

Healthcare Assistants' Role in Preventing Healthcare-Associated Infections

A Human Factors Approach to Environmental Cleaning Gaps

Waikato



Every role every day makes a difference




IDENTIFY GAPS
Where cleaning is missed


UNDERSTAND WHY
Human factors insights


IMPROVE SYSTEMS
Strengthen supports and processes


REDUCE RISK
Prevent HAIs and keep our community safe

*Caring for our people
and our community*



Human Factors became evident

Early 1900s: Scientific study of people, work, fatigue and efficiency develops.

1939-1945 - WWII: Major growth in human factors because of aviation and military safety; focus shifts toward designing systems around people.

1950s-1980s: Human factors becomes established in aviation, engineering and other safety-critical industries.

1990s-2000s: Healthcare increasingly adopts human factors and systems thinking, particularly in relation to patient safety and medical error.

2006: Carayon et al. introduce the **SEIPS model (Systems Engineering Initiative for Patient Safety)**, specifically applying human factors and systems engineering to healthcare.



A Human Factors Approach to Environmental Cleaning Gaps

"Healthcare assistants clean some of the highest-touch items in our hospitals every day. But how often do we ask whether the system actually makes it clear what they should clean, when they should clean it, and why it matters?"



The environment is part of the chain of transmission



- Pathogens persist in the healthcare environment.
- Frequently touched surfaces and shared equipment create opportunities for transmission.
- Cleaning is therefore an IPC intervention, not simply a housekeeping task.

The question that started this work



Moving from “people problems” to “system problems”

Traditional response



- Remind staff



- Retrain



- Re-audit



- Tell people to “clean better”

The system

Around **1 in 10** hospitalised patients

may experience a **healthcare-associated infection** — many of which are preventable.



1 in 10 patients



10% That's around **1 in 10** hospitalised patients.



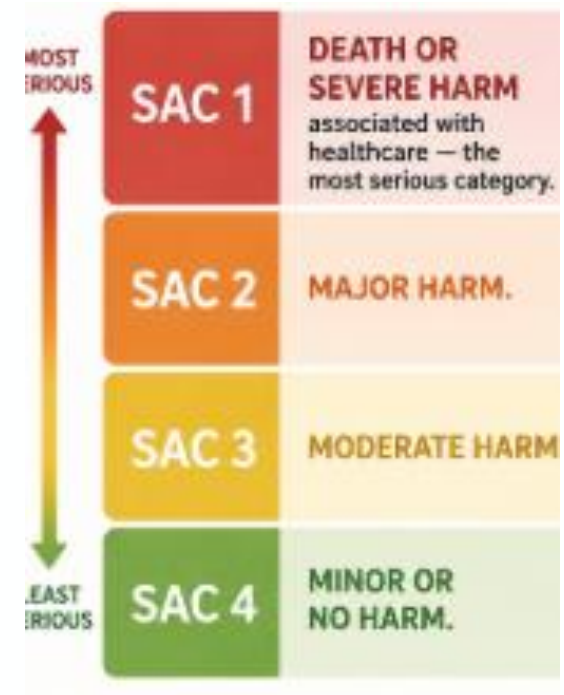
Severity Assessment Code

SAC 1 represents an event resulting in death or severe harm that is attributable to healthcare rather than the underlying condition, based on the national SAC framework.

SAC 1 review and report should generally be completed within 70 working days.

Recommendations

- Always have education
- How many system changes do you see



Feedback



The system

Balance with IPC requirements with the systems needs.

Risk Assessment Methodology



Moving from “people problems” to “system problems”

Human factors response



- What makes the task difficult?



- Are responsibilities clear?



- Is the right product available?



- Does workflow support the task?



- Is training accessible?



- Does the organisation reinforce the expectation?

We used SEIPS to look at the whole system

PERSON	Knowledge, IPC understanding, confidence
TASKS	What to clean, when, frequency, competing demands
TOOLS & TECHNOLOGY	Products, wipes, equipment, instructions
ENVIRONMENT	Ward layout, workload, interruptions, patient acuity
ORGANISATION	Policies, role clarity, education, governance, expectations

What we did

Mixed-methods service evaluation

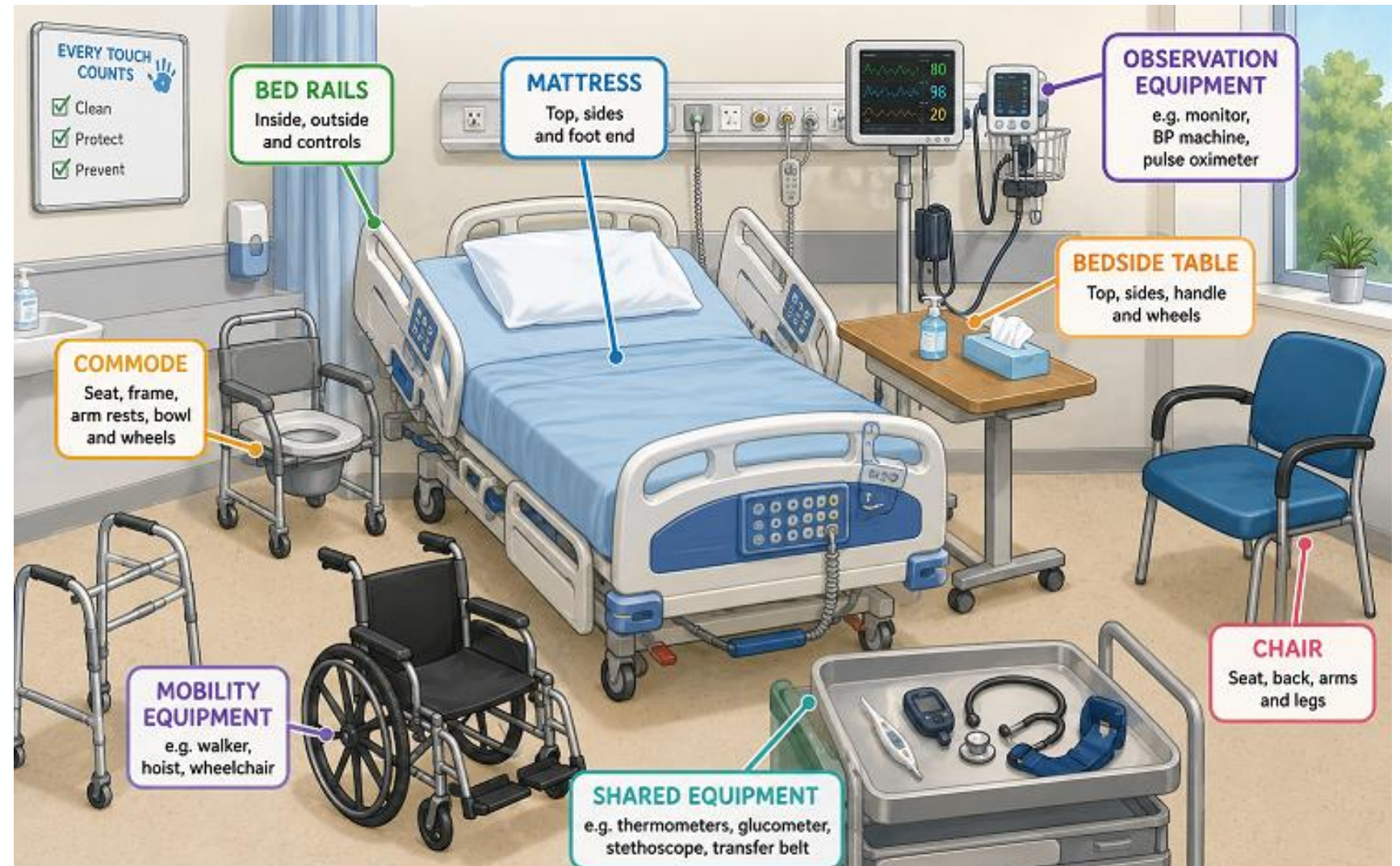
Environmental audit & glow markers	15 cleaning elements assessed, 10 glow markers, resources & changes in system priorities
SEIPS gap analysis	Document review + stakeholder engagement Role clarity + training + IPC knowledge explored + other demands
Targeted improvement programme	Reduce to one wipe Update the HCAs education, bio films, what's in dust One document for cleaning frequency and who cleans what Specific location on IPC page for cleaning Use of Professional Development Unity training all HCAs and Nursing staff • 6 months later - company of wipes training/posters/pictures
Ward rounds	Listen and learn
Action log	Capture the feedback

What did we find?

SEIPS factor	What we identified
Person	Limited formal IPC education on the importance of cleaning, alongside pressures associated with patient flow and bed demand
Task	Uncertainty about cleaning responsibilities and role boundaries
Tools	Variable understanding/use of cleaning products
Environment	Competing clinical priorities and workflow demands
Organisation	Fragmented guidance, training and governance

"Who cleans what?" was not a simple question

HCA? Nurse?
Cleaner? Shared
responsibility?



We redesigned the system, not just the education

INTERVENTION AREA	FOCUS AREAS	RIGHT ACTION	OUTCOME
 1. CLARIFY Cleaning responsibilities	• Cleaning responsibilities • Expected standards • Role boundaries	 Know your role. Follow the standard. Work within your responsibilities.	 Clear roles. Defined standards. Accountability understood.
 2. EDUCATE Build knowledge and skills	• HAI transmission – CLEEN Study • Environmental contamination – bio films • Cleaning products – wipes • Practical cleaning processes	 Understand the why. Use the right products and processes. Clean with confidence and consistency.	 Informed practice. Improved cleaning. Reduced HAI risk.
 3. STANDARDISE Create consistency and accountability	• Consolidated Cleaning Best Practice guidance • Consistent resources • IPC expectations • Governance and accountability – data	 Use the same guidance. Access the right resources. Follow IPC expectations. Monitor and act on data.	 Consistent practice. Visible expectations. Data-driven improvement. Stronger governance.

What changed?

Improvement occurred across more than
40% IPC Environmental Audits and Glow markers



Improved cleaning compliance



Greater clarity of HCA responsibilities



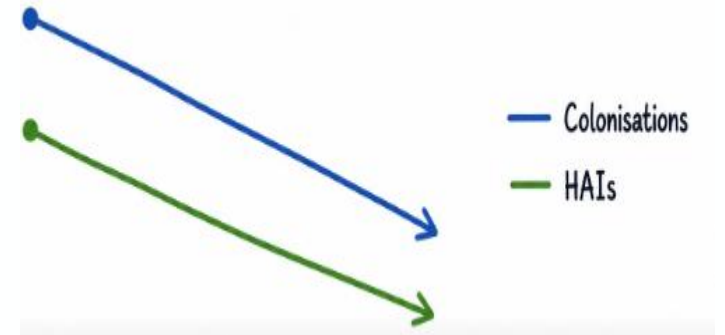
Increased engagement with IPC



Better understanding of why environmental cleaning matters



Not every measure improved equally — system improvement remains ongoing.



What SEIPS helped us see

Variation in cleaning was a symptom.

Clear roles → less ambiguity

Education → what they needed to know

Tools/resources → easier task completion

Workflow alignment → greater reliability

Governance → sustained expectations

**Better work system → More reliable cleaning →
Reduced opportunity for transmission**

Five things I want you to take away

1. Cleaning is patient safety.

Environmental hygiene is an integral component of IPC.

2. HCAs are an important part of the IPC workforce.

Their contribution needs to be recognised, defined and supported.

3. Don't automatically fix a system problem with more training.

Use human factors to understand why the gap exists.

4. Work within the system to fix the problem.

Health targets – access to care

5. Always use risk assessment Methodology to balance within the system.



Any Questions

References

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