Guide for Infection Control in the Practice of Dermatology

THE AUSTRALASIAN COLLEGE OF DERMATOLOGISTS

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DISCLAIMER

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Introduction

This guide has been formulated to enable dermatologists to minimise the risk of workplace infection being acquired by themselves, their staff or their patients.

For further information Fellows are referred to the NHMRC 'Australian Guidelines for the Prevention and Control of Infection in Healthcare' and RACGP 'Infection Prevention and Control Standards'.

Fellows should take care to comply with state medical practice law as it relates to infection control standards.

It is recommended that each practice develop a manual of protocols to be carried out during all procedures. Consideration of risk as it pertains to the specific facility, activities and individuals is an integral part of successful infection prevention and control. The Australian/New Zealand Standard on Risk Management (AS/NZS ISO31000: 2018) outlines a stepwise approach to risk management.

1. Standard and additional precautions

Standard precautions are work practices required for basic level of infection control.

They include the use of protective barriers (gloves, gowns, plastic aprons, masks and eye protection), hand hygiene, appropriate handling and disposal of sharps and other clinical waste, environmental controls, appropriate reprocessing of reusable instruments and equipment, respiratory hygiene and cough etiquette, aseptic technique and waste and linen handling.

Standard precautions are recommended for the treatment and care of all patients regardless of their perceived or confirmed infectious status and in the handling of blood and all other body fluids, secretions and excretions (regardless of whether they contain visible blood), non-intact skin and mucous membranes.

Standard precautions also apply to dried blood and other body substances.

Additional precautions are used for patients known to be or suspected of being infected or colonised with epidemiologically important or highly transmissible pathogens which can cause infection:

- by airborne transmission
    - Inhalation of small particles that contain infectious agents e.g. M. tuberculosis, measles virus, chickenpox virus
- by droplet transmission
    - Contamination with respiratory droplets with transfer to susceptible mucosal surfaces such as the eyes; when infectious respiratory droplets are expelled by coughing, sneezing or talking, and come into contact with another's mucosa (eyes, nose or mouth), either directly or via contaminated hands e.g. mumps, rubella, pertussis, influenza
- by direct or indirect contact
    - When a healthcare workers' hands or clothing become contaminated, patient-care devices are shared between patients, infectious patients have contact with other patients, or environmental surfaces are not regularly decontaminated e.g. MRSA
- by any combination of these routes.

Additional precautions are designed to interrupt transmission of infection by these routes and should be used in addition to standard precautions when transmission of infection might not be contained by using standard precautions alone.

2. Hand hygiene

- Hand hygiene is generally considered to be the most important measure in preventing the spread of infection. Alcohol hand rubs have to be left dry for 20-30 seconds.
- It is recommended that routine hand hygiene is performed:
    - before touching a patient
    - before a procedure
    - after a procedure or body substance exposure risk
    - after touching a patient
    - after touching a patient's surroundings.
- Hand hygiene must also be performed before and after eating, before putting on gloves and after the removal of gloves, after handling any used medical devices (e.g., instruments or equipment) and after going to the toilet.
- Hand washing must be performed if the hands are visibly soiled or perceived to be soiled, with rubbing of hands with liquid soap for a minimum of 20 seconds.
- A neutral pH soap should be used for routine hand washing. Liquid soap dispensers with a disposable cartridge including a disposable dispensing nozzle are recommended. If liquid soap is dispensed from reusable containers, these must be cleaned when emptied and dried prior to refilling with fresh soap.
- A surgical hand wash with 4% w/v chlorhexidine or detergent-based povidone-iodine (0.75% available iodine) or an aqueous povidone-iodine solution (1% available iodine) is required before any procedure which involves penetration of normally sterile tissues and registered by the Therapeutic Goods Administration (TGA). The manufacturers' instructions should be followed.
- Alcohol-based hand rubs that contain between 60% and 80% v/v ethanol or equivalent should be used for all routine hand hygiene practices and meet the requirements of EN1500 testing standards for bactericidal effect and the TGA.
- Cuts and abrasions on the hands and forearms should be covered by water-resistant, occlusive dressings which should be changed as necessary or when the dressing becomes soiled.
- Healthcare workers with exudative lesions or weeping dermatitis must seek medical advice and must be removed from direct patient care until the condition resolves.
- Patients should be involved in hand hygiene and offered opportunities to clean their hands when appropriate.
- It is important to consider the risk of allergic and irritant dermatitis from skin contacts including skin cleansers, occlusive gloves and less commonly, hand rubs. The use of an emollient, especially at night, is recommended to restore the skin barrier.

3. Personal protective equipment (PPE)

Personal protective equipment (PPE) is a routine part of standard and additional precautions in infection control but must be used together with hand hygiene. The choice of appropriate equipment is based upon the additional precautions that must be undertaken.

PPE should only be used in the patient area and removed upon leaving this area. Appropriate training on how to use PPE and correct donning and doffing order and technique is very important. Standard training videos are available. There is a high risk of self-contamination if practitioners have not practised and know the order and know how to remove gloves, gown and masks safely.

Gloves and Gowns

Gloves are the foundation of standard precautions when interacting with patients regardless of their perceived or confirmed infectious status.

- Gloves are worn as a barrier, when there is the possibility of direct contact with blood, body substances, mucous membranes or wounds or if there is a chance that touching the patient could transmit infection.
- Sterile gloves (AS/NZS 4179:2014) must be worn if the procedure involves contact with tissue that would be sterile under normal circumstances.
- Medical examination gloves (AS/NZS 4011.2:2014) should be used for all procedures that might involve contact with blood, body fluid or mucous membranes.
- For housekeeping activities, instrument cleaning and decontamination procedures, general purpose household gloves are appropriate. These can be washed and re-used but should be discarded when they become peeled, cracked, discoloured, torn or punctured.
- Gloves need not be worn for subcutaneous, intramuscular or intradermal injections unless exposure to blood is anticipated.
- Gloves must be changed and discarded as soon as they are torn or punctured; after contact with one individual is complete and before care is provided to another; and when performing separate procedures on the same patient, if there is a risk of transmitting infection from one part of the body to the other.
- Hands should be washed after removal and disposal of gloves.

Comparatively, the addition of a gown is essential for additional precaution in the setting of contact precaution. It also provides protection from splash exposures.

- SCRUBS made of impervious material should be worn to protect the wearer's clothing or skin during any procedure, where there is a likelihood of splashes or contamination with blood and body substances and should be cleaned professionally after each use.

Masks, face shields and protective eye wear

- Droplet precautions must be undertaken for patients known or suspected to be infected with agents transmitted by respiratory droplets. Here an AS 4381 standard face mask and AS/NZS 1337 standard protective eye wear (or a face shield) must be worn during procedures where splashing, splattering, or spraying of blood or other body substances may occur.
- When an airborne-transmissible infectious agent is known or suspected to be present, a correctly fitted P2 respirator (N95) is worn when entering the patient care area
- For laser plume, a particulate filter mask (filters 0.3 um particles) is suitable.

- It must be worn and fitted in accordance with the manufacturer's instructions and generally should not be reused.

Footwear

- Enclosed footwear, which protects from injury or contact with sharp objects, should be worn.

4. Skin preparations

The following may be used for preoperative skin disinfection. The selected agent should be appropriate for the nature and site of the procedure:

- 70-80% v/v ethyl alcohol
- 60-70% v/v isopropyl alcohol
- Alcoholic or aqueous formulations of chlorhexidine (0.5 to 4% w/v)
- 10% w/v aqueous or alcoholic povidone iodine (1% w/v available iodine)

Note:

- 0.5% W/V aqueous chlorhexidine is recommended for use on facial skin.
- Aqueous chlorhexidine 0.05 to 0.1% is the preferred preoperative antiseptic around the eye.

Manufacturers' instructions regarding the contact time of each antiseptic used should be followed. A minimum contact time of two minutes is usually recommended. Alcohol should not be used for skin disinfection prior to the use of cautery, diathermy or laser.

Disinfectants must be dated when opened and discarded after the designated use-by date.

Sufficient disinfectant for each patient's individual use should be decanted into a sterile disposable container or a container which may be sterilised. The container and any fluid remaining in the container at the end of each procedure must be discarded or the container re-sterilised.

5. Surgical techniques

Certain surgical techniques assist in infection control.

- Procedural and consulting spaces should be covered in vinyl flooring and cleaned daily.
- Emergency equipment should be available.
- Hair should be clipped when necessary, **not** shaved.
- Prior to any surgical or operating procedure, the surgeon and scrub nurse should decide on the routine for passage of sharp instruments during the procedure.
    - For larger procedures, such as flaps and grafts, the surgeon should have a procedure area large enough to walk around the patient. Consideration of having a nurse or registrar assistant is encouraged.
- The surgeon must avoid placing his/her less dexterous hand in potential danger.
- The diathermy and suction should be placed on the opposite side of the table to the surgeon, thereby ensuring that the assistant does not reach across the table between the surgeon and nurse.
- Instrument trays should be used to place instruments during procedures. These are metal and should be cleaned daily.
- Sharp instruments should not be passed by hand. A specified puncture resistant sharps tray must be used for the transfer of all sharp instruments. Only one sharp must be in the tray at one time. Handheld straight needles should not be used.
- Needles must never be picked up with the fingers nor the fingers used to expose an increased access for the passage of the suture in deep tissues.
- When suturing, forceps or a needle holder should be used to pick up the needle and draw it through the tissue.
- Hands of assisting staff must not be used to retract the wound during surgery. Self-retaining retractors should be used or a swab on a stick instead of a finger.
- Certain instruments should be avoided unless essential to the procedure, for example, sharp wound retractors such as rake retractors and skin hooks.
- Where appropriate, wound dressings with an impervious outer covering that will contain wound exudate should be used.
- Closed wound drainage systems should be used.
- All blood should be cleansed from the patient's skin after the operation using an aqueous solution of chlorhexidine (0.05% w/v chlorhexidine is adequate).
- Sterile drapes should be used where appropriate.
- Syringes used to hold single-use anaesthetic cartridges ("dental syringes") must be sterilised between patients.
- Diathermy and cautery hand pieces must be covered with a plastic sheath which is discarded and replaced between patients.
- Cautery tips must be sterilised after use.
- Single-use diathermy tips must be discarded after use. Reusable tips must be sterilised.

- Special precautions apply to dermabrasion and laser (see Appendix 1).
- Further techniques are applicable to Mohs' surgery (see Appendix 2).

Cryotherapy

The use of liquid nitrogen during cryotherapy for infected lesions, such as warts during cryotherapy should not allow contamination of the canister. The liquid nitrogen should be decanted to a separate container and discarded after use. The container should also be sterilised.

When warts are treated with liquid nitrogen spray, the nozzle head should not be brought into contact with wart tissue. If contact has been made, then the nozzle head should be sterilised. Likewise, if a cryoprobe is used, this should be sterilised between patients.

6. Reprocessing of re-usable medical devices

Healthcare facilities should develop local policies and procedures relevant to their setting and may also need to consult relevant Australian Standards (AS 5369: 2023)

Standard precautions should be followed at all stages of handling used items. Appropriate personal protection should be worn such as heavy-duty kitchen gloves, fluid repellent masks/eye protection/face shields and fluid resistant aprons or gowns.

Initial cleaning

Removal of gross soil may be achieved by dry wiping, damp wiping or rinsing in warm running water. Cold water will congeal fatty substances; hot water will coagulate protein. Instruments should not be allowed to dry before cleaning.

Manual Cleaning

(AS 5369:2023)

Fill a sink or bowl with warm water and detergent with the concentration recommended by the manufacturer. Neutral or mild alkaline detergents with a pH range 8 to 10.8 are recommended. Dismantle and open all items for cleaning prior to placement in the cleaning solution. Clean instruments by scrubbing with a firm bristled brush, holding instruments low in the sink, preferably under water, to prevent aerosols when scrubbing. For removal of stubborn material or stains use a non-abrasive scouring pad. Push a thin brush down through lumina, holes and valves, rinse in warm to hot running water, dry with a lint-free cloth or in a drying cabinet. Inspect all items prior to further processing.

Ultrasonic Cleaning

(AS 2773:2019)

Ultrasonic cleaners are used to assist in cleaning jointed and serrated stainless steel instruments. They are not suitable for cannulated instruments, plastics, cemented glass syringes or lenses. Ultrasonic cleaners work by subjecting instruments to high frequency, high energy sound waves causing soil to be dislodged from instruments and dropped to the bottom of the tank or be sufficiently loosened to be removed during the rinsing process.

To operate, fill the tank with cold or tepid water and add the correct amount of detergent as recommended by the manufacturer. Operate the machine to degas the solution.

Rinse off blood and other visible soil before immersing the instruments in the water tank. Place the open instruments in a basket, preferably with a solid base and perforated sides, submerge the basket in the water tank, close the lid and commence the cycle. After the specified time, remove the basket and rinse the instruments in clean hot water. Inspect instruments prior to further processing.

During use, workplace health and safety precautions must be considered:

1. The machine must have a lid and must not be operated unless the lid is closed.
2. No part of the operator's body should be submerged in the water during operation as this is thought to cause long term arthritic conditions.

Cleaning the ultrasonic cleaner and replacement of the cleaning solution is necessary at least daily or more frequently depending upon usage and thoroughness of precleaning. Performance tests should be performed daily, or when used, according to the manufacturer's instructions, and documented. Manufacturers' handbooks should be consulted for further information on the use and limitations of ultrasonic cleaning.

Sterilisation

(AS 5369:2023)

Sterilisation methods are designed to give a sterility assurance level (SAL) of at least 10-6, provided the sterilisation process is validated by the user. Records of sterilisation must also be kept verifying that an appropriate reprocessing system is in place according to state and federal legislation. Only TGA-included sterilant or medical device disinfectants should be used on medical devices as per Therapeutic Goods Order Number 104 (Standard for Disinfectants - TGO 104)

Two agents are available to office-based health care facilities to free items from viable organisms.

A. Moist heat (Steam-under-pressure)
B. Dry heat

Currently moist heat in the form of steam under pressure is the most reliable, economic and fastest medium for the destruction of microbial life. It sterilises by coagulating protein in the microbial cell.

The production of items required to be sterile depends not only on the correct medium being selected for the item to be processed and the validation of the sterilisation process, but also on the cleaning and disinfection processes, facility design/workflow, prevention of contamination and effective quality control prior to, during and after the sterilising process.

Fellows should ensure that personnel involved in the cleaning, disinfecting, sterilisation, storage and distribution of items are trained and educated to enable them to correctly undertake any task that they will be required to perform.

Steam Sterilisers

(AS 5369:2023)

Reprocessing of heat resistant items is recommended by steam sterilisation due to the safety margin, reliability, validity and lethality.

Bench top (portable) steam sterilisers are appropriate for use in office-based practice for the sterilisation of small quantities of small items. They are regulated by the Therapeutic Goods Administration (TGA).

Unpackaged items should be used immediately following sterilisation.

Packaged items should only be processed in a steam steriliser that has a built-in drying cycle. The door should remain closed for the duration of the drying cycle.

Bench top sterilisers that do not have a built-in drying cycle are only appropriate for the sterilisation of unwrapped items.

The manufacturer’s recommendations in the operation, monitoring and validation of the sterilisation process must be complied with. An operator’s manual should be available in the vicinity of the steriliser at all times.

The following table is used as the recognised international temperature-pressure-time relationship for steam-under-pressure sterilisation.

°C	KPa	Mb	Psi	Holding time (in min) plus safety factor
121	103	1030	15	15
126	138	1380	20	10
132	186	1860	27	4
134	206	2060	30	3

Associated equipment should meet any relevant Australian and New Zealand Standards.

Routine calibration checks, sterilisation cycle performance and maintenance of all measuring devices, timers, gauges and displays should be carried out by a skilled person using measuring equipment certified by a recognised certification body such as the National Association of Testing Authorities (NATA).

Penetration time tests shall be performed at the time of commissioning using the largest pack and whenever pack contents or packaging materials are changed.

Dry Heat Sterilisers

(AS 2487-2002)

Dry heat sterilisation destroys infectious agents by oxidation.

Dry heat is a simple sterilising process involving heating of the chamber, the air in the chamber and the load, and holding at a high temperature for a long time. It is used for anhydrous items and items sealed within impermeable containers which cannot be sterilised by steam under pressure but can withstand a temperature of 160 C for a minimum holding time of 120 minutes plus penetration time.

This method of sterilisation is less practical in office-based practice.

Loading of Sterilisers

- Prepared biopsy trays or surgical trays with standard instruments to reduce manual handling and opening. Single additional instruments should not be placed in open trays, but packaged and dated when sterilisation occurred.
- Prepared labelling systems or non-toxic, solvent-based felt-tipped marking pens and rubber stamps using a similar ink shall be used for labelling packs prior to sterilisation. Labelling shall include batch control data on both packs and bags and the contents if not visible through the pack or bag.
- Hollow wear should be tilted on edge in a draining position – the opening should be against the paper and not the plastic.
- Packs of drapes and soft goods with layers vertical. Racks may be used to allow for adequate separation of packaged instruments.
- Packs of hollow wear and trays of instruments should not be placed above textile packs or soft goods in order to avoid wetting caused by condensation from items above.
- Loading trays should be loosely loaded to capacity.

Unloading

- On completion of the cycle the load shall immediately be removed and a visual inspection made to ascertain that the load is dry and that sterilising indicators have made the required colour change.
- The operator shall check the recording charts or printouts and sign the designated record sheets to indicate that the required parameters have been met or notify the principal of the office-based health care facility if failure of any parameter is detected.
- Loading trays with cooling items shall be kept away from high activity areas.
- Cooling items shall not be placed on solid surfaces as condensation from vapour still within the pack may result.
- Items that have been dropped on the floor, compressed, torn, have broken seals or are wet shall be considered non-sterile and should be reprocessed.

7. Cleaning of work areas and equipment

Standard precautions should be followed at all stages of handling used items. Appropriate personal protection should be worn such as heavy-duty kitchen gloves, fluid repellent masks/eye protection/face shields and SCRUBS.

A documented routine cleaning schedule with responsible staff and minimum cleaning frequency needs to be created. Areas should be cleaned at least daily, with an evening cleaning service encouraged.

Initial mechanical cleaning with a suitable detergent followed by disinfection with TGA listed hospital-grade disinfectant with specific claims or a chlorine-based product such as sodium hypochlorite (where indicated for use as the intended purpose of the product as per the manufacturer's instructions) is recommended. If using sodium hypochlorite, a minimum dilution factor of 1:10 should be used, equivalent to 0.1% active chlorine. Two in one agents allow this to be done in a single step.

Shared equipment should be cleaned after each use. Frequently touched surfaces to be cleaned with detergent solution at least daily and when visibly soiled.

Healthcare facilities should refer to TGA Order 104 (Standard for Disinfectants and Sanitary Products) for more information about disinfectants and sterilants.

The use of carpet in patient care areas is not suggested. However, if used, carpets in public areas and in general patient-care areas should be vacuumed daily with well-maintained equipment fitted with high efficiency particulate air (HEPA) filters to minimise dust dispersion

As there is limited evidence on the effects of hydrogen peroxide vapor, the benefits of its use for infection prevention and control in addition to standard cleaning procedures cannot be evaluated. The effectiveness of ultra-violet light disinfection and of surfaces, fittings or furnishings containing anti-microbial materials as an adjunct to routine terminal cleaning is yet to be established.

8. Spills protocol

Standard precautions apply where there is a risk of contact with blood or body substances. Gloves and protective clothing should be worn.

Spot cleaning

- Wipe up spot immediately with a damp cloth, tissue or paper towel. Clean with water and neutral detergent. An alcohol wipe may also be used.
- Discard contaminated materials in accordance with State/Territory regulations and dispose of gloves.
- Perform hand hygiene.

Small spills (up to 10cm in diameter)

- Cover and wipe up spill immediately with absorbent material e.g. paper hand towel.
- Place contaminated absorbent material into impervious container or plastic bag for disposal.
- Clean the area with warm water and neutral detergent using disposable cleaning cloth or sponge.
- Disinfect by wiping with sodium hypochlorite 1,000ppm available chlorine and allow to dry.
- Discard contaminated materials in accordance with State/Territory regulations.
- Wash hands.

Spills on carpet should be managed as follows:

- Mop up as much of the spill as possible using disposable towels.
- Clean with a neutral detergent and arrange for the carpet to be shampooed with an industrial carpet cleaner as soon as possible.

Large spills (≥ 10cm diameter)

- Cover area of the spill with an absorbent clumping agent and allow to absorb for a few seconds.
- Use disposable scraper and pan to scoop up absorbent material and any unabsorbed blood or body substances.
- Place all contaminated items into impervious container or plastic bag for disposal. Discard contaminated materials.
- Mop the area with detergent solution.
- Wipe the area with sodium hypochlorite and allow to dry.
- Perform hand hygiene.

9. Disposal of sharps

(AS 3825:2020)

- Use the Hierarchy of Controls methods as well-recognised approach to prevent sharp injuries.
- Handle sharp devices in a way that prevents injury to the user and to others who may encounter the device during or after a procedure.
- Use passive (automatic) safety-devices in preference to active (manual) safety-engineered devices.
- Use appropriately designed single-handed devices to unload needles and scalpels.
- Needles should not be re-sheathed unless an approved re-capping device is used.
- For dental syringes, where re-sheathing is required, the needle must be properly re-capped, the sheath must not be held in the fingers and either a single-handed technique or forceps or a suitable protective guard designed for the purpose must be used.
- The needle must not be bent after it is contaminated with blood or other body substances.
- Disposable sharps should be discarded in a clearly labelled puncture-resistant container (AS 23907:2023).
- These containers must be waterproof and leak-proof with an opening wide enough to allow sharps to be dropped into the container by a single hand operation.
- They should be clearly labelled with black lettering on a yellow background with the ‘BIO-HAZARD’ symbol printed on the container.
- They should never be overfilled and should be securely sealed with a lid before disposal.
- They should be located as close as practical to the area of use and out of the reach of children.
- Reusable sharps must, immediately after being used, be placed in a puncture-resistant container especially kept for that purpose and labelled as such (AS 23907:2023).

10. Management of clinical waste

(See NHMRC National Guidelines for Waste Management in the Healthcare Industry, 1999; AS 3816:2018)

Protocols for waste disposal should follow national guidelines or codes of practice and must comply with State or Territory regulations. The following applies to waste management in NSW following Environment Protection Authority Guidelines. It is assumed that other states have similar guidelines.

Clinical waste is waste that has the potential to cause sharps injury, infection or offence. It includes the following: sharps, human tissue (excluding hair, teeth and nails), bulk body fluids and blood, visibly bloodstained body fluids and visibly bloodstained disposable material and equipment.

- Clinical waste should be segregated (i.e. placed in appropriate leak-proof bags or containers) and contained at the source of generation.
- Clinical waste bags must have sufficient strength to contain the waste safely, should not be over filled, should be tied or sealed then stored in a secure place for collection, should not be transported in chutes.
- Clinical waste bags and containers should be yellow with the 'BIO-HAZARD' symbol printed on the bag.
- After daily collection the bags should be kept for commercial disposal in a locked skip bin which is used exclusively for this purpose.
- Contaminated drapes should be kept separate and collected in designated bags for appropriate cleaning. Australian Standard AS/NZS 4146:2000 provides guidelines for correct laundry practice.
- Sutures are contaminated waste and the cut ends of threads should be treated as potentially infectious material and disposed of in a contaminated waste bag. The same applies at the time of removal of sutures.
- Standard precautions should apply when handling infectious waste.

11. Blood Borne Viruses and risk to patients

(See Medical Board AHPRA Guidelines: Registered health practitioners and students in relation to blood borne viruses, July 2020 that include and relate to compliance with the Communicable Diseases Network Australia's (CDNA): Australian National Guidelines for the Management of Healthcare Workers Living with Blood Borne Viruses and Healthcare Workers who Perform Exposure Prone Procedures.

A Health Care Worker (HCW) has a professional and ethical responsibility to take reasonable steps to know their blood borne virus (BBV) status. There is a very low, but real, risk of transmission from a HCW with a BBV to a patient, despite best practice infection control practices in Australian healthcare settings.

Exposure-prone and non-exposure prone procedures

Exposure prone procedures (EPPs) are procedures where there is a risk of injury to the HCW resulting in exposure of the patient's open tissues to the blood of the HCW. These procedures include those where the HCW's hands (whether gloved or not) may be in contact with sharp instruments, needle tips or sharp tissues (spicules of bone or teeth) inside a patient's open body cavity, wound or confined anatomical space where the hands or fingertips may not be completely visible at all times.

Comparatively, non-exposure prone procedures (non-EPPs) are procedures where the hands and fingers of the HCW are visible and outside of the body at all times and procedures or internal examinations that do not involve possible injury to the HCW's hands by sharp instruments and/or tissues, provided routine infection prevention and control procedures are adhered to at all times.

To this end, skin surgeries are considered non-exposure prone procedures. Extensive cosmetic procedures that involve bony reconstruction or free tissue transfer involving bone or in the thorax is considered exposure prone. Care and attention to avoid injury is still required.

Key recommendations

- All HCWs should be encouraged to undertake regular testing for BBVs.
- All HCWs have the right to access confidential testing, counselling, support and treatment.
- All HCWs should be vaccinated against HBV.

For those HCWs who do perform EPPs

- HCWs who undertake EPPs must take reasonable steps to know their BBV status and should be tested for BBVs at least once every three years.
- All registered HCWs who undertake EPPs must declare when applying for renewal of registration that they are complying with, and have been tested in accordance with the CDNA Guidelines.
- All HCWs who undertake EPPs should understand their obligation to report their BBVs status, if required, under jurisdictional legislation and/or policies.
- HCWs should understand their obligation to report all sharps injuries, whether or not there was a risk of patient exposure.

For HCW living with a BBV

- All HCWs with a BBV must have appropriate and ongoing medical care.
- All HCWs living with one or more BBVs must be tested for the respective BBV viral load levels, as well as for other BBVs, in accordance with the CDNA Guidelines.

- HCWs who are HBV deoxyribonucleic acid (DNA) positive are permitted to perform EPPs if they have a viral load below 200 International Units (IU)/mL and meet the criteria set out in detail within the CDNA Guidelines.
- HCWs must not perform EPPs while they are HCV ribonucleic acid (RNA) positive, but may be permitted to return to EPPs after successful treatment or following spontaneous clearance of HCV RNA.
- HCWs who are HIV positive are permitted to perform EPPs if they have a viral load below 200 copies/mL and meet the criteria set out in detail within the CDNA Guidelines.

12. Needlestick injury and blood/body substance exposure management

Immediate advice may be obtained from the:

NATIONAL NEEDLESTICK INJURY AND OTHER EXPOSURES HOTLINE 1800 804 823

Health care establishments should have protocols in place for dealing with needlestick and other blood/body fluid incidents involving patients or health care workers. These are must be adapted to incorporate local state health organisations policy. These should include:

- The appropriate skilled officer – a medical practitioner or nurse with expertise for assessment. External referral may be required to local hospital or area Infectious Disease Department
- The laboratory which will process emergency specimens
- The pharmacy which stocks prophylactic medication.

Reducing the risk of transmission

- Use eye protection and gloves.
- Utilise safety measures that optimise work health and safety including disposing of sharps safely.
- Immunise against Hepatitis B.

Post exposure management

- Healthcare workers should seek care immediately if they experience a sharps injury.
- If skin is penetrated, wash the affected area immediately with soap and water. Alcohol-based hand rub can be used to clean the area if soap and water are not available. Mucous membranes should be rinsed with water or saline. If clothing is contaminated remove clothing and shower if necessary.
- Do not squeeze the affected area.
- Report the incident immediately to the supervisor.
- A risk assessment of the exposure should be taken—including the type of exposure, type and amount of fluid involved, infectious status of the source, and susceptibility of the exposed healthcare worker.
- If the source of exposure can be identified, they should be tested for HBV surface antigen, HCV antibody and HIV antibody.
- The healthcare worker should have baseline testing, as required.
- Counselling and follow-up should be provided to the healthcare worker.
- If the source patient is known to be HBsAg, HIV or HCV antibody positive, contact the Infectious Diseases Department at the nearest public hospital and discuss with the on-call registrar or consultant for advice.
- Follow-up care, including post-exposure prophylaxis, is most effective if implemented soon after the incident.

- The injured worker should have baseline serological testing and repeat serology in three months
- Pregnancy testing should be offered to exposed women of child bearing age if pregnancy status is unknown.
- An accident / incident report form should be completed, including the date and time of the exposure, how it happened, and name of the source individual (if known).
- Post-exposure counselling and follow up should be undertaken by an infectious diseases physician. Only a small proportion of accidental exposures result in infection. Taking immediate action lowers the risk even further.

Post-exposure prophylaxis

Post-exposure prophylaxis (PEP) is the medical response given to prevent the transmission of blood borne pathogens following a potential exposure to HIV. The decision to prescribe PEP should be made on a case-by-case basis and include consideration of the need for first aid, counselling including the assessment of risk of exposure to the infection, testing, and depending on the outcome of the exposure assessment, the prescription of antiretroviral drugs, with appropriate support and follow-up.

When PEP is recommended, it should be prescribed and started as close to the time of exposure as possible, and within 72 hours. Eligibility for PEP and the type of regime prescribed is individualised and determined by a number of factors, including the transmission risk associated with the exposure.

A 28-day course of PEP is recommended.

Specific guidance on PEP can be found in the Australian Society of HIV Medicine Guidelines (second edition)

Hepatitis B

- Test source for HBsAg as soon as possible.
- If **positive**, no further action if injured person is known to be immune (anti HBsAg ≥ 10 mIU/mL) or shown to be immune within 48 hours.
- If injured person is not immune, or is of unknown immune status, give HBVIg within 48-72 hours of exposure. HBV vaccine should also be given to workers who have not been immunised. If the exposed person is a known non-responder to HBV vaccination then HBVIg should be given within 48-72 hours.
- HBV vaccine should be given within 7 days of exposure, repeated at 1 month and at 6 months.
- If **negative**, no further action is required.

HIV

- Observational studies have shown decreased seroconversion rates in those who receive prophylaxis although no random clinical trials have been performed.
- Test source blood for HIV antibodies as soon as possible.
- Test recipient blood. Retest at 1, 3 and 6 months if source is positive or has recently engaged in at-risk behaviour.

- If source is **positive**, consult with an infectious diseases/HIV physician as soon as possible for an assessment of the risks and benefits of antiretroviral therapy.
- If a decision is made to commence prophylaxis, therapy must begin as soon as possible after the injury (preferably within 2 hours). It may still be indicated if a longer interval has elapsed and the risk of transmission is thought to be high. Therapy continues for 4 months.
- The appropriate prophylactic regimen depends on the source patient's stage of infection and current and previous antiretroviral therapy.

N.B. The safety of most of the new antiretroviral agents in pregnancy is not known.

Hepatitis C

- If source **positive**, perform HCV PCR as transmission is less likely if PCR is negative. Repeat at 1, 3 and 6 months.
- Test recipient and retest at 1, 3 and 6 months.
- Consult an infectious diseases physician.
- Other than thorough washing at the time of injury, there is no known treatment that can alter the likelihood of transmission.

At-Risk factors / behaviours

Risk factors for BBVs include

- Prison incarceration – current or past
- Blood transfusion prior to 1990
- Tattoos or piercings not performed professionally
- Cultural practices
- Current or past injecting drug use
- Household member with HBV
- Sexual partner with HBV, HCV or HIV
- Infants of mothers infected with HBV, HCV or HIV
- Persons born in regions with a ≥2% prevalence of chronic HBV infection
- Candidates for immunosuppressive therapy

Appendix 1 – Cosmetic procedures

Lasers and dermabrasion

- Energy devices, such as IPL, ablative and non-ablative lasers have disposable and non-disposable components. All devices and surfaces (i.e., bed) should be cleaned after use and patient contact recommended. Single use attachments should be disposed of, with a sharps disposable bin present.
- The generation of a potentially infected aerosol plume during laser therapy, such as CO2 and erbium lasers requires purpose-designed plume-suction which must be safely vented. The plume extractor must be as close as possible to the area of skin being worked on.
- The generation of airborne particulate matter and blood spray during dermabrasion requires the use of shielding to cover the entire face of all staff in the work area. Caps to protect the hair from such debris must be worn by all personnel. As much as possible, the area in the vicinity of the procedure should be covered with either disposable or sterilisable drapes.

Botulinum toxin multi-use vials

The risk of infectious disease transmission may be mitigated by:

- Restricting the vial to single patient use wherever possible
- Establishing a separate secure area designated for the placement of these medications away from any work area
- Compliance with manufacturer's recommendations (adhere to instructions for refrigeration, storage, use within a specified time, expiry date). It should be kept in a refrigerator with a digital temperature control device.
- Using a sterile needle and syringe to draw up the required dose from the vial or ampoule on every occasion
- Using a sterile needle to draw up all the contents of the container into individual syringes before administering to patients
- Having only the current patient's medication in the immediate working environment
- Discarding any open ampoule(s) at the end of each procedure
- Discarding product if sterility or product integrity is compromised or questionable.

Appendix 2 – Mohs' surgery

Standard infection control guidelines must be observed during the entire procedure of Mohs' micrographic surgery including the transfer and processing of tissue taken after a cut. Adequate protection must be observed during the transfer to laboratory and cutting up and marking of fresh tissue. The wearing of gloves is mandatory during dressing changes between cuts. All contaminated waste must be disposed of along state-based Contaminated Waste Guidelines.

The following recommendations are designed to allow safe handling of tissue specimens which are all deemed to be potentially infectious.

Specimen handling

Safety measures are directed toward prevention of cuts, and protection of the eyes, nose and mouth.

Protective clothing

- Gloves
- Eyeglasses or goggles
- Mask
- SCRUBS

Technique

- Confine possible bench top contamination to small area.
- Drop mounting medium onto specimen holder plate, and at the appropriate time, add tissue. DO NOT allow dispenser to touch tissue.
- DO NOT create any aerosol in the cryostat chamber.
- Briefly immerse entire frozen section slide in 10% formalin.
- Change gloves, withdraw slide from formalin with clean forceps, and proceed with staining procedure.
- When technical procedure is completed, place residual tissue in 10% formalin to fix thoroughly before it is handled again.

Decontamination of cryostat

HIV and other communicable pathogens are known to be inactivated by 95% ethanol and 10% formalin. Therefore, 95% ethanol is favoured for the inside of the cryostat. The HIV virus **does** survive both freezing and drying so decontamination is essential.

- Turn off refrigeration.
- With protective clothing in place, remove the knife from microtome and place it in a pan of 10% Novatain in 95% alcohol for at least fifteen minutes. If a disposable blade has been used, discard in an appropriate sharps container.
- If complete defrosting is desired, pour a small amount of 10% Novatain in 95% alcohol on the floor of the cryostat chamber where water will collect.

- Wipe all exposed surfaces inside and outside the cryostat chamber with a towel or sponge that has been soaked in 10% Novatain in 95% alcohol.
- Replace the knife or use a clean microtome knife from the freezer.
- Turn on refrigeration for return to desired temperature.
- Use Medol disinfectant when pathogen is atypical mycobacterium

Clean-up of work area

Personnel not directly involved with preparing frozen sections and decontaminating the cryostat must also be protected from exposure to HIV and other communicable disease.

- Do not touch other objects in room while wearing contaminated gloves.
- Place instruments in 10% Novatain in 95% alcohol for fifteen minutes, wash well in tap water.
- Wipe bench top with 10% Novatain in 95% alcohol.
- Place all contaminated towels, protective clothing, etc. in biohazard bags. Use separate containers for disposable and re-usable items. Bags MUST NOT contain sharp objects.
- Contaminated garments should never be worn outside the frozen section room.
- Wash hands before leaving the area.
- Remove residual tissue shavings from Cryostat chamber by wiping surfaces with 10% Novatain in 95% alcohol.

Appendix 3 – Pandemic

Pandemic infection can have an impact on all aspects of your practice. Rapid but precise implementation of infection prevention and control measures is important. Many lessons can be learnt from such pandemics as COVID-19, MERS and SARS but unique features of each pandemic-causing pathogen mean a specific approach must be taken for each pandemic. As knowledge about the pandemic-causing pathogen is often evolving, seeking up-to-date, relevant and reliable information and regulations will best guide clinical, legal and professional requirements and responsibilities.

Relevant and important information can be sought from:

- The Australasian College of Dermatologists website
- Department of Health – Australia Federal Government
- State Government Health Organizations
- World Health Organisation (WHO)
- Other medical colleges including RACGP, RACP, AAD
- AMA
- Medical defence organizations
- Medical literature: including but not limited to Lancet, NEJM, JAAD, BJD