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Department of Veterans Affairs's Traumatic Brain Injury Screening and Evaluation Program: Promoting Individualized Interdisciplinary Care for Symptomatic Veterans

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WE THANK the editors for the opportunity to provide our viewpoint on traumatic brain injury (TBI) screening by the Department of Veterans Affairs (VA) and Department of Defense (DoD) in response to the article "Screening for a Remote History of Mild TBI: When a Good Idea is Bad" by Drs Vanderploeg and Belanger in this issue. VA implemented a mandatory screen for possible TBI in April 2007 for all Veterans accessing care in VA that served in the Global War on Terror and separated from active duty service after September 11, 2001. Implementation of the screen was prompted by evidence that exposure to blasts affected brain physiology and function in ways similar to the blunt force to the head experienced in concussion/mild TBI.[1] Also, DoD had not yet initiated screening service members postdeployment for possible TBI at the time. When VA implemented the screening, a significant number of service members had separated from military service, and many were coming to VA for medical care with a constellation of medical complaints. The 4-question screen that was developed identifies Veterans with a history of trauma with immediate as well as *current* symptoms.[2] VA developed the TBI screen realizing that it would not conform to all aspects of medical screening principles but would serve to cast a broad net to identify symptomatic individuals with the goal of connecting them with care. In addition, VA realized that the effects of repeated concussive events secondary to blast in a deployment setting were unknown, thereby increasing VA's obligation to identify affected individuals and offer the best evidence supported interventions available. Those with a positive screen are referred for an evaluation by a TBI specialist for a specific diagnosis and the development of a treatment plan for current complaints (ie, cognitive problems, headaches, irritability, insomnia) regardless of diagnosis.[3]

PRINCIPLES OF MEDICAL SCREENING

Vanderploeg and Belanger cite Wilson and Jungner's principles of medical screening published in 1968 by the World Health Organization to frame the discussion about TBI screening. These 10 core principles continue to have applicability today. However, Drs Vanderploeg and Belanger also outline 2 conditions for beneficial medical screening that are not part of these principles, namely, that the screening must be done for progressive diseases and that the symptoms must relate to the identified disease. In addition, Drs Vanderploeg and Belanger cite that "effective" treatments are the thresholds for implementing wide base screening programs rather

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than "accepted" treatments as correctly noted in Table 1 in their article.

In 2012, the Institute of Medicine reported on the treatment of posttraumatic stress disorder (PTSD)[4] specifically in military and Veteran populations and proposed 6 criteria for determining the acceptability of any given screening procedure or program. They include the following:

- The identified condition should be an important health problem.
- The test should be clinically, socially, and ethically acceptable.
- The test should be simple, precise, and valid.
- The test should lead to reduced morbidity.
- Staffing and facilities for all aspects of the screening program must be adequate.
- Benefits of screening should outweigh potential harms.

Some of these criteria overlap with the 1968 World Health Organization guidelines but more simply reflect the relevance of TBI screening for the current population of service members and Veterans returning with a condition that has been defined by the Centers for Disease Control as an important health problem. Moreover, in line with the Institute of Medicine criteria, the screening protocols pose no clinical, social, or ethical challenge; they are precise and valid; and they are aimed at a symptomatic population in order to lead to access to care and reduce morbidity. Furthermore, the buildup of programs and providers to meet the identified need in the population are adequate to meet the evaluation burden spurred by the screening protocol. Moreover, results of screening efforts can help influence future programs and policies of the healthcare system, resulting in a benefit not only to the individual service member and Veteran but also to the system at large.

RISKS OF SCREENING

The TBI screening and evaluation process encourages clinicians to view the Veteran as a unique individual with potentially complex comorbid conditions. An awareness of prior TBIs is a potentially important factor that allows clinicians to develop a better-informed treatment plan. Although it has been suggested in the literature that the TBI screening may have iatrogenic effects, this has not been well substantiated. Specifically, there is no convincing evidence to support the notion that specific risks associated with screening of other conditions, such as prostate cancer, also exist for TBI screening, as cited by Vanderploeg and Belanger. The TBI literature lacks objective measurements of distress or anxiety at the time of screening or documentation of iatrogenic effects related to the TBI evaluation or to the accompanying treatments that may follow. On the contrary, there is evidence that receiving care for symptoms attributable to TBI may be more "acceptable" than when such symptoms are attributed to mental health conditions,[5] which may facilitate engagement with services. Furthermore, a failure to screen and to identify Veterans with potential TBI and allowing for access to specialists for evaluation may lead to inadequate treatment recommendations or to missing important elements of the medical history that may help with prevention and early recognition of the late effects of TBI.[6,7]

Importantly, the VA's TBI screen identifies individuals with possible TBI from a cohort of currently symptomatic Veterans. As such, the screen does not uncover issues that would otherwise go undetected and/or may be inconsequential but rather helps connect the symptomatic Veteran with a specialist for the development of an appropriate treatment plan. In addition, there are no mandatory laboratory or radiographic interventions performed in conjunction with a TBI screen, so comparison of the clinical interview to the imaging or procedural risks associated with other conditions, such as the requisite biopsy that typically is recommended after a positive prostate cancer screen, may not be appropriate.

Vanderploeg and Belanger also express concerns about the negative effects of misattributing symptoms of mental health difficulties to TBI. These concerns are not borne out by the clinical realities of the complex presentations of Veterans returning from foreign theaters of war. In the vast majority of cases, there is no reliable way to establish the symptom etiology, and there is no evidence that addressing discrete patient complaints, such as headaches, sleep, or memory lapses, interferes with the treatment of psychological problems. On the contrary, clinical experience and the emerging literature point to the effectiveness of collaborative, interdisciplinary treatments of comorbid conditions, particularly those related to the war experience.[8]

Finally, concerns are raised related to the stigma associated with the diagnosis of TBI, with Veterans being less willing to engage in treatment or feeling that they do not have the ability to positively affect their outcome stemming from the perception that they cannot remediate brain injury. Again, literature supporting this claim is scant, while the TBI literature supports the effectiveness of training active coping strategies and the enhanced sense of personal agency to mitigate the effects of the injury.[9]

One cannot overemphasize the importance of early diagnosis and intervention for TBI-related symptoms and many of the common comorbid polytrauma conditions, such as PTSD and depression. Symptoms from many of these conditions are unlikely to be self-limited, and screening allows the needed attention to be directed on them. Although it can be hypothesized that a positive screen for TBI may produce anxiety, it is

equally–if not more–plausible that individuals with persistent symptoms already experience anxiety as they search for a diagnosis and effective treatment.

VA's TBI screening and evaluation process responded to the needs of Veterans to obtain treatment for persistent symptoms. This process connects symptomatic Veterans with subject matter experts, rather than imposing upon Veterans to look for answers elsewhere and potentially selecting options with a lower likelihood of addressing their issues. Turning to substance or alcohol use as a means of self-medication has long been documented in the literature as an "aid" for individuals with persistent symptoms and no diagnosis or effective treatment.[10–12] Screening prevents "suffering in silence" for those patients who would not seek out a provider to report their symptoms without being first asked. Many patients assume a passive role with medical providers and "don't like to cause trouble." Thus, they will not initiate discussion of symptoms about which the provider does not ask.[13,14] Other Veterans do not even realize that the difficulties they are having are abnormal or in some way related to their combat experiences. Medical follow-up to provide a diagnosis and develop an appropriate treatment plan can be invaluable to a Veteran or service member returning from deployment who has experienced a TBI or deployment-related stress, as well as family members who share that stress from living with them. Providing education to the family can be critical to maintain ongoing support for the Veteran.

The TBI screening process has contributed to the accumulation of a vast amount of information that is significant both for the individual patient's medical history and for research into the chronic effects of brain injury and its comorbidities. We have learned from previous medical surveillance projects in other cohorts of Veterans that documentation of the exposures incurred by the Veteran, symptoms experienced, the treatments offered, and the course of these symptoms over time will have implications for healthcare provision not only for this cohort but potentially for the planning and management of healthcare for future service members.[15]

COSTS OF TBI SCREENING

Recently, the Congressional Budget Office reported the cost of caring for Veterans with TBI, with PTSD, those with both TBI and PTSD, and those with neither diagnosis. On average, Veterans with TBI, PTSD, or both, incurred significantly higher costs to care for in the first year following diagnosis.[16] However, it would be incorrect to assume that caring for individuals who screen positive for TBI is comparable with those with no diagnosis in the Congressional Budget Office report. Again, individuals with a positive TBI screen are *symptomatic* and would likely continue to seek healthcare services due to their persistent symptoms, and VA would continue to provide care for these Veterans regardless of diagnosis. Therefore, even if there were no TBI screening process in place, Veterans meeting the diagnostic criteria for mild TBI and currently symptomatic with headaches, memory difficulties, dizziness, insomnia, and/or irritability would seek treatment in VA for those symptoms regardless of whether TBI is determined to be the proximate cause of the problems. In fact, without the unifying diagnosis/diagnoses offered as a result of the coordinated screening process, it is likely that these Veterans would be receiving care from a multitude of sources in search of the "magic bullet" cure to a variety of underdiagnosed difficulties. Providing care to Veterans with chronic medically unexplained symptoms is challenging, and although there are currently no comprehensive studies describing the cost of such care, it would be safe to assume that it is not significantly lower.[17]

VA has invested heavily to build and train teams of TBI specialists throughout VA. These rehabilitation teams have integrated with primary care, mental health, vocational rehabilitation, and pain teams in an effort to provide interdisciplinary treatment for this symptomatic group of Veterans identified by the TBI screen. These efforts have resulted in linking Veterans with the appropriate medical, psychological, and community resources to maximize independence and well-being. Provision of this specialized care, while modeled on existing scientific evidence and on the experience of the academic and private sectors, would be expected to be costly; however, one must continue to understand the direct and indirect long-term costs associated with not addressing these issues. One must consider the potential costs of untreated symptoms in terms of substance/alcohol usage, failed social relationships, and loss in productivity due to inability to manage the gap between diminished level of function and the demands of work and school. At the same time, some of these difficulties may be successfully mitigated with the appropriate individualized rehabilitation and community reintegration plan of care.

CONCLUSION

The VA and DoD TBI screening and evaluation process has heightened awareness of mild TBI and encouraged the exploration of effective assessment tools and treatment modalities. Given the complexities of the human brain and the limits to our current ability to fully assess its health or injury status with medical tools, we cannot say with absolute certainty that the percentage or types of patients who have concussions will have no lasting problems. Therefore, it is most prudent to gather as much medical information as possible on each patient now, so that we will have it for the future.

We welcome the critical evaluation that Drs Vanderploeg and Belanger have provided in their article but do not believe that it supports their final assessment that screening for TBI is unnecessary or deleterious. The screening process has provided a unique opportunity to connect *symptomatic* Veterans with experienced clinicians to develop meaningful diagnoses and implement appropriate treatment recommendations as was the intention when the TBI screen was developed. We agree that VA and DoD need to continue to evaluate the outcomes and effectiveness of their TBI screening and evaluation programs. As the current combat operations draw down, the TBI screening process in both DoD and VA may no longer be needed, but the challenges of caring for this symptomatic cohort will remain. Therefore, a full and thorough understanding of each patient's current symptoms and recovery course is necessary to provide comprehensive treatment plans and to prevent the development of late symptoms and conditions.

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