



Infection Prevention and Control during Construction and Renovation Activities Policy

1. Purpose

Building construction, renovation and maintenance activities undertaken within a healthcare facility impose risks, as they can disturb and disseminate reservoirs of dust, debris and organisms into the environment. The guidance provided within this policy is intended to minimise these health risks and ensure a formal approach to risk management of all building construction, renovation and relevant maintenance activities within Western Australian Country Health Service (WACHS).

Construction, renovation and relevant maintenance activities require planning and coordination to minimise the risk of patients, residents, clients, healthcare workers and visitors acquiring a healthcare associated infection (HAI). Planning should include involvement of a multidisciplinary team, inclusive of infrastructure staff (facilities maintenance and engineering), support service staff, infection prevention and control (IPC) staff, occupational safety and health (OSH) staff, external project staff and the manager of the relevant department/s.

In all WACHS health services, a range of systems and precautions are to be put in place to support construction, renovation and maintenance activities. The broad tasks include development of organisational governance arrangements and policies and the identification of the population at risk and the preventative measures needed to control risk.

The risk identification strategy should address as a minimum:

- the extent of construction work
- the identification of the patient population at risk
- the location of the patient population in relation to the site and construction
- traffic and supply routes
- ventilation system types and potential impact
- determination of air monitoring requirements, methodology and frequency
- requirements for air quality samples to be taken to establish a baseline
- the identification of possible contaminants and their locations.

During construction, renovation and relevant maintenance activities, IPC measures can include:

- a site induction for building workers / contractors with emphasis on the requirements for IPC being a major component that is documented and signed off by each participating worker
- monitoring of worker compliance with IPC related processes with results communicated to the workers routinely via the builder / construction manager
- installation of barriers to contain the impact of construction activities including dust migration
- inspections to assess breaches of any barriers / hoarding erected during the construction period by nominated representatives
- monitoring and reporting processes for inspections / audits undertaken.

Health Service construction, renovation and maintenance activities have been linked with outbreaks caused by common environmental organisms, including but not limited to Aspergillus, Legionella and Listeria, and implementation of appropriate IPC related strategies can reduce the risk of healthcare associated transmission of these organisms, and the potential for outbreaks to occur.

2. Policy

This policy applies to building construction, renovation and relevant maintenance activities / project/s occurring within a WACHS health service. A formal approach to IPC risk management should be undertaken when planning or designing a new facility, during construction activities or when undertaking renovation and relevant maintenance activities within WACHS health services, with reference to the guidance provided in the:

- [Australasian Health Facility Guidelines \(AusHFG\) Part D: Infection Prevention and Control](#)
- [Building Guidelines - Western Australian Health Facility Guidelines for Engineering Services](#)
- Relevant [Australian Standards](#).

Additional risk controls may be recommended by the IPC department in accordance with evidence based best practice standards. All staff involved in construction, renovation and maintenance activities must comply with relevant IPC policies and guidelines.

Facilities and engineering staff must consult with IPC staff to incorporate appropriate consideration of design features that minimise the risk of transmission of communicable diseases, including:

- surface finishes that are easy to clean, disinfect and maintain i.e.:
 - floor coverings that facilitate easy cleaning and disinfection when required / ability to withstand hospital grade disinfectants. NB: As per the AusHFG Part D, clinical areas where patient care and treatments are undertaken should not be carpeted
 - fixtures and furnishings that facilitate easy cleaning and disinfection when required
 - avoiding soft fabric furnishings for clinical and patient care areas, shared patient areas and treatment areas
- heating, ventilation, and air conditioning (HVAC) systems that meet relevant Australian standards and guidelines.
- water management systems that meet relevant Australian standards and guidelines
- ability to isolate patients with a suspected or confirmed communicable disease or those who are immunocompromised
- adequate storage facilities in all relevant areas of the health service to facilitate appropriate storage of all equipment and consumables
- adequate storage facilities to facilitate appropriate storage of all sterile stock – commercial and reprocessed reusable medical devices (RMDs) where relevant
- separation of clean and dirty workflows where relevant
- adequate systems and procedures to support appropriate waste management, linen handling practices and environmental cleaning
- access to appropriate hand hygiene facilities
- access to personal protective equipment (PPE).

2.1 IPC risk assessment

All projects are to be independently risk assessed and relevant control measures identified that reduce communicable disease transmission risks to patients, residents, clients, healthcare workers and visitors.

Refer to the [WACHS Infection Prevention and Control Risk Assessment for Construction and Renovation related activities](#) for Tables 1 – 4 referenced below.

Mitigation strategies must be planned and approved prior to the commencement of any works. The risk assessment should be documented and recorded with relevant approval and sign-off using the following steps:

- identify the type of construction activity (refer to Table 1)
- determine the Infection Control Risk Group (refer to Table 2)
- identify the Construction Classification Matrix (refer to Table 3)
- identify the Infection Prevention and Control Construction Guidelines required for this project (refer to Table 4).

2.2 Clinical care and individual patient controls

Following the completion of the risk assessment referred to in [section 2.1](#), the following controls are to be implemented as relevant:

- identify at risk populations and relocate high risk patients to unaffected areas – i.e., determine clinical health risks and degree of immunosuppression status (e.g., chemotherapy, dialysis, neutropenia).
- identify any concerns with patients, residents, clients located near the construction zone
- treating clinician assessment of patients, residents, clients for any preventative measures to be considered / implemented - commencement of prophylactic (antifungal) treatments / consultation with infectious diseases specialists
- utilisation of appropriate PPE as necessary.

2.3 Environmental controls

Following the completion of the risk assessment referred to in [section 2.1](#), the following controls are to be implemented as relevant:

- appropriate physical barriers e.g., floor to ceiling hoarding where required and timely repair of any breaches in hoarding barriers
- appropriate containment strategies for transportation of debris e.g., covering waste with plastic sheeting before removing it from the construction zone
- appropriate dust containment strategies e.g., utilisation of dust mats at the exit and entrance to an internal construction zone
- identification of possible contaminants and their locations - ceiling dust, service shafts (especially in damp conditions), bird droppings, presence of environmental organisms
- regular cleaning of affected areas
- consideration for occluding air ducts and other openings if applicable, such as air conditioning outlets and extraction fans, in consultation with facilities maintenance
- regular observation and monitoring of construction work noting breaches in the barrier precautions, and implementing additional controls as required
- air monitoring requirements and/or air sampling if applicable.

Ensure line managers are notified of any complications related to the construction work as soon as possible.

2.4 Microbiological air sampling

There is no national or international consensus on the methods, frequency, types of sampling or acceptable levels of microbial contamination in a functioning Operating Room (OR). However, there is evidence to support microbiological air sampling of ORs as part of the commissioning process of a new facility or following major refurbishment, as an adjunct to other heating, ventilation and air conditioning (HVAC) quality assurance controls.

The purpose of microbiological air sampling is to gauge the efficacy of the HVAC systems, including high-efficiency particulate air (HEPA) filters following installation or after major structural refurbishment. The OR should not be utilised until results of the air sampling have been confirmed. HCFs need to ensure they have adequate turnaround time and plan accordingly as air sampling results can take between 3-7 days to be finalised.

Refer to WA Health Guideline: [Microbiological Air Sampling of Operating Rooms in Western Australian Healthcare Facilities](#).

2.5 Risk mitigation strategies

All construction, renovation and relevant maintenance project teams must include an IPC representative to assist with developing risk mitigation strategies to ensure IPC measures are in place to prevent the release of airborne contaminants resulting from construction, demolition, renovation or maintenance activities including the following as relevant:

- cleaning pre, during and post construction incorporating increased cleaning frequency in adjacent area/s
- dust-proof barriers between patient care areas and any building work
- airtight seals (sealing and taping all joint edges including top and bottom and sealing temporary doors / hoarding / air locks connecting the construction zone to the adjacent area / occlusion where relevant of ventilation ducts within the construction / building work area)
- consideration to be given to sealing service ducts in adjacent areas
- additional dust containment measures as necessary (use of water sprays)
- review of air exhausted to outside the building from the construction site to ensure this is undertaken in a safe manner
- ensuring all waste material is removed with minimal creation of dust, e.g., bagging of waste, covering of skips / waste bins
- dust sheets/ walk on, and off dust mats should be single use / replaced regularly
- restriction to staff, patients, residents, clients, and visitors entering construction areas
- installing more elaborate barriers as indicated for long-term projects
- vacuuming of areas above false ceilings
- implementing pre-barrier and post barrier cleaning
- implementation of daily monitoring and auditing.

A [project handover checklist](#) must be completed by IPC team member or delegate prior to the final clinical clean and occupation of the area.

Newly constructed / refurbished areas should be cleaned thoroughly before patients can enter. Where possible, where services are not provided on a 24-hour, 7-day basis, such as outpatient clinics and day therapy services, work should be conducted after patient care hours.

3. Roles and Responsibilities

The Operations Manager for the health service has authority to approve construction, renovation and maintenance activities and oversee the following actions, roles and responsibilities.

3.1 Infrastructure Managers

Infrastructure Managers are to:

- provide detailed planning and information on impending building works to IPC and department managers as relevant
- liaise with and undertake risk assessment/s with IPC representative/s
- inform department manager/s and support services managers of impending building works
- ensure employees and contractors are familiar with and adhere to IPC requirements
- ensure employees and contractors have received relevant written information and orientation to department/s as applicable.

3.2 IPC staff

IPC staff are to:

- undertake a risk assessment in conjunction with facilities maintenance and engineering staff
- liaise with support services staff to ensure correct environmental cleaning and / or disinfection procedure/s are implemented
- determine frequency of cleaning until building works complete
- establish or delegate daily auditing of building works if necessary
- establish or delegate daily auditing requirements of building works as deemed necessary
- determine if microbiological air testing is required and liaise with infrastructure to facilitate.

3.3 Department Manager/s

Department Manager/s are to:

- review and/or undertake risk assessment/s with IPC staff, and facilities maintenance and engineering staff
- identify high-risk patients and arrange relocation of these patients to unaffected areas as necessary, prior to commencement of construction, renovation, or maintenance activities
- liaise daily with IPC and report any breaches or concerns.

3.4 Support Services Management

Support Services Management are to:

- identify areas that need to be cleaned / damp dusted / mopped and clean areas as scheduled
- thoroughly clean new and renovated areas after completion of construction, renovation and maintenance activities when contractors have deemed this safe to do so
- coordinate inspection / environmental audit of final clean in conjunction with IPC prior to opening / re-opening the area
- patients are not to be admitted or returned to the area until final environmental audit results meet acceptable quality standards according to that area's risk category and all additional tasks have been appropriately completed i.e., microbiological air sampling.

3.5 All hospital employees

All hospital employees are to:

- ensure a safe and sanitary environment is maintained during construction, renovation and maintenance activities according to WACHS [Occupational Safety and Health Policy](#) and the WACHS [Environmental Cleaning Policy](#)
- report any breaches in IPC measures and / or incidents related to construction, renovation and maintenance activities to appropriate department manager / site manager as applicable to ensure appropriate measures are put in place to prevent future incidents.

All staff are required to work within policies and guidelines to make sure that WACHS is a safe, equitable and positive place to be.

4. Monitoring and Evaluation

4.1 Monitoring

Monitoring requirements incorporate:

- Audits of adherence to the risk mitigation strategies outlined in section 2.5 undertaken utilising the [daily monitoring and auditing tools](#) for construction and renovation related activities.
- Outcome indicators for HAIs are to be assessed for any relevant links to construction, renovation and maintenance activities. Reporting of identified concerns is to be managed via regional reporting processes
- Compliance against this policy is to be assessed with routine incident reporting processes, IPC surveillance and OSH reporting.
- Infrastructure and support service teams as relevant are to maintain copies of the IPC risk assessment, daily checklist and related auditing.

All WACHS corporate records must be stored in the approved Electronic Documents and Records Management System.

4.2 Evaluation

Evaluation is to be measured by incident reports and IPC surveillance reporting at Regional IPC committee / Standard 3 committee and OHS committee as appropriate.

5. Compliance

This policy is a mandatory requirement to meet all components of the National Safety and Quality Health Service (NSQHS) Standards second edition - 2021: Standard 3 - Preventing and Controlling Infections Standard.

Failure to comply with this policy may constitute a breach of the WA Health Code of Conduct (Code). The Code is part of the [Integrity Policy Framework](#) issued pursuant to Section 26 of the [Health Services Act 2016](#) and is binding on all WACHS staff which for this purpose includes trainees, students, volunteers, researchers, contractors for service (including all visiting health professionals and agency staff) and persons delivering training or education within WACHS.

WACHS staff are reminded that compliance with all policies and procedures is mandatory.

6. References

- Australasian Health Infrastructure Alliance (AHIA) [Internet]. North Sydney, NSW; AusHFG [Australasian Health Facility Guidelines Part D: Infection Prevention and Control](#). 2016 [Accessed 16 June 2023]
- Australian Government [Internet] Canberra, ACT. National Health and Medical Research Council (NHMRC) [NHMRC Australian Guidelines for the Prevention and Control of Infection in Healthcare \(2019\)](#) [Accessed 16 June 2023]
- Government of Western Australia, Department of Health [Internet] Perth, Western Australia. Licensing and Accreditation Regulatory Unit. [Building Guidelines Western Australia Health Facility Guidelines for Engineering Services](#). 2018 [Accessed 16 June 2023]

7. Definitions

Term	Definition
Construction or renovation	Any new build, demolition, renovation, refurbishment, installation, redecoration or maintenance work that involves disturbance to any fabric of the building, including ceiling tiles.
HEPA Filter	A High Efficiency Particulate Air (HEPA) filter is a disposable, extended media, dry type filter in a rigid frame, having a minimum filtration efficiency of 99.97% and designed to remove particles greater than 0.3 microns.
Immunosuppression	Reduced immune response of an individual resulting in higher susceptibility to disease. Examples include but not limited to persons undergoing chemotherapy, transplant, renal dialysis patients, neutropenia and HIV/AIDS patients.
Maintenance	Any work required for a facility to reliably, safely and efficiently support its intended function throughout its used life. Includes fixing and adjusting fittings and does not result in high dust generation.

Minor Refurbishment	Type A and B construction activity types as defined by the Australasian Health Care Facility Guidelines Part D.0005 – Construction and Renovation .
Major Refurbishment	Type C and D construction activity types as defined by the Australasian Health Care Facility Guidelines Part D.0005 – Construction and Renovation
Operating Room	The room in which a surgical procedure is performed, with or without administration of an anaesthetic and there is use of microbiologically controlled air supply.

8. Document Summary

Coverage	WACHS wide
Audience	All Western Australian Country Health Service (WACHS) health services, which include WACHS hospitals, smaller health centres, Nursing posts, Aboriginal Health, Population Health, Community Health, Mental Health and Aged Care services.
Records Management	Non-Clinical: Corporate Recordkeeping Compliance Policy Clinical: Health Record Management Policy
Related Legislation	<ul style="list-style-type: none"> • Occupational Safety and Health Act 1984 • Occupational Safety and health Regulations 1996 • Building Act 2011
Related Mandatory Policies / Frameworks	<ul style="list-style-type: none"> • Infrastructure (Asset Management) Framework • Public Health Framework
Related WACHS Policy Documents	<ul style="list-style-type: none"> • Clinical Product Evaluation Policy • Employee Development Policy • Environmental Cleaning Policy • Hand Hygiene Policy • Ice Machines Cleaning and Maintenance Procedure • Infection Prevention and Control Policy • IPC - Patient management and healthcare worker exclusion periods Policy • Learning and Development Policy • Legionella Management Guideline • Legionella Management Procedure • Linen Management Procedure • Managing Risks of Hazardous Chemicals and Dangerous Goods Procedure • New Staff Induction policy • Occupational Safety and Health Policy • Personal Protective Equipment (PPE) Procedure • Storage of Sterile and Non-Sterile Supply within Clinical Areas Guideline • Waste Management Policy
Other Related Documents	<ul style="list-style-type: none"> • Australian Guidelines for the Prevention and Control of Infection in Healthcare • Australasian Healthcare Facility Guidelines (Part D) • Australian Standard AS 4260-1997. High efficiency particulate air (HEPA) filters- classification, construction and performance. Standards Australia • Building Guidelines Western Australia Health Facility Guidelines for Engineering Services
Related Forms	<ul style="list-style-type: none"> • Safety Risk Report Form (SRRF)
Related Training Packages	<ul style="list-style-type: none"> • Contractor Induction Package • Basics of IPC e-learning

Aboriginal Health Impact Statement Declaration (ISD)	ISD Record ID: 2188
National Safety and Quality Health Service (NSQHS) Standards	3.01 – 3.19
Aged Care Quality Standards	3(2), 3(3),5(1), 5(2), 5(3),
National Standards for Mental Health Services	2.1, 2.2, 2.6, 2.7, 2.9, 2.12, 2.13.

9. Document Control

Version	Published date	Current from	Summary of changes
1.00	3 July 2023	3 July 2023	New policy

10. Approval

Policy Owner	Executive Director Nursing and Midwifery
Co-approver	Executive Director Infrastructure and Environment Executive Director Clinical Excellence
Contact	Clinical Nurse Consultant, Infection Prevention and Control
Business Unit	Nursing and Midwifery
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