

Presentation Type:

Oral Presentation - Top Poster Abstract

Subject Category: Quality Improvement**Determinants of Adherence with Antimicrobial Resistant Organism (ARO) Admission Screening in a Provincial Health Care System**

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Background: Effective integration of antimicrobial resistant organism (ARO) admission screening into clinical information systems (CIS) can facilitate prompt identification of patients at risk of an ARO and interrupt transmission. However, ARO admission screening remains suboptimal in Alberta, Canada following implementation of the ARO admission screening tool in the provincial CIS. We sought to understand the determinants of adherence with the use of the ARO admission screening tool in the CIS.

Methods: A mixed-methods study was conducted using a survey, human factors observations, and qualitative focus groups. Eligible participants included nursing staff and physicians from emergency departments and in-patient units in acute care and acute rehabilitation facilities where the ARO admission screening tool was utilized in the CIS in Alberta, Canada from September 6, 2023 to June 18, 2024 (n=100). A survey (REDCap) explored staff perceptions and experiences using the tool in the CIS. Observations and interviews of nursing staff completing the tool were guided by the Systems Engineering Initiative for Patient Safety model. Virtual (Zoom) semi-structured focus groups explored barriers and enablers of using the tool guided by the Theoretical Domains Framework. Descriptive analysis of survey responses was conducted using Microsoft Excel (Version 2409). Field notes and focus group transcripts were used for a rapid qualitative, thematic analysis. A weaving narrative by theme was used to integrate survey results with findings from the observations and focus groups. **Results:** There were 527 survey respondents representing all 5 health zones, 5 nurses observed and 20 interviews conducted by the human factors team, and 24 participants in 6 focus groups. Focus group participants represented different sized hospitals (12-1,099 beds) with varying ARO admission adherence rates (29-83%). Three emergent themes arose: context, the ARO admission screening tool, and the individual. Contextual factors included time constraints, increasing nursing workload, competing priorities, lack of patient co-operation, and a need to increase interactions with infection prevention and control programs. Attributes of the tool impacting completion included location of the tool within the CIS, lack of prompts, and multiple sources of information required to complete the tool. At an individual level, themes arose related to experience, perceptions of ARO screening, and lack of training that influenced completion of the tool. **Conclusions:** Among the emergent themes, multiple determinants were identified influencing the use of the ARO admission screening tool in the provincial CIS. These findings will help inform future strategies to improve ARO admission screening and reduce ARO transmission.

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Subject Category: Quality Improvement**Defining Thresholds to Identify Hospitals in a Healthcare System with Opportunities to Significantly Improve C. difficile Infections**

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Background: Clostridioides difficile infections (CDI) are associated with patient morbidity and mortality and also may impact reputational and

financial metrics. CDI was identified as a healthcare-associated infection of concern at several of the hospitals in our healthcare system and set as a target for improvement. We sought to create an easily interpretable tool to help select hospitals with the greatest opportunity to benefit from this work. **Methods:** The National Healthcare Safety Network's (NHSN) data (infection counts and number of predicted infections) for LabID CDI from Oct 2023-Sept 2024 were exported for 3 academic and 8 community hospitals in our healthcare system in eastern Massachusetts and New Hampshire. Using published source code from the Centers for Disease Control and Prevention recreated in R software (v.4.3.3), we calculated the statistical significance of the Standardized Infection Ratio (SIR) relative to 1.0 using the p-value. We then performed the statistical test iteratively by adjusting the number of infections by one in each direction from the true observed number of infections, to establish thresholds for significantly improved or worsened performance. Data were displayed as gauge charts with indication of current SIR statistical significance defined by color (red, yellow and green) and distance to threshold that would alter that significance (See Figure). Viable opportunities for improvement were defined as being within 5 or fewer infections of calculated thresholds.

Results: Review of CDI data across all 11 sites demonstrated more improvement opportunities at some sites than others. Four sites were in green ranges, seven in yellow and none in red. All opportunities for viable improvement were identified in the yellow range; 5 of 11 sites had potential for improvement in SIR (Hospitals C, D, E, I, K) and 2 for worsening of SIR (Hospitals G, J); see Figure. **Conclusion:** In our healthcare system, this model provided insight into site-specific opportunities for improvement in CDI by highlighting sites closest to achieving a statistically significant change in SIR. Although factors such as morbidity and cost may influence selection of targets for improvement, visual depiction of viable thresholds for change in SIR may provide an indicator of facilities likely to yield the most benefit relative to investment required for reduction efforts.

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C. difficile Standardized Infection Ratio (SIR) Thresholds

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Subject Category: Regulatory issues**Tackling NHSN Location Mapping in a Large Healthcare System Utilizing a Robust Decision Support Tool**

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Background: Hospitals experienced increased demand for acute care and specialty services during recovery following COVID-19 epidemics. Internal analysis identified potential inaccuracies in NHSN location unit designations across a large healthcare system with 2,249 mapped NHSN locations. Findings revealed inconsistencies in how location change decisions were determined mainly from the type of data applied. Facilities