

# DISABLED AMERICAN VETERANS



V. A. REGIONAL OFFICE  
Federal Building  
1220 S. W. 3rd Avenue  
Portland, Oregon 97204  
April 7, 1982

MEMO TO: ALL OREGON COUNTY VETERANS SERVICE OFFICERS  
FROM: ROBERT L. POOLE, SUPERVISOR, NATIONAL SERVICE OFFICE  
SUBJECT: MELIOIDOSIS

Your attention is directed to the attached copy of a report prepared by Dow Chemical Co.

It describes melioidosis, a bacterial disease indigenous to Southeast Asia.

It is submitted by Dow Chemical Co. that complaints from veterans regarding disabilities resulting from exposure to defoliants may, in fact, be traceable to this exotic disease.

You will note that the presence or absence of this bacteria can be determined by serological testing.

We provide this information for use by you and your staff. Please do not release copies of this report to the veterans in your community.

If you have any questions regarding this matter, please contact us.

Sincerely,

A handwritten signature in dark ink, appearing to read "Patrick M. Rahm".

Patrick M. Rahm  
National Service Officer

by dir

PNR:db

Melioidosis is a bacterial disease which is unique to certain parts of Southeast Asia, and prevalent in Vietnam. In Vietnam, the bacteria is readily isolated from rivers, streams, rice paddies, soil and market fruit. The word "Melioidosis", literally translated from the Latin, means "having a resemblance to the distemper of asses". This is because the disease resembles the disease of distemper as it afflicts horses.

Melioidosis has long been referred to in the medical literature as the "time bomb disease" or the "medical time bomb". This is because there have been many documented cases where humans have acquired the bacteria without exhibiting signs of illness, only to have the disease manifest itself many years later. Such cases abound in the medical literature, with the longest documented period of latency being 26 years. It is not unusual for such cases to show a history of chronic debility or periodic serious illness where the real cause was not identified. Often the onset of identified latent illness is precipitated by some unrelated health impairment which compromises the health of the infected person. Onset of diabetes, surgery, trauma, burns, chemotherapy, and diseases such as influenza have been implicated. Excessive use of alcohol is frequently mentioned in the history of Melioidosis victims.

During the Vietnam war, the disease often erupted in a septicemic (blood poisoning) form in individual U.S. soldiers. In those cases, the disease was fatal about 90% of the time even with heroic drug therapy. The disease often arises in a pulmonary form, which resembles pneumonia or tuberculosis. Melioidosis has often been misdiagnosed as one of these diseases. The disease may also manifest itself in the appearance of cutaneous abscesses. Finally, it appears that many become infected without any overt symptoms of illness. It is at least conceivable that the varied manifestations are caused by different routes of exposure. For example, cutaneous abscesses could be caused by entry through a wound or damaged skin. Pulmonary effects could result from inhalation and inapparent infections from ingestion. The septicemic form could result from any route of acquisition in a person without sufficient defense mechanisms or persons of unusual susceptibility.

One of the obvious problems in the medical management of Melioidosis is the difficulty in diagnosis. In a startling percentage of cases, the bacteria has not been identified from cultures when the disease was obviously present. This may be partly due to the fact that

American physicians generally are unfamiliar with the disease. As a consequence, an inappropriate culture medium may be used or the culture terminated too soon. After 24 hours, the culture may have the appearance of a different bacterial origin. Only after 72 to 90 hours will the culture take on the characteristic wrinkled appearance of *Pseudomonas Pseudomallei* (melioidosis).

The most reliable method of detecting the presence of the bacteria is by measuring the antibodies created by the body to fight the disease. The antibody "titer" (level of antibody) will reflect existence of the bacteria even when it cannot be isolated, and rise sharply in periods of active illness.

Normally, a titer of 1:40 is considered diagnostic for existence of the bacteria. Using this criteria a survey of American troops returned from Vietnam showed that 9% had acquired the bacteria in Vietnam. If this percentage were typical, then some 260,000 American veterans carry this bacteria in their bodies today. An additional 11% showed titers of 1:20 which is normally not considered diagnostic. However, a titer of 1:20 was found in Vietnam returnees four times as frequently as men who had not served in Vietnam--which may suggest some significance at this level. If significant, an additional 317,000 Vietnam veterans would be at risk.

Many early reports about the treatment of this disease suggest that a "cure" was rather easily achieved. Later reports suggest that these may more appropriately be considered remissions. It now seems clear that brief periods of drug treatment do not achieve a cure. Drug treatment of up to one year has been reported, with no conclusive evidence that a permanent cure was achieved.

Early reports also agreed that person-to-person transmission was doubtful. Later reports cast doubt on this theory, as venereal transmission from a Vietnam veteran to his wife has been serologically confirmed. A case of neonatal Melioidosis has also been reported in the child of a Vietnam veteran. The source of the neonatal infection was never identified, although more than 500 environmental samples were cultured. Cultures of the parents and all attending hospital personnel were negative. However, the parents were never tested serologically, which

leaves the possibility of inapparent infection of the veteran passed to the wife and fetus. Indeed, under all of the evidence, this may be the most likely explanation. Finally, nine members of the family of a Vietnam veteran with active pulmonary Melioidosis were studied serologically to test the possibility of human transmission. Two developed a titer of 1:40 and one a titer of 1:80. The study termed these titers of "borderline significance" and concluded that transmission had not occurred when the family members did not develop symptoms in a 33 week follow-up period. In view of the demonstrated long latent periods associated with clinically inapparent infections, this conclusion may be questionable.

A number of features of this disease appear noteworthy. The broad range of potential effects is unusual. Although abscesses of the lung and skin are most frequent, abscesses of every body organ except the gastrointestinal tract have been reported. At autopsy, abscesses of organs throughout the body are often found. Symptoms of arthritis and osteomyelitis have also been reported. In one bizarre case, a diagnosed heart attack turned out later at autopsy to be a 4 cm. abscess that had eaten entirely through the myocardium of the heart.

It has been found that organs affected by the bacteria show widespread evidence of microabscesses that produce tiny granulomous areas upon healing. The larger abscesses found at autopsy appear to be a gathering or coalescing of the smaller pre-existing abscesses. Upon surgery or biopsy, the microabscesses and granulomous areas have been found in the lungs and liver of patients who survived and recovered. The effect on the vitality of the organ or the health of the individual of these microabscesses and granulomous areas has not been assessed in the literature.

From a review of the available literature, it appears that Melioidosis is a disease that is not well studied or understood. Estimates of the number of inapparent infections in Vietnam veterans suggest that at least 260,000 (and perhaps as many as 577,000) may be at risk. The documented latency of this disease suggests that the effects of this "medical time bomb" could be seen for the balance of this century.

The possibility of transmission of the disease to wives, children, and even fetuses is present, although the frequency is not known. The question of whether cures are actually achieved, or only remissions, warrants further study.

The bulk of the available literature has been written by doctors who handled cases in combat areas, in military hospitals, or in VA hospitals. It may well be that there is a reasonable chance of accurate diagnosis and effective treatment at such institutions, although the number of these cases diagnosed at autopsy is sobering. In any event, the more important question is how many of these cases would even be presented at a military or VA hospital. Certainly, a Vietnam veteran who became sick in 1982 for the first time could hardly be expected to relate the illness to his service. Given the difficulty in diagnosis, his civilian doctor could hardly be counted on to recognize the true nature of the problem.