The Clean Between Project

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Te Whatu Ora

Why clean shared patient equipment?

- Do we really need to clean shared patient equipment?
- What is the evidence that organisms can survive on equipment?
- How long can they survive?
- Can patients really get an infection from shared patient equipment?
- Does cleaning the equipment really make any difference?
- How do I know if staff are cleaning shared patient equipment?
- What can I do about it?

Standard Precautions

"Clean, disinfect or reprocess equipment shared between patients"

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Review

How long do nosocomial pathogens persist on inanimate surfaces? A scoping review

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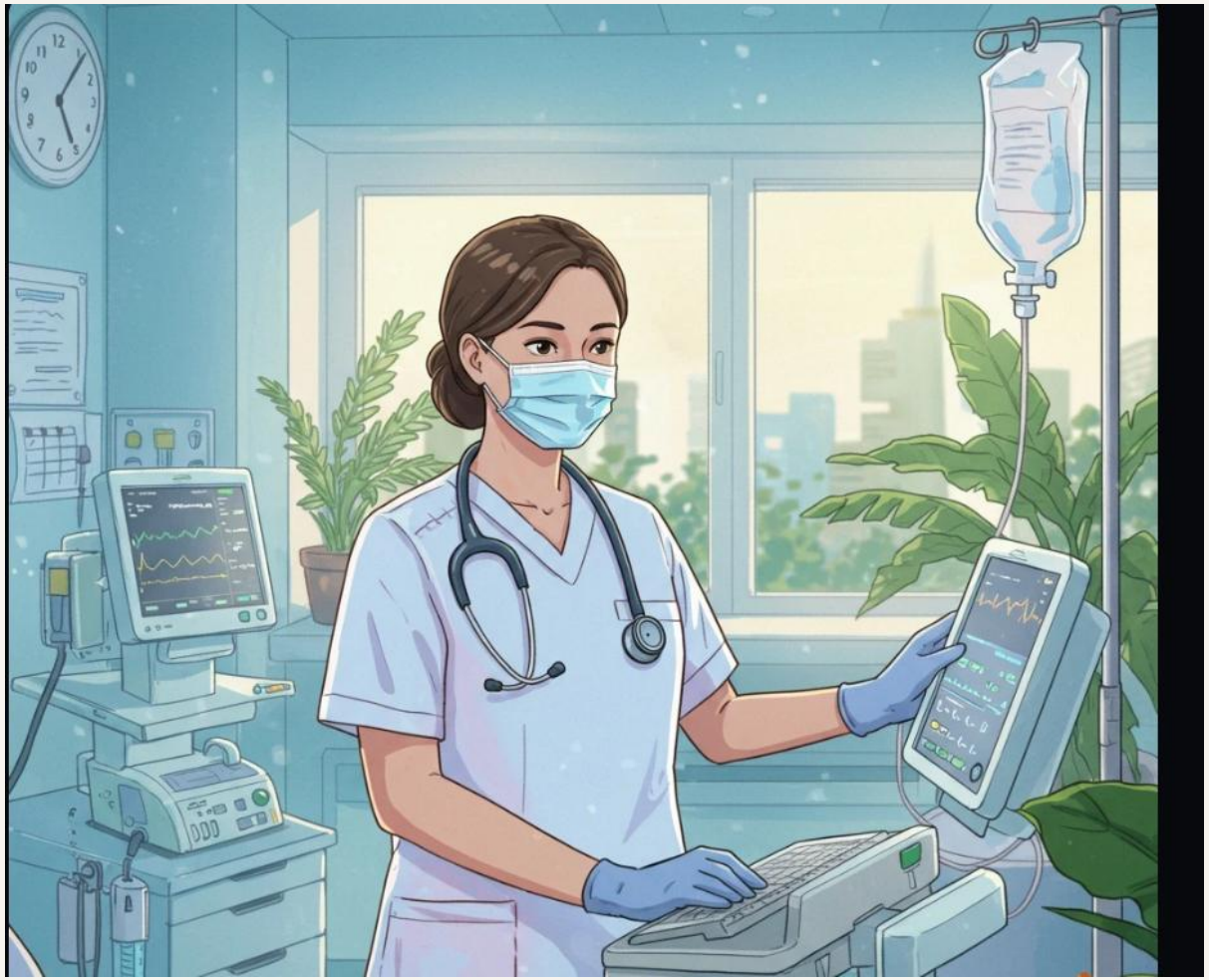
SUMMARY

Healthcare hygiene plays a crucial role in the prevention of healthcare-associated infections. Patients admitted to a room where the previous occupant had a multi-drug-resistant bacterial infection are at an increased risk of colonization and infection with the same organism. A 2006 systematic review by Kramer *et al.* found that certain pathogens can survive for months on dry surfaces. The aim of this review is to update Kramer *et al.*'s previous review and provide contemporary data on the survival of pathogens relevant to the healthcare environment. We systematically searched Ovid MEDLINE, CINAHL and Scopus databases for studies that described the survival time of common nosocomial pathogens in the environment. Pathogens included in the review were bacterial, viral, and fungal. Studies were independently screened against predetermined inclusion/exclusion criteria by two researchers. Conflicts were resolved by one of two senior researchers. A spreadsheet was developed for the data extraction. The search identified 1736 studies. Following removal of

Table II
Range of survival by pathogen

	Pathogen	Range of survival in days (unless otherwise indicated)
Gram positive	*Staphylococcus aureus*	<1 min to 318
	Clostridioides difficile	0.13–140
	Coagulase-negative *Staphylococcus*	<1 min to 28
	Micrococcus spp.	10–10
	Streptococcus mutans	0.13–0.2
	Bacillus spp.	1–28
	Enterococcus spp.	0.02–287
Gram negative	*Acinetobacter* spp.	0.04–90
	Burkholderia cepacia	0.13–8
	Citrobacter freundii	0.06–0.11
	Escherichia coli	<1 min to 56
	Klebsiella pneumoniae	0.57–600
	Proteus mirabilis	0.16–0.16
	Pseudomonas spp.	0.08–7
	Salmonella spp.	0.29–5
	Serratia spp.	0.29–20
	Stenotrophomonas maltophilia	0.29–1
	Haemophilus influenzae	1–1
Fungi	*Candida auris*	14–14
	Candida spp.	0.13–28
Virus	Animal virus	0.5–7
	Coronavirus	0.04–20
	Cytomegalovirus	<1 min to 0.01
	Human virus	<1 min to 12
	SARS-CoV	1–2

But does cleaning patient equipment really make any difference?



The CLEEN Study

Investigating the effect of enhanced cleaning and disinfection of shared medical equipment on health-care-associated infections in Australia (CLEEN): a stepped-wedge, cluster randomised, controlled trial

Katrina Browne, Nicole M White, Philip L Russo, Allen C Cheng, Andrew J Stewardson, Georgia Matterson, Peta E Tehan, Kirsty Graham, Maham Amin, Maria Northcote, Martin Kiernan, Jennie King, David Brain, Brett G Mitchell

Summary

Background There is a paucity of high-quality evidence based on clinical endpoints for routine cleaning of shared medical equipment. We assessed the effect of enhanced cleaning and disinfection of shared medical equipment on health-care-associated infections (HAIs) in hospitalised patients.

Methods We conducted a stepped-wedge, cluster randomised, controlled trial in ten wards of a single hospital located on the central coast of New South Wales, Australia. Hospitals were eligible for inclusion if they were classified as public acute group A according to the Australian Institute of Health and Welfare, were located in New South Wales, had an intensive care unit, had a minimum of ten wards, and provided care for patients aged 18 years or older. Each cluster consisted of two randomly allocated wards (by use of simple randomisation), with a new cluster beginning

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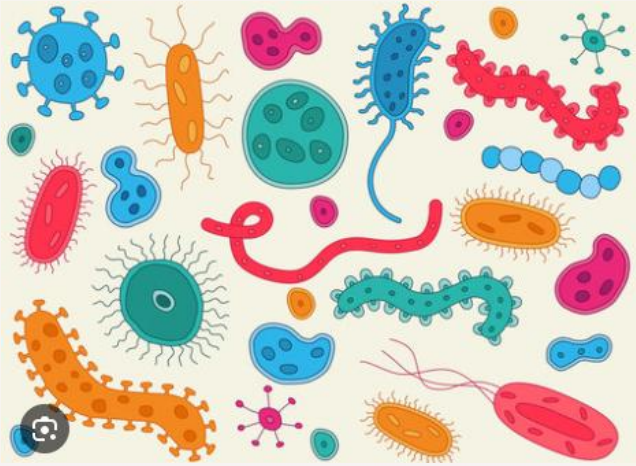
School of Nursing and Health, Avondale University,

Interpretation of results

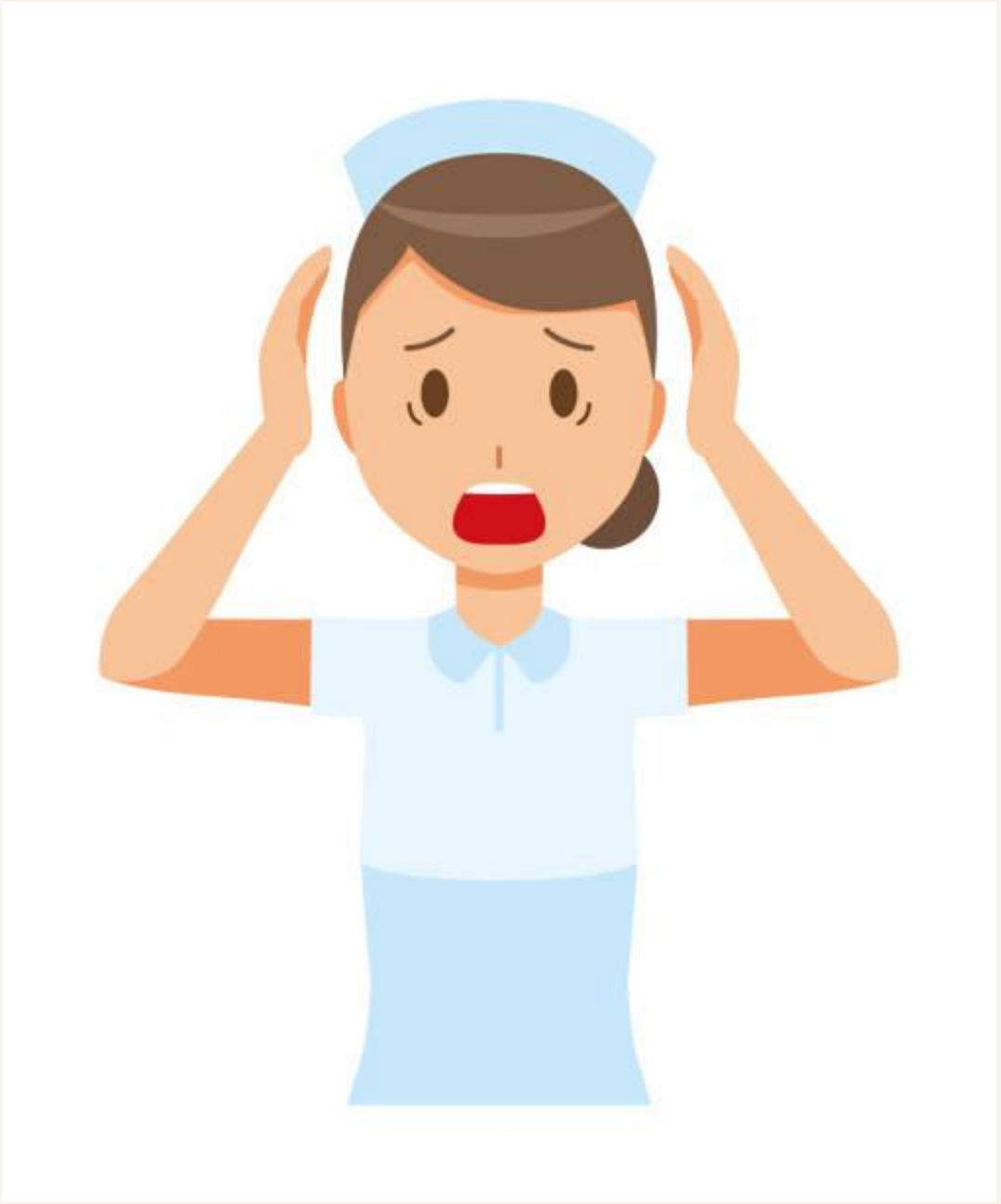
- “Improving the cleaning and disinfection of shared medical equipment significantly reduced HAIs, underscoring the crucial role of cleaning in improving patient outcomes”.

- “Findings emphasise the need for dedicated approaches for cleaning shared equipment”.

The cleaning of shared equipment is a key factor in preventing transmission of pathogens and reducing the risk of healthcare-associated infections.



We had no evidence that this was happening



So the Capital Coast and Hutt Valley IPC teams developed a process to audit how often the shared patient equipment is actually being cleaned between use on patients.

Product Review

We tested three different product types that were invisible on application but would be seen under UV light.

We decided on a pen-shaped gel applicator which is ready to use and already comes in a small volume, ideal for use by IPC Champions.

Guideline Development

We developed a guideline with instructions on products to use, what to audit, how to audit and included a form to record the results on

Equipment type	Identification	Where tag was put	Pass/Fail
Thermometer	*# 123456*	*Top, right-hand side of release button*	*Pass*

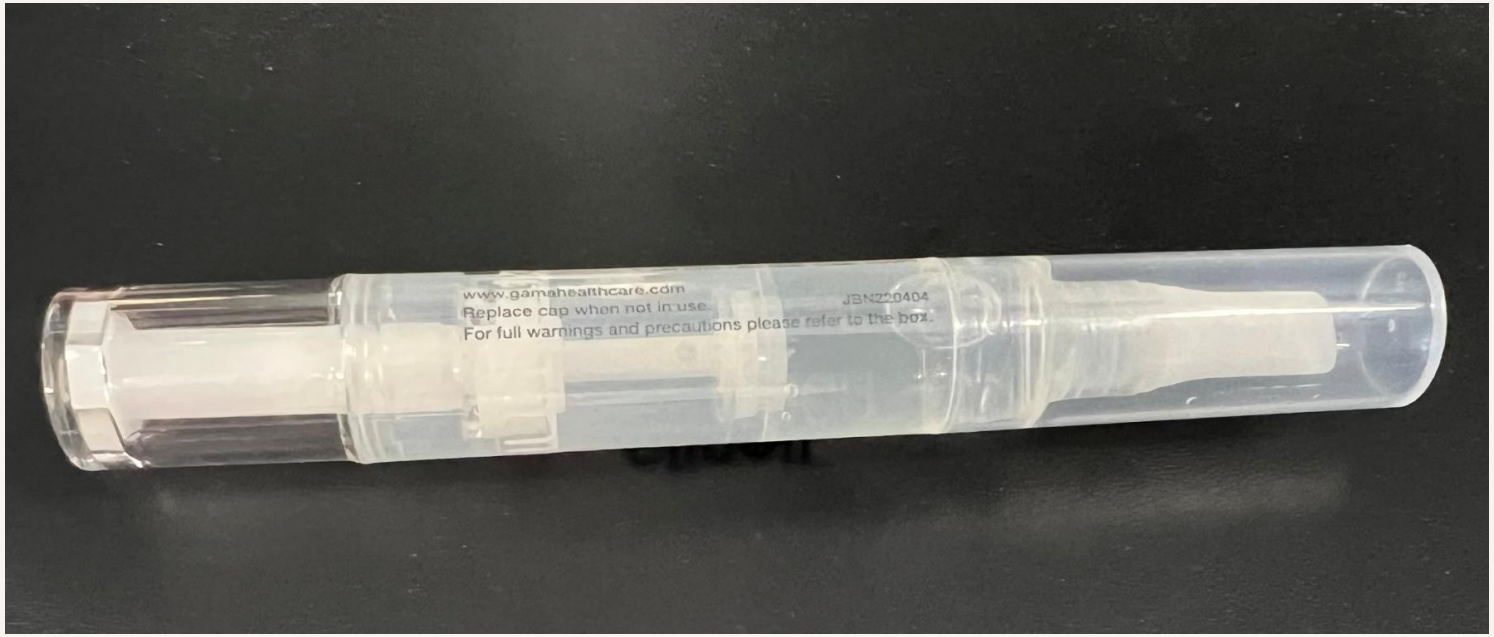
Equipment selection for audit

Equipment selected for auditing should meet the following criteria:

- Owned by or routinely stored in the clinical area
- Trackable (by equipment number or identifiable mark)
- Smooth and have non-porous surfaces
- Used more than once a day

Auditing

Indicator marker is used to tag equipment and then is rechecked 24hr later using a UV light to see if the mark has been removed by cleaning



Before

After

Initial Results

- 2024: Trials were done by IPC CNS testing the process.
- March 2025: The first round of audits done by IPC Champions produced an average result of only 52% (Wellington and Kenepuru results)
- IPC Champions feedback results to their areas and did education on the importance of cleaning patient equipment between use.
- September 2025: The average audit result was 75%
- January 2026: The average audit result was 85%

Future Aims

Our aim is to do twice yearly audits and get consistent results of over 80%.

Challenges

- High turnover of IPC Champions
- IPC Champions being able to get non-clinical time to do the audits in.
- Being able to feedback to and educate staff who work 24/7 and with many being part-time
- Ensuring the cleaning wipes were available in a convenient location so we didn’t set up for failure.

Success?

- Our data shows that shared equipment cleaning has improved overall
- Increased awareness amongst staff
- However there is still lots of work to do getting more areas on board with doing the audits and getting the IPC Champions enough non clinical time to achieve it.

Wipe it down before it gets passed around

Prevent Hospital Acquired Infections by Cleaning Shared Patient Equipment!

The End

Questions?