



Infection Control Guidelines

These guidelines outline infection control processes that are designed to minimise the risks of acquiring an infection, or transmitting one, through the provision of community care and support. Clients, their family and friends should be included through ongoing infection control education and information (e.g. use of precautions relevant to their situation, use of appropriate cleaning products, removal of suspect foods, etc.). These guidelines consist of:

- Standard Precautions
- Additional Precautions
- The spread of infection

STANDARD PRECAUTIONS

IHCS personnel are required to apply standard precautions at all times. Standard precautions are work practices required for the basic level of infection control and are recommended for the treatment and care of all clients regardless of their diagnosis or presumed infectious status.

Standard precautions apply to:

- blood (including dried blood);
- all other body fluids, secretions and excretions (excluding sweat), regardless of whether they contain visible blood;
- non intact skin; and,
- mucous membranes.

Standard precautions are designed to reduce the risk of transmission of microorganisms from both recognised and unrecognised sources of infection.

Standard precautions include:

- good hygiene practises, particularly hand washing and care;
- use of personal protective equipment (PPE);
- appropriate handling of sharps and other contaminated or infectious waste;
- use of aseptic techniques; and,
- environmental control.

Hand Washing:

Decontamination of hands by thorough and effective hand washing is the most effective measure to protect clients and yourself from infection. Hand washing should be performed:

- Before and after client contact.
- Before and after using gloves.

Infection Control

- Before and after contact with invasive devices (includes urinary catheters, gastrostomies, tracheostomies, vascular access devices etc.), regardless of whether gloves are used.
- Before and after direct contact with mucous membranes, non-intact skin, wounds, body fluids or excretions.
- At the commencement and completion of each client visit.
- Before and after contact with a common vessel that presents a risk of cross-contamination (such as contact with equipment or instruments in the immediate client environment, including personal hygiene items).

Prepare hands for hand washing by ensuring all skin surfaces are accessible, removing all jewellery and wrist watches. Nails must be clean, short and unvarnished as varnish can crack and harbour pathogens. Similarly, acrylic/false nails represent a reservoir for organisms and should not be worn. Following assessment of the environment for sources of potential infection, and with consideration of the care to be provided, select the most appropriate hand washing technique from Table 1 below:

Table 1: Selection of Hand Washing Technique

Hand Washing Technique	Method	Duration	Drying	When to Apply
Routine hand wash with Alcohol Based Hand Gel	<ul style="list-style-type: none"> • Pour 2ml alcohol based anti bacterial hand gel into palm of hand • Dip and circulate fingernails into gel in opposite palm & repeat on opposite hand • Rub palms together to evenly distribute Gel <ul style="list-style-type: none"> ○ over palms ○ all surfaces of fingers ○ between thumbs & index fingers ○ On the backs of both hands ○ around the base of wrists • Allow Gel to dry before donning gloves or touching any surface 	Until all surfaces are covered	Allow to air dry	<ul style="list-style-type: none"> • When hands are not visibly contaminated • Before and after each and every episode of direct client contact or care • Before and after different procedures on the same client • Before injecting or venepuncture • Before and after routine use of gloves, facial or eye protection, aprons or gowns • Following contact with non-intact skin or mucous membranes
Routine Hand wash with Soap and Water Hand Wash	<ul style="list-style-type: none"> • Wet hands thoroughly and lather vigorously using liquid hand wash • Ensure all surfaces of hands are covered including nails, finger tips, between fingers, thumbs and wrists • Rinse under running water • Do not touch taps with clean hands - use towel to turn taps off 	15 seconds	Pat dry using paper towel or a clean, dry linen towel	<ul style="list-style-type: none"> • As above and when hands are visibly contaminated • On starting and finishing work • Before and after eating/ food preparation and/ or smoking • After going to the toilet • After handling any instruments or equipment soiled with blood or body substances • If skin is visibly soiled or contaminated • If skin is visibly soiled or contaminated with blood or body fluids (own or others)

Infection Control

Aseptic hand wash	Routine soap and water hand wash	As above	As above	<ul style="list-style-type: none"> Before any procedures that require aseptic technique, such as inserting intravenous or indwelling catheters, attending to PICC line care.
	<i>followed by</i> Hand wash with alcohol based antibacterial gel	As above	As above	

Hand Care:

The maintenance of skin integrity of hands is important as skin that is intact (with no cuts or abrasions) is a natural defence against infection. Any breaks or lesions of the skin are possible sources of entry for micro-organisms.

- Cuts and abrasions must be covered by water resistant occlusive dressings which should be changed as necessary or when the dressing becomes soiled.
- Personnel with skin problems, such as exudative lesions or weeping dermatitis, must seek medical advice and must be removed from direct clients care until the conditions resolves.
- Personnel who develop skin conditions on their hands, including reactions to cleaning products or personal protective equipment, are required to report the matter at their earliest opportunity so that strategies to minimise risk can be implemented.

Personal Protective Equipment (PPE):

PPE are to be used to provide a barrier between yourself and potential sources of infection exposure. The use of PPE does not negate the need for safe work practice or hand washing. PPE are made available by contacting the office and contingent on risk assessment indicating a reasonable likelihood of exposure to blood and body substances. PPE may include:

- Gloves
- Aprons and gowns
- Eye and/or facial protection (glasses, goggles, face shields)
- Masks
- Footwear shields

The type of PPE required will vary depending on risks of exposure to blood and body substances; the amount of blood and body substances anticipated; the type of body substance anticipated and the skill of personnel.

Gloves should be used as an adjunct to hand washing when contamination of hands with blood or body fluid is anticipated. Gloves should be changed and hands washed after each client procedure and also during multiple procedures on the same client when a risk of cross-contamination exists. Gloves are not a substitute for hand washing.

Handling of Sharps and Other Contaminated or Infectious Waste:

Sharps must be handled with care at all times as they represent a major cause of accidents involving potential exposure to blood borne diseases. Gloves must be worn for handling of contaminated sharps, including administration of all injections. Sharp instrument must not be passed by hand. Where possible, alternatives should

be considered, including needle-less IV systems, pre-drawn up solutions, use of blunt needles for drawing up sterile solutions from ampoules.

To prevent injury, needles must not be re-sheathed. Needles should not be bent or broken by hand; removed from disposable syringes or otherwise manipulated by hand. All persons generating sharps must be responsible for the safe disposal immediately following their use and at the point of use, by discarding them in a clearly labelled, puncture-resistant container which must conform to the Australian Standard AS 4031. Gently slide sharps into the approved container using a one hand technique. Do not overfill sharps container and when the container is 2/3 full, or when they are no longer required for a particular client, seal them with the permanent lid and return to IHCS office. The IHCS office will arrange for periodic collection of used and sealed sharps containers by its approved hazardous waste disposal service.

Blood and body substance spills:

The basic principles of blood and body substances spills management are:

- Apply standard precautions. Use personal protective equipment as required.
- Spills should be cleaned up as soon as possible.
- Spills should be cleared up before the area is cleaned.

Spots or drops of blood or other small spills should be wiped immediately with paper towel and waste placed in a disposable waterproof bag and placed into general waste. The area should then be cleaned with detergent and water. Dry area with paper towel and discard waste as before. Large spills in a wet area should be carefully washed off into the sewerage system and then the area flushed with water and detergent. Large spills in other areas should be contained and consideration given to contacting the IHCS office to assist in the assessment of risk and garner support to clean. The process for cleaning large spills is the same as for smaller spills, however, additional resources and/or precautions may be required.

Aseptic Techniques:

Aseptic techniques refer to precautions which are designed to prevent or reduce contamination of a person, object or area by microorganisms. Use of aseptic techniques is indicated if performing any invasive procedure that bypasses the client's natural defences (i.e. the skin or mucous membranes); for example, insertion of intravascular cannulae or urinary catheters and open wound dressings.

Techniques to maintain asepsis can be either "clean" or "sterile". Clean techniques are used within the community care setting to confine microorganisms as far as possible to a restricted area and prevent their transfer from one area to another by the routine use of:

- hand hygiene
- barriers
- environmental controls
- appropriate processing, supply and storage of equipment

As can be seen in Table 1, aseptic hand washing involves the combination a soap and water hand wash followed by hand washing with alcohol based antibacterial gel. Aseptic techniques must be applied consistently and conscientiously. Any contamination which occurs must be addressed immediately.

Environmental Control:

Routine care and cleaning of environmental surfaces, equipment and other frequently touched surfaces is essential to prevent the transmission of microorganisms to susceptible clients. Equipment that is transferred by IHCS personnel and used with different clients (including any personal carry bags or satchels) requires additional care with routine cleaning due to the heightened potential for cross contamination between clients and/or their homes. A neutral detergent is the cleaning solution of choice for environmental surfaces.

ADDITIONAL PRECAUTIONS

Additional precautions may be indicated for clients who are:

- known or suspected to be infected or colonised with epidemiologically important or highly transmissible pathogens that can cause infection; and/or
- known or suspected to have a heightened susceptibility to infection.

Additional precautions are always used in addition to standard precautions. This two tiered approach is based on modes of transmission of pathogens and should provide high level protection to both clients and personnel. Additional precautions are used where standard precautions may be insufficient to prevent transmission of infection.

The precautions implemented are specific to the situation and selected based on the mode of disease transmission. For example by:

- airborne transmission (e.g. tuberculosis, measles, chicken pox); or
- droplet transmission (e.g. mumps, rubella, pertussis, influenza); or
- direct or indirect contact transmission (e.g. MRSA, VRE, gastro enteritis); or,
- any combination of these routes.

Additional precautions for airborne transmission should include:

- use of N95/P2 masks
- use of goggles for pandemic influenza

Additional precaution for droplet transmission should include:

- use of surgical masks
- rostering of immune personnel to care for infectious clients

Additional precautions for contact transmission should include:

- alcohol gel for routine hand hygiene
- gloves and gowns/aprons for personnel attending client
- dedicated client equipment

The client's Case Manager or Registered Nurse (if applicable) is responsible for ensuring that the client, carers and all persons involved in the support of the client are informed and understand the additional precautions implemented. The additional precautions required should be clearly documented in the client's service delivery plan.

THE SPREAD OF INFECTION

The application of standard precautions at all times and the application of additional precautions in addition to standard precautions, when standard precautions alone may be insufficient to prevent transmission of infection, is a preventative risk management model. It is useful to understand the mechanisms by which infection is spread and how standard precautions and additional precautions work to disrupt this spread.

The spread of infection requires three elements:

- 1. a source of infecting organisms;**
- 2. a means of transmission of the organism; and,**
- 3. a susceptible host.**

Infecting Organisms:

Infectious organisms are known as pathogens, or more commonly germs, and are biological agents that cause disease to its host. Infecting organisms include:

- viruses
- bacteria
- fungal
- other parasites

Source of Infecting Organisms

The source of the infecting organisms may be clients, staff or family, pets, environment and include:

- persons with acute disease;
- persons in the incubation of 'window' period of a disease;
- persons who are colonised or chronic carriers of the infecting agent but have no apparent disease; and,
- a person's own endogenous flora.

Other potential sources include:

- inanimate object in the environment which are contaminated, including equipment and medications;
- food;
- water; and,
- air.

The role of a pathogen in causing infection is dependent upon its ability to produce disease (pathogenicity), the number of microorganisms required to cause illness (infectious dose) and host susceptibility.

Means of Transmission:

Microorganisms are transmitted by various routes and the some microorganism may be transmitted by more than one route. There are five main routes of transmission:

- contact
- common vehicle
- droplet
- airborne
- vector borne

Contact Transmission:

The most important and frequent means of infection transmission can be divided into two subgroups; direct contact transmission and indirect contact transmission:

- direct contact transmission involves direct physical transfer of microorganisms from an infected, colonised or contaminated person to a susceptible host via unwashed hands.
- indirect contact transmission involves contact of a susceptible person with a contaminated inanimate object, such as instruments or equipment. Infectious organisms can also be carried on the hand if contaminated items are handled and then transferred to susceptible clients in this way.

Common Vehicle Transmission:

- occurs when the same infectious agent is transmitted to a number of people by a common contaminated source, e.g. food, water, drugs or blood.

Droplet Transmission:

- occurs when droplet containing microorganisms come in contact with the conjunctiva, or the nasal or oral mucosa of a susceptible person.
- droplet distribution is limited by the force of expulsion, gravity and humidity and involves close proximity, usually within a distance of 1 metre or less.
- droplets are generated during coughing, sneezing, talking and during the performance of certain aerosol generating procedures, such a suctioning

Airborne Transmission:

- occurs by dissemination in the air of either droplet nuclei or dust particles containing the infectious agent, over a distance greater than 1 metre.
- microorganisms carried in this manner can be widely dispersed via air current and can remain in the environment for long periods before being inhaled by, or deposited on, a susceptible person.

Vector Borne Transmission:

- occurs when an animal, usually an insect (e.g. mosquitoes, fleas and ticks), transmits microorganisms to a human host.

Susceptible Host:

Susceptibility to infection varies depending upon age, underlying medical conditions and other factors (e.g. nutritional status, drug therapy) which may compromise the immune status of a person. Some people may be immune to, or be able to resist, infection. Other may become asymptomatic carriers whilst others develop clinical disease. Trauma, surgical procedures, anaesthesia, invasive or indwelling devices and therapeutic and diagnostic procedures may render a person more susceptible to infection.

Managing an Outbreak

During an outbreak of an infectious condition in the community, consideration must be given to the following:

- Is the service an essential or non-essential service?
Determination of whether a service is essential or non-essential will occur following a discussion between the case manager and a Director (see Care Planning & Service Delivery Policy)
- Is the outbreak limited to one household or is it affecting the wider community?
- Have the staff attending received updated information on required PPE?
- Have appropriate PPE supplies been provided for use by staff working in the client's home?

For more information concerning specific infection control processes please see:
Clinical Practice Guidelines, Royal District Nursing Service, SA, 2005

References:

Clinical Practice Guidelines, Royal District Nursing Service, SA, 2005
Infection control in the health care setting, Commonwealth of Australia, 1996