

The current outbreak of human coronavirus disease (COVID-19) originated from a virus (SARS-CoV2) transmitted from wildlife to people in the live animal markets of China. Currently, human to human CoV2 transmission is the main way people contract COVID19 disease and at the moment there is no evidence that animals continue to contribute to human COVID 19 outbreaks.

However recent investigations have shown that some animals, including domestic cats, dogs, tigers, lions, minks and primates can be infected with CoV2. When infected, some of these develop clinical disease and some can further transmit the infection to other animals closely housed with them. While these animal infections are currently thought not to contribute to natural transmission and infection in humans, they are a good reminder to us that novel emerging infectious diseases can be complex and transmission dynamics can be labile and unpredictable.

For aviation personnel involved in wildlife hazard management and who could be exposed to carrier animals, COVID19 is a graphic alarm bell reminding us that the chance of contracting a zoonotic disease is a real and constantly changing risk that should be managed.

Zoonotic diseases: diseases transmitted between animals and humans, either from animals to humans, humans to animals or both.

Transmitted by:

- Contact with the saliva, blood, urine or faeces of an infected animal
- Close direct contact.
- Contact with contaminated soil or water
- Indirect contact via:
 - a. respiratory aerosols or sprayed respiratory droplets
 - b. fomites (common contact surfaces or inanimate transfer vessels)
 - c. a vector host, eg being bitten by tick or mosquito
- Eating or drinking unpasteurised dairy products, undercooked meats, unwashed contaminated fruits or vegetables

Zoonotic diseases are surprisingly common - the majority (~75%) of emerging infectious diseases in humans are zoonotic. Some can be very serious or even fatal, for example Rabies, Tuberculosis, Ebola virus and Hendra virus infections.

Zoonotic diseases include infections caused by:

- Bacteria e.g. Salmonellosis, Leptospirosis, Anthrax
- Viruses e.g. ABLV Encephalitis, Hendra Virus SARS-Encephalitis
- Protozoa e.g. Toxoplasmosis, Giardiasis
- Fungi e.g. Dermatophytosis
- Helminths (worms) e.g. Hydatidosis, Strongylosis

General preventative principles for Zoonotic diseases include:

- Do not handle a live or dead animal unless you are trained to do so.
- Always plan an animal capture and handling session with the aim to handle animals with minimal restraint/stress and to limit direct contact with them.
- Use PPE appropriate to the circumstance. PPE requirements may vary with circumstance and species. Simple examples include wearing disposable gloves and overalls to protect clothing and skin from contamination by organic material when collecting carcasses; or wearing a mask or respirator if working with animals in confined and poorly ventilated areas. eg a bird or bat cave roost.
- Regularly renew disposable PPE, wash hands and sanitise during and after an animal or carcass handling session
- Regularly wash and use hand sanitisers at all times
- Ensure you have the appropriate vaccine protection required for handling some species (e.g. bats & ABLV)
- Avoid handling animals or carcasses when you have any illness (eg cold or flu) or if your immune system is known to be compromised by intercurrent therapy, toxins or other issue.
- Dress or protect any existing cuts and abrasions from contact with animals or animal products.
- Any bite or wound sustained from an animal during a procedure should be immediately washed clean, sanitised and dressed. Prompt medical consultation is warranted to determine whether further treatment is necessary
- When working in outdoors areas be diligent in applying sunscreen and personal insecticide. Sunburnt skin is compromised and may accelerate absorption and transfer of pathogens into your system. In Australia, ticks, leeches, mosquitoes, biting midges, and other insects can transmit a variety of infectious disease agents.
- Be alert to any symptoms that arise after working in dense vegetation or in close proximity to animals. If you suspect a possible zoonosis from an animal or insect source, seek medical attention sooner rather than later.