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Senate Committee on Veterans Affairs

Testimony on S. 2004

The VA Epilepsy Centers of Excellence Act of 2007

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Mr. Chairman and Distinguished Members of the Committee:

Thank you very much for the opportunity to be here today. My name is Brien Smith and I am Medical Director of the Comprehensive Epilepsy Program at the Henry Ford Hospital in Detroit, Michigan. I am pleased to speak in support of S. 2004, the VA Epilepsy Centers of Excellence Act of 2007 and to share with you some thoughts about why these Centers are critically needed.

Epilepsy is a medical condition that produces seizures affecting a variety of mental and physical functions. A seizure happens when a brief, strong surge of electrical activity affects part or all of the brain. When a person has two or more seizures the condition is then considered epilepsy. Epilepsy affects about 1% of the U.S. population or 3 million people.

Nearly half a million people are involved in some kind of accidental brain injury each year - typically through a car accident or a fall - and 80,000 of them require hospitalization due to moderate or severe traumatic brain injury. Mortality and morbidity as a consequence of TBI are a major public health problem and post-traumatic epilepsy is linked to psychosocial disability and is probably a contributing factor to premature death after penetrating head injury.

One of my first experiences with posttraumatic epilepsy as a clinician is when I met George Bussell in 1994. Mr. Bussell's traumatic brain injury occurred in 1944 when he served as a combat engineer during World War II and he was taking up a mine field between France and Germany. A fragment from a shell struck him in the frontal region blowing off his helmet and leading to hospitalization. He seemed to recover fully, but subsequently developed seizures 16 years later arising from the area of injury. His wife recalls witnessing the first event with him screaming out, becoming confused, strange movements of his arms and legs, clicking of his tongue and undressing himself. Despite multiple attempts to control his seizures his life was altered by these recurrent, almost daily events until he presented to our clinic in 1994 for surgical evaluation. With good fortune, surgical intervention at age 69 provided him with a new sense of independence for the last 10 years of his life.

Mr. Bussell is one of many similar stories. We know that the risk for our service men and women is very real - even if we cannot predict the exact number of soldiers who will be harmed, we know that trauma to the brain, whether mild or severe, is a clearly defined risk factor for epilepsy. Past studies from the Vietnam War referenced in my written testimony, show that more than 50% of service related TBI becomes epilepsy within 1-15 years post trauma. This statistic is for penetrating injuries which occur when a foreign object or piece of fractured skull enters the brain. Another study conducted between 1980 and 1988 in Iran looking at soldiers in the Iran-Iraq war showed 32% of penetrating head injury TBI became epilepsy within 6 months to two years.

Today's story is a bit different. The common head trauma in Iraq is the result of a "shock wave" effect of high pressure that reverberates through the body and head from an explosion like those from the Improvised Explosive Devices or IEDs. Researchers fear that incidence of posttraumatic epilepsy could increase exponentially given the shock wave effect from IEDs.

2003 data from Walter Reed Army Medical Center found evidence of brain injury in 61% of returning soldiers who had been exposed to blasts according to the Defense and Veterans Brain Injury Center (DVBIC), a partnership between the VA and Department of Defense. It is because of such alarming statistics that the Epilepsy Foundation and epileptologists like me believe that S. 2004 is critically needed.

The legislation has three major goals:

1. (re)Establish 6 Centers to specialize in post traumatic epilepsy and make them part of a national network of Centers that can serve veterans;
2. Conduct research that will lead to an ability to prevent epilepsy as an outcome of TBI as well as research for better seizure control and an eventual cure for all epilepsy;
3. Allow veterans living in rural communities or far from VA hospitals access to the care they need.

Given the high rate of post-traumatic epilepsy that veterans with TBI are likely to endure, the Epilepsy Foundation and the American Academy of Neurology believes that Congress should take a strong role in veterans' health care by authorizing this bill that would direct the VA to establish a strong national epilepsy program with research, education, and clinical centers that will provide state-of-the-art care for our brave soldiers.

As this committee heard in May from Dr. John Booss, a former national director of neurology for the VA, the VA lacks a national program for epilepsy with clear guidelines on when to refer patients for further assessment and treatment of epilepsy. VA Centers of Excellence have been the model of innovation in the delivery of highly specialized health care and research for other disabling and chronic diseases in the veteran population such as Parkinson's disease and Multiple Sclerosis. The VA has the infrastructure to address many of the other common consequences of TBI such as psychosocial changes and vision problems but not post-traumatic epilepsy.

The VA established Epilepsy Centers as early as 1972, but these Centers have languished over the years with few staff and no national budget. The net result of allowing these Centers to fall by the wayside is that veterans with post TBI epilepsy are at the variable mercy of a system with

markedly uneven distribution of epilepsy services. This often results in denial of services in locations without the necessary epilepsy facilities and in which administrators are hard pressed to meet their budget. Sadly, the potential of these Centers to be the backbone of a national epilepsy program never materialized.

Under this bill, the VA would designate six new Centers that would be linked with prestigious medical schools and research centers thus attracting outstanding clinicians and scientists capable of driving innovation in the prevention and treatment of post-traumatic epilepsy.

State-of-the-art care is what our veterans deserve. Research is the key to discovering ways to better predict when TBI victims will develop epilepsy.

To date, research has been focused primarily on the seizures themselves and what drugs might control or eliminate them. My colleague Marc Dichter, M.D., Ph.D. professor of neurology and pharmacology at the University of Pennsylvania says, "We basically wait for epilepsy to happen and then see if we can treat it, which is in stark contrast to how we tackle other public health problems such as cancer or heart disease where we identify risk factors and try to prevent disease from occurring."

Another grave concern we have is that many returning veterans live in rural areas or far from a VA center. S. 2004 contains a component on telemedicine whereby the review of neurological diagnostic tests such as EEG's and MRI's will be able to take place through transmission of such tests from the veteran's local care facility to one of the 6 ECoEs. Thus, the ECoEs would provide a nationwide monitoring program to improve the quality of life for veterans with post-traumatic epilepsy who live in rural areas.

Mr. Chairman, I strongly believe that we must strike while the iron is hot. As a nation we became more aware of TBI as a consequence of war when news anchor Bob Woodruff shared his story of experiencing TBI with the nation. But while we now have people understanding that TBI is occurring at high rates, most people do not understand the high probability of epilepsy as a consequence of the TBI or that the epilepsy may manifest many years later. Congress has the opportunity right now to make a difference for our veterans and for their future. Without proper diagnosis and care, their lives and livelihoods are affected forever. By enacting the VA Epilepsy Centers of Excellence Act of 2007 we will be putting into place a national network of Centers to address the affects of TBI and epilepsy for the war heroes of today who will be the citizens living in your towns tomorrow.

Thank you for this opportunity today.