

U.S. Vietnam War Soldiers and Malaria

When Jim Manuel talks about his life after Vietnam he seems at peace with himself, like a man looking back with new insight. Most of the problems he's experienced mirror those of the approximately 480,000 other Vietnam theater veterans who, according to the estimates of the Department of Veterans Affairs (VA), suffer from post-traumatic stress disorder (PTSD). What is different, however, is that Manuel is one of only a handful of veterans to receive enhanced therapy that he claims has dramatically improved his life and, perhaps most important, provided him and his family with an explanation for the changes that occurred in him in the years following his service.

His turning point came one day in the mid-1980s, when he went to the Veterans Administration Medical Center in Cedar Rapids, Iowa, for his usual PTSD counseling. He was finding the counseling sessions helpful, but years of introspection had left him with many unanswered questions. When he saw a notice on a hallway bulletin board that day, the word 'malaria' caught his eye.

For years after his return from Vietnam, Manuel had believed that guilt was the root of his nightmares, his frustration and his uncontrollable temper — things that strained his personal relationships, clouded his judgment and plunged him into periods of heavy drinking and unemployment. But guilt could not explain everything.

During the first year home, he had many incidents of uncontrollable shaking, fever and chills that led to hospitalization on several occasions. He remembers how during one of these he awoke to find himself in a tub of ice in a hospital emergency room. His doctors had worked to get his fever down, but never determined its cause. Now that he was safely back in the States, it never occurred to him to mention to them the bouts of malaria he had suffered in Vietnam. The threat from that tropical disease, he thought, was thousands of miles behind him.

So when Manuel learned that Iowa City psychologist Nils Varney was recruiting volunteers for a study on veterans who had contracted malaria in Vietnam, he was intrigued. A few days later he went to see Dr. Varney, who referred him to a neurologist. Testing by the neurologist revealed a 30-point drop in his IQ from his military induction exam and an abnormal electroencephalograph (EEG). To his surprise, and eventual relief, Manuel learned that his problems might have resulted from the type of malaria he had contracted in Vietnam. 'It changed my life,' he says, describing his first meeting with Dr. Varney and the treatment he would subsequently receive. Manuel is now a volunteer who counsels other veterans at the Cedar Rapids Veterans Center and educates them about the long-term consequences of cerebral malaria infection.

Malaria is the general name of a tropical disease spread by mosquitoes. Its onset is indicated by a high fever, anemia and severe flulike symptoms, such as shivering, joint pain and headaches. If not properly treated, it can lead to organ failure and death. There are four kinds of malaria that affect humans, each characterized by a different species of the Plasmodium parasite.

When a person is bitten by a mosquito bearing Plasmodium, the parasite is injected into the bloodstream, where it lives out its life cycle in red blood cells and concentrates in the vital organs, principally the liver. Plasmodium falciparum (P. falciparum or falciparum malaria) is the predominant type of malaria worldwide and likely accounted for 90 percent of malaria illnesses reported in Vietnam. It is also the most feared, because it primarily affects the brain. At its most severe, it can become cerebral malaria, a complication that develops when infected blood cells stop circulating as they reach the brain and bind to the inner walls of the blood vessels carrying them. The resulting obstruction of blood flow is traumatic, depriving the brain of oxygen, causing hemorrhaging and producing severe psychiatric symptoms.

Telltale signs of cerebral malaria infection appear in an autopsy as discolored brain tissue and small 'pinhole' lesions. However, medically confirming cerebral malaria in a living patient is not as straightforward. A blood test will detect the P. falciparum parasite, but cerebral malaria can only be diagnosed when psychiatric symptoms are observed that indicate the infection has reached the brain.

Dr. Varney, who is currently a staff neuropsychologist at the Iowa City VA Medical Center and professor of psychology at the University of Iowa School of Medicine, has spent more than 15 years studying veterans who contracted malaria in Vietnam. He described the general progression of the illness that produces cerebral malaria as follows: '[Falciparum malaria] patients get sick as hell for 12 days, and then it goes to the brain. At this point, they usually become mortally ill because they have a fever of 104 degrees or more. Cerebral malaria is pretty obvious because they are hallucinating, confused, have amnesia and a whole host of other psychiatric and neuropsychiatric symptoms. They will die if they are not put into alcohol ice baths.' A combination of anti-malarial drugs is available that effectively kills the parasite and relieves symptoms of the illness; however, P. falciparum is highly resistant to treatment, requiring frequent changes to the drug regimen.

One study of cerebral malaria patients who were treated at an evacuation hospital in Vietnam during the war concluded that cerebral malaria causes no permanent psychiatric harm. But Dr. Varney's more recent research on aging Vietnam veterans challenges this view. His findings have taken him to Capitol Hill with the message that many veterans exhibiting symptoms of PTSD may actually be suffering long-term effects of cerebral malaria infection, and might benefit from improved treatments incorporating anti-convulsant medications like Tegretol and Depakote.

Figures for the total number of malaria cases treated in Army hospitals during the Vietnam War were unavailable from the Department of the Army. Furthermore, a written response dated August 16, 1999, from Charles H. Bowers, chief of the Freedom of Information Act and Privacy Act office in Houston, Texas, stated, '...we can not provide counts for cerebral malaria since cerebral malaria is not separately identified in the diagnosis coding scheme.'

Manuel knew about the risks of malaria, but he had never heard the term 'cerebral malaria' until he met Dr. Varney. Manuel was 19 when he volunteered for military service in November 1965. Ten months later, he found himself deep in the Central Highlands of Vietnam near the Cambodian border, one of 158 men in an Army infantry company. Between October 1966 and September 1967 he estimated his company lost 25 to 30 men — 11 of them in one day.

‘Staying alive was the biggest job over there, and not just because there were bullets and everything, but basic survival because the physical exertion was enormous. Plus you had to overcome the heat,’ Manuel recalled. ‘There were just always millions of mosquitoes everywhere. They gave us a little plastic container of repellent that, as God is my witness, was mosquito food! That stuff was worthless — we used it to start fires.’

Besides adding to the general discomfort of living in the tropics, mosquito bites also spread malaria from one infected person to another. Falling ill meant evacuation to the nearest field hospital. This was a constant concern. ‘We were always undermanned,’ Manuel said, ‘so if something happened to you and you needed to get medevaced out of there, there was no one to take your place — it hurt the mission.’

Official and anecdotal evidence suggests that the anti-malarial pills distributed as a precaution may not have been worth much more than the insect repellent. Manuel was stricken with the disease twice. He recalled it was the responsibility of his platoon sergeant to make sure everyone in his unit was taking the pills. Even so, he said, ‘Evidently the pills didn’t work for everybody, because I remember other guys taking them but still getting sick.’ In fact, a report from MACV indicated that 7,832 military personnel in Vietnam were treated for malaria in 1966.

As recently as July 1996, the American Forces Press Service, in an article on malaria vaccine research, quoted Dr. Stephen L. Hoffman, a Navy doctor and director of the malaria program at the Naval Medical Research Institute in Rockville, Md., as saying, ‘In every military campaign this century, we lost more casualties to malaria than bullets. During World War II and the Vietnam War entire divisions ceased to be effective combat units due to malaria.’

Cerebral malaria patients were studied at the height of the Vietnam War. In 1968, an article titled ‘Psychological Testing of Cerebral Malaria Patients’ was published in *The Journal of Nervous and Mental Disease*, with Dr. Albert J. Kastl as the lead author. The article described how, over a 10-month period in 1966, Dr. Kastl and other members of the 935th Medical Detachment working at the 93rd Evacuation Hospital in Long Binh measured the intellectual functioning of nine cerebral malaria patients. The patients were tested just after the peak of their illnesses, after their fevers had remitted and the worst of their symptoms had passed, and then again seven days later, after their symptoms had fully abated. A comparison of the scores showed that, while ill, the cerebral malaria patients exhibited a degree of impairment, suggesting organic brain damage that was not present in a comparison group of patients who had falciparum malaria without cerebral involvement. When retested after their ‘recoveries,’ however, the scores of patients in both groups improved to normal levels, leading Dr. Kastl to conclude that, with proper treatment, cerebral malaria patients fully recover from their illness with no lasting neurological or psychiatric problems.

This study marked the first time that any-one had ever tested cerebral malaria patients with psychological instruments; however, Dr. Varney believes that it should not be the final word. He argues that Dr. Kastl tested his patients too soon after their apparent recoveries for any long-term problems to show. He also believes that the initial brain damage caused by cerebral malaria, visible in autopsies and suggested by the lower test scores of Dr. Kastl’s patients while they were ill, starts a progressive syndrome of neurological changes, producing psychiatric problems that develop over time.

Dr. Varney noted that his interest in the long-term consequences of cerebral malaria infection began with a particularly difficult case. 'I had a patient 15 years ago who was demented,' he explained. 'I couldn't find anything wrong with him, but his wife was a nurse and she mentioned that he had malaria in Vietnam. So I got a book out on tropical disease, started reading and thought, Eureka!'

After three years of reviewing historical and contemporary medical texts on tropical disease — as well as consulting with experts in Thailand, where cerebral malaria has always been a public health concern — Dr. Varney sought grant money to study Vietnam veterans with a history of malaria. He won joint funding from the VA and the Iowa Chapter of the American Legion. When he solicited volunteers from among veterans using the services of the Iowa City VA hospital to participate in his study, he found 30 who reported having had malaria in Vietnam with additional symptoms, including amnesia, convulsions and blurred or temporary loss of vision, suggesting cerebral malaria. Asked to describe what their lives have been like in the years since Vietnam, all of them reported episodes of uncontrollable and irrational anger and problems maintaining employment. The majority had been diagnosed with psychiatric disorders, including depression, PTSD, bipolar affective disorder, antisocial personality and borderline personality. Most reported at least one year of heavy alcohol or marijuana use, and 22 recalled having suicidal thoughts.

Only five were still married to their first wives, and 11 had histories of domestic violence. In psychological tests, the patients exhibited mental status abnormalities, including poor memory function. The results of that study were published in *VA Practitioner* in 1989.

Dr. Varney followed up with a second study, also funded by the VA, in which he compared the performance on a battery of neuropsychological tests of 40 Vietnam veterans, identified as cerebral malaria survivors, to that of 40 Vietnam veterans who were treated for combat injuries but who had never had malaria. He found further evidence that cerebral malaria survivors exhibit symptoms such as depression, personality change, feelings of subjective distress, impaired memory, emotional instability and seizures that were still problematic 15 to 20 years after the malaria illness had been treated. In 1997 the results of his second study were published in the *Journal of Nervous and Mental Disease*.

Dr. Varney's findings have pitted him against the VA and the Department of Defense, which lead the world in malaria vaccine research. Both of these organizations support the view that cerebral malaria survivors experience no long-term impairments from their infection. According to the Veterans Benefits Administration, only three claims for disabilities resulting from cerebral malaria have been processed since the end of the Vietnam War. Nevertheless, on July 16, 1998, a House Subcommittee on Veterans Benefits convened a hearing to investigate 'the possibility that veterans judged to be suffering from PTSD may actually be exhibiting the effects of cerebral malaria.' Dr. Varney was invited to provide expert testimony by Congressman Lane Evans (D., Ill.). A transcript of the hearing reveals that Dr. Varney's statement was generally well received by the committee members but not by officials from the VA. They had their own expert, Dr. John Booss, the VA's national director of neurology, who criticized Dr. Varney's methods and played down the significance of his findings. Dr. Booss' criticism centered primarily on the fact that Varney lacked medical documentation that his study participants specifically had cerebral malaria.

'As any war veteran can tell you, the field of combat is not an ideal place for keeping scrupulous medical records,' said Varney. He found records confirming malaria with symptoms indicating cerebral involvement for only two-thirds of his subjects; however, he is careful to point out that this was the same degree of confirmation he achieved for his subjects who reported gunshot wounds. Apparently, claims in progress, lost records and records destroyed in a fire at the complex in the 1970s limited the number of service records he was able to access from the National Personnel Records Center in St. Louis.

Dr. Varney speculates that there may be another reason why there are so few cases of cerebral malaria on record from Vietnam. He suspects that most patients who had either cerebral malaria or falciparum malaria that was unresponsive to medication (leaving them vulnerable to a cerebral infection) were rushed from the battlefield to more modern hospitals in cities like Seoul; therefore, most records noting cerebral malaria were kept outside the military.

Dr. Booss urged caution in implementing any policy to compensate cerebral malaria survivors. 'What we suggest,' he stated, 'is that an assessment of Dr. Varney's work reveals some methodological and interpretational problems that should be carefully considered before we make decisions that change health benefits policy.'

'The hearing went absolutely nowhere,' says Dr. Varney. He believes that the long-term effects of cerebral malaria may exacerbate the symptoms of PTSD and other neuro-psychiatric problems, and that most cerebral malaria survivors are probably already receiving compensation for PTSD. 'Treatment is cheap. I don't think that getting more compensation is the issue, I think that getting more treatment is the issue.' And he believes the VA could learn a great deal about treating the short- and long-term symptoms of cerebral malaria from countries where it is a daily fact of life. According to Dr. Varney, there are four classic symptoms that suggest that a veteran with a history of malaria had cerebral malaria: depression, intense irritability, severe forgetfulness and trouble sleeping. The first step should be an exam by a psychiatrist and a neurologist. He advises veterans to inform their physicians if they have ever been ill with malaria. He's found that veterans who fit the criteria for being cerebral malaria survivors may benefit from PTSD therapy in combination with anti-convulsants.

Manuel claims his life has improved drastically because of this enhanced treatment and also because he's finally found an answer that makes sense to him. He believes there are many veterans with similar stories who could be helped.

Dr. Varney fears that time is running out and the VA is letting an opportunity slip by to help not only current veterans but also those who may contract cerebral malaria in the future. 'This population of malaria-afflicted Vietnam veterans are the only malaria-afflicted population of note in the industrialized West,' he testified in 1998. 'When they die, this research will become historical and have no relevance to anything in particular.'

More than three years has elapsed since Dr. Varney's testimony, and his message seems to have been ignored by the VA. Calls to the VA secretary's office for comment on the VA's actions since the hearing were returned by spokesperson Ken McKinnon, who stated that cerebral malaria is not presently a VA priority area. He read from a statement prepared by Dr. Booss: 'Were a veteran with a history of falciparum malaria with or without documented acute cerebral symptoms to complain of symptoms suggesting complex partial seizures, anxiety and/or depression, careful clinical evaluation of those and appropriate therapy would be warranted. This would constitute accepted practice and standard of care in any VA hospital.'

Dr. Varney believes VA clinicians should take a more proactive role. In order for the VA to stand any chance of helping veterans who suffer long-term problems due to cerebral malaria, he says, 'The first thing we need to do is ask them if they ever had malaria. Nobody's doing that.'

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