Wild Tiger Health Centre Information Sheet

Disease threat: Bartonella spp.

Hazard description: A bacterial infection of mammalian erythrocytes, widely distributed in wildlife, livestock and humans, likely species-specific. Transmission is by blood-feeding arthropods; fleas, sand-flies and probably ticks.

Host species: In general, *Bartonella* species are adapted to their own mammalian host, with chronic, but likely asymptomatic infection (Birtles 2012a). Infection has been detected by bacterial isolation, PCR techniques and by seropositivity in a wide variety of free-ranging wild felids (Molia et al. 2004; Rotstein et al. 2000, Kosoy and Goodrich, 2019) including African lion *(Panthera leo)*, Amur leopard *(Panthera pardus orientalis),* jaguar *(Panthera onca)*, puma *(Puma concolor),* cheetah *(Acinonyx jubatus)*, Iberian lynx *(Lynx pardinus)*, bobcat *(Lynx rufus)*, ocelot *(Leopardus pardalis)*, wildcat *Felis sylvestris)*, and Iriomote cat *(Prionailurus bengalensis iriomotensis).*

Pathogenesis: Disease occurs with accidental infection of non-reservoir species (or with immunocompromise in the reservoir host) (Birtles 2012a) – in humans disease is termed 'cat-scratch disease'. Infection results in replication in red blood cells, which may lead to an immune response and associated lymphadenopathy and fever. Disease in domestic cats has been reported (Chomel et al. 2006), and a fatal necrotising interstitial pneumonia with suppurative myocarditis associated with *Bartonella henselae* infection was recently documented in three pumas (Elsmo et al. 2018). No other reports of disease were found in free-ranging wild felids which might suggest limited susceptibility. The role of wild felids as potential reservoirs of infection for humans appears unclear.

Diagnosis: Serology, culture, PCR.

Vaccination: None.

Free-ranging tiger occurrence: Likely to have a species specific *Bartonella*. No reports found (0/17 free-ranging Amur tigers tested seronegative, but serological evidence of infection has been detected in free-ranging Amur leopards in the Russian Far East (Quigley et al. 2001).

Distribution: Considered worldwide.

Assumptions: Low pathogenicity in immunocompetent wild felids.

Limitations: lack of knowledge of the role of wild free-ranging felids in the epidemiology of *Bartonella* infections.