

Module 7

Module 7: Evaluation of Cleaning

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 types;

- 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 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.

7.1 Process Testing

7.1.1 Cleaning Audit

This 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 cleaning audit satisfies the aesthetic obligations that facilities must maintain; in addition it aids in the trust and confidence that the public have with a health facility.

The visual inspection audit is the most cost effective method for assessing cleanliness and the most rapid for identifying gross deficiencies in an area. However this assessment method is subjective and does not detect bioburden.

7.1.2 Fluorescent gel

The fluorescent gel is a test method that employs an invisible gel that will dry on a surface after application. 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.

An auditor applies the gel to surfaces and does not inform the cleaner which surfaces have the gel. The inspector then checks to ensure those surfaces were cleaned correctly and the gel has been removed.

This method assesses that the correct cleaning method and process was used to clean the item, it does not assess environmental contamination or bioburden.

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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 left over 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 provide 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.

¹ Department of Humans Services, Tasmania, 2011, Evaluating environmental cleanliness in hospitals and other healthcare settings; what are the most effective and efficient methods to use.