost-effectiveness of clinical case management for ED frequent users: results of a randomized trial. *Am J Emerg Med* 2008; 26:155–164
6. Okin RL, Boccillari A, Azocar F, Shumway M, O'Brien K, Gelb A, Kohn M, Harding P, Wachsmuth C: The effects of clinical case management on hospital service use among ED frequent users. *Am J Emerg Med* 2000; 18:603–608
7. Addington DE, Jones B, Bloom D, Chouinard G, Remington G, Albright P: Reduction of hospital days in chronic schizophrenic patients treated with risperidone: a retrospective study. *Clin Ther* 1993; 15:917–926

# PTSD: A Recent Name for an Ancient Syndrome

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Known as “irritable heart” during the Civil War, “shell shock” during World War I, and “combat fatigue” during World War II, posttraumatic stress disorder (PTSD) has been a relatively new term for an old concept. Despite its association with contemporary American warfare, the symptoms of PTSD have been described since ancient times in diverse circumstances.

## Combat-Related Mental Trauma in Ancient Literature

In ancient Mesopotamian literature (about 3000 BC), the Epic of Gilgamesh depicts the story of the title character who, after witnessing the death of his friend Enkidu, encounters profound despair and continuously re-experiences intrusive recollections of the death of his friend. He aimlessly roams and ponders over Enkidu’s misfortune, feeling helpless and fearing his own death (1).

Sophocles’ play, *Ajax*, is nowadays used to help Iraq veterans in their recovery from PTSD. This ancient story is presented to contemporary veterans of war in an effort to minimize the stigma of PTSD and to help them realize that this syndrome was also seen in ancient times (2) The plot accounts the story of Ajax, a war hero of the siege of Troy, who fails to reintegrate into society after returning from war. Ajax felt disgraced by the Greek generals’ decision to reward his opponent, Odysseus, instead of himself. Later, Ajax is tricked by the Goddess Athena. She makes him believe that sheep and cattle in the area are actually the Greek generals. In his rage, Ajax slaughters some of the animals and takes others home and tortures them. Covered in blood, after realizing what he had done, he decides to kill himself rather than live with the shame of having killed what he thought were the Greek generals (3).

In ancient Greek literature, Herodotus relates the story of an Athenian soldier

who became permanently blind after fighting in the battle of Marathon (4). This soldier may have suffered a conversational syndrome.

After the explosion of the volcano Vesuvius in Pompeii (79 A.D.), Younger Pliny wrote a letter explaining the death of his uncle, Older Pliny. He wrote: “I don’t know whether I should call this courage or folly on my part but I called for a volume of Livy and went on reading as if I had nothing else to do (1)” According to Birmes et al., this statement represents a clear sense of dissociation and detachment on the part of the writer (1). These symptoms are consistent with current diagnostic criteria for acute stress disorder.

## The Middle Ages

Despite the lack of literature describing PTSD symptoms in the Middle Ages, we suspect that the prevalence of this syndrome was rather high. Possible causative events could have been the multiple wars, such as the Crusades, natural epidemics of infectious diseases, such as the bubonic plagues, tortures inflicted upon religious minority groups by the Inquisition, and high infant mortality (5).

## The Enlightenment

After surviving the London fire in 1643, Samuel Pepys, fellow of the Royal Society, expressed endorsing extreme anger and irritability in his famous diary. These symptoms have been related to a stress reaction associated with experiencing the traumatic event (1).

### Victorian Era

“Railway spine” was a term used in the middle 19th-century to describe somatic sequelae in passengers who had survived railroad accidents. After 1890, some physicians began to also associate railway spine with adverse psychological symptoms (6). This is an important step on the road to the contemporary concept of

PTSD. Now, the medical community has linked trauma to physical as well as psychological distress and symptoms.

## The American Civil War

In 1871, J.M. Da Costa published *On Irritable Heart*, in which he described postwar physical and psychosomatic symptoms in as many as 300 Civil War veterans. Patients suffered from palpitations, cardiac pain, shortness of breath, diarrhea, and nervous disease. In these patients, he observed abnormal heart sounds and murmurs, which could lead to cardiac hypertrophy (7). Many patients with irritable heart were institutionalized in state hospitals, such as the Lunatic Asylum for the Insane in Athens, Ohio (8). The symptoms of irritable heart, as described by DaCosta, resemble those of takotsubo cardiomyopathy or broken heart syndrome. (9)

## World War I

After World War I and trench warfare, a “new” epidemic of poststress combat, coined shell shock, was described. Initially, this was believed to be caused by concussive cerebral micro hemorrhages, but when the symptoms were described in patients with no exposure to physical trauma, the psychological stress of battle was proposed as a possible etiology of this condition. The term shell shock was widely accepted by the general population. However, in the medical and military literature, the terms neurasthenia (usually given to higher ranks), male hysteria (usually given to lower ranks), and nervous disease were mostly used (10).

After an epidemic of shell shock in 1914, it was thought that some soldiers were intentionally associating their symptoms with war trauma as a means to claim a pension. This behavior was known as profit neurosis (10). To prevent an increasing number of individuals from

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soliciting benefits, the military authorities intended to avoid any psychiatric diagnosis caused by war trauma. For example, after 1916 in Germany, psychiatric professionals constantly denied trauma as a causal element of mental disorder. After 1939, soldiers were said to suffer from exhaustion or battle fatigue. These terms were chosen to imply that their condition had a natural recovery (10, 11, 12).

War neurosis was also a term used for patients who suffered from poststress combat symptoms. An incidence rate of 0.43% was reported in Madrid during the Spanish Civil War (13).

## World War II and the Holocaust

In 1945, at the end of World War II, Robert McElroy published *Psychoneu-*

*rosis, Combat Anxiety Type.* (14) In this article, McElroy explained that psychological stress reactions to war were the most common cause for fighting men to receive disability and to be discharged from the Army. Among these psychoneuroses, soldiers were diagnosed with neurasthenia, conversion hysteria, mixed types, hypochondriasis, or anxiety states. According to McElroy, patients with combat anxiety were characterized as having significant anxiety, irritability, and tension. They were unable to relax and enjoy the activities in the ward. Their symptoms would significantly worsen after any stimulus (e.g., a picture of gunfire) that would remind them of battle. They were sensitive to all noises and smoked more cigarettes. They were constantly alert and would interrupt a conversation after hearing minimum noises. These patients often dreamed that they were still in combat and recalled

their war experience by stating that “everyone was killed.” They usually referred to having been shell shocked (14).

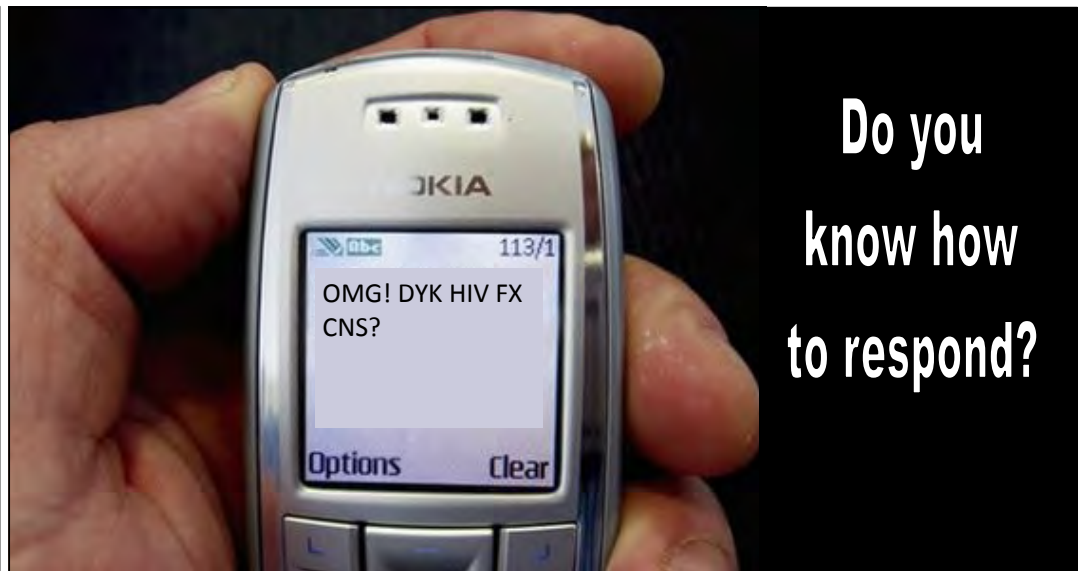
During the post-World War II era, Holocaust survivors commonly felt significant guilt that they had survived while others had not. After 1960, several therapists described this as survivor syndrome, concentration camp syndrome, or KZ syndrome. Feelings of guilt, first described as a posttraumatic symptom in Holocaust survivors, now forms part of the core symptoms of PTSD. Studies have shown that these survivors suffered from PTSD symptoms 40 years after their release from concentration camps (15).

## DSM

With the publication of DSM-I in 1952, posttraumatic stress was referred to as gross stress reaction and was described

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as a behavioral response to exceptional stressors. In 1968, during the Vietnam War, the concept transient cultural disturbance was introduced in DSM-II. This included psychotic and neurotic responses to stress. In 1980, post-Vietnam syndrome or delayed stress syndrome was included in DSM-II Robert Lifton, a Vietnam veteran, advocated for the definition of what is known today as PTSD, with the help of Nancy Andreasen, M.D. (11).

After 1990, several modifications to the term PTSD were suggested. Gulf War syndrome, a milder form of PTSD, was proposed as a response to the experience of British soldiers during the Gulf War. These soldiers stated that they did not identify with the severity of the symptoms of PTSD. They attributed the nature of their milder symptoms to their pre-combat knowledge of their duties and possible combat settings (16). Complex PTSD refers to patients who suffer repetitive and prolonged sexual or physical trauma. The course and prognosis in this clinical syndrome is different. Since results from DSM-IV field trials indicated that 92% of individuals with complex PTSD also met criteria for PTSD, complex PTSD was not added as a separate diagnosis (17). However, proposed changes to the definition of PTSD in DSM-5 include criteria for complex PTSD. New criteria for diagnostic cluster D disorders mention negative alterations in cognition and mood, which are characteristics of complex PTSD. Recently, the term Iraq syndrome, has been used to identify symptoms in soldiers returning from a war that is not as legitimated by society. As a result, these soldiers have to struggle with the additional burden of having less support than expected (18).

As evidenced throughout history, the psychological distress resultant from

traumatic experience has been part of humanity since ancient times. Despite its early descriptions, PTSD and its associated syndromes continue to challenge contemporary medicine and psychiatry. Psychiatry has evolved to entail a biological approach. Recent studies have provided insight into the potential neurobiological basis of PTSD. This condition is often characterized by aberrant amygdala activation and functional abnormalities in corticolimbic circuitry (19). Despite these advances, it is imperative to expand what is known of this ancient condition and implement further research on this topic.

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## References

1. Birmes P, Hatton L, Brunet A, Schmitt L: Early historical literature for post-traumatic symptomatology. *Stress Health* 2003; 19:17–26
2. Patrick Healy: *The Anguish of War for Today's Soldiers*, Explored by Sophocles. <http://www.nytimes.com/2009/11/12/theater/12greeks.html>
3. Sophocles: *The Ajax of Sophocles*. Edited with introduction and notes by Jebb R. Cambridge, United Kingdom, Cambridge University Press, 1893
4. Lefkovits MR: A Herodotus for our time. *Hist Theory* 2009; 48:248–256
5. Cobb L, Barbara F: *The Persistence of War*. Carbondale, Colo., Aetheling Consultants, 2005
6. Harrington R: On the tracks of trauma: railway spine reconsidered. *Soc Hist Med* 2003; 16:209–223
7. Da Costa JM: On Irritable Heart: a clinical study of a form of functional cardiac disorder and its consequences. *Am J Med Sci* 1871; 71:17–52
8. Katherine K, Ziff-David O, Thomas

PM: *Asylum and community: the Athens Lunatic Asylum in nineteenth-century Ohio*. *Hist Psychiatry* 2008; 19:409–432

9. De Backer O, Debonnaire P, Muyldermans L, Missault L: Tako-Tsubo cardiomyopathy with left ventricular outflow tract (LVOT) obstruction: case report and review of the literature. *Acta Clinica Belgica* 2011; 66:298–301
10. Jones E, Wessely S: Psychological trauma: a historical perspective. *Hist Epidemiol Treat Psychiatry* 2006; 5:7
11. Jones E, Wessely S: A paradigm shift in the conceptualization of psychological trauma in the 20th century. *J Anx Disord* 2007; 21:164–175
12. Kloocke R, Heinz-Peter S, Priebe S: Psychological injury in the two World Wars: changing concepts and terms in German psychiatry. *Hist Psychiatry* 2005; 16:43–60
13. Villasante O: War Neurosis during the Spanish Civil War (1936–1939). *Hist Psychiatry* 2010; 21:424–435
14. McElroy RB: Psychoneurosis, combat-anxiety type. *Am J Psychiatry* 1945; 101:517–520
15. Sperling W, Kreil SK, Biermann T: Posttraumatic stress disorder and dementia in Holocaust survivors. *J Nerv Ment Dis* 2011; 199:196–198
16. Kilshaw S: Gulf War syndrome: a reaction to psychiatry's invasion of the military? *Cult Med Psychiatry* 2008; 32:219–237
17. Roth S, Newman E, Pelcovits D, van der Kolk B, Mandel FS: Complex PTSD in victims exposed to sexual and physical abuse: results from the DSM-IV Field Trial for Posttraumatic Stress Disorder. *J Trauma Stress* 1997; 10:539–555
18. Mueller J: The Iraq syndrome. *Foreign Affairs* 2005; 84:44–54
19. Rabinak CA, Angstadt M, Welsh RC, Kennedy AE, Lyubkin M, Martis B, Phan KL: Altered amygdala resting-state functional connectivity in post-traumatic stress disorder. *Front Psychiatry* (Epub ahead of print November 14, 2011)

# Management of Depressive Sequelae Following Mild Traumatic Brain Injury in Athletes

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## Case

“Billy” was a 17-year-old young man who presented for an outpatient psychiatric evaluation. He complained of low mood, irritability, anger, poor grades and concentration, and difficulty with word finding. He reported feeling poorly for the last 3 months. His family mentioned that he had experienced loss of consciousness during a football game about 4 months before. At that time, he presented to a local emergency department following a concussive tackle. His acute loss of consciousness lasted approximately 1–2 minutes. His family reported that he remained confused, with acute memory loss, for 1 day. The patient was able to recall events leading up to the injury but not the injury itself nor, specifically, events surrounding and following loss of consciousness. He was dismayed that he could not remember being taken to the emergency department, where he was evaluated medically (undergoing head computerized tomography), monitored, and sent home. Aside from the loss of consciousness and some bruising, no other physical injuries were noted. The patient was instructed not to return to the sport for at least 4 weeks.

In the interval between the loss of consciousness and presentation to a psychiatrist, Billy’s grades plummeted. Before the loss of consciousness, he had little academic difficulty and was widely liked by others. However, following the injury, he became increasingly isolative, but attributed his low mood to “being a teenager.” He complained of weekly headaches and insomnia. He reported experiencing isolated episodes of road rage, which he considered out of character. Despite these challenges, he did not report symptoms of other psychiatric illnesses and had no psychiatric history. He came from an intact family, but his mother had

a history of depression, and his father had a history of combat posttraumatic stress disorder. He denied use of alcohol or illicit substances.

The patient in the present case report likely suffered from postconcussive syndrome, with symptoms of depression. While the majority of individuals who experience loss of consciousness do not also experience postconcussive syndrome resulting in psychiatric illness, a significant proportion of those with traumatic brain injury (TBI) have axis I disorders (1). The rate of affective dysregulation and substance dependency post-TBI may be as high as 36% (1). Since many children and teenagers engage in sports in which the risk of a TBI is present, it is important to consider screening this population for loss of consciousness, which may help clarify the etiology of any disordered mood or thoughts. The objective of this case discussion is to define mild TBI, touch on the common psychiatric sequelae seen in TBI, and address how to best manage post-TBI depression.

## Definition and Classification of TBI

A TBI can be defined as a brain injury that is the direct result of external mechanical force. Blast waves, impacts, and rapid acceleration, deceleration, or penetration by a projectile all may result in TBI (2). As noted in the present case, a defining characteristic is that global brain functioning is temporarily or permanently impaired (2, 3). TBI is usually classified based on severity, mechanism of the injury, and anatomical location of the injury (1, 4). In the present discussion, the focus will be on closed-head injury rather than penetrating head injury.

TBI can be classified as mild, moderate, or severe (1, 4). The Glasgow Coma

Scale measures a person’s consciousness on a scale of 3–15, based on verbal, motor, and eye-opening reactions to stimuli (1, 4, 5). Thirty minutes following TBI, a score of 13 or above indicates mild TBI. A score less than 12 is an indication of either moderate or severe TBI. It is likely that the patient in the present case would be classified as having mild TBI based on the limited description of symptoms that the family was able to provide. Another complicating factor that affects classification is the underlying pathophysiology of the injury. The underlying pathophysiology may be driven by changes in cerebral blood flow, ionic disequilibrium, and metabolic changes (6).

## Mild TBI in the Context of Sports

Between the years 2001–2009, the number of emergency room visits for sports-related TBIs in individuals <19 years old increased by 62% (7). Not only does the type of sport play a significant role with regard to the risk of TBI, but so does the age of the athlete. Professional American football carries a high incidence rate of TBI (8). Recent evidence from the Centers for Disease Control and Prevention suggests that the most common activities associated with childhood TBI are football, soccer, playground activities, and basketball (7). Regardless of age, injuries from bicycling and football accounted for the highest number of emergency room visits for head injuries in the United States in 2009 (9). Among organized competitive sports, football has the highest frequency and incidence rate for both pediatric and adult head injuries (9). Each season, TBI occurs in 5%–20% of all football players (10). In 2010, there were five football-related fatalities secondary to direct head trauma.

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Two of these fatalities were in pediatric populations, one was of an individual of unspecified age, and two were in the collegiate population (10).

## Postconcussive Syndrome and Common Psychiatric Sequelae

Approximately 40% of individuals suffering from mild TBI will experience some psychiatric illness (11–13). The prevalence of depressive symptoms following TBI appears to be approximately 30% (13). Pre-TBI psychiatric diagnosis may be associated with an increase in psychiatric symptoms post-TBI (13). One study that examined individuals 5 years away from an initial mild TBI observed symptoms of persistent depression and anxiety (11). Additionally, symptoms of aggression and disinhibition may be seen in up to 28% of individuals suffering from TBI (12). There is an increased prevalence of verbal aggression following TBI, and this aggression is associated with social

difficulty, symptoms of depression, and difficulties with daily activities (14). In a study of children and adolescents with brain injury, about 13% of individuals remained symptomatic 3 months after their injury (15). In addition to depression in postconcussive syndrome, other psychiatric disorders, including mania, anxiety, and psychosis, have been observed, although at lower rates (11–13, 15). Greater risk for the development of psychiatric illness exists after TBI in cases in which a pre-existing mood, thought, or substance abuse disorder is present (13, 14). We must also carefully consider the psychological effect of TBI on a patient's self-concept. Loss of cognitive ability following TBI can have a long-lasting impact on self-worth and subsequent mood and affect.

## Managing Depression Following mild TBI

Depression is a significant psychiatric complication of TBI and is the major complication in this clinical scenario. Treatment of depression following TBI results in improved psychomotor speed,

improved recent verbal and visual memory, general cognitive efficiency, and self-perception of cognitive symptoms (16). Serotonin reuptake inhibitors (SSRIs) are generally regarded as the first-line agents for treatment of depression in the pediatric population (16). The efficacy of SSRIs has been studied more extensively in adults and may be particularly helpful for treating depressive symptoms and improving attention and working memory (16). Alternative treatments, such as tricyclic antidepressants, are also effective in treating post-TBI depression (16). However, clinicians should consider the black box warning with regard to the increased risk of suicidal ideation as a result of treatment with SSRIs in the general pediatric population.

## Conclusions

There has been increasing awareness of the symptoms of post-TBI sequelae in recent years. Consequently, many parents, coaches, and athletes are now aware that no concussed individual should be allowed to return to the sport on the same

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day the concussion occurred (17), since there is risk of a second head injury resulting in catastrophic brain swelling if the athlete returns to play too early (17). Physical and cognitive rest is important to allow for the resolution of concussion symptoms.

In addition to the risk of a second head injury, the symptoms of postconcussive syndrome are varied, with a significant proportion of patients presenting with depressive illness. As already noted, subsequent morbidity can be avoided from a pharmacologic perspective, and appropriate treatment is imperative for symptom relief. By pursuing optimal treatment of depression following TBI, we may be able to minimize the long-term psychological effect of academic difficulty, impaired memory, and dysfunctional social interactions that may result from depression induced by TBI.

*Dr. Cornejo is a fourth-year resident in the Department of Psychiatry, University of Wisconsin Hospitals and Clinics, Madison, Wisc.*

## References

1. Hibbard MR, Uysal S, Kepler K, Silver J: Axis I pathophysiology in individuals with traumatic brain injury. *J Head Trauma Rehabil* 1998; 13:24–39
2. Mass AI, Stocchetti N, Bullock R: Moderate and severe traumatic brain injury in adults. *Lancet Neurol* 2008; 7:728–741
3. Parikh S, Koch M, Narayan RK: Traumatic brain injury. *Int Anesthesiol Clin* 2007; 45:119–135
4. Saatman KE, Duhaime AC, Bullock R, Maas AI, Valadka A, Manley GT; Workshop Scientific Team and Advisory Panel Members: Classification of traumatic brain injury for targeted therapies. *J Neurotrauma* 2008; 25:719–738
5. Valadka AB: Injury to the cranium, in *Trauma*. Edited by Moore EJ, Feliciano DV, Mattox KL. New York, McGraw-Hill, 2004
6. Biasca N, Maxwell WL: Minor traumatic brain injury in sports: a review in order to prevent neurologic sequelae. *Prog Brain Res* 2007; 161; 263–282
7. Centers for Disease Control and Prevention: Nonfatal traumatic brain injuries related to sports and recreation activities among persons aged ≤19 years: United States, 2001–2009. *MMWR Morb Mortal Wkly Rep* 2011; 60:1337–1342
8. Pellman EJ, Viano DC: National Football League's Committee on Mild Traumatic Brain Injury. Concussion in professional football: summary of the research conducted by the National Football League's Committee on Mild Traumatic Brain Injury. *Neurosurg Focus* 2006; 21:E12
9. US Consumer Product Safety Commission: Estimated Number of Head Injuries for Sports-Related Injuries. National Electronic Injury Surveillance System, Bethesda, Md, 2009
10. Mueller FO, Colgate B: Annual Survey of Football Injury Research, 2010. Indianapolis, American Football Coaches Association, Waco, Texas National Collegiate Athletic Association, 2011
11. Jorge RE: Neuropsychiatric consequences of traumatic brain injury: a review of recent findings. *Curr Opin Psychiatry* 2005; 18:289–299
12. Vaishnavi S, Rao V, Fann JR: Neuropsychiatric problems after traumatic brain injury: unraveling the silent epidemic. *Psychosomatics* 2009; 50:198–205
13. Whelan-Goodinson R, Ponsford J, Johnston L, Grant F: Psychiatric disorders following traumatic brain injury: their nature and frequency. *J Head Trauma Rehabil* 2009; 24:324–332
14. Rao V, Rosenberg P, Bertrand M, Salehinia S, Spiro J, Vaishnavi S, Rastogi P, Noll K, Schretlen DJ, Brandt J, Cornwell E, Makley M, Miles QS: Aggression after traumatic brain injury: prevalence and correlates. *J Neuropsychiatry Clin Neurosci* 2009; 21:420–429
15. Pangilinan PH, Giacoletti-Argento A, Shellhaas R, Hurvitz EA, Hornyak JE: Neuropharmacology in pediatric brain injury: a review. *PM R* 2010; 2:1127–1124
16. Neurobehavioral Guidelines Working Group, Warden DL, Gordon B, McAllister TW, Silver JM, Barth JT, Bruns J, Drake A, Gentry T, Jagoda A, Katz DI, Kraus J, Labbate LA, Ryan LM, Sparling MB, Walters B, Whyte J, Zapata A, Zitnay G: Guidelines for the pharmacologic treatment of neurobehavioral sequelae of traumatic brain injury. *J Neurotrauma* 2006; 23:1468–1501
17. Wetjen NM, Pichelmann MA, Atkinson J: Second impact syndrome: concussion and second injury brain complications. *J Am Coll Surg* 2010; 211:553–557

## CALL FOR PAPERS

### Have You Ordered a Lab Today?

The Residents' Journal is soliciting manuscripts about the use of laboratory studies in clinical care.

Suggested topics are:

- The measurement of serum antipsychotic levels
- The role of laboratory studies in managing substance use disorders
- Laboratory studies for specific populations (e.g., children, pregnant women)
- The laboratory monitoring of clozapine's systemic effects

Please note that we will consider manuscripts outside of the suggested topics.

# Mental Health in the Digital Age

Kairav Shah, M.D., M.P.H.

Department of Psychiatry, Harlem Hospital Center, New York

Information technology plays a major role in our day-to-day lives. In the last few decades, it has been used more frequently in our health care system. According to a report from the Institute of Medicine titled “Crossing the Quality Chasm: A New Health System for the 21st Century,” this form of technology has enormous potential, and it will play a fundamental role in transforming our health care delivery system in the future (1). Most medical specialists are integrating information technology applications into their current medical practices. Whether it is the use of a tablet personal computer during major surgery (2) or use of a smart phone in electrocardiogram recordings (3) or in diagnosing a stroke (4), each day we see innovative uses of technology. Although its use is more common among medical and surgical specialists, relative to its use among psychiatrists (5), there are concerns that the field of psychiatry may lag too far behind other medical specialties in using this form of technology in practice. The present report is of a case in which technology helped in saving a patient’s life.

## Case

“Ms. X” called our emergency department crying and said that she wanted to die. She said that she felt overwhelmed and did not know what to do with her life. Her only thought was to jump in front of a car. Our attending psychiatrist talked with her empathetically and gently extracted her name and present location, which we gave to the 911 dispatcher. Ms. X understood only a little English, and her emotional state interfered with her ability to process information. She was not in a stable state of mind, as evidenced by her giving us her home address rather than her current location. As a result, the address we gave to the 911 operator was incorrect. The attending physician was 15 minutes into the conversation before

the woman gradually started following his instructions, providing him with an approximation of where she was actually located. We then thought of utilizing a global positioning system. We were able to locate a store near the estimated location, and we asked her to go to this store. While the attending physician continued to talk with her, we called 911 again and provided them with the exact location. The police arrived at the location within 5 minutes of our call, located the woman, and brought her to the comprehensive psychiatric emergency program.

## Discussion

As the technology revolution gathers speed, many physicians are attempting to incorporate information technology into the administration of patient care. While global positioning applications are usually used for casual purposes, they have also been used in other instances to improve health care research (6). In the present case report, it also proved to be a life-saving tool. The use of global positioning system maps with satellite views was spontaneous and helped us to provide Ms. X with care that could have potentially saved her life. Other compelling technologies are also available, such as smartphones, e-prescriptions, tablet personal computers, and virtual reality. It will be even more fascinating to discover the different ways in which they could be used to support our clinical practices.

Smartphones are already popular in psychiatric practice; they are changing the face of psychiatry. Many new applications allow individuals to screen for depression, eating disorders, panic disorders, anxiety disorders, Asperger’s syndrome, and attention deficit hyperactivity disorder, among other conditions. For example, using a “mood chart,” which is downloadable through certain applications via a smartphone, patients can identify and monitor stressors and mood patterns in

their daily lives, record their depressive symptoms, and identify signs of deterioration. Patients’ self-monitoring of their mood symptoms as well as collecting accurate records of progress can be helpful to psychiatrists in providing the best level of care. On the other hand, widespread use of these applications without an appropriate knowledge base could potentially lead to unwanted results. For example, poor adherence to medications could occur if a patient makes a self-diagnosis and misinterprets the mood chart. Moreover, these applications are still in their infancy stage, and their scientific validity has not yet been established. Therefore, such tools need to be used with caution, and patient education in the use of these tools is critical.

More hospitals are adopting programs to provide physicians with access to electronic medical records via smartphones (7). Availability of pertinent data via cell phone, including for laboratory and imaging results as well as medications, would increase both convenience and decision making capability. Many of these electronic medical record systems now provide e-prescription services in which the software automatically checks for appropriate dose, drug-drug interactions, duplicate prescriptions, formulary/nonformulary status, and acceptable alternatives based on a patient’s insurance coverage and copayment. These e-prescription services can be accessed via computers and mobile devices.

With the rising popularity of tablet personal computers, applications for autism spectrum disorders are enriching the lives of children with these disorders. Children with autism prefer interacting with electronic screen media, such as tablet personal computers (8). These new tablets can be helpful in learning social, fine motor, and language and communication skills via new applications specifically

continued on page 11

continued from page 10

designed for children with autism spectrum disorders. Many autism centers across different countries have started using these tablet personal computers as a learning tool for such children.

Although information technology has had an unprecedented effect on all areas of medicine, certain ethical and legal issues are unavoidable. Ethical issues in psychiatry are particularly complex because of the stigma associated with having a mental illness and concerns regarding the vulnerability of patients. Given the sensitive nature of psychiatric information, many challenges relate to privacy and security in the mental health field, falling under the Health Insurance Portability and Accountability Act laws and regulations. Moreover, increased use of information technology will have a huge influence on the traditionally humanistic nature of our practice.

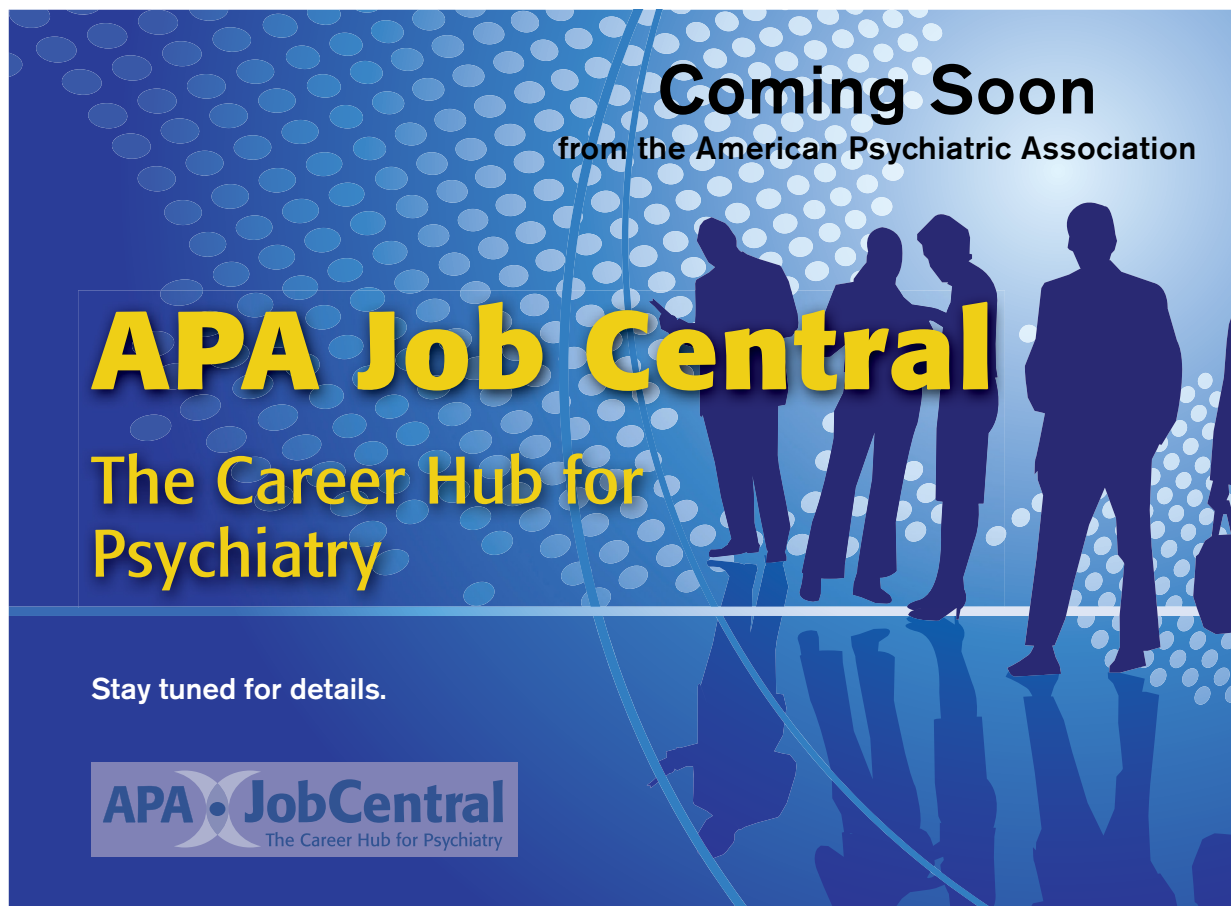
In this world of cutting-edge technology, we will continue to see many new

and beneficial changes in the field of psychiatry. Certain disadvantages are also inevitable. However, once psychiatrists identify the advantages and disadvantages of new information technologies and learn to maximize the positives, these technologies will enrich our practice in delivering excellent and efficient care.

*Dr. Shah is a third-year resident in the Department of Psychiatry, Harlem Hospital Center, New York.*

## References

1. Institute of Medicine, Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC, National Academies Press 2001
2. Volonte F, Robert JH, Ratib O, Triponez F: A lung segmentectomy performed with 3D reconstruction images available on the operating table with an iPad. *Interact Cardiovasc Thorac Surg* 2011; 12:1066–1068
3. Iwamoto J, Ogawa H, Maki H, Yonezawa Y, Hahn AW, Caldwell WM: A mobile phone-based ECG and heart sound monitoring system: *Biomed* 2011. *Biomed Sci Instrum* 2011; 47:160–164
4. Mitchell JR, Sharma P, Modi J, Simpson M, Thomas M, Hill MD, Goyal M: A smartphone client-server teleradiology system for primary diagnosis of acute stroke. *J Med Internet Res* 2011; 13:e31
5. Mojtabai R, Datapoints: Use of information technology by psychiatrists and other medical providers. *Psychiatr Serv* 2007; 58:1261
6. Chang AY, Parrales ME, Jimenez J, Sobieszczyk ME, Hammer SM, Copenhaver DJ, Kulkarni RP: Combining Google Earth and GIS mapping technologies in a dengue surveillance system for developing countries. *Int J Health Geogr* 2009; 8:49
7. Gamble KH: Beyond phones: with the proper infrastructure, smartphones can help improve clinician satisfaction and increase EMR use. *Healthcare Inform* 2009; 26:23–4, 6
8. Shane HC, Albert PD: Electronic screen media for persons with autism spectrum disorders: results of a survey. *J Autism Dev Disord* 2008; 38:1499–1508



**Coming Soon**  
from the American Psychiatric Association

**APA Job Central**  
The Career Hub for Psychiatry

Stay tuned for details.

**APA JobCentral**  
The Career Hub for Psychiatry

The advertisement features a blue background with a pattern of white dots. Silhouettes of four people in professional attire are shown in the center, with their reflections on a glossy surface below. The text is prominently displayed in yellow and white.

# TEST YOUR KNOWLEDGE

In preparation for the PRITE and ABPN Board examinations, test your knowledge with the following questions.  
(answers will appear in the next issue)

In preparation for the PRITE and ABPN Board examinations, test your knowledge with the following questions (answers will appear in the next issue).

This month's questions are courtesy of Brandon J. Cornejo, M.D., Ph.D., Department of Psychiatry, University of Wisconsin Hospitals and Clinics, Madison, Wisc. Please also see the accompanying case report in this issue.

## Question #1

Which of the following is the least frequent psychiatric complication following a traumatic brain injury?

- A. Depression
- B. Anxiety
- C. Substance Abuse
- D. Personality Disorders
- E. Psychosis

## Question #2

What is the second impact syndrome associated with traumatic brain injury?

- A. Any head injury combined with spinal cord injuries
- B. A second head injury resulting in severe brain swelling
- C. Contrecoup injury
- D. Any injury resulting in secondary bleed

## ANSWERS TO JANUARY QUESTIONS

### Question #1

**Answer:** D Intramuscular chlorpromazine

All dopamine receptor antagonists can decrease seizure threshold (1). Low-potency drugs are thought to be more epileptogenic than high-potency drugs (1). Of the antipsychotics listed, intramuscular chlorpromazine has the strongest potential to decrease the seizure threshold (1).

#### Reference

1. Sadock BJ, Sadock VA: Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry, 10th ed. Philadelphia, Lippincott Williams & Wilkins, 2007, p. 1047

### Question #2

**Answer:** C Thought broadcasting, delusions of control, and auditory hallucinations commenting on the patient's behavior

Some of the symptoms listed are consistent with symptoms described as first-rank symptoms by Kurt Schneider (1887–1967) (1). First-rank symptoms are those that were once considered to be potentially distinctive of schizophrenia and helpful in differentiating schizophrenia from other types of psychosis (1). Such symptoms include audible thoughts, voices arguing or discussing or both, voices commenting, thought withdrawal insertion or other experiences of influenced thoughts, thought broadcasting, delusional perception, other experiences involving volition, and made affect and made impulses (1).

#### Reference

1. Sadock BJ, Sadock VA: Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry, 10th ed. Philadelphia, Lippincott Williams & Wilkins, 2007, pp. 467–468

➔ We are currently seeking residents who are interested in submitting Board-style questions to appear in the Test Your Knowledge feature. Selected residents will receive acknowledgment in the issue in which their questions are featured.

Submissions should include the following:

1. Two to three Board review-style questions with four to five answer choices.
  2. Answers should be complete and include detailed explanations with references from pertinent peer-reviewed journals, textbooks, or reference manuals.
- \*Please direct all inquiries and submissions to Dr. Seawell; mseawell@med.wayne.edu.

# Author Information for *The Residents' Journal* Submissions

*The Residents' Journal* accepts manuscripts authored by medical students, resident physicians, and fellows; manuscripts authored by members of faculty cannot be accepted.

- 1. Commentary:** Generally includes descriptions of recent events, opinion pieces, or narratives. Limited to 500 words and five references.
- 2. Treatment in Psychiatry:** This article type begins with a brief, common clinical vignette and involves a description of the evaluation and management of a clinical scenario that house officers frequently encounter. This article type should also include 2-4 multiple choice questions based on the article's content. Limited to 1,500 words, 15 references, and one figure.
- 3. Clinical Case Conference:** A presentation and discussion of an unusual clinical event. Limited to 1,250 words, 10 references, and one figure.
- 4. Original Research:** Reports of novel observations and research. Limited to 1,250 words, 10 references, and two figures.
- 5. Review Article:** A clinically relevant review focused on educating the resident physician. Limited to 1,500 words, 20 references, and one figure.
- 6. Letters to the Editor:** Limited to 250 words (including 3 references) and three authors. Comments on articles published in *The Residents' Journal* will be considered for publication if received within 1 month of publication of the original article.
- 7. Book Review:** Limited to 500 words and 3 references.

Abstracts: Articles should not include an abstract.

## Upcoming Issue Themes

*Please note that we will consider articles outside of the theme.*

### March 2012

Section Theme: Memory Disorders  
Guest Section Editor: Sarah Jane De Asis, M.D.  
Sarah.deasis@yale.edu

### April 2012

Section Theme: Family Psychiatry  
Guest Section Editor: Michael Ascher, M.D.  
michaelaschermd@gmail.com

### May 2012

Section Theme: Sexual Disorders  
Guest Section Editors: Almari Ginory, D.O., Laura Mayol-Sabatier, M.D., and Nicole Edmond, M.D.  
ginory@ufl.edu

### June 2012

Section Theme: Advocacy in Psychiatry  
Guest Section Editor: John Lusins, M.D.  
drjlusins@gmail.com