Health Department
Kansas City Missouri

Tularemia Backgrounder

Tularemia (too-lă-rē′mē-ă) was first described as a plaguelike disease of rodents in 1911 and, shortly thereafter, was recognized as a potentially severe and fatal illness in humans. Tularemia's wide-ranging potential became apparent in the 1930s and 1940s, when large waterborne outbreaks occurred in Europe, the Soviet Union and United States. This caused *Francisella tularensis* to quickly gaine notoriety as a strong laboratory hazard. Public health concerns encouraged substantial early investigations into tularemia.

Tularemia occurs throughout much of North America and Eurasia. In the United States, human cases have been reported from every state except Hawaii; however, most cases occur in south-central and western states (especially Missouri, Arkansas, Oklahoma, South Dakotaand Montana). *F. tularensis* is found in widely diverse animal hosts and habitats and can be recovered from contaminated water, soil and vegetation. A variety of small mammals, including mice, water rats, squirrels, rabbits and hares, are natural reservoirs of infection. They acquire infection through bites by ticks, flies and mosquitoes, as well as by contact with contaminated environments.

F. tularensis has long been considered a potential biological weapon. It was one of a number of agents studied by Japanese germ warfare research units operating in Manchuria between 1932 and 1945; it was also examined for military purposes in the United States. Ken Alibeck, a former Soviet Union biological weapons scientist, has suggested that tularemia outbreaks affecting tens of thousands of Soviet and German soldiers on the eastern European front during World War II may have been the result of intentional use. (Alibek K. *Biohazard*. New York, NY: Random House; 1999:29-38.) Following the war, there were continuing military studies of tularemia. In the 1950s and 1960s, the US military developed weapons that would distribute *F. tularensis* aerosols; concurrently, it conducted research to better understand the function and structure of tularemia and to develop vaccines, antibioticand treatment regimens. In some studies, volunteers were infected with *F. tularensis* by direct aerosol delivery systems and by exposures in an aerosol chamber. By the late 1960s, *F. tularensis* was one of several biological weapons stockpiled by the US military. According to Alibeck, a large parallel effort by the Soviet Union continued into the early 1990s and resulted in weapons production of *F. tularensis* strains engineered to be resistant to antibiotics and vaccines.