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Unless otherwise stated the content of this guideline has been adapted from BCCDC Communicable Disease Control Hepatitis A Guideline (August, 2008)

1.0 INTRODUCTION

1.1 Goal

In order to minimize the incidence of hepatitis A virus infection in Yukon, 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 Canadian Immunization Guidelines
- 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, however the severity of HAV increases with age and can range from asymptomatic or a short lasting and mild illness lasting 1 – 2 weeks to a severely disabling disease lasting several months.

Children less than six years of age are commonly asymptomatic or present with mild disease without jaundice, and represent an important source of infection, particularly for household members and other close contacts (NACI, 2016).

Older children and adults with HAV are typically symptomatic, which begins with abrupt onset of nausea, vomiting, anorexia, fever, malaise, and abdominal pain. Within a few days to a week, dark urine appears and pale stools may also be observed. These are followed by jaundice and pruritus (40-70% of cases). The early signs and symptoms usually diminish when jaundice appears. Jaundice usually peaks within two weeks (Lai & Chopra, 2016). Older persons, and individuals with chronic liver disease and immunocompromised conditions, have an increased risk of progressing to fulminant hepatic failure resulting in death (NACI, 2016).

Approximately 25% of adult cases in Canada are hospitalized. Based on the available Canadian data, case fatality rates (CFR) for individuals 40 to 59 years of age and over 60 years of age have been estimated to be 0.94% and 2.2%, respectively (NACI, 2016).

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 six months) has been documented in infants and children.

3.0 EPIDEMIOLOGY

Worldwide Distribution

Hepatitis A occurs worldwide. In high endemic regions including parts of Africa and Asia, Hepatitis A is associated with inadequate sanitation and limited access to clean water, while infection in low endemic areas (such as the United States and Western Europe) is found in people in high-risk groups or as communitywide outbreaks. In less endemic countries, Hepatitis A is among the most common vaccine preventable infections acquired during travel. Travelers from low endemic regions who travel to high and medium endemic regions are at most risk when they live in or visit rural areas, trek in backcountry areas or frequently eat or drink in settings with poor sanitation (Centers for Disease Control and Prevention, 2014).

Yukon

Yukon has a low occurrence of hepatitis A. Only three HAV infections have been found in YT between 2006 and 2015. One case in 2006, one in 2009 and another in 2013. The 2009 case was linked to travel within Canada and no source of infection could be identified in both the 2006 and 2013 case.

4.0 DEFINITIONS

Confirmed Case:

Laboratory confirmation of infection in the absence of recent vaccination (Anti-HAV IgM has been detected up to two to three weeks after one dose of hepatitis A vaccine):

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

- 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 or by repeat titre after a week.
- All specimens should be sent to WGH lab and from there are forwarded to BCCDC. The BCCDC lab performs the hepatitis A virus analysis and verifies all HAV-IgM reactive

specimens because some false positives are found on initial screening.

- All acute samples should be submitted to the WGH lab as a STAT specimen for processing.
- All acute samples are forwarded by BCCDC to the National Microbiology Laboratory for further typing.

(Alberta Public Health Notifiable Disease Management Guidelines, Hepatitis A, April 2013.)

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, either by 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 six 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., 100 days) within a community or closed setting.

5.0 CASE INVESTIGATION

5.1 Confirm the diagnosis

Hepatitis A is not clinically distinguishable from other forms of viral hepatitis. Therefore, a diagnosis is established by the demonstration of IgM antibody to HAV (anti-HAV IgM) in the serum of acutely or recently ill persons. IgM is detectable five to 10 days before the onset of symptoms and is *usually* detectable for four to six months after onset. IgM disappears from the serum and IgG persists conferring lifelong immunity. *(Modified and obtained from Alberta Public Health Notifiable Disease Management Guidelines, Hepatitis A April 2013.)*

The diagnosis will be confirmed by Yukon Communicable Disease Control (YCDC) with the attending physician or Community Health Centre. All confirmed and probable cases must be reported to YCDC, which will be contacting both the involved physician/Health Centre and case to conduct the contact follow-up.

Determine if laboratory results are available. The specimen should be sent as a STAT to the WGH laboratory.

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 investigational 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
 - staff and attendees of daycare centres and kindergartens 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, contact Yukon Communicable Disease Control to report.
- 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: <https://www.healthlinkbc.ca/health-topics/hw124783>

6.2 Exclusion of cases

- The Medical Officer of Health should exclude the case from occupations involving the handling of food or milk for 14 days from the onset of illness, or seven days after the onset of jaundice, (whichever is the longer).
- The Medical Officer of Health should consider the exclusion of children and adults with hepatitis A from a child care centre (e.g., daycare, day home) or kindergarten class for 14 days from the onset of the illness, or for seven 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 facility/class.
- The Medical Officer of Health should consider the exclusion of health care workers for 14 days from the onset of the illness, or for seven 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 Officer of Health 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.

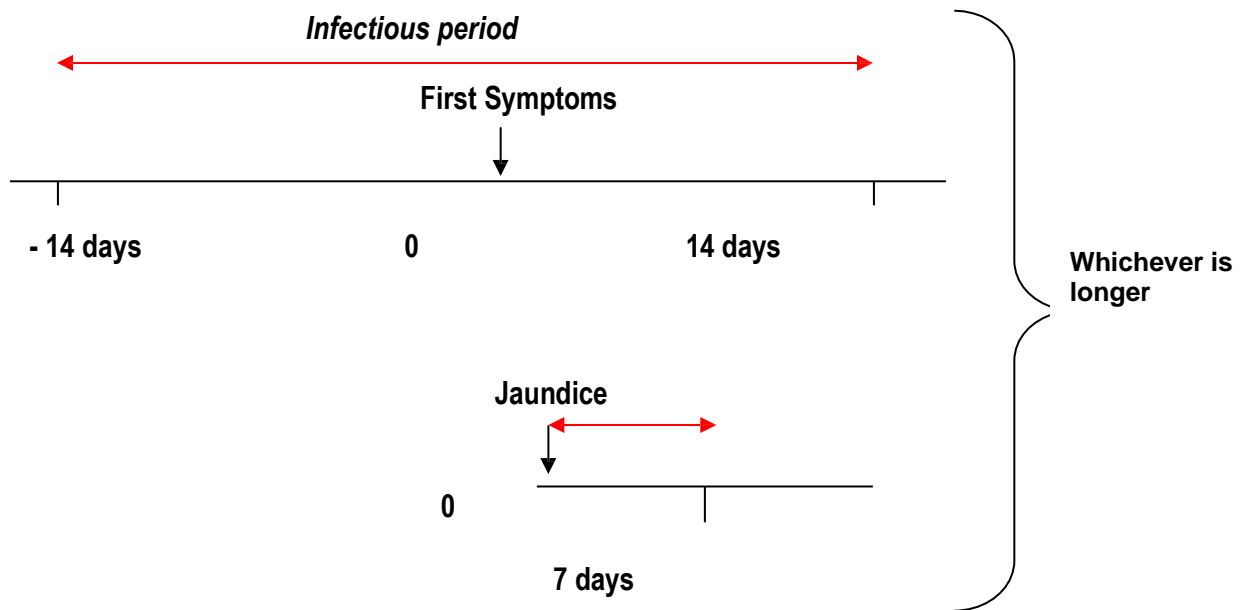
7.0 CONTACT MANAGEMENT

7.1 Identify contacts

- A contact is defined as a person having exposure to 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 (whichever is longer):

- 14 days prior to and after onset of first symptoms **OR**
- Seven 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 <https://www.healthlinkbc.ca/health-topics/hw124783>

Identify contacts who have protection against hepatitis A.

Protection is defined as:

- history of confirmed hepatitis A disease,
- completion of a two dose series of hepatitis A vaccine,
- received one dose of hepatitis A vaccine between one and six months prior to exposure, or
- receipt of Ig within the last three to five months prior to exposure to the hepatitis A case.
 - A dose of 0.02 ml/kg is effective for approximately three months.
 - A dose of 0.06 ml/kg is effective for three to five months.

(Alberta Public Health Notifiable Disease Management Guidelines, Hepatitis A, April 2013.)

7.2 Immunoprophylaxis for contacts

The use of hepatitis A vaccine for post-exposure immunoprophylaxis of contacts is preferred to that of IM (intramuscular) Ig (GamaSTAN S/D).

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.

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*
- Staff and attendees of the child care facility (day care/day home) and kindergarten

If a contact has received only **one** dose of hepatitis A vaccine more than six months previously, provide a second dose of hepatitis A vaccine.

Susceptible contact	PEP (give asap)
1. Chronic liver disease 2. Adults 60 years of age and older 3. Immunocompromised	HAV & Ig
4. Infants less than 6 months of age; 5. Those for whom vaccine is contraindicated	Ig only
6. All other contacts (not in categories 1-5)	HAV only

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 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.

Accessing Human Immune Globulin Intramuscular (Ig)

Ig can be only accessed for PEP with the authorization of the MOH/YCDC. Whitehorse General Hospital Laboratory is the sole location storing Ig for the territory.

Whitehorse

Monday-Friday 0830-1630, if Ig is indicated, YCDC will notify the WGH Laboratory (867-393-8739) and arrange for administration to occur in the WGH ER.

After hours and weekends: The MOH will call the WGH Laboratory at 393-8739.

Communities

Monday-Friday 0830-1630, if Ig is indicated, YCDC will notify the WGH Laboratory (867-393-8739) and arrange for the product to be shipped to the requesting Community Health Centre or Clinic. See above for after hours.

7.3 Exclusion of contacts

The Medical Officer of Health 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 MOH 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 Child care 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.

The MOH will 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 three 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 Child care 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. Within these settings an outbreak is considered to have occurred when two or more epidemiologically linked cases occur within two incubation periods (100 days).

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:
 - <https://www.healthlinkbc.ca/health-topics/hw123935#hw123935-sec>
- Refer to the current edition of the Yukon Immunization Manual for Hepatitis A Vaccine Pre-Exposure Indications, for listing of groups for whom hepatitis A vaccine is recommended.

10.0 REPORTING

Report confirmed and probable cases to Yukon Communicable Disease Control by the next business day.

As soon possible, report suspect hepatitis A outbreaks by phone to Yukon Communicable Disease Control during business hours or to the Medical Officer of Health after hours and weekends.

11.0 AUTHORITY

Yukon Public Health and Safety Act (2009). Available at www.hss.gov.yk.ca/ifo_professionals.php

12.0 REFERENCES

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Public Health Agency of Canada (2016). Part 4: Active Vaccines. Canadian Immunization Guide. (Evergreen ed.) Retrieved from <http://healthycanadians.gc.ca/publications/healthy-living-vie-saine/4-canadian-immunization-guide-canadien-immunisation/index-eng.php?page=6>

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13.0 CONTACT INFORMATION

Yukon Communicable Disease Control Hours:

Monday- Friday (08:30 to 16:30)
#4 Hospital Road, Whitehorse, YT Y1A 3H8
Telephone:
Local (867) 667-8323
Within Yukon 1-800-661-0408, ext. 8323
Fax: (867) 667-8349

Dr. Brendan E. Hanley MD CCFP (EM) MPH

Chief Medical Officer of Health, Yukon
204 Lambert St. (4th floor), Whitehorse, YT Y1A 2C6
Telephone:
Office (867) 456-6136
Cell: (867) 332-1160 (after hours and weekends)
Fax: (867) 667-8349

Whitehorse General Hospital

(Ambulatory Care)
#5 Hospital Road, Whitehorse, YT Y1A 3H7
Telephone:
(867) 393-8700
Fax: (867) 393-8700
WGH Laboratory telephone: (867) 393-8739

Dr. Catherine Elliott MD MHS Sc FRCPC

Deputy Chief Medical Officer of Health, Yukon
204 Lambert St. (4th floor), Whitehorse, YT Y1A 2C6
Telephone:
Office: (867) 667-8091
Cell: (867) 335-0546 (after hours and weekends)
Fax: (867) 667-8349

APPENDIX A: HEPATITIS A FOLLOW-UP FORM

Information is collected under the authority of the Health Act and the Public Health Act for purposes of providing health services and public health services. Queries should be directed to the Manager of Yukon Communicable Disease Control, at (867) 667-8323 or toll free at 1-800-661-0507

Date Case Contacted (YYYY/MM/DD):	Form Completed By:	Email Address:
Attending Physician:	Phone # attending:	Discussed with involved physician: <input type="checkbox"/> yes <input type="checkbox"/> no If yes, date:
Health Centre/Clinic:	Phone # of Health Centre/ Clinic:	
<input type="checkbox"/> Lab results (HAV IgM) as attached or (specify): Date Collected (YYYY/MM/DD):		
This case is: <input type="checkbox"/> Confirmed <input type="checkbox"/> Clinical		
A. Demographic Information		
Case Surname:	First Name:	Initial:
Panorama Client ID #:		
(If Panorama client ID is provided & basic demographic information has been verified & is up to date in Panorama, just provide occupation information and skip to section B)		
YHCIP#:	Birth date (YYYY/MM/DD):	Age:
Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female	Ethnicity:	
Parent/Guardian name (If Applicable):		
Address:	Phone # (Including Area Code):	
	Cell #:	
	email:	
Type of residence: <input type="checkbox"/> Private home <input type="checkbox"/> Institution <input type="checkbox"/> Other, specify _____		
Occupation: <input type="checkbox"/> Food/drinking water handler <input type="checkbox"/> Daycare worker <input type="checkbox"/> Adult care facility or prison <input type="checkbox"/> Hospital worker		
Place of work/address/phone #:		
Family Physician <input type="checkbox"/> attending (details as above) Or if different from above:		
Surname:	First Name:	Initial:
Address:		Phone # (Include Area Code):

The following questions are of a sensitive nature and should be asked if no alternative exposure is identified:

High risk sexual activity (oral-anal sex): Specify:

Injection drug use: Specify drug & if "rig"/needle shared:

Other street drug use/indicate if shared: Specify:

Complete section below if no clear exposure identified:

Restaurants visited in past two (2) months:

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

D. Contact Information

Exposure (incubation) Period: *(max 50 days to min 15 days prior to first symptom)*

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 (recorded in Panorama)
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 (recorded in Panorama)
Child Day Care contacts:							
Additional/ Other Contacts: (<i>sexual partners, share drugs/ cigarettes, etc.</i>)							

Please use additional pages if needed.