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An Agent-Based Model of Environmental Transmission of Clostridioides difficile in Healthcare Settings

Clostridioides difficile (*C. difficile*) is one of the most frequently identified healthcare-acquired infections in United States hospitals. Colonized patients, both symptomatic and asymptomatic, shed *C. difficile* endospores that can survive for long periods on surfaces outside the host and are resistant to many commonly-used disinfectants. Transmission pathways can include contact with both endospores on fomites, objects likely to carry infection, and endospore-carrying individuals. Our agent-based model simulates the spread of *C. difficile* within a hospital ward, focusing on transmission originating from environmental pathways and healthcare workers. Simulations can help determine effective control strategies to mitigate the spread of *C. difficile* in healthcare settings.