



Exposure and outbreak management

Role of vaccination

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Vaccine preventable diseases - VPD



- Diphtheria
- Tetanus
- Pertussis (whooping cough)
- Polio
- Tuberculosis
- Measles
- Mumps
- Rubella
- Influenza
- Chicken pox
- Neisseria meningitidis
- Haemophilus influenzae
- Pneumococcal
- Hepatitis A & B
- Rotavirus
- Japanese encephalitis





Immunization schedules

- Childhood
- Adults
- Health care worker
- Travel



Rates of vaccination coverage

- **HK – 95%** Health Facts of Hong Kong 2015
- **Australia- 92%** Australian Childhood Immunisation Register 2015



Group A – Notifiable Diseases

- Anthrax
- Botulism
- Chikungunya virus
- Diphtheria
- 2 or more food/water borne illness
- HUS\Hib type b
- Hepatitis A
- Japanese encephalitis
- Legionella
- Measles
- Meningococcal
- Murray Valley Encephalitis
- Parathyroid
- SARS
- Small pox
- Tularaemia
- Typhoid
- Viral haemorrhagic fever
- Yellow fever

Procedures in place



- Standard and Transmission Based precautions
- Notifiable Diseases – laboratory notifications
- Disease specific e.g

TB

Chicken pox

Pandemic influenza

Ebola

The screenshot shows the website for The Royal Children's Hospital Melbourne. The page is titled 'Policies and Procedures' and specifically 'Infectious Diseases - Notification Procedure'. The page content includes:

- 1. Overview/procedure description**: For some communicable infections, there is a legal obligation for the treating medical practitioner to notify the Victorian Department of Health (VDH). A list of notifiable diseases is available online through the Department of Health website at http://dhsa.health.vic.gov.au/23143000_830. These are listed in table 1 below.
- 2. Related Procedure**: Transmission Based Precautions - Infection Control
- 3. Definition of Terms**:
 - Notifiable diseases**: The public health and wellbeing act 2008 requires that prescribed notifiable conditions are notified to the Department of Health by persons in charge of pathology services (laboratories) and medical practitioners (doctors). The prescribed notifiable conditions are listed in Schedule 4 of the Public Health & Wellbeing Regulations 2009.
 - The regulations state that doctors are required to notify the department of suspected and confirmed cases and laboratories are required to notify the department when a test indicates a person may have or have any notifiable condition.
- 4. Procedure details**: For a number of communicable infections, there is a legal obligation for the treating medical practitioner to notify the Department of Health. This is in

Metadata on the right side of the page:

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Date	13 Dec 2012
Approved	
Last review date	13 Dec 2015
Does content refer to the following	

Sources of VPD



- Patients
- Parent/ visitors
- Staff
- Returned travelers



Notification of VPD



Department of Health – Alerts

Chief Health Officer Advisory

30 May 2014 Status: Active

Health warning about Polio (Poliomyelitis) for international travellers

Status: Active
Date issued: 30 May 2014
Issued by: Dr Rosemary Lester, Chief Health Officer, Victoria
Issued to: Health professionals: including hospitals, travel medicine clinics, and general practices.

Key messages

- WHO has recently declared polio to be a public health emergency of international concern.
- Unvaccinated or under-vaccinated travellers are at risk of contracting polio.
- Travellers who have not received a three-dose primary course of any polio vaccine should receive single dose of inactivated poliomyelitis vaccine (IPV) (IPOL[®]) a minimum of 14 days prior to travel reduce the risk of illness.
- Healthcare workers must ensure that they are appropriately immunised against polio.

Information for clinicians, laboratories and public health personnel on Middle East Respiratory Syndrome coronavirus (MERS-CoV)

27 May 2014

What's new in this advice?

- Updated case numbers
- More information about the source of infection
- New advice for travellers

Summary

- The number of reported cases of Middle East Respiratory Syndrome coronavirus (MERS-CoV) increased sharply in April and May 2014. As of 23 May 2014, MERS-CoV had been identified in 635 patients with 193 deaths.
- All cases have been linked with travel to or residence in the Middle Eastern countries of Saudi Arabia, the United Arab Emirates (UAE), Qatar, Oman, Jordan, Kuwait, Lebanon and Yemen, or with contact with travellers returning from these areas.
- Dromedary camels are the suspected source of sporadic human infections, though the exact routes of transmission is known to occur, infection control is required.
- Severe acute lower respiratory illness may occur in certain underlying medical conditions.
- MERS-CoV affects people of all ages, and have most commonly been reported in people aged 40 years and over.
- Appropriate precautions when visiting countries affected by MERS-CoV.

Chief Health Officer, Victoria, Australia

Health home > Chief Health Officer > CHO health alerts

CHO health alerts

A Health Alert advises the Victorian community of an issue that is urgent, poses an immediate threat to public health and requires an immediate response.

Updates to current Health Alerts may be issued if necessary.

An Alert with the status 'Not active' indicates the issue has been resolved.

Current alert list

- Update: Suspected contamination of 'Provie' Proppol - 12 May 2014
- Legionnaires' disease - alert for health professionals - 9 May 2014
- Update: Middle East Respiratory Syndrome Coronavirus (MERS-CoV) - 13 January 2014

CHO Alerts and Advisories more than one year old can be found in [previous alerts](#)

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Hazelwood open cut mine fire

Learn more

Notifications reminder!

Health practitioners and laboratory services are required by law to notify the Department of certain infectious diseases.

Notifying infectious diseases

Subscribe to health alerts

[Twitter](#) [Facebook](#) [RSS](#)

Related sites

- ▶ Better Health Channel
- ▶ Communicable Diseases
- ▶ Infectious Diseases Epidemiology & Surveillance (IDES)
- ▶ Food safety and regulation

Notification of VPD



- Department of Health Notification
- Clinical suspicion
- Laboratory confirmed
- Known contact



Note - not all VPD are “Notifiable diseases”

Managing suspected or confirmed VPD



Action

- Confirm patient location – inpatient/discharged/not admitted
- Confirm management ? Suspected or confirmed
- Isolate patient
- Review exposure recommendations for staff/patients
- Determine timeframes for action
- Confirm results
- Notify Department of Health?
- Notify hospital executive/communications

Managing suspected or confirmed - VPD



- Determine patient/family contacts/locations
- Determine staff contacts/vaccination history
- Advise/implement management
- Contact non vaccinated & immunocompromised 1st
- Isolate inpatients during suspected infectious period
- Arrange vaccination/serology for staff



Measles – Emergency Department



Monday

Brought to ED – clerked in at 17.27, transferred to GP@ Kids clinic at 18.07. Seen ~ 18.15.

Tuesday/ Wednesday

Own GP

Thursday

Returned to ED at 11.57am, collected from waiting room at 15.03

Admitted to ward at 22.13 - single room.

Friday

Clinical diagnosis - moved to negative pressure room at 11.00

Post exposure guidelines



- Within 72 hours

Table 1: Post exposure guidelines - *within 72 hours of first exposure to infectious case*

Age or immune status	MMR vaccination history		
	0 doses MMR or unknown	1 dose MMR	2 doses MMR
Immunosuppressed (any age)	Normal Human Immunoglobulin 0.5 mL/kg to max of 15 mL	Normal Human Immunoglobulin 0.5 mL/kg to max of 15 mL	Normal Human Immunoglobulin 0.5 mL/kg to max of 15 mL
birth to 5 months	Normal Human Immunoglobulin 0.2 mL/kg only if mother has had <2 doses MMR and no history of past measles infection (otherwise no NHIG)	Not applicable	Not applicable
6 to 8 months	Normal Human Immunoglobulin 0.2 mL/kg	Not applicable	Not applicable
9 to 11 months	MMR now, then second dose at 12 months of age or 4 weeks later (whichever is later)	Not applicable	Not applicable
12 months to <4 years	MMR	MMR (unless first dose was given <4 weeks ago)	Nil necessary
≥4 years and born after 1965	MMR if not pregnant. If pregnant, offer NHIG (0.2 mL/kg to a maximum of 15 mL) and inform obstetrician or GP	MMR if not pregnant. If pregnant, offer NHIG (0.2 mL/kg to a maximum of 15 mL) and inform obstetrician or GP	Nil necessary

- 73 to 144 hours

Table 2: Post exposure guidelines - *73 to 144 hours after first exposure to infectious case*

Age or immune status	MMR vaccination history		
	0 doses MMR or unknown	1 dose MMR	2 doses MMR
Immunosuppressed (any age)	Normal Human Immunoglobulin 0.5 mL/kg to max of 15 mL	Normal Human Immunoglobulin 0.5 mL/kg to max of 15 mL	Normal Human Immunoglobulin 0.5 mL/kg to max of 15 mL
birth to 5 months	Normal Human Immunoglobulin 0.2 mL/kg only if mother has had <2 doses MMR and no history of past measles infection (otherwise no NHIG)	Not applicable	Not applicable
6 to 8 months	Normal Human Immunoglobulin 0.2 mL/kg	Not applicable	Not applicable
9 to 11 months	Normal Human Immunoglobulin 0.2 mL/kg	Not applicable	Not applicable
12 months to <4 years	Normal Human Immunoglobulin 0.2 mL/kg	Nil necessary	Nil necessary
≥4 years and born after 1965	Normal Human Immunoglobulin 0.2 mL/kg to max of 15 mL	Nil necessary Consider MMR if not pregnant	Nil necessary

Measles – Emergency Department



- Measles confirmed at ~ 16.15 Friday afternoon.
- Department of Health notified ~ 16.30
- ED triage log reviewed
- Exposure determined
- Patients categorised due to immunisation status
- Script written and calls commenced ~ 17.15





Measles – Emergency Department

- From 16.30 Friday - Sunday
 - 7 staff over 3 days
 - Accessed ACIR records
 - Identified 52 contacts
 - Contacted 42 people
 - Administered NHIG to 9 pt's
 - Immunised 7 patients/ siblings
 - Over 35 hours

Measles Contact Information

The following information is specifically intended for people who may have been in contact with a case of measles while infectious.

What is Measles?

Measles is a highly infectious viral illness.

People generally develop symptoms of the infection after 10 days but may take up to 18 days after having been exposed to an infectious person. These symptoms begin with:

Fever	Tiredness	Red eyes	A runny nose	A cough
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The characteristic measles rash usually begins 3–7 days after the first symptoms, generally starting on the face and then spreading all over the body. Measles is often thought of as a minor childhood illness but it can cause serious illness, particularly in young adults. Some of the possible complications include pneumonia and brain inflammation (encephalitis).

How long does a person remain infectious?

A person can spread measles to other people from 5 days before the rash appears until 4 days after the rash first appeared.

Am I susceptible to measles?

People who are susceptible to contracting measles are:

- Babies aged less than 6 months if the mother has no documented evidence of receiving two measles-containing vaccines (usually given as MMR vaccine).
 - Children aged between 6 and 12 months of age.
 - Children aged between 1 and 4 years of age who have no documented evidence of receiving a measles-containing vaccine (usually given as MMR vaccine due at 12 months and 4 years).
 - Persons over the age of 4 and born during or since 1966 who have no documented evidence of receiving two measles-containing vaccines, usually given as MMR vaccine.
- People who are immunocompromised (that is, have decreased immunity) are also at risk – at any age, even if immunised. This includes people with diseases such as Hodgkin's Lymphoma or cancer, and people undergoing cancer treatment or on high-dose steroids.

What can I do to avoid measles?

If you have been in contact with someone with measles and you are susceptible to measles your risk of becoming infected may be reduced by seeing your doctor immediately for vaccination or immunoglobulin. Options include the standard measles 'MMR' vaccine (with Mumps and Rubella) within 3 days of contact, or an immunoglobulin injection within 6 days of contact. If you receive immunoglobulin, you will still need to have a MMR vaccine 5 months after the administration of immunoglobulin.

If you think you may be susceptible to measles you need to discuss your options with your local doctor as soon as possible.

What do I do if I think I have measles?

If you suspect that you might have measles, make an appointment with your local doctor. Let them know you think you might have measles, and ask for a home visit if possible. If not, try to get the last appointment of the day to avoid coming into contact with other patients in the waiting room.

Further information

For further information contact your local doctor, or call the Department of Health Communicable Disease Prevention and Control Unit on **1300 651 160**.

Measles – Emergency Department Outcome



- 2 further cases
 - Mother
 - Unimmunised sibling of outpatient attendee





Measles – staff

Medical officer confirmed positive for Measles.

- Had worked when febrile and with rash over 5 days
- Follow up of 70 medical staff
- Patient contacts (immunoglobulin required for 2 patients)
- Extra staff administration resources required over 1 week

Measles – staff



- Alert to review vaccination history given to all staff.
- Additional vaccinations sessions made available to staff 3 x4 hrs.
- 350 staff vaccinated with MMR
- 84 staff screened for serological evidence for immunity. 17 staff found to be either negative or Equivocal were revaccinated.

Pertussis Exposure



- Undiagnosed sick baby transported by neonatal transport service.
- later confirmed to be pertussis positive
- 13 unprotected staff received prophylactic antibiotics



Varicella – Chicken Pox



- Suspected case in Day Surgery – 3 contacts received ZIG
- Suspected case in Day Oncology – isolated immediately
- All staff reviewed – all positive/vaccinated





Meningococcal exposures- Intensive Care Unit

Undiagnosed baby admitted

- suspected case 12+ hours after admission
- 16 staff reviewed for unprotected exposure
- 6 staff received antibiotic prophylaxis (1 pregnant)

Unconscious 16yrs ? Drug overdose

- Intubated on Emergency Department
- CSF – positive 36 hrs after presentation
- 23 staff reviewed for unprotected exposure
- 12 staff received antibiotic prophylaxis

?Prevention - Influenza Vaccination 2015



Patients - Laboratory confirmed

- 341
- 152 Inpatients
- 5 Hospital acquired
- 17 Intensive care
- 2 deaths

Staff vaccinated

- RCH – 86.2%
- Victoria – 78.7%



Future management of exposures



Staff

- Pre employment – review vaccination history
- Offer vaccinations/serology
- Booster immunization
- Staff vaccination data base
 - ❖ Search by staff/unit
- Standard Precautions - PPE

Future management of exposures



Patients

Pre appointment/admission letter – reporting – rash
fever, diarrhea

Admission screening

- Travel
- Contacts

Opportunist immunization





Future management of exposures

Emergency Department

- Display Health Department alerts
- Triage
- Education
- Segregation
- Isolate on suspicion
- Standard Precautions

