munity influenza exposure, as measured according to the presence of ill household members. Frontline HCWs were defined as staff who worked in the emergency department, triage unit, or outpatient clinic and screened patients with suspected 2009 H1N1 influenza. In this hospital, all HCWs with suspected or confirmed 2009 H1N1 influenza have been required to report to the hospital’s occupational health unit since May 2009, and the infection control policy was for HCWs to wear surgical masks while caring for patients with suspected 2009 H1N1 influenza, whereas the use of N95 masks was restricted to aerosol-generating procedures. A hospital-wide hand hygiene program with monthly monitoring and feedback has been sustained since July 2006 [6].

During the 7.5-month study period, 69 HCWs had confirmed 2009 H1N1 influenza, 51 (74%) of whom met the criteria for HA 2009 H1N1 influenza. Eighteen HCWs with 2009 H1N1 influenza were excluded because of potential community influenza exposure (they had ill household members). All 51 HCWs consented to study enrollment; the median age of the study group was 36 years (range, 24–54 years), and 24 (47%) of 51 HCWs reported unprotected exposure to patients with confirmed 2009 H1N1 influenza (Table 1). Nurses were the most frequently exposed (26 [51%] of 51 exposed HCWs), and most exposures occurred on medical units (30 [59%] of 51 exposed HCWs). According to multivariate analysis, unprotected exposure to patients with confirmed 2009 H1N1 influenza (adjusted odds ratio [aOR], 2.41 [95% confidence interval [CI], 1.19–16.71]) was the sole factor associated with HA 2009 H1N1 influenza, and the protective effect of surgical masks is consistent with existing literature for 2009 H1N1 influenza [7, 8]. Last, factors associated with unprotected exposure and reduced risk of infection among frontline HCWs will require further exploration in other study populations to provide additional evidence for optimized infection control practices and minimization of viral infection.

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AnuchaApisarnthanarak1 and Linda M. Mundy

1Division of Infectious Diseases, Thammasat University Hospital, Pratumthani, Thailand; and LM Mundy, LLC, Bryn Mawr, Pennsylvania

References


Death Due to Community-Associated Clostridium difficile in a Woman Receiving Prolonged Antibiotic Therapy for Suspected Lyme Disease

To the Editor—Clostridium difficile infections can occur outside the hospital in association with antibiotic use and can result in fulminating colitis and death. In December 2009, the Minnesota Department of Health investigated a death due to C. difficile of a 52-year-old woman with no recent hospitalizations.

In June 2009, the patient sought care for symptoms of fatigue, insomnia, achy joints, memory loss, and confusion. These symptoms had been present for >5 years and had worsened in the past 2 years. She received a diagnosis of a relapse of depression. In August, on the basis of responses to a “Lyme Disease Question-
nome/Checklist” given at a health care visit, Lyme disease serologic tests were performed in a California laboratory. Results were indeterminate by immunofluorescence assay and were IgM-positive (2 of 3 bands) but IgG-negative (3 of 10 bands) on Western blot. She was placed on a 5-week course of doxycycline for possible Lyme disease. The patient’s symptoms improved but then worsened after completion of antibiotics. Both her primary physician and a rheumatologist found no objective evidence of Lyme disease in October. In November, without further Lyme disease testing, another physician prescribed oral cefuroxime and telithromycin for a planned 2–4 months to treat chronic Lyme disease. Five weeks after initiating this therapy, the patient developed diarrhea for 3 days and received a diagnosis of *C. difficile* colitis. An enzyme immunoassay was positive for *C. difficile* toxin A and B. Because she had no overnight stays in a health care facility in the 12 weeks prior, she was classified as having a community-associated *C. difficile* infection. The patient was started on oral metronidazole therapy but was hospitalized 2 days later with severe abdominal pain secondary to diffuse colitis and abdominal ascites. The next morning, she experienced cardiac arrest twice and succumbed to cardiac arrest during an emergency colectomy. Pseudomembranes were noted in the colon, and *C. difficile* was isolated from stool. The isolate was toxinotype III, binary toxin positive, and contained a 36-base pair *tcdC* deletion.

This case illustrates the potential severity of community-associated *C. difficile* infection and the danger of antibiotic treatment for a presumed diagnosis of chronic Lyme disease. In the absence of a positive IgG finding on Western blot, symptoms lasting >1 month are not likely due to *Borrelia burgdorferi* infection, even if the IgM result is positive [1]. Longstanding nonspecific symptoms unaccompanied by objective evidence of infection do not warrant antibiotic treatment for Lyme disease [2]. Even in patients with histories of appropriate clinical and serological criteria for Lyme disease, multiple randomized placebo-controlled trials have shown no durable benefit to long-term antibiotic therapy for persistent nonspecific symptoms [3–5]. Severe adverse effects, such as death, catheter-related bloodstream infections, pulmonary embolism, septic thrombophlebitis, and gastrointestinal bleeding, have previously been reported in patients treated with antibiotics for Lyme disease [3–7]. This death due to fulminant *C. difficile* colitis serves as yet another example of the severe adverse outcomes that can result from inappropriate antibiotic therapy for presumptive Lyme disease.

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**Stacy M. Holzbauer, Melissa M. Kemperman, and Ruth Lynfield**

1. Career Epidemiology Field Officer Program, Office of Public Health Preparedness and Response, Centers for Disease Control and Prevention, Assigned to the Minnesota Department of Health, and 2. Minnesota Department of Health, Saint Paul, Minnesota

**References**

6. Patel R, Grogg KL, Edwards WD, Wright AJ, Schwenk NM. Death from inappropriate ther-


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Reprints or correspondence: Stacy M. Holzbauer, DVM, MPH, Minnesota Dept of Health, 625 Robert St N, Saint Paul, MN 55104-0975 (stacy.holzbauer@state.mn.us).

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