

TERRESTRIAL ANIMAL HEALTH STANDARDS
COMMISSION

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CHAPTER X.X.

**INFECTION WITH *ECHINOCOCCUS*
*MULTILOCCULARIS***

Article X.X.1.

General provisions

Echinococcus multilocularis is a cestode (tapeworm) which is widespread in some parts of the Northern Hemisphere, and it is maintained mainly in wild animal populations. The adult worms occur in the small intestines of canids (definitive hosts), particularly foxes, and larval stages (metacestode) in tissues of various liver and other organs of other mammals, i.e. hosts (commonly rodents), (intermediate hosts), including Humans are infected occasionally. ~~Infection with the larval stage of the parasite in the intermediate host, which causes severe disease, in humans (referred to as 'alveolar echinococcosis'), but infection does not cause discernible health impacts in livestock.~~

~~For the purpose of the Terrestrial Code, infection with *E. multilocularis* is defined as a zoonotic parasitic infection of domestic and wild canids, felids, rodents and pigs.~~

~~Transmission of *E. multilocularis* to canids (definitive hosts) occurs through ingestion of metacestode-infected viscera from a range of wild small mammalian species (intermediate hosts). Foxes and some other wild canids are the most important definitive hosts in maintaining the cycle at the wildlife-human interface through contaminating both rural and urban environments. Dogs may also act as important and efficient definitive hosts in both rural and urban environments, providing an important potential source for human infections. Even though the potential role of felids in transmission of infection to humans cannot be excluded, their epidemiological role is considered negligible. Pigs may become infected but the parasite remains infertile; therefore, they have no role in transmission of the parasite.~~

For the purpose of the Terrestrial Code, infection with *E. multilocularis* is defined as a zoonotic parasitic infection of domestic and wild canids, and rodents.

Transmission of *E. multilocularis* to canids occurs through ingestion of metacestode-infected organs from a range of wild small mammals.

Infection in intermediate hosts, as well as in humans, occurs by ingestion of parasite eggs from contaminated environments. In humans, infection may also occur following contact with infected definitive hosts or by consumption of food or water contaminated with ~~*E. multilocularis* eggs from canine~~ faeces.

Prevention of infection in humans is difficult, particularly in areas with a high infection pressure maintained by rural and urban foxes. The risk of infections may ~~can~~ be reduced by good food hygiene and personal hygiene, community health education and preventing infection of dogs ~~and cats~~. Good communication and collaboration between the *Competent Authority* and public health authorities is an important component in monitoring the extent of infection with *E. multilocularis* in human and animal populations.

This chapter provides recommendations for prevention, control and monitoring of infection with *E. multilocularis* in dogs ~~and cats~~, and monitoring in wild canids.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

[NOTE: The following terms 'owned dog', 'responsible dog ownership' and 'stray dog' used throughout this chapter are defined in Chapter 7.7. Once this chapter is adopted, this note will be deleted and these definitions will be moved to the glossary of the *Terrestrial Code*.]

Article X.X.2.

Prevention and control of infection with *Echinococcus multilocularis* in owned and stray dogs (~~owned and stray~~) and cats

In order to achieve success in the prevention and control of infection with *E. multilocularis*, the *Competent Authority* should carry out community awareness programmes to inform people of the risk factors associated with transmission of *E. multilocularis* and the importance of alveolar echinococcosis in animals and humans, the role of foxes, ~~and other wild canids, and dogs (including stray dogs), and cats~~, the need to implement preventive and control measures, and the importance of responsible dog ownership ~~and cat ownership~~.

Whenever the epidemiological situation makes a control programme necessary, the following measures should be undertaken:

1. Owned dogs ~~and cats~~ should not be allowed to roam freely unless treated according to point 3.
2. For control of stray dog populations, the *Competent Authority* should ensure compliance with relevant aspects of Chapter 7.7.
3. Dogs ~~and cats~~ known to be infected should immediately be treated with praziquantel (5 mg/kg) or another cestocidal product with a comparable efficacy; dogs suspected of having access to rodents or other small mammals should be treated at least every 21–26 days. Where possible, faeces excreted up to 72 hours post treatment should be disposed of by incineration or burial.

Article X.X.3.

Monitoring for infection with *Echinococcus multilocularis*

1. Monitoring in foxes and other wild canids
 - a) Monitoring for infection with *E. multilocularis* in foxes and other wild canids should be undertaken as it is an essential component for assessing the current situation regarding prevalence of infection.
 - b) Appropriate monitoring strategies should be designed according to local conditions, in particular, where large populations of definitive hosts exist. Under these circumstances environmental sampling (faeces) may provide a useful indicator of infection pressure.
2. Surveillance in slaughterhouses/abattoirs
 - a) The *Veterinary Services* should consider carrying out targeted surveillance for larval lesions of *E. multilocularis* in livers of pigs raised in outdoor conditions, as an indicator of the presence of the parasite in the environment.

b) ~~Data collected will provide useful additional information regarding prevalence of infection.~~

Veterinary Authorities should use any information on cases of human infection, provided by public health authorities, in the initial design and any subsequent modification of surveillance and monitoring programmes for estimation of parasite transmission.

Article X.X.4.

Recommendations for the importation of dogs, and wild canids ~~and cats~~ from an infected country

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that:

1. the *animal* has been treated between 48 and 72 hours prior to shipment with praziquantel (5 mg/kg), or another cestocidal product with a comparable efficacy against intestinal forms of *E. multilocularis*
2. adequate precautions have been taken to avoid reinfection of the *animal* between treatment and embarkation.