Innovative and Evidence-Based Bundle Reduces Hospital-Onset *C. difficile* by 53%

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Background

Annually, there are 500,000 *Clostridium difficile* (CDI) cases and 15,000 related deaths in the United States.

- UC Davis Health (UCDH), a 625 bed academic acute care hospital, exceeded internal and national hospital-onset CDI (HO-CDI) benchmarks
- In 2013 there was no national standardized target.
- 2015: National Healthcare Safety Network (NHSN) established Standardized Infection Ratio (SIR) goal of 1.0. for HO-CDI
- UCDH multi-disciplinary team developed an original CDI prevention bundle combining innovative and evidence based strategies to combat CDI
- UCDH team has sustained significant reduction in HO-CDI that has evolved over a period of 5 years

Purpose

Reduce and sustain HO-CDI in our UCDH acute care hospital to a SIR less than 1.0 to improve and save lives.

PICO Question

In the academic hospital setting, can the implementation of a multi-pronged innovative and evidence-based CDI prevention bundle decrease and maintain HO-CDI below the SIR?

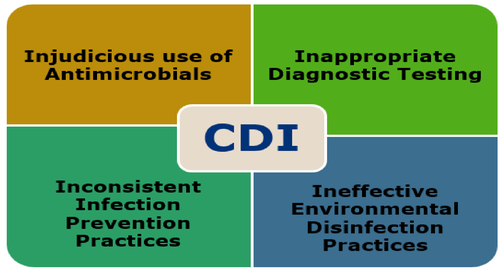
Design & Methods

2013-14: We launched an innovative quality improvement project designed to identify and isolate patients with asymptomatic *C. difficile* colonization. These "carriers" are a known reservoir of CDI transmission.

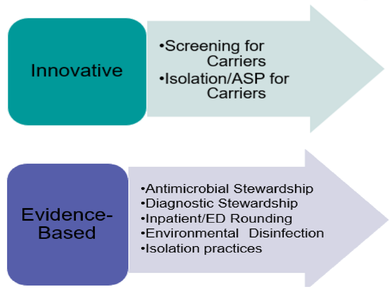
While a 20% reduction in HO-CDI was achieved, stakeholders agreed there was more work to be done. With full administrative support, a multi-disciplinary team was chartered in 2017 to "go back to the drawing board," identify gaps in care, and develop a plan of action.

Implementation Plan

Identify practice gaps:

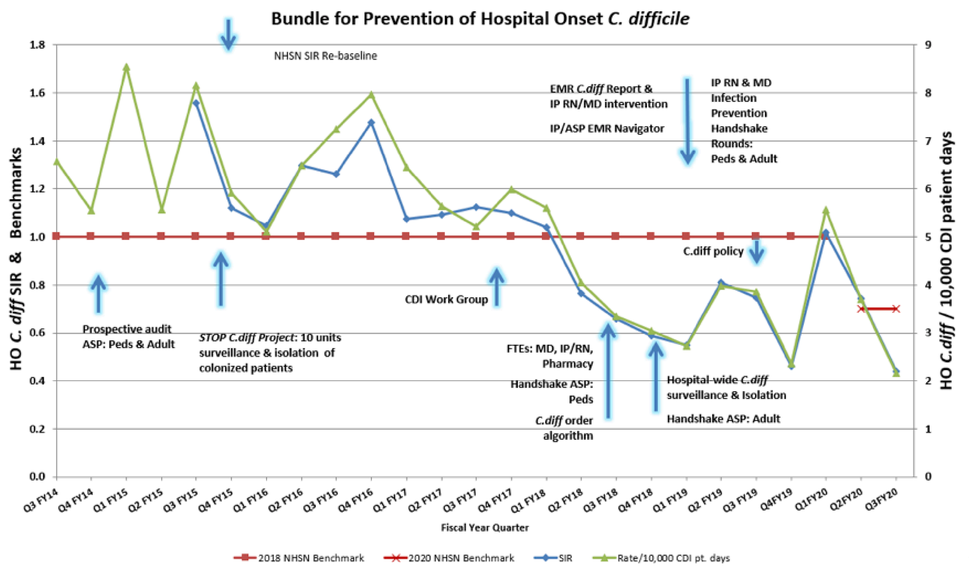


Develop strategies:



- Increase FTEs for MDs, IP/RNs, Analysts
- Leveraging EMR -real time diagnostics, active surveillance, recommendations and decision support, antimicrobial stewardship, C diff order algorithm
- Developed a *C. difficile* policy
- Closer partnership with Environmental Services
- ASP/IP face-to-face "handshake rounds"
- Targeted ASP for carriers
- Patient education care in hospital and care when discharged home

Outcomes



Conclusions

- Combining evidence-based approaches with cutting edge strategies has led to a desirable and sustainable outcome
- Once all bundle elements were fully implemented, our HO-CDI rate and SIR decreased dramatically
- We have met and sustained our improvement goals for the past seven quarters
- Beautiful job by our staff of educating our patients with an emphasis on patient safety and protection
- Our team effort, which involved nearly every hospital department, could not have succeeded without the unwavering support of our administration
- Vital role of antimicrobial and diagnostic stewardship
- Home grown EMR tools led to faster, more effective tracking and intervening
- When we leverage administrative backing and break down organizational silos to effect change, our patients reap the benefit in the form of lives improved and saved

References

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- McDonald, L.C., Gerding, D.N., Johnson, S., Bakken, J.S., Carroll, K.C., Coffin, S.E....Wilcox, M.H. (2018). Clinical practice guidelines for Clostridium difficile infection in adults and children: 2017 update by the Infectious Diseases Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA), Clinical Infectious Diseases, 66(7), e1-e48.

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