Infection control for the disinterested

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As physicians working in a teaching hospital in Toronto, we had never felt that communicable diseases posed much of a personal risk to us. During a recent Norwalk outbreak, one of us was the only emergency department physician to catch the virus, and yet we remained unimpressed. Indeed, the same one of us spent several years working in refugee camps with a relief organization and emerged intact from exposures to cholera, tuberculosis, typhoid and respiratory infections. Like many of our colleagues, we thought the odds of catching anything worse than diarrhea were pretty remote. Severe acute respiratory syndrome (SARS) changed all that.

In this article we describe ways in which the SARS outbreak changed our work, attitudes and personal lives. This is not a comprehensive guide to the management of an outbreak, but we hope that our observations might be useful.

SARS and work

In the early days of the SARS outbreak, new procedures had to become routine. Handwashing was transformed from an irregular and absent-minded habit to a necessity carried out frequently and deliberately. The proper technique had to be learned, since we had scarcely realized the intricacy of the process. Seven steps in all, continued for at least 15 seconds, making sure that the thumb, the web spaces and the nails were not missed.[1] When we disrobed after leaving a SARS isolation room, handwashing had to be repeated four times. Soap was supplemented with a disinfectant gel, left to dry on the hands for another 15 seconds. The alcohol-based gel dried the skin, and could be flammable if not allowed to dry completely (another reason we don't smoke).[1]

Better handwashing was obvious, but additional nuances became apparent. Wedding bands created a space where the SARS virus could hide, and so had to come off. But where to store a ring? One could loop it through watchbands, yet watches were also forbidden. Watches ended up in our pockets, with the rings safely attached. We no longer bit or shared our pens, and threw each one out at the end of every shift (Bics beat Mont Blancs during epidemics). And what about the pager poking out from our clothes? It might carry the virus, and while some of our colleagues recommended wrapping it in plastic food wrap, we both chose to take it off when seeing SARS patients.

Old worries about how often to clean lab coats disappeared along with the lab coats themselves. They were replaced by greens, gowns, gloves, goggles and new worries. We replaced our greens at each shift with new hospital issue, usually several sizes too small. Shoes were simple, since we each kept a dedicated pair at work; socks were smuggled home and immediately placed in the washing machine.

Small changes to routine accumulated into large disruptions. Locked doors meant detours. Changing clothes meant delays. Closed cafeterias meant hunger. The few open hospital entrances entailed long lines of patients and staff waiting to be screened, the juggling of briefcases and screening questionnaires in gel-soaked hands, and temperature checks by devices that consistently diagnosed us as hypothermic. All this occurred under the gaze of police recruited to ensure compliance. Yet even they could not snuff out all subversive efforts, since a trade was rumoured to have developed in the hospital parking lot among unscrupulous people scalping day passes. The situation seemed to change daily, which meant a deluge of emails about the evolving epidemic, with sometimes contradictory information, typically striking our computers just when we were trying to go home.

We underestimated the exhaustion that comes from working for hours in full infection-control garb. Dehydration and hypercarbia were likely, so more frequent breaks became necessary. The masks available seemed to change daily, and just as we found one type that fit well it was replaced by another. Moreover, the tight fittings were uncomfortable, especially for people with big noses like us. We sometimes broke protocol by adjusting the mask with gloved hands in an effort to find comfort. The red indentations across our faces at the end of each day seemed vaguely honourable (they proved we had survived the front lines), but the sight of them made some people uncomfortable when we stopped at a corner store on the way home.

The biggest impact of masks for us was the loss of visual cues that normally inform conversations. Establishing rapport with a crying toddler before sewing up his laceration, deciphering whether a nurse agreed with us, or determining whether a depressed patient was suicidal became more challenging than ever when everyone was wearing a mask.

As researchers we had spent time studying emergency department overcrowding and had been frustrated by the lack of evidence documenting the deleterious effects. Yet SARS managed to expose the dangers of hallway medicine and prolonged waits for inpatient beds in a dramatic fashion. The presence of one unrecognized SARS patient in one crowded emergency department created the epicentre

of an outbreak. Moreover, public health authorities virtually shut down elective care throughout the city's hospitals, which meant that far fewer other patients were competing for services. The result was a temporary increase of inpatient beds and other resources for the emergency department. For a while, emergency patient volumes dropped substantially, presumably as a result of reduced discretionary utilization. The net, paradoxical result was the temporary decongestion of our normally overcrowded emergency departments.

SARS and home

Our families had to cope with concern about SARS, too. A few simple measures helped to reduce this stress. First, adequate preparation was helpful, such as deciding whether the family would remain together during a quarantine or, if not, where they would stay. We also had to prepare for calls from worried friends and family members. They mostly wanted confirmation that newspaper reports were accurate, but did not always accept our assurances. They also tended to reject our attempts to minimize the risks of our work, so we were not surprised when some relatives decided not to visit. Finally, we chose to adhere to any additional precautions proposed in our homes, whether evidence-based or not. Failure to do so would have likely resulted in effective quarantine, anyway.

SARS and colleagues

Relationships with colleagues changed. We sometimes found ourselves counselling anxious staff members about risks we did not fully understand. This task was not trivial, could not be avoided, required time, and meant that other work was delayed. Early on, a sense of common purpose and altruism provided examples for many to follow. Later, the rising count of infected health care workers meant that suspicions of inadequate protective measures were voiced more frequently. This was followed by a few refusals of high-risk assignments, providing new precedents for others to follow. Administrators soon realized that not all physicians, nurses and support staff were willing to do front line SARS care. The savvy chiefs did not coerce unwilling staff, but found other clinical duties for them that could then free up staff for SARS care.

Rules about patient confidentiality (especially when the patients were friends and colleagues) became almost impossible to follow, out of concern for their welfare and the direct relevance of their experience to our ability to reduce our personal risk.This presented an ethical dilemma that was difficult to resolve. The challenges imposed by the epidemic also revealed physicians in a new light. The professional veneer of manners and civility sometimes wore thin, and reactions to fear and pressure were unpredictable. Most of our colleagues behaved reasonably, and some behaved like heroes. A few sank under the weight of circumstance, hoping that their conduct would not be noticed in the confusion.

Some authorities predict that nothing will be the same following the SARS outbreak. This is true for us in at least one respect. Never before had we truly felt we were at risk of contracting a serious illness at work. Never before had we thought about our own safety before responding to a patient who needed intubation. Such possibilities now have a new meaning. The implications of SARS infection is different from, say, those of catching HIV from a needlestick injury. Acute epidemics of HIV rarely occur from needlestick injuries, and clinicians cannot take that infection home and give it to their children the same day. With SARS, suddenly, we felt that our families were at risk, even if we followed all the rules.

Conclusion

There is not much that is truly new about the so-called "new normal" in Toronto hospitals.[2] The risk of communicable disease was apparent to previous generations of Canadian physicians, some of whom, like Norman Bethune and Lucille Teasdale, died treating their patients. To us, these figures held much historical significance but little practical relevance. We knew our lives could never be heroic, and we believed that our deaths would not be from a disease caught at work. Then SARS began to claim our contemporaries. SARS has served to remind us of an occupational risk that has never really gone away: most doctors who contracted SARS were normal clinicians doing normal tasks, just like us.

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References

1. University Health Network. *SARS information: for patients, families, visitors & volunteers*. Toronto: The Network; 2003. Available: www.uhn.ca/home/sars/index.asp?nav=1;1 (accessed 2003 June 24).
2. Nicholls S. A new normal? *Medical Post* [Toronto] 2003 June 10;p. 23(col 1-4).

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