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Application of consolidated framework for implementation research to improve Clostridioides difficile infection management in district hospitals

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Abstract

Background

Clostridioides difficile infection (CDI) contributes the global threats of drug resistant infections, healthcare acquired infections and antimicrobial resistance. Yet CDI knowledge

among healthcare providers in low-resource settings is limited and CDI testing, treatment, and infection prevention measures are often delayed.

Objectives: to develop a CDI intervention informed by the local context within South African public district level hospitals, and analyze the CDI intervention and implementation process.

Methods

A CDI checklist intervention was designed and implemented at three district level hospitals in the Western Cape, South Africa that volunteered to participate. Data collection included a retrospective medical records review of patients hospitalized with *C. difficile* test orders during the 90 days post-implementation. Patient outcomes and checklist components (e.g. antibiotics) were collected. Qualitative interviews (n = 14) and focus

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groups (n = 6) were conducted with healthcare providers on-site. The Consolidated Framework for Implementation Research (CFIR) and the Framework for Reporting Adaptations and Modifications to Evidence-based Implementation Strategies (FRAME-IS) were applied to collected data and observations in order to identify drivers and barriers to implementation and understand differences in uptake.

Results

One of the three hospitals displayed high intervention uptake. Highly relevant CFIR constructs linked to intervention uptake included tension for change, strong peer intervention champions, champions in influential leadership positions, and the intervention's simplicity (CFIR construct: complexity). Tension for change, a recognized need to improve CDI identification and treatment, at the high uptake hospital was also supported by an academic partnership for antimicrobial stewardship.

Conclusions

This research provides a straight-forward health systems strengthening intervention for CDI that is both needed and uncomplicated, in an understudied low resource setting. Intervention uptake was highest in the hospital with tension for change, influential champions, and existing academic partnerships. Implementation in settings with fewer academic connections requires further testing of collaborative implementation strategies and proactive adaptations.

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Keywords

Clostridioides difficile infection; Healthcare associated infection; Antimicrobial stewardship; District level hospital; Implementation science; Global health

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