

Long-Term Care Survey Alert

Resident care: Ramp Up Your Infection Control Patrol To Battle Clostridium Difficile

Beware: C. difficile-associated diarrhea has become increasingly lethal.

Clostridium difficile is unfortunately living up to its name by creating difficulties in long-term care -- which is why your facility needs a plan to quickly recognize, diagnose and treat infections caused by the troublesome bug.

In fact, C. difficile is the most common infectious cause of acute diarrhea in the nursing home setting, said **Nora Reznickova, MD**, with **Kaiser Permanente**, in a presentation at the March 2007 **American Medical Directors Association** annual meeting.

And the Gram-positive, spore-forming microorganism has been causing more infections. The number of cases has more than doubled from 2000 to 2005, according to hospital discharge data, says **L. Clifford McDonald, MD, FACP**, chief of the Prevention and Response Branch with the Division of Healthcare Quality Promotion at the **Centers for Disease Control & Prevention**.

"With the epidemic disease that has increased virulence, we are seeing a death rate of 10 to 12 percent," reports McDonald.

Know the Risk Factors

The major risk factor for getting the infection is advanced age, which probably has something to do with immunity, McDonald tells **Eli**. Until a few years ago, the CDC thought that antibiotic use was an absolute prerequisite for developing C. difficile infection. And "in healthcare settings, it probably still is," he says. "Yet a significant portion of people in the community who contract the infection haven't been taking antibiotics."

Other risk factors for developing infection include the following, according to Reznickova:

- Antibiotic use (frequently associated with quinolones, ampicillin, amoxicillin, cephalosporins and clindamycin but rarely with metronidazole, vancomycin and tetracyclines)
- Hospitalization
- Nasogastric or gastrostomy feedings
- H2 antagonists, proton pump inhibitors
- Low albumin levels
- Severe underlying illness
- Length-of-stay in the nursing home.

Active Diarrhea a Warning Sign

The major symptom of infection is diarrhea, although you'll also see abdominal pain and sometimes fever, says McDonald. The diarrhea occurs when a person ingests C. difficile spores, which make their way to the lower intestinal tract where they germinate, producing toxins that damage the colon and cause colitis. "The colitis is called pseudomembranous colitis," he notes. "Some people with the infection go on to develop a dangerous dilation of the

intestine called toxic megacolon."

Infection occurs via direct and indirect transmission from person to person -- "probably from patient to patient," McDonald says. "We don't see much disease among healthcare workers."

Diagnosing the infection requires a stool study to identify the toxins produced by the bacteria.

Suspect a resident has *C. difficile* infection if he has active diarrhea, which McDonald defines as more than three loose stools in a 24-hour period. If the resident has formed stool, CDC doesn't recommend testing, he adds.

Antibiotics a Cause and Cure

Despite the fact that experts have discovered antibiotics can trigger the infection, it is also "unfortunately" treated with antibiotics, says McDonald. And there's a high recurrence rate: "About 20 percent of people who have the infection develop it again."

Metronidazole is used to treat the infection. The second choice is oral vancomycin, but it's very expensive, says McDonald. People with signs of severe disease (white blood cell count over 15,000, abdominal tenderness or signs of sepsis) should receive vancomycin up front, he adds.

Do probiotics or yeast supplements help? The jury is still out on whether giving people probiotic foods or supplements can prevent the disease or its recurrence in vulnerable people, according to McDonald. Some practitioners have their patients take yeast supplements (*Saccharomyces boulardii*) to prevent recurrence. Generally, giving probiotics doesn't hurt, McDonald says, except in the case of very immunocompromised people who have had bone marrow or organ transplants. Those people "might get infection from the bacteria or yeast, although we haven't seen people get bacteremia from eating yogurt."

Avoid giving residents with *C. difficile*-associated diarrhea anti-peristaltics, such as Immodium and Lomotil and opioids, advised **Jennifer Dugan, PharmD**, with Kaiser Permanente, who copresented with Reznickova at the 2007 AMDA meeting. The anti-peristaltic action of such medications keeps the toxins in the system longer, she cautioned. If the resident is taking opioids, try to discontinue them or decrease the dosage, she said.

Wondering about Kaopectate, which many facilities have as a standing order? That medication doesn't really fall into the anti-peristaltic category because it has changed ingredients and contains bismuth, which was originally used to treat mild cases of *C. difficile* prior to widespread use of metronidazole, said Dugan.