IMPACT OF A REVERSE TESTING ALGORITHM AND MULTIDISCIPLINARY APPROACH ON REDUCING HEALTHCARE FACILITY-ONSET CLOSTRIDIOIDES DIFFICILE INFECTIONS

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Project Objective

To decrease the amount of possible hospital onset clostridium difficile infections by treating only true acute clostridium difficile infections.

Background

Clostridioides difficile infections impact hundreds of thousands of hospitalized patients each year. (Centers for Disease Control and Prevention [CDC], 2021). As we continue to navigate the post-pandemic world of healthcare associated infections and how to best serve our community, we looked to change our method of testing for Clostridioides difficile (C. difficile). The testing algorithm was utilized as the Antigen/toxin with reflex confirmation via polymerase chain reaction (PCR); this led to a higher incidence of positive results that may have indicated colonization rather than an active infection. To determine an active infection the need to reverse the algorithm and testing method was adopted, utilizing the PCR initially reflexing to toxin confirmation if positive.

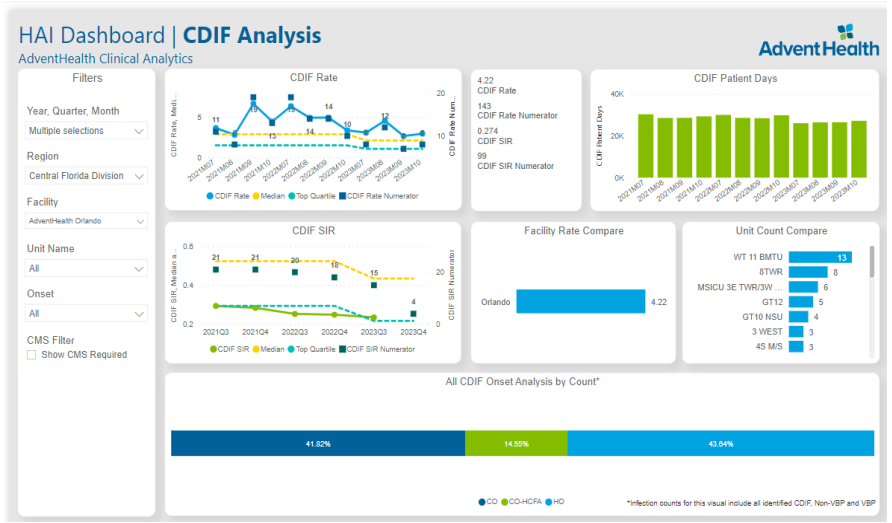
Methods

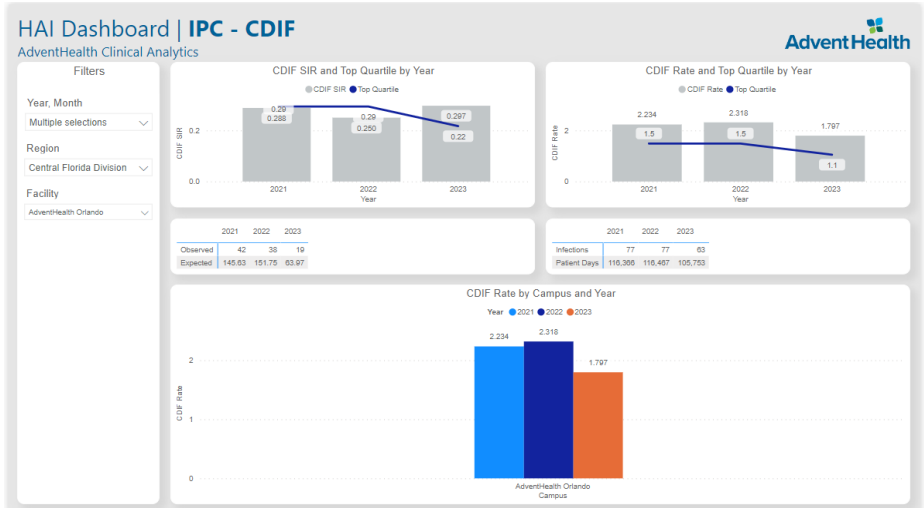
A cross-sectional approach was utilized, with both inpatient and outpatient settings comparing 2021 through 2023. By implementing the reverse algorithm of PCR reflex to toxin the active rate of infection would decrease resulting in improved antimicrobial stewardship for the system. The frontline healthcare team was provided education consisting of a C. difficile selfie sheet and quick reference guide to facilitate testing. The confounding variable included data from 31 days of August 2022 while the new testing protocol was not in effect until August 15th, 2023, this presented a variability of 9.

C. *Diff* Treatment and Isolation Quick Reference

The table below will help guide you through C. Diff treatment and isolation.

	Enteric Isolation	Treatment	Room Cleaning
Order for C. Diff Testing	Isolation Required Upon Order of Test	Dependent upon testing result	Dependent upon testing result
Positive C. Diff PCR with Positive C. Diff Toxin	Isolation Required	Treatment Required	Request UV Light Cleaning
Positive C. Diff PCR with Negative C. Diff Toxin	Isolation may be Required Consult IP if PCR is Positive but Toxin is Negative	At Physician's Discretion With no explainable reasons for decline and signs/symptoms point to C. Diff	Dependent upon treatment If treated as C. Diff, request UV Light Cleaning
Negative C. Diff PCR	Isolation Not Required Pending GI Viral Panel will require Isolation	Treatment Not Required	Standard Cleaning





Results

From the period August 2022 – November 2022 compared to August 2023 – November 2023 the positive rate of C. difficile declined 63%, from 47 to 28 positive results. Total C. difficile and PCR testing volume increased 13% from 2022-2023 with a total number of tests of 481 to 550.

Conclusions

This study found that initiating PCR testing with positive reflex to Toxin, an accurate depiction of active C. diff results is achieved. The educational tools utilized were instrumental in successful algorithm adherence that continues to promote antimicrobial stewardship.

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