

Clostridium Difficile

Reducing infections using an evidence-based practice initiative

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BACKGROUND: Nosocomial *Clostridium difficile* (*C. difficile*) infections are adverse incidents that affect immunocompromised hospitalized patients. High-touch surface areas within the patient's environment are frequently overlooked and are a source of microscopic bacterial transmission.

OBJECTIVES: This article examines whether the use of a standardized protocol for cleaning high-touch surface areas would reduce the incidence of hospital-acquired *C. difficile* infection.

METHODS: The initiative targeted five high-touch surfaces, and nurses were educated about these findings. Baseline data on the *C. difficile* infection rate was collected from four specialty medical-surgical oncology units. A pilot period of the Five by Five initiative evaluated *C. difficile* infection rates after staff cleaning of these high-touch surfaces.

FINDINGS: This initiative accounted for a statistically significant reduction in *C. difficile* infections. The use of a standardized cleaning initiative was effective in reducing *C. difficile* infections. Nursing staff perceived that the education was easy to remember and supported efficient implementation.

KEYWORDS

nosocomial; *Clostridium difficile*; high-touch areas; evidence-based practice

DIGITAL OBJECT IDENTIFIER

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EACH YEAR, ABOUT 500,000 AMERICANS DEVELOP a *Clostridium difficile* (*C. difficile*) infection, with 29,000 of these infections resulting in death within 30 days of diagnosis (Centers for Disease Control and Prevention [CDC], 2015). The CDC (2015) report that *C. difficile* infections are preventable. However, in the hospital setting, even with isolation precautions, high-touch surfaces around the patient can transmit bacteria to him or her (Louh et al., 2017; Sattar & Maillard, 2013). A preventive approach used by nursing and hospital staff is the frequent cleaning of highly contaminated hard surfaces. This cleaning, in addition to excellent hand hygiene, has been shown to be an effective intervention for reducing bacterial transmission (CDC, 2015).

Preventing nosocomial *C. difficile* infection in immunocompromised populations, including patients with cancer and patients undergoing transplantation, is a significant safety concern for nurses in clinical practice. Infection prevention is of particular interest in the cleaning of the occupied room of the immunocompromised patient. Immunosuppression from cancer treatment increases the risk of infection in patients, and *C. difficile* infection is a particularly serious risk for these patients. *C. difficile* can cause severe pain, dehydration, reduced nutrition, isolation, and increased hospital length of stay and costs (Bhandari et al., 2018; CDC, 2015; Ran-Castillo et al., 2019; Talbot et al., 2019).

At the authors' institution, Loma Linda University Medical Center in California, a nurse-led shared governance council consisting of acute care nurses from four inpatient specialty medical-surgical oncology units formed an evidence-based practice (EBP) team to explore an increase in hospital-acquired *C. difficile* infections during the first three quarters of 2017. The objectives of the EBP team were (a) to determine and implement best practices that would reduce the incidence of *C. difficile* infections on the four inpatient units (the units had an average of seven new *C. difficile* infections per year) and (b) to reinforce environmental service staff education regarding the impact of cleaning patient rooms and to review the seven-step daily patient room cleaning process, which includes cleaning of the patient bedside table, bed rails, telephone, and patient television/nurse call remote.

Methods

A literature review was undertaken using Academic Search Premier, CINAHL®, and PubMed® to determine best practices in the prevention of