HEPATITIS A

Based on the MoH Communicable Disease Control Manual 2012-March 2018 Update[1]

Associated Documents

Case Report Form:
K:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\Hepatitis A\Hepatitis A\FormsStdLettersQuest\Hep A Case Report Form Nov 2013.pdf

Fact Sheets:
English
K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\HepatitisAFactSheet.pdf

Samoan
K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\HepatitisASamoan130408.pdf

Somali
K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\HepatitisASomali130409.pdf

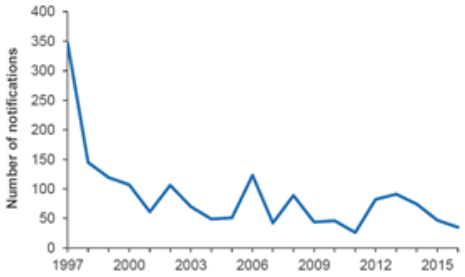
The Illness

Hepatitis A is caused by the hepatitis A virus (HAV) that primarily replicates in the liver and is excreted in large quantities via the biliary tract into the faeces. It is a hardy virus and can survive outside the body for prolonged periods in food and water. It causes a self-limiting illness with no carrier state. **In infants and preschool children most infections are either asymptomatic or cause only mild non-specific symptoms without jaundice.** Most adults and adolescents develop symptomatic disease, the severity of which generally increases with age. Symptomatic HAV infection is characterised by an acute febrile illness with jaundice, anorexia, nausea, abdominal discomfort, malaise and dark urine. Signs and symptoms usually last less than two months, although 10–15 percent of symptomatic persons have prolonged or relapsing illness lasting up to six months. Liver enzymes almost always return to normal by six months after the illness, and often much sooner. The case fatality rates vary from 1.8% in adults aged 50 years and older, to higher in those with pre-existing liver disease such as hepatitis B or hepatitis C infection. Persisting liver damage is very rare. [2]

In areas of the world with low living standards, poor hygiene and high population density, the disease is virtually confined to early childhood and is not an important cause of morbidity. Viral spread occurs readily in households and in early childhood services, which can be important sources of outbreaks in the community. Outbreaks have also arisen from eating contaminated shellfish, vegetables and fruit.[2]

Epidemiology in New Zealand[3]
The incidence of hepatitis A in New Zealand has decreased sharply since the 1960s, and currently about half the cases notified have a history of overseas travel.[1]

Figure . NZ Hepatitis A notifications by year, 1997–2016



The number of notified cases of acute HAV infection in New Zealand has steadily decreased since 1980. In 2016, 35 cases of hepatitis A were notified in New Zealand, compared with 47 notifications in 2015. There were outbreaks in 2002, 2006, 2008, 2012 and 2013 (Figure). Adults aged 20–29 years (1.9 per 100,000) had the highest rate, followed by people aged 40–49 years (1.0 per 100,000). Of the ethnic groups with more than five cases reported, Pacific peoples (2.1 per 100,000) had the highest notification rate, followed by the Asian (1.7 per 100,000) and European or Other (0.5 per 100,000) ethnic groups. 18 (51.4%) were hospitalised.

Travel information was recorded for all cases, with 20 cases (57.1%) having travelled overseas during the incubation period for the disease.

The countries most commonly visited were India, Pakistan (3 cases each), Australia, Kenya, Korea, Samoa, and the Solomon Islands (2 cases each). Five cases reported travelling to more than one country.

No hepatitis A outbreaks were reported in 2016.

CASE DEFINITION

Clinical description

Following a prodrome that may include fever, malaise, anorexia, nausea or abdominal discomfort, there is jaundice, and sometimes an enlarged tender liver. Infection may be indicated by the presence of elevated serum aminotransferase levels. Children are often asymptomatic and occasionally present with atypical symptoms, including diarrhoea, cough, coryza or arthralgia. Jaundice is very unusual in children younger than 4 years, and 90 percent of cases in the 4–6 years age group are anicteric.

Reservoir

Humans and possibly certain non-human primates.

Incubation: Average 28-30 days (range 15-50 days).

Transmission: Mainly person to person by the faecal-oral route.
Common-source outbreaks have been reported from contaminated water or food; foodborne outbreaks have been linked to an infected food handler, raw or undercooked shellfish harvested from contaminated water, and contaminated produce such as lettuce or berries. Transmission by injected drug use or sexual transmission is occasionally reported. Blood or blood-product transfusion related transmission (associated with a viraemic donor) is rare. Hepatitis A virus remains viable in the environment for long periods.

Communicability: Virus excretion falls sharply in the week following the onset of hepatitis.
Maximum infectivity is during the 1–2 weeks before and the first few days after the onset of jaundice. Most cases are probably non-infectious after the first week of jaundice although prolonged viral excretion (up to 6 months) has been documented in infants and children. The period of communicability recommended for contact tracing purpose is 2 weeks before and 1 week after the onset of jaundice.

Prevention: Sanitary disposal of faeces, thorough hand washing after toileting, safe food and water and vaccination.

Persistence of IgM: From the onset of jaundice, IgM anti-HAV persisted for less than 30 days to greater than 420 days; most patients became sero-negative by 120 days. (Koa HW et al. see References).

Notification Procedure

On suspicion immediately. Notification should not await confirmation.

Case Classification

- **Under investigation:** A case that has been notified, but information is not yet available to classify it as probable or confirmed.
- **Probable:** A clinically compatible illness that is epidemiologically linked to a confirmed case.
- **Confirmed:** A clinically compatible illness accompanied by laboratory definitive evidence.
- **Not a case:** A case that has been investigated and subsequently found not to meet the case definition.

Laboratory Testing

Laboratory definitive evidence for a confirmed case requires one of the following:

- detection of HAV nucleic acid
- in the absence of HAV vaccination in the preceding 12 weeks:
  - detection of anti-HAV IgM
  - seroconversion between paired sera tested in the same laboratory (in the absence of recent vaccination).

Samples from confirmed cases should be sent to ESR for genotyping and sequencing (preferably faecal and blood samples)

HAV-specific IgM antibody level becomes detectable in the blood by 4 weeks after infection, persisting at elevated levels for about 2 months before declining to undetectable levels by 6 months. They rarely persist beyond 12 months after infection.[4]

Hepatitis A Test Interpretation (Southern Community Laboratories)

- The initial test is a combined IgG/IgM test. If this is negative the person does not have hepatitis A.
- If the combined test is positive but there is no biochemical evidence of hepatitis (i.e. liver function tests are normal), then the person does not have hepatitis and an IgM test will not be done. The comment from the laboratory will be "In the absence of biochemical evidence of hepatitis this is likely to represent immunity to hepatitis A resulting either from past exposure or vaccination." There will be no comment that the condition is notifiable.
- If the combined test is positive and there is biochemical evidence of hepatitis (deranged liver function tests), then an IgM test will be done.
    - If positive, the person is a case and the laboratory comment will include the comment that this is a notifiable disease
    - If the test is negative for IgM, the person is not a case.

Management of Case

Investigation

- Interview case (visit or phone) using the Hepatitis A questionnaire to identify possible sources and contacts.
- Identify cases in high risk occupation or situations and check for the risk of transmission.
- Obtain a history of travel (including overseas visitors within the incubation period), prior vaccination, possible contacts, consumption of shellfish or other suspect food (for example, overseas food), and blood or blood-product transfusion. Injecting drug users and men who have sex with men may be at higher risk of infection.
- Action within an hour.
- Complete the Case Report Form. Gather details from notifying doctor.
- Serology (hepatitis A IgM and IgG) is essential for diagnosis especially in children.
- If the serology result is: unknown, or IgM negative, or if positive but the case is elderly and not associated with a clinically compatible illness, discuss with the MOH.
- The dates of onset of symptoms and jaundice are important for public health management as they allow determination of onset of the infectious period (see The Illness, Communicability above).
- Attempt to identify possible sources.
- Young children in whom the disease may be unrecognized because of being mild or asymptomatic are a major risk for spreading Hepatitis A.
- **Ensure laboratory confirmation by serology has been attempted**.
- For **all acute cases,** diagnosed by positive IgM serology (in the absence of HAV vaccination in the preceding 12 weeks) or by detection of HAV by PCR/NAAT:
- patient serum and/or faecal specimens (preferably both) should be sent to Specimen Reception at ESR Kenepuru Science Centre, Porirua for HAV genotyping by the ESR Enteric, Environmental and Food Virology Laboratory.
- PHUs are requested to ensure these specimens are sent for genotyping.

Restriction

- In health care facilities, only standard precautions (found here: CDHB intranet, View: Library and Manuals, CDHB Policies, Vol. 10, Infection Control. [CDHB intranet>Home> Search>Standard precautions policy) are indicated for the majority of patients with hepatitis A. Infants, young children and incontinent patients require contact isolation precautions until at least 1 week after the onset of jaundice (or symptoms) or for the duration of hospitalisation.

- All patients[8,9] (especially those in high risk categories[1]) should stay away from work/school/preschool for at least 1 week from onset of jaundice or symptoms (see the exclusion and clearance criteria in Table 1 below).

Table 1.[6] Exclusion and clearance criteria for people at increased risk of transmitting an infection to others*

Pathogen / Disease	Control	Cases§		Contacts
		Exclusion	Micro Clearance	
Hepatitis A	Enteric precautions for ≥1 wk after onset of symptoms	All patients[7,8] especially in high risk categories 1,2,3,4* for seven days after onset of jaundice and/or other symptoms. *Note: the MoH CD manual only excludes those in categories 1-4**	None required	Consider vaccination of contacts (especially if index case identified within 1 week of onset or if at continuing risk). Alternatively consider passive immunisation. People who have recently been exposed to food prepared by a case may benefit from active or passive immunisation.

Note (for further details see Appendix 2 and references 6, 7 and 8)

*** Increased risk categories 1-4**

1. people whose work involves preparing or serving unwrapped food to be served raw or not subject to further heating (including visitors or contractors who could potentially affect food safety)
2. staff, inpatients and residents of health care, residential care, social care or early childhood facilities whose activities increase risk of transferring infection via the faecal-oral route
3. children under the age of 5 attending early childhood services/groups
4. other adults or children at higher risk of spreading the infection due to illness or disability.

Also note: The Health (Infectious and Notifiable Diseases) Regulations 2016 do not contain any exclusionary powers or incubation periods for infectious children, or for high risk occupational groups such as people who work with children or food handlers. Instead the medical officers of health can resort to broader powers in Part 3A of the Health Act 1956, which include directions to cases and contacts to remain at home until no longer infectious.

- The Ministry for Primary Industries has powers to close commercial food premises. In contrast, medical officer of health powers focus on the risk the person poses.
- Note that while there are provisions that apply to early childhood service workers, there are no provisions for health care workers – instead, advice should be provided to employers in terms of the Health and Safety at Work Act 2015.
- Employers may decide to implement more stringent exclusion/restriction criteria in response to their own or their customers' requirements.

Treatment

Supportive. The disease is often asymptomatic in children but is fulminant in about 1% of adult cases.

Counselling

- Advise case or parent/caregiver of the nature of the infection, mode of transmission, and safe hygiene practices.

While infectious period, cases should not:[7]

- prepare or handle food to be consumed by other people
- donate blood
- have sex
- attend preschool, childcare, school, work, or to provide personal care to others
- share drug paraphernalia
- share utensils, toothbrushes, towels or face washers until no longer considered infectious and while symptomatic.

A fact sheet is available in English, Samoan or Somali:

- English K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\HepatitisAFactSheet.pdf
- Samoan K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\HepatitisASamoan130408. pdf
- Somali K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\HepatitisASomali130409.pdf

Management of Contacts

- To prevent disease developing prophylaxis should be given within 14 days of exposure.
- Identify contacts (household, sexual and other) for counselling about immunisation and[±]/or immunoglobulin as appropriate. Contacts should be advised about possible symptoms, incubation period and the need to seek medical attention if unwell within the maximum incubation period of 50 days.
- Contacts who would be the greatest risk for spreading the disease if they were to become cases (ie: young children and non-immune food handlers) require close management.
- Anyone who meets the criteria for a contact who has not been identified by CPH staff should be reported to the Communicable Diseases team.

([±] see Vaccine Plus Immunoglobulin below)

Definition of a Contact
A person who had contact with a case anytime during the latter half of the incubation period (usually two weeks) and until a week after the onset of jaundice, as follows:

Contact Situation	***Comments***
All household and sexual contacts.	
If the case is in nappies, persons who provided direct care to the case.	
Staff and children in close contact with the case at an early childhood service.	*Assessment will take into consideration involvement with nappy changing and toilet hygiene practices and whether there has been more than one case associated with the centre.*
Where there was other close social contact.	*Discuss with MOH on a case-by-case basis.*
If case is a food handler, other food handlers at a premise are considered to be contacts.	
A person who consumed food not subjected to further cooking that was prepared by the case.	*Refer to 'Special Situations' below.* *If the case works as a food handler CPH will provide advice to customers and staff.*
Those exposed through food where the original reservoir remains unknown (eg, imported produce).	.
Those exposed to Hepatitis A-contaminated water in a common-source outbreak.	

- Collect details (name, address, phone number, DOB) about contacts from case (visit or telephone).
- Record on Hepatitis A contact sheet: Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\HepatitisA\FormsStdLettersQuest\CONTACTSHEETHepAMay16.docx

Investigate

- Laboratory screening of contacts is not usually indicated (see comment under 'Vaccination' below but,
- Consider testing in the following situations:
  - if the case is a food handler (see **Special Situations B** below).
  - for any contact with compatible symptoms (ie: a suspect case and manage accordingly).
  - if time allows and if there is a history or likelihood of previous Hepatitis A vaccination, or infection (e.g. previous residence in an endemic country).

Guidelines for the management of a contact:

- if it is less than 10 days since the exposure, serology is **not** done but prophylaxis* is given.
- if it is 10 – 14 days since the exposure, serology is done and prophylaxis* is given without waiting for the result.
- if it is more than 14 days since the exposure, serology is done but prophylaxis* is **not** given.

(* refer to Prophylaxis pages 7-9 below)

- Search for missed cases and maintain surveillance for 7 weeks of contacts in the patient's household or, in a common source outbreak, of persons exposed to the same risk.
- Refer any contact with compatible symptoms to their doctor for investigation. Symptoms include:
  - nausea and vomiting
  - stomach upset and pains
  - fever
  - lack of energy
  - poor appetite
  - general aches and pains
  - yellow eyes (jaundice)
  - dark urine
  - pale faeces
  - feeling unwell
- Telephone each contact and discuss their risk. Assess if vaccine or IG is required and obtain contact's weight if IG likely. Refer to Moorhouse Medical Centre (or other medical centre) as necessary.
- If neither vaccine nor IG is required, send fact sheet or pamphlet only.

Preschool

- If the case attends preschool, note that children under the age of four may be asymptomatic cases and a child of this age may be the source. Discuss with the MOH. Refer to **Special Situations A** for outbreak in a preschool, below.

Food handler

- If the case is a food handler refer to **Special Situations B** below.

Health care worker

- If the case is a health care worker, the role of the case should be assessed and consideration given to the provision of Normal Immunoglobulin-VF human immunoglobulin (IG) prophylaxis for co-workers and patients in their direct care whilst infectious. Surveillance of contacts in the health care facility should be maintained for 7 weeks.

SPECIAL SITUATIONS

A Early childhood service and other institutional outbreaks

- If an outbreak occurs in an early childhood service, vaccination (and*/or immunoglobulin if appropriate) may be indicated for all previously unimmunised staff and children at the service and unimmunised new staff and children for up to 6 weeks after the last case has been identified, including cases in the household of attendees.

- The number of infected cases should determine the extent of intervention. However, consider that one case in a preschool may constitute an outbreak as transmission may have occurred resulting in asymptomatic cases.
- Vaccination and*/or immunoglobulin may also be indicated for adults and children at a school, hospital or custodial-care institution where an outbreak of Hepatitis A is occurring.
- For sporadic cases in hospitals, schools or work settings, post exposure prophylaxis is not routinely indicated, but careful hygiene practices should be maintained.
- Contact ESR and the MoH if an outbreak or cluster.
- If a vaccination clinic is considered refer to the 'setting up a community vaccination clinic' procedure:
  K:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\OUTBREAK GENERAL\Procedures\Setting up a community vaccination clinic.pdf

(* see Vaccine Plus Immunoglobulin page 9 below)

B Contacts of an infected food handler

- If a food handler is diagnosed with hepatitis A, vaccine (or immunoglobulin) should be given to other food handlers at the same premises. Vaccination of patrons is usually not needed but can be considered under the following conditions:
  - if while infectious, the case directly handled uncooked foods or foods after cooking, and had diarrhoea or poor hygiene practices
  - if vaccine (or immunoglobulin) can be given within 2 weeks of exposure.
- Consider serological testing of at risk co-workers and restricting their work activities (discuss implications with MOH and the business owner)
- Consider undertaking surveillance for hepatitis A in patrons by seeking a history of exposure to the food premise from cases notified over the next 2-3 months.
- In a community outbreak consider advising that food handlers be vaccinated (course of two doses).

Restriction

Nil unless symptoms develop.

Counselling

- Advise to seek medical attention promptly if unwell within the maximum incubation period of 50 days. [Note: contacts given IG need to be aware that they may still be at risk of developing hepatitis A, but that the illness may be less severe because of being modified by the IG.]
- Hand hygiene particularly associated with toileting is vital to prevent transmission
- A fact sheet is available in English, Samoan or Somali:
  English
  K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\HepatitisAFactSheet.pdf
  Samoan
  K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\HepatitisASamoan130408. pdf
  Somali
  K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\HepatitisASomali130409.pdf

PROPHYLAXIS

Prophylaxis

Hepatitis A vaccine is effective for preventing secondary cases in healthy contacts and now tends to be the preferred option rather than immunoglobulin. Both are free. Immunoglobulin may have higher efficacy, but this needs to be balanced against the advantages of vaccination, including ease of administration, duration of effect and the lack of interaction with live vaccines. Neither IG nor the vaccine is recommended for the usual office, school or work-type exposure. Prophylaxis is recommended according to the age and medical condition of the contact as follows:

Age or Condition	Prophylaxis
Aged < 1 year	Immunoglobulin[3]
Aged 1-15 years	Havrix Junior[4]
Aged > 15 years	Havrix[4]
Any age and have any of the following: – immunocompromised – chronic liver disease – risk factors for severe disease – the vaccine is contraindicated	Immunoglobulin[3]

Vaccination

- Age-appropriate vaccination is recommended for all close contacts over the age of 1 year. If time allows, consider pre-vaccine serology if there is a history or likelihood of previous hepatitis A vaccination or infection (for example, previous residence in an endemic country).
- Post-exposure prophylaxis (PEP) with vaccine should be offered to contacts as soon as possible, and within 2 weeks of last exposure to an infectious case.
- The efficacy of vaccine when administered > 2 weeks after exposure has not been established.
- Havrix is free to contacts. If arranging for Havrix/Havrix Junior to be given by the Moorhouse Medical Centre or in general practice, refer to **Obtaining and giving Vaccine and/or Immunoglobulin** below.
- If a vaccination clinic is considered refer to the following procedure: K:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\OUTBREAK GENERAL\Procedures\Setting up a community vaccination clinic.pdf
- Also refer to Com Dis Outbreak Response Plan - http://cdhbintranet/communitypublichealth/cphpoliciesandprocedures/Documents/Forms/C.aspx

Immunoglobulin

Note: IG is free to contacts. IG can be given to close contacts of any age.

- Where vaccine is contraindicated (or not immediately available), normal human immunoglobulin (NHIG) may be offered to a close contact who may have a reduced response to vaccine or has risk factors for severe disease.
- Close contacts under 1 year of age will require NHIG.
- The dose of NHIG is 0.03 mL/kg given by intramuscular injection. Post exposure prophylaxis with NHIG should be offered to contacts as soon as possible, and within 2 weeks of last exposure to an infectious case.
- Timely administration of IG will prevent or modify clinical illness for approximately six weeks after the dose.

NHIG is available from the New Zealand Blood Service.
For further information refer to the medicine data sheets or the New Zealand Blood Service website (www.nzblood.co.nz).

For further information refer to the medicine data sheets:
http://www.medsafe.govt.nz/profs/Datasheet/n/NormalimmunoglobulinVFinj.pdf

Contraindications for IG

- *known IgA deficiency*
- *severe thrombocytopenia or any coagulation disorder that would contraindicate an intramuscular injection*
- *previous allergic reaction to immune globulin.*

See Precautions following

Precaution

- *Live vaccines such as measles-mumps-rubella (MMR) should not be administered for three months after a dose of IG, and may also be ineffective if given in the 14 days prior to IG.*

Further information is found in the NZ Immunisation Handbook.

Vaccine Plus Immunoglobulin

The MoH CD manual (Special situations – early childhood service and other institutional outbreaks)[1] refers to "immunisation and/or immunoglobulin". The Immunisation Handbook 2017 page 199 states that an outbreak involving children in nappies usually requires that all unimmunised children and adult workers at the facility and unimmunised new staff and children for up to 6 weeks after the last case has been identified, including cases in the household of attendees be given IG and/or vaccine. For C&PH purposes the giving of vaccine and immunoglobulin for optimal protection would be made on a case by case basis by the MOH.

Obtaining and giving Vaccine and/or Immunoglobulin

- Fax a fully completed Blood Bank prescription form: CFS\ProtectionTeam\FinalDocs\NotifiableConditions\HepatitisA\FormsStdLettersQuest\IMMUNOGLOBULINexBLOODBANKForm130429.docx signed by an MOH/MO/Registrar to the Blood Bank (**ChCh**: fax 364-0159: **Timaru**: fax 688-9958, **Greymouth:** fax 768-2792) and the clinic.
- The Blood Bank will arrange for delivery of IG to the clinic giving it.
- The following day ensure that C&PH receive a fax indicating whether or not vaccine or IG was given to each contact. Record on the contact sheet Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\HepatitisA\FormsStdLettersQuest\CONTACTSHEETHepAMay16.docx.

Chch

- The Moorhouse Medical Centre (and some GPs) will give Havrix and IG free and GPs will also give Havrix free (Havrix is fully funded for contacts and claimed as an Immunisation but the cost of administering IG will be charged to C&PH).
- Refer to the Flow Diagram of the agreement to provide this service with:
  - Moorhouse Medical Centre (see Moorhouse Medical flowchart) http://cdhbintranet/communitypublichealth/cphpoliciesandprocedures/Documents/Forms/M.aspx
  or
  - General practice http://cdhbintranet/communitypublichealth/cphpoliciesandprocedures/Documents/General Practice Flowchart.aspx
  The flow chart for general practice is also found on HealthPathways.
- For Havrix, provide a referral letter Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\Hepatitis A\FormsStdLettersQuest\REFERRAL_GP_HepAVaccination_140704.pdf
- For IG, fax a consent form and prescription form to the Moorhouse Medical Centre/GP: CFS\ProtectionTeam\FinalDocs\NotifiableConditions\HepatitisA\FormsStdLettersQuest\IMMUNOGLOBULINConsentAndREFFERRAL_MoorhouseMedical20160519.pdf
  CFS\ProtectionTeam\FinalDocs\NotifiableConditions\Hepatitis A\ Forms StdLettersQuest \IMMUNOGLOBULIN ConsentAnd Referral_GP_20130628.pdf

Timaru

- Havrix available via the hospital pharmacy and after hours via the on-call pharmacist. Stocks available within 24 hours. HPOs to collect Havrix from the hospital pharmacy and/or immunoglobulin from Medlab and deliver to patient's GP (maintaining the cold chain). If on a week-end confirm with GP on-call that he/she will give it. (A practice nurse who is not an authorised independent vaccinator requires the GP to write in the patient's notes that the vaccine is to be given and the doctor needs to be on site when it is given). Use the Havrix referral letter and Immune globulin prescription and consent forms. If there are problems the IMAC South Canterbury Co-ordinator will assist (Ph: 027 2711515). Discuss with MOH.

Greymouth

- Health Protection officer discusses situation with MOH. When prophylaxis agreed either Havrix or Immune globulin (IG) is ordered from the hospital pharmacy. If IG a prescription arranged and forwarded once signed (the prescription signing is not to hold up obtaining the prophylaxis). If Havrix, a referral letter is provided to the patient to take to their GP. Havrix and IG are kept in the hospital pharmacy and administered by either GPs, PHNs, or ED staff depending on the location of the contacts and availability of these staff.

Transportation of Immune globulin

- IG can be transported by C&PH staff or taxi but it must be transported in a cool environment, preferable 4-8 degrees C. (but at least above 2 degrees) eg. with a 'slicker pad' at the bottom of a chilly bin and the IG wrapped in 4-6 layers of bubble wrap above it.

Other Control Measures

Identification of source

- Check for other cases in the community.
- Investigate potential food and water sources of infection only if there is a cluster of cases or an apparent epidemiological link.
- Liaise with the Ministry for Primary Industries if a contaminated commercial food source is thought to be involved.
- Liaise with the environmental health officer of the local territorial authority where food premises are thought to be involved.
- Consider Hepatitis A vaccination as an occupational health matter for certain food manufacturers /premises (eg: high Polynesian population who travel to the Pacific Islands).
- If indicated, investigate possible water sources in consultation with CPH Drinking Water team. Check water supply for microbiological contamination and compliance with the latest New Zealand drinking-water standards (Ministry of Health 2008). Liaise with the local territorial authority staff to investigate potential water sources of infection.

Disinfection

- Clean and disinfect surfaces and articles soiled with faecal material. If necessary discuss disinfection with an infection control nurse.
- Sanitary disposal of faeces, urine and blood.
- In areas with modern and adequate sewage disposal systems, faeces and other body fluids or secretions can be discharged into sewers.

For further details, refer to Appendix 1 and reference 9. https://www.health.govt.nz/our-work/diseases-and-conditions/communicable-disease-control-manual/appendix-1-disinfection

Vaccination Clinic

The local procedure for 'setting up and conducting a community vaccination clinic' is found here:
K:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\OUTBREAK GENERAL\Procedures \Setting up a community vaccination clinic.pdf

Health education

- Educate about hygienic practices particularly hand washing (see Appendix 3: and reference 10).
- If there is a cluster of cases, consider a media release and direct communication with local parents, early childhood services, schools and health professionals to encourage early reporting of symptoms.
- In communications with doctors, include recommendations regarding diagnosis, treatment and infection control.
- In early childhood services or other institutional situations, ensure satisfactory facilities and practices regarding hand cleaning; nappy changing; toilet use and toilet training; preparation and handling of food; and cleaning of sleeping areas, toys and other surfaces.

Reporting

- Ensure case is entered on EpiSurv.
- Where food/food businesses are thought to be involved inform the Ministry for Primary Industries.
- If a cluster of cases occurs, contact the Ministry of Health Communicable Diseases Team and outbreak liaison staff at ESR, and complete the Outbreak Report Form.
- If an outbreak, write report for Outbreak and file: Y:\CFS\ProtectionTeam\FinalDocs\NotifiableConditions\Hepatitis A\Outbreaks
- File.

Appendix 1

Extract from the MoH Communicable Disease Control Manual 2012 – March 2018, Appendix1: Disinfection[9]

Disinfection and cleaning the environment

Diseases that are notifiable have public health implications. Therefore decontamination of the environment is recommended when cross-infection from the source is possible. Disinfection is also indicated for contamination with y resistant bacteria.

Concurrent disinfection is the application of disinfection measures as soon as possible after the discharge of infectious material from the body of an infected person, or after articles have been soiled with such infectious discharges.

Personal protective equipment (PPE) must be used during environmental disinfection to prevent self-contamination.

Procedures

Disposable items: Any items that can be disposed of should be categorised as in NZS 4304:2002 New Zealand Waste Standard and disposed of.

Solid surfaces and/or equipment (including children's toys): Before disinfection, solid surfaces and/or equipment should be cleaned with detergent and dried. Before disinfection chemicals are applied, it should be established that they are fit for purpose a clear process on how to use them and manufacturer's recommendations are followed

Source: Ministry of Health. 2009. *Guidelines for the Management of Norovirus Outbreaks in Hospitals and Elderly Care Institutions*. Wellington: Ministry of Health.

Appendix 2

Extract from the MoH Communicable Disease Control Manual 2012 – March 2018, Appendix 2: Enteric Disease[6]

Exclusion/Restriction

Cases of most enteric disease should be considered infectious and should remain off work/school until 48 hours after symptoms have ceased. Certain individuals pose a greater risk of spreading infection and additional restriction/exclusion criteria may apply. Microbiological clearance may be required for individuals infected with/exposed to certain pathogens.

The key criteria are:

- the decision to exclude any worker is based on individual risk assessment. As a general rule, any worker with symptoms of gastrointestinal infection (diarrhoea and/or vomiting) should remain off work until clinical recovery and stools have returned to normal (where the causative pathogen has not been identified). Where the pathogen has been identified, specific criteria are summarised in Table 2.4
- the overriding prerequisite for fitness to return to work is strict adherence to personal hygiene, whether symptomatic or not.

The circumstances of each case, carrier or contact should be considered and factors such as their type of employment, availability of toilet and hand washing facilities at work, school or institution and standards of personal hygiene taken into account. For example, a carrier may be relocated temporarily to a role that does not pose an infectious risk.

Pathogen specific exclusion criteria for people at increased risk of transmitting an infection to others

Pathogen specific exclusion (restricting criteria for people from work, school or an early childhood service and for subsequent clearance are summarised in Table 2.4. Additional information is also included in the table for the following groups:

1. people whose work involves preparing or serving unwrapped food to be served raw or not subject to further heating (including visitors or contractors who could potentially affect food safety)

2. staff, inpatients and residents of health care, residential care, social care or early childhood facilities whose activities increase risk of transferring infection via the faecal-oral route

3. children under the age of 5 attending early childhood services/groups

4. other adults or children at higher risk of spreading the infection due to illness or disability.

The Health (Infectious and Notifiable Diseases) Regulations 2016 do not contain any exclusionary powers or incubation periods for infectious children, or for high risk occupational groups such as people who work with children or food handlers. Instead the medical officers of health can resort to broader powers in Part 3A of the Health Act 1956, which include directions to cases and contacts to remain at home until no longer infectious. This Manual contains the recommended exclusion periods for specific diseases (Refer: Table 2.4). There is guidance published about the 2016 regulations and Part 3A of the Health Act in

Summary of Infectious Disease Management under the Health Act 1956.
www.health.govt.nz/our-work/diseases-and-conditions/notifiable-diseases/summary-infectious-disease-management-under-health-act-1956

The legislation is principles based. In this context this means that medical officer of health must weigh protection of public health (the paramount consideration) with the following principles: trying voluntary means first if likely to be effective, choosing a proportionate, and the least restrictive measure required in the circumstances, fully informing the case or contact of the steps to be taken and clinical implications, treating them with dignity and respect for their bodily integrity and taking account of their special circumstances and vulnerabilities, and applying the measures no longer than is necessary (sections 92A to 92H).

Under Part 3A a medical officer of health can direct a case or a contact to stay home (section 92I(4)(b) or 92J(4)(b)). This is when the officer believes on reasonable grounds that the case or contact poses a public health risk (as defined in the s2 Act). The direction must specify duration.

Alternatively, in the context of attendance at an educational institution, if the officer believes the infection risk is unlikely to be effectively managed by directing the case or contact, he or she can approach the head and direct them to direct the case or contact to remain at home. In serious cases, the medical officer of health can also direct the head to close the institution or part of it (s 92L).

Medical officers of health have no powers to direct closure of premises or places where people congregate, other than educational institutions. If a medical officer of health needs to manage a public health risk by excluding infectious people from certain occupations, public pools, campsites, concerts and other public environments, he or she can use directions to the individuals concerned – to stay away from a certain place, or not to associate with certain people.

The Ministry for Primary Industries has powers to close commercial food premises. In contrast, medical officer of health powers focus on the risk the person poses.

Note that while there are provisions that apply to early childhood service workers, there are no provisions for health care workers – instead, advice should be provided to employers in terms of the Health and Safety at Work Act 2015.

Employers may decide to implement more stringent exclusion/restriction criteria in response to their own or their customers' requirements.

Appendix 3

Extract from the MoH Communicable Disease Control Manual 2012 – March 2018, Appendix 3: Patient Information[10]

Health education resources

Pamphlets, posters and other resources available from the Ministry of Health at www.healthed.govt.nz.

Food safety practices

The Ministry for Primary Industries

The Ministry for Primary Industries (MPI) leads New Zealand's food system, ensuring the food we produce is safe and protecting the health and wellbeing of consumers. MPI is responsible for legislation covering food for sale on the New Zealand market, primary processing of animal products and official assurances related to the export of animal and plant products and the controls surrounding registration and use of agricultural compounds and veterinary medicines. MPI is the New Zealand competent authority for imports and exports of food and food-related products.

MPI contact information: www.mpi.govt.nz/contact-us

Food safety practices in preparing and cooking a hangi: He whakatairanga i nga ahuatanga mahi mo te tunu hangi:
www.mpi.govt.nz/food-safety/community-food/marae-food-safety

Safe food preparation – key messages
Educate the public about safe food preparation.

- Avoid working with food when you:
  - are unwell especially with a gastro infection
  - have open skin sores, boils or abscesses.
- Clean your hands thoroughly after using the toilet or changing nappies or other incontinent products for others and before and after preparing food.
- Wash raw vegetables and fruits thoroughly before juicing them or eating them fresh.
- Cook meat thoroughly before eating.
- Cook eggs and egg products properly. Avoid eating raw, incompletely cooked eggs or using dirty or cracked eggs.
- Keep hot food hot between cooking and eating it.
- Wash hands, utensils and chopping boards in hot, soapy water after handling uncooked food.
- Keep raw meat, poultry and fish separate from and below other foodstuffs so that any raw meat juice does not contaminate other foods stuffs especially ready-to-eat foods.
- Cover all stored food.
- Cover and put uneaten, cooked food in the refrigerator within 1 hour of cooking.
- Defrost food by placing it on the lower shelves of a refrigerator (if raw meat place on bottom shelf to avoid raw meat juice contaminating other foods) or use a microwave oven according to defrosting instructions. Avoid defrosting food at room temperature.
- Thoroughly reheat (until internally steaming or piping hot, at least 70ºC) leftover or ready-to-eat foods before eating.
- Strictly follow use-by and best-before dates on refrigerated foods.

Find out more about how to prepare and store food safely and when you need to take extra care with some types of food at www.mpi.govt.nz/food-safety/food-safety-for-consumers

References And Further Information

1. NZ Communicable Diseases Control Manual 2012-March 2018, Hepatitis A: https://www.health.govt.nz/our-work/diseases-and-conditions/communicable-disease-control-manual/hepatitis

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3. ESR Annual Surveillance Summaries 2016.Hepatitis A, https://surv.esr.cri.nz/PDF_surveillance/AnnualRpt/AnnualSurv/2016/2016AnnualNDReportFinal.pdf

4. Koa HW, Ashcavai M, Redeker AG (1984). *The persistence of Hepatitis A IgM antibody after acute clinical hepatitis A.* Hepatology Pubmed. Retrieved 8/05/2013 from http://www.ncbi.nlm.nih.gov/pubmed/6090293

5. Mayo Clinic Hepatitis A IgM Antibody, Serum https://www.mayomedicallaboratories.com/test-catalog/Clinical+and+Interpretive/48064

6. NZ Communicable Diseases Control Manual 2012 – March 2018, Appendix 2: Enteric disease http://www.health.govt.nz/system/files/documents/publications/cd-manual-appendix-2-dec17.pdf

7. NSW Health > Professionals > Control Guidelines http://www.health.nsw.gov.au/Infectious/controlguideline/Pages/hepa.aspx#10

8. UK Public health control and management of hepatitis A https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/623036/Public_health_control_and_management_of_hepatitis_A_2017.pdf

9. NZ Communicable Diseases Control Manual 2012 – December 2017, Appendix 1: Disinfection
https://www.health.govt.nz/our-work/diseases-and-conditions/communicable-disease-control-manual/appendix-1-disinfection

10. NZ Communicable Diseases Control Manual 2012 – December 2017, Appendix 3: Patient education
http://www.health.govt.nz/system/files/documents/publications/cd-manual-appendix-3-dec17.pdf