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HOUSE VETERANS' AFFAIRS COMMITTEE – JUNE 20, 2001
PROPOSED WRITTEN STATEMENT

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Mr. Chairman, Members of the Committee, I am Dr. Bruce Rounsaville, a Professor of Psychiatry at Yale University and have been involved with treating veterans having post traumatic stress disorder or PTSD for over 20 years. At this hearing, I will review a small portion of extensive neurobiological work showing that veterans with post traumatic stress disorder have a profound brain disorder. Because this understanding has improved the treatment of PTSD and holds great promise for the future, it is most important to keep these mental disorders high on the agenda of biomedical research and to keep the veterans afflicted with these disorders in the mainstream of our treatment services. Less than 12% of the VA research budget has been allocated to mental and addictive disorders, yet over 25% of veterans suffer from these disorders. These types of imbalances need to be actively addressed by VA leadership.

In spite of limited research resources, over the last 25 years we have had tremendous success in understanding stress induced mental illness among our veterans. These mental illnesses are brain disorders in every sense of our biomedical vocabulary, and I will show you the evidence for altered brain structure and function due to these illnesses. However, my presentation is profoundly colored by my experience providing care to these veterans over the last 20 years and watching them be denied the care they deserve because of disproportionate budget cuts for mental illness treatment in the VA.

Veterans returning from Vietnam included a disproportionate number who continued to re-experience the traumatic events in which they had participated while in combat. These re-experienced events or flashbacks might occur several times in a month, a week or even a day and were terrifying and completely disrupted the veteran's transition back to normal civilian life. These veterans could not sleep, were easily startled and had profound memory and concentration problems. They also became socially isolated and irritable with violent outbursts in some cases. Their flashbacks were so real that they sometimes acted as if they were back in combat again.

In their attempts to cope with these disruptions and personal pain, many turned to a common form of self-medication using alcohol, sedatives prescribed by their local doctors, and sometimes illicit drugs. All of these self medication attempts were temporarily successful in

attenuating their distress, but ultimately failed and worsened their distress due to withdrawal symptoms from these medications or drugs. These attempts at self-medication poisoned not only their nervous systems, but also the public attitude towards these veterans. They became viewed as drug addicts and sociopaths. This perception was and remains incorrect. These veterans suffered from significant brain damage due to their exposure to repeated trauma and the resulting stress response made by their own bodies in an attempt to respond to these traumas.

The body's programmed response to trauma exposure is to release large amounts of stress related hormones such as cortisol and epinephrine. These hormones help the body to mobilize for either fight or flight, when a crisis occurs. However, flashbacks are not real crises demanding such a dramatic response, and their continual repetition can be seriously damaging to the brain. Repeated activation of these stress response systems has been studied carefully in animals and found to damage a critical brain area for memory formation and retrieval – the hippocampus. A similar kind of brain damage is consistent with findings from our most advanced brain imaging in humans. This critical brain area is significantly smaller in veterans with post traumatic stress disorder compared to this brain area in normals. This damage compounds the damage arising from self-medication so that even when you adjust for the effects of alcoholism or drug abuse, one can still clearly see the impact attributable to PTSD. However, the self medication by these veterans was not without consequences.

We have accumulated substantial evidence that drug addiction is a brain disease associated with brain cell damage. Many of these veterans suffered this additional brain damage. While their self medication had been labeled “willful misconduct” in the past, it is not willful nor misconduct in these very ill men and women. The substance abuse was in many cases a desperate attempt to control intrusive and profoundly unpleasant thoughts that developed the same reality that hallucinations and delusions have in schizophrenic patients. These veterans did learn during their military experiences in Vietnam, Korea and World War II that alcohol, marijuana and other substances blunted their responses to the traumas that they encountered regularly. Substance abuse became a learned coping strategy that carried over into their civilian after-life; it was not a way to seek sensations and a “high”, but a way to blunt overwhelming terror, anxiety, isolation and depression that followed them after their wars. Unfortunately, they had found a cure that was itself a disease and that amplified the brain destruction set in motion by the post traumatic stress disorder.

Why did these veterans not seek appropriate medical help at the VA? The answer is an unfortunate commentary on the disorder of post traumatic stress and its symptoms, as well as on the slow evolution of compassion within the bureaucracy of the VA. Post traumatic stress disorder is associated with fear that others will harm you, as you maintain a constant vigilance for “the enemy” whom you are re-experiencing. This paranoia extended to the VA healthcare system during the Vietnam conflict and the early years after Vietnam ended. This core symptom continues even now with young veterans from the Persian Gulf and the much older veterans from Korea and World War II, who now are beginning to appear at the VA with substantial symptoms of post traumatic stress disorder. The second factor contributing to abortive and ineffective self-medication was the reception veterans got from the VA system, when they presented requests for disability based on their disabling psychiatric symptoms. The VA response was discouraging and effective treatments were not yet available 25 years ago. Because this disorder was not

among the diagnoses officially recognized by American Psychiatry until 1980, mis-diagnosis was a serious issue and veterans were all too often accused of "malingering" or seeking undeserved compensation. Misunderstood and scorned, they turned away from traditional providers. Veterans Outreach Centers were a positive response in the early 1980's, but they came only after many veterans with PTSD had already developed serious complications of their primary PTSD, such as substance abuse and depression. Fortunately, treatments have improved for our veterans, as we have come to understand the brain damage that these traumatic stress disorders cause.

Substance abuse can damage other brain areas that complicate the cognitive and memory problems of veterans with post traumatic stress disorder. For example, alcohol damages other brain areas critical for memory, and stimulants such as amphetamine damage the same brain pathways that lead to Parkinson's disease. Parkinson's disease is a complex disorder that prominently produces shaking and difficult, slowed movement, but it also compromises the ability to concentrate and can induce depression. Many veterans with traumatic stress disorders took stimulants to relieve the depression and social isolation that they experienced and that got worse with alcohol and the sedatives that were prescribed by their local doctors. Unfortunately, these stimulants have also taken a toll on their brain. Brain images using PET scanning of that part of the brain primarily involved in Parkinson's disease has shown that stimulant abusers' brain images are quite abnormal and very similar to those of much older patients with Parkinson's disease. This comparison is most concerning. Clearly, these stimulants have produced a brain disease that looks strikingly like the naturally occurring disease of Parkinsonism, but in much younger men. However, the situation for our veterans who have so unfortunately self-medicated themselves into an additional brain disease is perhaps more hopeful than the situation for Parkinsonian patients, because this drug induced state can be arrested, unlike the spontaneous disease. Overall, this brain disease from self-medication is quite real and sad for these veterans, but we can help them.

The reversibility of the brain damage from post traumatic stress disorder is also more hopeful than for spontaneous Parkinson's disease. For both disorders, the nerve cells appear to have degenerated, but they may not have died in PTSD and may grow back with appropriate medical interventions. Hope is on the horizon for Parkinson's disease and for PTSD with our understanding of stem cells derived from the patient's own bone marrow, and their transplantation back into that same patient's brain, as well as from nerve growth factors that can lead to sprouting of new nerve cells. A most exciting recent discovery is that anti-depressant medications, which have been a mainstay of treating veterans with traumatic stress disorder, as well as having some role in Parkinson's disease, appear to stimulate these nerve growth factors. Thus, in the younger veterans with traumatic stress disorders, long term medication treatment with these medications and newer medications being developed may indeed provide the type of brain rehabilitation that our medical colleagues working with paralyzed veterans have been pursuing.

I want most to leave you with a message of optimism, promise and enthusiasm for treating veterans with the dual brain diseases of traumatic stress disorder and drug-induced brain damage. We have come a long way in providing rehabilitation for these veterans and helping them live with their disability. Furthermore, now that we have more clearly identified their brain

disorder, we are on the research frontier of reversing it. The investment in these veterans and in research to develop definitive neurobiological treatments for them could not have a greater yield. We not only owe it to them for their sacrifice and dignity, but to our community in order to return them to the productive lives that can be salvaged from appropriate recognition and treatment of their brain disorder.

I urge you to press the VA to make appropriate levels and proportions of research funding available for these mental disorders, and to legislate the specificity of so-called “fenced funding” for these treatment programs, because without this specific and very openly accountable process, these veterans are not getting the equitable treatment that your laws have mandated.

Thank you.