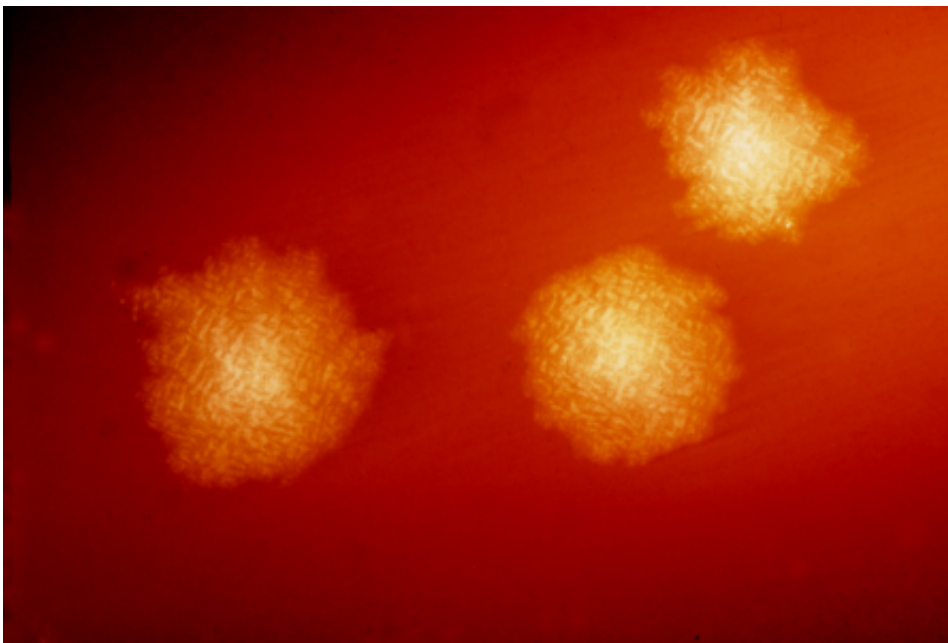


# New study finds aerosolized hydrogen peroxide can significantly reduce *C. difficile* infections in hospital settings

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This photograph depicts *Clostridium difficile* colonies after 48hrs growth on a blood agar plate; Magnified 4.8X. *C. difficile*, an anaerobic gram-positive rod, is the most frequently identified cause of antibiotic-associated diarrhea (AAD). It accounts for approximately 15-25% of all episodes of AAD. Credit: CDC

New data published today suggest that adding aerosolized hydrogen peroxide (aHP) to hospital infection prevention protocols can effectively reduce *Clostridioides difficile* infections (CDI), one of the most common

healthcare-associated infections (HAIs), among patients in large, acute-care facilities. The findings, which offer the first, long-term evaluation of an aHP disinfection system for reducing CDI in a clinical setting, appear in the *American Journal of Infection Control (AJIC)*, the journal of the Association for Professionals in Infection Control and Epidemiology (APIC).

"Our study showed that persistence in utilizing an aerosolized hydrogen peroxide system had a significant impact on reducing *C. difficile* infections hospital-wide," said Christopher L. Truitt, Ph.D., Wayland Baptist University, and the paper's lead author.

Individuals infected with *C. difficile* can be asymptomatic or have symptoms ranging from mild diarrhea to severe and life-threatening inflammation of the colon. According to the Centers for Disease Control and Prevention and The Joint Commission, *C. difficile* is responsible for 223,000 HAIs resulting in more than 12,000 deaths and \$6.3 billion in costs in the United States annually. *C. diff* spores can be transmitted by environmental surfaces in [hospital rooms](#), including bed handrails, equipment controls, and doorknobs, and are resistant to hand sanitizers and most disinfectants. Enhanced protocols for hand hygiene and environmental cleaning, along with improved antibiotic prescribing, are required to prevent *C. diff* spread and [infection](#), but even with consistent implementation of these measures, the microbe is difficult to eradicate from hospital surfaces.

aHP disinfection systems offer a touchless, whole-room approach to enhance standard environmental cleaning protocols. Once placed in a room, the systems generate an aerosolized dry-mist fog that contains a specified percentage of hydrogen peroxide. The fog covers all exposed surfaces to kill any *C. diff* spores that remain after physical cleaning. To date, there is no long-term data evaluating the use of these systems.

Dr. Truitt and his colleagues retrospectively analyzed CDI rates at a large, acute-care facility in Philadelphia, Pennsylvania, over a 10-year period, to evaluate the effectiveness of an aHP disinfection system for reducing CDI. The researchers compared the incidence of healthcare-associated CDI (HA-CDI) at the facility prior to and following implementation of the system as an addition to standard CDI patient room-cleaning procedures following the discharge or transfer of patients with CDI.

Findings suggest that consistent use of an aHP disinfection system contributed to a significant and sustained reduction in HA-CDI rates. Over a 27-month period prior to implementation of the system, the facility recorded 120 HA-CDI. Following implementation, 72 cases were observed over a 33-month interval. This reflects a significant, 41% decrease in the facility's HA-CDI rate—from 4.6 per 10,000 patient days to 2.7 per 10,000 patient days (p

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