
INFECTION CONTROL MANUAL

5.1 Chicken Pox/Shingles

CHICKEN POX/SHINGLES

Chicken pox is a highly contagious, but generally mild disease. Most cases (>90%) occur in children under 15 years of age.

INFECTIOUS AGENT

Human Herpes virus 3 (Varicella-Zoster virus or VZV)

TRANSMISSION

CHICKEN POX (Varicella)

Chicken pox is usually transmissible from up to 5 days before the onset of the rash until all the lesions have crusted.

- droplet or airborne spread of respiratory tract secretions
- direct person to person contact
 - indirectly through articles freshly soiled by discharges from vesicles of infected persons (including shingles vesicles).

SHINGLES (Herpes zoster)

Shingles is infective reactivation of the Chicken Pox Virus which has been dormant in the body since the primary Varicella infection.

- Susceptible individuals can develop chicken pox from contact with Shingles lesions and exudate.

INCUBATION PERIOD

From 2-3 weeks; usually 14-16 days.

May be prolonged in the immunosuppressed, or following immunoglobulin.

PREVENTION OF CROSS INFECTION

Masks are not completely effective in preventing transmission ^(DoHA 2004 28-29). Non immune staff (i.e. those who do not have either a history of varicella infection, vaccination, or are sero-negative) should be excluded from caring for patients with chicken pox and shingles. **Pregnant health care workers should not care for patients with either chicken pox or shingles unless they have a definite history previous chicken pox or serological evidence of previous infection/ vaccination.**

CHICKEN POX (VARICELLA)

Standard precautions with additional airborne and contact precautions are to be observed with all cases and suspected cases.

Patients known or suspected to have Chicken Pox:

- Shall be isolated in a single isolation room (preferably negative pressure- class N) with door closed with additional airborne and contact precautions.
- Notification posted at entry to room identifying the precautions and PPE required for entry into the room

- All staff entering the room should wear gloves and gown.
 - All non-immune people entering the room should also wear a surgical mask
 - It is preferable that non immune visitors are discouraged from visiting.
- The patient's movement from the room should be restricted. If required to leave the room, the patient should wear a surgical mask & have all lesions covered.
- Linen soiled with secretions from lesions should be placed into white linen bags. Once contained within a linen bag, it will not pose a risk, the laundry washing process is adequate to decontaminate linen.
- No special cleaning procedure is required upon patient discharge.

The patient should be isolated from the onset of prodromal (onset of fever) stage until all lesions are crusted). The period of infectivity may be prolonged with immuno-compromised patients.

Infected staff should not be in contact with patients and should not present to work until they are well and all lesions are crusted or healed.

SHINGLES (HERPES ZOSTER)

Standard precautions with additional contact precautions are to be observed for all cases and suspected cases of localised shingles. Additional airborne precautions are also required for cases with disseminated shingles.

Patients are known or suspected to have shingles:

- Shall be isolated in a single room.
 - If the facility does not have a single room, the patient may share a room with people with a confirmed past history of Varicella (chickenpox).
- All staff and visitors having direct contact should wear a gown.
 - If the case has disseminated shingles all non immune people entering the room should also wear a surgical mask.
- Gloves and gowns shall be worn if contact with wound exudate or secretions are anticipated or likely.
- Linen soiled with secretions from lesions should be placed into white linen bags, once contained within a linen bag; it will not pose a risk. The laundry washing process is adequate to decontaminate linen.

Patients with shingles are considered infectious until all lesions have dried up and crusted.

STAFF VACCINATION

Serological screening prior to commencement of employment is recommended. A vaccine is available, refer to staff immunisation policy.

HEALTH CARE WORKERS WITH INFECTION

Health care workers with varicella and herpes zoster infection should not have patient contact and should not present at work until fully recovered and all lesions have healed. Refer to Health Care Workers with Infectious Diseases Policy.

Non Immune employees that have been in contact with varicella (in either the work, home or social setting) should consult staff health or Infection Prevention and Control before presenting for their next rostered shift. During the incubation period these employees require monitoring and should be excluded from contact with susceptible or immunocompromised patients.

VICTORIAN STATUTORY REQUIREMENT

Notification to Human Services is not required.

Note: as at 28/04/2008 proposed amendments to the Health (Infectious Diseases) Regulations may change Varicella-zoster virus infection to a group B notifiable disease

REFERENCES:

Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting. Australian Department of Health and ageing, 2004.

Benenson, A.S., Fifteenth Edition, 1990. Control of Communicable Diseases in Man.

Chin. J. (ed). Control of Communicable Diseases Manual. 17th Edition. American Public Health Association. 2000

Healthcare Infection Control Practices Advisory Committee (HICP AC). Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Health Care Settings: Centres for Disease Control: 2004

Isada CM, Kasten BL, Goldman MP, et al. Infectious Diseases Handbook. 5th Edition. American Pharmaceutical Association. 2003

National Health and Medical Research Council. The Australian Immunisation Handbook. 8th Edition. National Capital Printing. Canberra. 2003

Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings*, June 2007
<http://www.cdc.gov/ncidod/dhqp/pdf/isolation2007.pdf>

Victorian Government Department of Human Services [DHS], 2005, *The Blue book Guidelines for the control of infectious diseases* available from
<http://www.vic.gov.au/ideas/bluebook>

Victorian Government Department of Human Services [DHS], 2007, *Guidelines for the Classification and Design of Isolation Rooms in Health Care Facilities*. Victorian Advisory Committee on Infection Control 2007

Victorian Government Department of Human Services [DHS] (2007), *Immunisation for Health Care Workers*. Revised October 2007

5.2 Cytomegalovirus (CMV)

CYTOMEGALOVIRUS (CMV)

A HUMAN HERPES VIRUS.

The incidence of CMV is very common world wide and there is a high prevalence of asymptomatic virus shedders in the community, however symptomatic disease is rare. The risk of infection is increased for people with immunosuppression. CMV can also cause a congenital viral infection of the foetus if the mother is infected for the first time during pregnancy.

CMV has the ability to remain dormant within the body over a long period and may be shed in blood, urine, saliva, semen, breast milk, cervical secretions, tears and faeces during primary or reactivated infection. After infection with the virus, with or without symptoms, the virus may be excreted for as long as 3-6 years in infants and seems to be a shorter period in adults. Excretion may be reactivated during pregnancy, or with immunodeficiency or immunosuppression (eg. oncology or organ transplant patients).

TRANSMISSION

CMV is not readily spread by casual contact; intimate prolonged exposure is required for transmission.

CMV may be transmitted via:

- Intimate or very close contact between skin or mucous membranes and infected tissue secretions or excretions.
- Transplacental or reactivated infection.
- Perinatal infection of neonates via infective maternal cervical secretions or breast milk or infective secretions of attendants or siblings.
- Blood transfusion or organ transplantation.

INCUBATION PERIOD

Adults:	3-8 weeks after blood transfusion 4 weeks - 4 months after organ transplantation
Perinatal infection:	3-12 weeks after delivery

PREVENTION OF CROSS-INFECTION

Standard precautions.

Immunodeficient Health Care Workers should minimise contact with known CMV infected patients.

PREGNANT HEALTH CARE WORKERS

Healthy pregnant women are not at special risk for disease from CMV infection as many have been previously exposed and are not at risk of new infection during the pregnancy, however, if non-immune pregnant women become infected there is a small possibility of foetal damage.

Pregnant staff should maintain a high standard of hygiene and effectively practice the principles of standard precautions.

VICTORIAN STATUTORY REQUIREMENT

Notification to Human Services is not required.

REFERENCES:

Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting. Australian Department of Health and ageing, 2004.

Benenson, A.S., Fifteenth Edition, 1990. Control of Communicable Diseases in Man. An Official Report of the American Public Health Association.

Bennett, Brachman, 1992. Hospital Infections. 3rd Edition. Little, Brown.

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Victorian Government Department of Human Services [DHS], 2005, *The Blue book Guidelines for the control of infectious diseases* available from <http://www.vic.gov.au/ideas/bluebook>

5.3 Gastroenteritis

CAUSATIVE AGENTS OF GASTROENTERITIS:

The most common agents are bacteria, viruses and parasites.

BACTERIA:

Toxin produced in food:

- Staphylococcus aureus
- Clostridium botulinum
- Bacillus cereus

Damage to gut wall and/or systemic infection:

- Salmonella spp.
- Shigella spp.
- Clostridium perfringens
- Campylobacter spp.
- E.coli
- Helicobacter pylori
- Vibrio cholerae/ V. parahemolyticus
- Yersinia enterocolitica
- S.typhi/Paratyphi
- Brucella spp.
- Listeria monocytogenes

VIRUSES:

- Hepatitis A and E (not endemic in Australia) viruses
- Noroviruses and other small round structured viruses (SRSV)
- Rotavirus

PARASITES:

- Cryptosporidium spp.
- Entamoeba histolytica
- Giardia Lamblia

IDENTIFICATION:

Symptoms vary with the causative agent and range from slight abdominal pain and nausea to retching, vomiting, abdominal cramps, fever and diarrhoea. Fever, chills, headache, malaise and muscular pains may accompany gastrointestinal symptoms. Vomiting, with or without diarrhoea, abdominal cramps and fever are common symptoms of viral disease or staphylococcal intoxication. Severity depends on host and agent characteristics and the infectious dose. The duration of illness varies from hours to days and even weeks in salmonellosis and campylobacteriosis.

METHODS OF DIAGNOSIS:

- Bacteria can be isolated from faeces or blood or by detection of toxin
- Parasites can be isolated by microscopy of fresh or appropriately preserved faeces
- Viruses can be isolated by stool electron microscopy (EM), immune EM or paired sera from patients to detect seroconversion to a virus
- Advice regarding specific tests are sought from laboratories with expertise in the identification of gastrointestinal pathogens.

RESERVOIR:

- Soil, dust, cereals
- Bacteria and parasites: fish, birds, reptiles, wild and domestic animals
- Viruses: humans

MODE OF TRANSMISSION:

Transmission is predominantly via the faecal-oral route or ingestion of contaminated food and water sources. Transmission via aerosols (produced during profuse vomiting) has been implicated in outbreaks involving viral pathogens.

PERIOD OF COMMUNICABILITY:

Communicable periods for food and water-borne illnesses depend on the causative agent. Viruses are generally communicable during the acute phase and up to two days after recovery while bacteria are generally communicable during the acute diarrhoeal stage.

CONTROL MEASURES:

In the community:

In the community a large proportion of disease is not detected, as many people will not seek health care with mild illness. In recent years the detection of outbreaks of viral origin, especially noroviruses, has been increasing.

In Health Care Settings:

NOTE: If more than one case of hospital acquired gastroenteritis occurs in any unit of the facility, Infection Prevention & Control must be notified, this will ensure investigation of cases to prevent further transmission of illness and to provide information to prevent/control outbreak.

- All patients presenting with Gastroenteritis symptoms in any unit/ward require additional precautions.
- **Emergency department** will notify all units/wards of all patients presenting with any Gastroenteritis symptoms to ensure appropriate isolation of the patient on admission.

GASTROENTERITIS OUTBREAK MANAGEMENT:

Additional Precautions:

- Single room with ensuite or dedicated toilet and bathroom facilities. (cohorting of patients may be advised if same causative agent is proven)
- Notification posted at entry to room identifying the precautions and PPE required when entering into the room
- Strict attention to **HANDWASHING** is necessary; Hand hygiene using Alcohol hand rubs (AHR) are less effective against viruses.
- Use of gown/plastic apron for all patient contact,
- **gloves only for handling of blood and or body fluids, not required for touching intact skin.**
- mask and goggles worn if risk of aerosol from vomitus.
- Linen – yellow linen bag with alginate inner bag, outer plastic bag if leakage
- Waste – No special requirements, double bag if risk of leakage of body fluids
- Crockery and cutlery – No special requirements

Cleaning of rooms and ward

- Ensure all potentially contaminated areas on wards are cleaned with hot water and detergent, then sanitised with a sodium hypochlorite solution (bleach) of 1000ppm. Leave sanitiser for 10 minutes and then rinse with cold water. Potentially contaminated areas include toilets, showers, panrooms, pantry, patients lockers and surrounding areas including floor, benches, taps, toilet and door handles etc.
- 48 hours post cessation of symptoms the patient's bed, (including mattresses), lockers and surrounding area (including floor) should be washed down with hot water and detergent sanitised with sodium hypochlorite solution of 1000ppm. Leave sanitiser for 10 minutes then rinse with cold water. Blankets must be washed.
- Bed screens and drapes must be changed.

Transfer of Patients

- No transfer of patients between wards or to other institutions unless absolutely necessary, until patients have been symptom free for 48 hours. If patients must be transferred, the ward or institution must be advised so that they can take appropriate precautions to prevent the transmission of infection in their establishment. Staff should not be transferred from the affected ward to work in another area.

Staff with Symptoms

- staff with symptoms of gastroenteritis must not present for work and may not return to work until they have been symptom free for at least 48 hrs,
- staff with signs and symptoms of gastroenteritis are also recommended to notify the Infection Prevention & Control Unit, this information will be kept confidential.

Staff Allocations

- staff should not be assigned to work in other ward areas, if a gastroenteritis outbreak has been declared in the ward area they have been working on, this also applies to casual and pool staff members.
- Staff may be assigned to work in other ward areas once the outbreak has been declared over.
- Agency staff should be instructed about possible risk to other institutions.

Visitors

- Visitors will be restricted if an outbreak is declared. If visitors are not restricted it is important that visitors do not visit other patients.
- Visitors should wear clean gowns/apron to affected wards or rooms, and wash their hands before and after visiting.
- Any visitor with symptoms of gastroenteritis should be refrained from entering wards.
- Children should not be permitted in wards during an outbreak, as far as is possible.

Food/ Pantries on wards

- Only catering staff should have access to the ward kitchen
- Ensure that all exposed food on wards eg. Fruit, is discarded
- Staff are not to eat or drink on the ward.

Documentation and communication in an outbreak:

- The manager of the ward/unit should prepare a list of all persons who have been affected by the illness (including staff if possible) together with their dates of birth, ward/room/work location, and date and time of onset of symptoms
- The Infection Control Consultant will liaise with the unit manager to ensure thorough documentation is kept and communication is provided to all staff, including casual staff. The nominated outbreak coordinator (Infection control or nursing administration representative) will provide briefings which give clear instructions to staff outlining :
 - o Transmission of gastroenteritis and infection control procedures
 - o Cleaning and disinfection procedures
 - o Isolation of affected patients
 - o Transfer of patients
 - o Visitors
 - o Discharge of patients
 - o Ill staff to remain away from work for 48hrs after cessation of symptoms
 - o Names and contact numbers for infection control personnel

Infection Control Responsibilities

- liaise with affected ward/unit, provide outbreak management instruction and advice on cessation of precautions
- liaise with management
- liaise with bed management
- liaise with the Department of Human Services Note: 2 or more cases of gastroenteritis amongst residents or patients (that cannot be explained by medication or other medical conditions) must be notified to the communicable diseases unit (1300 651160)
- liaise with laboratory – laboratory staff must be clearly briefed regarding the outbreak and of the need to examine or refer samples for viruses.
- Prepare outbreak investigation report

REFERENCES:

- The Blue Book: Guidelines for the control of infectious diseases. Department of Human Services. 2005.
- Guidelines for the investigation of gastrointestinal illness. Department of Human Services.
- Infection Control Guidelines for the prevention of transmission of infectious diseases in health care settings. Australian Government Department of Health and Ageing, 2004.

5.4 Hepatitis A, B and C

HEPATITIS A

INFECTIOUS AGENT

Hepatitis A virus. (HAV)

This is the most common type of viral hepatitis. Symptoms vary in clinical severity from a mild illness lasting 1-2 weeks, to a severely disabling disease lasting several months. Onset is usually abrupt with fever, malaise, anorexia, nausea and abdominal discomfort, followed within a few days by jaundice.

TRANSMISSION

- faecal-oral route
 - Ingestion of contaminated food or water
 - Ingestion of filter feeding fish (e.g. oysters) from contaminated waters
 - Contamination uncooked foods by infected food handlers
 - Oral-anal sexual practices

INCUBATION PERIOD

Incubation period extends from 15-50 days (average 28-30 days). Virus is excreted in faeces from 1 week prior to symptoms up to 1 week after the onset of jaundice. Cases are most infectious from the latter half of the infectious period until a few days after the onset of jaundice. Most cases are not infectious after the first week of jaundice. Infants may excrete the virus for up to 6 months.

PREVENTION OF CROSS-INFECTION

Patients with known or suspected Hepatitis A who are faecally continent with good hygiene require standard precautions.

- Preferably single room with bathroom/toilet facilities that are not shared
- Incontinent and patients with altered mental states or poor hygiene require standard and additional contact precautions and should be placed in a single room with bathroom/toilet facilities that are not shared.
- Precautions to continue
 - Infants and children < 3 years of age – duration of hospitalization
 - Children 3-14 years – 2 weeks after the onset of symptoms
 - > 14 years – 1 week after the onset of symptoms

VACCINATION

Vaccination is recommended for:

- Travellers to areas of intermediate or high endemicity
- Those caring for young children
- Plumbers having contact with sewerage works and
- Food handlers

Immunoglobulin before and/or after exposure provides passive immunity for up to 6 months.

HEALTH CARE WORKERS WITH INFECTION

Health care workers with Hepatitis infection (including food handlers) should consult staff health or Infection Prevention and Control and be excluded from work for at least one week from the onset of jaundice and until they are well.

Additional surveillance may need to be implemented if the case is either a health care worker or food handler at the facility.

Also refer to Health Care Workers with Infectious Diseases Policy

VICTORIAN STATUTORY REQUIREMENT

Hepatitis A (Group B disease) must be notified in writing within 5 days of diagnosis.

HEPATITIS B

INFECTIOUS AGENT

Hepatitis B virus. (HBV)

Onset is usually insidious with anorexia, abdominal discomfort, nausea, vomiting, dark urine and jaundice. Sometimes arthralgia, rashes and renal disease may occur. Fever is usually absent or mild. Severity ranges from asymptomatic cases to acute hepatic necrosis. 5% of adults will be chronically infected, up to 10% of children > 2years of age will be chronically infected.

TRANSMISSION

Hepatitis B has been found in virtually all blood and body fluids of those infected however, only blood (and blood products), semen and vaginal fluids have been shown to be infectious. HBV may be transmitted in blood from infected persons from many weeks before the onset of symptoms, remains infective through the acute clinical course of the disease, and a chronic infectious state may persist for life.

Transmission occurs by percutaneous and permucosal exposure to contaminated blood or body fluids.

This may occur by:

- skin or mucous membrane break by inoculation (eg. needle-stick injury, cut, contact with mucous membrane) :
- sharing injecting equipment
- tattooing, ear piercing and body piercing if there has been inadequate infection control
- perinatally during birth
- sexual contact
- invasive medical or dental procedures if there has been inadequate infection control

INCUBATION PERIOD

Incubation period extends from 45 to 180 days (average 60-90 days).

PREVENTION OF CROSS-INFECTION

Standard precautions are sufficient for HBV and apply to all patients independent of diagnosis or perceived risk.

Hepatitis B vaccination is highly recommended for all health care workers.

STAFF VACCINATION

Serological screening and vaccination on commencement of employment is highly recommended, refer to staff immunisation policy.

HBV exposures (eg. needle-stick or splash to mucous membranes) refer to Blood/Body Fluid Exposure Protocol

HEALTH CARE WORKERS WITH INFECTION

Refer to Health Care Workers With Infectious Diseases Policy.

Health care workers undertaking exposure prone procedures have an ongoing responsibility to know their infectious status for HIV, HBC and HCV.

Health care workers with Hepatitis B infection should consult specialist infectious diseases advice to establish risk of transmission and should not perform exposure prone procedures where there is established evidence of a risk of transmission of infection to a patient from the health care worker. Health care workers who test positive for HBeAg must not perform exposure prone procedures.

VICTORIAN STATUTORY REQUIREMENT

Hepatitis B (Group B disease) must be notified in writing within 5 days of diagnosis.

HEPATITIS C

INFECTIOUS AGENT

Hepatitis C virus. (HCV)

Most infections with HCV are asymptomatic; when symptoms and signs do occur they are similar to other forms of viral hepatitis but usually milder.

Estimates suggest more than 200,000 Australians are infected with 11,000 new infections occurring each year.

TRANSMISSION

All who test positive for HCV RNA are infectious

HCV is primarily transmitted by blood-to-blood contact via:

- skin or mucous membrane break by inoculation (eg. needle-stick injury, cut, contact with mucous membrane)
- Sharing injecting equipment by drug users
- Tattooing, ear piercing and body piercing using unsterile equipment
- Blood and blood products before 1990 (since 1990 all blood products have been screened for hepatitis C and the blood supply is considered safe).

Low risk of transmission is reported for:

- sexual transmission (risk increased during menstruation and traumatic sexual practices)
- perinatal transmission

There is no evidence that HCV is transmitted from mother to child by breast feeding.

INCUBATION PERIOD

Incubation period ranges from 2 weeks to 6 months (average 6-9 weeks).

PREVENTION OF CROSS-INFECTION

Standard precautions are sufficient for HBV and apply to all patients independent of diagnosis or perceived risk.

STAFF VACCINATION

No vaccination is currently available.

Hepatitis C exposures (eg. needle-stick or splash to mucous membranes) refer to Blood/Body Fluid Exposure Protocol.

HEALTH CARE WORKERS WITH INFECTION

Health care workers undertaking exposure prone procedures have an ongoing responsibility to know their infectious status for HIV, HBC and HCV.

Health care workers with Hepatitis C viraemia must not perform exposure prone procedures where as there is a risk of transmitting infection in all situations

Refer to Health Care Workers with Infectious Diseases Policy

VICTORIAN STATUTORY REQUIREMENT

Hepatitis B (Group B disease) must be notified in writing within 5 days of diagnosis.

REFERENCES:

Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting, Australian Government Department of health and ageing, 2004.

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5.5 Human Immunodeficiency Virus (HIV)

HUMAN IMMUNODEFICIENCY VIRUS

HIV can cause a severe life threatening condition known as acquired immunodeficiency syndrome (AIDS). AIDS represents the late clinical stage of infection with HIV. Infected persons may be free of clinical signs or symptoms of disease for months or years, before developing specific opportunistic infections and cancers, and a range of other indicative diseases.

INFECTIOUS AGENT

The Human Immunodeficiency Virus (HIV).

TRANSMISSION

HIV is a blood borne and sexually transmissible virus and transmission occur by contact with blood and other body fluids via.

- Sexual exposure to infected semen, vaginal and other infected body fluids during unprotected sexual intercourse (including oral sex).
- Inoculation with infected blood, blood products, transplanted organs/ tissue, or by insemination with infected sperm.
- Sharps injuries including needle stick. The risk of transmission is dependent on the type of injury (deep/ shallow) and the viral load of the source.
- Vertical transmission during pregnancy, delivery or breastfeeding.

Health care workers in the occupational setting

- Blood is the single most important source of HIV infection.
- Exposure through the percutaneous route is significantly more likely to result in transmission than mucous membrane exposure.
- There are no reported cases of HIV infection resulting from body fluids coming into contact with intact skin.
- The virus has on occasion been found in saliva, tears, urine and bronchial secretions. Transmission after contact with these secretions has not been reported.

PREVENTION OF CROSS-INFECTION

Standard precautions are sufficient for HIV and apply to all patients independent of diagnosis or perceived risk.

NB. Additional precautions may be required if the person has a concurrent infection with another infectious disease that requires additional precautions (e.g. TB)

- A single room is not required.
- Linen should be placed into white linen bags, once contained within a linen bag; it will not pose a risk. The laundry washing process is adequate to decontaminate linen.
- No special cleaning procedure is required upon patient discharge.
- Disposable crockery and cutlery is not indicated.

INCUBATION PERIOD

From infection to primary seroconversion illness: 3-8 weeks. The development of anti HIV antibodies is 3 weeks to 3 months.

The interval from HIV infection to the diagnosis of AIDS ranges from 9 months to 20 years or longer, with a median of 12 years.

STAFF VACCINATION

No vaccine is currently available.

HEALTH CARE WORKERS WITH INFECTION

Refer to Health Care Workers with Infectious Diseases Policy

Health care workers undertaking exposure prone procedures have an ongoing responsibility to know their infectious status for HIV, HBC and HCV.

Health care workers with HIV infection should consult specialist infectious diseases advice to establish risk of transmission and must not perform exposure prone procedures where there is established evidence of a risk of transmission of infection to a patient from the health care worker.

Health care workers with HIV infection may have lowered immunity and be at risk of acquiring infection from patients.

HIV positive health care workers with other transmissible co-infections should also follow guidelines for those infections.

VICTORIAN STATUTORY REQUIREMENT

HIV and AIDS (Group D) a separate notification form is required. Written notification is required within 5 days of initial diagnosis.

REFERENCES:

Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting, Australian Government Department of Health and ageing, 2004.

Chin. J. (ed). Control of Communicable Diseases Manual. 17th Edition. American Public Health Association. 2000

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Victorian Government Department of Human Services [DHS], 2005, *The Blue book Guidelines for the control of infectious diseases*

5.6 Influenza

Influenza

Seasonal influenza may appear as isolated cases, localized outbreaks epidemics of pandemics and generally occur between the middle of autumn until the end of winter, but may occur at any time.

Residential aged care and health care facilities are at high risk of influenza outbreaks.

Pandemic Influenza

An influenza pandemic occurs when a new viral strain appears to which the population has little or no immunity. Pandemics are unpredictable and occur on average three times a century at intervals ranging between 10 to 50 years.

Managing infection prevention and control measures in health services during a pandemic will be a complex issue with a multi layered response to be activated at specific stages of the pandemic. Agencies should have comprehensive pandemic management plans and this policy is to be used in conjunction with the agency pandemic plan.

TRANSMISSION:

Influenza can be transmitted from 24 hours before the onset of symptoms, (viral shedding is the greatest during the first 2 days of illness) up to 7 days (in adults) and 21 days (in children). Generally shedding peaks early in the illness and the risk of dispersal is greatest when the person is coughing and sneezing.

Pandemic influenza viruses may have different characteristics and transmission should be reviewed when the new viral strain becomes evident.

Influenza is transmitted by the following routes

- Droplet.
- Contact.
- Airborne.

The greatest risk is associated with close contact, including direct contact with respiratory secretions, exposure to large respiratory droplets, and near range exposure to aerosols.

Influenza can survive for 24-48 hours on non porous surfaces, 8-12 hours on porous surfaces

INCUBATION PERIOD

The usual incubation period for human influenza is 1-3 days.

Pandemic strains may have different incubation periods and the Australian pandemic plan assumes an incubation period of up to 7 days.

PREVENTION OF CROSS-INFECTION

Standard and additional contact and airborne droplet precautions

Basic infection control principles from the *Interim Infection control Guidelines for pandemic Influenza in Health care and Community settings* include:

- (a) Limit contact between infected and non infected persons
 - Isolate infected people.

Isolate cases in a single room (preferably negative pressure ventilation).
Cases with the same illness may be cohorted together in designated rooms or wards if the number of available single rooms is not sufficient.

- Limit contact to a small number of HCW's and close family and friends.
- Promote spatial separation in common areas – keep a 1 metre distance between people in waiting rooms etc.

(b) Protect all people in direct contact with the case with appropriate PPE

- **Masks. P2 (N95) respirator masks or powered air purifying respirator (PAPR)** to be worn. A fit check should be carried out each time a respirator is worn.

Essential all HCW's in close contact undertaking aerosol generating procedures shall wear a P2 or other appropriate high filtration device e.g. intubation, suctioning, chest physiotherapy, bronchoscopy, nebulization (If P2 masks are in short supply they should be prioritized for HCW's undertaking aerosol generating procedures).

Preferred all HCW's in close contact undertaking patient assessment and care procedures should wear a P2 or other appropriate high filtration device, if this is not available, a surgical mask should be worn.

Disposable masks should be applied before entering the isolation area, worn once and discarded. If a number of influenza patients are cohorted in a common area/ ward, it may be practical to wear one mask for the duration of activities in that area. Masks should be removed and discarded when moist. Hand hygiene shall be performed upon touching or discarding a used mask.

Patient to wear a surgical mask at all times when outside the isolation room.

- **Gloves and Gown** to be worn for all patient (and bed zone) contact activities and environmental cleaning.
- **Protective eyewear** to be worn for all aerosol generating activities and when sprays/splatter of infectious matter is anticipated or likely.
- Appropriate PPE (including instruction on its use) to be provided for relatives and visitors (during a pandemic the numbers of visitors may need to be restricted if PPE is in short supply).

(c) Contain all respiratory secretions

- Instruct all patients with 'flu like symptoms' in respiratory hygiene/ cough etiquette.
- Promote the use of surgical masks by symptomatic people in common hospital areas e.g. waiting rooms/ corridors and when being transported.
- Provide disposable tissues and refuse receptacle in the room.

Social distancing measures to be implemented appropriately and progressively at different phases during a pandemic.

AGED CARE FACILITIES

Specific infection control measures including vaccination of unvaccinated staff and residents, exclusion of sick staff, and active surveillance/ case finding should be implemented in the event of:

- A laboratory confirmed case of influenza
- Two or more cases of an acute respiratory influenza like illness.

HEALTH CARE WORKERS WITH INFECTION

Health care workers with influenza infection should take sick leave until well and they are no longer infectious

VICTORIAN STATUTORY REQUIREMENT

Notification to Human Services is required in writing within 5 days of laboratory confirmation.

VACCINATION

Healthcare personnel have been implicated in the transmission of influenza to patients. Vaccination of both people at high risk of complications and people who can transmit influenza to high risk patients (i.e. health care workers) is the most effective measure for reducing the impact of influenza. Influenza vaccination of healthcare workers is associated with decreased mortality among nursing home residents. Vaccination should occur before the influenza season each year.

Refer to immunisation policy in section 8.

REFERENCES:

Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting, Australian Government department of health and ageing, 2004.

Commonwealth of Australia, (2006) Australian Health Management plan for *PANDEMIC INFLUENZA IMPORTANT INFORMATION FOR ALL AUSTRALIANS* Available online at www.health.gov.au

Commonwealth of Australia, (2006) Annex to Australian Health Management plan for *PANDEMIC INFLUENZA IMPORTANT INFORMATION FOR ALL AUSTRALIANS Interim Infection control Guidelines for pandemic Influenza in Health care and Community settings* (June 06) Available online at www.health.gov.au

Commonwealth of Australia, (2005), Australian management plan for pandemic influenza June 2005 Available online at www.health.gov.au

Tablan, O et al, (2003) Guidelines for preventing health care associated pneumonia, 2003. recommendations for CDC and the Healthcare Infection Control Practices Advisory committee.

Victorian Government Department of Human Services [DHS], 2005, *The Blue book Guidelines for the control of infectious diseases* available from <http://www.vic.gov.au/ideas/bluebook>

Victorian Government Department of Human Services [DHS], (2005) *Victorian Influenza pandemic plan* November 2005

Victorian Government Department of Human Services [DHS], (2007) *Victorian Human Influenza pandemic plan* April 2007 www.health.vic.gov.au/pandemicinfluenza

Victorian Government Department of Human Services [DHS], (2007) *Human Influenza Pandemic What your organization needs to do* www.health.vic.gov.au/ideas/diseases/avian

Victorian Government Department of Human Services [DHS], (2007), *Victorian health management plan for pandemic influenza July 2007*.
http://www.health.vic.gov.au/ideas/regulations/vic_influenza

World Health Organization [WHO] (2003), *Practical Guidelines for Infection Control in Health Care Facilities* Available online at www.who.int/

5.7 Measles (rubeola)

MEASLES VIRUS (MORBILLIVIRUS).

Measles is a highly infectious acute viral illness. Childhood vaccination programs in Australia have made the incidence of measles low. However small outbreaks continue to occur and adults born after 1966 who have not been vaccinated are most at risk.

TRANSMISSION

- Airborne aerosol (and droplet) transmission.
- Direct contact with nasal or throat secretions of infected persons.

The virus may persist in the environment for up to 2 hours

Cases are infectious from up to 5 days before the rash appears till 4 days after the rash appeared.

INCUBATION PERIOD

Approximately 10 days (varying 7-18) from exposure to onset of fever.

PREVENTION OF CROSS INFECTION

Standard, and additional airborne and contact precautions with alert system identifying the precautions to be used by all people entering the room.

Patients known or suspected to have measles infection:

- Shall be isolated in a single negative pressure isolation room (Class N) with negative pressure ventilation activated, door closed. Recommended minimum 12 air changes per hour. Air pressures in the room and ante room should be monitored and recorded in the patient history at least daily. (Nosocomial outbreaks have occurred when breaches/ deterioration of the system performance have not been recognised).
- Patients requiring inpatient treatment in hospitals without this facility should be transferred to a hospital where one exists.
- All non immune visitors and staff entering the room shall wear a P2 high filtration respirator/mask.
- All visitors and staff entering the room shall wear gloves and gown.
- Notification posted at entry to room identifying the precautions and PPE required for entry into the room
- The patient should wear a surgical mask when outside the room.
- Linen should be placed into white linen bags, once contained within a linen bag, it will not pose a risk. The laundry washing process is adequate to decontaminate linen.
- Precautions to continue until 4 days after the rash appeared.
- Post discharge – Staff to wear PPE as above for routine isolation room terminal disinfection. Wait 2 hours before admitting new patient to the room post discharge of the measles case (if measles case was still in the infectious phase).

The patient should be isolated from the onset of prodromal (onset of fever) stage until and including day 4 after onset of the rash.

Non-immune staff should be excluded from having patient contact or entering the isolation room or have patient contact. If non immune staff is required to enter the room, full PPE including a P2 respirator mask shall be worn.

STAFF VACCINATION

Serological screening and vaccination on commencement of employment is recommended. Non immune staff should be offered MMR vaccination (refer to staff immunisation policy and contact staff health or infection control for further information). People born between the years 1966-1984 are often non-immune and at risk.

POST EXPOSURE PRECAUTIONS

Non immune HCW's exposed to measles (either in the workplace or another setting) should be excluded from contact with susceptible patients and offered a dose of MMR vaccine within 72 hours post exposure (or immunoglobulin if exposed between 3-7 days earlier).

In the event of a non immune staff member having contact with an infectious measles case, facilities should make an organisational risk assessment and seek expert advice from the communicable diseases unit (phone 1300 651160) to determine appropriate exclusion periods.

Note: Siegel et al (2007) recommend susceptible HCW's should be excluded from day 5 after exposure until day 21 after last exposure, regardless of post exposure vaccination. (American document)

HEALTH CARE WORKERS WITH INFECTION

Health care workers with measles infection should not be in contact with patients and should consult with Infection Prevention and Control and not present at work until considered non-infectious and well.

VICTORIAN STATUTORY REQUIREMENT

Notification (Group A) to Human Services is required.

REFERENCES:

Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting, Australian department of health and ageing, 2004.

Benenson, A.S., Fifteenth Edition, 1990. *Control of Communicable Diseases in Man*. An Official Report of the American Public Health Association.

Chin. J. (ed). *Control of Communicable Diseases Manual*. 17th Edition. American Public Health Association. 2000

Communicable Diseases Intelligence Network Australia and New Zealand. July 2000. Guidelines for the Control of Measles Outbreaks in Australia

Health (Infectious Diseases) Regulations 2001. Statutory Rule No. 41/2001

Isada CM, Kasten BL, Goldman MP, et al. *Infectious Diseases Handbook*. 5th Edition. American Pharmaceutical Association. 2003

Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, *2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings*, **June 2007**

Victorian Government Department of Human Services [DHS], 2007, *Guidelines for the Classification and Design of Isolation Rooms in Health Care Facilities*. Victorian Advisory Committee on Infection Control 2007

Victorian Government Department of Human Services [DHS], 2005, *The Blue book Guidelines for the control of infectious diseases*

INFECTION CONTROL MANUAL

5.8 MENINGOCOCCAL DISEASE

Invasive infection with *Neisseria meningitidis* can cause either bacterial meningitis or septicaemia. The majority of patients with this disease are under 5 years old, but it can occur at any age. Even if antibiotic treatment (usually penicillin or ceftriaxone) is started early, the mortality rate is between 5-10%.

INFECTIOUS AGENT

Neisseria meningitidis. There are three main serogroups (A, B, &C)

TRANSMISSION

- Respiratory Droplet Route
 - *N. meningitidis* is transmitted mainly by respiratory droplets from the nose and throat of infected people. The organisms can be carried asymptotically, and can be found in up to 25% of the community but only a very small minority will go on and develop invasive disease.
 - *N. meningitidis* dies quickly outside the human host and is unable to be isolated from environmental surfaces or samples
 - Saliva has previously been considered as a means of transmission, however there is little evidence to support this view and available evidence indicates that neither saliva nor salivary contact is important in transmission of meningococci.

INCUBATION PERIOD

The incubation period is commonly 3-4 days, but can vary from 2-7 days. People may become asymptomatic carriers without developing disease.

STAFF VACCINATION

Vaccines are available for serogroup C disease but are not routinely recommended for health care workers. Immunisation is, however, recommended for microbiology laboratory personnel who frequently handle *N. meningitidis*.

PREVENTION OF CROSS INFECTION

Standard precautions should be followed, with additional droplet precautions for 24 hours post the commencement of treatment.

Patients known or suspected to have meningococcal infection:

- Shall be isolated in a single isolation room with door closed
- All persons (staff and visitors) entering the room should wear a surgical mask.
- A gown should be worn for close patient contact.
- The patient should wear a surgical mask if required to leave the room.
- Additional respiratory droplet precautions may be ceased 24 hours post the commencement of therapeutic antibiotics.
- Linen should be placed into white linen bags, once contained within a linen bag; it will not pose a risk. The laundry washing process is adequate to decontaminate linen.
- No special cleaning procedure is required upon patient discharge.

MANAGEMENT OF CONTACTS

Chemoprophylaxis should be given to close contacts of patients with meningococcal disease, and should be started as soon as possible. Recommended chemoprophylaxis can be found at <http://www.health.vic.gov.au/ideas/bluebook/meningococcal>

The relative risk of meningococcal disease is more than 1000 times greater for close contacts compared to the general population. **Chemoprophylaxis is given to eliminate nasopharyngeal carriage of the organism so as to prevent subsequent invasion and/or transmission and secondary invasive infection in further contacts.**

HEALTH CARE PERSONNEL DO NOT USUALLY REQUIRE ANTIBIOTIC PROPHYLAXIS EXCEPT WHERE INTIMATE CONTACT SUCH AS IN MOUTH-TO-MOUTH RESUSCITATION HAS OCCURRED.

Chemoprophylaxis does NOT prevent the disease in someone who is already incubating the infection and who is about to develop symptoms. Consequently, contacts must be told to seek prompt medical advice if they begin to feel unwell, particularly if they develop a headache or a fever. Contacts receiving chemoprophylaxis can still attend work/school etc.

'CLOSE CONTACTS' are considered to be

- Immediate family and household members of the patient. (This includes any special friends of a child patient in whom there was regularly one hour of close contact a day.)
- All close contacts from day-care centre or school of the patient. (This will be followed up by the Health Department, who are contacted as soon as a case is diagnosed.)
- Any sexual partner or kissing contact of the patient within the preceding 10 days
- Medical or nursing staff who have performed mouth-to-mouth resuscitation of the patient and have had extensive contact with the patient's nasopharyngeal secretions
- Anyone who has shared a drink/saliva with the patient within the preceding 10 days

An Infectious Disease Physician should be contacted if there are any problems or questions or the Infectious Diseases Unit at the Department of Human Services.

When indicated chemoprophylaxis should be instituted as soon as possible preferably within 24-48 hours of diagnosis of the index case.

Note: Antibiotic prophylaxis does not eliminate the need for close surveillance of contacts.

NB: Antibiotic prophylaxis of family and household contacts is the responsibility of the treating hospital while The Department of Human Services Victoria will take responsibility for follow-up of other contacts.

VICTORIAN STATUTORY REQUIREMENT

Suspected or confirmed meningococcal infection (Group A disease) must be notified immediately by phone or fax, followed by written notification within 5 days.

REFERENCES:

Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting, Australian Government Department of health and ageing, 2004.

Chin. J. (ed). Control of Communicable Diseases Manual. 17th Edition. American Public Health Association. 2000

Communicable Disease Intelligence. Vol.23 Number 10, 30th Sept. 1999.

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National Health and Medical Research Council. The Australian Immunisation Handbook. 8th Edition. National Capital Printing. Canberra. 2003

Patel, M., et.al., New guidelines for management and prevention of meningococcal disease in Australia. MJA Vol. 166, 2 June, 1997.

Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, *2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings*, **June 2007**

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Victorian Government Department of Human Services [DHS] (2006), Immunisation for Health Care Workers. Revised October 2007

Victorian Government Department of Human Services [DHS], 2005, *The Blue book Guidelines for the control of infectious diseases*

5.9 RUBELLA

Rubella is a mild febrile viral disease with a diffuse punctate and maculopapular rash sometimes resembling that of measles or scarlet fever, but usually much less erythematous (red) and obvious. Rubella is important because of its ability to produce anomalies in the developing foetus of women who acquire rubella during the first trimester of pregnancy.

INFECTIOUS AGENT

Rubella virus

TRANSMISSION

- Droplet or direct contact with nasal or throat secretions of infected persons
- Airborne transmission or by articles freshly soiled with secretions of nose and throat.

Infants with congenital rubella syndrome shed the virus in their pharyngeal secretions and urine.

INCUBATION PERIOD

Usually 14-17 days, but may range up to 21 days.

PREVENTION OF CROSS INFECTION

Standard and additional airborne precautions, with alert system identifying the precautions to be used by all people entering the room

Persons are known or suspected to have Rubella:

- Shall be isolated in a single isolation room (Class S) with ensuite and with the door shut.
Non immune staff (i.e. those who do not have either a history of infection, or are sero-negative) should be excluded from caring for patients with rubella or entering the room if possible.
- All non-immune persons (including visitors) entering the room should wear a surgical mask, gloves and gown. Non-immune visitors should be discouraged from visiting.
- All pregnant women who are non immune or have unknown immunity should be excluded from having patient contact or entering the room.
- The patient should wear a surgical mask if required to leave the room.
- Linen soiled with secretions from lesions should be placed into white linen bags, once contained within a linen bag; it will not pose a risk. The laundry washing process is adequate to decontaminate linen.
- No special cleaning procedure is required upon patient discharge.
- Isolation procedures to continue from the onset of illness stage until and including day 4 after the onset of the rash.

STAFF VACCINATION

Serological screening on commencement of employment is recommended if immune status unknown. Non immune staff should be offered MMR vaccination (refer to staff immunisation policy and contact staff health or infection control for further information).

HEALTH CARE WORKERS WITH INFECTION

Health care workers with Rubella infection should not have patient contact and should not present at work until fully recovered and considered non-infectious. Refer to Health Care Workers With Infectious Diseases Policy.

Non Immune employees that have been in contact with varicella (in either the work, home or social setting) should consult staff health or Infection Prevention and Control before presenting for their next rostered shift. Susceptible HCWs should be excluded from duty day 5 after 1st exposure to day 21 after the last exposure.

VICTORIAN STATUTORY REQUIREMENT

Notification (Group B) to Human Services is required for both acute rubella and congenital rubella syndrome.

REFERENCES:

Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting, Australian Government Department of health and ageing, 2004.

Bennett & Brachman 3rd Edition 1992, Hospital Infection . Little, Brown

Chin. J. (ed). *Control of Communicable Diseases Manual*. 17th Edition. American Public Health Association. 2000

Health (Infectious Diseases) Regulations 2001. Statutory Rule No. 41/2001. Victorian Government Printer

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Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, *2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings*, **June 2007**

Victorian Government Department of Human Services [DHS], 2000, *Guidelines for the Classification and Design of Isolation Rooms in Health Care Facilities*. DHS Public Health Division April 2000

Victorian Government Department of Human Services [DHS], *Immunisation for Health Care Workers*. DHS Vic. Revised 2007

Victorian Government Department of Human Services [DHS], 2005, *The Blue book Guidelines for the control of infectious diseases*

5.10 TUBERCULOSIS (TB)

INFECTIOUS AGENT

Mycobacterium tuberculosis

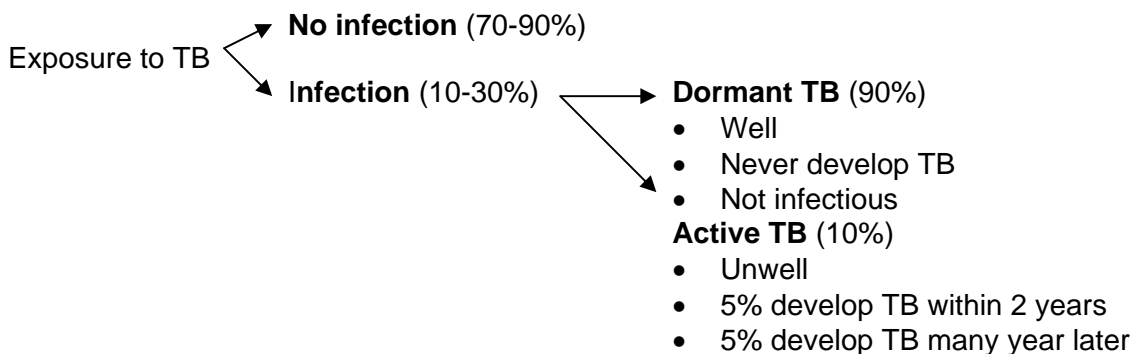
Tuberculosis (TB) can occur at any age, in any social class, and without an obvious precipitating stress factor.

Patients with untreated pulmonary tuberculosis pose a risk to susceptible patients, staff and visitors. The greatest risk of transmission occurs from contact with undiagnosed cases of pulmonary TB.

TRANSMISSION

- Airborne route
 - Inhalation of infectious particles or droplet nuclei produced by persons with pulmonary or laryngeal TB
 - Invasion may occur through mucous membranes or damaged skin
 - Extrapulmonary TB, other than laryngeal infection (eg renal hepatic, gastrointestinal or meningeal TB) does not pose a significant risk of transmission unless associated with aerosolisation of infected material.

THE NATURAL HISTORY OF TUBERCULOSIS INFECTION



INCUBATION PERIOD

Infection to the primary lesion or significant tuberculin reaction is about 4-12 weeks

PULMONARY TUBERCULOSIS

Transmission usually occurs by inhaling airborne droplet nuclei produced by persons with pulmonary or laryngeal tuberculosis.

NON-PULMONARY TUBERCULOSIS

Extrapulmonary tuberculosis, other than laryngeal, is generally not transmissible by social contact (ie non-infectious) as such, but occurs as a result of bacilli migrating from the lungs to other parts of the body.

Urine and peritoneal fluid are potentially infectious fluids in cases of renal and peritoneal tuberculosis and care should be taken not to create aerosols.

Wound exudate should be contained with a dressing. If the wound cannot be contained, the patient should be nursed in a single room (negative pressure not indicated unless pulmonary or laryngeal infection also present) and care should be taken not to create aerosols.

PREVENTION OF CROSS-INFECTION

Standard precautions with additional airborne precautions

Note: Further precautions in addition to those listed below will be required for Multi Drug Resistant Tuberculosis (MDRTB) and Extended Drug Resistant Tuberculosis (XDRTB). The TB unit should be contacted for advice on occasions when MDRTB or XDRTB are diagnosed or suspected.

Persons confirmed or suspected to have open pulmonary or laryngeal TB:

- Shall be isolated in a single negative pressure isolation room (Class N) with negative pressure ventilation activated, door closed. Recommended minimum 12 air changes per hour. Air pressures in the room and ante room should be monitored and recorded in the patient history at least daily. (Nosocomial outbreaks have occurred when breaches/ deterioration of the system performance have not been recognised).
- Patients requiring inpatient treatment in hospitals without this facility should be transferred to a hospital where one exists.
- Notification posted at entry to room identifying the precautions and PPE required when entering into the room.
- All persons (including visitors) entering the room should wear a high particulate filtration respirator mask (P2) (or a powered air purifying respirator (PAPR) may be considered). A fit check should be carried out every time a respirator mask is worn.
- Patient movement from the room should be restricted. If required to leave the room, the patient must wear a surgical mask covering mouth and nose.
- Patients who are intubated and mechanically ventilated should have a suitable particulate filter placed on the exhalation side of the circuit.
- Soiled linen should be placed into white linen bags, once contained within a linen bag, it will not pose a risk. The laundry washing process is adequate to decontaminate linen.
- No special cleaning procedure is required upon patient discharge.
- Separation of bed linen or crockery is not required, disposable crockery and cutlery is not indicated.

Cessation of isolation

Isolation may only be discontinued following consultation with infection prevention and control

1. If the diagnosis of TB has been ruled out; or
2. If the patient is no longer regarded as infectious (i.e. the patient has had a minimum of two weeks effective therapy, understands and tolerates the medications, is improving clinically (including improvement of cough) and has had two consecutive acid fast bacilli (AFB) negative sputum smears on different days.

Treatment with anti-tuberculosis drugs reduces the infectivity of most cases within 2 to 3 weeks.

STAFF SCREENING

Agencies should perform a risk assessment to guide the frequency of regular staff Tuberculin skin Test (TST). Note: the Mantoux test, the Heaf test and the tuberculin tine test and all variants of the TST.

Low risk facilities – admit on average, less than 1 infectious TB case per year – **Entry and exit tuberculin skin testing (TST) required**

Higher risk facilities – admit, on average one or more infectious TB cases per year, the frequency of routine TST requirements is determined by organizational risk assessment

High risk settings – (e.g. respiratory wards / clinics, bronchoscopy unit, intensive care units, emergency departments treatment setting for TB or HIV positive patients, etc.) - **Annual TST**

Medium risk settings – (all other settings where direct care is provided, but not identified as high risk including clinical areas, allied health treatment areas and community settings) - **Two yearly TST**

Low risk settings – No patient or clinical specimen contact – **Entry and Exit TST**

STAFF VACCINATION

The role of BCG in health care workers is contentious and not routinely recommended, however agencies may consider offering BCG vaccination to health care workers with a risk of repeated and uncontrolled exposure to infectious TB, where risk assessment shows that infection control strategies are not limiting TST conversions. Agencies considering BCG vaccination should consult the TB control unit on 9096 5144 or 1300 651160

TB screening for all staff is available through Staff health services or infection prevention and control.

PATIENT AND STAFF EXPOSURE

Patients and staff with significant exposure will require contact tracing.

A significant exposure is considered to be an unprotected (i.e. without appropriate PPE) cumulative exposure of 8 hours or more to a smear positive, and coughing, person with TB. Special consideration: A lesser exposure may be considered significant if the exposed person is known to be particularly susceptible to infection and further advice should be sought from the TB control unit or an infectious diseases physician when completing the risk assessment.

POST-EXPOSURE CONTACT TRACING AND FOLLOW UP

In the event that staff and/ or patients have significant exposure (as defined above), a risk assessment will be undertaken, with intensive investigation and follow up by infection control and/ or OH&S departments. Discharged patients, who have been identified as at risk will be notified of their exposure and referred to the TB program for investigation and follow up.

Further information or guidance may be sought from the TB control unit on 9096 5144 or 1300 651160

VICTORIAN STATUTORY REQUIREMENT

Group B: Tuberculosis must be notified in writing to Human Services within 5 days of diagnosis including clinical suspicion.

REFERENCES:

Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting, Australian Government Department of Health and ageing, 2004.

Chin. J. (ed). Control of Communicable Diseases Manual. 17th Edition. American Public Health Association. 2000

Isada CM, Kasten BL, Goldman MP, et al. Infectious Diseases Handbook. 5th Edition. American Pharmaceutical Association. 2003

National Health and Medical Research Council. The Australian Immunisation Handbook. 8th Edition. National Capital Printing. Canberra. 2003

Patel,A., Streeton, J., 1990. Tuberculosis in Australia and New Zealand into The 1990s. Prepared for the National Health and Medical Research Council.

Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, *2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings*, June 2007

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Victorian Government Department of Human Services [DHS] (2002) *Management, Control and Prevention of Tuberculosis. Guidelines for Health Care Providers (2002-2005)*.

INFECTION PREVENTION AND CONTROL MANUAL

Quick guide to implementing additional precautions

Infection/ condition	Precautions	Footnote
Abscess (draining, major)	S,C	DI, a
Abscess (draining, minor or limited)	S	b
Adenovirus infection, in infants and young children	S,D,C	DI
Amebiasis	S	
Anthrax (cutaneous and pulmonary)	S	
Aspergillosis	S	
Botulism	S	
Bronchiolitis	S,C	DI,
Brucellosis (undulant, Malta, Mediterranean fever)	S	
Campylobacter gastroenteritis (see gastroenteritis)	S	J
Candidiasis, all forms including mucocutaneous	S	
Cellulitis, uncontrolled drainage	S,C	DI
Chancroid (soft chancre)	S	
Chickenpox (varicella zoster virus)	S,A,C	e
Chlamydia trachomatis (Conjunctivitis, Genital, Respiratory)	S	
Clostridium botulinum	S	
Clostridium difficile	S,C	DI
Clostridium perfringens (food poisoning, gas gangrene)	S	
Congenital rubella	S,C	f
Conjunctivitis (acute bacterial, Chlamydia, Gonococcal)	S	
Creutzfeldt-Jakob disease	S	g
Croup	S,C	DI
Cryptococcosis	S	
Cryptosporidiosis. Cryptosporidium species	S	j
Cytomegalovirus infection, neonatal or immunosuppressed	S	
Decubitus ulcer, infected (major)	S,C	DI, a
Decubitus ulcer, infected (minor or limited)	S	b
Diarrhoea, acute-infective aetiology suspected	S,C	
Diphtheria (Cutaneous)	S,C	CN, h
Diphtheria (Pharyngeal)	S,D	CN, h
Echinococcosis (hydatidosis)	S	
Endometritis	S	
Enterobiasis (pinworm disease, oxyuriasis)	S	
Enterococcus species (see multi drug-resistant organisms if epidemiologically significant or vancomycin resistant)		
Enterocolitis, Clostridium difficile	S,C	DI
Enteroviral infections (adults)	S	
Enteroviral infections (infants and young children)	S,C	DI
Epiglottitis, due to Haemophilus influenzae	S,D	U (24hrs)
Epstein-Barr virus infection, including infectious mononucleosis		
Erythema infectiosum (also see Parvovirus B19)	S	
ESBL (see multi-resistant organisms)		
Escherichia coli gastroenteritis, Enterohemorrhagic (O157:H7)	S	j
Escherichia coli gastroenteritis, Enterohemorrhagic (O157:H7) diapered or incontinent	S,C	DI, j
Escherichia coli gastroenteritis (other species)	S	j
Food poisoning (Botulism, Clostridium perfringens or welchii, Staphylococcal)	S	
Furunculosis-staphylococcal (infants and young children)	S,C	DI
Gangrene (gas gangrene)	S	
Gastroenteritis	S,C	
German measles (rubella)	S,D	v
Giardiasis	S	j
Gonococcal ophthalmia neonatorum (gonorrhoeal ophthalmia, acute conjunctivitis of newborn)	S	
Gonorrhoea	S	

Infection/ condition	Precautions	Footnote
Granuloma inguinale (donovanosis, granuloma venereum)	S	
Guillain-Barré, syndrome	S	
Hepatitis A	S	
Hepatitis A (diapered or incontinent patients)	S,C	k
Hepatitis B	S	
Hepatitis C	S	
Herpes simplex virus (Encephalitis)	S	
Herpes simplex virus (Neonatal)	S,C	DI, l
Herpes simplex virus, mucocutaneous (disseminated or primary,severe)	S,C	DI
Herpes simplex virus, mucocutaneous (recurrent skin, oral, genital)	S	
Herpes zoster (varicella-zoster), Localised	S	m
Herpes zoster (varicella-zoster), Disseminated or in immunocompromised patient	S,A,C	DI, m
Histoplasmosis	S	
HIV (without infectious opportunistic infection)	S	
Hookworm disease (ancylostomiasis, uncinariasis)	S	
Impetigo	S,C	U (24hrs)
Infectious mononucleosis	S	
Influenza (pandemic influenza: refer to pandemic alerts from DHS)	S,D	DI
Legionella	S	
Leptospirosis	S	
Lice (pediculosis)	S,C	U (24hrs)
Listeriosis	S	
Lyme disease	S	
Lymphocytic choriomeningitis	S	
Lymphogranuloma venereum	S	
Malaria	S	
Marburg virus disease	S,C	DI, i
Measles (rubeola), all presentations	S,A	DI
Meningitis Aseptic (nonbacterial or viral --meningitis; also see enteroviral infections) Bacterial, Gram-negative enteric, in neonates Fungal <i>Listeria monocytogenes</i> Pneumococcal	S	
Meningitis - <i>Haemophilus influenzae</i> , known or suspected	S,D	U (24hrs)
Meningitis - <i>Neisseria meningitidis</i> (meningococcal) known or suspected	S,D	U (24hrs)
Meningitis -Tuberculosis	S	o
Meningococemia (meningococcal sepsis)	S,D	U (24hrs)
Meningococcal pneumonia	S,D	U (24hrs)
Molluscum contagiosum	S	
MRSA (see Multi-resistant organisms)		
Multi-resistant organisms, infection or colonisation (Gastrointestinal)	S,C	CN, p
Multi-resistant organisms, infection or colonisation (Respiratory, except Pneumococcal)	S,C	CN, p
Multi-resistant organisms, infection or colonisation (Skin, wound, or burn). See Wound Infections, Staphylococcal disease	S,C	CN, p
Mumps (infectious parotitis)	S,D	q
Mycobacteria, non tuberculosis/atypical (pulmonary, wound)	S	
Mycoplasma pneumonia	S,D	DI
Necrotizing enterocolitis	S	
Nocardiosis, draining lesions or other presentations	S	
Norovirus gastroenteritis	S	j
Parainfluenza virus infection, respiratory (infants and young children)	S,C	DI
Parvovirus B19 (erythema infectiosum)	S,D	r
Pediculosis (lice)	S,C	U (24hrs)
Pertussis (whooping cough)	S,D	s
Pinworm infection	S	

Infection/ condition		Precautions	Footnote
Pneumonia bacterial)	Bacterial not listed elsewhere (including gram-negative Chlamydia Fungal <i>Haemophilus influenzae</i> (adults) Legionella Pneumococcal <i>Staphylococcus aureus</i> <i>Streptococcus</i> , group A (adults) and Viral (adults)	S	
Pneumonia (Adenovirus)		S,D,C	DI
Pneumonia (<i>Burkholderia cepacia</i> in cystic fibrosis patients, including colonization)		S	t
Pneumonia (<i>Haemophilus influenzae</i> in infants and children, any age)		S,D	U (24hrs)
Pneumonia (Meningococcal)		S,D	U (24hrs)
Pneumonia (Mycoplasma, primary atypical pneumonia)		S,D	DI
Pneumonia (<i>Pneumocystis carinii</i>)		S	u
Pneumonia (<i>Streptococcus</i> , group A, in infants and young children)		S,D	U(24hrs)
Pneumonia, viral (infants and young children)		S,C	DI
Poliomyelitis		S,C	
Psittacosis (ornithosis)		S	
Q fever		S	
Respiratory infectious disease, acute (if not covered elsewhere), adults		S	
Reye's syndrome		S	
Rheumatic fever		S	
Ringworm (dermatophytosis, dermatomycosis, tinea)		S	
Roseola infantum (exanthem subitum)		S	
Rotavirus		S	j
Rotavirus (Diapered or incontinent)		S,C	DI
Rubella (German measles; also see congenital rubella)		S,D	v
Salmonella species (including <i>Salmonella typhi</i>)		S	j
SARS Severe Acute Respiratory Syndrome		S,A,D,C	
Scabies		S,C	U (24hrs)
Schistosomiasis (bilharziasis)		S	
Shigella species		S	j
Shigella species (diapered or incontinent)		S,C	DI
Shingles (see Herpes zoster)			
Smallpox		S,A,C	DI
Sporotrichosis		S	
Staphylococcal disease (<i>S aureus</i>), minor or limited skin, wound or burn		S	b
Staphylococcal disease (<i>S aureus</i>), major skin, wound, or burn		S,C	DI, a
Staphylococcal disease (<i>S aureus</i>), Pneumonia, Toxic shock syndrome, Scalded skin syndrome		S	
Staphylococcal disease (<i>S aureus</i>), Enterocolitis		S	j
Streptococcal disease (group A streptococcus), major skin, wound, or burn		S,C	U (24hrs), a
Streptococcal disease (group A streptococcus), minor or limited skin, wound, or burn		S	b
Streptococcal disease (group A streptococcus), Endometritis (puerperal sepsis), Neonatal		S	
Streptococcal disease (group A streptococcus), Pharyngitis in infants and young children Pneumonia in infants and young children Scarlet fever in infants and young children		S,D	U (24hrs)
Streptococcal disease (group B streptococcus)		S	
Streptococcal disease (not group A or B) unless covered elsewhere		S	
Strongyloidiasis		S	
Syphilis (Skin and mucous membrane, including congenital, primary, secondary; Latent [tertiary] and seropositivity without lesions)		S	
Tapeworm disease, <i>Hymenolepis nana</i> , <i>Taenia solium</i> (pork) and other		S	
Tetanus		S	
Tinea (fungus infection dermatophytosis, dermatomycosis, ringworm)		S	

Infection/ condition	Precautions	Footnote
Toxoplasmosis	S	
Trachoma, acute	S	
Trichinosis	S	
Trichomoniasis	S	
Tuberculosis, extrapulmonary draining lesion (including scrofula)	S	
Tuberculosis, extrapulmonary (meningitis)	S	o
Tuberculosis, pulmonary, confirmed or suspected, or laryngeal Disease	S,A	w
Tularemia (draining lesion, pulmonary)	S	
Typhoid (<i>Salmonella typhi</i>) fever	S	j
Typhus, endemic and epidemic	S	
Urinary tract infection (including pyelonephritis), with or without urinary catheter	S	
Varicella (chickenpox)	S,C,A	e
<i>Vibrio parahaemolyticus</i>	S	j
Viral diseases, respiratory, not covered elsewhere (adults)	S	
Viral diseases, respiratory, not covered elsewhere (infants and young children)	S,C	DI
Whooping cough (pertussis)	S,D	s
VRE (see Multi-resistant organisms)	S,C	
Zoster (varicella-zoster), Disseminated, or localised in immunocompromised patient	S,A,C	DI, m
Zoster (varicella-zoster), Localized in normal patient	S	m

Precautions

- S** Standard precautions;
- A** Airborne precautions;
- C** Contact precautions;
- D** Droplet precautions.

1

2 Footnotes

CN, until off antibiotics and culture-negative;

DI, duration of illness (with wound lesions, DI means until they stop draining);

U, until time specified in hours (hrs) after initiation of effective therapy

- a No dressing or dressing does not contain drainage adequately.
- b Dressing covers and contains drainage adequately.
- c (unused)
- d (unused)
- e Maintain precautions until all lesions are crusted. The average incubation period for varicella is 10 to 16 days, with a range of 10 to 21 days. After exposure, use varicella zoster immune globulin (VZIG) when appropriate, and discharge susceptible patients if possible. Place exposed susceptible patients on Airborne Precautions beginning 10 days after exposure and continuing until 21 days after last exposure (up to 28 days if VZIG has been given). Susceptible persons should not enter the room of patients on precautions if other immune caregivers are available.
- f Place infant on precautions during any admission until 1 year of age, unless nasopharyngeal and urine cultures are negative for virus after age 3 months.
- g Additional special precautions are necessary for handling and decontamination of blood, body fluids and tissues, and contaminated items from patients with confirmed or suspected disease.
- h Until two cultures taken at least 24 hours apart are negative.
- i Call state health department for specific advice about management of a suspected case.
- j Use Contact Precautions for diapered or incontinent children <6 years of age for duration of illness.
- k Maintain precautions in infants and children <3 years of age for duration of hospitalization; in children 3 to 14 years of age, until 2 weeks after onset of symptoms; and in others, until 1 week after onset of symptoms.
- l For infants delivered vaginally or by C-section and if mother has active infection and membranes have been ruptured for more than 4 to 6 hours.
- m Persons susceptible to varicella are also at risk for developing varicella when exposed to patients with herpes zoster lesions; therefore, susceptibles should not enter the room if other immune caregivers are available.
- n (unused)
- o Patient should be examined for evidence of current (active) pulmonary tuberculosis. If evidence exists, additional precautions are necessary (see tuberculosis). Refer 'Tuberculosis'

- p Resistant bacteria judged by the infection control program, based on current state, regional, or national recommendations, to be of special clinical and epidemiologic significance.
- q For 9 days after onset of swelling.
- r Maintain precautions for duration of hospitalization when chronic disease occurs in an immunodeficient patient. For patients with transient aplastic crisis or red-cell crisis, maintain precautions for 7 days.
- s Maintain precautions until 5 days after patient is placed on effective therapy.
- t Avoid cohorting or placement in the same room with a CF patient who is not infected or colonized with *B cepacia*. Persons with CF who visit or provide care and are not infected or colonized with *B cepacia* may elect to wear a mask (Droplet precautions) when within 3 ft of a colonized or infected patient.
- u Avoid placement in the same room with an immunocompromised patient.
- v Until 7 days after onset of rash.
- w Discontinue precautions only if the patient is no longer regarded as infectious (i.e. the patient has had a minimum of two weeks effective therapy, understands and tolerates the medications, is improving clinically (including improvement of cough) and has had two consecutive acid fast bacilli (AFB) negative sputum smears on different days.

REFERENCES:

Adapted from: Communicable diseases unit *Infection control guidelines Queensland Health* November 2001. (Appendix D pages 243-249)

Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, June 2007 Appendix A pages 93-113 <http://www.cdc.gov/ncidod/dhqp/pdf/isolation2007.pdf>