

Capital Project Management: Infection Control & Prevention in Hospital Design and Construction



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No Disclosures



Acknowledgement of Country

We acknowledge that this land we meet, work, live and play on is the traditional lands of the Kurna people, and we respect their spiritual relationship with this country.

We pay our respects to their leaders, past, present and emerging and acknowledge that their language, cultural and traditional beliefs held for over 60,000 years are still as important and relevant to the living Kurna and all Aboriginal people today.

Artwork

Wardli Purrutinhi, *"Place to live or to be alive"*

Designed by accomplished Aboriginal South Australian artist Allan Sumner, a descendant of the Ngarrindjeri, Kurna and Yankunytjatjara people.

Overview

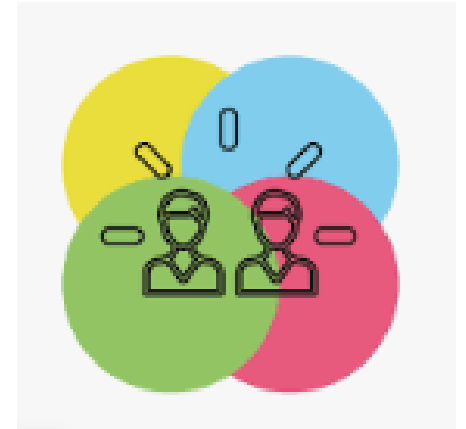
- Background
- Engagement
- Planning
- Design
- Specifications and Procurement
- Construction
- Defects & Inspections

Background

- Central Adelaide Local Health Network Projects
 - Royal Adelaide Hospital
 - \$2.1B New Hospital (2017)
 - Repat Health Precinct
 - \$59M Brain and Spinal Injury Rehab (2022)
 - The Queen Elizabeth Hospital
 - \$314M Redevelopment (2024)
 - Mental Health Rehabilitation Project
 - \$44M New facility (2025)



Engagement



- Meet your IC&P team
- Agree your engagement partnership through the various stages
- Understand local policies and processes
- Plan various stages and involvement

Planning

- Stakeholder Engagement
- Australasian Health Facility Guidelines
- Relevant standards
- Risk assessment, issues or non-compliance
- New evidence or practice
- Emerging technology

Australasian Health Facility Guidelines

Part D - Infection Prevention and Control

Uncontrolled when printed

Update November 2020:

The following key references within AusHFG Part D have since been updated. These revised resources should be referred to when considering infection prevention and control as part of the planning and design of healthcare facilities. These references will be amended in the next iteration of AusHFG Part D.

- Previous reference: National Health and Medical Research Council, 2010, Australian Guidelines for the Prevention and Control of Infection in Healthcare. This has now been replaced with: National Health and Medical Research Council, 2019, Australian Guidelines for the Prevention and Control of Infection in Healthcare, Australian Government, Canberra. Link to current document: <https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2019>
- Previous reference: Australian Commission on Safety and Quality in Health Care, 2012, Controlling Healthcare Associated Infections (Factsheet on Standard 3). This has now been replaced with: Australian Commission on Safety and Quality in Health Care, 2017, National Safety and Quality Health Service Standards, 2nd ed. Preventing and Controlling Healthcare-Associated Infection Standard, ACSQHC, Sydney. Link to current document: <https://www.safetyandquality.gov.au/sites/default/files/2019-04/National-Safety-and-Quality-Health-Service-Standards-second-edition.pdf>

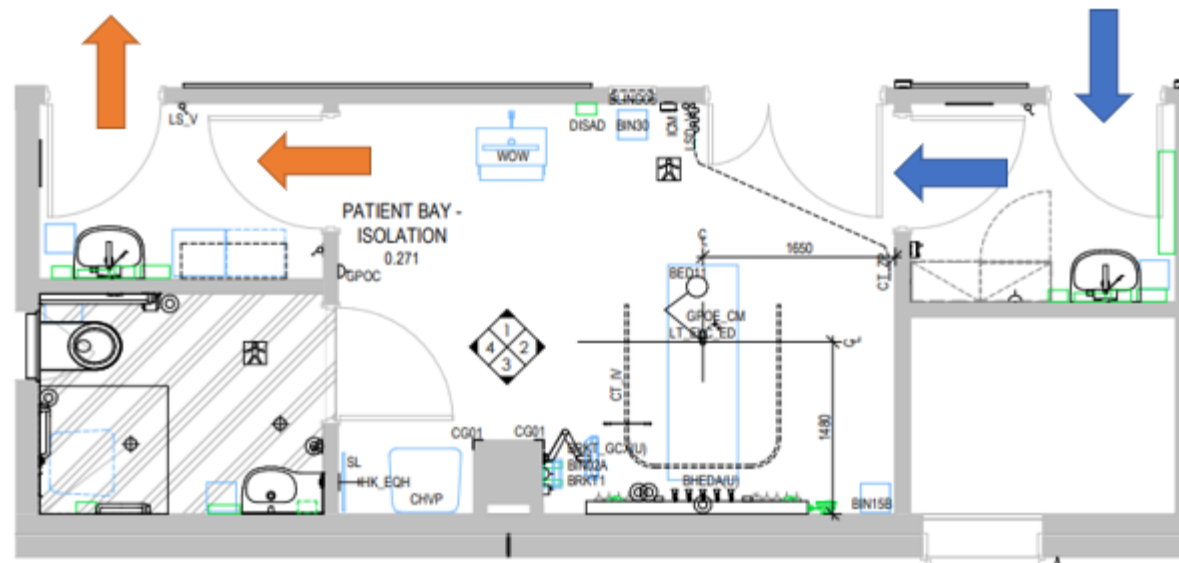
Revision 7.0
01 March 2016

Design



Design

- Adjacencies and flow (patient, staff, waste, equipment)
- Positive pressure/negative pressure isolation
- Single bedrooms, physical barriers, ensuites
- Pods/zones – pandemic resilience in design



Design

- PPE station design and locations
- Dispensers
- Hand basin location – in room v corridor
- Kit of parts design of sinks, toilets, handbasins, dirty utility
- Contact organisms – touch free design, surface area, ledges



Design

- Prototype rooms



Design

- Airborne and waterborne organisms
- Mechanical (HVAC)
 - Room ventilation rates (air change/hour)
 - Outside air rates
 - Airflow direction
 - Filtration requirements for recirculating systems



Design

- Room disinfection technology
 - ultraviolet light
 - vapour fogging disinfectant
- Hydraulic - RO water, drinking water, handbasins/sinks, tapware and aerators, water chlorination, design to eliminate dead legs and psueodmonas.
- Pest management



Specifications and Procurement

- Finishes – anti-microbial, stainless, timber
- Cleaning requirements and compliance
- Reprocessing – CSSD unidirectional flow (decontamination, packing, sterilisation and storage/dispatch); no touch storage systems



THIS



NOT THIS

Specifications and Procurement

- Samples – tech data, physical testing
- PPE and hand hygiene
- Flooring – vinyl, carpet



- Waste systems e.g.
Surgical suction – closed
system to reduce
biohazard exposure



Specifications and Procurement

- Clinical Equipment
- Furniture evaluation
- Fixtures/fittings



Construction

- Risk Assessment
- Location of work and risk level
- Protecting vulnerable or immunosuppressed consumers



Construction

- Temporary hoarding
- Internal
 - Dust barriers
 - Dust mats
 - Seal/protect HVAC systems
 - Debris or asbestos
 - Waste travel paths
 - Air sampling



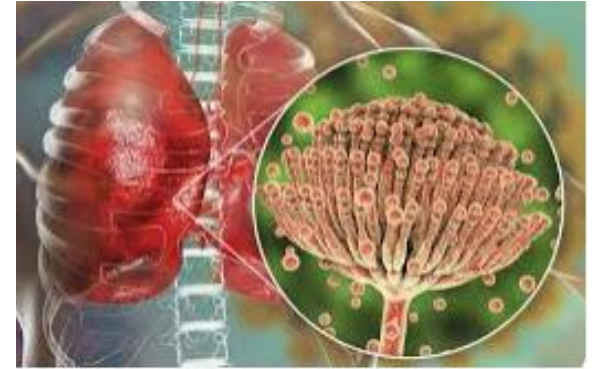
Construction

- External - dirt/dust, air intake



Construction

- Aspergillus and fungal spores
- Water outages and risk of pathogens
- Legionnaires – potable water contamination with water shutdowns
- Commissioning – water testing
- Microbiology air sampling



Defects and Inspections

- Installations



Defects and Inspections

- Finishes



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