

Appendix A: Disease-Specific Chapters

Chapter: Hepatitis B

Hepatitis B

- 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:	Hepatitis B virus (HBV) is the causative agent. It is a DNA virus, composed of a nucleocapsid core (HBcAg), surrounded by an outer lipoprotein coat containing the surface antigen (HBsAg) (1).
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) and or aetiologic agent <p>Cases may be classified by levels of probability (i.e. confirmed, probable or suspect).</p>
3) Identification:	
Clinical Presentation	Acute hepatitis B infection is often not clinically apparent, with 50-70% of adult cases being asymptomatic. The onset of symptoms is usually insidious with anorexia, fatigue, vague abdominal discomfort, joint pain, fever and jaundice; many cases are asymptomatic (1).
Diagnosis	See Appendix B
4) Epidemiology:	
Occurrence	Worldwide, and is endemic with little seasonal variation; in highly endemic countries, most infections occur during infancy and early childhood; in low endemic countries infections occur mostly in young

	adults (1). Incidence of acute hepatitis B in Canada is estimated to be 2.3 per 100,000. Prevalence is estimated to be 0.5 – 1.0% (3). In Ontario, the rates of Hepatitis B are higher among males and among those aged 30-39 years.
Reservoir	Humans
Modes of Transmission	Via blood, blood products, saliva, CSF, pleural, peritoneal, semen and vaginal secretions and any other fluid containing blood (1). Routes of transmission include (3): <ul style="list-style-type: none"> • percutaneous, principally injection drug users • sexual: anal, vaginal, oral • horizontal: household contacts • vertical: mother to neonate
Incubation Period	Usually 45-180 days, average 60-90 days. It may be as short as 2 weeks to the appearance of HBsAg and rarely as long as 6-9 months. The variation is related in part to the amount of virus in the inoculum, the mode of transmission and host factors (1).
Period of Communicability	All persons who are HBsAg positive are potentially infectious. Blood is infective many weeks before onset of first symptoms and remains infective through the acute period of disease.
Susceptibility and Resistance	All non-immune people are susceptible; disease presentation is usually milder in children and may be asymptomatic in infants (1).

5) Reporting Requirements:

To local Board of Health	Laboratory confirmed 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 five (5) business days of receipt of initial notification as per <i>iPHIS Bulletin</i> Number 17: Timely Entry of Cases (4). The minimum data elements to be reported for each case is specified in the following: <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

	<ul style="list-style-type: none"> • Bulletins and directives issued by the Ministry. <p>Refer to the <i>Sexual Health and Sexually Transmitted Infections Prevention and Control Protocol, 2008</i> (or as current) for reporting requirements and data collection requirements.</p>
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6) Prevention and Control Measures:

<p>Personal Prevention Measures</p>	<p>Measures:</p> <ul style="list-style-type: none"> • Counselling/education regarding risk behaviours • Harm reduction strategies such as needle exchange programs • Individual immunization with Hepatitis B vaccine by universal immunization programs • Prenatal screening for all woman for each pregnancy so that newborns can receive prophylaxis if necessary • Promote screening of adopted children from countries with high prevalence of infection and persons in high risk group (3) <p>For more information on prevention measures refer to the following:</p> <p><i>Sexual Health and Sexually Transmitted Infections Prevention and Control Protocol, 2008</i> (or as current)</p> <p>Public Health Agency of Canada, <i>Canadian Guidelines on Sexually Transmitted Infections, 2008</i> edition or as current</p>
<p>Infection Prevention and Control Strategies</p>	<p>Strategies:</p> <ul style="list-style-type: none"> • Investigation and follow-up of contacts of acute and chronic cases • Investigation and follow-up of persons with significant exposures to blood or body fluids • Use of routine practices at all times • Adequate sterilization of instruments used in invasive procedures including personal care services such as ear piercing and tattooing • Appropriate disinfection measures following body fluid spills • Infected medical and dental personal should perform exposure-prone procedures using proper and adequate precautions and under counsel and expert advise (1,3) <p>More information is available in the Public Health Agency of Canada, <i>Canadian Guidelines on Sexually Transmitted Infections, 2008</i> edition and the protocol listed above.</p>
<p>Management of Cases</p>	<p>Investigate the case to determine source of infection. Refer to Regulation 569 under the HPPA for relevant data to collect. Include the following in the management of the case:</p> <ul style="list-style-type: none"> • Acute cases of hepatitis B should abstain from sexual contact or practice safer-sex until partners and or/relevant contacts have been appropriately screened and or immunized (3)

	<ul style="list-style-type: none"> • Cases should not donate blood • Occupational exposures should be managed according to the individual occupational protocols <p>For more information on case management refer to the <i>Sexual Health and Sexually Transmitted Infections Prevention and Control Protocol, 2008</i> (or as current), and to the Public Health Agency of Canada, <i>Canadian Guidelines on Sexually Transmitted Infections, 2008</i> edition or as current.</p>
<p>Management of Contacts</p>	<p>Contacts include:</p> <ul style="list-style-type: none"> • household members • persons who share personal care items such as razors or tooth brushes, or needle sharing partners • sexual contacts • persons exposed to infected blood, or body fluids • infants born to hepatitis B infected mothers <p>Management of contacts is done in collaboration with attending medical professional. Household and sexual contacts should be assessed and immunized as required.</p> <p>For more information on contact management refer to the <i>Sexual Health and Sexually Transmitted Infections Prevention and Control Protocol, 2008</i> (or as current), and the Public Health Agency of Canada, <i>Canadian Guidelines on Sexually Transmitted Infections, 2008</i> edition or as current.</p>
<p>Management of Outbreaks</p>	<p>An outbreak is defined as the occurrence of two or more cases of Hep B linked by time or a common exposure source or setting.</p> <p>Provide public health management of outbreaks or clusters in order to identify the source of illness and stop the outbreak. 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 • Declare the outbreak over in collaboration with the outbreak team currently reviewing them
<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. 335-55.</p> <p>(3) Public Health Agency of Canada. Canadian guidelines on sexually transmitted infections. Ottawa: Public Health Agency of Canada; 2008. Available from http://www.phac-aspc.gc.ca/std-mts/sti_2006/pdf/Guidelines_Eng_complete_06-26-08.pdf.</p> <p>(4) Ministry of Health and Long-Term Care. Timely entry of cases. iPHIS Bulletin. 2007 May 11;17.</p>
<p>8) Additional Resources</p>	<p>Ministry of Health and Long-Term Care. Sexual health and sexually transmitted infections prevention and control protocol. Toronto: Queen's Printer for Ontario; 2008. Available from http://www.health.gov.on.ca/english/providers/program/pubhealth/oph_standards/ophs/progstds/protocols/sexual_health_sti.pdf. (or as current)</p> <p>Sherman M, Bain V, Villeneuve JP, Myers RP, Cooper C, Martin S, Lowe C. Management of viral hepatitis: a Canadian consensus conference 2003/2004. Ottawa, ON: Canadian Association for the Study of the Liver; 2004. Available at: www.phac-aspc.gc.ca/hepchepatitis_cpdf/ccc_04/index.html</p> <p>National Advisory Committee on Immunization. Canadian immunization guide. 7th ed. Ottawa: Public Health Agency of Canada; 2006. Available from: http://www.phac-aspc.gc.ca/publicat/ci-gci/index-eng.php.</p> <p>Notifiable Diseases On-Line [Internet]. Ottawa: Public Health Agency of Canada; 2003. Hepatitis B; 2003 Dec 11 [cited 2009 Feb 12]. Available from http://dsol-smed.phac-aspc.gc.ca/dsol-smed/ndis/diseases/hepb_e.html.</p> <p>Zhang J, Zou S, Giulivi A. Hepatitis B in Canada. Can Commun Dis Rep. 2001;27 Suppl 3. Available from http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/01vol27/27s3/27s3e_e.html.</p> <p>World Health Organization, Department of Communicable Diseases Surveillance and Response. Hepatitis B. Geneva: World Health Organization; 2002. Available from http://www.who.int/csr/disease/hepatitis/HepatitisB_who.cdscsrlyo2002_2.pdf.</p> <p>Canadian Liver Foundation [Internet]. Ottawa: Canadian Liver Foundation; 2009 [cited 2009 Feb 1]. Available from http://www.who.int/csr/disease/hepatitis/HepatitisB_who.cdscsrlyo2002_2.pdf.</p> <p>Canadian Blood Services [Internet]. Ottawa: Canadian Blood</p>

Services; 1998-2008 [cited 2009 Feb 10]. Available from <http://www.bloodservices.ca/>.

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.
