

# Management of *Echinococcus* *multilocularis* Infections in Animals Guideline, 2025

Ministry of Health

Effective: January 2025

---

ISBN 978-1-4868-8712-5 [PDF]

© King's Printer for Ontario, 2025

---

**Citation:** Ontario. Ministry of Health.  
Management of *Echinococcus multilocularis*  
infections in animals guideline, 2025. Toronto,  
ON: King's Printer for Ontario; 2025.

# TABLE OF CONTENTS

<b>1. PREAMBLE.....</b>	<b>3</b>
<b>2. PURPOSE.....</b>	<b>3</b>
<b>3. REFERENCE TO THE STANDARDS.....</b>	<b>3</b>
<b>4. REPORTING OF ANIMAL CASES TO BOARDS OF HEALTH .....</b>	<b>4</b>
4.1 REPORTING TO THE MINISTRY.....	5
<b>5. RESPONSE TO CASES OF <i>E. MULTILOCULARIS</i> INFECTION IN ANIMALS .....</b>	<b>5</b>
5.1 ANIMAL AND ENVIRONMENTAL MANAGEMENT PLAN .....	5
5.2 MANAGEMENT OF INFECTED ANIMALS.....	6
<b>6. MANAGEMENT OF HUMAN EXPOSURES.....</b>	<b>6</b>
6.1 INFECTION PREVENTION AND CONTROL FOR CARETAKERS OF ANIMALS.....	7
<b>7. CLEANING AND DISINFECTION .....</b>	<b>7</b>
<b>REFERENCES.....</b>	<b>9</b>
<b>DOCUMENT HISTORY .....</b>	<b>9</b>

# 1. Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by Boards of Health.<sup>1,2</sup> The Standards identify the minimum expectations for public health programs and services. Boards of Health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Guidelines are program and topic-specific documents which provide direction on how Boards of Health shall approach specific requirement(s) identified within the Standards.

# 2. Purpose

This guideline document was created to assist staff at Boards of Health with the management of suspected and confirmed cases of *Echinococcus multilocularis* (*E. multilocularis*) infections in animals, and human exposures to these cases.

# 3. Reference to the Standards

This section identifies the standard and requirements to which this guideline relates.

## **Infectious and Communicable Disease Prevention and Control**

**Requirement 15.** The Board of Health shall receive and respond to all reported animal cases of avian chlamydiosis (infection of birds with the causative agent of psittacosis in humans), avian influenza, novel influenza and *Echinococcus multilocularis* infection, in accordance with the *Health Protection and Promotion Act*, the *Management of Avian Chlamydiosis in Birds Guideline, 2025* (or as current), the *Management of Avian Influenza or Novel Influenza in Birds or Animals Guideline, 2025* (or as current); and the *Management of Echinococcus multilocularis Infections in Animals Guideline, 2025* (or as current).<sup>2</sup>

**Requirement 21.** The Board of Health shall ensure 24/7 availability to receive reports of and respond to:

- a) Infectious diseases of public health importance in accordance with the *Health Protection and Promotion Act*; the *Mandatory Blood Testing Act, 2006*; the *Infectious Diseases Protocol, 2023* (or as current); and the *Institutional/ Facility Outbreak Management Protocol, 2023* (or as current);<sup>2,3</sup>
- b) Potential rabies exposures in accordance with the *Health Protection and Promotion Act*; the *Management of Potential Rabies Exposures Guideline, 2020* (or as current); and the *Rabies Prevention and Control Protocol, 2023* (or as current);<sup>2</sup> and
- c) Animal cases of avian chlamydiosis, avian influenza, novel influenza, or *Echinococcus multilocularis* infection, in accordance with the *Health Protection and Promotion Act*,<sup>2</sup> the *Management of Avian Chlamydiosis in Birds Guideline, 2025* (or as current); the *Management of Avian Influenza or Novel Influenza in Birds or Animals Guideline, 2025* (or as current); and the *Management of Echinococcus Multilocularis Infections in Animals Guideline, 2025* (or as current).

## 4. Reporting of Animal Cases to Boards of Health

The Communicable Diseases – General regulation (R.R.O. 1990, Reg. 557)<sup>4</sup> under the HPPA requires that

- A veterinarian who knows or suspects that one or more definitive host animals (canids such as dogs, coyotes, foxes wolves or felids such as cats, cougars) infected with *E. multilocularis* notify the Medical Officer of Health within one business day.
- A director of a laboratory who knows or suspects that one or more definitive host animals (canids or felids) infected with *E. multilocularis* notify the Ministry within one business day, who will then notify the Medical Officer of Health.

On an annual basis, the Board of Health shall communicate with veterinarians within its jurisdiction their duty to report cases of *E. multilocularis* to the Board of Health.

## 4.1 Reporting to the Ministry

The Board of Health shall:

- Report all cases of *E. multilocularis* in definitive host species (canids and felids) to the ministry after receiving the report;
- Consult with the Ministry, who will engage appropriate animal health partners, with respect to the attending veterinarian's plan for managing all animal and environmental health aspects of the response; and
- Report back to the Ministry, the extent of the exposure(s) and outcome(s) of public health action(s), animal management plan, and control measure(s).

## 5. Response to Cases of *E. multilocularis* Infection in Animals

The identification of a confirmed or suspected case of *E. multilocularis* infection in canids or felids shall trigger an investigation by the Board of Health in order to evaluate potential transmission to human contacts of the infected animal(s).

### 5.1 Animal and Environmental Management Plan

The Board of Health shall contact the veterinarian to obtain a copy of the animal and environmental management plan which should include the following:

- Information sufficient to identify the infected animal(s) (e.g. species, breed, colour, age, sex, as well as tattoos or microchip numbers where applicable, etc.);
- Current health status of infected animal(s), which would impact treatment;
- Animal's travel history, both within and outside the province in the 6 months prior to diagnosis;
- Details on how a diagnosis of *E. multilocularis* was made and any available test results for the animal (including laboratory service provider, specimen type, test method(s), and report interpretation);
- History of treatment with any product containing praziquantel in the last 6 months, including since the date of diagnosis, for the affected animal(s) and any other canids or felids in the household; How the animal's environment is to be cleaned and disinfected to remove any fecal contamination, and thus exposure of humans to the infective eggs.

## 5.2 Management of Infected Animals

In accordance with the Communicable Diseases – General regulation (R.R.O. 1990, Reg. 557) under the HPPA, a Medical Officer of Health who knows or suspects that canids or felids are infected with *E. multilocularis*, shall act to prevent the spread of the infectious agent to humans.<sup>4,5</sup>

The Board of Health shall consult with the ministry to determine if the attending veterinarian's animal and environmental management plan for any infected canids or felids is appropriate. Otherwise, the Medical Officer of Health can issue an order requiring treatment of the animal by a licensed veterinarian to reduce shedding of *E. multilocularis* eggs into the environment, to reduce the risk of transmission to humans.

In cases where *E. multilocularis* infection occurs in animals forming part of an animal exhibit or at a facility where the general public comes into direct contact with the animals or their immediate environment, the Medical Officer of Health should consider issuing an order to prevent public contact with infected canids or felids until appropriately treated, and to prevent public contact with the animal(s) housing areas until they have been appropriately cleaned and disinfected.

## 6. Management of Human Exposures

The Board of Health shall, upon being notified of an animal confirmed to be infected with *E. multilocularis*:

- Identify all household contacts and those with frequent and prolonged unprotected exposure to an infected animal (e.g., dog walker, dog caretaking or grooming centres) for the six-month period preceding the diagnosis of alveolar echinococcosis (only in dogs) or intestinal infection of *E. multilocularis*.
- Conduct a risk assessment to assess the likelihood of fecal ingestion during routine contact with and care of the animal, including hand hygiene practices, and environmental risks.
- Inform all contacts that may have frequently handled an infected animal or its feces without personal protective equipment of the potential health risks associated with this exposure.

Those considered at increased risk of exposure due to fecal-oral exposure should be referred to an infectious disease physician to determine the need for any further investigation or follow up such as imaging and serological testing (as infected persons are not a public health risk). The Board of Health may contact the Ministry at [IDPP@ontario.ca](mailto:IDPP@ontario.ca) if further case consultation is required.

## 6.1 Infection Prevention and Control for Caretakers of Animals

The Board of Health shall ensure that all identified household and veterinary contacts, and those who have had frequent exposure to an infected canid or felid, are provided with information regarding the risk of exposure to *E. multilocularis* eggs from the animal and in the environment. This includes basic information about risk mitigation strategies, such as preventing fecal-oral transmission through appropriate handling and disposal of feces, and practicing proper hand hygiene (with soap and water) before handling food or after handling animals, animal feces or potentially contaminated soil, including outdoors or on fruits/vegetables and before handling food.

## 7. Cleaning and Disinfection

In the course of investigating human exposures to animals with *E. multilocularis* infections, Boards of Health may need to review the attending veterinarian's recommendations for the cleaning and disinfection of premises where the animal(s) have been housed, in order to reduce risk of human infections due to the presence of viable *E. multilocularis* eggs in homes, kennels, etc.

*E. multilocularis* eggs can remain viable for up to a year in a moist environment at low temperatures. The eggs are inactivated by high temperatures (hot water of 85°C or above is effective) and desiccation (drying). Chemical disinfection is unreliable, as most commercial disinfectants are ineffective against *E. multilocularis* eggs.

Because the eggs are quite environmentally resistant, thorough cleaning of all surfaces that may have contact with feces / fecal contamination from infected canids and felids (including both pets and wildlife) should be emphasized first and foremost, in order to physically remove any fecal matter and parasite eggs. Previously cleaned surfaces or items can then be disinfected if needed using boiling water, application of dry heat, or undiluted household bleach (sodium hypochlorite 3.75% minimum concentration, minimum 5 minute contact time) depending on the material. Items that can be laundered (particularly high-animal contact items such as bedding, blankets, coats, harnesses)

should be washed in hot water and hot-air dried (washing in water 60C or higher for one hour is effective to inactivate any eggs that may be present, but even at lower temperatures laundering will help physically remove eggs from items). Upholstered items should be thoroughly cleaned and vacuumed. During the summer, cars can warm up to temperatures detrimental to *E. multilocularis* eggs when exposed for several hours to direct sunshine.<sup>6</sup> Also consider cleaning pet toys that could potentially become contaminated through use by dogs that also consume feces in the outdoor environment. If an item is at high risk for contamination but cannot be effectively cleaned, it should be discarded and replaced only once the pet is on regular preventative treatment.

It is impossible to fully eliminate the risk of *E. multilocularis* in the outdoor environment in regions where it is endemic in wildlife populations (including all of southern Ontario), therefore emphasis should be placed on eliminating the highest risk sources of parasite eggs in the outdoor environment, and reducing transfer of fecal contamination to other items or indoor surfaces. Animal feces in the yard (from both domestic and wild animals, if applicable) should be removed and disposed in a secure manner (e.g. garbage can with lid, not backyard composter) that prevents exposure to rodents (which may otherwise become infected themselves and continue to parasite life cycle). Appropriate glove use and disposal followed by hand hygiene with soap and water, should be emphasized whenever feces must be handled or there is contact with soil (particularly where canids or felids may have defecated at any time). Consider cleaning footwear as needed to avoid tracking contaminated soil indoors or to other locations. Fences can be used for smaller areas (e.g., garden, play area, yard) to help prevent direct fecal contamination from canids and felids as much as possible. Thoroughly wash all home-grown produce, herbs etc. that may have come into contact with soil prior to consumption.



## References

1. Ontario. Ministry of Health. Ontario public health standards: requirements for programs, services, and accountability [Internet]. Toronto, ON: King's Printer for Ontario; 2023 [modified 2024 Nov 25; cited 2024 Dec 11]. Available from: <https://www.ontario.ca/page/ontario-public-health-standards-requirements-programs-services-and-accountability>
2. *Health Protection and Promotion Act*, RSO 1990, c H.7. Available from: <https://www.ontario.ca/laws/statute/90h07>
3. *Mandatory Blood Testing Act*, 2006, SO 2006, c 26. Available from: <https://www.ontario.ca/laws/statute/06m26>
4. *Communicable Diseases – General*, RRO 1990, Reg 557. Available from: <https://www.ontario.ca/laws/regulation/900557>
5. *Designation of Diseases*, O Reg 135/18. Available from: <https://www.ontario.ca/laws/regulation/R18135>
6. World Organisation for Animal Health; World Health Organization; Eckert J, Gemmell MA, Meslin F-X, Pawłowski ZS, editors. WHO/OIE manual on echinococcosis in humans and animals: a public health problem of global concern. Paris: World Organisation for Animal Health; 2002. Available from: <http://apps.who.int/iris/handle/10665/42427>

## Document History

Revision Date	Document Section	Description of Revisions
January 2025	Entire Document	Updated reporting of animal cases by laboratories. Updated information within the document to limit it to definitive host animals. Removal of document appendices.

