

# HEPATITIS A

## Case definition

### CONFIRMED CASE

Laboratory confirmation of infection in the absence of recent vaccination<sup>1</sup>:

- detection of immunoglobulin M (IgM) antibody to hepatitis A virus (anti HAV) **AND** acute clinical illness<sup>2</sup>

**OR**

- detection of immunoglobulin M (IgM) antibody **AND** an epidemiologic link to a person with laboratory-confirmed hepatitis A infection.

### PROBABLE CASE

Acute clinical illness<sup>2</sup> in a person without laboratory confirmation of infection who is epidemiologically linked to a confirmed case.

<sup>1</sup> The context of the clinical situation needs to be considered when interpreting the results of Hepatitis A serology if the case has had the Hepatitis A vaccine.

<sup>2</sup> Acute clinical illness is characterized by discrete onset of symptoms, including fever, malaise, anorexia, nausea and abdominal pain followed by jaundice or elevated aminotransferase levels within a few days.

## Causative agent

*Hepatitis A virus (HAV)*, an RNA picornavirus

## Source

Humans and some non-human primates

## Incubation

15-50 days with an average of 28-30 days.

## Transmission

The Hepatitis A virus is transmitted via the fecal-oral route, which can occur from direct person-to-person contact, from contamination of the environment or objects, or through contaminated food or water, including shellfish from contaminated water. Transmission through infected blood or blood products has also been reported.

## Communicability

The infectious period is typically 2 weeks before the onset of symptoms to 1 week after the onset of jaundice. The risk becomes minimal following this time period; however, HAV can be detected in the stool for up to six months in some infants and children. Viral shedding can also be greatly prolonged in immunocompromised individuals.

## Symptoms

Clinical manifestation of the disease is dependent on age and ranges from asymptomatic to fulminant hepatitis.

Acute clinical illness is characterized by discrete onset of symptoms, including fever, malaise, anorexia, nausea and abdominal pain followed by jaundice or elevated aminotransferase levels within a few days.

Most children less than 6 years of age are asymptomatic or have non-specific symptoms and only few symptomatic children develop jaundice.

Older children and adults are usually symptomatic with jaundice developing in > 70% of cases. Occasionally some adults may be asymptomatic.

## Diagnostic testing

Hepatitis A serology is used for two purposes, either to determine immunity (HAV IgG) or diagnose acute infections (HAV IgM).

**Determination of immunity (HAV IgG):** routine pre-immunization serology is not cost effective in NS, where the population is unlikely to have been previously infected by HAV. Pre immunization serology can be considered in older Canadians, people from endemic areas or those with a past history of jaundice ([Canadian Immunization Guide](#)).

**Acute infection (HAV IgM):** HAV IgM should only be ordered when evaluating patients for acute infection. To ensure that the appropriate test is performed, the clinician MUST clearly indicate whether they are looking for a diagnosis of an acute infection (IgM) or immunity (IgG).

Failure to indicate which test may delay testing and lead to erroneous results.

## Treatment

Supportive therapy.

# PUBLIC HEALTH MANAGEMENT & CONTROL

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## Case management

The investigator should initiate the investigation immediately upon receipt of the report using the following steps:

- Contact the primary care provider to obtain clinical information on the case.
- Interview the case, review clinical information, determine food history and activities, employment and possible source of exposure.

- Identify contact(s) who have had exposure to the case during the period of communicability.
- If the case identifies drinking water or recreational water as a potential source, consult with the Medical Officer of Health (MOH) to determine if a request for assistance from Nova Scotia Environment is warranted. The MOH may request an inspection/investigation be conducted at the site to identify potential sources. If needed, this can be facilitated through the Environmental Health Consultant with the Nova Scotia Environment.
- If the case identifies a local food establishment (including institutional settings) as a potential source, consult the MOH to determine if a request for assistance from Nova Scotia Environment is warranted. The MOH may request an inspection/investigation be conducted at the site to identify potential sources. If needed, this can be facilitated by contacting the Manager, Food Safety, Nova Scotia Environment.
- Advise the case that they cannot donate blood for a period of six months after complete recovery or as per the requirements of CBS. As per CBS standards if the donor had Hepatitis A after age 11 they are deferred for 6 months after complete recovery. If testing is done at the time of diagnosis the donor must present serological documentation of IgM anti-hepatitis A. If testing is done months or years after illness must have IgG anti-hepatitis A. In all cases, the donor must provide documentation of negative tests for HBsAg, Anti-HBc and Anti-HCV.
- Document the information on the appropriate forms and ensure the case is entered into ANDS/ANDI.

## Exclusion of a case

Exclude cases in the risk groups below as indicated in Table 1.

**TABLE 1: EXCLUSION CRITERIA FOR CASES OF HEPATITIS A IN RISK GROUPS**

Risk Group	Criteria for Exclusion
Food handlers	Exclude until one week after onset of jaundice or if not jaundiced until one week after onset of symptoms.
Health care, child care <sup>3</sup> or other staff who have contact with susceptible persons	Exclude until one week after onset of jaundice or if not jaundiced until one week after onset of symptoms.
Children < 5 years attending child care <sup>3</sup> etc.	Exclude until one week after onset of jaundice or if not jaundiced until one week after onset of symptoms.

<sup>3</sup> For a case in a childcare settings, the MOH may modify the exclusion period until the post exposure prophylaxis has been completed.

## Education of the case

- Educate the case and/or family about Hepatitis A disease transmission and prevention measures and provide access to resources (website, general information etc.).
- Emphasize the importance of proper hand hygiene after using the bathroom and changing diapers.
- Encourage the case to limit food handling and preparation for other household and close contacts during the period of communicability.
- Discuss safe sexual practices to minimize risk of transmission with sexual contacts during the period of communicability.
- Inform the case that they cannot donate blood for a period of six months after complete recovery or as per the requirements of CBS. As per CBS standards if the donor had Hepatitis A after age 11 they are deferred for 6 months after complete recovery. If testing is done at the time of diagnosis the donor must present serological documentation of IgM anti-hepatitis A. If testing is done months or years after illness must have IgG anti-hepatitis A. In all cases, the donor must provide documentation of negative tests for HBsAg, Anti-HBc and Anti-HCV.
- If the case is a health care worker, advise them to contact Occupational Health or Infection Control at their place of employment.

## Contact tracing

### Definition of close contact/exposure criteria

A contact is a person who has had exposure to a case during the period of communicability and at risk of infection by the fecal-oral route by either person-to-person contact or the ingestion of contaminated food or water.

Contacts of a case of Hepatitis A include:

- Household contacts (those living in the same residence)
- Close contacts include sexual contact(s) and persons who have contact that may be fecal-oral (i.e. sharing meals the case cooked, sharing needles and other items used for injecting or non-injecting drugs with the case, or any activity that may involve hand to mouth contact with the case)

### Susceptibility

Individuals who have no history of disease or no previous immunization are susceptible to a hepatitis A infection. Older individuals, individuals with chronic liver disease and immunocompromising conditions have an increased risk of progressing to fulminant hepatic failure resulting in death.

## Initiate contact tracing

- During the interview with the case, identify contact(s).
- Contact all household and close contacts of the case and determine the need for prophylaxis.
- Determine if any of the household or close contacts fall into a special risk group.
- If a child is a contact, of a case and attends a childcare setting, confirming the HAV status of the child may assist in determining if there may be additional cases at the child care setting and if control measures need to be implemented at the setting that the child attends.

## Prophylaxis

Post exposure prophylaxis should be offered to all susceptible household and close contacts of a case of Hepatitis A within 14 days of exposure. Post exposure prophylaxis consists of the administration of the Hepatitis A vaccine or the administration of immune globulin (Ig) or both depending on the age and health condition of the contact. In consultation with the MOH the Hepatitis A vaccine may still be considered if more than 14 days have elapsed since last exposure as per the [Canadian Immunization Guide](#) there is no data on the outer limit of efficacy. Efficacy of Ig is unknown if administered more than 14 days since the last exposure and as per the [Canadian immunization Guide](#) not recommended after 14 days.

The following is the recommended post exposure prophylaxis for susceptible household and close contacts of a case of Hepatitis A:

- Infants less than 6 months of age and individuals from whom vaccine is contraindicated: Ig
- Healthy individuals 6 months of age – 59 years of age: Hepatitis A vaccine
- Healthy individuals 60 years of age and older – Hepatitis A vaccine and Ig
- [Immunocompromised individuals](#) – Hepatitis A vaccine and Ig
- Individuals with Chronic liver disease – Hepatitis A vaccine and Ig

### Note:

For post exposure efficacy only one dose of the Hepatitis A vaccine is needed. The second dose of the vaccine series is provided free of charge to individuals who are eligible for the publicly funded Hepatitis A vaccine as per the [Publicly Funded Vaccine Eligibility for Individuals at High Risk of Acquiring Vaccine Preventable Diseases](#). Individuals who are not eligible for the second dose of the vaccines should be encouraged to complete the series by purchasing the vaccine to ensure long term protection.

Post vaccination serology testing is not recommended.

### **Child care settings:**

As per Ontario's [\*Provincial Infectious Diseases Advisory Committee\*](#) (PIDAC) 2013 recommendations:

- If the index case attends a childcare setting and the source of the infection is obvious (e.g. recent travel of the case or of a household contact): post exposure prophylaxis should be offered to all susceptible attendees and staff of the childcare setting ideally within 14 days of symptom onset in the index case.
- If it has been more than 14 days since symptom onset in the index case, or where the source of the index case is unknown: post exposure prophylaxis should be offered to all susceptible attendees, staff and all household contacts of attendees of the childcare setting to prevent cases of tertiary transmission.
- In the event of an outbreak i.e. two or more cases associated with a childcare setting, or if cases are recognized in 2 or more households: post exposure prophylaxis should be offered to all susceptible staff, attendees and household members of attendees would generally be recommended. Also refer to the section on [\*Outbreak Control\*](#). Note: For household members who are 60 years and older the vaccine alone is sufficient.

### **Food Handler/Establishment:**

- If the case is a food handler, other food handlers in the same institution should be offered post exposure prophylaxis.
- Post exposure prophylaxis to patrons of the food establishment may be considered when:
  - the infected food handler handled food at a time when they were most likely infectious **AND**
  - the food handler had diarrhea or lack of proper hand washing is suspected **AND**
  - the post exposure prophylaxis can be administered within 2 weeks of exposure.

### **Common source exposure:**

- In a provincial or national hepatitis A outbreak situation, linked to a potential known source, post exposure prophylaxis for individuals who were exposed to the contaminated food/water within the past 14 days may be considered. A risk/benefit analysis would be necessary for each situation and implementation may not be applicable for all outbreaks. In an outbreak situation see section on [\*Outbreak Control\*](#).

### **Other settings:**

- Post exposure prophylaxis is not necessary for health care workers in contact with a case or contacts in the workplace or in schools unless an outbreak is suspected . If an outbreak is suspected see section on [\*Outbreak Control\*](#).

**NOTE: Do not give live virus vaccine** (i.e. Measles Mumps Rubella or Varicella vaccine) for 3 months after the administration of Ig. If a live virus vaccine was given within 2 weeks prior to Ig administration, the vaccine should be repeated in 3 months. Please refer to the [Canadian Immunization Guide](#) for more information.

## Exclusion of the contact

Exclusion criteria for case contact(s) in special risk groups are indicated in Table 2:

**TABLE 2: EXCLUSION CRITERIA FOR CONTACT(S) OF A CASE HEPATITIS A IN SPECIAL RISK GROUPS**

Risk Group	Criteria for Exclusion
Food handlers	<p><i>Symptomatic:</i> exclude until one week after onset of jaundice or if not jaundiced until one week after onset of symptoms.</p> <p><i>Asymptomatic:</i> Consult with MOH to assess on a case-by-case basis.</p>
Health care, child care <sup>4</sup> or other staff who have contact with susceptible persons	<p><i>Symptomatic:</i> exclude until one week after onset of jaundice or if not jaundiced until one week after onset of symptoms.</p> <p><i>Asymptomatic:</i> Consult with MOH to assess on a case-by-case basis.</p>
Children < 5 years attending child care <sup>4</sup> etc.	<p><i>Symptomatic:</i> exclude until one week after onset of jaundice or if not jaundiced until one week after onset of symptoms.</p> <p><i>Asymptomatic:</i> Consult with MOH to assess on a case-by-case basis.</p>

<sup>4</sup>For a symptomatic contact in a childcare settings, the MOH may modify the exclusion period until the post exposure prophylaxis has been completed.

## Education

- Educate the contact and/or family about Hepatitis A disease transmission and prevention measures and provide access to resources (website, general information etc.).
- Emphasize the importance of proper hand hygiene before preparing/handling foods and after using the bathroom or changing diapers.

- Inform the contact(s) and/or family to see a health care provider and contact public health if they develop symptoms of Hepatitis A within 15-50 days of exposure.
- If the contact is a health care worker, advise them to contact Occupational Health or Infection Control at their place of employment.

## Outbreak Control

- For management of an outbreak please refer to the [\*Outbreak Response Plan\*](#) section of the Nova Scotia Communicable Disease and Control Manual.
- For outbreaks in child care settings also refer to the [\*Guidelines for Communicable Disease Prevention and Control for Child Care Settings\*](#).
- During an outbreak, the MOH and/or facility management may recommend closure of a child care setting temporarily. If the facility is closed, it is important for parents to keep ill children at home and not send the ill child to an alternative child care location.

## Surveillance forms

[novascotia.ca/dhw/populationhealth/surveillanceguidelines/NS Notifiable Disease Surveillance Case Report Form.pdf](http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/NS_Notifiable_Disease_Surveillance_Case_Report_Form.pdf)

[novascotia.ca/dhw/populationhealth/surveillanceguidelines/Enteric Case Report Form.pdf](http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/Enteric_Case_Report_Form.pdf)

[novascotia.ca/dhw/populationhealth/surveillanceguidelines/Hepatitis A Case Report Form.pdf](http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/Hepatitis_A_Case_Report_Form.pdf)

## General Information Sheet

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Date	Updates
February 2026	Reference Audit. No content changed.