

# New York State Department of Health

## Glanders

Last Reviewed: November 2006

### What is glanders?

Glanders is an infectious disease caused by the bacterium *Burkholderia mallei*. Glanders is primarily a disease affecting horses, but it also affects donkeys and mules and can be naturally contracted by goats, dogs, and cats. Human infection, although not seen in the United States since 1945, has occurred rarely and sporadically among laboratory workers and those in direct and prolonged contact with infected, domestic animals.

### Who gets glanders?

Geographically, the disease is found in Africa, Asia, the Middle East, and Central and South America. Sporadic cases have been documented in veterinarians, horse caretakers and laboratory workers.

### How is glanders spread?

Glanders is transmitted to humans by direct contact with infected animals. The bacteria enter the body through the skin and through mucosal surfaces of the eyes and nose.

### What are the symptoms of glanders?

The symptoms of glanders depend upon the route of infection with the organism. The types of infection include localized, pus-forming cutaneous infections, lung infections and bloodstream infections. Generalized symptoms of glanders include fever, muscle aches, chest pain, muscle tightness and headache. Additional symptoms may include excessive tearing of the eyes, light sensitivity and diarrhea.

#### **Localized infections:**

If there is a cut or scratch in the skin, a localized infection with ulceration will develop within one to five days at the site where the bacteria entered the body. Swollen lymph nodes may also be apparent.

Infections involving the mucous membranes in the eyes, nose and respiratory tract will cause increased mucus production from the affected sites.

#### **Pulmonary infections:**

In pulmonary infections, pneumonia, pulmonary abscesses and pleural effusion can occur. Chest X-rays will show localized infection in the lobes of the lungs.

#### **Bloodstream infections:**

Bloodstream glanders infections are usually fatal within seven to 10 days.

#### **Chronic infections:**

The chronic form of glanders involves multiple abscesses within the muscles of the arms and legs or in the spleen or liver.

### How soon after infection do symptoms appear?

Symptoms can develop one to five days after infection.

### How is glanders diagnosed?

The disease is diagnosed in the laboratory by isolating *Burkholderia mallei* from blood, sputum, urine or skin lesions. Serologic assays are not available.

## What is the treatment for glanders?

Because human cases of glanders are rare, there is limited information about antibiotic treatment of the organism in humans. Sulfadiazine has been found to be effective in experimental animals and in humans. *Burkholderia mallei* is usually sensitive to tetracyclines, ciprofloxacin, streptomycin, novobiocin, gentamycin, imipenem, ceftrazidime and the sulfonamides. Resistance to chloramphenicol has been reported.

## What can be done to prevent the spread of glanders?

There is no vaccine available for glanders. In countries where glanders is found in animals, prevention of the disease in humans involves identification and elimination of the infection in the animal population. Within the health care setting, transmission can be prevented by using common blood and body fluid precautions.

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