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**Health Alert: *Brucella suis* in pigs in NT- implications for human health**

*Brucella suis* has been detected for the first time in feral pigs in the Northern Territory. Enhanced testing has identified this first detection of *Brucella suis* in local pigs in the Daly Region and more recently in other areas of the Top End. *Brucella suis* is known to be widespread in pig populations in Queensland, and pig cases have been previously detected in Northern NSW. *Brucella suis* has also been found in dogs used in pig-hunting activities, or that have been fed raw feral pig meat in these states. While disease in humans from *Brucella suis* is found in many parts of the world, it is rare in most developed countries like Australia. In 2021, a single human case of brucellosis was identified in a patient who had not travelled outside of the NT.

***Brucella suis* is a disease associated with pigs that can also affect humans, dogs and other animals. It has recently been identified in local pigs. Human transmission has been associated with the hunting, butchering or consumption of feral pigs.**

### Brucellosis

Brucellosis is a zoonotic disease caused by the intracellular bacteria, *Brucella* species. There are several types of *Brucella* bacteria, but *Brucella suis* is the only species in Australia that can cause human disease. It is transmitted to humans from infected animals. *Brucella suis* usually infects pigs, but can also infect other animals such as dogs. See [fact sheet for Swine brucellosis](#). Different *Brucella* species infect different animals, for example *Brucella melitensis* usually infects goats, sheep and camels but is not present in Australia. Travellers from overseas may present with brucellosis acquired from other species that are not present in Australia.

### Transmission

In Australia, most infections are the result of direct contact with the tissues or body fluids of an animal infected with *Brucella suis* (such as feral pigs or dogs). The risk of disease increases if the person has open wounds that come into contact with the infected animal tissues or fluids. The disease can also occur following consumption of undercooked meat from an infected animal. In rare cases the disease may be spread through inhalation of the *Brucella* bacteria. Human to human transmission is extremely rare.

### Symptoms

The incubation period is highly variable, but is commonly 1 to 2 months. Following the incubation period, human cases may experience:

- fever (relapsing, mild or protracted) and drenching sweats
- weight loss and anorexia
- malaise
- headache

- arthralgia, myalgia, back pain
- depression (common, and often severe)

Brucellosis typically begins with a flu-like illness. Symptom onset can be acute or insidious. Fever is the most common symptom, and is usually accompanied by a variety of other complaints. Joint involvement (particularly sacroilitis) and symptoms of arthritis are common, whereas orchitis, epididymitis, osteomyelitis, meningitis, endophthalmitis, and endocarditis are rare. Endocarditis is the leading cause of death, and the case-fatality rate of brucellosis endocarditis is approximately 2%. Disease relapse occurs in up to 10% of cases. Pregnant women and their babies are at risk of developing severe disease.

**Brucellosis should be considered as a differential diagnosis in hunters, farmers and veterinarians presenting with a compatible febrile illness. The clinical manifestations are varied, but symptomatic patients will usually report fevers, sweats, headache, and joint pain following exposure.**

### Testing

Bacterial culture and isolation from blood, bone marrow, and other tissues can be used to identify *Brucella*, and PCR can be conducted to determine the species. If acute brucellosis is suspected, serology and blood cultures are recommended. Serological testing may be difficult to interpret (particularly in relapsed disease), and requires convalescent serum samples.

### Treatment

Doxycycline is the mainstay of treatment. Adjunctive gentamicin or rifampicin reduces the rate of treatment failure and relapse. Oral therapy with doxycycline is required for six weeks, with adjunctive daily intravenous gentamicin for the initial seven days. Rifampicin can be used as an alternative agent if gentamicin is contraindicated.

### Prevention

There are no human vaccinations available to prevent brucellosis. Farmers, hunters, and handlers of potentially infected animals should exercise care when handling carcasses, and placentae/foetuses. Hunters, farmers, and veterinarians handling feral pigs or pig-hunting dogs should protect themselves with Personal Protective Equipment (PPE) and adopt good personal hygiene measures. PPE should be worn to prevent bare skin contact with animal tissue and fluids. The slaughtering of unwell animals should be avoided.

Dogs should not be fed raw feral pig meat or bones, and should be taken to a veterinarian if there are concerns of illness.

All confirmed human cases need to be notified to the NT Centre for Disease Control (CDC). Thank you for being alert to possible cases of brucellosis in your practice.

Yours sincerely,

Dr Vicki Krause  
 Director, Public Health Unit (Centre for Disease Control and Environmental Health)

Centre for Disease Control	Darwin	Katherine	Nhulunbuy	Tennant Creek	Alice Springs
Phone	08 89228044	08 89739049	08 89870357	08 89624259	08 89517540
Fax	08 89228310	08 89739049	08 89870355	08 89624420	08 89517900