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Outbreak response: A tale of two cities

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ORIGINALLY PUBLISHED MARCH 6, 2007

If you don't remember what SARS is - the four letters stand for severe acute respiratory syndrome - and you're not worried, keep reading. The newly released SARS Commission report, published by the government of Ontario, is a sobering list of what hospitals in Baltimore and other cities need to do to protect all of us.

On March 7, 2003, two men with undiagnosed SARS went to the hospital in two Canadian cities. In Toronto, this event caused an outbreak of disease that killed 44 people, infected another 330, and forced hospitals to close. In Vancouver, a "robust worker safety and infection control culture" enabled Vancouver General Hospital to prevent the disease from spreading to another patient or hospital visitor.

Mr. C (the report omits names) arrived in Vancouver after a trip to Asia. He felt ill and went to the emergency room at Vancouver General at 4:55 p.m. Because of his fever and difficulty breathing, the staff removed him from the crowded room within five minutes. By 5:10, he was put on "full respiratory precautions." Caregivers wore tight N95 masks to filter out microbial particles. By 7, Mr. C. had been moved to a negative pressure room to prevent infectious agents from flowing to other parts of the hospital.

That same evening, Mr. T was taken to Scarborough Grace General Hospital in Toronto. Mr. T's mother had come home from Hong Kong two weeks earlier, and died from what everyone thought was heart disease. Mr. T waited in Scarborough Grace's emergency room for 16 hours. Two patients waiting with him contracted SARS. "Infection control was not a high priority" in Ontario hospitals, says the report. Of all the people who contracted SARS in Ontario, 77 percent got it in a hospital.

Hospital administrators at Scarborough insisted that N95 masks were unnecessary. In Vancouver, the staff was ordered to don N95 masks until there was proof that less protection was needed.

On March 18, the Ontario government recommended gloves, gowns, N95 masks and eye protection when treating SARS patients. Health care workers had to fend for themselves. Doctors at Toronto's Lapsley Clinic bought goggles and masks from a home improvement store, but three of the clinic's four doctors there still caught SARS.

Many SARS patients needed to be intubated, meaning a tube was inserted in their windpipe to help them breathe. During intubation, mucus sometimes is expelled onto equipment and walls. Mr. C was intubated at Vancouver General without anyone present becoming infected. In Toronto, doctors and nurses who performed the procedure without N95 masks caught the disease.

Hospital workers were also exposed to SARS by contaminated equipment (the virus can live on objects for hours) and visitors whose relatives were being treated for SARS. Mrs. M, whose husband was in intensive care with SARS, was allowed to walk around the hospital without a mask on the false assumption that without symptoms she posed no risk. She died of SARS in April.

The SARS report is a tale of different hospital cultures. The report shows that if avian flu or another virus made its way to the U.S., the death toll would depend largely on what hospitals did when the first victims were admitted. If hospitals have effective infection controls in place, an epidemic might be stopped. Vancouver proved it. Baltimore and other U.S. cities can learn from it.

Some preparations have been made, but most hospitals in the U.S. are underprepared. One out of every 20 patients contracts an infection in the hospital. Methicillin-resistant Staphylococcus aureus (MRSA) is racing through hospitals, spread by dirty hands and unclean equipment. How can hospitals that are failing to prevent ordinary infections spread by touch contain a new, unknown virus that can spread not only by touch but also in the air?

Even in Baltimore, where hospitals such as Johns Hopkins have shown leadership in preventing infections (Hopkins recently announced a pilot program to screen patients for MRSA), the SARS Commission report holds important lessons. In Toronto, doctors and nurses brought SARS home to their families. In U.S. cities, hospital workers wear contaminated uniforms home and even into restaurants.

Such shoddy practices are poor preparation for the challenge of an unknown disease. Our best defense against a sudden, new contagion is rigorous hospital hygiene and routine infection prevention. That is the lesson of SARS.

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