

Rationalising Contact Precautions

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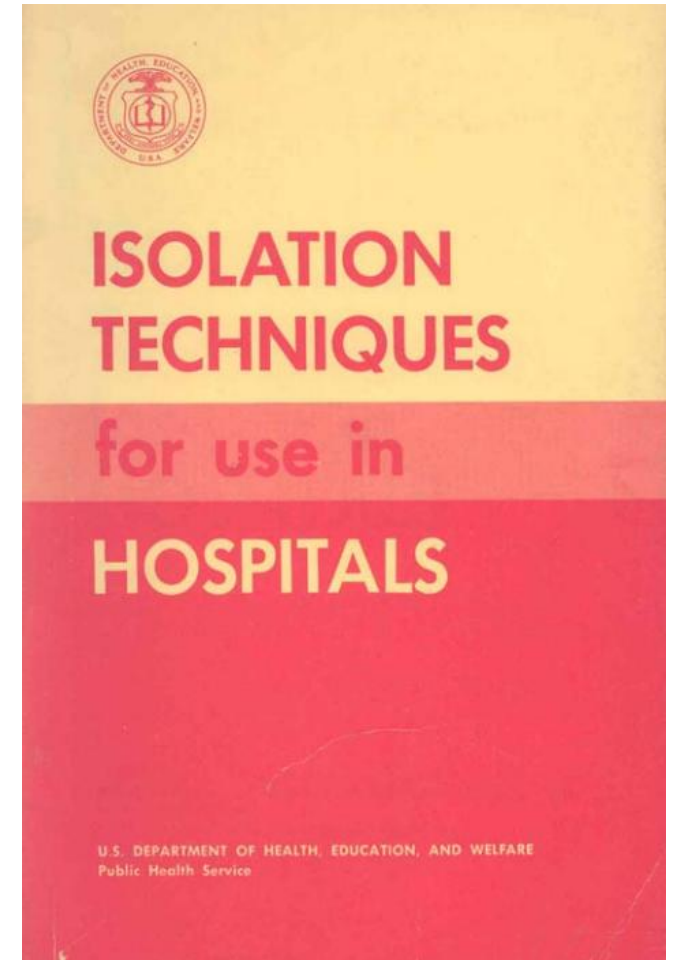
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Disclosures

- No conflicts of interest

A brief history of Contact Precautions

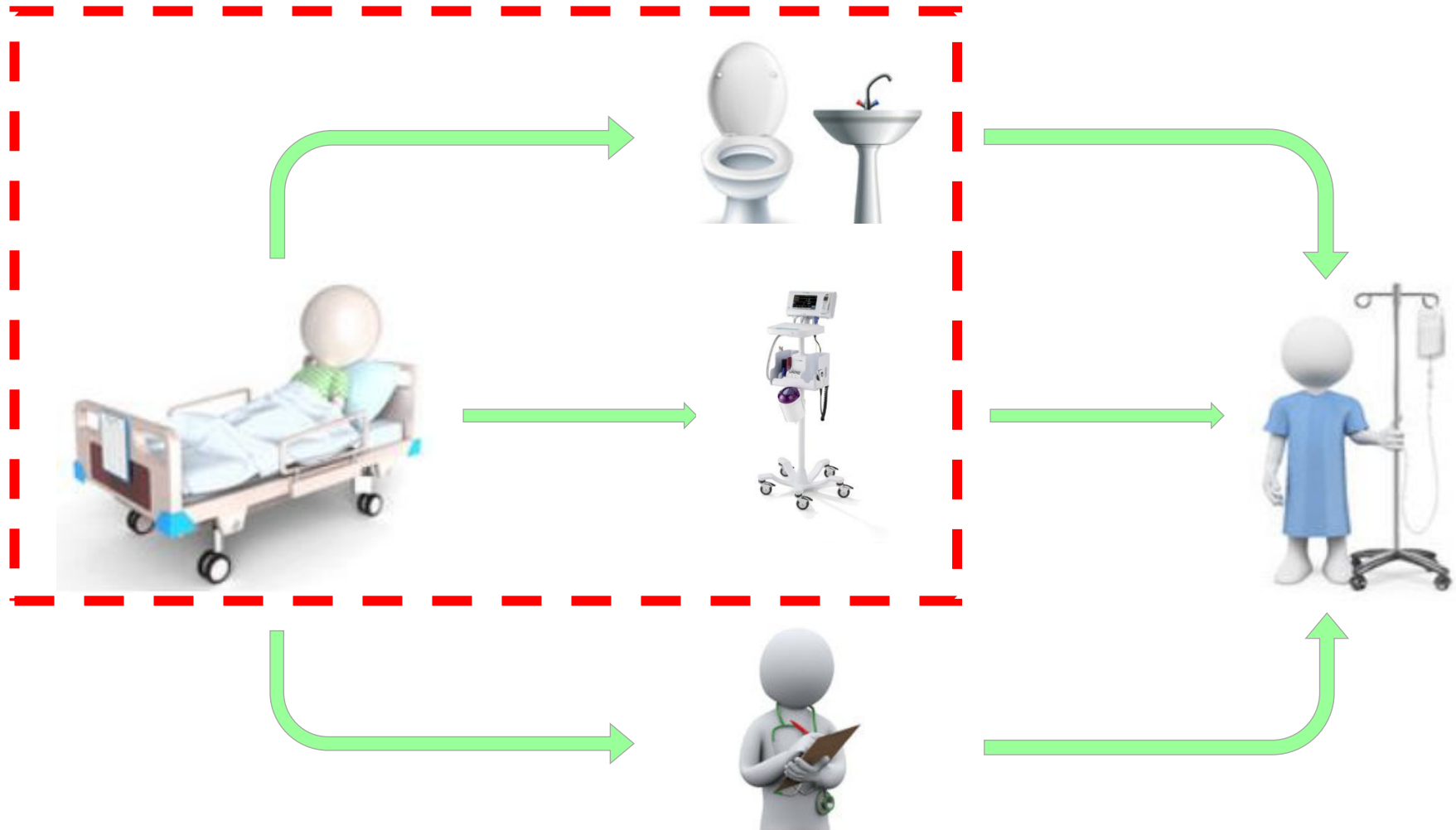
- CDC Categorical Guidelines (1970s)
 - The CDC published Isolation Techniques for use in Hospitals.
 - Grouped diseases into categories like Strict or Respiratory.
 - Gowns and masks were recommended based on the category.
- The Shift to Universal Precautions (1980s)
 - The HIV epidemic changed safety rules in 1985.
 - Hospitals treated all blood and body fluids as dangerous.
 - Protection focused heavily on defending healthcare workers.
- Modern Tiered Precautions (1996)
 - The CDC combined old rules into a two-tier system in 1996.
 - Standard Precautions applied to all patients at all times.
 - Transmission-Based Precautions split into Contact, Droplet, and Airborne.



Contact Precautions are a multimodal intervention

- Systems to identify high risk patients
- Single room with own bathroom
- Gloves and gowns
- Hand hygiene
- Dedicated equipment
- Daily clean and a special clean on discharge
- Visitor restrictions

Contact Precautions make sense



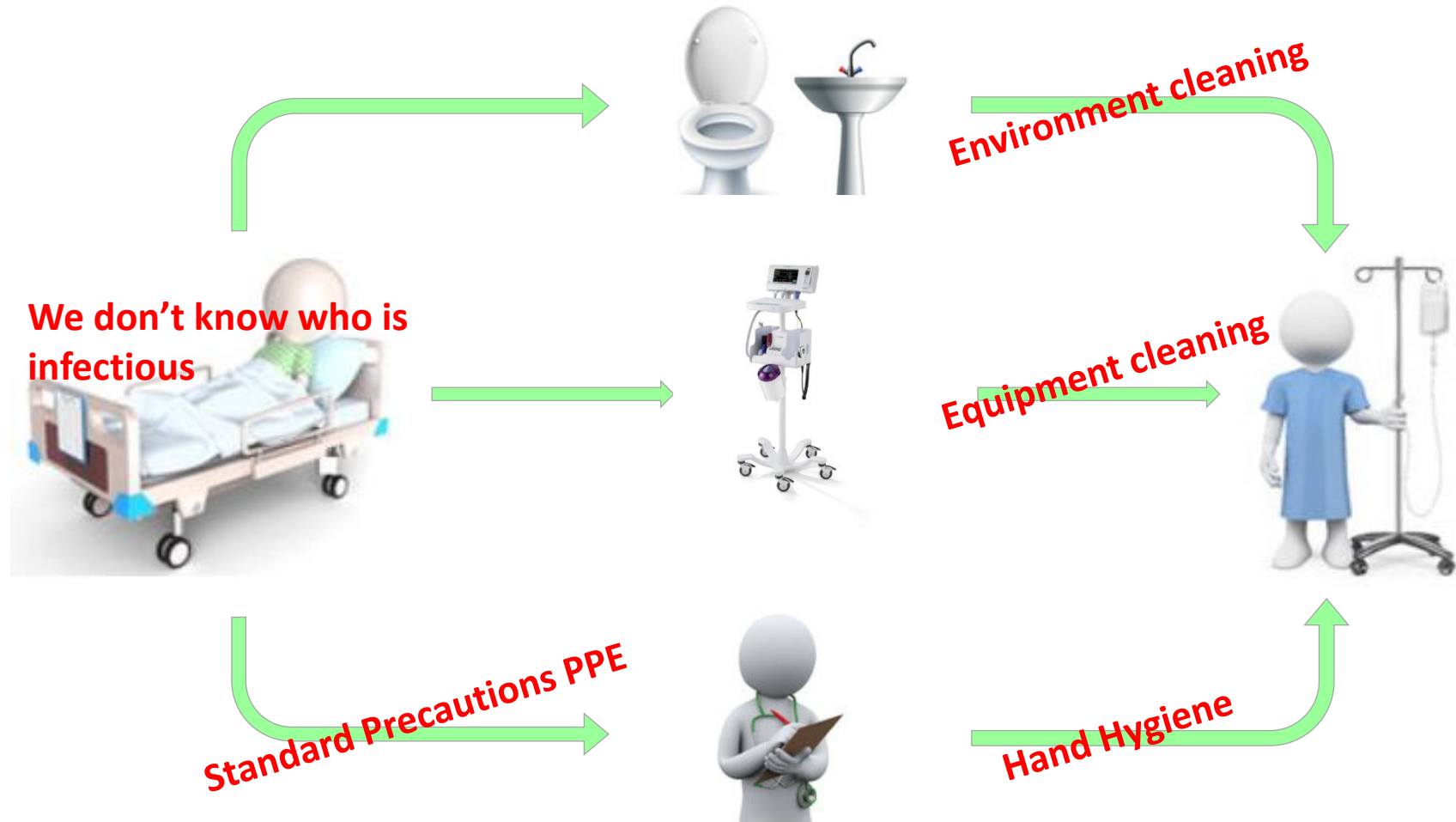
The Precautionary Principle

- If an intervention seems likely to provide benefit, and the risk of harm is low, then the intervention should proceed even if there is a lack of supporting evidence

The Precautionary Principle

- ~~• If an intervention seems likely to provide benefit, and the risk of harm is low, then the intervention should proceed even if there is currently a lack of supporting evidence~~
- If an intervention has a risk of severe harm, a lack of evidence about that harm should not stop us taking action to block it = First do no harm
- We do not put patients into Contact Precautions for their benefit

Do Contact Precautions make sense?



Do Contact Precautions cause harm?

- There is low quality evidence suggesting there may be a risk of harm for Contact Precautions. The risk is probably over-stated.
- The greatest harm is likely to be from increased room transfers, which affects other patients beyond just the patient going into Contact Precautions
 - Each room transfer increased the odds of HAI by 9%
 - Changing wards increases risk of HAI by x5
 - Increased risk of falls and delirium
 - Use of staff time to facilitate transfer

BMJ Open 2020;10:e030371doi.org/10.1136/bmjopen-2019-030371

BMJ Qual Saf 2021 Jun;30(6):457-466. doi: 10.1136/bmjqs-2020-012124.

JCN 2017 Jul; 26(23-24):4927-4935. doi.org/10.1111/jocn.13976

What is the evidence for Contact Precautions?

SYSTEMATIC REVIEW



Prevention in adults of transmission of infection with multidrug-resistant organisms: an updated systematic review from Making Healthcare Safer IV

Sean McCarthy,¹ Aneesa Motala ,^{2,3} Paul G Shekelle^{1,2}



ORIGINAL ARTICLE



Intervention to Reduce Transmission of Resistant Bacteria in Intensive Care

Population: 18 ICUs, n=9139 admissions

Intervention: Screening all patients for MRSA and VRE and placing in CP. Universal gloving for all other patients.

Control: No screening. CP for patients with known MRSA or VRE. Standard precautions for all others.

Outcome: More patient days in isolation in intervention arm. No difference in colonisation or infection rates for MRSA or VRE

www.nejm.org/doi/full/10.1056/NEJMoa1000373

Other RCTs looking at Contact Precautions

- 2 ICUs in France, n=500 (Camus et al 2011)
 - Contact Precautions made no difference to rates of MRSA acquisition
- 16 Dutch hospitals medical and surgical wards, n=10220 (Kluytmans et al 2019)
 - Contact Precautions in single room vs Standard Precautions in multi-bed room made no difference to ESBL acquisition
- 6 European hospitals medical and surgical wards, n=16091 (Maechler et al 2020)
 - Contact Precautions made no difference to rates of ESBL colonisation or infection

What about other MDROs?

- Carbapenem-Resistant Organisms
 - Lack of evidence
- *Candidozyma auris*
 - Lack of evidence



What about *Clostridioides difficile*?

- Best evidence for benefit from gloves

JOURNAL ARTICLE

Transmissibility of *Clostridium difficile* Without Contact Isolation: Results From a Prospective Observational Study With 451 Patients

[Andreas F. Widmer](#), [Reno Frei](#), [Stefan Erb](#), [Anne Stranden](#), [Ed Knetsch](#), [Sarah Tschudin-Sutter](#) [Author Notes](#)

Clinical Infectious Diseases, Volume 64, Issue 4, 15 February :
<https://doi.org/10.1093/cid/ciw758>

Published: 15 November 2016 **Article history** ▼

> *Gastroenterology*. 2017 Apr;152(5):1031-1041.e2. doi: 10.1053/j.gastro.2016.12.035.
Epub 2017 Jan 5.

Asymptomatic Carriers Contribute to Nosocomial *Clostridium difficile* Infection: A Cohort Study of 4508 Patients

[Thomas Blixt](#)¹, [Kim Oren Gradel](#)², [Christian Homann](#)³, [Jakob Benedict Seidelin](#)⁴,
[Kristian Schønning](#)⁵, [Anne Lester](#)⁶, [Jette Houliind](#)⁷, [Marie Stangerup](#)⁷, [Magnus Gottlieb](#)⁸,
[Jenny Dahl Knudsen](#)⁶

Affiliations + expand

PMID: 28063955 DOI: [10.1053/j.gastro.2016.12.035](https://doi.org/10.1053/j.gastro.2016.12.035) [↗](#)

What about infectious diarrhoea?

- Viral gastroenteritis is highly infectious. Usually present on admission or part of an outbreak
- Most hospital onset diarrhoea is non-infectious. Even antibiotic-associated diarrhoea suspicious for *C. difficile* is only *C. difficile* in approximately 20% of cases (likely to be less in low prevalence settings)

Do single rooms make a difference?

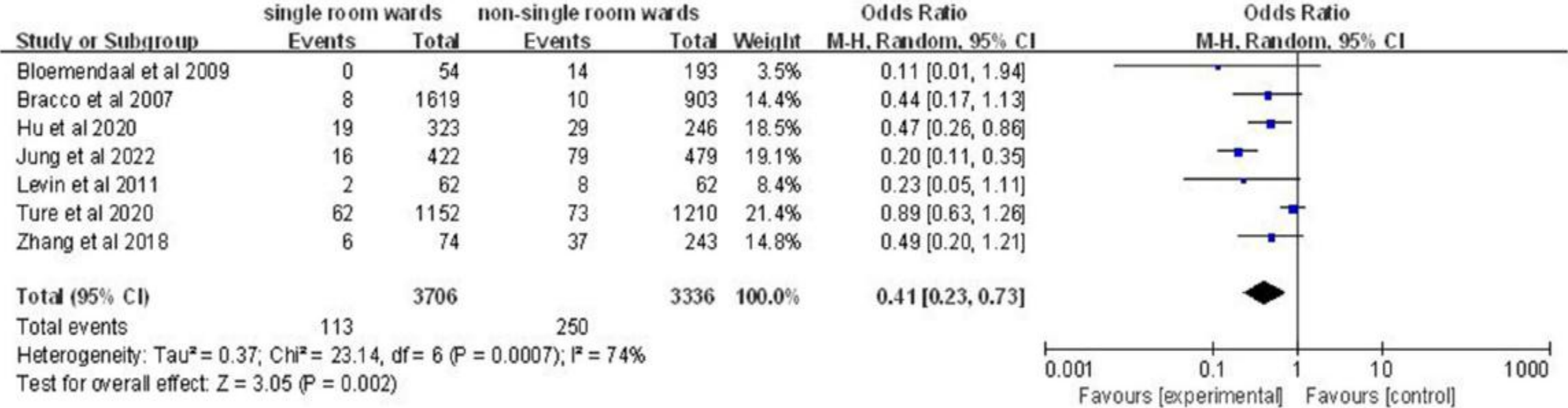


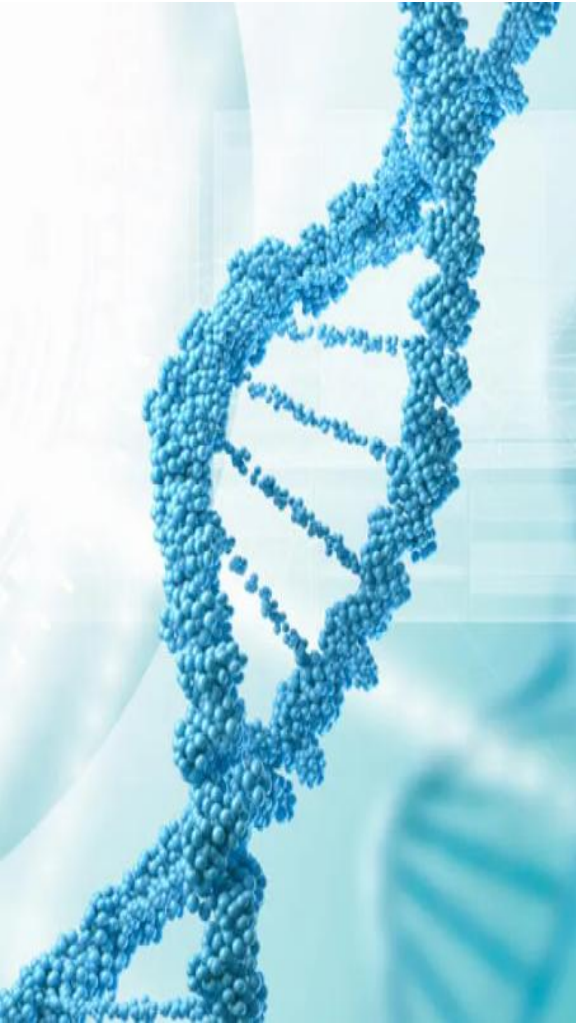
FIGURE 5
Impact of single-patient room design on acquisition rate of MDROs in the ICU.

What interventions do we have evidence to support?

- Equipment cleaning – CLEEN study 2023
- Hand hygiene – Semmelweis 1847
- Environmental cleaning – REACH study 2019



Genomics will completely change how we understand transmission events



- Most studies look at organisms identified by culture which does not prove transmission or the source of transmission
- Genomics removes the background noise and clarifies if a transmission event has occurred
- We will discover more transmission events than we previously recognised, and we will discount a lot of events which we previously thought were transmission

Contact Precautions for NZ (my opinion)

1. Contact Precautions are a prioritisation tool for placement in single rooms. PPE should only be used as per Standard Precautions
2. Given lack of single rooms and harm from moving patients, Contact Precautions should only be for non-endemic MDROs or highly transmissible infections:
 - CRO, *C. auris* – Contact Precautions
 - MRSA, ESBL, VRE – Standard Precautions
 - Hospital onset diarrhoea – Standard Precautions unless confirmed *C. difficile*
3. We should do less screening but more genomic surveillance
4. We should focus on improving Standard Precautions, equipment cleaning and environmental cleaning for all patients