

ZOONOTIC DISEASES IN WILDLIFE AND THE IMPORTANCE OF SURVEILLANCE

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Wildlife diseases can have a significant effect on humans through their impacts on economy and cultural practices, but the most direct impact of wildlife on human health is through the zoonotic pathogens that wildlife can carry. Wildlife species are a major source of zoonoses. Some of these pathogens are ancient, for example rabies was first reported in 2300 BC. However, novel zoonoses are constantly being discovered (e.g. SARS, HIV). Of all emerging infectious diseases in humans, those originating from wildlife are believed to pose the most significant risk to global human health (Jones et al, Nature, 2008). Wildlife zoonoses reported in Europe are numerous and include viruses (e.g. rabies, tick-borne encephalitis, hantaviruses), bacteria (e.g. bovine tuberculosis, tularemia, brucellosis) and parasites (e.g. trichinellosis, echinococcosis). With increasing globalization, human population expansion and encroachment into wildlife habitat, introductions of invasive species, and environmental, socioeconomic and microbial change, the presence and maintenance of pathogens within a given ecosystem is in constant flux. In some cases, wildlife also act as sentinels for human infection. For these reasons, surveillance for pathogens in wildlife can provide critical information to help minimize human exposure. Passive (general) and active (targeted) surveillance are both valuable components of a surveillance scheme, as are continual analysis and dissemination of surveillance information. In Sweden, surveillance for these zoonoses occurs through both passive (e.g. tuberculosis) and targeted (e.g. avian influenza, *Echinococcus multilocularis* and *Trichinella spp.*) programs, or both (e.g. West Nile Virus, tularemia, rabies). Through a program funded by the government and hunting license fees, all wildlife found sick or dead and all hunted wildlife with abnormalities can be submitted for examination. Approximately 2 000 wildlife cases, representing whole carcasses and samples, are examined each year.