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1.0 INTRODUCTION

1.1 Goal

In order to reduce the annual incidence of hepatitis A virus infection in British Columbia, control of hepatitis A will be undertaken through:

- Immunoprophylaxis of contacts of known hepatitis A cases
- Recommending immunization of high-risk groups, as specified in the Immunization Program
- Exclusion of cases and contacts from high-risk occupations
- Passive surveillance of hepatitis A
- Rapid response to identified hepatitis A outbreaks
- Promotion of good personal hygiene and adequate living standards as the most important measures for prevention of hepatitis A
- Increasing public awareness regarding the use of hepatitis A vaccine prior to travel

2.0 CLINICAL DESCRIPTION

Hepatitis A virus (HAV) infection characteristically is an acute, self-limited illness associated with fever, malaise, jaundice, anorexia, and nausea. Symptomatic hepatitis A infection occurs in approximately 30% of infected children younger than 6 years of age; few of these children will have jaundice. Among older children and adults, infection usually is symptomatic and typically lasts several weeks, with symptoms occurring in approximately 70% or more. Prolonged or relapsing disease, lasting as long as 6 months, can occur. Fulminant hepatitis is rare but is more common in people coinfecting with another hepatitis virus with underlying liver disease. Chronic infection does not occur.

The most common mode of transmission is person-to-person, resulting from fecal contamination and oral ingestion. The incubation period is 15 to 50 days, with an average of 25 to 30 days. The period of infectivity for hepatitis A is the latter half of the incubation period, continuing for a few days after onset of jaundice. Most cases are non-infectious after the first week of jaundice, although prolonged viral excretion (up to 6 months) has been documented in infants and children.

3.0 EPIDEMIOLOGY

The number of cases of Hepatitis A in BC has continued to decline in 2007, there were a total of 41 cases reported, for a rate of less than 1 per 100,000. This is down from 55 cases in 2006 and 51 in 2005. A significant proportion of the hepatitis A cases continue to be identified in persons who were not immunized prior to travel to countries where hepatitis A is endemic. Overall there are similar numbers of cases in males and females. No cases were reported in persons under 5 years of age, but young children may have asymptomatic infection and not be identified.

4.0 DEFINITIONS

Confirmed Case:

Laboratory conformation of infection in the absence of recent vaccination:

- Detection of Immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV)

AND

- 1) Acute illness with discrete onset of symptoms and jaundice or elevated serum aminotransferase levels

OR

- 2) An epidemiologic link to a person with laboratory confirmed Hepatitis A

Probable Case:

Acute illness in a person who is epidemiologically linked to a confirmed case.

Laboratory confirmation: Positive for HAV IgM antibody

Indications for laboratory testing, and limitations of laboratory testing

- The laboratory should repeat testing on a specimen, and include testing for anti-HAV total. If the anti-HAV total is negative, then the initially reactive anti-HAV IgM should be considered "false positive."
- IgM positive results can be a true positive but reflect a remote infection, as HAV-IgM can remain detectable for years after an acute infection due to trailing IgM or the non-disappearance of anti-HAV IgM after a recent infection. Acute/recent infection should be confirmed with clinical history symptoms, or by repeat titre after a week.
- BCCDC verifies all HAV-IgM reactive specimens because some false positives are found on initial screening. Peripheral laboratories identify using one method only.
- All acute samples are forwarded by BCCDC to the National Microbiology Laboratory for further typing. Please ensure that your local laboratory is sending specimens to BCCDC and indicating they are acute hepatitis A.

Clinical Evidence

Acute clinical illness is characterized by abrupt fever, malaise, anorexia, nausea and abdominal pain followed by jaundice and increased aminotransferase levels within a few days.

Contact:

A person who has exposure to a case during the time the case is infectious. The contact may acquire infection by the fecal-oral route by either person-to-person contact or ingestion of contaminated food or water.

Period of infectivity:

The period of infectivity for hepatitis A is during the latter half of the incubation period (which varies from 15-50 days), and continuing for a few days after onset of jaundice. Most cases are non-infectious after the first week of jaundice, although prolonged viral excretion (up to 6 months) has been documented in infants and children.

Hepatitis A Outbreak:

- An outbreak of hepatitis A occurs when two or more epidemiologically –linked cases occur within two incubation periods (i.e. 90 days) within a community or closed setting.

5.0 CASE INVESTIGATION**5.1 Confirm the diagnosis**

- Confirm the diagnosis with the attending physician. Inform the physician that the health unit will be contacting the case, and conducting the contact follow-up. Determine if laboratory results are available. BCCDC Laboratory Services can be contacted by telephone for serology results. Phone: (604) 660-5100. If testing has not been done in a probable case, testing can be arranged by contacting the Virology Section of BCCDC Laboratory Services. Phone (604) 707-2819.

5.2 Obtain case details:

- Hepatitis A Follow-Up Form (Appendix A) may be used to collect case information. Assure the case of the **confidentiality** of the information, and explain that the information will be used for epidemiological purposes.
- Obtain a history of the illness from the case, including date of onset of symptoms.
- Calculate the infectious period for the case.
- Determine the occupation of the case. The following groups are of particular concern due to the increased risk of transmission to others:
 - food handlers
 - daycare workers

- health care providers
- Determine if the case prepared food for others or shared common food with others while in the infectious period.
- In order to determine the degree of risk posed to others, question the case about hand washing practices (i.e. prior to preparing food or eating and after using the bathroom).
- Ascertain source of infection. This could be person-to-person, food, or waterborne. Risk factors may include:
 - employment (i.e. child daycare, adult care facility, hospital setting, food handling, or working with a hepatitis A infected food handler).
 - living in a correctional facility or residential/institutional setting
 - illicit drug use
 - foreign travel
 - living in the same household as a person who has hepatitis A
 - contact with a person who has hepatitis A
 - household contact of a diapered child attending a daycare centre
 - men who have sex with men
- Determine if the case donated blood in the year previous to the acute infection. If so, follow protocol as outlined in the Communicable Disease Control Manual, Chapter I, Transfusion Transmissible Infections, dated July 2004.
- Identify contacts of the case.

6.0 CASE MANAGEMENT

6.1 Educate cases

- Advise case of their period of infectivity.
- Counsel the case regarding ways to prevent transmission to others and ways to expedite recovery. Refer to Hepatitis A Health File, available at:
- < <http://www.bchealthguide.org/healthfiles/hfile33.stm> >

6.2 Exclusion of cases

- The Medical Health Officer should exclude the case from occupations involving the handling of food or milk for 14 days from the onset of illness, or 7 days after the onset of jaundice, (whichever is the longer).
- The Medical Health Officer should consider the exclusion of children and adults with hepatitis A from a child care facility for 14 days from the onset of the illness, or for 7 days after the onset of jaundice, (whichever is the longer), or until hepatitis A vaccine or Immune Globulin (Ig) has been provided to all the children and staff at the centre.

- The Medical Health Officer should consider the exclusion of health care workers for 14 days from the onset of the illness, or for 7 days after the onset of jaundice, (whichever is the longer), when the nature of their health care work poses a risk of HAV transmission.

6.3 Hepatitis A in food handlers

If the case is a food handler, the Medical Health Officer may consider issuing a media release to alert patrons of an eating establishment of the need for hepatitis A vaccine or Ig for those situations in which:

- the person was infectious while working, **AND**
- handled foods prior to consumption which were not cooked after handling, **AND**
- the food handler's practices were not hygienic, OR the food handler had diarrhea, **AND**
- the contacts can be identified and receive immunoprophylaxis within 14 days of the last exposure to the case while the case was in the infectious period.
- Consultation with Epidemiology Services, BCCDC, is recommended. Phone: 604.312.9220 to speak with the individual on-call. Epidemiology Services, BCCDC, **must** be notified that a public announcement will be made. The decision to issue a media alert usually has provincial and sometimes national or international implications. In some instances, a joint Provincial-Regional advisory may be required.

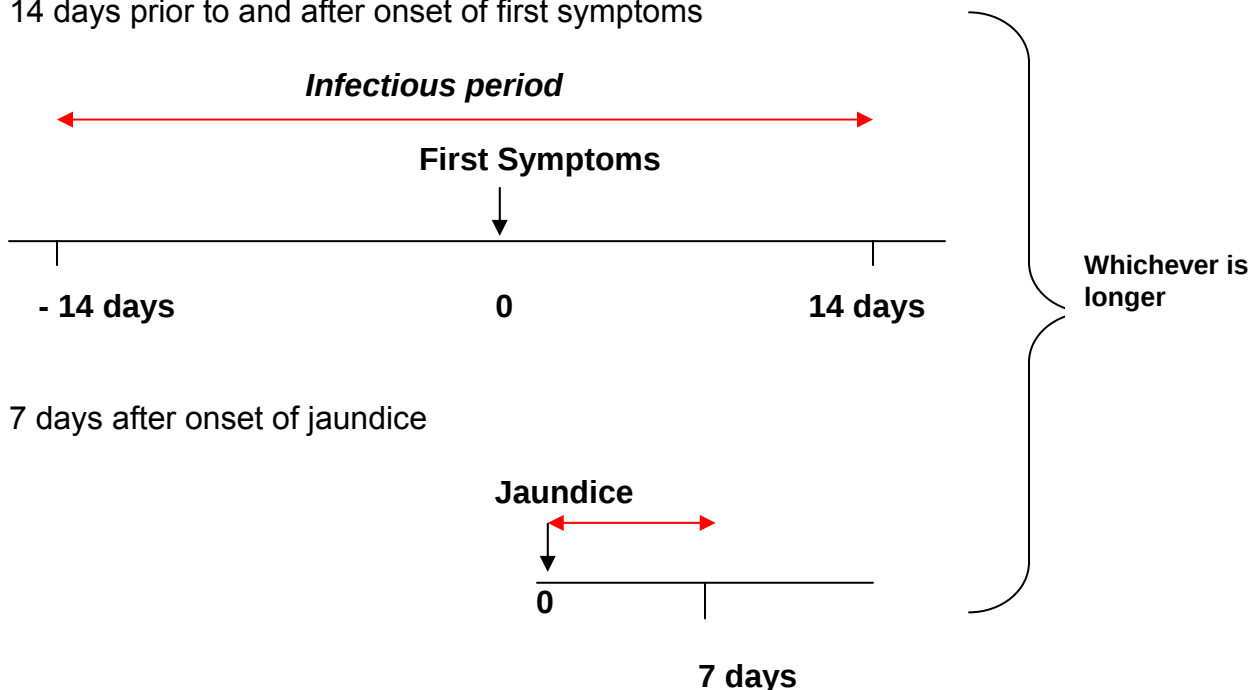
7.0 CONTACT MANAGEMENT

7.1 Identify contacts

- A contact is defined as a person having exposure to with a case during the time the case is infectious, and at risk of infection by the fecal-oral route by either person-to-person contact or ingestion of contaminated food or water.

For contact tracing purposes, the period of infectivity is the following:

- 14 days prior to and after onset of first symptoms



- 7 days after onset of jaundice

Pay particular attention to household, close non-household, sexual, drug-sharing, food handler, day care, and institutional contacts.

Educate contacts about personal hygiene, disease transmission, and symptoms. Advise contacts to seek medical attention and to be tested if symptoms develop.

Contacts with symptoms suggestive of HAV infection should be tested as soon as possible. Provide information about enteric precautions and begin further contact tracing as needed.

Refer contacts to the Hepatitis A Health File at
<http://www.bchealthguide.org/healthfiles/hfile33.stm>

7.2 Immunoprophylaxis for contacts

- The use of hepatitis A vaccine for post-exposure immunoprophylaxis of contacts is preferred to that of Ig.
- Ig is still the recommended immunoprophylactic agent for:
 - infants < 6 months of age
 - immunocompromised persons who may not respond fully to vaccine, and
 - those for whom vaccine is contraindicated.

- Hepatitis A vaccine or Ig should be given as soon as possible after a known exposure to a confirmed case, and no later than 14 days after the exposure.
- If a probable or suspect case is not in a high risk group for hepatitis B or hepatitis C, **and** if immunoprophylaxis of contacts must be undertaken immediately because of time constraints, presume hepatitis A until the diagnosis is lab confirmed.
- Provide one dose of hepatitis A vaccine or Ig to the following contacts of a case of hepatitis A (provided either can be administered within 14 days after the last exposure to the case while the case was in the infectious period):
 - Household
 - Close non-household
 - Drug-sharing
 - Sexual contacts
 - If the case is a food handler, other food handlers at the same establishment at risk of hepatitis A (as assessed by public health staff)
 - Patrons of eating establishments who ate food handled by an infected food handler as specified in Section 6.3 Hepatitis A in food handlers.
 - If a contact has received only **one** dose of hepatitis A vaccine more than 6 months previously, provide a second dose of hepatitis A vaccine.

An exception to the provision of vaccine or Ig to daycare centre staff and children is to restrict use to staff and children who are confined to a single section of a larger facility, provided the risk is **completely** contained in that section and no other cases have occurred in any other area of that facility.

Administration of hepatitis A vaccine or Ig is not recommended for health care workers in contact with an infected patient or for workers in contact with a case in offices or factories unless there is evidence of possible transmission of hepatitis A virus by the fecal-oral route.

The use of hepatitis A vaccine or Ig is not indicated in schools for pupils or teachers in contact with a case, unless there is evidence of classroom or school transmission.

Post-vaccination testing is **not** recommended. The high response rate to immunization makes routine serological testing unnecessary. A review of the literature regarding HAV immunization in persons with HCV infection concluded that persons with HCV also respond well to the vaccine, and testing is not indicated after HCV positive individuals receive hepatitis A vaccine. In addition, commercially available anti-HAV tests may not detect low but protective concentrations of vaccine-induced antibody. There is no recommendation for booster doses following a vaccine series.

7.4 Exclusion of contacts

- The Medical Health Officer may consider excluding a contact from food or milk handling duties, until it is demonstrated that the contact has received hepatitis A vaccine or Ig, or the contact has demonstrable anti-HAV (Total) and no anti-HAV IgM. The decision to exclude individuals who do not have evidence of immunity, or are unable to receive the vaccine or Ig within 14 days of last exposure, should be determined on a case-by-case basis. The MHO may take into consideration the health and hygiene status of the contact, including whether the contact is asymptomatic, has received and is following proper hygiene advice, is only handling food that requires cooking, has received information about the symptoms associated with infection, the incubation period, and what to do if he/she experiences symptoms.

8.0 OUTBREAK MANAGEMENT

8.1 Daycare centres that accept diapered children

- Provide hepatitis A vaccine or Ig to all child attendees and staff when one case occurs in an attendee or staff member, **OR** when cases are identified in at least two of the households of the child attendees.
- Consider the use of hepatitis A vaccine or Ig for household contacts of diapered daycare centre attendees when cases have occurred in three or more households of child attendees or when the outbreak is recognized more than 3 weeks after the onset of the index case.
- Provide hepatitis A vaccine or Ig to newly hired staff, or to children newly admitted to the centre during the six week time period following identification of that last case.

8.2 Daycare centres not caring for diapered children

If a case occurs in a staff member or child attendee, provide hepatitis A vaccine or Ig for previously unimmunized staff members in contact with the index case and for unimmunized children in the same room as the index case.

8.3 Institutional settings

Provide hepatitis A vaccine or Ig to residents and staff in facilities for developmentally challenged individuals, and inmates and staff in correctional facilities, when an outbreak occurs.

9.0 PREVENTION

- Emphasize the importance of personal hygiene (e.g. handwashing after using the bathroom, before preparing meals and before eating). In daycare facilities, careful handwashing is important, particularly after changing diapers and before preparing or serving food.
- Remind health care workers of the importance of enteric precautions, when there is a possibility of contamination from any body fluid.
- Enteric precautions include the following:
 - washing hands after contact with the case or with potentially contaminated articles
 - discarding, or bagging and labeling articles contaminated with infectious material before they are sent for decontamination and reprocessing
 - using gowns if soiling is likely
 - using gloves for touching contaminated materials
- Advise travelers going to developing countries about careful selection of food and drink to avoid potentially contaminated sources of infection. Refer to Health Files for travelers:
 - <http://www.bchealthguide.org/healthfiles/hfile41e.stm>
 - <http://www.bchealthguide.org/healthfiles/hfile41d.stm>
- Refer to Immunization Program, Section VII - Biological Products , under Hepatitis A Vaccine Pre-Exposure Indications, for listing of groups for whom hepatitis A vaccine is recommended:
 - <http://www.bccdc.org/download.php?item=2314>

10.0 REPORTING

- Report confirmed and probable cases to Epidemiology Services, BCCDC, via the Public Health Information System (iPHIS). It is important to indicate the likely source of infection.
- The BC Enteric Policy working group approved a proposal to assess number and proportions of enteric infections in BC associated with travel outside BC; this includes hepatitis A. Once the HAV data is entered in iPHIS and saved, the travel exposure can be recorded by selecting the “exposures” tab; the drop down list includes: “Travel – out of country”, “Travel – within BC”, or “Travel – none”.
- As soon as possible, report hepatitis A outbreaks by phone to Epidemiology Services, BCCDC, on call person at (604) 312-9220.

11.0 AUTHORITY

Health Act (1996) and Communicable Disease Regulation

12.0 REFERENCES

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13.0 Appendix A : Hepatitis A Follow-Up Form

Date Case Contacted (YYYY/MM/DD):	Form Completed By:	Email Address:
Attending Physician:	Phone # attending:	Discussed with attending: ☐ yes ☐ no If yes, date:
☐ Lab results (HAV IgM) as attached or (specify): Date Collected (YYYY/MM/DD):		
This case is: ☐ Confirmed ☐ Clinical		
A. Demographic Information		
Case Surname:	First Name:	Initial:
PHN:	Birth date (YYYY/MM/DD):	Age:
Gender: ☐ Male ☐ Female	Ethnicity:	
Parent/Guardian name (If Applicable):		
Address:	Phone # (Include Area Code):	
	Cell #:	
	email:	
Type of residence: ☐ Private home ☐ Institution ☐ On Reserve		
Occupation: ☐ Food/drinking water handler ☐ Daycare worker ☐ Adult care facility or prison ☐ Hospital worker		
Place of work/address/phone #		
Family Physician ☐ attending (details as above) Or if different from above: Surname: First Name: Initial: City: Phone # (Include Area Code):		

Case initials _____

Complete section below if no clear exposure identified:

Restaurants visited in past 2 months:

Name:	Date (YYYY/MM/DD):	Items eaten:

Case initials _____

**D. Contact Information**

Estimated Infectious Period: see **Calculate Infectious Period** page 2

From (YYYY/MM/DD):

To (YYYY/MM/DD):

Name of Contact:	Relationship:	Age:	Sex:	Telephone #	Date of Contact (YYYY/MM/DD)	Symptoms?	Date Vaccine Given	Lot #
Household:								
Place of Work:								
Contacts for whom case has prepared food:								
Name of Contact:	Relationship:	Age:	Sex:	Telephone#	Date of Contact (YYYY/MM/DD)	Symptoms?	Date Vaccine Given	Lot #
Child Day Care contacts:								

Case initials _____



Additional/ Other Contacts: <i>(sexual partners, share drugs/cigare ttes, etc)</i>								

Please use additional pages if needed.

Case initials _____