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Improving Early Detection of C. difficile Infections

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BACKGROUND

- Patients with *C. difficile* will have liquid, loose, mucous-like, or non-formed stools. These infections can occur in both the inpatient and community settings and can range from diarrhea to life-threatening illness.¹
- C. difficile* positive stool samples collected within the first three calendar days of hospital admission is considered community-acquired.
- Positive stool samples for *C. difficile* calendar day 4 or greater are considered hospital-acquired.
- In 2019 and 2020, the P4 surgical intensive care unit (SICU) at Henry Ford Hospital (HFH) experienced high rates of hospital-acquired *C. difficile* infections (CDI).

AIM

The purpose of this project was to utilize an electronic health record (EHR) report to conduct early screening for patients to capture CDI during the community-acquired timeframe rather than during the hospital-acquired timeframe.

METHODS

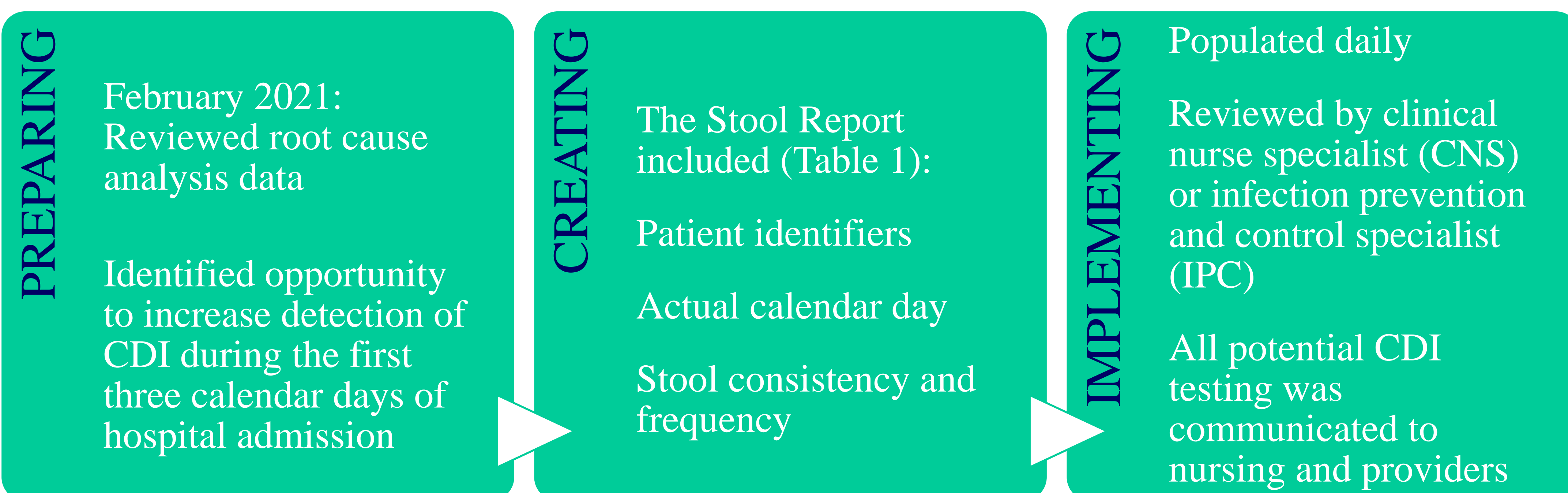


Table 1: Example of P4 Stool Report

Bed	Actual Calendar Day	Stool Consistency
P411	1	Liquid/watery Liquid/Watery
P438	3	Mushy
P456	3	
P456	4	Formed

- Pre-post quasi-experimental retrospective study
- Institutional Review Board approval was obtained
- Incidence and rate of hospital-acquired CDI were tracked from 2019-2022
- All community-acquired CDI identified using the stool report were tracked from 2021-2022

FINDINGS

- Significant reductions occurred in unit incidence and rates of hospital-acquired CDI (Table 2).
- During the study timeframe, 15 community-acquired CDIs were successfully detected within the first 3 calendar days of hospital admission (7 in 2021, 8 in 2022). These infections were detected with the use of the stool report tool and CNS and/or IPC follow-up.
- Without this tool, these CDIs may not have been identified during the community-acquired infection timeline.

Table 2: P4 Hospital Acquired CDI

Year	Incidence	Rate
2019	9	0.73
2020	9	0.77
2021	2	0.18
2022	4	0.36

DISCUSSION

- October 2021: A Loose Stool Best Practice Alert (BPA) was implemented. This electronic health record BPA alerts nursing staff of potential CDI during the community-acquired window.
- The stool report remains a useful monitoring tool in the event that the Loose Stool BPA is bypassed.
- The CNS and IPC continue with daily screening of the stool report and follow-up with nursing for all potential CDI patients.
- This quality improvement project is in the process of being expanded to additional units at the hospital.

IMPLICATIONS

Delay in CDI detection can cause negative outcomes for patients and can result in inflated hospital-acquired rates. Utilizing an electronic report in conjunction with clinical nurse specialist follow-up, is an effective method for early screening for *C. difficile*.

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REFERENCE

- Centers for Disease Control and Prevention. *C. diff* (Clostridioides difficile). Published July 20, 2021. Accessed February 14, 2022. <https://www.cdc.gov/cdiff/what-is.html>.