

 		Environmental Cleaning Standard Operating Procedure
Title: Module 7: Evaluation of cleaning		
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Active date: October 2024		Review date: October 2029
Applies to: Health workers evaluating and/or auditing health organisations in NSW		Exclusions:
Purpose: This module outlines some currently available methods to evaluate and/or audit the efficacy of cleaning and/or the environmental cleaning program of a health facility.		
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Introduction

[Cleaning of the Healthcare Environment \(PD2023_018\)](#) requires that NSW Health organisations have a cleaning audit system that measures and records cleaning outcomes.

PD2023_018 notes that evaluations and audits of cleaning can be performed through a variety of different methods, including process testing and outcome testing. Cleaning audits of environmental cleanliness can also facilitate education programs and motivate staff to strive for improvements in routine cleaning practices.

The primary approach to reviewing cleanliness after cleaning is by visual assessment.

NSW Health organisations can consider using additional methods of evaluation of cleaning, such as fluorescent gel testing or adenosine triphosphate (ATP) bioluminescence testing.

These additional methods of evaluating cleaning forms may be particularly useful:

- as an additional validation control process
- after an outbreak or cluster of a multidrug-resistant organism (MRO) or infectious disease
- for education and training purposes
- for assessing high touch surfaces in extreme risk areas (even if this method can only assess that the correct cleaning method and process was used to clean items and cannot assess environmental contamination or bioburden).

Microbiological testing can be useful for outbreak and cluster management investigations, if recommended by the outbreak management team.

This module sets out the methods that are currently available to assess the efficacy of cleaning and the extent of environmental contamination in a health facility. The methods to assess environmental cleaning fall into two methods:

- process testing – in which the efficacy of cleaning is assessed and evaluated by visual inspection with the naked eye and using an audit tool to record the results or a fluorescent gel marker
- outcome testing – which assesses the outcome of cleaning by measuring environmental contamination through the use of ATP or microbiological cultures.

The minimum requirement that health facilities including NSW Ambulance and patient transport services currently have for evaluating cleaning is the visual inspection audit tool. Each functional area must meet a predetermined minimum target score.

Each facility should decide whether to include other forms of evaluations of cleaning. This may be warranted as a validation control process or conducted after an outbreak of an MRO or infectious disease.

See also:

- Australian Commission on Safety and Quality in Health Care: [Principles of Environmental Cleaning Auditing](#)
- CDC: [Options for Evaluating Environmental Cleaning](#).

7.1 Process testing

7.1.1 Cleaning audit/direct observation

Direct performance observation and visual assessment of cleanliness is the primary method that is required by all facilities to assess cleanliness. A person trained in auditing undertakes a visual inspection of an area and documents the inspection. A score is placed next to each section that has passed visual inspection and an overall score for an area is obtained.

The primary approach to reviewing cleanliness after cleaning is by visual assessment.

7.1.2 Fluorescent marker/gel testing

Fluorescent marker or gel testing is an additional method that employs an invisible gel that will dry on a surface after application and is used as an additional validation control process. The gel is resistant to dry abrasion cleaning but is removed with light wet abrasion cleaning. The gel can only be seen with a UV light.

Additional methods of evaluating cleaning forms are useful:

- after an outbreak or cluster of an MRO or infectious disease
- for education and training purposes
- for assessing high touch surfaces in extreme risk areas (even if this method can only assess that the correct cleaning method and process was used to clean items and cannot assess environmental contamination or bioburden).

7.2 Outcome testing

7.2.1 ATP bioluminescence

ATP is the energy component molecule of all plant and animal cells and is contained in all micro-organisms and organic residue. Testing the surface of an item for ATP measures the amount of organic soil, including microbes, on that item.

A surface is swabbed using a specific swab stick which is then placed into a detection device that will catalyse a reaction with ATP. The light output from this reaction is measured by a machine, the amount of light generated is directly proportional to the amount of ATP present. The sensitivity of this test does depend on the equipment brand that is used.

This process tests surface contamination by assessing for the presence of leftover organic residue after cleaning. A low reading is associated with low colony counts. This process does not identify specific bacteria, only if ATP from organic material present.

The main benefits this type of assessment are that it provides results within 20 seconds, and the ease of use of the system which requires no specific laboratory training. The limitations of this type of assessment are that the system can produce false positives and cannot detect ATP from all surfaces. The test identifies organic material which includes viable bacteria, but it also identifies non-viable bacteria. It also identifies food residue, milk residue, blood and urine, all of which will come up as a positive on the

result. The test cannot identify the source of the ATP. The residue of some chemical cleaning products may also alter the results.

7.2.2 Microbiological testing

Microbiological testing can detect the actual presence of a specific microbiological organism on a surface or object. Microbiological testing includes swabbing, dipslides, air sampling and settle plates.

Microbiological testing is only recommended as part of outbreak management investigations. Microbiological testing is the most accurate indication of infection risk from the environment. However, microbiological testing is expensive, labour intensive, can take a prolonged time for results, not supported for routine practice and few laboratories are accredited to conduct environmental testing.

Reference

[Cleaning of the Healthcare Environment \(PD2023_018\)](#)