The Lessons of SARS

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Given the low mortality and morbidity of the severe acute respiratory syndrome (SARS) compared with other public health scourges, is the attention devoted to it misdirected? The SARS experience has provided at least 4 enduring lessons. First, by providing a test of the capacity of each part of the public health system, from national to local and hospital responses, it has better prepared the world for the anticipated and much-feared next real pandemic. Second, SARS has reemphasized that from housing, sexual practices, and slaughtering techniques to health care capacity, the situation in other, especially developing, countries affects us. Global cooperation is necessary not only for justice but to ensure our own health. Third, despite trends toward commercialization, easier lives, and self-centered individualism, the response of health care professionals to SARS reaffirmed dedication to caring for the sick even at great personal risks as the core ethical principle of medicine. Finally, SARS also emphasized the importance of the duty of health care administrators and senior physicians to rapidly institute procedures to maximize the safety of frontline physicians and nurses. These lessons will be valuable far beyond the SARS episode.

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Many people wonder whether all of the international attention heaped on the severe acute respiratory syndrome (SARS) has been misdirected. As of 11 July 2003, there were just 8437 cases of SARS worldwide, leading to 813 deaths (1). While each of these deaths is a tragedy, the numbers pale in comparison to the numbers of deaths caused by HIV infection, malaria, and tuberculosis, not to mention more mundane but more deadly infectious diseases such as pneumococcal pneumonia and diarrhea. In 2002, 40 million people worldwide were infected with HIV. Five million had newly contracted the disease during that year, and approximately 3.1 million died of AIDS (2). Similarly, malaria afflicts over 400 million people worldwide each year and causes approximately 2 million deaths (3). The corresponding figures for tuberculosis are 8 million cases and 2 million deaths (4). Indeed, even in local contexts, the impact of SARS on mortality rates is much less significant than that of these other diseases. In the United States, over 750 people die of tuberculosis each year and over 14,000 die of AIDS; in contrast, none of the 73 U.S. patients who have contracted SARS have died of the disease (5). In Canada, 81 persons died of tuberculosis in 2000 and about 400 died of AIDS, substantially more than the 39 deaths among the 438 patients with SARS (250 probable cases and 188 suspected cases) (6).

Among the many reasons for the disproportionate response to SARS are its high mortality rate compared with other respiratory infections, its rapid spread across the globe, and the remarkable sleuthing that identified the etiologic virus and decoded its genome in just a handful of days (7). But novelty may be the most powerful force behind all the public attention. Despite its continued threat, West Nile virus, which dominated the media just a few years ago, now receives minimal coverage, and the outbreak of monkeypox in the midwestern United States already seems to have eclipsed SARS in the headlines. Nevertheless, for all the disproportionate attention, the focus on SARS has taught some invaluable lessons that will have long-term positive effects on health care.

One is that the SARS epidemic has better prepared the world’s public health authorities for a major influenza or other pandemic. For many years, public health officials have been worrying about a repeat of the great influenza pandemic of 1918 and 1919. In less than a year, between 20 and 40 million people, 1% to 2% of the world’s entire population, died (8, 9). In most European countries, the mortality rate was 2.5%; in other places, it reached 5%. Over one quarter of the U.S. population was infected, and some 675,000 people died, 10 times the number of Americans who died fighting in World War I (10). As one commentator noted, the influenza pandemic decreased the average life span in the United States by 10 years (10). Two characteristics of the flu were even scarier than just the sheer numbers of dead. First, it did not kill only the old and infirm; nearly 43,000 young and fit U.S. servicemen suffocated from the fluid in their lungs (10). The second was the speed with which death overtook the victim. People who looked fine one day were dead the next. In recent decades, public health workers have been trying to prevent a pandemic of comparable magnitude by sequencing the genome of the 1918 influenza virus strain and by linking early monitoring systems to strategies for rapid vaccine development and dissemination (8, 9).

As the SARS epidemic spread, many feared that it was the long-dreaded second coming. Luckily it was not. Nevertheless, SARS severely tested the capacity of the worldwide public health system to respond rapidly and decisively. Moreover, it tested each country’s integrity in reporting data as well as the emergency response plans of each country, city, and hospital. The SARS epidemic focused a harsh light on the Chinese public health system and the deadly consequences of suppressing health care information. Simultaneously, it illuminated the efficient Vietnamese response and the value of strict quarantines. Local public health departments and hospitals throughout the world had to reevaluate and strengthen their measures for handling infectious emergencies, quarantining patients, and ensuring the safety of other hospitalized patients. The
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Lessons learned have—and will continue to have—an impact beyond refining the response to SARS. The epidemic has highlighted the developing public health gaps in tuberculosis, HIV infection, and other communicable diseases as China has privatized medical services. These disparities may now receive much-needed attention. Thus, a benefit of SARS has been to mobilize resources for the worldwide public health infrastructure, which is necessary for addressing rapidly spreading, deadly respiratory infections. It is hoped that this awakening will lessen the impact of the next pandemic and perhaps even avert it.

A closely related lesson is the necessity of global cooperation in containing infectious diseases. For those who are unconvinced by the ongoing saga of HIV infection and AIDS, SARS is a forceful reminder that everyone has a personal health interest in what happens in other countries. Living in a rich, developed country does not protect people from emerging infections. Borders, oceans, and other natural barriers are not what they once were. Housing, farming techniques, food handling and transportation arrangements, sexual practices, public health measures, and even political practices in developing countries around the globe can adversely affect health everywhere. Isolationist attitudes will not protect a country that participates in the global economy and transportation system. Working with other countries, supporting international development institutions, and providing development aid are likely to be critical to protecting the health of people in developed countries. If a passion for distributed justice cannot induce us to care for people living in poor countries, then self-interest in our own health should engage us in improving their living standards lest we become infected by diseases that emerge there.

Another lesson from the SARS epidemic relates to the internal morality of medicine. Carlo Urbani, a physician from the World Health Organization, responded to a new respiratory infection at the Vietnam French Hospital in Hanoi (11). Dr. Urbani determined that the new respiratory infection was SARS, warned the world about it, and worked tirelessly to help the hospital staff care for the patients by developing an isolation ward, quarantining the hospital, and helping the country cope with the contagion. Less than 4 weeks after responding to the first case of SARS, Dr. Urbani died of the disease. His dedication was not unique. More than half of the first 60 reported cases of SARS involved health care workers who had come into contact with SARS patients. Indeed, apart from the very first case, all of the people who died in Vietnam were doctors and nurses. Nearly a quarter of all patients with SARS in Hong Kong were health care workers. In Canada, of the 141 probable cases of SARS diagnosed between 23 February and 14 May 2003, 92 (65%) involved health care workers. Despite deadly peril, physicians and nurses tirelessly cared for patients with SARS.

This reaffirmation of health care workers’ duty to care for the sick at the risk of death is amazing (12). It did not have to be this way. The history of physicians’ responses to other contagions is mixed (12, 13). Galen is reported to have fled from Rome during a plague in 166. Although in the 14th century some physicians stayed and cared for the sick, most responded to the Black Death by fleeing. Defoe indicates in A Journal of the Plague Years—a novelistic chronicle about London’s great plague of 1665—that most physicians were called “deserters” (14). In the mid-19th century, nascent professional organizations began to articulate the physician’s ethical obligation to care for the sick during epidemics (12). The SARS epidemic tested the dedication of a medical profession that might have been weakened by increasing commercialization, poor morale, an emerging preference for easier professional lifestyles, and the pervasive self-centered individualism of the larger society. In light of these worldwide trends, it would have been disappointing but perhaps not surprising if physicians refused to care for highly infectious patients spreading a deadly virus. That they continued to care despite personal risk is one of the ennobling—and, it is hoped, enduring—legacies of the SARS epidemic.

Nearly 20 years ago, when the HIV and AIDS epidemic was erupting, physicians expressed what some commentators called “profound reluctance and concern” about caring for any of the “4-H” patients: homosexuals, hemophiliacs, Haitians, and heroin addicts. Indeed, while many thousands of health care workers cared for these patients despite uncertain risks, many others vocally refused to do so. Saying that the patients somehow deserved the disease because of their lifestyles or that “accidental injuries [were] inevitable” (15), many claimed that “no one can condemn a doctor for not taking on a patient with AIDS.” Prompted by such views, medical and dental societies convened panels to debate the issue. These discussions concluded by reaffirming that devotion to caring for the sick is what distinguishes health professionals from lawyers, teachers, and businesspeople (16, 17). This moral ideal defines the core element of being a medical professional. The obligation is not chosen; it is inseparable from the choice to become a doctor. To reject this ethical ideal is to reject the profession.

The logic of this view became so irrefutable that, against its own tenet that doctors should be free to choose their patients, the American Medical Association’s Council on Ethical and Judicial Affairs declared that “a physician may not ethically refuse to treat a patient whose condition is within the physician’s current realm of competence solely because the patient is seropositive [for HIV]” (18). Ultimately, this thinking came to dominate the medical profession in the late 1980s and was inculcated through hospital practices and training programs. It simply became ethically and professionally unacceptable for health care workers to refuse to treat a patient with HIV infection or AIDS.

Health care workers educated with this ethos responded with dedication to the SARS epidemic. This re-
response does not mean that physicians and nurses caring for patients with SARS were not concerned. They asked questions, wondering how much risk they needed to take, how to deal with uncertainty in deciding about interventions, and what they—and, more important, their hospital administrators—could do to reduce the risks. But proceeding with caution is different from refusing to care for patients, different from declaring that health care workers are not obliged to risk their lives for patients with SARS, and different from threatening to quit practicing rather than care for such patients. Thus, in dealing with SARS, the health professions have reaffirmed Dr. Urbani’s model of physicians’ dedication to caring for the sick. They have rejected a “me first” philosophy.

Affirming health care workers’ ethical duty to care for the sick imposes a correlative duty on health care administrators and senior physicians to quickly develop and deploy procedures to maximize the safety of frontline physicians and nurses. The gloves, eye shields, and other paraphernalia that are now routine did not exist 20 years ago. While it took many years to develop and implement these measures in response to HIV and AIDS, the response to SARS took just a handful of weeks. Canadian health and hospital administrators in particular seem to have done an extraordinary job deploying maximal protective measures, including N95 respirators, negative air pressure examining rooms, long-sleeved gowns, redesigned traffic flow patterns to ensure minimal contact with suspected case-patients, and adequate quarantines of health care workers with suspected SARS (19). These measures doubtless stressed hospital facilities and health care workers and may not be perfect. However, their proven efficacy in reducing the risk for transmission made it easier to hold physicians to their obligation to care for patients despite personal risk.

Malaria, HIV infection, tuberculosis, and a host of other deadly infections are more devastating than SARS. However, while its novelty focused disproportionate attention on SARS, the attention has been of incalculable value. These lessons—the importance of the public health infrastructure throughout the world, the importance of improving health and living conditions in developing countries, the reaffirmation of the moral center of the medical profession, and the urgent need to implement measures that minimize risks to health care workers—are valuable far beyond SARS. Indeed, they may help to focus worldwide attention on the global threat of both long-standing and emerging infections.

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**References**


