

Increase in *Clostridium difficile*–related Mortality Rates, United States, 1999–2004

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[Dan Rutz] I'm Dan Rutz, on the phone with Matthew Redelings, an epidemiologist with the Los Angeles County Department of Public Health. We're here to talk about an article in the September 2007 issue of *Emerging Infectious Diseases* about deaths in the United States caused by the bacterium *Clostridium difficile*. Matthew, what is *Clostridium difficile*?

[Matthew Redelings] *Clostridium difficile* is an anaerobic bacillus, which means that it can grow in decaying tissue without the presence of oxygen. This pathogen can cause diarrhea, colitis, and septic infection resulting in death. It primarily affects people 65 or older and is usually contracted in hospitals, nursing homes, and other long-term care facilities.

[Dan Rutz] Let's talk about your study. What was the point?

[Matthew Redelings] Well, several previous studies in the United States, England, and Wales had reported an increase in *C. difficile*–associated disease, or CDAD. Our study looked at mortality throughout the United States from 1999 through 2004 to determine the extent of this trend, as well as the relationship between CDAD and other demographic data or coexisting conditions.

[Dan Rutz] And what did you find?

[Matthew Redelings] We found that the overall rate of death related to CDAD during the study was 12.2 deaths per million population. However, the annual death rate more than quadrupled, from just 5.7 deaths per million population in 1999 to 23.7 deaths per million population in 2004. Mortality rates increased by 35 percent per year during this period.

While these rates are higher than previously reported, we did include all deaths in which CDAD was listed as the underlying cause of death or as a contributing cause of death. Previous studies had only included cases where CDAD was the underlying cause of death. For our study, this meant the inclusion of more than 8,000 additional deaths where CDAD was a contributing cause of death.

[Dan Rutz] So what are the implications of this study for public health?

[Matthew Redelings] This study shows that CDAD may be under-recognized as a cause of severe illness and death in the U.S. The incidence of CDAD-related deaths is increasing, but little attention has been paid to prevention of *C. difficile* infection. Other intestinal pathogens such as *E. coli* and *Salmonella* receive much more attention, both

in the media and from public health professionals. This study underscores the need for more education and prevention efforts focused on preventing the spread of *C. difficile*.

[Dan Rutz] And in a nutshell, Matthew, what would that prevention and education message be?

[Matthew Redelings] There are two main strategies that spring to mind. *C. difficile* is usually a hospital-acquired infection, and hospital hygiene would be very important in preventing *C. difficile* infection. Additionally, judicious use of antibiotics would be helpful. Many oral antibiotics can put patients at risk for acquisition of *C. difficile* infection.

[Dan Rutz] So it's a matter of being aware, and for clinicians to use good clinical judgment.

[Matthew Redelings] Yes.

[Dan Rutz] Matthew, thank you for your comments and insight on these findings. Our discussion with Mr. Redelings was prompted by an article on *Clostridium difficile* disease in the United States, published in the September 2007 issue of *Emerging Infectious Diseases*. This article, and others on emerging bacterial and viral diseases, can be read online at www.cdc.gov/eid. Again, www.cdc.gov/eid.

You can submit your comments on this interview to eideditor, one word, at www.cdc.gov. That's eideditor@www.cdc.gov.

For *Emerging Infectious Diseases*, I'm Dan Rutz.

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