

Study estimates transmission of deadly *C. diff* infection

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Credit: Suzy Hazelwood from Pexels

A severe disease caused by the *C. difficile* bacteria affects more than 250,000 patients in hospitals each year, but little is known about how it is transmitted. A Yale-led study estimates transmission rates inside and outside of hospitals, providing insight into different sources of the infection and how it might be better controlled.

Previous studies found that less than half of C. diff infections in hospitalized patients could be attributed to spread from other infected patients. "It's traditionally been thought of as a hospital-focused disease, but there is increasing recognition of [transmission](#) outside the hospital," said first author David P. Durham, associate research scientist in epidemiology.

To determine how the remaining infections spread, the Yale-led team developed a dynamic model to estimate [transmission rates](#) in three settings: hospitals, long-term care facilities, and the general community. They found that hospitalized patients with symptoms of C. diff infection transmitted it at a rate 15 times higher than [asymptomatic patients](#), even after accounting for infection control measures. The rates of transmission among residents in long-term care facilities and in the community were 27% and 0.1% that of [hospitalized patients](#), respectively.

"The latter rates are lower but still important sources of transmission, due to the much larger population outside of the hospital setting," said co-author Jeffrey Townsend, associate professor of public health.

The findings point to the need to account for asymptomatic carriers and community sources in efforts to prevent and control C. diff infection, the researchers noted.

More information: David P. Durham et al. Quantifying Transmission of within and outside Healthcare Settings , *Emerging Infectious Diseases* (2016). [DOI: 10.3201/eid2204.150455](https://doi.org/10.3201/eid2204.150455)

Provided by Yale University

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