Enhancing Cleaning Standards to reduce *Clostridioides difficile* cases: A Multi-Ward Intervention

Oxford University Hospitals NHS Foundation Trust

Riji Varghese[1], Jins Abraham[1], Lisa Butcher[1], Philip Norville[1], David Eyre[1,2], and Katie Jeffery[1,3]

[1]Oxford University Hospitals NHS Foundation Trust and [2]Nuffield Department of Population Health, [3]Radcliffe Department of Medicine, Oxford University

Background

Environmental cleaning is important for reducing healthcare-associated infections such as *Clostridioides difficile*, as supported by the CLEEN study*. In response to rising *C. difficile* cases, and an outbreak on an acute medical ward, a 12-month project focusing on departmental/clinical cleaning scores. was launched across six acute medical wards in Oxford University Hospitals to improve cleaning standards, auditing, and accountability.

Methods

Starting in 2023, the project included baseline assessments, targeted staff training on equipment cleaning, and monthly audits with ward representation. Inter-ward peer reviews encouraged collaboration, while real-time issue escalation ensured timely resolution. Monthly infection prevention spot checks and review meetings provided ongoing feedback. Audit and infection data were analysed and shared with stakeholders.

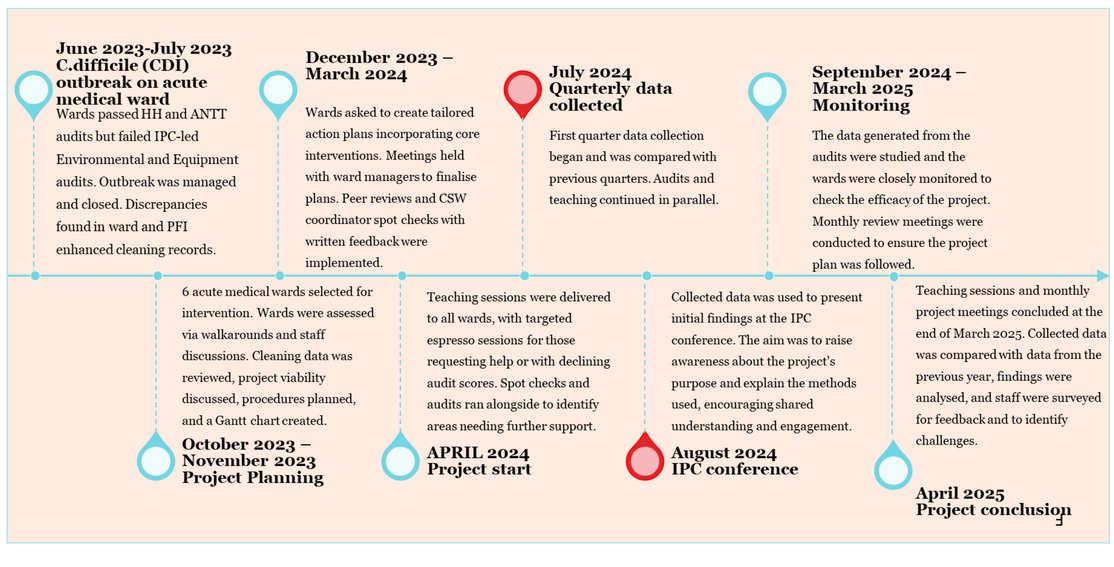

Figure 1: Project timeline

Results

Across 175 audits, overall cleaning scores improved from 94.6% (SD=3.4) to 96.1% (SD=2.5) (p=0.002), with consistent improvements across all wards (interaction p values testing for differences by ward >0.22). Audit failures (scores <95%) dropped from 52% to 26%.

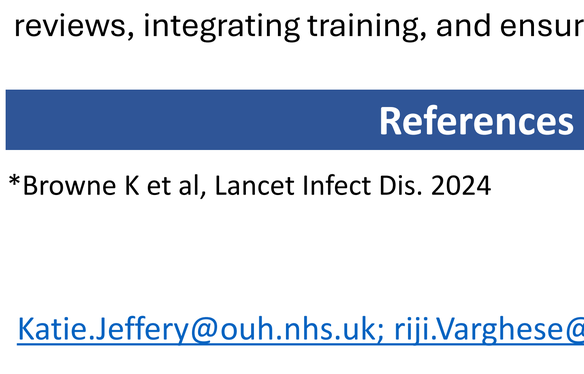

Figure 2: overall audit score—made up of departmental, estates, and domestic cleaning—shows only a slight improvement, driven by departmental/clinical cleaning.

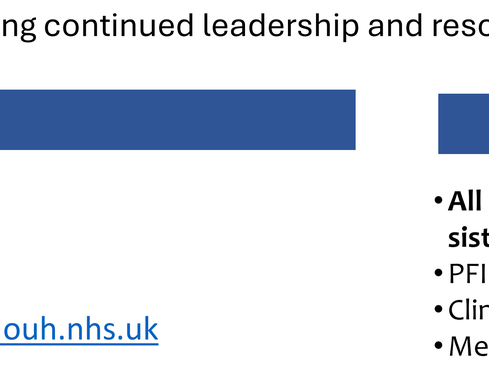

Figure 3: Departmental clean breakdown by ward - Wards **1, 2, and 6** showed statistically significant improvements, while others remained stable

The number of C. difficile cases in the intervention wards in the year before project initiation (2023-24) was 29, with a 41% reduction in cases in the year after the intervention to 17 cases. Interrupted time-series analysis showed a decline in *C. difficile* cases from 6.5 to 3.1 per 10,000 bed-days (p=0.01) on intervention wards, with no significant change on the control wards (all wards on the John Radcliffe site not included in the intervention) (2.2 to 2.8; p=0.12) (Figure 4).

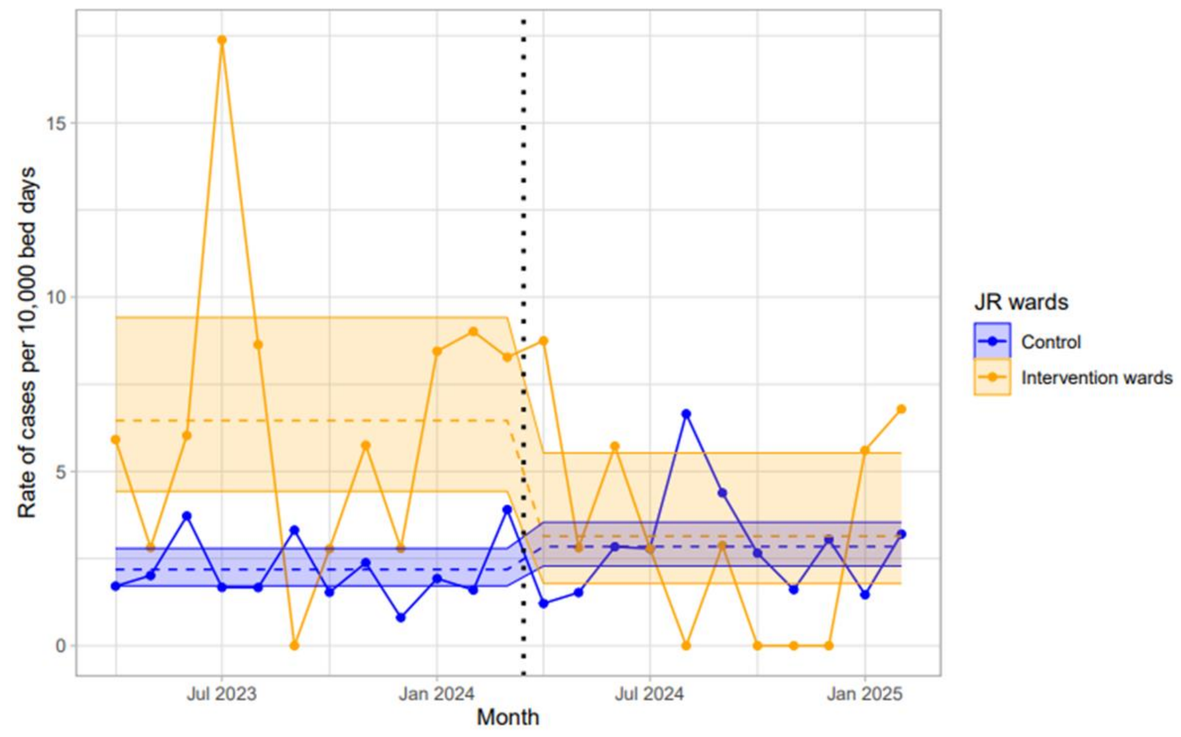

Figure 4: Interrupted time series – dotted line represents start of the intervention

Sustaining improvement and embedding long-term change

Importance of ownership, consistency, and communication

- **Clinical support worker (CSW) Coordination:**
  Appointed CSWs to oversee cleaning coordination efforts and task delegation .
- **Equipment cleaning – simple protocols**
  15 items of clinical equipment selected for regular spot checks (eg drip stands, commodes) supporting the departmental cleaning audit
- **Consistent Audit Participation**
  Ensure ward representatives are consistently available for audits and empowered to act on findings.
- **Clear Escalation Pathway**
  Reinforced the process for immediate issue escalation to the PFI team with clear communication protocols and shared responsibility.
- **Training & Education:**
  Providing ongoing training on audit expectations, cleaning standards, and effective communication of findings.
- **Ward Manager Ownership:**
  Ward managers to take active ownership of cleaning standards and audit outcomes within their wards
- **Resource Allocation:**
  Ensure availability of cleaning supplies (e.g. mops, wipes) and adequate staffing for enhanced cleaning.

Conclusion

Over time, ward teams transitioned from feeling 'intervened upon' to becoming the proud owners of the improvement process. Staff were genuinely motivated by the drop in *C. diff* cases.

The project improved cleaning standards and reduced *C. difficile* rates by over 40%. Success factors included consistent audit participation, ward ownership, and responsive issue management. Future plans involve scaling the approach to other sites, embedding it into routine care, expanding peer reviews, integrating training, and ensuring continued leadership and resource support.

References

*Browne K et al, Lancet Infect Dis. 2024

Katie.Jeffery@ouh.nhs.uk; riji.Varghese@ouh.nhs.uk

Thank you!

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