C. difficile Outbreak  
Not From Antibiotics

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WASHINGTON — Quebec’s recent outbreak of *Clostridium difficile*-associated diarrhea does not appear to have been associated with any specific antibiotic use pattern. Rather, poor infection control practices are likely to blame.

That was the conclusion of an analysis from four Canadian hospitals conducted by Dr. Karl A. Weiss and his associates at Maisonneuve-Rosemont Hospital, Montreal, and reported in a poster at the annual Interscience Conference on Antimicrobial Agents and Chemotherapy.

The outbreak of *C. difficile*-associated diarrhea (CDAD), which occurred in 2002-2004 at several Quebec hospitals, was caused by an isolate of *C. difficile* found to be more virulent than those previously seen (N. Engl. J. Med. 2005;353:2442-9).

Although antibiotic usage has been strongly associated with the occurrence of CDAD, the circumstances of this outbreak were at odds with that explanation.

No increase in CDAD cases was seen in any province other than Quebec, which actually has the lowest per capita antibiotic consumption of all the Canadian provinces.

The investigators analyzed antibiotic use data for the time periods 1999-2001, 2002, and 2003 from two hospitals that were affected by the new *C. difficile* strain outbreak and two that were not. In one of the affected hospitals, the number of CDI agenoses per 1,000 population rose from 9 in 1999-2001 to 14 in 2002 to 13 in 2003. In contrast, rates in one of the unaffected hospitals remained stable, from 5/1,000 in 1999-2001 to 4 in 2002 to 5.5 in 2003.

A comparison of affected and unaffected hospital showed no significant association between the number of CDI cases and 1,000 admissions and the daily consumption of cephalosporins, carbapenems, β-lactams/β-lactase inhibitors, fluoroquinolones, or intra-venous clindamycin. There was no significant protective effect from any class of antibiotics, Dr. Weiss and his associates reported at the meeting, sponsored by the American Society for Microbiology.

Probiotic use is key to controlling the emergence of resistant organisms, but in the case of CDAD antibiotics appear to be acting mainly as triggering agents in patients who acquire the new strain during their hospital stay.

Instead, the Quebec outbreak appeared to be mostly caused by poor infection control practices. The situation improved dramatically in 2004-2005 following substantial investment by the provincial government and the implementation of infection control measures.

Washington — Mechanically ventilated ICUs are older, the investigators’ 200-bed hospital, with most cases occurring after 5 days’ ventilation. There was no change in the rate of CDAD cases between 2003 and 2004 despite a reduction in the use of both antipseudomonal penicillins and fluoroquinolones during that period.

Among 3,247 patients who received antibiotics and had a length of stay greater than 3 days between January 2004 and March 2005, a total of 19% required ventilation. Of those 614, CDAD developed in 47 (7.6%). With the ventilated population excluded, the infection rate was just 1.2%.

The reply reads: “Ideally, all newly hired HCWs should receive baseline two-step skin TST for newly hired HCWs is not needed.”


The exhaustive guidelines were updated in an effort to respond to “shifts in the epidemiology of TB, advances in scientific understanding, and changes in health care practice that have occurred in the United States during the previous decade,” wrote the authors, led by Paul A. Jensen, Ph.D., in the division of tuberculosis elimination at the CDC’s National Center for HIV, STD, and TB Prevention (MMWR 2005;54:RR17:1-121).

TB rates have declined in recent years, but the 2004 rate of 4.9 per 100,000 remained higher than the 2000 goal of 3.5.

This goal was established as part of the national strategic plan for TB elimination, the authors noted. Also, health care workers (HCWs) in different areas of the country face different risks.

One key change that makes these guidelines different is the use of the term “tuberculin skin tests” instead of purified protein derivative. Also, the guidelines state that the Quantiferon Gold test can be used instead of tuberculin skin tests in TB screening programs for health care workers. This one-step blood assay for M. tuberculosis infection was approved by the Food and Drug Administration.

Other changes include the following:

- **Expansion of settings.** The guidelines have site-specific recommendations for more inpatient and outpatient setting types.
- **More concise criteria for who needs serial testing for TB infection.** Recommendations vary depending on the type of health care setting. In some settings, the frequency of TB screening for HCW’s has been decreased.
- **New airborne terms.** The term “airborne isolation” replaces “respiratory isolation,” while the term “airborne infection control” replaces “airborne isolation” while the term “airborne infection control” replaces “airborne isolation.”
- **Instructions on proper respirator use.** This includes criteria for selecting respirators and recommendations for annual training and fit testing.
- **A nine-page “frequently asked questions” section.** One of the questions posed is: “Do health care settings or areas in the United States exist for which baseline two-step skin TST is not necessary?”
- **Therapy for multidrug-resistant TB.** The guidelines now recognize the need for treatment for MDR-TB, which was previously not recommended.
- **More specific treatment recommendations.** The guidelines now recommend specific treatment regimens for drug-resistant TB.

The authors suggest that the updated guidelines should be used to guide TB prevention efforts in health care settings. The guidelines are available online at www.cdc.gov/mmwr/preview/mmwrhtml/mm54rr17a1.htm.