DECREASING CLOSTRIDIUM DIFFICILE INFECTIONS IN THE LONG-TERM CARE POPULATION: A STATEWIDE COLLABORATIVE PROJECT IN KENTUCKY

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Background
- C. difficile is an aerobic, Gram-positive, spore-forming bacillus, which can cause pseudomembranous colitis, an inflammatory condition of the colon. If untreated, this condition can lead to severe destruction of the colon wall and the development of abdominal pain and death.
- Approximately 65% to 80% of reported C. difficile infections (CDI) occur in adults aged 65 and older, heading to C. difficile being the most commonly identified cause of infectious diarrhea in Long-Term Care Facilities (LTCF).
- Exposure to antimicrobial therapy in the nursing home is a risk factor for the development of CDs, and in the LTC setting antimicrobials are among the most frequently prescribed pharmaceuticals, accounting for approximately 40% of all prescribed medications, resulting in 50% to 70% of infections occurring at least one antibiotic during a 1-year period.
- Urinary tract infections (UTIs) are the most commonly diagnosed and treated infections in residents of LTCFs, however, it is estimated that 35% to 50% of non-catheterized residents and 100% of chronically catheterized residents have asymptomatic bacteruria, which evidence suggests should not be treated with antimicrobials.
- Kentucky has over 300 licensed long-term care facilities operating across the state as compared to approximately 124 hospitals.
- According to the Centers for Disease Dynamics, Economics and Policy, Kentucky has the second highest rate in the number of antibiotic prescriptions written in the U.S. (1,055/1,000 persons).

Outcomes
- Goal
- Increase the incidence of facility-onset Clostridium difficile infections by 15%.
- Objectives:
  - Improve the identification of asymptomatic urinary tract infection from asymptomatic urinary colonization through the utilization of nationally accepted surveillance definitions (NHSN).
  - Decrease the use of indwelling urinary catheters.
  - Decrease the use of antimicrobials for asymptomatic urinary colonization by 25%.
  - Improve the education and use of evidence-based practices.

Methods
- Institutional Review Board (IRB) approval obtained with HIPAA waiver to facilitate participation.
- SharePoint database was created using NHSN surveillance definitions for UTIs and CDI on KY State secure server (HIPAA/LTC model not available at this time).
- Additional data elements were added to the UTI form to capture those cases that did not meet NHSN definition, but were diagnosed by medical provider as UTI and antimicrobial prescribed.
- 30 letters were sent out to administrators asking for voluntary participation:
  - 40 facilities responded
  - 36 facilities signed consent to participate
  - 24 facilities continue to enter data
- Intervention resources provided:
  - Policies - 7
  - Monitoring tools - 4
  - Decision trees - 4
  - Isolation forms - 4
  - Case Scenarios - 16
  - Teaching/PowerPoint presentations - 5
  - Print-based ARF resources for each collaborative facility
- Analysis was conducted using SAS 9.2

Lessons Learned
- Over 75% of attendees (CDI) did not meet definition of symptomatic UTI per NHSN definition.
- Needed improvement with internal assessment.
- Necessity of having a formal project plan.
- Importance of maintaining surveillance and trends.
- Potential to improve staff education on correct diagnosis.
- Need to be consistent with provider education.
- Importance of tracking and reporting outcomes.
- Importance of having a defined protocol for treatment.
- Lack of resources.
- Importance of TIP activities by LTC staff.
- Turnover in the staff position at LTC facilities.
- Computer/Phone access for LTC staff.
- Need for medical providers directly vs. relying on facility to do.

Conclusions
The collaborative project was successful in improving staff education and the implementation of evidence-based infection prevention and control practices within the LTC facilities.

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