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A Tale of Two Cities

In early June I spent several days in Canada as visiting professor of emergency medicine for the University of Toronto's affiliated residencies. It was a wonderful experience in a beautiful city that reminded me once again of how much alike we all are. Nevertheless, the trip also served as an ironic reminder of the challenges emergency physicians everywhere still face.

A strong Toronto interest in geriatric emergency medicine rivaling ours in New York City led to the invitation. But in the weeks prior to the trip, I worried that it might have to be canceled if travel restrictions were imposed in response to the growing H1N1 influenza pandemic, of which New York City appeared to be the epicenter in the US. How ironic to have to cancel educational activities concerning emergent problems of the elderly because of a new problem that most seriously affects *young* people.

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In the end, no such restrictions were necessary. But while in Canada, I realized that almost exactly six years earlier, severe acute respiratory syndrome (SARS) had virtually closed Toronto to outside visitors. Before returning to New York City and the new H1N1 cases overwhelming our pediatric and adult emergency departments, we toured one of Toronto's emergency departments to see firsthand some of the structural changes made in response to the SARS epidemic and heard about the near-fatal experiences of two attending emergency physicians exposed to SARS.

Between February and April 2003, Toronto reported more than 250 cases of SARS. Then, after the World Health Organization lifted its advisory limiting travel and SARS precautions were discontinued, Toronto experienced a second wave of cases centered at a community hospital. Of the 74 new cases reported between April and June, 29 occurred in health care workers. By the time SARS had finally run its course, there were 44 deaths. Worldwide, the mortality rate for SARS was about 10% overall and over 50% in those older than 65.

The 2003 SARS epidemic spared the US, but its relevance to current concerns about pandemic H1N1-2009 should be apparent. As of this writing, countries in the northern hemisphere are experiencing a summer respite from new cases, while the novel H1N1 strain of influenza appears to be the predominant influenza strain of this winter season in much of the southern hemisphere.

Almost all experts are predicting a second wave of pandemic H1N1-2009, together with the typical seasonal flu strain, in the northern hemisphere this fall and winter. Will pandemic H1N1-2009 be as deadly as Toronto's SARS experience in 2003, or the biphasic pandemic influenza that killed tens of millions of mostly young people worldwide in 1918? Part of the answer may be known by the time you read this. But in any case, concerns are both real and many: H1N1-2009 is a "very unstable" virus that can easily exchange genetic material with other viruses that are resistant to antiviral medications, more lethal to humans, or both. Also, by even the most optimistic forecasts, there will not be sufficient H1N1 vaccine available early enough to protect all who need it, and the CDC estimates that as much as 40% of the workforce may be unable to work at the peak of a second pandemic.

Ultimately, whether our experience with pandemic H1N1-2009 will more closely resemble that of 1918, 2003, or the US in 1976, when "swine flu" concerns proved unwarranted, most emergency physicians will someday have to deal with the "real thing." At present, the emergency physicians who have the most recent personal experience are in the city of Toronto, which is why we are hoping to welcome some of them soon to our fair city to share their experiences and their expertise. □