

The Sun

Spreading Infections

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SARS, four letters that filled the headlines in the spring of 2003, and then disappeared. New Yorkers who do not remember what those letters mean — severe acute respiratory syndrome — and are not worried, should consider the lessons of the newly released SARS Commission report, published by the government of Ontario.

On March 7, 2003, two middle-aged men with undiagnosed cases of SARS went to the hospital in two different cities. In Toronto, Ontario, this caused an outbreak of disease that killed 44 people, infected another 330, and forced hospitals to close. In Vancouver, British Columbia, a "robust worker safety and infection control culture" enabled Vancouver General Hospital to prevent the disease from spreading to a single other patient or hospital visitor. The report shows how one city thwarted an epidemic, while another made deadly mistakes.

Mr. C — the report omits full names — arrived in Vancouver after a trip to Asia. Feeling very ill, he went to the emergency room at Vancouver General at 4:55 p.m. Because of his high fever and difficulty breathing, the staff removed him from the crowded room within five minutes and placed him in a cubicle. By 5:10 p.m., he was on "full respiratory precautions." Caregivers wore special, tight-fitting N95 masks, which filter out microbial particles. By 7 p.m., Mr. C was in a negative pressure room to prevent airborne infectious agents from flowing to other parts of the hospital. The staff had no idea what made Mr. C sick, but they had been alerted by provincial authorities about illnesses coming from the Far East.

That evening, Mr. T was taken to Scarborough Grace Hospital in Toronto. Mr. T's mother had returned from Hong Kong two weeks earlier, and died from what everyone thought was heart disease. Mr. T waited in Scarborough Grace's crowded emergency room for 16 hours, despite a high fever and respiratory distress. Two patients waiting with him contracted SARS.

At Scarborough Grace, there were no precautions to isolate patients with respiratory illnesses, except tuberculosis. "For most hospitals in Ontario," says the report, "infection control was not a high priority." As a result, 77% of the people who contracted SARS there got it while working, visiting, or being treated in a hospital.

For two weeks after Mr. T's admission, hospital administrators insisted that ordinary surgical masks were sufficient and decided to stick with this lower level of protection until research proved more was needed. In Vancouver, the staff was ordered to don N95 masks until there was proof less was needed.

On March 18, the Ontario Ministry of Health and Long Term Care recommended gloves, gowns, N95 masks, and eye protection when treating SARS patients. But health care workers had to fend for themselves. Doctors at Toronto's Lapsley Clinic bought goggles and masks from Home Depot. Nevertheless, three of four doctors there caught SARS.

Not using N95 masks was deadly. Many SARS patients needed a tube inserted in their windpipe to help them breathe. During insertion, mucous was sometimes expelled with great force onto nurses' faces, equipment, and walls. Mr. C was intubated at Vancouver General without anyone present becoming infected. But when Mr. M was intubated at Scarborough Grace, the physician and three nurses who performed the procedure without wearing N95 masks caught SARS.

Hospital workers were also exposed to SARS by contaminated equipment — the virus can live on objects for several hours — and by visitors. Mrs. M, whose husband was in intensive care, 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 report is a tale of two different hospital cultures — Vancouver's "robust infection control" and Toronto's laxness. Ontario "did not have hospitals that were prepared for infection control," Dr. James Young, the commissioner of public safety and security for Ontario, said. "We did not have doctors and nurses ... who were used to getting in and out of gloves, and gowns, and masks, who were used to working in these situations, who knew and thought about infection control every day of their lives."

The report shows that if an unknown virus reached America, the death toll would depend largely on what hospitals do when the first victims are admitted. If hospitals have effective infection controls in place, an epidemic might be stopped.

Some preparations have been made. Government agencies have stockpiled N95 and surgical masks. Long Island College Hospital fits all staff members, from housekeepers to physicians, with N95 masks and teaches them how to avoid transmitting infection.

But most hospitals in America are under-prepared. One out of every 20 patients contracts an infection in the hospital. Infections such as methicillin-resistant *Staphylococcus aureus*, or MRSA, are 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 invisibly in the air?

In Toronto, doctors and nurses unknowingly brought SARS home to their families. In New York City, hospital workers wear contaminated uniforms onto buses and subways and track bacteria into their homes on contaminated shoes. Such shoddy practices are poor preparation for the challenge of an unknown disease.

Our best defense is rigorous hospital hygiene and routine infection prevention. That is the lesson of SARS.

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