Impact of Hospital-Wide Prevention and Reduction of *Clostridium difficile*, an ECUH North’s multidisciplinary collaborative: An evaluation on reduction in Hospital Acquired Infection (HAI)

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Disclosures

ECU Health Nursing Professional Development is approved as a provider of nursing continuing professional development by the North Carolina Nurses Association, an accredited approver by the American Nurses Credentialing Center’s Commission on Accreditation.

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Clostridium difficile (C. diff) is a bacterium that produces toxins that lead to diarrhea and colitis. Healthcare-associated C. diff infection (CDI) increases morbidity and mortality of hospitalized patients, prolongs hospital stays, and increases healthcare costs.

A multidisciplinary team consisting of infection prevention, nursing leadership, quality assurance, physician leadership, pharmacy, and laboratory leadership was developed to evaluate C. diff rates.

The collaborative initiative focused on developing a process map to determine opportunities for reducing and mitigating the rate of C. diff within the inpatient setting.
Collaborative Team Members

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Project Development

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Team lead  
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Hospitalist  
Medical Director / Chief of Staff

**Sheree Pilgreen**  
Quality Director
The aim of this project was to reduce C. diff rates by at least 25% on the inpatient units (ICU, Medical Step-down Unit, Medical Surgical Unit), by January 31, 2023 (FY2023)
OUTCOME MEASURES
- Increased Infection Preventionist (IP) utilization-notifying IP on call prior to testing a patient for C. diff
- Increased staff utilization of C. diff evidence-based testing algorithm
- Reductions of CDI via facility healthcare-associated infection prevention program—in association with the multidisciplinary workgroup

PROCESS MEASURES
- Compliance with hand hygiene and special enteric isolation precautions
- Patient-testing according to evidence-based guidelines
- Educate and train healthcare personnel on prevention practices for CDI
- Utilization of Infection Preventionist (IP) on call

BALANCING MEASURES
Increased lab rejections of stools not meeting criteria for testing (e.g., Bristol Stool Chart not meeting criteria 6 or 7)
ECU Health North

C. diff Stool Collection Algorithm

Day 1-3, if the patient experiences 3 or more watery, diarrheal stools in 24 hours collect the specimen and send to the lab as soon as possible per protocol*

Day 4 or Later of Admission: Has the patient had 3 or more watery, diarrheal stools in 24 hours?

- Place patient on Special Enteric Precautions
  - Has the patient taken laxatives, stool softeners, enemas, bowel prep, lactulose, oral contrast or other medication to induce stool in the past 24-48 hours? Was tube feeding initiated or changed within 24-48 hours?
    - Yes
      - Notify provider, suggest holding stool inducing medication and/or tube feed if patient’s condition allows. Continue Special Enteric Precautions and reassess PRN
    - No
      - Observe for persistence of symptoms. DO NOT order test

- Is the patient clinically symptomatic with new onset of at least one of the following: temp > 100.6 F, nausea, loss of appetite, abdominal pain/tenderness not related to another condition or disease process, unexplained leukocytosis
  - Yes
    - Collect C-Diff, complete collection form with 2 licensed nurse verification and send stool specimen
    - If not sent within 24 hrs
      - Lab specimen collection and isolation precautions orders will expire. Discontinue orders per protocol.
  - No
    - Patient is not clinically symptomatic. Discuss with provider and request order to discontinue testing

- Is specimen POSITIVE for C. diff
  - Yes
    - Continue ordered treatment and Special Enteric Isolation
  - No
    - Discontinue Special Enteric Isolation if no other stool cultures or O&P are ordered and pending.
Improvement Strategies Employed

Feb 22
PRE-IMPLEMENTATION

01. “C. Diff Nurse Driven Protocol”

02. SBAR Utilization-Data Collection

03. Inadequate Doc / Inappropriate samples collected

June 22
PDSA 1

01. Removal of “C. Diff Nurse Driven Protocol”

04. Consult Infection Preventionist (IP)

03. Provide education & reinforcement on inpatient units

02. Develop Multidisciplinary team to review testing

July 22
PDSA 2

01. Establish & reinforce algorithm

02. Consult the Infection Preventionist (IP)

04. New Team Member Education

03. Knowledge gaps identified

04. Knowledge gaps identified
HAC C. diff Infections FY22-Current

Number of Cases

Date


0 1 2 3

Outcomes

Feb 22 Pre-Implementation

June 22 PDSA 1

July 22 PDSA 2

0 infections 7/1/22-1/31/23
Balancing Measures

ECUH North Laboratory Rejections → Not meeting Criteria 6 or 7—Bristol Stool → 7 rejections
Challenges Encountered in QI Process

High Turn-over of Team Members - Unaware of C. Diff testing Algorithm & Utilizing On-Call Infection Preventionist (IP)

- Bi-Monthly education & reinforcement to New team members on C. Diff testing Algorithm
- Reinforcement and reminders to Department Managers & Nurses to utilize On-Call IP

Team Members Unaware of C. Diff Preventative Measures

- Laminate Special Enteric Precautions Signs on units/departments
- Daily Rounding
- Mandatory Annual Competency Evaluation (ACE) Day to Team Members - Appropriate signage, Proper PPE, and HH

Providers ordering C. Diff testing >3 Days not meeting criteria

IP Consulting with providers to d/c order not meeting criteria
Lessons Learned

**Constant re-education** needed for all Health Care Team Members due to high turnover.

**Daily rounding** needed for patients & visitors on C. Diff prevention measures (Special Enteric Precaution signs & Improper Hand Hygiene).

**Key:** Include **ALL team members** in dealing with patients with potential or confirmed C. Diff cases with communication and consistent message.

Reinforce team members to continuously utilize the on-call IP and evidence-based C. diff testing algorithm.
Next Steps

01. Algorithm implemented

02. PDSA 1 and 2

03. Reach Goal (AIM Statement)

04. Continued education & reinforcement to team members on utilizing IP and C. Diff testing algorithm

05. Continued communication to team members on C. Diff preventative measures and proper hand hygiene

06. Reinforcement to stakeholders with data in Quality meetings / IP meetings
Questions