WEBINAR SERIES

Complete Care for Aged Care

Choosing a disinfectant & auditing 'clean'

Kate Smith
Head of Clinical Solutions, Training and Support – GAMA Healthcare

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Best practice for the management of Incontinence Associated Dermatitis

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WEBINAR SERIES

Complete Care for Aged Care

Choosing a disinfectant, and auditing ‘clean’

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

gama healthcare

Choosing a disinfectant, and auditing ‘clean’

Overview

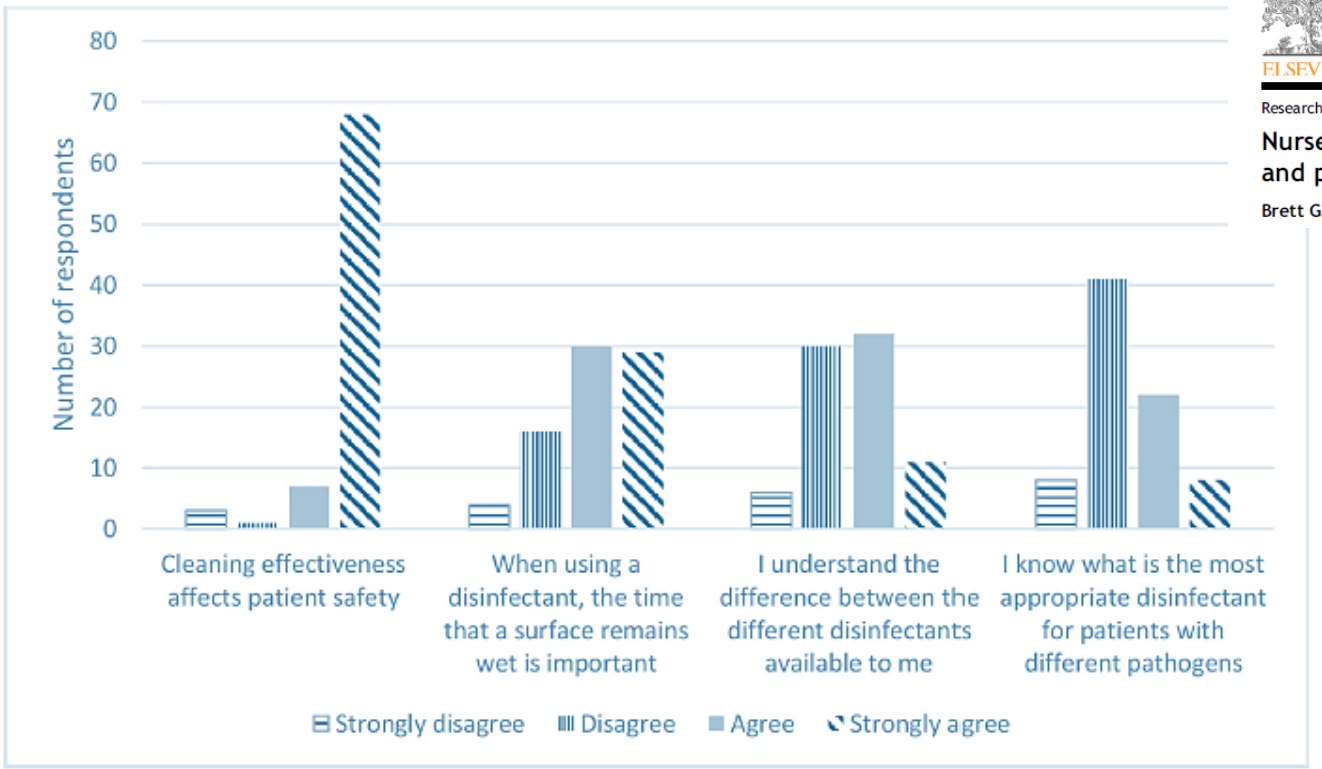
- Knowledge & attitudes to cleaning
- An introduction to cleaning & disinfection
- Considerations when choosing a disinfectant
- Auditing ‘clean’
- Q & A

Choosing a disinfectant, and auditing ‘clean’

Overview

Choosing a disinfectant, and auditing ‘clean’

Knowledge & attitudes




Infection, Disease & Health (2021) 26, 55–62

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: http://www.journals.elsevier.com/infection-disease-and-health/

ELSEVIER

Research paper

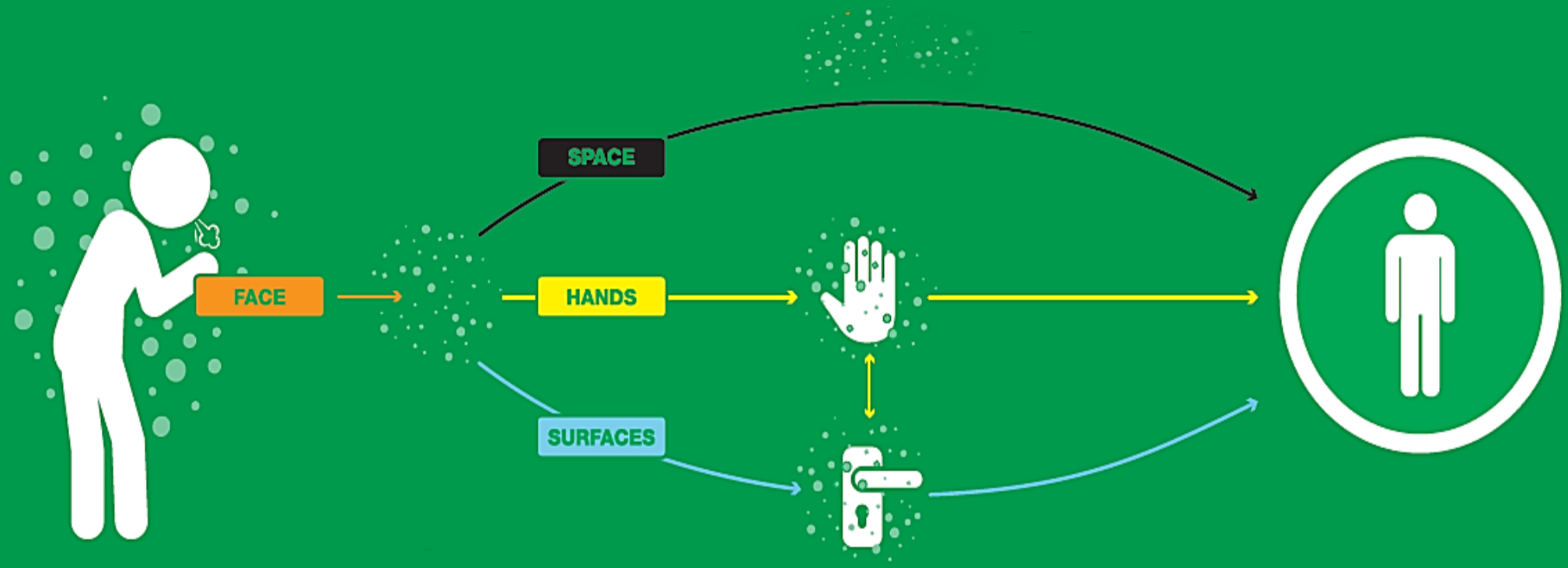
Nurses’ and midwives’ cleaning knowledge, attitudes and practices: An Australian study

Brett G. Mitchell [a,b,*], Philip L. Russo [c,d], Martin Kiernan [a,e], Cassie Curryer [a]

Most did not feel comfortable being admitted to a room where the previous patient had a multi-drug resistant organism (never 42% or only sometimes 34%)

Mitchell BG, Russo PL, Kiernan M, Curryer C. Nurses' and midwives' cleaning knowledge, attitudes and practices: An Australian study. Infect Dis Health. 2021;26:55–62.

Transmission of Microorganisms



Transmission of Microorganisms

Why we clean

"Bugs cannot walk, jump or run;

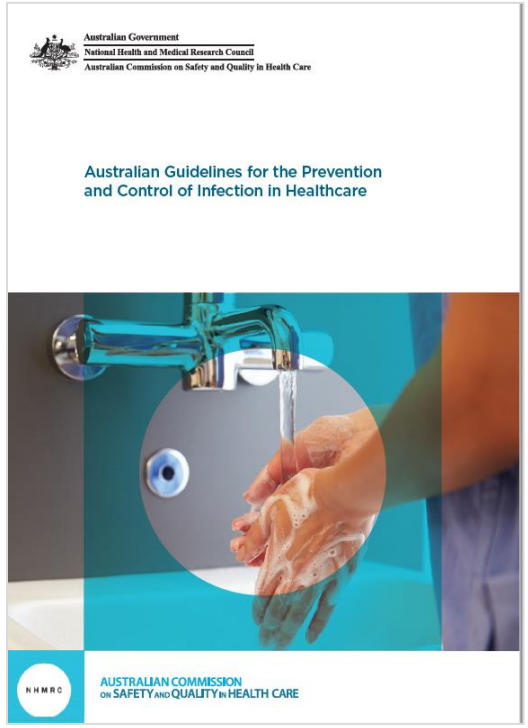
they must hitch hike from one

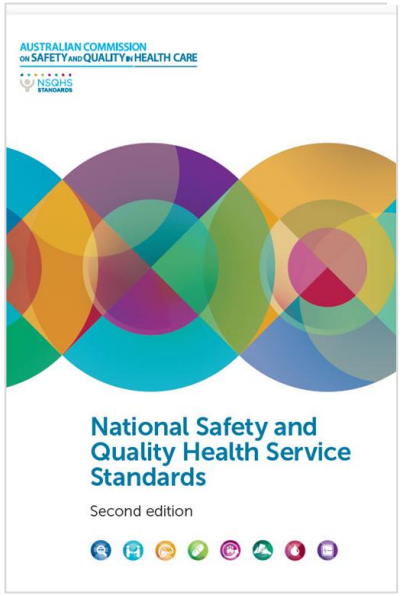
place to another"

Caddow, 1989

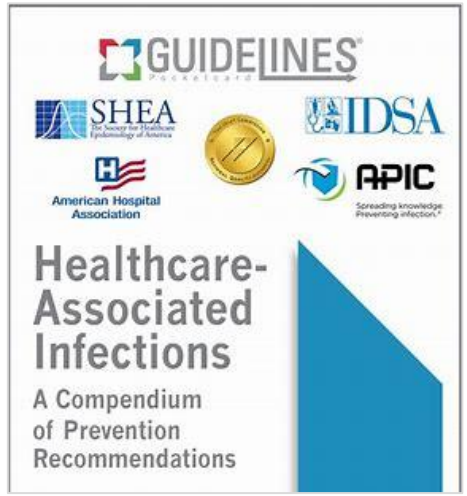
National and International Guidance

Surface decontamination is now included in national and international infection prevention and control policies and guidelines





ACIPC
Australasian College for Infection Prevention and Control

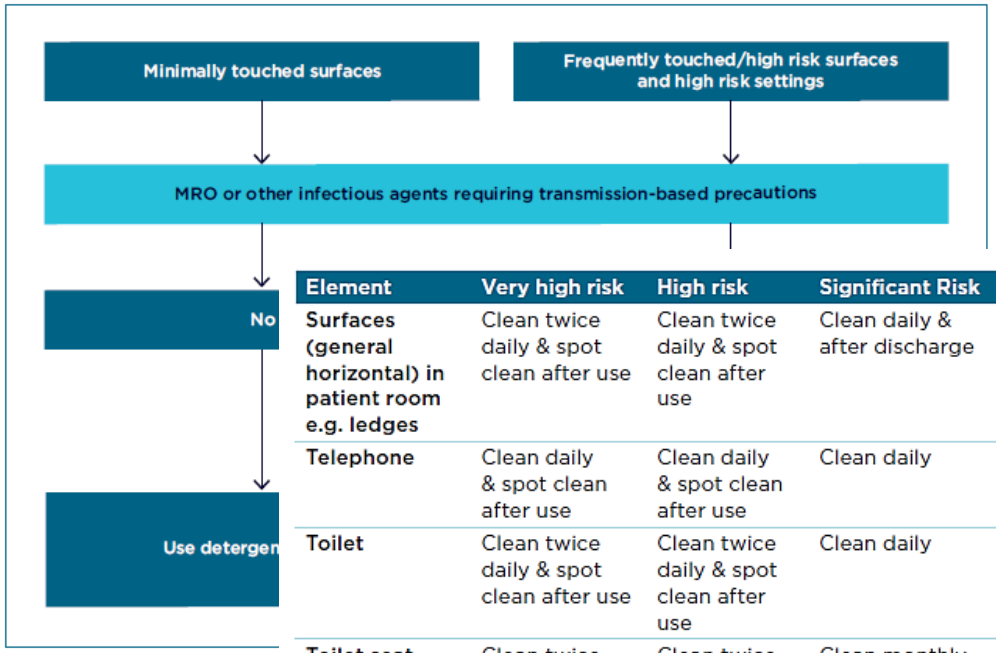


DEPARTMENT OF HEALTH & HUMAN SERVICES · USA
CDC

Choosing a disinfectant

Risk assessment

The methods, thoroughness and frequency of cleaning and the products used for different surfaces are determined by risk analysis and reflected in your facility policy



Element	Very high risk	High risk	Significant Risk	Low risk	Method
Surfaces (general horizontal) in patient room e.g. ledges	Clean twice daily & spot clean after use	Clean twice daily & spot clean after use	Clean daily & after discharge	Clean weekly & after discharge	Detergent + disinfectant for MRO
Telephone	Clean daily & spot clean after use	Clean daily & spot clean after use	Clean daily	Clean weekly	Detergent
Toilet	Clean twice daily & spot clean after use	Clean twice daily & spot clean after use	Clean daily	Clean weekly	Detergent + disinfectant
Toilet seat, raised	Clean twice daily & spot clean after use	Clean twice daily & spot clean after use	Clean monthly & before initial use & spot clean after use	Clean monthly & before initial use & spot clean after use	Detergent for routine Detergent + disinfectant for MRO
Trolley, dressing	Clean utilised surfaces before & after use Clean whole trolley weekly	Clean utilised surfaces before & after use Clean whole trolley weekly	Clean utilised surfaces before & after use Clean whole trolley weekly	Clean utilised surfaces before & after use Clean whole trolley monthly	Detergent + disinfectant for MRO

Australian guidelines for the prevention and control of infection in healthcare, Canberra: national health and medical research council (2019).

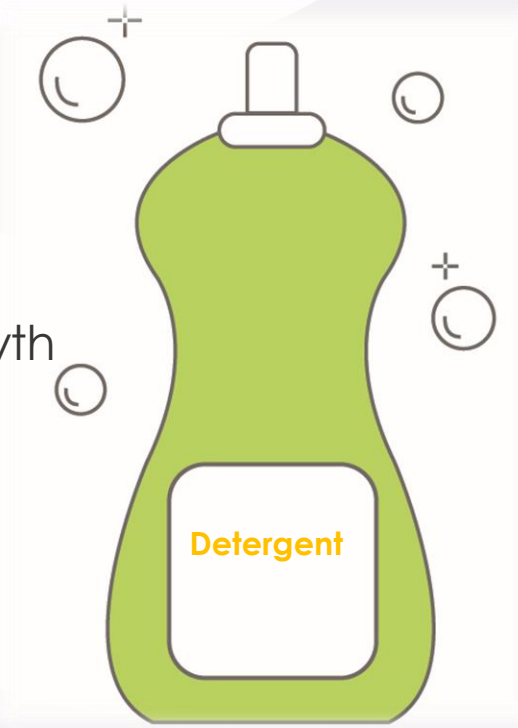
Choosing a disinfectant

Detergent & Disinfectants

What is the difference between Detergent and Disinfectants?

Detergent – a cleansing agent containing surfactant/s to aid in the removal of organic soil and oils, fats, and greases.

- Detergents loosen germs
- Friction & Pressure aids removal
- Surfaces should be dried after cleaning to reduce further microbial growth
- A detergent alone will not kill pathogens, but help to physically remove them and reduce bioburden



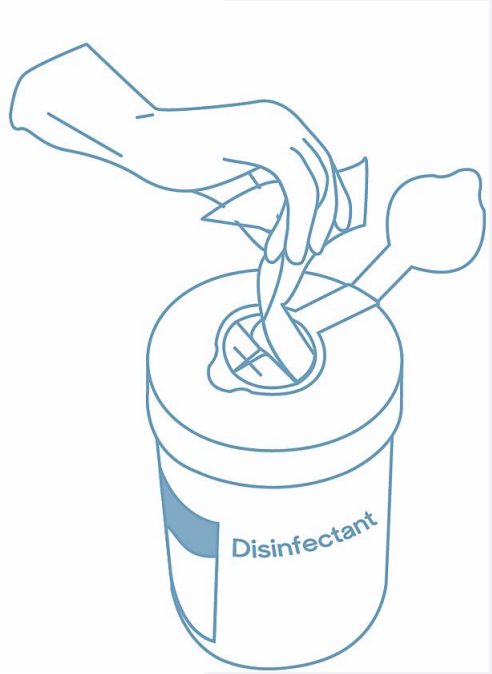
Choosing a disinfectant

Detergent & Disinfectants

Disinfectant – An agent that reduces the number of pathogenic organisms to a level felt not to be harmful

To be effective against pathogens, a disinfectant must:

- be applied to a clean, dry surface – pre clean with detergent
- be used at the right concentration
- have enough time in contact with the surface to kill the pathogen
- be effective against those particular pathogen.



Choosing a disinfectant

Choosing the right disinfectant

To kill germs, any disinfectant must:

- have enough time in contact with the surface to kill the germs
- be used at the right concentration
- be applied to a clean, dry surface
- be effective against those particular germs

But also consider:

- TGA registration
- Ease of use – compliance
- Efficacy in soiled conditions
- Achievable contact time
- pH & compatibility
- User acceptance
- Training & support
- Cost

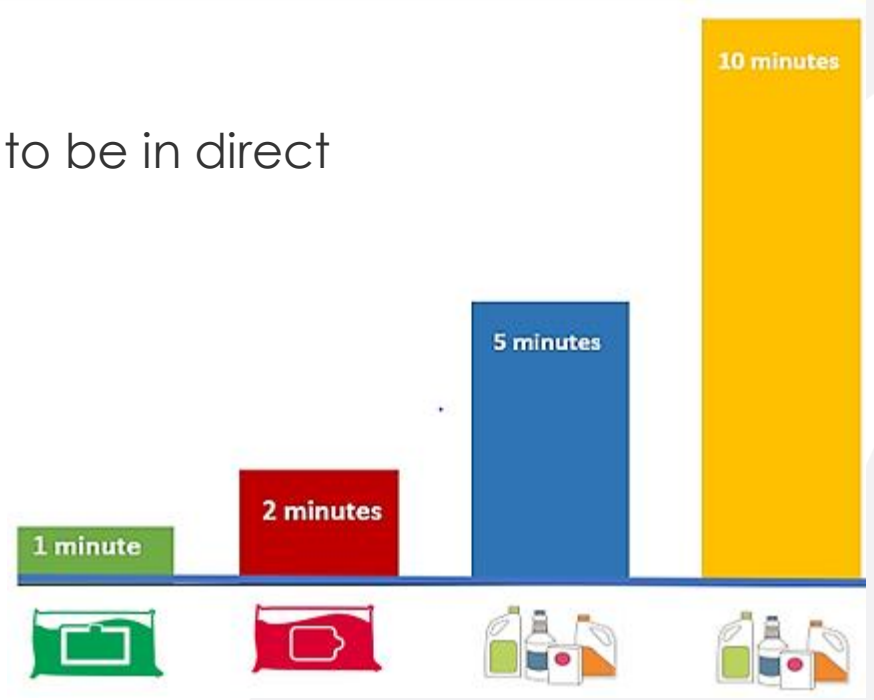
Choosing a disinfectant

Contact time

Different disinfectants will have different contact times

In order to work, the disinfectant has to be in direct contact with the microorganism

This means surfaces must be left damp for the specified period of time, for the disinfectant to be effective

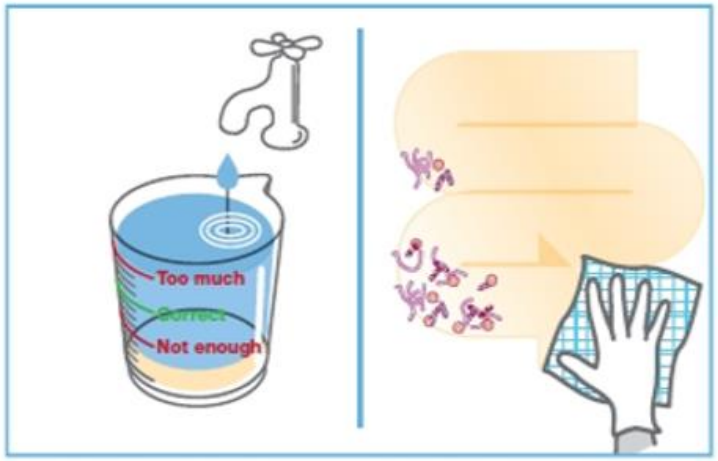


Choosing a disinfectant

Correct concentration

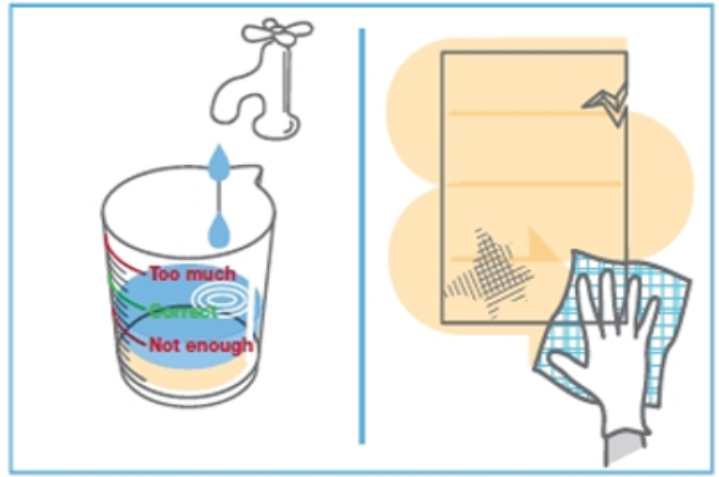
Disinfectants that are provided in the correct concentration reduce the risk of over-dilution or under-dilution

Too much water



If its too weak then is not effective.

Too little water

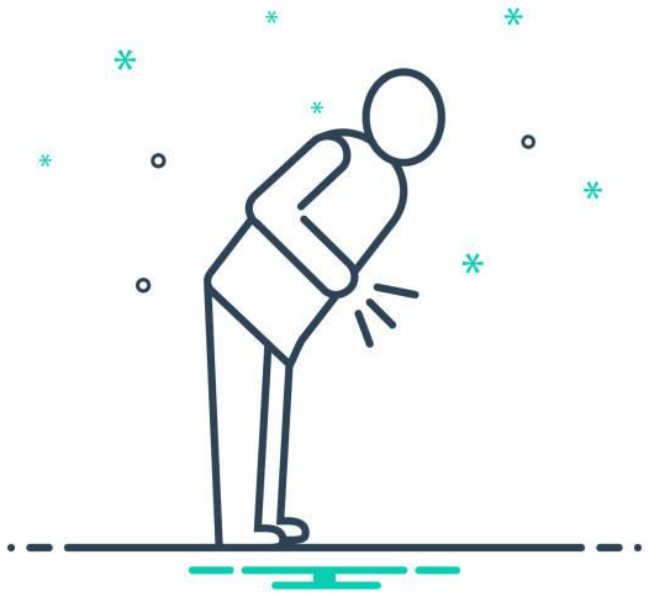


Using too little water results in a solution that is too strong, & potentially harmful to surfaces as well as the user.

Choosing a disinfectant

Efficacy

Does the product kill the most prevalent healthcare pathogens?



Choosing a disinfectant

Efficacy

Has the product been tested in an accredited laboratory?

- ISO 17025 Laboratory
- Test method
- Clean or dirty conditions
- Test organism
- Contact time
- Result

mgsLABORATORIES
Microbiological Services and Consultancy

Doc No. TRB-2016-114-03

Title	**Microbiological Analysis Based on EN 14561 (2006) Quantitative carrier test for the evaluation of bactericidal activity for instruments used in the medical area. (Phase 2 / Step 2)**				
Product	**Clinell Australian Universal Wipes**	**MGS No**	**23705**	**SO No**	**5652**

UKAS TESTING 4393

Interfering substance	3.0ml/l sheep erythrocytes and 3.0g/l Bovine albumin	
Identification of the bacterial strains used	*Pseudomonas aeruginosa*	ATCC 15442
	Enterococcus hirae	ATCC 10541
	Staphylococcus aureus	ATCC 6538
	Enterococcus faecium (VRE)	NCTC 12204
	Acinetobacter baumannii (DR)	ATCC-BAA-1799
Contact time	60 seconds ± 10s	
Name of product	Clinell Australian Universal Wipes -liquid expressed from wipes	

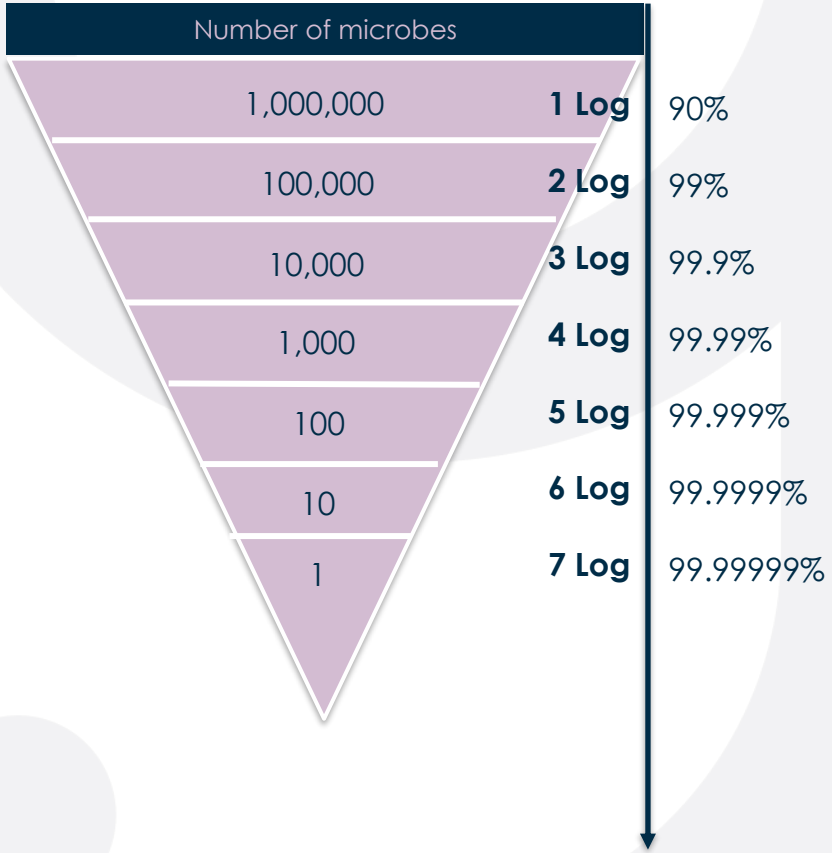
Conc of the product	Dilution Step	Vc1	Vc2	Na = χ x10	lg Na	lg R	Contact time
RTU	10^{0}	<14	<14	<140	<2.15	>5.55	60 seconds
	10^{-1}	<14	<14				
	10^{-2}	<14	<14				
	10^{-3}	<14	<14				

Cleaning & Disinfection

Efficacy

Does the product kill enough of the pathogen?

- What is the log reduction



Log reduction definition

Log reduction is a measure of how thoroughly a decontamination process reduces the concentration of a contaminant

Choosing a disinfectant

TGA registration

Surfaces should be physically cleaned with a detergent solution, followed or combined with a hospital-grade disinfectant with specific claims listed on the Australian Register of Therapeutic Goods (ARTG)

Australian Government
Department of Health
Therapeutic Goods Administration

Australian guidelines for the prevention and control of infection in healthcare, Canberra: national health and medical research council (2019).

Choosing a disinfectant

TGA registration

- Is the product TGA registered
- What is it registered for? What specific claims do they make ?
  Class 1, Class IIB , hospital grade, instrument grade

Public Summary

Summary for ARTG Entry:	299351	GAMA Healthcare Australia Pty Ltd - Medical device cleaning/disinfecting wipe
ARTG entry for	Medical Device Included Class IIb	
Sponsor	GAMA Healthcare Australia Pty Ltd	
Postal Address	1/395 Nepean Highway, Frankston, VIC, 3199 Australia	
ARTG Start Date	6/02/2018	
Product Category	Medical Device Class IIb	
Status	Active	
Approval Area	Medical Devices	

Products

1 . Medical device cleaning/disinfecting wipe

Product Type	Single Device Product	**Effective Date**	6/02/2018
GMDN	58077 Medical device cleaning/disinfecting wipe		
Intended Purpose	Low level Instrument Grade Disinfectant with wide spectrum antimicrobial activity including MRSA and VRE, Acinetobacter (DR) and Klebsiella (CRE), virucidal activity against SARS-CoV-2 (COVID-19), Norovirus, Influenza (H1N1) and fungicidal activity. Effective on surfaces.		

Australian Government
Department of Health
Therapeutic Goods Administration

Public Summary

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ARTG entry for: Medical Device Included Class IIb
Sponsor: GAMA Healthcare Australia Pty Ltd
Postal Address: 1/395 Nepean Highway, Frankston, VIC, 3199 Australia
ARTG Start Date: 6/02/2018
Product Category: Medical Device Class IIb
Status: Active
Approval Area: Medical Devices

Conditions

- The inclusion of the kind of device in the ARTG is subject to compliance with all conditions placed or imposed on the ARTG entry. Refer Part 4-5, Division 2 (Conditions) of the Therapeutic Goods Act 1989 and Part 5, Division 5.2 (Conditions) of the Therapeutic Goods (Medical Devices) Regulations 2002 for relevant information.
- Breaching conditions of the inclusion related to the device of the kind may lead to suspension or cancellation of the ARTG entry; may be a criminal offence; and civil penalties may apply.

Manufacturers

Name	Address
Gama Healthcare Ltd	2 Regal Way , Watford, WD24 4YJ United Kingdom

Products

1 . Medical device cleaning/disinfecting wipe

Product Type: Single Device Product
Effective Date: 6/02/2018
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Intended Purpose: Low level Instrument Grade Disinfectant with wide spectrum antimicrobial activity including MRSA and VRE, Acinetobacter (DR) and Klebsiella (CRE), virucidal activity against SARS-CoV-2 (COVID-19), Norovirus, Influenza (H1N1) and fungicidal activity. Effective on surfaces.

Specific Conditions

No Specific Conditions included on Record

Public Summary

Choosing a disinfectant

Ease of Use

- Easy to access
- Product at point of care
- Ready to use – no mixing
- 2 in 1 formula

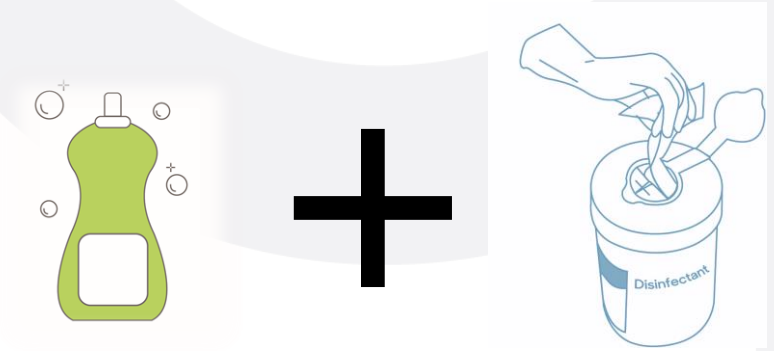
Choosing a disinfectant

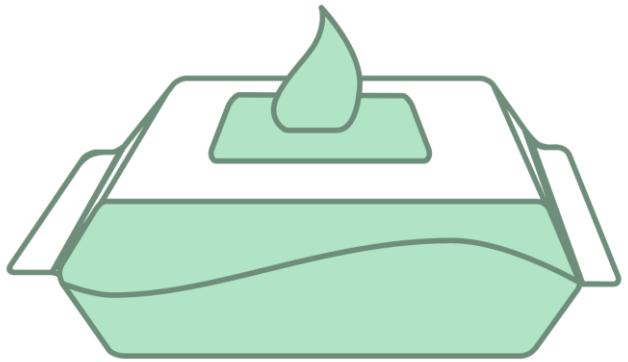
Ease of use

2 step clean VS 2 in 1 step clean

A detergent clean should always precede disinfection because the presence of soil will impede disinfectant activity

A 2-step clean, involves a physical clean using detergent solution followed by use of a disinfectant





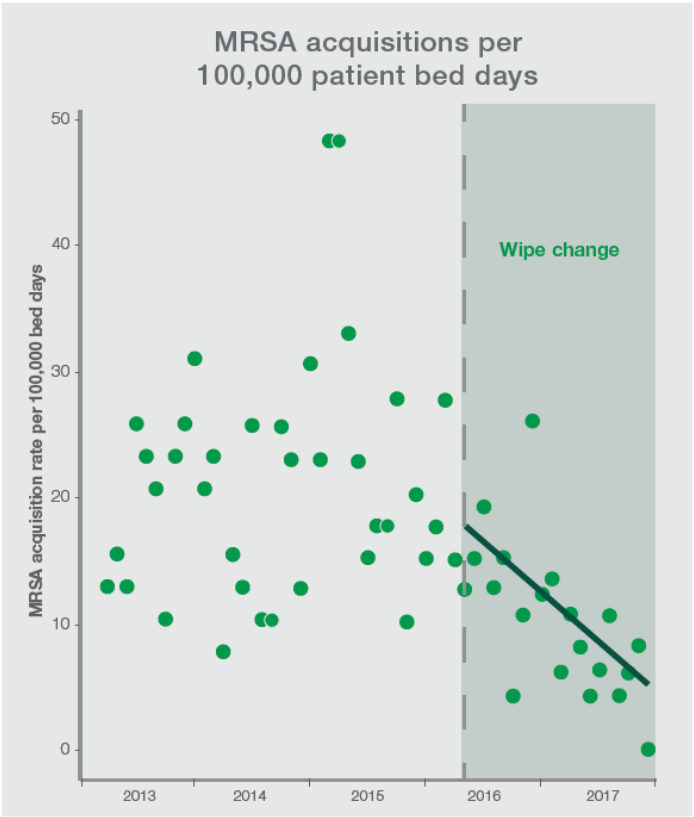
2-in-1 clean uses a formula containing both a detergent and disinfectant to clean & disinfect in one process

Choosing a disinfectant

Ease of use

Wiping out MRSA:
Effect of introducing a universal disinfection wipe in a large UK teaching hospital

- A two-stage cleaning process - a detergent wipe followed by alcohol disinfection, was replaced by Clinell Universal — a two in one step process.
- MRSA acquisitions across the whole organisation fell by **55%**
- There was a continuing and consistent reduction, ↓ 6.3% monthly
- Additional operational benefits such as time saved and reduced stock storage requirements.



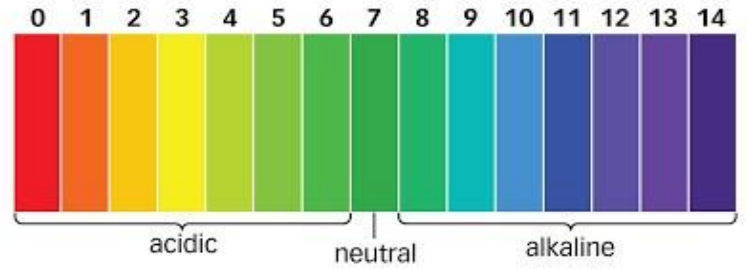
Garvey, M.I., Wilkinson, M.A.C., Bradley, C.W. et al. Wiping out MRSA: effect of introducing a universal disinfection wipe in a large UK teaching hospital. Antimicrob Resist Infect Control 7, 155 (2018). https://doi.org/10.1186/s13756-018-0445-7

Choosing a disinfectant

Compatibility & pH

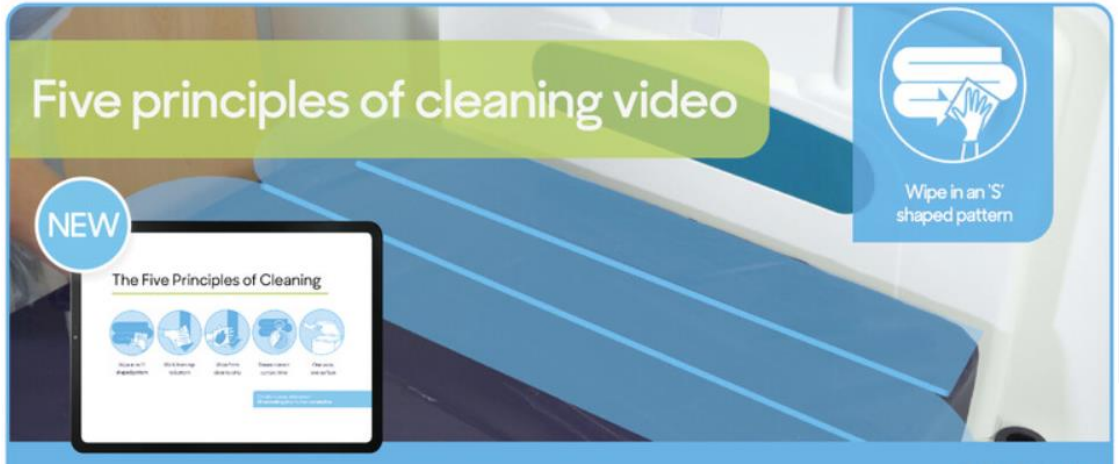
Look for a disinfectant compatible with commonly cleaned surfaces and equipment within your facility

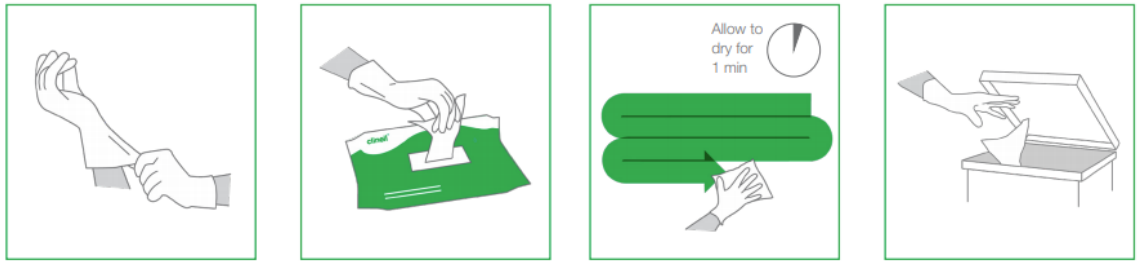
- What is the active ingredient?
- What surfaces are not compatible?
- What is the pH?
- Does the manufacturer have claims to be safe to use on specific equipment e.g.: medical equipment



Choosing a disinfectant

Training & support





Choosing a disinfectant

Training & support

A multimodal intervention, focusing on optimising product use, technique, staff training, auditing with feedback, and communication, for routine cleaning


Articles

An environmental cleaning bundle and health-care-associated infections in hospitals (REACH): a multicentre, randomised trial

‘The REACH cleaning bundle was successful at improving cleaning thoroughness and showed great promise in reducing vancomycin-resistant enterococci Infections’

Mitchell, B.G., Hall, et.al., 2019. An environmental cleaning bundle and health-care-associated infections in hospitals (REACH): a multicentre, randomised trial. The Lancet Infectious Diseases, 19(4), pp.410-418

Auditing ‘clean’

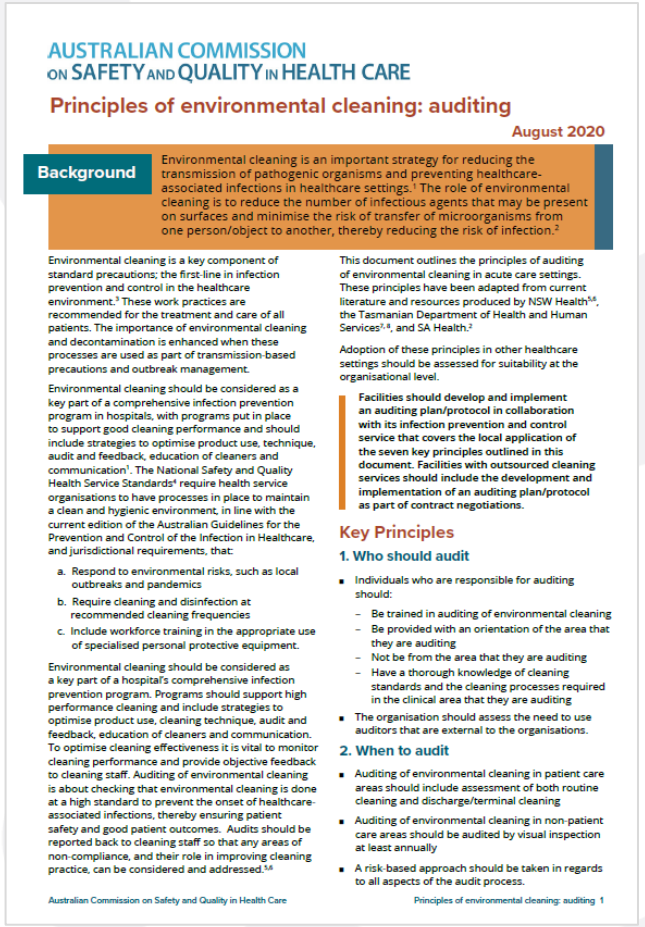
An evaluation used to assess, evaluate and improve patient care in a systematic way

Audits of environmental cleanliness can also facilitate education programs and motivate staff to strive for improvements in routine cleaning practices

Auditing clean

Principles of auditing

- ❑ Who should audit
- ❑ When to audit
- ❑ Where to audit
- ❑ Frequency of audits
- ❑ How to audit
- ❑ What surfaces to audit
- ❑ What to do with audit results



AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

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 communication[1]. The National Safety and Quality Health Service Standards[4] 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[7-9], 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.

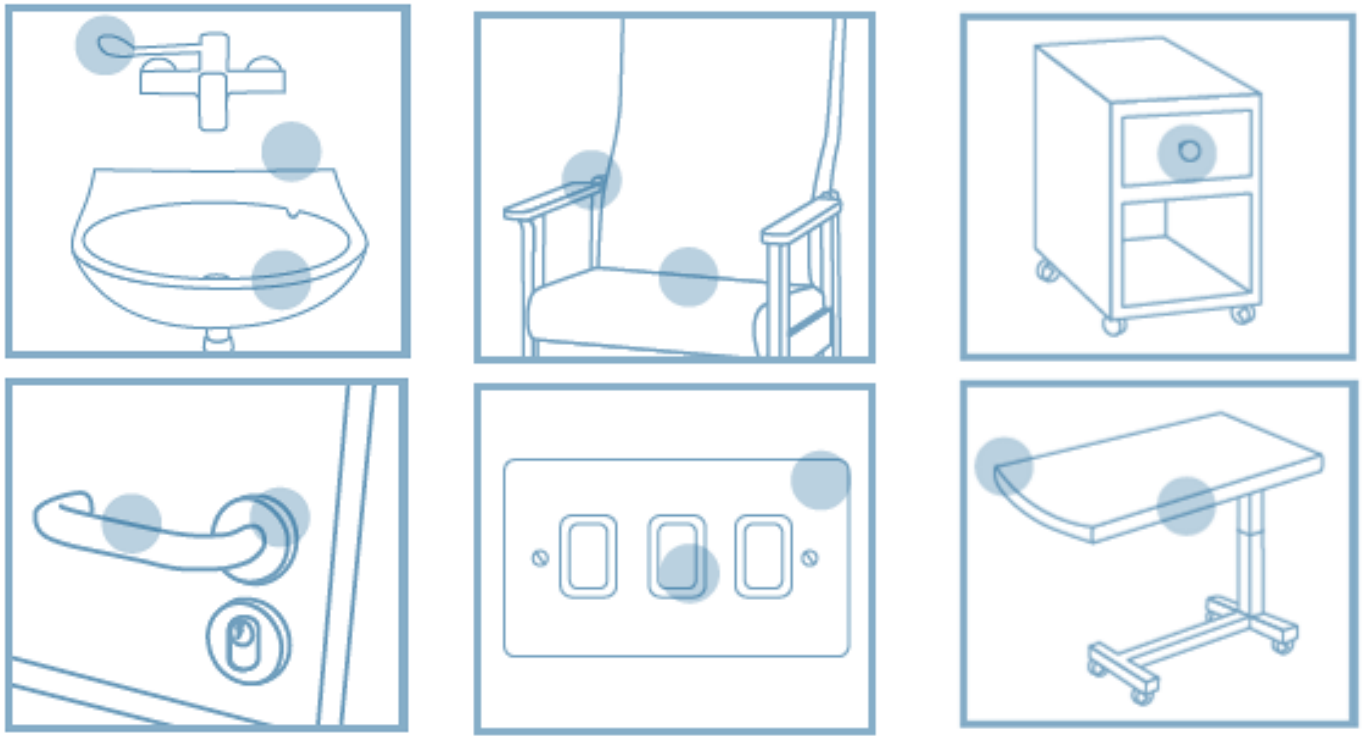
2. When to audit

- 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.

HTTPS://WWW.SAFETYANDQUALITY.GOV.AU/SITES/DEFAULT/FILES/2020-09/PRINCIPLES_OF_ENVIRONMENTAL_CLEANING_AUDITING_-_AUGUST_2020.PDF

Auditing clean

Principles of auditing



Clinell EvaluClean

Audit Form – Shared Equipment

gama healthcare

Marker: _____ Reviewer: _____

Date: _____ Time: _____ Date: _____ Time: _____

Ward: _____ Planned: ☐ Outbreak: ☐

Pre audit		Audit review				
Responsibility	Item marked	Room No:	Room No:	Room No:	Room No:	Room No:
		Asset No:	Asset No:	Asset No:	Asset No:	Asset No:
	1	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed
	2	Asset No: ☐ Present ☐ Partial ☐ Removed	Asset No: ☐ Present ☐ Partial ☐ Removed	Asset No: ☐ Present ☐ Partial ☐ Removed	Asset No: ☐ Present ☐ Partial ☐ Removed	Asset No: ☐ Present ☐ Partial ☐ Removed
		Asset No:	Asset No:	Asset No:	Asset No:	Asset No:
	3	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed
		Asset No:	Asset No:	Asset No:	Asset No:	Asset No:
	4	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed
		Asset No:	Asset No:	Asset No:	Asset No:	Asset No:
	5	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed
		Asset No:	Asset No:	Asset No:	Asset No:	Asset No:
	6	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed
		Asset No:	Asset No:	Asset No:	Asset No:	Asset No:
	7	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed
		Asset No:	Asset No:	Asset No:	Asset No:	Asset No:
	8	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed	☐ Present ☐ Partial ☐ Removed
Removed (pass):		/	/	/	/	/
Partial (fail):		/	/	/	/	/
Present (fail):		/	/	/	/	/
Cleaning schedule signed:		Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
Overall Compliance (pass/fail %)		/ %	/ %	/ %	/ %	/ %

Auditing clean

Methods for auditing ‘clean’

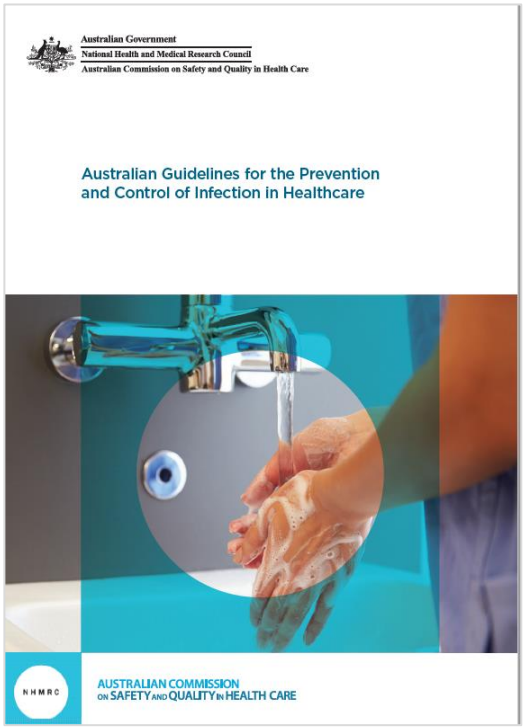


Table 5. Methods for evaluating environmental cleanliness in healthcare facilities[101]

Type	Method	Definition	Advantages	Disadvantages
Process Testing	Visual Inspection	An individual trained in the auditing of cleaning inspects an area to assess the level of cleanliness. Primary method used in healthcare facilities.	Can detect obvious soiling of the environment. Most cost-effective method and most rapid for detecting major cleaning issues.	Cannot detect microorganisms that are invisible to the naked eye.
	Fluorescent gel marker	An invisible gel that can only be detected with UV light is applied to surfaces. The effectiveness of cleaning processes can be determined by shining UV light to determine if the gel has been adequately	Can allow for an efficient and timely cleaning evaluation on a large scale.	Does not assess environmental contamination or biodburden.
Outcome testing	ATP bioluminescence	A swab of a surface is taken which is placed into a detection device that will catalyse a reaction with ATP. Testing the surface for ATP measures the amount of organic residue on a surface.	ATP testing provides rapid results and requires no specific laboratory training to be	The test can produce false positives, and cannot identify the source of the ATP. The residue of some cleaning products may alter the results.
	Microbiological testing	Involves swabbing, dipslides, air sampling or settle plates to detect the presence of a specific microbiological organism on a surface or object.	Can provide an accurate indication of infection risk from the environment.	Expensive, labour intensive, requires specific expertise and access to a microbiology laboratory. Only recommended in the management of specific situations such as an outbreak or an unidentified cause of infections.

Australian guidelines for the prevention and control of infection in healthcare, Canberra: national health and medical research council (2019).

Auditing clean

Visual assessment

Visual assessment is the most frequently used method for auditing environmental cleanliness

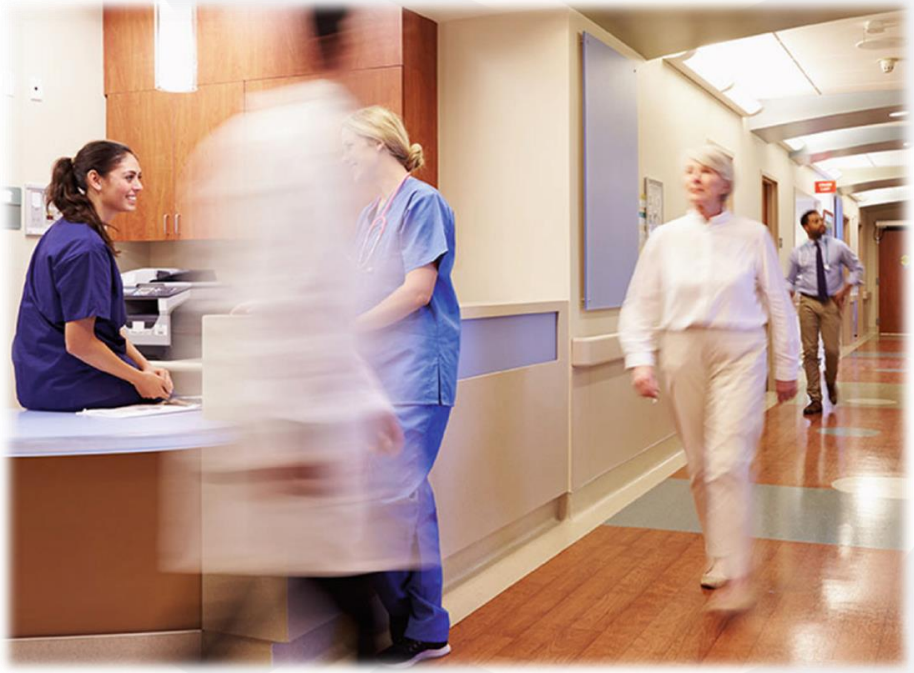
It measures the appearance of an item or surface against a set checklist standards.

Advantages:

Can detect obvious issues with the environment. Most rapid method of identifying cleaning issues.

Disadvantages:

Cannot detect microorganisms that are invisible to the naked eye



Auditing clean

Fluorescent Gel Marker

Fluorescent gel dots are placed on frequently touched surfaces.
The effectiveness of cleaning can be determined by shining a UV light to confirm if the gel has been removed.

Advantages:

Can allow for a very visual, efficient and timely cleaning evaluation of a large scale

Affordable

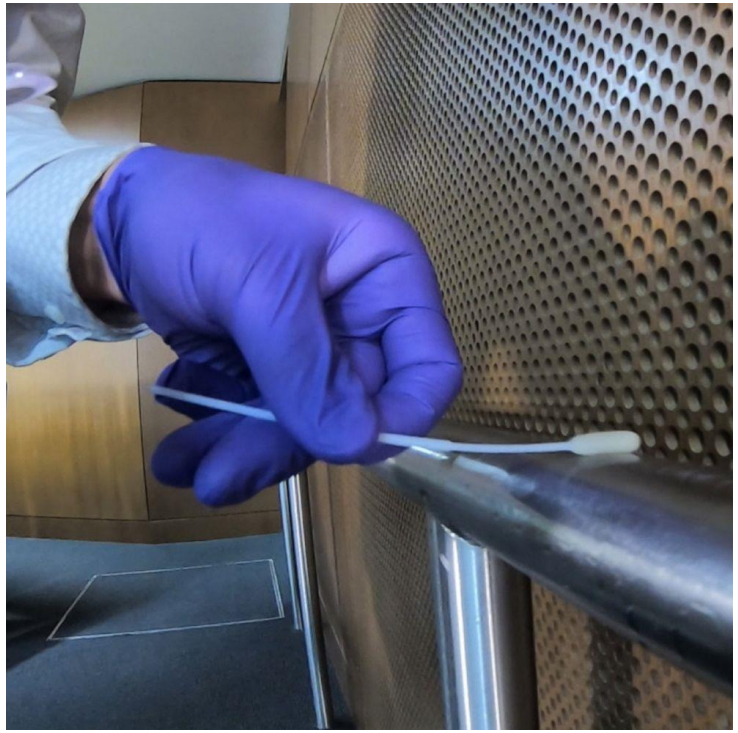
Disadvantages:

Does not assess environmental contamination or bioburden

Auditing clean

Adenosine triphosphate (ATP) bioluminescence

Testing the surface for ATP measures the amount of organic residue on a surface



A swab of a surface is taken which is placed into a detection device

Advantages:

provides rapid results and requires no specific laboratory training to be undertaken.

Disadvantages:

The test can produce false positives and cannot identify the source of ATP.

The residue of some cleaning products may alter the results

Inconsistent reading between machines

More costly than fluorescent marking.

Auditing clean

Microbiological sampling

Involves swabbing surfaces, air sampling or settle plates to detect the presence of a specific Microbiological organism on a surface or object

Advantages:
Can provide an accurate indication of infection risk from the environment.

Disadvantages
Expensive, labour intensive, requires specific expertise and access to a microbiology laboratory. Only recommended in the management of specific situations such as an outbreak or an unidentified cause of infections.

Choosing a disinfectant, and auditing ‘clean’

Useful sites

Australian Guidelines for the Prevention and Control of Infection in Healthcare (nhmrc.gov.au)

NSW Clinical Excellence Commission Environmental Cleaning Audit Tool – http://www.cec. health.nsw.gov.au/patient-safety-programs/ assurance-governance/healthcare-associated-infections/environment-cleaning

CDC Environmental Cleaning Evaluation Worksheet – https://www.cdc.gov/hai/toolkits/ evaluating-environmental-cleaning.html

Department of Health and Human Services, Tasmania Environmental Assessment Cleaning Protocol - http://www.dhhs.tas.gov.au/ publichealth/tasmanian_infection_prevention_and_ control_unit/evaluating_environmental_cleanliness

https://www.safetyandquality.gov.au/sites/default/files/2020-09/principles_of_environmental_cleaning_auditing_-_august_2020.pdf

https://www.health.gov.au/resources/publications/coronavirus-covid-19-environmental-cleaning-and-disinfection-principles-for-health-and-residential-care-facilities

https://www.safeworkaustralia.gov.au/covid-19-information-workplaces/industry-information/general-industry-information/cleaning

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