

Gulf War illness and the health of Gulf War veterans: 25 years of progress and set-backs

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It is the 25th anniversary of the Gulf War. Our veterans won this conflict in less than a week. However, concern remains high that the troops who produced this victory are and will remain ill, without legitimate acknowledgement of their health problems and the associated disabilities, and without effective treatment options now or in the future.

Despite decades of scientific evidence to the contrary, the VA and the Institute of Medicine have recently produced documents that minimize the poor health of these veterans by terming their illnesses as “functional” disorders, a medical term for psychiatric illness. This injustice is then compounded by a treatment guideline that suggests ineffective, unproven, purely palliative, and potentially harmful treatments for Gulf War illness that focus on psychiatric symptomatology.

I speak as a clinician/scientist who has worked with Gulf War veterans clinically and in research for over 20 years. My work on Gulf War illness is part of an overall clinical and research career in which I have studied the effects of exposures to neurotoxic chemicals on adults and children. For eight years, until last fall, I served as scientific director of the Research Advisory Committee on Gulf War Veterans Illnesses.

Science of Gulf War illness

It has been known since a year or two after their return from the Gulf that a subset of Gulf War veterans was experiencing debilitating physical illness. (In fact, the Department of Public Health at VA engaged clinical and research personnel at the Boston VA Medical Center, including myself, in trying to figure out what was going on with the veterans).

Research beginning at that time and continuing to the present has produced a consensus of scientific knowledge about this illness.

- Dozens of studies in multiple countries reveal that approximately 30% of the 1991 Gulf War veteran population suffers from a characteristic pattern of physical health symptoms. This research has further revealed that this pattern of health problems was seen in Gulf War veterans, but not veterans of other conflicts (such as Bosnia), and that veteran populations from multiple coalition forces from the Gulf War experienced the same disorder.

The health problems of Gulf War veterans are not vague and extremely variable, as is often suggested. There are two case definitions of the illness—the Kansas definition and the Centers for Disease Control definition—that clearly allow researchers and clinicians to decide whether an individual Gulf War veteran has the illness. These definitions were supported by the Institute of Medicine in its Volume 9 report for use in clinical and research work. I cannot think of any illness in which all patients have exactly the same symptoms—diagnosis of diseases and disorders is based on critical masses of signs and symptoms that cluster together to fit a case definition. Gulf War illness is not different from any other disorder in this way.

- This illness is not the result of stress or other psychiatric factors. It has been known since the 1990s that post-traumatic stress disorder occurs at far lower rates in Gulf War populations than Gulf War illness. Rates are typically less than 10%, in contrast to the 30% for Gulf War illness. Furthermore, research conducted in veterans with Gulf War illness has repeatedly shown that post-traumatic stress disorder and other psychiatric disorders do not predict whether a veteran will have Gulf War illness, that is rates of Gulf War illness are not significantly higher in Gulf War veterans with psychiatric diagnoses.

- Research over the past 20 years has also shown that occurrence of Gulf War illness is associated with exposures to chemicals present in the Gulf War theater, especially pesticides and use of pyridostigmine bromide (and possibly other chemicals, including nerve gas agent sarin and particulate matter from oil well fires).

Epidemiologic, clinical, and animal research involving Gulf War veterans and other populations with similar types of exposures has converged to show that these chemicals affect the central nervous and immune systems, producing chronic signs and symptoms that affect multiple body systems.

As suggested by the Institute of Medicine in its recent Volume 10 report, there *is* a mind/body continuum here. However, it is not that these veterans have a psychiatric condition that is affecting their physical health; it is that exposures to the chemicals present in the Gulf theater affect brain systems that mediate cognition, emotion, and immune function simultaneously. Thus, ill veterans have multiple cognitive, physical and emotional complaints and signs and symptoms.

The previous Institute of Medicine report, Volume 8, reflected the scientific consensus on Gulf War illness that I have just described, concluding that “[t]he excess of unexplained medical symptoms reported by deployed Gulf war veterans cannot be reliably ascribed to any known psychiatric disorder” and that “it is likely that Gulf War illness results from an interplay of genetic and environmental factors.”

Like the reports of the Research Advisory Committee, the Volume 8 Institute of Medicine report called for rigorous research to find effective treatments for the illness, including “studies to identify . . . modifications of DNA structure related to

environmental exposures, . . . signatures of immune activation, or brain changes identified by sensitive imaging measures.”

Effective treatments for Gulf War illness and other illnesses induced by exposures that damage the brain do not exist. This is true for exposures such as lead, mercury and solvents as well as the pesticides, pyridostigmine bromide, low-level chemical warfare agents, and air pollutants to which our Gulf War veterans were exposed. However, recent research has identified potential treatments of Gulf War illness that target specific nervous system and immunological mechanisms. These treatments are now being piloted. They are consistent with the types of treatments recommended in the Volume 8 Institute of Medicine report and hold promise for effective treatment of Gulf War veterans, other veterans who experience chemical exposures, future troops at risk of similar exposures, and people who are exposed to pesticides occupationally and environmentally.

The progress made over the past 20 years in understanding the mechanisms and causes of Gulf War illness, the physiological effects of exposure to chemicals such as pesticides, and the treatment of these effects is extremely exciting for the health of the military and the population as a whole. The scientific findings from this research hold great scientific promise. In addition, they are the only source of hope for veterans with Gulf War illness who are suffering from the disorder and wish to lead healthier, more productive lives.

VA treatment recommendations

However, recent recommendations from VA concerning the diagnosis and treatment of ill Gulf War veterans threaten the viability of the promise emanating from two decades of research. These recommendations are summarized in a document entitled, VA/DoD Clinical Practice Guideline: Management of Chronic Multi-symptom Illness, 2014.

The recommendations contained in this document are regressive in terms of the knowledge that science and medicine have provided on the disorder. They are consistent with the stance that VA has taken since the Gulf War illness issue was first discovered in the early 1990s, when VA staff published papers saying that the health problems of Gulf War veterans represented post-traumatic stress disorder or “effects seen in all wars,” statements that were made *before any scientific data had been collected on ill Gulf War veterans*.

The treatment recommendations include immediate referral for mental health evaluation. In addition, cognitive behavioral therapy is suggested. This is a palliative treatment that might allow veterans to manage their lives better but was already found in a major VA study to help less than 6% of GW veteran patients and to provide only a 1 point improvement on a scale of 100.

Even worse, when these palliative therapies do not satisfy the patient, the treatment guidelines recommend eleven drugs, ten of them psychiatric. All eleven drugs are noted in the guidelines to have significant adverse side effects, including suicidal ideation. Even more disturbing, *these medications have not been studied with regard to effectiveness in the treatment of Gulf War illness*. They are not the medications or treatment approaches of choice among the VA clinicians with extensive clinical treatment experience who have discussed their approaches with the Research Advisory Committee on Gulf War Veterans Illnesses. And the advice of such experts does not seem to have been solicited for this treatment document.

In my experience as a neuropsychologist, I have had many patients whose neurological illnesses were initially thought to be psychiatric—the term “functional” was, in fact, sometimes used to describe them. These patients include people with multiple sclerosis, small vessel strokes, dementias and exposures to chemicals such as solvents or mercury. Treating Gulf War illness with an antidepressant is akin to treating multiple sclerosis with one. The patient might feel a little more optimistic, but the medication will do nothing to reverse or prevent the brain damage that the multiple sclerosis disease process is inflicting on his or her brain.

Furthermore, the VA treatment document says its advice is also appropriate for mild traumatic brain injury, suggesting that recent Iraq and Afghanistan veterans who suffered blast injuries from improvised explosive device (IED) exposures should also be treated as psychiatric cases.

IOM report Volume 10

The recent Volume 10 Institute of Medicine report further contributes to the worsening plights of ill Gulf War veterans by minimizing their health problems and again placing a psychiatric cast on them.

This report was written by a committee that (purposefully) included no one with clinical experience treating Gulf War veterans or in-depth epidemiological expertise in the phenomenology of Gulf War illness.

The report supports the VA stance that Gulf War illness is a functional disorder without evaluating the extensive scientific evidence that demonstrates just the opposite.

Although the Volume 10 Institute of Medicine report states that the science has not changed since the Volume 8 report, its conclusions fly in the face of the scientific consensus on Gulf War illness that I have described, a consensus that was embraced in the Volume 8 report. The Volume 10 report distorts and disavows the Volume 8 report’s finding that Gulf War illness “cannot be reliably ascribed to any known psychiatric disorder” by saying that the illness “cannot be *fully* explained by any ...psychiatric disorder.”

Unlike prior reports that support mechanistic scientific research on Gulf War illness, Volume 10 suggests that “it is time research efforts focus on the [mind-body] interconnectedness” and that “further research to determine the relationships between Gulf War exposures and health conditions in Gulf War veterans should not be undertaken.”

To recommend stopping research into the mechanisms underlying the disease, just as research into these mechanisms has begun to make real progress, is shockingly short-sighted. And to suggest that psychiatric research has been neglected could not be further from the truth.

During the fifteen years after the war, federal Gulf War research focused mainly on psychiatric issues. For example, 51% of VA research funding in 2003 for Gulf War illness focused on psychological stress and psychiatric illness. This research revealed that the answer to the Gulf War illness problem could not be found in the psychiatric arena. It is unthinkable that the scientific progress now being made should be halted and to return to that era.

Conclusion

When I think of the problem of Gulf War illness and the health problems and disabilities of the many Gulf War veterans whom I know or have evaluated, I am painfully reminded of the veterans of World War I who were exposed to mustard gas in the trenches of Europe. The gas was known to be present and widespread and it was known that mustard was designed to make people very sick or kill them. However, these veterans did not receive support for their health problems or the hardships their families endured due to their disabilities when they returned from combat.

We are experiencing the same phenomenon with the 1991 Gulf War. It is well known and established that Gulf War veterans were exposed to poisons such as pesticides, pyridostigmine bromide, sarin gas and air pollutants from oil well fires that are harmful to health. However, groups like the Institute of Medicine and VA state that with current technology we cannot identify exactly which chemicals and which dosages each individual veteran was exposed to. This leads them to claim that we do not know enough to conclude that the Gulf War veteran population was over-exposed to toxic chemicals and that individual veterans are ill. This is not the approach to population environmental health problems that we should expect.