

Principles of environmental cleaning: auditing

August 2020

Background

Environmental cleaning is an important strategy for reducing the transmission of pathogenic organisms and preventing healthcare-associated infections in healthcare settings.¹ The role of environmental cleaning is to reduce the number of infectious agents that may be present on surfaces and minimise the risk of transfer of microorganisms from one person/object to another, thereby reducing the risk of infection.²

Environmental cleaning is a key component of standard precautions; the first-line in infection prevention and control in the healthcare environment.³ These work practices are recommended for the treatment and care of all patients. The importance of environmental cleaning and decontamination is enhanced when these processes are used as part of transmission-based precautions and outbreak management.

Environmental cleaning should be considered as a key part of a comprehensive infection prevention program in hospitals, with programs put in place to support good cleaning performance and should include strategies to optimise product use, technique, audit and feedback, education of cleaners and communication¹. The National Safety and Quality Health Service Standards⁴ require health service organisations to have processes in place to maintain a clean and hygienic environment, in line with the current edition of the Australian Guidelines for the Prevention and Control of the Infection in Healthcare, and jurisdictional requirements, that:

- a. Respond to environmental risks, such as local outbreaks and pandemics
- b. Require cleaning and disinfection at recommended cleaning frequencies
- c. Include workforce training in the appropriate use of specialised personal protective equipment.

Environmental cleaning should be considered as a key part of a hospital's comprehensive infection prevention program. Programs should support high performance cleaning and include strategies to optimise product use, cleaning technique, audit and feedback, education of cleaners and communication. To optimise cleaning effectiveness it is vital to monitor cleaning performance and provide objective feedback to cleaning staff. Auditing of environmental cleaning is about checking that environmental cleaning is done at a high standard to prevent the onset of healthcare-associated infections, thereby ensuring patient safety and good patient outcomes. Audits should be reported back to cleaning staff so that any areas of non-compliance, and their role in improving cleaning practice, can be considered and addressed.^{5,6}

This document outlines the principles of auditing of environmental cleaning in acute care settings. These principles have been adapted from current literature and resources produced by NSW Health^{5,6}, the Tasmanian Department of Health and Human Services^{7,8}, and SA Health.²

Adoption of these principles in other healthcare settings should be assessed for suitability at the organisational level.

Facilities should develop and implement an auditing plan/protocol in collaboration with its infection prevention and control service that covers the local application of the seven key principles outlined in this document. Facilities with outsourced cleaning services should include the development and implementation of an auditing plan/protocol as part of contract negotiations.

Key Principles

1. Who should audit

- Individuals who are responsible for auditing should:
 - Be trained in auditing of environmental cleaning
 - Be provided with an orientation of the area that they are auditing
 - Not be from the area that they are auditing
 - Have a thorough knowledge of cleaning standards and the cleaning processes required in the clinical area that they are auditing
- The organisation should assess the need to use auditors that are external to the organisations.

2. When to audit

- Auditing of environmental cleaning in patient care areas should include assessment of both routine cleaning and discharge/terminal cleaning
- Auditing of environmental cleaning in non-patient care areas should be audited by visual inspection at least annually
- A risk-based approach should be taken in regards to all aspects of the audit process.

3. Where to audit

- Audits should be undertaken in patient care areas and general ward areas
- A patient care area is the space dedicated to an individual patient for that patient's stay and may include, but is not limited to: inpatient bed areas including isolation rooms, patient bays, paediatric cots and neonatal incubators and/or cots, emergency department (where assessment or treatment is undertaken), theatres and outpatient clinics
- A general ward area is an area that adjoin patient care areas and are areas where assessment or treatment of patients does not directly occur. These include, but are not limited to, waiting areas, ward corridors, nurses' station, sterile stock rooms, equipment rooms and toilets/showers/bathrooms that are located off a ward corridor.

4. Frequency of audits

- The frequency of auditing for routine cleaning depends on the outcome of risk assessment.^{2,5} Table 1 provides examples of risk categories. In general, higher risk areas require increased frequency of cleaning³ and, in turn, environmental cleaning in these areas should be audited more frequently
- Audit schedules should also include cleaning requirements associated with the following scenarios:
 - cleaning during outbreaks
 - cleaning for new commissioning and
 - special project cleaning
- Auditing schedules should be developed in consultation with environmental cleaning services and the local infection control team.

5. How to audit

- Best practice auditing of environmental cleaning requires a combination of visual inspection and objective methods of cleaning performance, such as fluorescent gel markers and ATP bioluminescence
- Visual inspection is not sensitive enough to assess bioburden and risk of infection.^{9,10} Visual inspection only measures the aspect of cleanliness that is apparent to patients and for identifying maintenance issues (e.g. surface degradation) that require rectification.¹¹

6. What surfaces to audit

- According to the Australian Guidelines for the Prevention and Control of Infection in Healthcare, frequently touched surfaces include, but are not limited to, bedrails, trolleys, commodes, doorknobs, light switches, tap handles and ensuite facilities. Minimally touched surfaces include floors, ceilings, walls and blinds³
- Frequently touched surfaces in patient care areas should be cleaned more frequently due to an increased risk of contamination and should be audited using objective methods
- When using objective methods, a random selection of different sites (surfaces, equipment and locations) in the patient care area should be observed at each audit
- Minimally touched surfaces need to be audited by visual inspection
- As a minimum, audit data for bathrooms and bedrooms should be reported separately. If your organisation wants to compare audit results for an individual surface over time (e.g. the same tap handle in the same room in the same ward), it is important to record what specific sites have been audited at each audit.

7. What to do with audit results

- Results of individual environmental cleaning audits should always be fed back to the cleaning staff in a timely and constructive manner
- Summary results should also be fed back to the unit manager and clinical department staff. A process to require the unit manager to sign off on audit results may be useful in building a local culture of accountability for environmental cleaning
- The results of environmental cleaning audits should be centrally collated. The organisation should designate an individual to regularly undertake a review of all audit results to identify continuing issues
- Environmental cleaning audit results, trends and issues should be regularly reviewed and discussed at the relevant governance/organisational committee(s) (e.g. Infection Prevention and Control Committee, Clinical Governance Committee)
- Emergent issues identified during auditing should be immediately fed back to the cleaning staff and, if necessary, clinical department staff and infection prevention and control. When providing this feedback, auditors should:
 - describe the emergent issue, providing detail regarding location, time of day and how the issue was observed
 - describe the expected cleaning standard

- work with cleaning staff, the clinical department and infection prevention and control to identify
 - ◊ what needs to be done to rectify the issue and who should do it
 - ◊ an appropriate timeframe for rectification, based on the functional risk rating of the area
 - ◊ who will review the issue after the rectification
- Identified risks should be managed according to an agreed risk management plan
- Recurring issues should be escalated to the organisation's clinical governance committee for response and rectification. The committee should develop an action plan to respond to any ongoing issues
- The action plan, as a minimum, should outline:
 - the expected cleaning standard
 - the steps needed to rectify the issue, including the provision of additional education and the need for ongoing monitoring of cleaning performance
 - the individual responsible for each step of rectification
 - the timeframe for each step of rectification.

Table 1. Risk categories for environmental cleaning^{2,6}

Risk category	Examples
Extreme	<i>These examples are inclusive of any adjoining area, for example, bathrooms, corridors, storerooms, meeting rooms, offices, pan rooms and staff lounges</i> Operating theatres Day procedure areas Medical imaging procedural areas Intensive care units Clinical areas with patients in isolation or with patients who are immunosuppressed Emergency departments Level 2 and 3 nurseries Labour and delivery wards
High	General wards Level 1 nurseries Pharmacy clean areas Mortuaries, mortuary fridges and body holding rooms Outpatient clinics and treatment rooms Sterile stock storage (outside of central sterilising services departments and sterile supply areas) Emergency ambulances and other rescue vehicles
Medium	Day activity areas Rehabilitation areas, including hydrotherapy Outpatient clinics, including consulting rooms, ambulatory care Residential accommodation Offices in patient/clinical areas Medical imaging Pathology and other laboratories General pharmacy Kitchenette/pantry/other food preparation or storage areas Main foyer Cleaners room Non-emergency patient transport vehicles All ambulance operational support vehicles

Table 2. Where to audit using objective methods and visual inspection

	Objective methods	Visual inspection
Patient care area	Frequently touched surfaces	Minimally touched surfaces
General ward area	Not required routinely Risk assess if needed for outbreak situations	Minimally touched surfaces

Audit tools and programs

There are a number of existing environmental cleaning audit tools already available in Australia, including:

- [SA Health Environmental Cleaning Internal Audit Tool](#)
- [SA Health Environmental Cleaning External Audit Tool](#)
- [Tasmanian Environmental Cleaning Assessment Program](#)
- [NSW Clinical Excellence Commission Template for Exterior Environmental Cleaning Audit](#)
- [NSW Clinical Excellence Commission Template for Interior Environmental Cleaning Audit](#)

This is not an exhaustive list and there may be other tools that are not available in the public domain. When choosing an audit tool, ensure that the tool suits the needs of your organisation and that auditors are trained in the use of the tool before its implementation.

References

1. Hall. L., Mitchell BG. Cleaning and decontamination of the healthcare environment. In: Walker J, editor. Decontamination in Hospitals and Healthcare. 2nd ed. London: Woodhead Publishing; 2019. p. 227-39
2. SA Health. Cleaning Standard for South Australian Healthcare Facilities. [Online] Adelaide: SA Health; 2014 [cited 14 October, 2014]; Available from: <https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+topics/healthcare+associated+infections/prevention+and+management+of+infections+in+healthcare+settings/environmental+hygiene+in+healthcare#Cleaningstandard>
3. National Health and Medical Research Council, Australian Commission on Safety and Quality in Health Care. Australian Guidelines for the Prevention and Control of Infection in Healthcare. Canberra: National Health and Medical Research Council; 2019
4. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards (second edition). [Online] 2017 [cited 16 October 2019]; Available from: <https://www.safetyandquality.gov.au/publications/national-safety-and-quality-health-service-standards-second-edition/>
5. NSW Health. Cleaning of the Healthcare Environment [Online] Sydney: NSW Health; 2020 [cited 26 August 2020]; Available from: https://www1.health.nsw.gov.au/pds/Pages/doc.aspx?dn=PD2020_022
6. Clinical Excellence Commission. Environmental Cleaning Standard Operating Procedures. [Online] Sydney Clinical Excellence Commission; 2012 [cited 14 October 2019]; Available from: <http://www.cec.health.nsw.gov.au/patient-safety-programs/infection-prevention-and-control/cleaning-and-reprocessing>
7. Tasmanian Infection Prevention and Control Unit. Evaluating environmental cleanliness in hospitals and other healthcare settings. [Online] Hobart: Department of Health and Human Services, Tasmania; 2012 [cited 14 October 2019]; Available from: https://www.dhhs.tas.gov.au/__data/assets/pdf_file/0007/126961/TIPCU_Environmental_Hygiene_Assessment_Report_2012.pdf
8. Tasmanian Infection Prevention and Control Unit. Environmental Assessment Cleaning Protocol. [Online] Hobart: Department of Health and Human Services; 2013 [cited 16 October 2019]; Available from: https://www.dhhs.tas.gov.au/__data/assets/pdf_file/0008/126962/Environmental_Cleaning_Assessment_ProtocolV2_Nov2013.pdf
9. Sherlock O, O'Connell N, Creamer E, Humphreys H. Is it really clean? An evaluation of the efficacy of four methods for determining hospital cleanliness. *Journal of Hospital Infection*. 2009;72(2):140-6
10. Mitchell BG, Wilson F, Dancer SJ, McGregor A. Methods to evaluate environmental cleanliness in healthcare facilities. *Healthcare infection*. 2013 2013/03/01;18(1):23-30
11. Snyder GM, Holyoak AD, Leary KE, Sullivan BF, Davis RB, Wright SB. Effectiveness of visual inspection compared with non-microbiologic methods to determine the thoroughness of post-discharge cleaning. *Antimicrobial Resistance and Infection Control*. 2013;2:26.