

## **Animal Surveillance Case Definition**

### ***Mycobacterium tuberculosis***

Tuberculosis (TB) is a mycobacterial disease that is a major cause of disability and death in most of the world, particularly developing countries. The etiological agents of mammalian TB in North America are *Mycobacterium tuberculosis*, the main cause of human TB, and *M. bovis*, the agent of bovine TB. Humans are the reservoir hosts of *M. tuberculosis*.

#### **Clinical description**

Dogs and cats have a natural resistance to infections with the TB organisms. 75% of documented canine cases are due to *M. tuberculosis* and the remainder to *M. bovis*. *M. tuberculosis* is typically transmitted from humans to dogs ("reverse zoonoses"). Cases in dogs are attributed to repeated aerosol exposure from living with humans infected with TB, or consuming contaminated sputa, milk, or tissue. 90% of documented cases in cats are caused by *M. bovis*; however in countries where bovine TB has been brought under control, the rare infections in cats are usually caused by *M. tuberculosis*.

The clinical picture of TB in dogs and cats is not characteristic, and therefore, ante-mortem diagnosis is difficult. Clinical signs include: anorexia, lethargy, cachexia, coughing, fever, and leukocytosis in respiratory cases. Granulomatous lesions in soft tissue, ascites, vomiting, pleural and pericardial effusion, and hepatomegaly may develop when dogs and cats swallow the organism and the gastrointestinal form results.

Although few cases of transmission from dog to man have been confirmed, a dog infected with active tuberculosis would represent a potential risk of transmission to persons in the household, and strong consideration should be given to euthanizing an infected animal. A dog or cat infected with *M. bovis* can also be a potential source of infection to cattle.

#### **Case classification**

Domestic companion animals are not routinely tested for *M. tuberculosis*, and testing of dogs and cats is usually limited to situations where they reside in a household with a human TB patient. Diagnosis of *M. tuberculosis* is made via bacteriologic culture, histopathology or PCR analysis.

Reports of TB in domestic companion animals should be referred to the local health departments, which will collaborate with the NJDHSS to investigate. Other state agencies will be notified by the NJDHSS, if appropriate.

#### **Confirmed**

+/- compatible clinical signs **and**

- isolation of *M. tuberculosis* or *bovis* from a clinical specimen by culture. Mycobacterial are slow growing so 4-6 weeks may be necessary for culture and identification.

#### **Probable**

A clinically compatible case that is epidemiologically linked to a human TB case **and**

- characteristic granulomatous lesions containing acid-fast bacilli, **or**
- detection of *M. tuberculosis* or *bovis* nucleic acids in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay.