

# **National Poliomyelitis Response Plan for New Zealand**

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MANATŪ HAUORA

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# 1 Introduction

## 1.1 Purpose of this plan

This plan sets out the response in New Zealand to the first case of imported poliomyelitis (polio) caused by a wild type poliovirus.

In New Zealand, the three-dose polio vaccination rate is estimated to be 88 percent. Given this level of immunisation coverage, it is unlikely poliovirus would spread significantly if it came to New Zealand. Nevertheless, we wish to be ready with a response that is prompt, effective, and based on available evidence should this unlikely event occur.

## 1.2 Current situation

Worldwide, the number of counted polio cases reached its lowest level of 483 cases in 2001. Since 2001 eradication has proven difficult in a small number of countries, with the number of counted polio cases fluctuating since 2001, peaking at 1997 cases in 2006. In 2008, 18 countries experienced 1655 cases; 14 countries in Africa and four in Asia. There are four remaining polio-endemic countries; Nigeria, India, Pakistan and Afghanistan. Nigeria (801) and India (559) accounted for 82 percent of cases in 2008.

The last case of wild poliovirus in New Zealand was in 1977, and the Western Pacific region has been declared polio-free since 2000. Nevertheless a risk exists of an imported case, as happened in Australia in 2007, when an Australian citizen travelled to visit family in Pakistan and came back to Australia with the virus.<sup>1</sup>

## 1.3 Likely scenario

The most likely scenario is similar to the one experienced by Australia in 2007, namely a person is infected during travel to an endemic country and soon after travels to New Zealand. Since most infections are asymptomatic, it is possible an asymptomatic infected person could pass on the virus, resulting in a case among immediate or more distant contacts.

Other scenarios are of extremely low probability, but include:

- importation of vaccine-derived poliovirus following a person's travel to an area with circulating vaccine-derived polio
- importation of vaccine-associated paralytic poliomyelitis, from a country using oral polio vaccine (OPV)
- exposure to polio in a laboratory.<sup>2</sup>

For definitions of key terms used in this plan, see Appendix 1.

<sup>1</sup> This case is counted as a Pakistan case since it was imported from Pakistan.

<sup>2</sup> No New Zealand laboratory holds the poliovirus, but laboratory exposure could occur via a person's contact with specimens subsequently found to be positive for polio.

## **2 Background**

### **2.1 Description of poliomyelitis**

Poliomyelitis is caused by poliovirus types 1, 2 and 3. Infection is established in the gastrointestinal tract. In a minority of cases it spreads to the central nervous system. Less than 1 percent of infections result in acute flaccid paralysis (AFP). A minor illness (fever, malaise, headache, vomiting) occurs in about 10 percent of infections. Over 90 percent of infections are asymptomatic or involve non-specific fever.

### **2.2 Mode of transmission of the poliovirus**

The poliovirus is passed person to person, mainly by the faecal–oral route. Pharyngeal spread is also possible.

### **2.3 Incubation period of polio**

The incubation period for polio is usually 7–14 days for infections resulting in AFP, although the reported range is 3 to 35 days.

### **2.4 Period of communicability for poliovirus**

The period of communicability for the poliovirus has not been precisely defined, but transmission is possible as long as the virus is excreted. Poliovirus is detectable in throat secretions as early as 36 hours after exposure to infection and in faeces 72 hours after exposure to infection. The virus typically persists in the pharynx for about one week and in faeces for three to six weeks. However, poliovirus may be shed in the faeces of immunocompromised people for several years. Cases are most infectious in the days immediately before and after the onset of any symptoms.

## 3 Case Response

### 3.1 Case definitions

The following are the case definitions to be used.

#### 3.1.1 Case definition 1: used during a polio-free period, before identification of an index case

Probable: AFP with an epidemiological link.<sup>3</sup>

Confirmed: A clinically compatible illness with laboratory confirmation.

#### 3.1.2 Case definition 2: used after identification of an index case

Suspect:<sup>4</sup> A clinically compatible illness with an epidemiological link.<sup>3</sup>

Probable: A clinically compatible illness with a positive polymerase chain reaction (PCR) result.

Confirmed: Identification of poliovirus using the standard cell culture-based method.

Please see the Institute of Environmental Science and Research (ESR) website for up to date case definitions ([www.surv.esr.cri.nz](http://www.surv.esr.cri.nz)).

### 3.2 Case confirmation

Any case of suspected polio is a national emergency. The priority is to establish the diagnosis as soon as possible.

In a case of suspected polio, urgently obtain as many of the following specimens as possible:

- a stool sample (or rectal swab with faecal material if stool not immediately available)
- cerebrospinal fluid (CSF)
- a nasopharyngeal swab (NPS)
- urine
- EDTA blood 5 ml.

<sup>3</sup> An epidemiological link is a history within the past 35 days of one of more of: an OPV; travel to high risk countries (wild poliovirus endemic countries, see <http://www.polioeradication.org/casecount.asp> for an up to date list); exposure to high-risk individuals (a person with polio infection; a person immunised with OPV within the last two months; a person with a history of travel to high-risk countries within the last three months; or a person working with poliovirus in a laboratory; or exposure to poliovirus in a laboratory).

<sup>4</sup> In the *Communicable Disease Control Manual* published by the Ministry of Health, there is no definition for suspect cases of polio. The distinction between suspect and probable may be necessary during a polio outbreak when a PCR test with a shorter turnaround time (compared with the turnaround for the standard cell culture-based method) is likely to be used to facilitate the emergency response.

Laboratory confirmation is required for a definitive diagnosis of polio.

Whenever there is a suspicion that a case of paralysis is caused by polio, the clinician must call the laboratory and talk to the virologist.

### **3.3 Methods of laboratory testing for detection of poliovirus**

#### **PCR assays**

##### **Generic enterovirus PCR**

An enterovirus PCR (which has a turnaround time of five hours) with a negative result excludes poliovirus involvement.

##### **VP1-based sequence typing**

The VP1-based sequence typing assay (which has a turnaround time of 48 hours) is used for enterovirus PCR-positive samples. A clinical specimen is used for PCR amplification followed by sequencing for the VP1 region of the virus. It differentiates polioviruses from non-polio enteroviruses.

#### **Cell culture-based method**

The cell culture-based method is the standard method used to identify polioviruses.<sup>5</sup> The method involves:

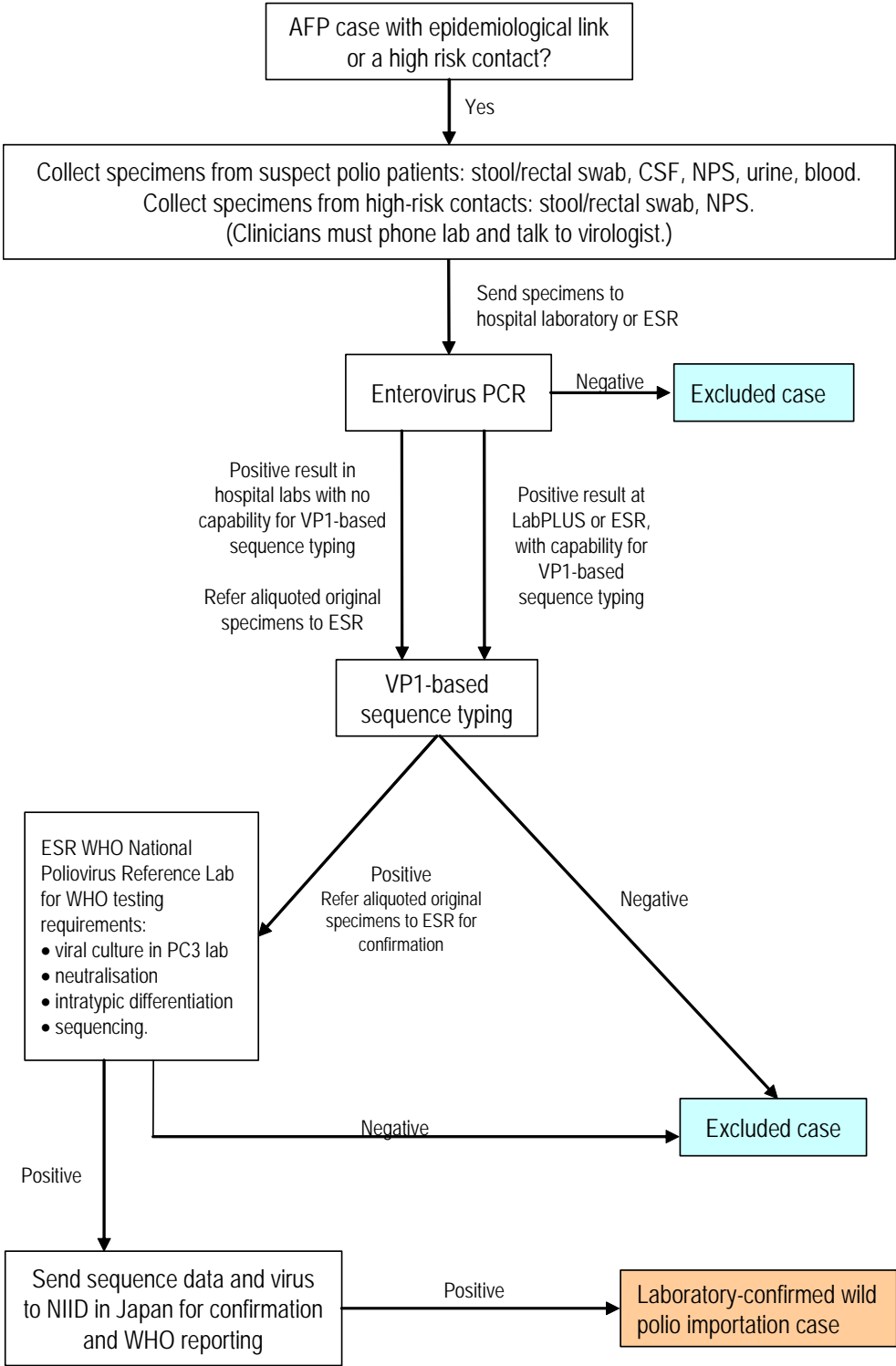
- viral culture and neutralisation to identify poliovirus and serotype (with a turnaround time of 14 days)
- intratypic differentiation by PCR and ELISA to differentiate wild poliovirus from vaccine derived poliovirus.

Figure 1 shows the laboratory process for a suspected polio case.

See Appendix 2 for further information on the laboratory response and the testing protocol, and see Appendix 3 for instructions for sending faecal samples to the Institute of Environmental Science and Research (ESR).

<sup>5</sup> WHO. 2004. *Polio Laboratory Manual* (4th ed), Geneva: World Health Organization.

**Figure 1: Laboratory flow diagram**



**3.4 Notification**

The clinician and the laboratory must immediately notify suspected, probable and confirmed cases of polio to the local medical officer of health. (For a summary of roles and responsibilities, see Appendix 4.)

The medical officer of health is responsible for ensuring investigation and adequate isolation of the case, and the identification and management of the case's contacts.

The medical officer of health will inform the Ministry of Health, which will set up a technical advisory group when a case is confirmed (or earlier if there is strong suspicion of polio).

Under the International Health Regulations 2005, isolation of wild poliovirus must be notified to the World Health Organization (WHO) via the National Focal Point within 24 hours of a case of polio due to wild poliovirus.

### **3.5 Isolation**

Enteric precautions are required during a person's hospital stay with suspected or confirmed polio. When the person is sent home, they should stay at home until six weeks have passed since the onset of symptoms or until two stool samples, taken seven days apart, are shown to be negative for poliovirus.

At home, a high standard of hygiene will be necessary, although it is recognised that other household members may already be infected. The usual bathroom and wash facilities may be used. Contact with others should be limited, but isolation is not necessary.

### **3.6 Case information**

Case details should be gathered as soon as possible by public health units, via the case report form, including the person's demographic details, vaccination history, history of recent travel, immunocompetency, onset and range of symptoms, and type and results of laboratory tests.

To see the case report form, go to the ESR website:  
<http://surv.esr.cri.nz/episurv/crf.php>.

### **3.7 Case finding following detection of index case**

The following processes will occur after a case of polio is detected in New Zealand.

- AFP surveillance will be expanded – during an outbreak of polio, all cases (paediatric and adult) of AFP will be classified as suspect cases of polio that must be notified to the local medical officer of health.
- The Ministry of Health will implement a communication strategy to the whole health sector (including hospitals, public health units, and primary health care services).
- The Ministry of Health will implement a national communication strategy to raise awareness of polio among the public.

## 4 Contact Response

### 4.1 Contact tracing

The contacts of each person with polio must be identified, so they can be traced and tested for polio.

**Contact definition: A contact is any individual potentially exposed to infectious faecal material either from close physical contact or shared toilet facilities with a probable or confirmed case of polio.**

The types of contacts most likely to fit this definition are:

- other household members who live with the index case and any sexual partners
- close social contacts, such as family and friends who spend a lot of time with the index case.

Some occasional occupational contacts or contacts from domestic or international travel may also meet the definition of a contact.

It will be necessary to determine whether the case has used the toilet facilities in a particular setting and whether a case has had close physical contact with other individuals. Determine whether a potential contact is at particular risk of faecal–oral or pharyngeal spread by considering:

- the case's standard of hygiene
- the case's age (eg, if they are aged under 12, any contacts should probably be classified as close contacts)
- the immune status of the case and any contacts
- the contact's degree of physical contact with the case (eg, sexual contact)
- whether the contacts live in the same household as the case.

### 4.2 Contact investigation

#### 4.2.1 Vaccination history

Take the contact's vaccination history to determine their immune status and the risk of polio infection after exposure.

#### 4.2.2 History of exposure to index case

Collect details about the contacts history of exposure to the index case. Focus on the contact's exposure to the case, for example, the:

- relationship between the contact and case (eg, parent, spouse, or colleague)
- place(s) of exposure
- date(s) of exposure

- type(s) of exposure
- duration of exposure.

If a contact becomes a case, then further information will be required as part of the case response.

### 4.3 Contact management activities

Contact management focuses on:

- vaccination
- promoting enhanced hand hygiene and sanitation practices.

#### 4.3.1 Vaccination

There is no known post-exposure prophylaxis for polio infection. Vaccination of contacts is recommended, even though some contacts may already be infected at the time of vaccination, and therefore will not benefit from the vaccination.

See the vaccination protocol in section 4.5.

#### 4.3.2 Hygiene

Contact management focuses on education about the importance of good hand hygiene practices.

- Hand hygiene is the single most important means of preventing the spread of infection. People should wash their hands well with soap and warm water for 20 seconds, then dry them thoroughly, preferably with two disposable hand towels for 10 seconds each. An antiseptic gel designed for the purpose and used for 20 seconds is a good alternative when hands are not visibly soiled.
- A disinfecting solution should be used to wipe down surfaces used by people who are ill (such as toilet and bathroom facilities). One of the most effective and cheapest disinfecting solutions is a solution of 1 teaspoon (5 ml) of bleach to half a litre (500 ml) of water.

#### 4.3.3 Restriction of activities and laboratory investigation

Contacts who have a potentially high risk of transmitting infection to others should be restricted from school or work for six weeks after contact with the case or until the contact provides two stool samples negative for the virus taken at least 24 hours apart.

Such restrictions and laboratory investigation are needed for household contacts and for the following close contacts:

- those aged under 12 (due to their generally low hygiene standards)
- those aged 12 and over who are at high risk of transmitting infection or who work with susceptible groups such as:

- food handlers (these contacts should be assigned work duties not directly associated with food preparation)
- health care workers
- people working with young, infirm, immunocompromised or elderly people
- people who for mental or physical reasons may transmit the virus more easily than other people.

See Appendix 2 for information on specimens and laboratory tests.

#### **4.3.4 Quarantine**

Contacts do not need to be quarantined. Quarantine is not a feasible management strategy because the infectious period for poliovirus (ie, faecal shedding) may last as long as six weeks.

### **4.4 Contact management by contact type**

This section discusses how the different groups of contacts should be managed.

#### **4.4.1 Household and close social contacts**

Household contacts and close contacts aged under 12 or who are at high risk of transmitting infection or who work with susceptible groups (identified in section 4.3.3) should be:

- offered inactivated polio vaccine (IPV) as per the vaccination protocol in section 4.5
- restricted from school or work for six weeks after contact with the case or until the contact provides two stool samples negative for the virus taken at least 24 hours apart.

Health authorities will communicate with contacts regularly to check for the development of symptoms and to provide information as needed.

Other close social contacts will be offered IPV as per the vaccination protocol in section 4.5, given written information about the infection, and encouraged to use good hygiene practices. This group's activities do not need to be restricted.

#### **4.4.2 Other social, occupational and travel contacts**

Other social, occupational and travel contacts include anyone who has shared toilet facilities with the case during the infectious period. These people are at low risk of infection, but should be offered IPV as per the vaccination protocol, be given written information about the infection, and be encouraged to use good hygiene practices and report any symptoms (eg, fever, malaise, headache, nausea, vomiting, and early muscle weakness) to health authorities so their need for viral testing can be assessed. Their activities do not need to be restricted.

## 4.5 Vaccination protocol for contacts

### 4.5.1 The vaccines

A complete primary course of polio vaccination is three doses using any combination of OPV and IPV given at least four weeks apart. A booster dose is given up to 10 years after the primary course.

The national immunisation schedule involves a course of four doses of polio vaccine given at six weeks, three months, five months and four years using Infanrix-hexa (a hexavalent vaccine containing DTaP-IPV-HepB/Hib; first three doses) and Infanrix (a tetravalent vaccine containing DTaP-IPV; fourth dose).

OPV will not be used as part of the vaccination protocol for contacts during a polio outbreak response, due to already high immunisation coverage in New Zealand and the risk of vaccine-associated paralytic poliomyelitis with OPV. OPV is not currently available in New Zealand.

There are no adverse effects on the foetus following polio vaccination during pregnancy, although vaccination is not advised for pregnant women in the first and second trimester in a low-risk setting. However, pregnant women are susceptible to paralytic polio, so should be immunised as per the vaccination protocol during a polio outbreak.

For more information, see the Ministry of Health's *Immunisation Handbook 2006*.<sup>6</sup>

### 4.5.2 Vaccination protocol

#### Booster dose

If there is a sure history of a completed course of polio vaccination, offer a booster dose of IPV. If there is any doubt, offer a full primary course of IPV as below.

#### Full primary course of IPV

Offer a full primary course of IPV, with at least four weeks between doses, if the person has:

- no history of polio vaccination
- an uncertain history of polio vaccination
- a history of an incomplete primary course.

For young contacts, align vaccination with the national immunisation schedule if possible after the initial dose.

<sup>6</sup> Ministry of Health. 2006. *Immunisation Handbook 2006*. Wellington: Ministry of Health, URL: <http://www.moh.govt.nz/moh.nsf/indexmh/immunisation-handbook-2006>.

## **4.6 Monitoring of contacts**

### **4.6.1 Household and close social contacts**

Health authorities will regularly monitor household contacts and close contacts aged under 12 or those who are at high risk of transmitting infection or who work with susceptible groups (as identified in section 4.3.3) to check for the development of symptoms and to provide information as needed.

### **4.6.2 Other contacts**

Active monitoring of other contacts should not be necessary. These contacts will be given written information about the infection, and encouraged to use good hygiene practices and to telephone their public health unit for any illness up to five weeks after the most recent exposure. The public health unit will manage the process of the contact accessing primary care to ensure appropriate information is given to the primary care practitioner.

### **4.6.3 General advice**

Contacts who are vaccinated as part of the response need to be informed that they are not necessarily protected against infection and need to telephone a public health unit and see a medical practitioner if they suffer from any illness.

Contacts should be advised to avoid strenuous physical activity and should not undergo surgical procedures (including, for example, a tonsillectomy).

If a contact suffers from a major illness with symptoms including neck, back and leg stiffness, severe muscle pain or neurological symptoms, the responsible medical practitioner is advised to:

- refer the patient to hospital as a suspected case of polio
- notify the local medical officer of health of a suspected case of polio.

If a contact suffers from a minor non-specific illness (eg, symptoms such as fever, malaise, headache, nausea, or vomiting) or an influenza-like illness, the responsible medical practitioner is advised to:

- test the contact for polio virus
- reinforce messages about hand hygiene and disinfection practices
- emphasise the importance of seeking medical attention if symptoms worsen or neurological symptoms occur
- notify the local medical officer of health of a suspected case of polio.

## **5 Community Measures**

A single case of polio in New Zealand will not require a measure as extensive as community vaccination. The focus will be on education about adequate hygiene practices. If there are secondary cases, then the scenario changes markedly. In this situation a technical advisory group will advise on any vaccination programme that may be required, as well as on other measures such as the closure of schools and restriction of community gatherings.

## Appendix 1: Definitions

Term	Definition
Acute flaccid paralysis (AFP)	AFP is a clinical manifestation characterised by sudden onset of weakness or paralysis and reduced muscle tone without other obvious cause.
Inactivated polio vaccine (IPV)	IPV is injected and works by producing protective antibodies in the blood, thus preventing the spread of poliovirus to the central nervous system. However, it induces only very low levels of immunity to poliovirus locally, inside the gut. IPV provides individual protection against polio paralysis but, unlike OPV, cannot prevent the spread of wild poliovirus.
Oral polio vaccine (OPV)	The action of OPV is two-pronged: OPV produces antibodies in the blood to all three types of poliovirus. In the event of infection, this will protect the individual against polio paralysis by preventing the spread of poliovirus to the nervous system. OPV also produces a local immune response in the lining ('mucous membrane') of the intestines – the primary site for poliovirus multiplication. The antibodies limit the multiplication of 'wild' (naturally occurring) virus inside the gut, preventing effective infection. This intestinal immune response to OPV is probably the main reason why mass campaigns with OPV can rapidly stop person-to-person transmission of wild poliovirus.
Vaccine-associated paralytic poliomyelitis	Vaccine-associated paralytic poliomyelitis is a rare event where neurological damage is caused by a virus ingested from the OPV. A mutation of the vaccine virus known as a reversion causes previously attenuated poliovirus to revert to a more neurovirulent form. The paralysis that results is identical to that caused by wild poliovirus.
Vaccine-derived poliovirus	Vaccine-derived poliovirus is the live, attenuated strain of the poliovirus contained in the OPV that has changed and reverted to a form that can cause paralysis in humans and has the capacity for sustained circulation. Vaccine-derived polioviruses differ from the parental (original) Sabin strains found in the vaccine by 1 percent to 15 percent of VP1 nucleotides. This is a measurement of genetic change that scientists use to monitor the circulation of viruses.
Wild poliovirus	Naturally occurring polioviruses. Polioviruses with greater than 15 percent sequence difference in the VP1 coding region are defined as wild polioviruses.

## Appendix 2: Laboratory Response

### Suspected case of poliomyelitis

Any case of suspected poliomyelitis (polio) is a national emergency. The priority is to establish the diagnosis as soon as possible.

Urgently obtain as many clinical specimens as possible and send the specimens to one of the referral laboratories listed below for urgent enterovirus PCR, to be followed by VP1-based sequence typing (see Figure 1).

Ring the referral laboratory and speak to the virologist.

Auckland region:	Department of Virology LabPLUS Building 31 Auckland City Hospital PO Box 110 031 Grafton, Auckland Phone: (09) 307 8995 After hours: (09) 379 7440
Waikato region:	Specialist Services Laboratory Waiora Building Level 3 Waikato Hospital Pembroke Street Private Bag 3200 Hamilton Phone: 0800 452 283 ext 8530 (Virology) After hours: Pager 20075
Wellington region:	Laboratory Services Clinical Services Block, Level F Wellington Hospital Riddiford Street, Newtown Private Bag 7902 Wellington Phone (including after hours): (04) 385 5999 ext 6060
ESR:	WHO National Poliovirus Reference Laboratory Institute of Environmental Science and Research National Centre for Biosecurity and Infectious Disease 66 Ward Street, Wallaceville, Upper Hutt 5018 Phone: (04) 529 0606 After hours (Mobile): 027 216 7833

Southern region: Virology/Molecular Microbiology Section  
Microbiology Unit  
Canterbury Health Laboratories  
Corner Hagley Ave and Tuam Street  
PO Box 151  
Christchurch  
Phone: (03) 364 0300  
After hours: (03) 364 0640

The WHO-endorsed laboratory standard used to confirm poliovirus is the cell culture-based method with a turnaround time of 14 days (as outlined in the WHO *Polio Laboratory Manual*).<sup>7</sup> To fulfil WHO reporting requirements, faecal samples from all suspected cases of polio need to be tested using cell culture-based methods by the WHO-accredited national poliovirus laboratory at ESR for cell culture. This method can be done in a routine manner when stool samples are available.

The hospital laboratory will send an aliquot of the original clinical samples to ESR for final laboratory confirmation and to fulfil the WHO testing requirements (viral culture, antigenic-based typing (neutralisation), intratypic differentiation and sequencing). See Appendix 3 for instructions on sending specimens to ESR.

## **Methods of laboratory testing for detection of poliovirus**

### **PCR assays**

#### **Generic enterovirus PCR**

A generic enterovirus PCR (turnaround time of five hours) with a negative result allow exclusion of poliovirus involvement.

#### **VP1-based sequence typing**

VP1-based sequence typing<sup>8</sup> is to be used for enterovirus PCR-positive samples. A clinical specimen is used for PCR amplification followed by sequencing for the VP1 region. It allows differentiation between polioviruses and non-polio enteroviruses (turnaround time is 48 hours).

<sup>7</sup> WHO. 2004. *Polio Laboratory Manual* (4th ed), Geneva: World Health Organization.

<sup>8</sup> Nix W, Oberste MS, Pallansch MA. 2006. Sensitive, seminested PCR amplification of VP1 sequences for direct identification of all enterovirus serotypes from original clinical specimens. *Journal of Clinical Microbiology* 44(8): 2698–704.

### **Cell culture-based method**

The cell culture-based method is the standard method used to identify polioviruses as outlined in the *WHO Polio Laboratory Manual*, and consists of the following steps:

- viral culture and neutralisation to identify poliovirus and serotype (turnaround time 14 days)
- intratypic differentiation by PCR and ELISA to differentiate between wild poliovirus and vaccine-derived poliovirus.

### **Contacts**

High risk contacts (as described in section 4.3.3) require laboratory investigation, because they will be restricted from school or work for six weeks after contact with the case or until infection can be excluded.

The following samples should be collected and sent to the regional laboratory for enterovirus PCR and any positive samples sent to ESR or LabPLUS for VP1-based sequence typing (see Figure 1):

- a stool or rectal swab
- a nasopharyngeal swab.

Final laboratory confirmation would occur as for cases.

Other contacts do not require laboratory testing.

## Appendix 3: Instructions for Sending Samples to ESR

Note: This information is modified from the standard ESR AFP paediatric surveillance form.

When you identify a case of acute flaccid paralysis, you must do the following.

- Notify your local medical officer of health.
- Collect as many samples as possible (stool/rectal swab, CSF, NPS, urine, blood).
- For faecal samples, collect them as soon as they are available (this may be after or at the same time as PCR tests are being done on other specimens).
- Collect **two** faecal specimens **24 hours apart within 14 days of the onset of paralysis**.
- Send specimens to the World Health Organization (WHO) National Poliovirus Reference Laboratory in ESR.
- Send specimens in an ESR biobottle provided by Specimen Reception at ESR's Wallaceville campus (Ph: (04) 529 0600). One ESR biobottle contains two faecal containers, a vial containing viral transport medium, a swab, a chill pad, a specimen bag, a bubble bag, a courier ticket, a specimen request form, and a specimen collection instruction sheet.

### Instructions for sending samples to ESR

Follow the instructions carefully. If you have any questions, contact:

Kaye Croft, Judy Bocacao or Sue Huang  
WHO National Poliovirus Reference Laboratory,  
Institute of Environmental Science and Research  
Phone: (04) 529 0600.

#### 1 ESR specimen form

- Include on the specimen form the date of onset of paralysis, symptoms, the patient's vaccination history, the batch number of the last IPV (if available), and patient and specimen details.
- Place the specimen form inside the pocket of the specimen bag.
- Place the specimen bag into the bubble bag.

#### 2 Chill pad

- Freeze the chill pad.
- Place the chill pad next to the specimen containers when they are ready to be sent to ESR.

### **3 When samples are ready to be sent to ESR**

- Place the chill pad and the bubble bag (containing the specimen bag with the specimen containers) into the biobottle.
- Place the biobottle into its outer cardboard box.
- Close the top of the cardboard box. Swap the address cards around on the outer cardboard box so that ESR is in the 'To' pocket and your address is in the 'From' pocket.
- Attach the courier ticket to the top of the box.
  - Peel off the courier ticket at the 'PEEL HERE' mark.
  - Attach the sticky portion to the top of the outer cardboard box.
  - Keep the top part of the label as your record.
- Call New Zealand Couriers on 0800 800 841 for a courier to pick up the box from your address.

You will receive VP1-based sequence typing results in 48 hours and cell culture based test results in 14 days.

## Appendix 4: Roles and Responsibilities

**Table 1:** Roles and responsibilities in relation to the national poliomyelitis response

Role	Responsibility
Clinicians	Have a high index of suspicion, report <i>suspected</i> cases of polio infection (ie, acute flaccid paralysis (AFP) cases) to local medical officer of health
Public health units	Undertake case investigation and community management, contact investigation and management, and report probable and confirmed cases to Ministry of Health
Laboratories	Test specimens, liaise with public health units regarding laboratory investigation
National Certification Committee for the Eradication of Polio	Undertake national AFP surveillance
Institute of Environmental Science and Research (ESR) – Population and Environmental Health Group	Manage and maintain the EpiSurv database that stores case information reported by public health units and laboratories; report suspect, probable and confirmed cases to the Ministry of Health
Institute of Environmental Science and Research (ESR) – WHO National Poliovirus Reference Laboratory	Test samples, confirm poliovirus test results for hospital laboratories; liaise with Global Poliovirus Reference Laboratory in Japan regarding laboratory testing; report to the WHO WPRO polio laboratory co-ordinator regarding the laboratory investigation; liaise with public health units and Ministry of Health regarding laboratory investigation
Technical advisory group	Will be formed by the Ministry of Health after the first confirmed case of poliomyelitis, will comprise members of the National Certification Committee for the Eradication of Polio and other relevant representatives such as members of the Immunisation Technical Working Group
Ministry of Health	Develop communication strategies and reports probable and confirmed cases to the World Health Organization via the National Focal Point (following International Health Regulations 2005 requirements)