

PROJECT SNAPSHOT

8C: Clostridioides difficile Near-Patient Testing Versus Centralized Laboratory Testing: A Cluster Randomized Trial

Pillar: Treatment Optimization

Theme: Policy, Economics & Sustainability

Keywords: Diagnostics; Nosocomial Diarrhea; Near-patient Testing; C. difficile



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AIM

The focus of this project is to investigate through implementation the clinical and economic impact of decentralizing C. difficile testing from a centralized regional laboratory to near-patient.

WHY IS THIS IMPORTANT?

By moving C. difficile diagnostics to near-patient testing the time required to report actionable results can be reduced. This has the potential to improve patient management and reduce unnecessary patient isolation and antibiotic use while ruling out a primary infectious cause of nosocomial diarrhea.

OUTCOMES

- 1 Quicker de-isolation of C. difficile negative patients in hospitals.
- 2 More targeted clinical treatments as a result of faster reported.
- 3 Negative diagnostic results.

RESEARCH QUESTIONS

- 1 Does near-patient testing meaningfully reduce unnecessary isolation time by shortening wait times for diagnostic results?
- 2 Are less antibiotics used when healthcare providers can more quickly rule out potential C. difficile infections?
- 3 Are clinical outcomes improved with C. difficile near-patient testing implementation?

OUR APPROACH

Calgary presents a unique opportunity to examine the effects of decentralizing C. difficile infection testing to near-patient. All inpatient care units at Foothills Hospital have been randomized to one of two study arms. The standard of care arm will continue to have samples tested at the central lab using SOP, while the near-patient testing arm will screen samples at Foothills Hospital (NPT) using a lateral flow assay with negatives results reported out immediately (positive samples still confirmed at the central lab). This is a cluster randomized crossover study and at study midpoint all patient care unit will switch to the opposite study arm.

Interim data prior to cross-over confirmed that NPT significantly reduced the time of patient isolation. Current efforts are focused on translating this to cost-savings if any and determining the change in antibiotic use with NPT.

ALIGNMENT WITH THE AMR - ONE HEALTH CONSORTIUM

LEVERAGED SOURCES OF SUPPORT

Alberta Health Services, Alberta Precision Laboratories, Foothills Hospital, University of Calgary Cumming School of Medicine (Infrastructure) • CIHR Funding

KNOWLEDGE & TECHNOLOGY EXCHANGE AND EXPLOITATION

- Evaluate the potential benefits and hurdles for potential wider integration of C. difficile near-patient testing in Alberta.
- Reduce unnecessary antibiotic use.
- Reduce the length of stay and the costs of isolation.

TRAINING OF HIGHLY QUALIFIED PERSONNEL

- 1 PhD
- 2 MSc
- 0.5 MLA
- Broad multidisciplinary team involving medical staff, laboratory personnel, research, economics, epidemiology, management, and IPC

AFFILIATIONS:

