Poliovirus Infection Outbreak Response Plan for Australia

January 2019
Office of Health Protection
Australian Government Department of Health
Poliovirus Infection Outbreak Response Plan for Australia

Australia was verified as polio-free in 2000, along with the Western Pacific Region. The Poliovirus Infection Outbreak Response Plan for Australia (the Plan) has been developed to ensure Australia is prepared for possible outbreaks of infection with wild poliovirus (WPV) or circulating vaccine derived poliovirus (cVDPV).

In a previously polio-free country, the occurrence of a poliomyelitis (or polio) case due to WPV or cVDPV is considered a national public health emergency, requiring a rapid and high-quality response.

This Plan is developed in line with the Australian National Framework for Communicable Disease Control, Australia’s Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) and the Standard Operating Procedures for poliovirus outbreak response and operational guidelines on polio outbreak response.

As noted in the CDPLAN, where disease-specific plans exist, such as this one for poliovirus, such plans are the primary plans used in response to specific incidents.

Reviewed and endorsed by Australia’s Polio Expert Panel (PEP) on 12 April 2018.

Reviewed and endorsed by the National Certification Committee (NCC) on 13 July 2018.

Reviewed and endorsed by Communicable Diseases Network Australia (CDNA) on 30 August 2018.

Reviewed and endorsed by Australian Health Protection Principal Committee (AHPPC) on 26 October 2018.

Submitted to Western Pacific Regional Certification Commission (RCC) as part of the Australia’s 2018 “Annual update of the National documentation for certification of polio eradication” on 24 January 2019.

Name: Professor Brendan Murphy

Designation: Chief Medical Officer for the Australian Government

Signature: 

Date: 23 January 2019


3 Please see the GPEI’s technical guidance for outbreak response, including the Standard Operating Procedures (SOPs) (http://www.polioeradication.org/ResourceLibrary/Resourcesforpolioeradicators/Technicalguidelines.aspx)
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INTRODUCTION

Purpose of this Document

Australia was declared polio-free by the World Health Organization (WHO) in 2000. Any case of a wild poliovirus (WPV) or circulating vaccine derived polio virus (cVDPV) is therefore considered an outbreak, threatens Australia’s polio-free status, and must be managed as a public health emergency.

The Australian Government Department of Health (Health) has prepared this Plan in consultation with key stakeholders. The Poliovirus Infection Outbreak Response Plan for Australia (the Plan) clarifies the roles and responsibilities for the states and territory health departments, advisory committees, organisations and clinicians involved in disease surveillance and control in the event of an outbreak of a WPV or cVDPV case in Australia.

Consistent with the WHO Global Polio Eradication Initiative, this plan does not cover viruses with a genetic sequence indicative of having been shed from an immunocompromised person following vaccination with oral polio vaccine (OPV), nor viruses classified as ambiguous vaccine derived poliovirus (aVDPV). With detection of an immunodeficiency-related vaccine derived poliovirus (iVDPV), a rapid risk assessment will occur and a specific sub-plan for iVDPVs is being developed for Australia.

Australia’s Emergency Response Plan for Communicable Disease Incidents of National Significance (the CDPLAN) notes that where disease-specific plans exist, such as this Plan for poliovirus, the disease-specific plans are the primary plans used in response to such incidents.

The Plan is based on a risk management approach for biological emergencies, that recognises that:

- such an event will occur infrequently;
- the evidence base for decision making may be limited and evolving; and
- community concern may be disproportionate to the level of risk.

In Australia the likelihood of locally acquired cases resulting from an importation of a WPV or cVDPV is very low due to high immunisation coverage and generally good sanitation. However, while WPV or cVDPV continue to be diagnosed internationally there remains the potential for local importation events. Should local transmission occur the consequences would be profound, so being prepared for an outbreak event is essential.
Triggers for Activation of the Plan

A single confirmed or probable case of WPV or cVDPV poliovirus infection (as defined by the [national notifiable diseases surveillance case definition](https://www.haithc.gov.au/haihcr/disease-control-and-prevention/operational-framework/polio-outbreak-response-plan)) is considered an outbreak.

There are several possible scenarios for an outbreak of poliovirus infection to occur in Australia that would trigger activation of the Plan. These include:

Scenario 1 - Importation of a WPV case from an endemic country or a country with recently imported poliovirus. This is the most likely scenario as occurred in Australia in 2007;

Scenario 2 - Importation of cVDPV from a country where cVDPV has been detected;

Scenario 3 - Human acquisition of a WPV or cVDPV from a laboratory containment incident.

Any case of WPV or cVDPV in Australia will require epidemiological investigation to determine the likely source of infection.

The Operational Matrix on pages 8-9 (Table 1) guides the activation steps.

**Scenarios that will not activate this plan**

A case of vaccine associated paralytic poliomyelitis (VAPP) from a country that is still using OPV will be investigated, but is not likely to result in secondary cases and therefore would not lead to activation of this Plan.

Notifications concerning viruses with a genetic sequence indicative of having been shed from iVDPV, or virus classified as aVDPV, will not activate this Plan. With detection of an iVDPV, a rapid risk assessment will occur and a specific sub-plan for iVDPVs is being developed for Australia.
Governance Process for Activating the Plan

Authority to activate the Plan rests with the Chief Medical Officer (CMO), as Chair of the Australian Health Protection Principal Committee (AHPPC), in collaboration with the reporting state or territory health authority.

Clinical and/or laboratory confirmation of poliovirus infection would initiate a joint meeting between the CMO, as the chair of AHPPC, the Chief Health Officer (CHO) or their chosen representative from the affected jurisdiction, Communicable Diseases Network Australia (CDNA), Australia’s Polio Expert Panel (PEP), representatives from the National Enterovirus Reference Laboratory (NERL), Polio National Authority for Containment (NAC) and the National Certification Committee (NCC).

In the rare circumstance where more than one jurisdiction is affected, an emergency teleconference of the AHPPC will be called. This teleconference would include the chair CDNA, PEP and NCC, representatives from the NERL, NAC and other relevant experts.

Participating committees will be engaged according to their respective terms of reference.

Emergency Response to an Outbreak of a WPV or cVDPV in Australia

According to the structure of the CDPLAN, the principles below underpin a coordinated national approach to a rare biological emergency in Australia.

- **Prevention** to reduce the likelihood of any emergency, and the impact;
- **Preparedness** to ensure effective response and recovery; and
- **Response** encompassing coordinated **Standby, Action** and **Stand down** phases including:
  - coordination of policy and operational arms at a state or territory and national level, including agreement on roles and responsibilities; and
  - regular communication between key policy and operational stakeholders. These lines of communication should be established and have the ability to deal with interactions with the media.
ROLES & RESPONSIBILITIES FOR KEY RESPONSE ACTIVITIES

Critical Success Factors

The main response actions to a case of poliomyelitis (or polio) will be containment of potential spread, including:

- isolation and testing of the index case;
- risk assessment to inform subsequent steps;
- tracing and management of contacts, including stool sample collections from close contacts;
- targeted immunisation campaigns;
- education on infection control measures;
- preventing ongoing community risk through managing any potential environmental contamination;
- enhanced surveillance measures, including notices to clinicians regarding the potential for acute flaccid paralysis (AFP) diagnoses, and/or active case finding and retrospective review of hospitals records; and
- liaison of the NERL, as Australia’s designated Poliovirus Essential Facility (dPEF), with other testing laboratories to ensure appropriate protocols are in place for the management of potential poliovirus infectious materials (principally, stool and sputum samples).

The critical factors affecting success of the response will be:

- timely detection, notification and reporting as part of active surveillance;
- accurate and timely assessment of at risk populations and environmental risk assessments;
- identification of the source of infection (importation or locally acquired);
- detailed epidemiological data and case history to identify potential contacts and at risk populations;
- uptake of poliovirus vaccines by at risk populations;
- management and maintenance of enhanced active surveillance; and
- any diagnosis of polio in Australia will be of international significance. It is imperative there is a nationally consistent approach to the release of information and an effective national response, including international reporting from the National Focal Point (NFP) to the WHO International Health Regulations (IHR) Focal Point.

Emergency Response Teams

The primary public health response to a confirmed case of polio will be driven at the state or territory level with overarching coordination at a national level by the National Incident Room (NIR) and CDNA, with support as required from AHPPC.

Response teams will be required at different levels of the public health system; state or territory and national incident response teams. Each will be required to work closely together.
An epidemiologist or appropriate public health officer from the affected state or territory health department and a representative from the NERL would ideally be included in the response team or available as liaison between teams.

Technical advice may be sought from the PEP, the NCC and the Australian Technical Advisory Group on Immunisation (ATAGI) as required. The NAC will be consulted on laboratory containment issues. Key stakeholders are listed under Appendix A.

**Notification to the WHO IHR Focal Point**

All confirmed cases of poliovirus, both WPV and cVDPV, must be reported to the WHO within 24 hours of confirmation, as per the decision tree algorithm contained in Annex 2 of the WHO *International Health Regulations (2005).* Notification by the relevant state or territory health department occurs through the NFP, in the Office of Health Protection (OHP), at Health, to the WHO IHR Focal Point. In the event a case cannot be laboratory confirmed but is considered probable, reporting to the WHO, though not required, is desirable and would follow the same process.

Contact details of the NFP are:

National Incident Room  
Office of Health Protection  
Telephone: (+61) 2 6289 3030 (24 hours)  
Email: health.ops@health.gov.au

Other countries’ national focal points and international disease control agencies will also be informed of confirmed cases by the Australian Government, where relevant.

Once the NFP notifies the WHO IHR Focal Point, CDNA and AHPPC must be informed.
Epidemiological Investigation of Poliovirus Infection

The epidemiological investigation should establish where the infection was acquired and where it may have spread. This is particularly important and time sensitive for those without a travel history or laboratory exposure, indicating the potential for a locally acquired infection. The short incubation period (on average 7-14 days), and ability for asymptomatic patients to shed poliovirus, may mean that many individuals are exposed to the virus before a case of AFP is detected.

The epidemiological investigation team should review the patient’s records and ensure that the following has been collected for the index case:

- stool samples, collected and sent to the NERL for laboratory testing as per Appendix B to determine whether the virus is WPV or cVDPV;
- age of patient, date of onset of paralysis;
- residence or travel to a polio-endemic country, or one with active transmission following an importation, or one with a current or recent cVDPV detection, or a country that uses OPV;
- immunisation status, including timeframes and the vaccine used (OPV or inactivated polio vaccine [IPV]);
- contact with persons recently immunised with OPV or persons who have recently travelled to a polio-endemic country, or one with active transmission following an importation or one with a current or recent cVDPV detection or a country that uses OPV;
- potential for further spread noting that health care workers and people who have contact with children, or are involved in food preparation have a greater chance of spreading infection to a larger number of people;
- potential for exposure to laboratory strains of poliovirus;
- identification of contacts;
- immune status of patient and contacts; and
- indigenous status.

In addition, the epidemiological investigation and collection of stool specimens may involve the local community, including childcare facilities, schools and other community groups.
### TABLE 1: OPERATIONAL MATRIX FOR THE INVESTIGATION AND RESPONSE TO A SUSPECTED CASE OF POLIOMYELITIS IN AUSTRALIA

Note that actions may take place concurrently. The national surveillance case definition refers to probable or confirmed cases. A “probable case” requires both clinical evidence and the case not discarded as non-polio AFP after review by PEP. Suspected cases refer to cases with a high clinical suspicion of poliovirus infection. Some actions must take place when a case of poliovirus infection is first suspected, prior to being considered a probable or confirmed case.

<table>
<thead>
<tr>
<th>Action</th>
<th>By whom</th>
<th>What &amp; how</th>
<th>When to act</th>
<th>Critical success factors</th>
<th>Timeframe to complete</th>
<th>Page Ref.</th>
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<tbody>
<tr>
<td><strong>PREPAREDNESS PHASE</strong></td>
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<tr>
<td>Case of AFP</td>
<td>Paediatricians Neurologists Other clinicians</td>
<td>Clinical presentation of AFP.</td>
<td>Presentation at health care facility.</td>
<td>Inclusion of poliovirus infection in the differential diagnosis of AFP.</td>
<td>-</td>
<td>Pages 21 and 27</td>
</tr>
<tr>
<td>Reporting to NERL, local public health unit and the Australian Paediatric Surveillance Unit (APSU)/PAEDS (for paediatric cases)</td>
<td>Paediatricians Neurologists Other clinicians</td>
<td>Phone call to NERL and local public health units (return of APSU report card and AFP questionnaire; ascertainment of case by PAEDS).</td>
<td>As soon as AFP is considered in the differential diagnosis (where poliovirus is not excluded).</td>
<td>Notification of paediatric case via APSU/PAEDS. Immediate notification to NERL. Collection of adequate stool specimen for diagnostic testing at the NERL.</td>
<td>Immediately</td>
<td>Pages 23 to 27 Appendix B</td>
</tr>
<tr>
<td>Isolation of AFP case as per hospital protocols</td>
<td>Paediatricians Neurologists Other clinicians</td>
<td>Isolation of case as per hospital protocols. Refer to the Australian Guidelines for the Prevention and Control of Infection in Healthcare for the correct infection control procedures.</td>
<td>As soon as AFP is considered in the differential diagnosis (where poliovirus is not excluded).</td>
<td>Knowledge of poliovirus amongst clinicians.</td>
<td>Immediately</td>
<td>Page 14</td>
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<tr>
<td><strong>STANDBY PHASE</strong></td>
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<td>Notification of a suspected case (a case with high clinical suspicion of poliovirus infection) to the relevant jurisdictional authorities and the NFP</td>
<td>Via a local public health unit OR NERL OR clinicians directly</td>
<td>Notification of a suspected case (a case with a high clinical suspicion of poliovirus infection) and the expected time to confirm the diagnosis. Initiation of case investigation protocol.</td>
<td>Should occur as soon as possible after clinician’s referral ideally within 24 hours.</td>
<td>Agreed referral protocols.</td>
<td>Within 24 hours of clinician’s referral</td>
<td>Page 25 Appendix C</td>
</tr>
<tr>
<td>Action</td>
<td>By whom</td>
<td>What &amp; how</td>
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<tr>
<td>Epidemiological investigation and risk assessment for local spread</td>
<td>CDNA in collaboration with NERL Health and state or territory CHO</td>
<td>Detailed case investigation including determining the likely source of possible infection. Contact tracing including review of immunisation status and environmental risks.</td>
<td>Immediately after notification of a suspected case of polio</td>
<td>Availability of credible exposure history.</td>
<td>Within 24 hours of notification of a suspected case of polio</td>
<td>Pages 7 and 13</td>
</tr>
<tr>
<td>Laboratory testing to identify virus type to aid in confirmation of diagnosis</td>
<td>NERL</td>
<td>Poliovirus typing by virus culture, RT-PCR and genetic sequencing. Either direct on stool specimen or after virus culture, which will require days.</td>
<td>As above AND Availability of credible exposure history.</td>
<td></td>
<td></td>
<td>Page 23</td>
</tr>
<tr>
<td>Activation of jurisdictional responsibilities under this response plan</td>
<td>State or territory health authority</td>
<td>Begin actions described in this response plan, including all steps from here down.</td>
<td>As soon as poliovirus infection is confirmed by the NERL.</td>
<td>Timely reporting of poliovirus typing results by the NERL.</td>
<td>Within 24 hours of notification of a suspected case</td>
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<tr>
<td>Refer case to PEP for review</td>
<td>NERL/APSU/PAEDS OR Health through CDNA</td>
<td>Arrange special teleconference of PEP including the chair of NCC to discuss case and joint teleconference with CDNA to follow if polio is considered.</td>
<td>When adequate clinical and laboratory data can be provided.</td>
<td>Availability of stool specimens. Collection of 2 stool specimens within 14 days of onset of symptoms and at least 24 hours apart. Availability of clinical findings.</td>
<td>Within 48 hours of case reported by clinician or jurisdictional health authority</td>
<td>Pages 26 and 27</td>
</tr>
<tr>
<td>Notification of positive test results to the NFP</td>
<td>NERL in their role as the dPEF in Australia and being part of the Global Polio Laboratory Network (GPLN)</td>
<td>NERL reports test results to PEP and NFP. Note as part of their role in the GPLN the NERL also reports positive test results to the GPLN. The GPLN informs the local, regional and global WHO polio offices.</td>
<td>As soon as a positive test result is confirmed.</td>
<td>Availability of samples.</td>
<td>Immediately upon result</td>
<td>Page 25</td>
</tr>
<tr>
<td>Official notification to the WHO under the IHRs</td>
<td>NFP</td>
<td>NFP makes and IHR notification to the WHO IHR Focal Point. AHPPC and CDNA are notified about the IHR notification.</td>
<td>Within 24 hours of the case being classified by PEP as a confirmed or probable case of poliovirus infection.</td>
<td>Laboratory notification. Timely review of the case by PEP.</td>
<td>Within in 24 hours of PEP advice</td>
<td>Page 6</td>
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<tr>
<td>Action</td>
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<td>Progress formal recommendation for Plan activation</td>
<td>Australian Government, and relevant state or territory health authority</td>
<td>Emergency teleconference including the CMO as the chair of AHPPC, the CHO or their chosen representative, of the affected jurisdiction, CDNA, PEP, NERL, Polio Containment Coordinator and NCC. If more than one jurisdictions is affected, an emergency AHPPC teleconference will be called and include the chair of CDNA, PEP and NCC, representatives of NERL and the Polio Containment Coordinator.</td>
<td>When the case becomes a probable or confirmed case of WPV or cVDPV OR In response to management of public concerns.</td>
<td>Timely access to clinical and laboratory data for PEP review.</td>
<td>Within 12 hours of positive test result notification received by the NFP</td>
<td>Pages 4, 5 and 6</td>
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</table>

**ACTION PHASE**

| Poliovirus Outbreak Response Plan officially activated | CMO | Initiate collection and analysis of enhanced surveillance and next steps. | When the case becomes a probable or a confirmed case of WPV or cVDPV. | Availability of key decision makers. | Within 48 hours of confirmation from the NERL and PEP | Pages 4 |

<p>| Containment | State or territory health service | Isolate additional suspected cases, including close contacts of confirmed polio cases. Targeted immunisation campaign. Increased surveillance. Management of contacts and collection of stool specimens for testing at the NERL. Environmental and sanitation measures as appropriate. Decontaminate if necessary (e.g., aircraft bathroom). | As soon as polio is confirmed. | Uptake of vaccine. Detailed investigation of potential contacts including collection of stool specimens from close contacts. Thorough risk assessment for environmental contamination. Consistent and comprehensive application of response plan across affected area/jurisdiction. Timely communication of plan and provision of resources to affected areas. Cooperation from patient, their family and other contacts. | For isolation of suspected cases - immediately upon suspicion of poliovirus infection. Re-assess need to isolate after laboratory results are provided. | Within 24 hours of confirmation from the NERL and the PEP | Pages 13 to 20 |</p>
<table>
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<tr>
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<th><strong>Timeframe to complete</strong></th>
<th><strong>Page Ref.</strong></th>
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<tbody>
<tr>
<td>Patient support and family services</td>
<td>State or territory and Australian Government. Carer organisations</td>
<td>Examination of the availability, efficiency, effectiveness and acceptability of support services by family/careers/hospitals etc.</td>
<td>As soon as diagnosis is suspected or confirmed.</td>
<td>Individual access to support services. Availability of culturally appropriate services</td>
<td>Within 48 hours of confirmation form the NERL and the PEP</td>
<td>Page 15</td>
</tr>
<tr>
<td>Risk communication</td>
<td>CMO in collaboration with jurisdictional CHO, AHPPC/CDNA and other relevant agencies depending on the facts of the case</td>
<td>Detailed communication strategy developed in collaboration with Department of Health media unit. Notification to the WHO Focal Point under the IHR (as mentioned above). Reporting of laboratory results to WHO by NERL (as mentioned above).</td>
<td>Management of media interactions at any stage of the investigation. Notify the WHO Focal Point when diagnosis confirmed.</td>
<td>Timing and nature of media releases depends on the scenario encountered and whether there is an ongoing risk to the Australian community. Timing of international notification dependent on confidentiality being maintained by those involved in diagnosis &amp; case investigation.</td>
<td>Within 24 hours of the activation of the plan</td>
<td>Page 20</td>
</tr>
<tr>
<td>STANDDOWN</td>
<td>CMO in collaboration with jurisdictional CHO, AHPPC/CDNA and other relevant agencies depending on the facts of the case</td>
<td>Collection and analysis of enhanced surveillance providing evidence of the interruption of polio transmission. Teleconference including the CMO as the chair of AHPPC, the CHO or their chosen representative, of the affected jurisdiction, CDNA PEP, NERL, National Polio Containment Coordinator and NCC. If more than one jurisdiction is affected, an AHPPC teleconference will be called and include the chair of CDNA, PEP and NCC, representatives of NERL and the National Polio Containment Coordinator.</td>
<td>Throughout the investigation.</td>
<td>Ongoing collection of enhanced surveillance. Adequate clinical and laboratory data provided. Ongoing collection and analysis of environmental samples.</td>
<td>Six months after the symptom onset of the last identified case in the outbreak</td>
<td>Pages 21</td>
</tr>
<tr>
<td>Debriefing and review of the polio response plan</td>
<td>Teams at local, jurisdictional and national levels including a representative from NERL, PEP and NCC</td>
<td>Identify strengths and weaknesses of response plans, including coordination. Economic evaluation. Applied research arising out the</td>
<td>As required.</td>
<td>Agency/partner participation. Review findings incorporated where relevant into polio response plan and communicated to relevant stakeholders including the Western Pacific Regional</td>
<td>4 weeks following the closure of the outbreak by CMO</td>
<td>Page 21</td>
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### Poliovirus Infection Outbreak Response Plan for Australia

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<td></td>
<td></td>
<td>investigation as appropriate.</td>
<td></td>
<td>Certification Commission (RCC).</td>
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**Activation of Laboratory Surge Plan**

Based on the experience of the 2007 importation, the number of specimens to be tested from contacts of the index case can quickly increase. Nucleic acid based tests (reverse transcription polymerase chain reaction, RT-PCR) are more amenable to high throughput testing than virus culture. After the 2007 importation, the NERL implemented pan-enterovirus RT-PCR testing of all specimens from AFP cases in parallel to the WHO recommended culture based procedure.4

In the event of another polio importation, the NERL would be in the position to provide public health authorities with rapid RT-PCR test results. In consultation with key stakeholders, the public health response could be based on the NERL’s RT-PCR testing of patient specimens with the timing of confirmatory virus culture dependent on the number of cases involved.

**Risk Assessment**

As a certified polio-free region Australia has a responsibility to:

- maintain WHO certification-standard surveillance for acute flaccid paralysis;
- ensure access to a WHO-accredited polio reference laboratory; and
- ensure containment of WPVs and cVDPVs.

A risk assessment should be conducted by the relevant state or territory health authority and ideally completed within 24 hours of the notification of a suspected case (a case with a high clinical suspicion of poliovirus infection), to identify the following:

- the immunity profile of the population;
- any areas of suboptimal immunisation coverage;
- any subpopulations at high risk; and
- environmental risks that would heighten concern for transmission.

Using the Global Polio Eradication Initiative grading system, all outbreaks of poliomyelitis in Australia would be considered Grade 1.3 As Australia has high polio immunisation coverage, robust health care systems and structures, and low to no security threats or challenges to accessing populations, there is minimal risk of continuation and/or international spread of poliovirus.

**Containment strategies**

The containment of a potential outbreak of poliovirus will include the following:

- isolation of infected individuals;
- tracing and management of potential contacts;

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cleaning and disinfection and infection control (including environmental factors); immunisation; and education and increased surveillance, including possibly environmental surveillance.

**Isolation of infected individuals**

Individuals identified as being infected with poliovirus are to be isolated to minimise potential for spread. Contact precautions are to be implemented and, if the patient is hospitalised, the patient should have a single *en-suite* room. A stool specimen is to be collected weekly for testing at the NERL. Isolation should continue until two stool samples taken seven days apart are shown to be negative for poliovirus. Poliovirus infection is usually cleared within six weeks by an immunocompetent person but may become chronic in individuals with a primary immunodeficiency who were immunised with OPV and may result in an iVDPV.

Patients that continue to shed WPV or cVDPV should be kept in isolation for a minimum of 2 weeks after diagnosis to ensure full immunological response in the vaccinated close contacts. If after this time, the patient is well, but has not stopped shedding, then a comprehensive risk assessment must be completed before discharge from hospital and before considering home based isolation. This risk assessment should be undertaken by an infectious diseases physician and public health authorities in consultation with the PEP.

Families and carers of a patient with polio should observe good sanitation and hand washing. All health care workers, carers and family need to be adequately immunised against polio (see Tracing and management of potential contacts below). As most cases of AFP require hospitalisation, health care workers are to refer to the *Australian Guidelines for the Prevention and Control of Infection in Healthcare* for the correct infection control procedures.

**Additional screening of immunocompromised patients following release from isolation**

Stool samples are to be taken monthly from infected immunocompromised individuals. The time period for testing is to be decided on a case by case basis in consultation with the treating physician, the state or territory health department and the PEP. Persons identified with a chronic poliovirus infection should be counselled regarding good hygiene practices and consideration given to whether a sanitary assessment of their living conditions or occupation adjustments (for example, health care worker or food handler) is necessary. Family members, close contacts and household contacts of a person shedding iVDPV should be counselled on the need to maintain adequate polio vaccination and good hygiene practices.
Tracing and management of potential contacts

In order to contain the spread of poliovirus, which produces a large number of asymptomatic infections, contact tracing undertaken by the relevant jurisdiction(s) is essential to identify potentially infected individuals. There are four major categories of people who may have had contact with the index patient and therefore may have been exposed to the poliovirus:

- **Household contacts** (people who lived with the index patient or visitors who stayed overnight). These people represent the greatest risk as they may have had contact with the index patient prior to the appearance of symptoms.
- **Toilet contacts** (people who shared a toilet with the index patient during the infectious period, before the toilet was cleaned, e.g. those sharing a toilet at the workplace).
- **Health care workers** (people who cared for the index patient during the infectious period) and laboratory workers involved with testing the patient’s specimens. Laboratory workers need to ensure appropriate procedures are followed during testing of suspect samples.
- **Public contacts**, including consumers, in the event that the index case prepared food for others to eat.

Previous vaccination or exposure to poliovirus does not necessarily prevent infection and most people who are infected with poliovirus do not develop any symptoms. As such, the following precautions are advised to prevent further transmission from potentially infected contacts. A summary of actions is outlined in Table 2 below.

**Table 2: Management of potentially infected contacts**

<table>
<thead>
<tr>
<th>Type of contacts</th>
<th>Management action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household contacts (people who lived with the index patient or visitors who stayed overnight)</td>
<td>Quarantine household contacts at home, consistent with jurisdictional and national legislation and outbreak incident response team advice. Take stool samples &gt; 3 days after the contact’s first exposure to the index patient. Contacts can be released from quarantine when two stool samples taken 24 to 48 hours apart are shown to be negative for poliovirus. Offer education on hygiene and recommend vaccination with IPV.</td>
</tr>
<tr>
<td>Toilet contacts (people who shared a toilet with the index patient)</td>
<td>Offer education on hygiene and recommend vaccination with IPV. Assume Australian-born contacts have been</td>
</tr>
</tbody>
</table>

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5 A global stockpile of type specific monovalent OPV (mOPV) is being held by the WHO. Depending on the specific epidemiological circumstances and in negotiation with WHO Western Pacific Region (WPRO), mOPV may be considered in a local outbreak response.
the index patient during the infectious period, before the toilet was cleaned) | vaccinated and offer a booster; assume overseas-born may not have been fully vaccinated and offer a full course of IPV (three doses a minimum of one month apart).

Health care workers (people who cared for the index patient during the infectious period) and laboratory workers involved with testing the patient’s specimens | Offer a booster vaccine with IPV for anyone who has not had a booster within the previous 10 years as outlined in the Australian Immunisation Handbook. For health care workers who have no recorded immunisation history, or are not completely vaccinated, take two stool samples, 24 to 48 hours apart, with the first being taken > 3 days after the contact’s first exposure to the index patient and offer a full course of vaccination with IPV (three doses a minimum of one month apart).

Public contacts (including consumers, in the event that the index patient is involved in food preparation for public consumption) | Offer education on hygiene and recommend vaccination with IPV. Assume Australian born contacts have been vaccinated and offer a booster; assume overseas born may not have been fully vaccinated and offer a full course of IPV (three doses a minimum of one month apart).

Summary information pertaining to the household transmission of polioviruses and non-polio enteroviruses can be found in Fields Virology 6th Edition which states that:

“Household secondary attack rates in susceptible members may be greatest for the agents of acute haemorrhagic conjunctivitis (enterovirus type 70 and coxsackievirus A24 variant) and for poliovirus, and of lesser magnitude for the other coxsackieviruses and echoviruses. In some studies, secondary attack rates may be 90% or greater, although they are typically lower. New York Virus Watch data indicate that enterovirus infections were more frequent among children 2 to 9 years of age and the greater spread of polioviruses and coxsackieviruses may derive from longer periods of virus excretion.”

Tracing of toilet contacts (such as those sharing a section of an aeroplane, workplace or childcare centre with the infected patient) is important to reduce the risk of onward transmission of infection. For containment, the tracing of contacts needs to be more rapid than the spread of the virus. One of the most important reasons for tracing of contacts is to educate them on hygiene and recommend vaccination.

Contact tracing may not prevent a contact becoming infected with poliovirus, particularly if they are not adequately immunised, but stool sampling of household and incompletely vaccinated health care worker contacts (as outlined in Table 2 above) and increased surveillance for clinical symptoms such as AFP will identify spread of the virus and allow prevention of further transmission.

Management, including vaccination of contacts such as health care workers, food handlers and child care workers, who have the potential to spread infection to a large number of people, are to be prioritised. The Department of Home Affairs will be involved in identification of contacts in an immigration, diplomatic or refugee setting, from countries that have the potential to spread the disease. The Department of Defence may
become involved in identification of contacts should a defence member or dependant be exposed to poliovirus in the course of their duty.

**Cleaning and disinfection**

Proper cleaning and disinfection of areas contacted by an infected individual is required to prevent onward transmission. Following the imported case in Australia in 2007, cleaning and disinfection of the aeroplane and airport toilets, as well as the patient’s home was performed. No evidence of transmission of polio on aeroplanes has been reported.

Survival of poliovirus is favoured by lower temperatures and high moisture content. Once shed, the virus can survive outside the human body for weeks at room temperature. Laboratory studies have shown that poliovirus survival in the environment is enhanced at high relative humidity. Typical relative humidity for aircraft is below 10% suggesting the virus may not survive for long periods in this environment. Interpolating data from various studies, Dowdle and Birmingham estimated poliovirus infectivity to decrease by 90% every 20 days in winter and 1.5 days in summer, in sewage every 26 days at 23°C, in fresh water every 5.5 days at ambient temperatures, and in seawater every 2.5 days under the same conditions. Poliovirus survived on cotton fabric with minimal loss for 24-48 hours at ambient temperature and 35% relative humidity, with rapid loss after 48 hours. Poliovirus survived longer on woollen fabrics, with recovery after 20 weeks at the same humidity.

Active disinfection procedures should involve the use of cleaning practices to remove soiling that may harbour and protect viral particles. Common disinfectants such as 70% ethanol, isopropanol, lysol and quaternary ammonium compounds are not effective against poliovirus. The virus is also resistant to lipid solvents (such as EcoTru® and Dettol®) and is stable in many detergents at room temperature, although temperatures above 60°C for prolonged periods will reduce the infective capability of poliovirus.

Effective disinfectants are those which contain free chlorine, such as sodium hypochlorite or bleach, glutaraldehyde solutions, formaldehyde solutions and iodophores. Contact time is also important in inactivating the virus. Laundry should be soaked in chlorine bleach (diluted according to the manufacturer’s instructions) for at least 15 minutes.

The WHO Guide to Hygiene and Sanitation in Aviation provides indicators and guidance notes for post-event disinfection procedures to assist airport and aircraft operators in the prevention of the spread of disease.

**Faecal matter management**

A risk assessment for the shedding of WPV and cVDPV from potentially infected individuals is to be undertaken, and isolation of infected individuals considered as per the guidelines under Management of infected individuals and potentially infected contacts. While epidemiological investigations are being completed, the ramifications of potentially shedding WPV or cVDPV into the local sewerage network should be reviewed. A reticulated sewerage system in a major urban setting may be deemed safe from a public
health perspective, but an older network in a regional or remote area may present additional risks.

The condition of septic tanks may also be considered a potential public health threat if a WPV or cVDPV infection was subsequently identified in a contact that had used such a system.

Where the potential risk of poliovirus transmission by environmental sources was determined to be high, preventative strategies such as the installation of a sewage trap should be investigated. As a further assessment of poliovirus being shed within the sewerage network, grab samples can be taken from a septic tank or at strategic points of a reticulated system and tested by the NERL.

**Immunisation**

There is no published evidence on the role of polio immunisation as post-exposure prophylaxis against paralytic disease. Theoretically, as IPV induces IgG immunity in some people after a single dose, IPV provided during the incubation period to paralytic disease could protect the individual. However, it is more likely that the high immunisation rate in Australia and an individual’s previous immunisation will prevent further transmission throughout the community and paralysis in infected contacts. At present, vaccination with IPV in household contacts, other close contacts and health care workers without a known immunisation history of receiving at least three doses of an appropriate poliovirus vaccine (e.g. IPV or OPV), or with incomplete immunisation history, is recommended to provide protection if further exposure to a secondary case occurs in a household and to ensure that all reasonable harm minimisation measures are implemented (refer to Table 2). Because there is an absence of evidence on the protective role of IPV immunisation after possible exposure, contacts vaccinated need to be informed that they are not necessarily protected by immunisation and that they should still contact their state or territory health authority if they develop any of the symptoms outlined on a supplied fact sheet. Individuals offered vaccination should be reassured that IPV is not a live vaccine and will not cause polio infection. The state or territory health authority coordinating the response will decide the need for vaccinations of contacts depending on the time elapsed from their exposure to the infected individual.

IPV is the only polio vaccine readily accessible in Australia and is available in either a single vaccine formulation or in combination with other vaccines. The National Immunisation Program (NIP) recommendations for the polio immunisation schedule, including information regarding contraindications for use of the vaccines, are outlined on the Department of Health’s website at [health.gov.au/immunisation](http://health.gov.au/immunisation). In addition, the [Australian Immunisation Handbook](http://www.health.gov.au/immunisation) is Australia’s Guideline for immunisation clinical practice and outlines (non NIP funded) recommendations for polio vaccination as part of standard care.

IPV will be administered to non-fully vaccinated contacts, as above, whilst a full containment response is developed. The extent of the supplementary immunisation response will to some degree depend on the scenario by which poliovirus infection occurs. For example, a laboratory exposure to poliovirus may only require vaccination of known contacts, whereas an importation of poliovirus in a person who has travelled to
Australia via aeroplane may require a more widespread vaccination and containment response, and community involvement in surveillance for symptoms of poliomyelitis. Although the national immunisation rate for polio is very high, there are pockets of unvaccinated individuals in which transmission will be possible. Large immunisation or re-immunisation campaigns may need to be implemented, depending on the time that has elapsed between the onset of paralysis in the index case and the population involved.

The Australian Government, through travel advice on the Department of Foreign Affairs and Trade (DFAT) Smartraveller website (http://smartraveller.gov.au), encourages all Australians before they travel to consult their doctor or a travel clinic and ensure they get immunised. In line with the Temporary Recommendations to prevent the international spread of poliovirus under the IHRs (2005) implemented in May 2014, applicants for Australian visas from countries that have the potential to spread the disease internationally are required to present a valid certificate of vaccination with their visa application. The information provided on both the Department of Home Affairs, and DFAT websites is routinely reviewed and updated to align with WHO and Department of Health guidelines and advice.

A global stockpile of type specific monovalent OPV (mOPV) is being held by the WHO. Depending on the specific epidemiological circumstances and in negotiation with Western Pacific Regional Office, mOPV may be considered in a local outbreak response. The Therapeutic Goods Administration (TGA) would need to regulate special import of these monovalent vaccines for use in an outbreak situation through the Special Access Scheme.

The NERL tests for polio antibodies in cases with a clinical suspicion of poliomyelitis. The test detects total virus neutralising antibodies and does not distinguish between vaccine and wild strains of poliovirus. A blood specimen should be collected prior to vaccination if testing for polio antibodies is required.

**Education and increased surveillance**

As part of the containment strategy, education will be essential as poliovirus infection is a very rare occurrence in Australia. Health care workers need to be educated on appropriate contact precautions, testing and immunisation. Cleaning staff need to be educated on appropriate cleaning agents and contact times. Potential contacts need to be educated on testing, hygiene and immunisation and provided with information of the symptoms of poliomyelitis infection. In order to ensure that any further transmission is detected, clinicians and testing laboratories need to ensure that all cases of AFP have appropriate stool sampling and are referred to NERL for testing. Australia’s status as ‘free from poliovirus infection’ can only be demonstrated by maintaining the WHO performance indicators for AFP surveillance, including appropriate stool sampling.

**Environmental Surveillance**

Individuals shed poliovirus for several weeks after infection and, as noted in the section on Cleaning and Disinfection, it is estimated that poliovirus can survive in sewage for weeks under suitable conditions (i.e. poliovirus infectivity decreases by approximately 90% every 26 days at 23°C). Using a number of assumptions, WHO estimates the
theoretical maximum sample sensitivity of environmental surveillance at detection of one individual infected with poliovirus among 10,000 uninfected individuals. In practice this means that repeated detection of virus in a sampling site almost guarantees that virus is circulating in the population.\textsuperscript{12}

Environmental surveillance has played an important role in the certification of endemic countries, such as Egypt (the last isolation of indigenous WPV was from an environmental sample) and India as polio-free. Many established polio-free countries have also used this system to supplement their existing surveillance systems. The NERL performs testing of environmental samples for poliovirus at sentinel sites. Non-polio enteroviruses are routinely reported as indicator organisms for the validation of the collection, transport and processing of the samples.

Since Australia was certified polio-free in 2000 and ceased use of OPV in 2005, any poliovirus detected by routine environmental monitoring would be cause for further investigation.

Following the isolation of WPV from sewage in Switzerland in 2007, the WHO developed recommendations for the response to isolation of a WPV or cVDPV from a sewage sample, which could entail the following options:

- alerting physicians;
- performing enhanced surveillance for AFP cases for 6 months;
- continuing to sample sewage at the same site for 6 months;
- ensuring all enterovirus isolations from cases of aseptic meningitis were typed; and
- assessing vaccine coverage for gaps, especially in at risk groups.

Confirmation of a polio outbreak based on environmental sampling would require one of the following conditions to be met:

- multiple detection of WPVs with sequencing information indicating sustained local transmission; or
- a single sample positive for WPV with follow-up evidence of virus excretion from an infected individual; or
- any positive cVDPV in environmental samples.\textsuperscript{12}

**Enterovirus Surveillance**

The clinical manifestation of poliovirus infection ranges from febrile illness to meningitis and paralysis. As part of extended surveillance for poliovirus, the NERL established the Enterovirus Reference Laboratory Network of Australia (ERLNA) in 2009, consisting of public diagnostic virology laboratories. The member laboratories either type enteroviruses detected in clinical specimens or refer them to the NERL for identification. This serves the dual purpose of confirming or excluding the presence of poliovirus as well as surveying the epidemiology of non-polio enterovirus infection in Australia. WPV or cVDPV detected by this form of surveillance would require follow-up by the state or territory health authority according to Table 1. As part of an investigation of a confirmed WPV or cVDPV importation, the ERLNA may provide recent enterovirus typing results, particularly from meningitis cases, and follow-up on any un-typed results from the jurisdiction involved.
Even though Australia ceased use of OPV from November 2005, Sabin poliovirus strains can be detected in clinical specimens from persons who either travelled to a country routinely using OPV, or were in contact with someone who had done so.

**Communication Strategy**

One of the most important elements of a public health response will be the communication strategy to ensure that, whilst protecting the patients’ privacy and confidentiality, relevant and accurate information is provided to the media and the community in a timely manner. The release of inaccurate or premature information may have serious repercussions for the affected individual, their family, carers and their community. The media may also be important in education of the public on the importance of sanitation, hand washing and immunisation in the containment phase.

It is important that the media are presented with up to date and factual information in order to minimise speculation and public concern. It is important for key stakeholders to have agreed on a consistent approach, national notification and communication strategy. The CDNA will formulate the key messages and Health will coordinate the media response. Health’s website will have current information and media releases.

For media inquiries, please contact:
Health’s Media Unit
Phone: (02) 6289 7400
Email: news@health.gov.au

**STANDDOWN OF THE PLAN AND CLOSURE OF THE OUTBREAK RESPONSE**

The collection of enhanced surveillance, which may include environmental surveillance measures, for poliomyelitis will continue for six months after the symptom onset of the last identified case. An outbreak will officially be closed by the CMO, in consultation with the affected jurisdiction, if no further cases are identified during this period and evidence shows the transmission of poliovirus infection has been interrupted in Australia. Upon the closure of an outbreak this plan will be deactivated.

**EVALUATION OF AN OUTBREAK RESPONSE**

Following the official closure of an outbreak response, an assessment of the response will be undertaken by the Australian Government with assistance from the relevant state or territory health authority, a representative from NERL, PEP and NCC. This will occur approximately four weeks after the plan has been deactivated.

The assessment may include but not be limited to:

- identifying strengths and weaknesses of response, including an evaluation of the coordination and communication strategies;
- providing an economic evaluation; and
- identifying, where appropriate, future areas for applied research.

The assessment will involve consultations with key stakeholders involved in the response, and a review of the response plan through the NCC, the PEP and CDNA. Results
from these activities will be used to strengthen and improve this outbreak response plan and provide ‘lessons learned’ from the response.

**PREPAREDNESS BACKGROUND**

**SURVEILLANCE OF AFP AND POLIOMYELITIS IN AUSTRALIA**

**Australian Poliovirus Surveillance Program**

The Australian Government is responsible for the Australian Poliovirus Surveillance Program, and funds a number of activities associated with the surveillance and monitoring of poliovirus in Australia in order to detect imported cases, mitigate the risk of localised transmission should importation occur, and provide ongoing evidence that Australia is maintaining its polio-free status in accordance with WHO recommended standards. The objective of this program is to conduct clinical surveillance for AFP in children less than 15 years of age, and in anyone in which poliomyelitis is suspected (a case with a high clinical suspicion of poliovirus infection), in accordance with WHO standards for a polio free country. Clinical surveillance is supplemented by virological surveillance including enterovirus typing and sentinel environmental surveillance activities. The clinical and virological surveillance activities monitor Australia’s polio-free status and provide ongoing evidence that the country is free of circulating WPV and cVDPV in support of the global eradication effort.

The maintenance of a surveillance system that is sensitive enough to detect a case of polio in Australia is essential, particularly as clinicians will rarely have experience in diagnosis of polio. Although, in the context of good sanitation and high immunisation rates, AFP is unlikely to be polio related, however active surveillance is vital to detect possible cases.

To ensure the detection of a case of poliomyelitis further clinical, epidemiological and laboratory investigation is required in the following situations.

**1) All AFP cases in children less than 15 years of age to exclude poliomyelitis.**

The WHO has set a performance indicator for AFP surveillance in children. In a polio non-endemic country, such as Australia, at least one case of non-polio AFP should be detected annually per 100,000 population aged less than 15 years. If insufficient cases of AFP are reported, the surveillance system is deemed not sensitive enough to detect a potential case of poliomyelitis. The differential diagnosis of an AFP case upon initial presentation may include poliomyelitis, Guillain-Barré syndrome and transverse myelitis. If reporting of AFP is delayed to exclude other causes, or if a case of AFP is not reported and no follow up laboratory investigation occurs, it is possible that a case of AFP due to poliovirus infection could be missed. Failure to report AFP, a lack of stool specimens or insufficient information in clinical questionnaires can result in Australia not reaching the expected annual number of non-polio AFP cases, or, not having an adequate proportion of cases with stools referred for virological investigation.

It is important to report all cases of AFP in children, even those that are later found to exclude poliovirus infection based on clinical and laboratory investigation. AFP surveillance was initiated in March 1995 as part of Australia’s commitment to the Global
Polio Eradication Initiative. Active surveillance for AFP is conducted through the Australian Paediatric Surveillance Unit (APSU) via participating paediatricians and the Paediatric Active Enhanced Disease Surveillance (PAEDS) system through selected tertiary paediatric hospitals across Australia in collaboration with the WHO accredited NERL located at the Victorian Infectious Diseases Reference Laboratory (VIDRL). The active surveillance system coordinated by VIDRL also regularly provides data to the WHO regional office to assess the surveillance system against the performance indicators for AFP reporting.

2) **All suspected cases of paralytic poliomyelitis regardless of age.**

It is imperative that any case with a clinical suspicion of poliomyelitis in a person of any age be fully investigated.

3) **All suspected cases of non-paralytic poliovirus infection regardless of age.**

It is estimated that 90% of poliovirus infections are asymptomatic. This includes close contacts of confirmed polio cases, immunocompromised individuals from whom a poliovirus was isolated and laboratory derived infections.

**Clinical Reporting of AFP**

AFP surveillance in Australia follows the WHO criteria targeting children less than 15 years of age. The scheme requires clinicians to report and submit stool samples from any case of AFP in one or more limbs or acute onset of bulbar paralysis, even where poliovirus infection is considered a highly unlikely clinical diagnosis. The case definition for poliovirus infection, which includes a definition for AFP as part of the clinical evidence, is provided on the Department of Health’s website ([http://www.health.gov.au/casedefinitions](http://www.health.gov.au/casedefinitions)). The procedure and Laboratory Request Form for referring stool specimens to the NERL is available at Appendix B.

The procedures to be followed by clinicians in all cases of AFP in children, and in suspected cases of poliomyelitis in a person of any age, are outlined below. A flow chart is also available at Appendix C.

If poliomyelitis is suspected (when there is a high clinical suspicion of poliovirus infection) or if poliovirus is isolated, the case should be immediately notified to the state or territory health authority and steps taken to confirm the diagnosis. Key contact details for state and territory health authorities are included in Appendix D.

The adequate collection of stool specimens is the responsibility of clinicians and is essential for confirmation of poliovirus infection. Collection of adequate patient history by clinicians allows for a more accurate assessment of the risks to contacts. It is essential to collect as much information as possible about the patient’s history and risks of exposure to WPV or OPV, including cVDPV. Including:

- age of patient, date of onset of paralysis;
- residence or travel to a polio-endemic country or a country that has recently reported poliovirus outbreaks or cVDPV or uses OPV;
- immunisation status, including timeframes and the vaccine used (OPV or IPV);
Polio Outbreak Response Plan for Australia

- contact with persons recently immunised with OPV or persons who have recently travelled to a polio-endemic country, or a country that has recently reported outbreak of polio cases or cVDPV, or a country that uses OPV;
- potential for exposure to laboratory strains of poliovirus;
- immune status of patient and contacts; and
- indigenous status.

Such information is critical when attempting to trace potential sources of infection both forward and back.

**Laboratory Confirmation of Poliomyelitis in Australia**

Confirmation or exclusion of poliovirus infection is not possible without laboratory testing of stool specimens so it is important that stool specimens are collected from every case of AFP in children and cases with a clinical suspicion of poliomyelitis in persons of any age. Stool specimens from close contacts of confirmed polio cases should also be tested for poliovirus. The isolation of a poliovirus from a specimen of an asymptomatic person would be regarded as a poliovirus infection that did not cause paralysis. Definitive diagnosis will establish the need for follow up actions to contain and prevent spread of a WPV or cVDPV. As poliovirus can spread very quickly, rapid detection of cases is critical. Under WHO guidelines, stool specimens must be tested in a WHO accredited laboratory, which for Australia is the NERL at VIDRL.

WHO recommends that all stool specimens from AFP cases be tested by virus culture using the RD-A and L20B continuous mammalian cell lines. The NERL also routinely screens stool specimens from AFP cases with a pan-enterovirus RT-PCR and identifies the enterovirus type by sequencing a fragment of the viral protein 1 (VP1) genomic region (refer to Figure 1). While virus culture has the advantage of increasing the virus titre present in an extract of the original clinical specimen, the procedure can be laborious requiring at least one passage to a fresh monolayer of cells. The reporting of a negative result can take up to 14 days, which is not timely in the context of an outbreak investigation. The index case from the 2007 polio importation was held in isolation for 34 days and the household contacts under home quarantine for 16 days before the assigned criteria were met to issue negative virus culture results of stool specimens.
Serological testing is usually unhelpful and is not routinely recommended.

The cerebrospinal fluid in acute poliomyelitis usually contains an increased number of leukocytes, from 10 to 200 cells/mm$^3$ (primarily lymphocytes), and a mildly elevated protein from 40 to 50 mg/100 ml. This finding is non-specific and may result from a variety of infectious and non-infectious conditions and is therefore not useful for differentiating polio from other causes of aseptic meningitis. Poliovirus is rarely isolated from cerebrospinal fluid.

**National Notification of Poliomyelitis**

All Australian states and territories have public health legislation that requires medical practitioners and/or pathology laboratories to notify the occurrence of certain communicable diseases to their respective health authorities. The *National Health Security Act 2007* provides a legislative basis for, and authorises the exchange of, health information, including personal information, between Australian states and territories and the Australian Government. The Act also provides the establishment of a National Notifiable Diseases List which specifies the diseases in which personal information can be provided. De-identified data on these diseases are reported to the National Notifiable Diseases Surveillance System (NNDSS). The National Health Security Agreement (http://www.health.gov.au/nhs) supports the *National Health Security Act 2007*, and establishes the operational arrangements to formalise and enhance existing surveillance and reporting systems.

Nationally, cases are collated by the NNDSS under the auspices of the CDNA.
The NNDSS surveillance case definition for poliovirus infection available at www.health.gov.au/casedefinitions (WPV, cVDPV, and VAPP), includes a definition for AFP as part of the clinical evidence. Except in the case of non-paralytic infection, a confirmed case of poliomyelitis requires both clinical evidence AND laboratory definitive evidence (from testing conducted by the NERL). A poliovirus infection that did not cause paralysis, such as in a close contact of a confirmed polio case, is verified by laboratory testing at the NERL.

The procedures for notification of a suspected case of poliomyelitis (a case with a high clinical suspicion of poliovirus infection) are outlined in Table 1 (page 8 and 9) and Appendix C. In the event of a confirmed case being identified, the CDNA, which involves communicable disease experts from each jurisdiction, would coordinate a national response with support from the CMO and the National Incident Room, Office of Health Protection, Health, where required.

Clinical Confirmation of Poliomyelitis in Australia

Clinical confirmation of cases of poliomyelitis is undertaken by the PEP. The NERL sends a questionnaire to all clinicians reporting AFP, irrespective of the age of the patient, to collect adequate clinical data to enable the PEP to classify cases. It is essential that clinicians fill out these questionnaires and return them to VIDRL in a timely manner, even if poliomyelitis is not suspected.

The PEP is made up of paediatricians, epidemiologists, neurologists and virologists who have expertise in AFP surveillance and reporting. All clinical and laboratory details of each case of AFP reported are reviewed by the PEP every two months, or as required. The decisions made by the PEP are reported to WHO after each meeting and are included in the WHO global AFP surveillance data. The PEP also reports to CDNA and, as such, a state or territory epidemiologist may be called upon to help procure additional data to aid classification. AFP cases involving children less than 15 years of age are classified by the PEP according to the following categories (Table 3) using a decision making tree outlined at Figure 2.

<table>
<thead>
<tr>
<th>TABLE 3. PEP CLASSIFICATIONS REVISED MAY 2004, CURRENT AUG 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Non-polio AFP</td>
</tr>
<tr>
<td>B. AFP more information required</td>
</tr>
<tr>
<td>C. Polio compatible – AFP notification; insufficient information for further classification</td>
</tr>
<tr>
<td>D. Poliomyelitis</td>
</tr>
<tr>
<td>i. WPV</td>
</tr>
<tr>
<td>ii. VAPP</td>
</tr>
<tr>
<td>iii. cVDPV</td>
</tr>
<tr>
<td>E. Non-AFP</td>
</tr>
</tbody>
</table>

As these definitions are based on results of stool specimens it is important that stool specimens be collected from all patients, even when an alternative definitive diagnosis has been confirmed. A decision making tree used by the PEP when reviewing AFP cases involving children less than 15 years of age is shown in Figure 2. AFP cases are either
classified as confirmed polio, discarded as non-polio AFP or if there is not enough information to exclude polio, as polio-compatible. These data are reported to the WHO and every effort is made to obtain enough information to enable a final classification of each AFP notification. In addition, the NERL also reports all polio test results to the WHO.
**Figure 2: Investigation of AFP notifications in children less than 15 years of age or potential polio cases of any age by the Polio Expert Panel**

Specimens and or clinical/diagnostic information available

Adequate specimens with clinical or diagnostic information

Poliovirus isolated: Wild, cVDPV

Clinical or diagnostic information available but inadequate or no specimens

Sufficient clinical or diagnostic information available for determination of classification to exclude poliovirus infection

Further clinical or diagnostic information requested from notifying clinician

Further information supporting the exclusion of poliovirus infection becomes available

No further information becomes available

Discard non-polio AFP

Polio compatible (polio not excluded)*

Confirm polio*

Discard non-polio AFP

*Note: Cases of polio compatible AFP notification; insufficient information (zero evidence) involve notification of an AFP case without provision of further patient information by the notifying clinician. The PEP classifies such cases after a final review reveals no evidence of clustering with other AFP notifications. These cases would **not activate** this response plan. For global surveillance purposes, the WHO count the polio compatible (zero evidence) cases reported by Australia with the non-polio AFP data based on Australia's high level of polio vaccine coverage and the national polio surveillance mechanisms in place.
**POLIOVIRUS AND THE GLOBAL ERADICATION PROGRAM**

**Poliovirus**

Poliomyelitis is a highly infectious disease caused by poliovirus, a small, non-enveloped enterovirus classified in the picornavirus family. Poliovirus infection occurs principally person-to-person via the faecal-oral route. The virus is ingested and replicates initially in the throat and then the gut, mostly without causing symptoms, and then is excreted in faeces. Transmission can occur as long as the poliovirus is excreted, in both symptomatic and asymptomatic cases, typically from the nasopharynx for up to a week after infection and from the faeces for 3 to 6 weeks. Cases are most infectious in the days before and after symptom onset.21 Vaccination with OPV can result in poliovirus shedding. Transmission can be enhanced by poor sanitation. In less than 1% of cases, the virus can invade the nervous system, causing AFP, usually involving the legs. In rare cases, patients can die when their breathing muscles become paralysed. Poliomyelitis can occur at any age with individuals who have not been fully immunised at risk of infection and children the most susceptible. As most cases are asymptomatic, poliovirus can spread widely before a case of paralysis is seen.

There are three serotypes of poliovirus (types 1, 2 and 3). Trivalent OPV and IPV are designed to protect against all three serotypes. Trivalent IPV is the vaccine used in Australia. Monovalent OPV vaccines also exist but are not registered for use in Australia. In 2017, WHO defined a vaccine derived poliovirus (VDPV) as the VP1 region varying from the prototype Sabin poliovirus nucleotide sequence by ≥1% for types 1 and 3 and by ≥0.66% for type 2. WHO may update the definition based on further understanding of the evolutionary development of VDPVs. The variation from prototype Sabin poliovirus sequence arises from long-term virus replication that may occur in an individual with an immunodeficiency (iVDPV), or by person to person transmission in a location with low vaccine coverage and continued use of OPV (circulating or cVDPV). A number of outbreaks of paralytic polio associated with cVDPV have been reported internationally since 2000.

**Global Polio Eradication Initiative**

At the 1988 World Health Assembly (WHA), the Ministers of Health of all Member States of the WHO resolved to launch a global goal to eradicate polio.

The globally endorsed WHO Polio Eradication and Endgame Strategic Plan 2013-201822 was developed by the WHO and its partners to formulate what is required to deliver the eradication of all polio. Retention of WPV2 and OPV/Sabin2 materials is no longer permitted except in designated essential facilities effective 1 January 2016 for all WPV2 and by the end of July 2016 for OPV/Sabin2. The plan also recommends that facilities destroy all unneeded poliovirus materials of any type.

The Global Polio Eradication Initiative is one of the largest public health efforts to date. Further information of the Global Polio Eradication Initiative is available on its website (http://polioeradication.org/polio-today/polio-now/).
Public Health Emergency of International Concern

On the 5 May 2014, the WHO Director General declared the international spread of wild poliovirus a “Public Health Emergency of International Concern” (PHEIC) and issued Temporary Recommendations under the International Health Regulations IHR (2005). These recommendations aim to prevent further international spread of poliomyelitis which, if it occurs, could result in the failure to eradicate the disease. The Temporary Recommendations are reviewed approximately every 3 months and are available on the WHO website (http://www.who.int/mediacentre/news/statements/2017/ihr-emergency-committee-polio/en/)

Australian and Regional Situation

The Western Pacific Region (which includes Australia), was certified as free of circulating indigenous poliovirus by WHO in October 2000. However, since immunocompromised individuals and areas with sub-optimal immunisation levels exist, further limited transmission would be possible within these populations once a poliovirus has been introduced.

The first case of polio due to a WPV virus in Australia in more than 30 years occurred in 2007. A case of type 1 WPV was detected in a person from Pakistan who travelled to Australia. Appropriate containment and surveillance ensured that there was no local transmission within Australia and the WHO reported that as ‘the case had onset of illness in Pakistan; it was considered a Pakistani case, irrespective of residency status of the individual.’ For this reason Australia maintained its poliofree status and continues to be free of endemic polio.

Australia maintains high polio immunisation rates and generally has good sanitation. The risk of transmission from an imported case is higher in areas with low vaccine coverage, inadequate sanitation or a higher than average prevalence of immunocompromised individuals. Low coverage may be a result of vaccine refusal, which has been documented in particular groups. Some Aboriginal or Torres Strait Islander communities may also be at increased risk due crowded living conditions, although this risk is mitigated by high immunisation coverage and decreased likelihood of exposure to an imported poliovirus.

Australia’s NIP Schedule provides publicly funded polio immunisation at 2, 4 and 6 months of age with a booster at 4 years. In November 2005, Australia switched from OPV to IPV. The use of OPV can lead to VAPP, a rare condition in vaccine recipients and their contacts that have identical clinical presentation to WPV infection. IPV cannot cause VAPP. Unimmunised or under-immunised individuals travelling in countries that still use OPV are at risk of VAPP. Monovalent OPVs are available in some countries but are not registered for use in Australia. As a result of Australia switching from OPV to IPV, OPV poliovirus strains including cVDPVs are not expected to be present in Australia, except in rare cases of long term virus shedding in immunocompromised individuals.
Laboratory Containment

Australia is committed to the global eradication of poliomyelitis. To fulfil our WHA obligations as outlined in resolution WHA 68.3 2015, Australia is required to prevent the risk of reintroduction of a poliovirus into the population from facilities that still hold poliovirus materials once eradication of the disease occurs.

Under the Global Action Plan for containment of WPV Phase 1, a comprehensive laboratory survey and a national inventory of laboratories holding poliovirus or poliovirus infectious materials was completed in 2002. Laboratories were asked to either dispose of the specimens, or contain them at Physical Containment Level 2 (PC2). Additionally, VIDRL offered to replace poliovirus used in laboratory testing with authenticated OPV strains. A National Inventory of Wild Poliovirus was compiled from this 2002 survey and is maintained by Health.

The 3rd edition of the global action plan, the WHO global action plan to minimize poliovirus facility-associated risk after type-specific eradication of wild polioviruses and sequential cessation of OPV use (GAPIII) provides details of the global strategy and milestones related to laboratory containment of all polioviruses. Retention of WPV2 and OPV/Sabin2 materials is no longer permitted except in designated certified essential facilities. The plan recommends that facilities destroy all unneeded poliovirus materials of any type. In December 2015, Health nominated the NERL as Australia’s dPEF for both WPV and OPV/Sabin polioviruses.

All applications for importation of poliovirus or poliovirus infectious materials through the Department of Agriculture and Water Resources Biological Imports Program, are assessed by Health and conditions relevant to the global stage of eradication applied which includes that any subsequent importation of a WPV or poliovirus infectious materials must be notified to the Human Biosecurity Officer (humanbiosecurity@health.gov.au) from the Office of Health Protection, Australian Government Department of Health.

In the event of a laboratory acquired case of poliovirus infection, the Public Health Laboratory Network (PHLN) would be involved in investigation of the incident and contact tracing, along with the state or territory health authority.
REFERENCES


In; 2009.
APPENDICES

Appendix A: Key Stakeholders Involved in a Suspected Case of Poliomyelitis

Appendix B: Referral of stool specimens to the National Enterovirus Reference Laboratory

Appendix C: Procedure for clinicians to notify a case of AFP or suspected poliomyelitis (all ages)

Appendix D: Key Contacts

Appendix E: List of Acronyms
Appendix A: Key Stakeholders Involved in a Suspected Case of Poliomyelitis

The key stakeholders involved in an investigation of a suspected case of poliomyelitis (a case with a high clinical suspicion of poliovirus infection) are listed below and some key contact details are included in Appendix D.

- Index case, their family or carers and their primary health care provider.
- Contacts of the index case.
- Diagnostic networks of neurologists, neuropathologists, radiologists, paediatricians.
- Hospitals and care facilities in the public and private sectors.
- Primary diagnostic laboratories.
- General practitioners.
- NERL at VIDRL.
- The Australian Paediatric Surveillance Unit (APSU- paediatric cases only).
- The Paediatric Active Enhanced Disease Surveillance Unit (PAEDS).
- The Communicable Diseases Network Australia (CDNA).
- The Public Health Laboratory Network (PHLN).
- The Polio Expert Panel (PEP).
- The Chief Health Officer (CHO)/ Director of Public Health in the affected jurisdiction, and later all CHOs/Directors of Public Health.
- The Chief Medical Officer (CMO), the Office of Health Protection in the Australian Government Department of Health and the broader public health sector.
- The Australian Health Protection Principal Committee (AHPPC).
- WHO IHR Focal Point.
- National Committee for the Certification of Polio Eradication (NCC).
- The National Authority for Containment (NAC).
- The Department of Home Affairs.
- The Department of Defence.
- The WHO Western Pacific Regional Office, Manila.
- Counselling and patient support services.
- Lawyers, civil organisations regarding confidentiality and liability issues.
- The Australian and international media.
- The broader Australian and international community.
Appendix B: Referral of stool specimens to the National Enterovirus Reference Laboratory

1. Collect two stool specimens at least 24 hours apart and within 14 days of onset of paralysis, in sterile containers. Each specimen should be approximately five grams. Two specimens are requested due to intermittent virus shedding.
2. Store the specimens at 4°C until ready to send. If the shipment cannot be sent for more than 72 hours, freeze the specimens.
3. Complete the AFP specimen laboratory request form and include with the shipment.
4. Send the specimens to the National Enterovirus Reference Laboratory via the local hospital pathology referral department. Request that the shipment be packaged according to the International Air Transport Association (IATA) Packing Instruction (PI) 650 and classified as UN 3373 biological substance category B.
   a. The National Enterovirus Reference Laboratory will pay for the shipping costs.
   b. If the local hospital pathology referral department does not routinely send shipments to VIDRL, contact the laboratory for further information.
   c. If a member of staff is not qualified for the shipment of biological specimens, contact the National Enterovirus Reference Laboratory for assistance.
5. The shipment can be sent by overnight courier, with sufficient ice bricks to keep the specimens chilled while in transit. Dry ice is not needed.

Address the shipment to:
National Enterovirus Reference Laboratory
Victorian Infectious Diseases Reference Laboratory (VIDRL)
The Doherty Institute
792 Elizabeth Street
Melbourne 3000
Victoria

Telephone: (03) 9342 9607 (direct to lab), (03) 9342 9600 (24 hour contact)
Facsimile: (03) 9342 9665
Email: enterovirus@vidrl.org.au

6. Notify the National Enterovirus Reference Laboratory of the impending shipment. Contact the laboratory if you have any questions or difficulties with arranging the shipment.
**Acute Flaccid Paralysis Specimen Referral**

To accompany stool specimens to the National Enterovirus Reference Laboratory, Victorian Infectious Diseases Reference Laboratory (VIDRL).

To facilitate the collation of data, we request completion of the following details. Contact the National Enterovirus Reference Laboratory if you have any questions.

**Telephone:** (03) 9342 9607  
**Email:** enterovirus@vidrl.org.au

Laboratory request form:

<table>
<thead>
<tr>
<th>Patient’s Name:</th>
<th>M</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td>Address:</td>
<td></td>
<td></td>
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<tr>
<td>City:</td>
<td></td>
<td></td>
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<tr>
<td>Postcode:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of birth of patient:</td>
<td>Day</td>
<td>Month</td>
</tr>
<tr>
<td>If date of birth is unknown, give age in years / months:</td>
<td>Years</td>
<td>Months</td>
</tr>
<tr>
<td>Date of onset of paralysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date first stool specimen collected:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date second stool specimen collected:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date stool specimen sent:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of most recent polio vaccination:</td>
<td></td>
<td></td>
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<tr>
<td>Preliminary clinical diagnosis:</td>
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<tr>
<td>Clinical diagnosis in hospital:</td>
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<tr>
<td>Name of person to whom laboratory results should be sent:</td>
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</tr>
<tr>
<td>Complete Address:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone number:</td>
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<tr>
<td>Fax number:</td>
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</tbody>
</table>

(For use by the National Enterovirus Reference Laboratory)

<table>
<thead>
<tr>
<th>Date received:</th>
<th>Day</th>
<th>Month</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of person receiving specimen at NERL:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian AFP case number</td>
<td>AUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was specimen in good condition?*</td>
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*Criteria for "good" condition = adequate mass, no leakage, no desiccation, and temperature indicator or presence of ice indicating reverse cold chain was maintained.
Appendix C: Procedure for clinicians to notify a case of AFP or suspected poliomyelitis (all ages)

Identify a case of AFP or suspected poliomyelitis (a case with a high clinical suspicion of poliovirus infection)

Immediate phone report to National Enterovirus Reference Laboratory (NERL) at the Victorian Infectious Diseases Reference Laboratory (VIDRL) (For patients under 15 years, also monthly reporting on the Australian Paediatric Surveillance Unit cards). Notify State or Territory Health Department as per the relevant State or Territory requirements.

Order 2 stool specimens at least 24 hours apart and within 14 days of onset of paralysis

Local laboratory will send specimens to NERL for testing

Keep a record of the case you have notified

Complete and return questionnaire to VIDRL

Complete and return 60 day follow up questionnaire to VIDRL if requested

VIDRL will notify the State or Territory Health Department if a poliovirus is isolated and clinicians will be contacted as part of the activation of this response plan to assist in the epidemiological investigation of the case.
(1) REPORTING INSTRUCTIONS FOR AFP CASES IN CHILDREN

**Telephone reporting:** Report all cases, *immediately by telephone* to the National Enterovirus Reference Laboratory (NERL) at the Victorian Infectious Diseases Reference Laboratory (VIDRL) on (03) 9342 9607. Notify the State or Territory Health Department as per the relevant State or Territory requirements.

**APSU reporting:** For children under 15 years of age, in addition to the NERL also report cases on the *monthly APSU report card*.

Collection of stool specimens from cases of AFP for viral culture: due to intermittent shedding, collect 2 stool specimens at least 24 hours apart and within 14 days of onset of paralysis in a sterile container and send them to your local laboratory who will forward the specimens to the NERL (the WHO accredited National Polio Reference Laboratory) in Melbourne as per Appendix B. Note:

- on the request form, the patient must be identified as having AFP;
- the local laboratory should be informed that the specimens must be forwarded to the NERL for exclusion of poliovirus;
- all costs for transport and analysis will be borne by the NERL. Information regarding specimen transport can be obtained from the NERL on (03) 9342 9607 or at the website (http://www.vidrl.org.au); and
- the NERL will send results to your local laboratory and the Polio Expert Panel (PEP).

**Follow-up of clinical information:** A clinical questionnaire requesting further details may be sent by the NERL to clinicians reporting a case of AFP or suspected poliomyelitis. A further follow-up questionnaire is sent to clinicians 60 days after the onset of paralysis to determine the outcome of the patient if required.

(2) REPORTING INSTRUCTIONS FOR SUSPECTED CASES OF POLIOMYELITIS IN A PERSON OF ANY AGE

**Telephone reporting:** Report all cases, irrespective of age, *immediately by telephone* to the State or Territory Health Department (Appendix D). In addition, telephone the NERL at VIDRL on (03) 9342 9607 to discuss collection of specimens.

Collection of stool specimens from cases of suspected poliomyelitis for viral culture: due to intermittent shedding, collect 2 stool specimens at least 24 hours apart and within 14 days of onset of paralysis in a sterile container and send them to your local laboratory who will forward the specimens to the NERL (the WHO accredited National Enterovirus Reference Laboratory) in Melbourne as per Appendix B. Note:

- on the request form, the patient must be identified as having suspected poliomyelitis;
- the local laboratory should be informed that the specimens must be forwarded to the NERL for exclusion of poliovirus;
- all costs for transport and analysis will be borne by the NERL. Information regarding specimen transport can be obtained from the NERL on (03) 9342 9607 or at the website (http://www.vidrl.org.au); and
- the NERL will send results to your local laboratory and the PEP.
Follow-up of clinical information: A clinical questionnaire requesting further details will be sent by the NERL to clinicians reporting a case of suspected poliomyelitis. A further follow-up questionnaire may be sent to clinicians 60 days after the onset of paralysis to determine the outcome of the patient.
## Appendix D: Key Contacts

<table>
<thead>
<tr>
<th>The National Enterovirus Reference Laboratory (<a href="http://www.vidrl.org.au">www.vidrl.org.au</a>)</th>
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<tbody>
<tr>
<td>The NERL should be informed of AFP cases and suspected polio cases (a case with a high clinical suspicion of poliovirus infection) as early as possible:</td>
</tr>
<tr>
<td>Victorian Infectious Diseases Reference Laboratory (VIDRL)</td>
</tr>
<tr>
<td>The Doherty Institute</td>
</tr>
<tr>
<td>792 Elizabeth St</td>
</tr>
<tr>
<td>Melbourne 3000 Victoria</td>
</tr>
<tr>
<td>Telephone: (03) 9342 9607 (direct to lab) (03) 9342 9600 (24 hour reporting)</td>
</tr>
<tr>
<td>Email: <a href="mailto:enterovirus@vidrl.org.au">enterovirus@vidrl.org.au</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Australian Paediatric Surveillance Unit (<a href="http://www.apsu.org.au">www.apsu.org.au</a>)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinicians should contact the APSU with any enquiries regarding the monthly report card:</td>
</tr>
<tr>
<td>Australian Paediatric Surveillance Unit</td>
</tr>
<tr>
<td>Locked Bag 4001</td>
</tr>
<tr>
<td>Westmead NSW 2145</td>
</tr>
<tr>
<td>Telephone: (02) 9845 3005 (office hours - for enquiries) Fax (02) 9845 3082</td>
</tr>
<tr>
<td>Email: <a href="mailto:APSU@chw.edu.au">APSU@chw.edu.au</a></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>The Paediatric Active Enhanced Disease Surveillance (<a href="http://www.paeds.edu.au">www.paeds.edu.au</a>)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kids Research Institute, The Children’s Hospital at Westmead</td>
</tr>
<tr>
<td>Cnr Hawkesbury Road and Hainsworth Street</td>
</tr>
<tr>
<td>Locked Bag 4001</td>
</tr>
<tr>
<td>Westmead NSW 2145</td>
</tr>
<tr>
<td>Telephone: (02) 9845 3024</td>
</tr>
<tr>
<td>Email: <a href="mailto:paeds.schn@health.nsw.gov.au">paeds.schn@health.nsw.gov.au</a></td>
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</tbody>
</table>

| Department of Health  |
|---|---|
| WHO IHR National Focal Point  |
| National Incident Room  |
| Office of Health Protection  |
| t: (+61) 2 6289 3030 (24 hours)  |
| f: (+61) 2 6289 3041  |
| email: health.ops@health.gov.au  |

| For media inquiries, please contact: |
|---|---|
| Department of Health  |
| Telephone: (02) 6289 7400  |
| Fax: (02) 6289 4044  |
| email: news@health.gov.au  |
### Key State and Territory Health Authority Contacts

All cases of suspect poliomyelitis should be reported immediately to the local health authority:

<table>
<thead>
<tr>
<th>Health Authority</th>
<th>Public Health</th>
<th>Communicable Disease Prevention and Control Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Protection Service&lt;br&gt;ACT Health&lt;br&gt;Locked Bag 5005&lt;br&gt;Weston Creek ACT 2611&lt;br&gt;Telephone: (02) 6205 1700 (24 hours)&lt;br&gt;Email: <a href="mailto:cdc@act.gov.au">cdc@act.gov.au</a></td>
<td>WA Department of Health&lt;br&gt;PO Box 8172&lt;br&gt;Perth Business Centre&lt;br&gt;Perth WA 6849&lt;br&gt;Telephone: (08) 9388 4878&lt;br&gt;a/h Infectious Diseases Emergency: (08) 9328 0553&lt;br&gt;Email: <a href="mailto:cdc@health.wa.gov.au">cdc@health.wa.gov.au</a></td>
<td>Department of Health&lt;br&gt;GPO Box 4057&lt;br&gt;Melbourne VIC 3000&lt;br&gt;Telephone: 1300 253 942&lt;br&gt;Notifying Infectious Diseases Emergency: 1800 671 738</td>
</tr>
<tr>
<td>Communicable Diseases Branch&lt;br:NSW Ministry of Health&lt;br&gt;Locked Mail Bag 961&lt;br&gt;North Sydney NSW 2059&lt;br&gt;Telephone: (02) 9391 9195&lt;br&gt;Public Health Unit: 1300 066 055&lt;br&gt;Email: <a href="mailto:NSWH-CDOncall@health.nsw.gov.au">NSWH-CDOncall@health.nsw.gov.au</a></td>
<td>Communicable Disease Control Branch&lt;br&gt;Department for Health and Wellbeing&lt;br&gt;GPO Box 6&lt;br&gt;Rundle Mall&lt;br&gt;Adelaide SA 5000&lt;br&gt;Telephone: 1300 232 272 (24 hours)</td>
<td>Communicable Diseases Prevention Unit&lt;br&gt;Department of Health&lt;br&gt;GPO Box 125&lt;br&gt;Hobart TAS 7001&lt;br&gt;Public Health Hotline: 1800 671 738</td>
</tr>
<tr>
<td>Communicable Diseases Branch&lt;br&gt;QLD Health&lt;br&gt;PO Box 2368&lt;br&gt;Fortitude Valley BC 4006&lt;br&gt;Telephone: (07) 3328 9724&lt;br&gt;Email: <a href="mailto:CDBoncall@health.qld.gov.au">CDBoncall@health.qld.gov.au</a></td>
<td></td>
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<tr>
<td>Centre for Disease Control&lt;br&gt;Department of Health&lt;br&gt;PO Box 40596&lt;br&gt;Casuarina NT 0811&lt;br&gt;Telephone: (08) 8999 2400&lt;br&gt;For notifiable diseases contact the region directly:&lt;br&gt;Darwin (08) 89228044&lt;br&gt;Alice Springs (08) 8951 7540&lt;br&gt;Katherine (08) 8973 9049&lt;br&gt;Tennant Creek (08) 8962 4250&lt;br&gt;Nhulunbuy (08) 8997 0282</td>
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### Appendix E: List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AFP</td>
<td>Acute Flaccid Paralysis</td>
</tr>
<tr>
<td>AHPPC</td>
<td>Australian Health Protection Principal Committee</td>
</tr>
<tr>
<td>APSU</td>
<td>Australian Paediatric Surveillance Unit</td>
</tr>
<tr>
<td>ATAGI</td>
<td>Australian Technical Advisory Group on Immunisation</td>
</tr>
<tr>
<td>aVDPV</td>
<td>Ambiguous Vaccine Derived Poliovirus</td>
</tr>
<tr>
<td>CDNA</td>
<td>Communicable Diseases Network Australia</td>
</tr>
<tr>
<td>CDPLAN</td>
<td>Australia's Emergency Response Plan for Communicable Disease Incidents of National Significance</td>
</tr>
<tr>
<td>CHO</td>
<td>Chief Health Officer</td>
</tr>
<tr>
<td>CMO</td>
<td>Chief Medical Officer</td>
</tr>
<tr>
<td>cVDPV</td>
<td>Circulating Vaccine Derived Poliovirus</td>
</tr>
<tr>
<td>DFAT</td>
<td>Department of Foreign Affairs and Trade</td>
</tr>
<tr>
<td>dPEF</td>
<td>Designated Poliovirus Essential Facility</td>
</tr>
<tr>
<td>ERLNA</td>
<td>Enterovirus Reference Laboratory Network of Australia</td>
</tr>
<tr>
<td>GPLN</td>
<td>Global Polio Laboratory Network</td>
</tr>
<tr>
<td>Health</td>
<td>Australian Government Department of Health</td>
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<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IHR</td>
<td>International Health Regulations</td>
</tr>
<tr>
<td>IPV</td>
<td>Inactivated Polio Vaccine</td>
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<tr>
<td>iVDPV</td>
<td>Immunocompromised Vaccine Derived Poliovirus</td>
</tr>
<tr>
<td>mOPV</td>
<td>Monovalent OPV</td>
</tr>
<tr>
<td>NAC</td>
<td>National Authority for Containment</td>
</tr>
<tr>
<td>NCC</td>
<td>National Committee for the Certification of Polio Eradication</td>
</tr>
<tr>
<td>NERL</td>
<td>National Enterovirus Reference Laboratory</td>
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<tr>
<td>NFP</td>
<td>National Focal Point</td>
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<td>NIP</td>
<td>National Immunisation Program</td>
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<td>NIR</td>
<td>National Incident Room</td>
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<td>NNDSS</td>
<td>National Notifiable Diseases Surveillance System</td>
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<td>NERL</td>
<td>National Enterovirus Reference Laboratory</td>
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<tr>
<td>OPV</td>
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<td>PAEDS</td>
<td>Paediatric Active Enhanced Disease Surveillance</td>
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<td>PC2</td>
<td>Physical Containment Level 2</td>
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<td>Polio Expert Panel</td>
</tr>
<tr>
<td>PHEIC</td>
<td>Public Health Emergency of International Concern</td>
</tr>
<tr>
<td>PHLN</td>
<td>Public Health Laboratory Network</td>
</tr>
<tr>
<td>PI</td>
<td>Packing Instruction</td>
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<tr>
<td>RCC</td>
<td>World Health Organization Regional Commission for the Certification of Poliomyelitis Eradication in the Western Pacific Region</td>
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<tr>
<td>RT-PCR</td>
<td>Reverse transcription polymerase chain reaction</td>
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<tr>
<td>TGA</td>
<td>Therapeutic Goods Administration</td>
</tr>
<tr>
<td>Plan</td>
<td>National Poliovirus Infection Outbreak Response Plan for Australia</td>
</tr>
<tr>
<td>VAPP</td>
<td>Vaccine Associated Paralytic Poliomyelitis</td>
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<tr>
<td>VDPV</td>
<td>Vaccine Derived Poliovirus</td>
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