
News Release

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**EMBARGOED: Hold for release until
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American College of Gastroenterology

MULTIMEDIA ALERT: A video interview with Dr. Khanna is available for journalists to download on the [Mayo Clinic News Network](#)

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C. Diff Infections Becoming More Common, Severe in Children and Elderly, Mayo Clinic Finds

ROCHESTER, Minn. — Clostridium difficile infections are becoming more common and more severe in hospitalized children and the elderly, in large part due to greater use of antibiotics, Mayo Clinic researchers report in studies being presented at the American College of Gastroenterology annual meeting. The bacterium, also known as C. difficile or C. diff, can cause an infection with symptoms ranging from diarrhea to life-threatening inflammation of the colon. It is the most common cause of diarrhea in hospitals and is linked to 14,000 U.S. deaths each year.

The Mayo study analyzed five years of data from the National Hospital Discharge Survey and found that of an estimated 13.7 million hospitalized children, the 46,176 with C. diff infections had significantly longer hospital stays, more instances of colectomy (partial or total removal of the colon), increased admission to long or short-term care facilities, and higher risk of death.

“Despite increased awareness of C. difficile in children, and advancements in management and prevention, this remains a major problem in hospitalized children,” says Sahil Khanna, M.B.B.S., a Mayo Clinic gastroenterologist.

Elderly patients also have a greater risk of complications from C. difficile and dying from the infection. In a separate study of 1.3 million adult patients hospitalized with C. diff, patients over 65 were in the hospital longer, sent to nursing homes more frequently and had a greater risk of death. That suggests being over age 65 is an independent risk factor for adverse outcomes associated with the infection.

Researchers say increased use of antibiotics is a main reason for the increasing infection rates. When a person takes antibiotics, good bacteria or flora that protect against infection are destroyed. When these bacteria are destroyed, patients are vulnerable to C. difficile picked up from contaminated surfaces or spread from a health care provider's hands.

Treatments depend on the severity and number of times a patient has had a C. diff infection. Typically, physicians will treat it with the antibiotic metronidazole or oral vancomycin. For severe cases and patients with recurrent C. diff, fecal transplants are an option. Stool transplant restores healthy intestinal bacteria by placing donor stool in the colon.

Recurrent C. difficile is a major problem with the risk of recurrence being 20 percent after a first infection and as much as 60 percent after multiple infections. People who have had C. difficile are twice as likely to get it again. Other known risk factors include proton-pump inhibitors for gastric reflux, immunosuppression, and long hospital stays.

It costs at least \$1 billion annually to treat C. difficile infections.

Prevention measures include:

- Washing hands frequently with soap and warm water in the event of a C. difficile outbreak; alcohol-based hand sanitizers may not destroy C. diff spores.
- Patients hospitalized with C. difficile should have a private room or share a room with someone else who has it. Hospital staff and visitors should wear disposable gloves and gowns while in the room.
- Thoroughly cleaning surfaces with a product that contains chlorine bleach.
- Avoid unnecessary use of antibiotics.
- When on antibiotics, take probiotics to help restore balance to the intestinal tract.

Other study authors include Mallika Gupta, M.B.B.S., Larry Baddour, M.D., and Darrell Pardi, M.D.

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