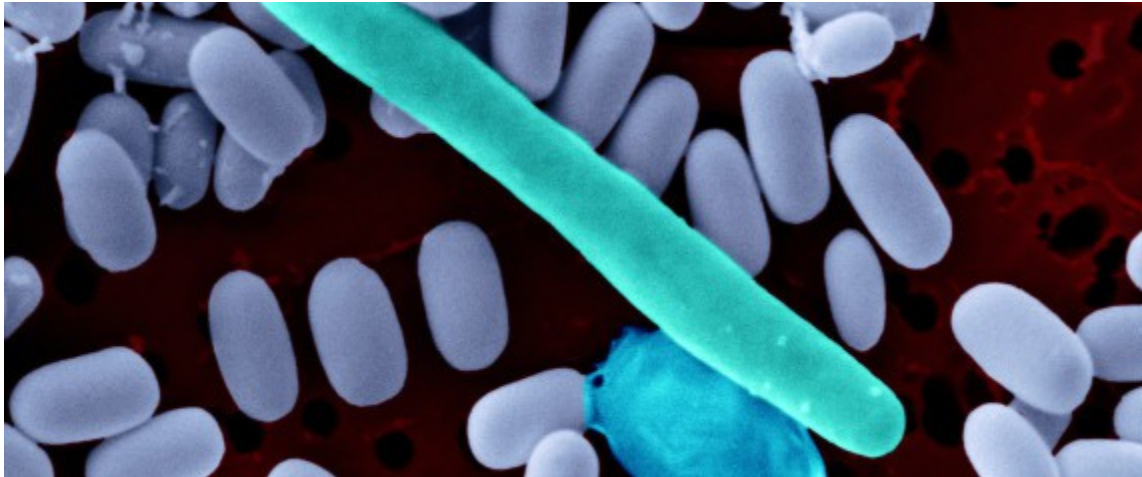


C-Diff Kills 15,000 People A Year. Feces Donations May Change That

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A bacteria that triggers deadly diarrhea and is one of the most common causes of U.S. infectious disease deaths is caused, in part, by antibiotics.

Clostridium difficile, or C-diff, is a toxin-producing microbe that infected almost a half-million Americans in 2011 and was linked to 29,000 deaths, according to a report released Wednesday by the Centers for Disease Control and Prevention. It said 15,000 deaths were "directly attributable" to C-diff infections. The bacteria is the [leading cause of hospital-acquired diarrhea](#) in the industrialized world. In the U.S., [the rate of hospital-acquired C-diff infections doubled](#) from 2001 to 2010, to 8.2 infections per 1,000 admissions.

Dr. Fernanda Lessa, a CDC medical epidemiologist and lead author of the report, called the control of C-diff infections a "national priority."

“There is no vaccine for *Clostridium difficile*, and we know that good antibiotic stewardship is a big step forward in terms of its prevention,” Lessa said in a phone interview with The Huffington Post. “We had a publication last year showing that if hospitals can reduce 30 percent of antibiotic use, rates of C-diff can be [reduced by 25 percent](#).”

The bacteria’s spores make inroads in people who either recently took antibiotics or are currently taking them. Antibiotic use creates an ideal environment for C-diff because the medication indiscriminately wipes out beneficial bacteria that help prevent disease, along with bacteria that are the source of infection.

C-diff spores can survive a wash in hand sanitizer gel and can live for a long time on surfaces, so infection control and personal hygiene for health care workers is key, officials said during a CDC press conference on Wednesday. In fact, almost all of the C-diff infections in 2011 were associated with a stay or visit to a health care facility. That shows the deadly and [costly](#) infections are preventable.

C-diff produces a toxin that can cause horrific diarrhea and holes in the large intestine, putting people at risk of sepsis if fecal matter leaks into the body. In the worst cases, patients need to have portions of their colon surgically removed and use a colostomy bag for an extended period while their intestines heal.

The standard treatment for most C-diff infections is, strangely, antibiotics -- which experts at the CDC press conference expressed concern about. Further, antibiotics don’t work for everybody. The report estimated that 83,000 people -- about one in five -- experienced at least one recurrent C-diff infection in 2011, which burdens patients and gives the bug more opportunity to be spread to others.

“What we’ve seen is that for many patients, there can be multiple rounds of antibiotics required to finally suppress the infection and, with luck, finally give the body enough time to go back to normal in terms of the bacteria

with the gut,” said Dr. Michael Bell, deputy director of the CDC’s division of Healthcare Quality Promotion. “The challenge that we have is that by giving antibiotics, in many ways we are continuing to disturb the normal bacteria in the bowels, so it’s not a perfect solution.”

Given this treatment difficulty, doctors are increasingly turning to a promising, relatively new treatment -- fecal transplant. It's what it sounds like: an infusion of healthy feces, through an enema or a colonoscopy.

Intestines are teeming with bacteria that help us digest food and eliminate waste. But a healthy balance of gut bacteria can get thrown off, either because of aggressive antibiotic treatment, poor diet that starves helpful bacteria, or an infectious microbe that begins to colonize in the intestines. Fecal transplants deploy a donor's good bacteria to defeat the bacteria wreaking havoc in the recipient’s gut.

While fecal transplants are technically experimental, the treatments have largely been successful to treat recurrent C- diff infections. The Food and Drug Administration doesn’t require doctors to ask permission, in the form of a new drug application, before performing one.

“Originally, this was sort of a last-ditch, desperation-type treatment,” explained Bell. “I think increasingly, we’re seeing it move earlier into the process,” in order to avoid surgery and its complications.

In small but compelling experiments that include a [randomized trial](#), researchers have found that transferring feces from a healthy donor into a C-diff patient is much better at treating recurrent infections than antibiotics -- so much so that the trial was stopped early because it was considered unethical to deny the control group access to fecal transplants. Still, few hospitals are equipped to screen fecal donors and store or administer feces. The CDC doesn’t track the number of doctors that offer fecal transplants, but a nonprofit organization called the Fecal Transplant Foundation says [92 providers across 32 states](#) perform the transplants.

Open Biome, the first stool donor bank, counts more than 200 hospitals and medical centers in its clinical network and says more than 80 percent of Americans live within four hours of a clinic that does the procedure. Catherine Duff, a C-diff survivor and founder of the Fecal Transplant Foundation, said the CDC press conference was encouraging, but more needs to be done to make fecal transplants accessible. Instead of only allowing fecal transplants for people who have had multiple C-diff infections, Duff argued the treatment should be a first line of defense offered to patients with their first infection.

"If doctors could more easily identify and diagnose C-diff, we would like see fecal transplant offered as one of the first line of treatments," said Duff in a phone call to HuffPost. "You would guess that the majority of people would choose a fecal transplant" -- partly because it works, but also because it doesn't destroy the microbiome and leave you vulnerable to future infections.

Duff, who suffered eight bouts of C-diff from 2005 to 2012, had multiple sections of her colon removed because of complications from the infection. She was on the brink of surgically removing the entire colon before she discovered that fecal transplants were a promising therapy.

She had to convince her doctor to look into it. Then, they couldn't find a provider near where she lived in Carmel, Indiana. After persevering, Duff eventually had two fecal transplants -- once via an enema at home, and once through a colonoscopy. After each transplant, she said she felt instantly better.

"I just became more bothered by the idea this procedure is so simple and can offer relief to so many people, and it remains so inaccessible," said Duff.

Case studies from the [Journal of Medical Case Reports](#) and [Open Forum Infectious Diseases](#) point to the challenges of living far from a facility and of working with doctors who have limited experience in providing transplants. CDC study co-author Dr. L. Clifford McDonald expressed hope about the experimental treatment, if only that it gets patients off the antibiotics that left them vulnerable to infection in the first place.

“Some people do just fine with the antibiotic treatment,” said McDonald during the briefing. “But it is a problem that we’re using an antibiotic to treat a disease that really occurs because someone got an antibiotic in the first place.”

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