

Appendix A: Disease-Specific Chapters

Chapter: Tularemia

Revised January, 2012

Tularemia

- Communicable
 Virulent

**Health Protection and Promotion Act:
Ontario Regulation 558/91 – Specification of Communicable Diseases**

**Health Protection and Promotion Act:
Ontario Regulation 559/91 – Specification of Reportable Diseases**

1) Aetiologic Agent:	<p>Tularaemia (also known as rabbit fever) is a zoonotic bacterial disease caused by the bacterium <i>Francisella tularensis</i> (<i>F. tularensis</i>), which is a small, Gram-negative nonmotile coccobacillus (1).</p> <p>May be used as a potential bioterrorism agent.</p>
2) Case Definition:	
Surveillance Case Definition	See Appendix B
Outbreak Case Definition	<p>The outbreak case definition varies with the outbreak under investigation. Consideration should be given to the following in establishing an outbreak case definition:</p> <ol style="list-style-type: none">1. Clinical, laboratory and/or epidemiological criteria2. A time frame for occurrence3. A geographic location(s) or place(s) where cases live or became ill/exposed4. Special attributes of cases (e.g. age, underlying conditions) <p>Cases may be classified by levels of probability (i.e. confirmed, probable and/or suspect)</p>
3) Identification:	
Clinical Presentation	<p>Clinical presentation is typically sudden with an abrupt onset of fever, chills, myalgia and headache. Illness usually conforms to one of several tularemic syndromes, including the following: (1, 2)</p> <ul style="list-style-type: none">• Ulcero-glandular –cutaneous ulcer with regional lymphadenopathy at the entry site (most common)• Glandular – regional lymphadenopathy with no ulcer• Oculo-glandular – conjunctivitis with preauricular lymphadenopathy• Oropharyngeal – stomatitis or pharyngitis, or tonsillitis and cervical lymphadenopathy• Intestinal – intestinal pain, vomiting, and diarrhea

	<ul style="list-style-type: none"> • Pneumonic – primary pleuropulmonary disease • Typhoidal – febrile illness without early localizing signs and symptoms
Diagnosis	See Appendix B

4) Epidemiology:

Occurrence	<p>Tularaemia is not internationally reportable. However it has been reported throughout North America and in many parts of continental Europe, the former Soviet Union, China and Japan (1).</p> <p>Tularaemia is very rarely reported in Ontario. Five cases of tularaemia were reported in Ontario between 2003 and 2005. No cases were reported in 2006 and 2007.</p>
Reservoir	Wild animals, especially rabbits, hares, voles, muskrats, beavers and some domestic animals, as well as various ticks (1).
Modes of Transmission	<p>Many routes of human exposure to tularaemia are known to exist; the common routes include inoculation of the skin or mucous membranes with blood or tissue of animals, while handling infected animals; bites from infected deerflies or ticks, or handling or eating insufficiently cooked meat of infected animals (1).</p> <p>Less common means of spread include drinking contaminated water, inhaling dust from contaminated soil, or handling contaminated pelts or paws of animals (1).</p>
Incubation Period	Related to size of inoculum; usually 3 – 5 days with a range of 1 – 14 days (1).
Period of Communicability	No person to person spread; unless treated, infectious agent may be found in blood during first 2 weeks of disease and in lesions for a month; flies infective for 14 days and ticks throughout lifetime (two years); frozen rabbit meat has remained infective for more than three years (1).
Susceptibility and Resistance	All ages are susceptible, and long term immunity follows recovery; reinfection is extremely rare and has been reported only in laboratory staff (1).

5) Reporting Requirements:

To local Board of Health	Confirmed and suspected cases shall be reported to the medical officer of health by persons required to do so under the <i>Health Protection and Promotion Act</i> , R.S.O. 1990.
To Public Health Division (PHD)	Report only case classifications specified in the case definition to PHD. Cases shall be reported using the integrated Public Health Information System (iPHIS), or any other method specified by the Ministry within one (1) business day of receipt of initial

	<p>notification as per <i>iPHIS Bulletin</i> Number 17: Timely Entry of Cases (3).</p> <p>The minimum data elements to be reported for each case is specified in the following:</p> <ul style="list-style-type: none"> • <i>Ontario Regulation 569</i> (Reports) under the Health Protection and Promotion Act (HPPA); • The disease-specific User Guides published by the Ministry, and • Bulletins and directives issued by the Ministry.
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6) Prevention and Control Measures:

Personal Prevention Measures	<p>Preventative measures: (1, 2)</p> <ul style="list-style-type: none"> • Provide education to the public about avoiding bites of deerflies, mosquitoes and ticks; using insect repellent, wearing light coloured clothing to observe ticks easier, long sleeved shirts and pants and checking for ticks frequently • Provide education to hunters AND others that handle wildlife (e.g. trappers) • Provide education about cooking game meat thoroughly and using impermeable gloves when dressing game
Infection Prevention and Control Strategies	For hospitalized cases, routine practices are recommended (2).
Management of Cases	<p>Investigate the case to determine source of infection. Refer to <i>Ontario Regulation 569</i> for relevant data to collect and inquire about the following:</p> <ul style="list-style-type: none"> • Contact with animals, especially muskrats and rabbits; • History of bite from ticks, deerflies or mosquitoes. <p>Treatment is under the direction of the attending health care provider.</p> <p>Provide education about the illness and how to prevent the spread as mentioned above.</p>
Management of Contacts	<p>None except if exposed to same source, then same as above. Use of prophylaxis antibiotics is recommended for children and adults after exposure to an intentional release of tularaemia (2). Refer to the resources listed below for case and contact management in this situation.</p>
Management of Outbreaks	<p>Provide public health management of outbreaks or clusters in order to identify the source of illness and stop the outbreak.</p> <p>Two or more cases linked in time and place to a common exposure is suggestive of an outbreak</p>

	<p>As per this Protocol, outbreak management shall comprise of but not be limited to the following general steps:</p> <ul style="list-style-type: none"> • Confirm diagnosis and verify the outbreak; • Establish an outbreak team; • Develop an outbreak case definition; • Implement prevention and control measures; • Implement and tailor communication and notification plans depending on the scope of the outbreak; • Conduct epidemiological analysis on data collected; • Conduct environmental inspections of implicated premise where applicable; • Coordinate and collect appropriate clinical specimens where applicable; • Prepare a written report, and • Declare the outbreak over in collaboration with the outbreak team.
<p>7) References</p>	<p>(1) Heymann D, editor. Control of communicable diseases manual. 18th ed. Washington: American Public Health Association; 2004.</p> <p>(2) Pickering LK, Baker CJ, Long SS, McMillan JA, editors. Red book: 2006 report of the Committee on Infectious Diseases. 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006. Section 3, Summaries of infectious diseases; p. 550 – 552.</p> <p>(3) Ministry of Health and Long-Term Care. Timely entry of cases. <i>iPHIS Bulletin</i>. 2012 January;14.</p>
<p>8) Additional Resources</p>	<p>Notifiable Diseases On-Line [Internet]. Ottawa: Public Health Agency of Canada; 2003. Tularemia. 2003 Dec 11 [cited 2009 Feb 12]. Available from http://dsol-smed.hc-sc.gc.ca/dsol-smed/ndis/list_e.html#tab2.</p> <p>Gregg MB, editor. Field epidemiology. 2nd ed. New York: Oxford University Press; 2002.</p> <p>Ministry of Health and Long-Term Care. Infectious diseases protocol. Toronto: Queen’s Printer for Ontario; 2009. Available from http://www.health.gov.on.ca/english/providers/program/pubhealth/oph_standards/ophs/infdispro.html (or as current)</p> <p>Ministry of Health and Long-Term Care, Emergency Management Unit. Ministry emergency response plan (MERP). Toronto: Queen’s Printer for Ontario; 2007. Available from http://www.health.gov.on.ca/english/providers/program/emu/emerg_rep/emerg/emerg_resp_plan.pdf.</p> <p>Meat hygiene manual of procedures. Ottawa: Canadian Food Inspection Agency; 2008. Chapter 9, Emergency situations [cited 2009 Feb 8]. Available from http://www.inspection.gc.ca/english/fssa/meavia/man/ch9/table9e.sht</p>

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CHICA-Canada [Internet]. Winnipeg: Community and Hospital Infection Control Association—Canada; 2008 [cited 2009 Feb 12]. Available from http://www.chica.org/links_bioterrorism.html.

Health Protection and Promotion Act, R.S.O. 1990, c. H.7. Available from http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90h07_e.htm.

