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## SARS: Fear of Global Pandemic

Just as the war in Iraq was winding down and hopes for global stability were increasing, severe acute respiratory syndrome (SARS) has appeared to frighten an already jittery global community. The World Health Organization and the Centers for Disease Control and Prevention have announced that the pathogen responsible for SARS is a member of the coronavirus family. SARS appears to be spread by close person-to-person contact and most cases of SARS to date have involved people who cared for or lived with someone with the virus. As of April 28th, nearly 5,200 cases of SARS have been reported in 26 countries with nearly 317 deaths—a morbidity rate of nearly 6%. Compare this to the influenza pandemic of 1918-1919, which had a morbidity rate of less than 1% but managed to kill 20–40 million people worldwide. Over 95% of the known SARS cases are confined to Hong Kong and China. It most likely originated in the Guang Dong Province of China. The other country affected by SARS is Canada, localized in Toronto, where a single person with an inadvertent contact with someone with SARS in Hong Kong may have spread the disease. The virus causing the disease is indiscriminate—it infects young, old, healthy, diseased, males or females. Presently there appears to be no good or reliable treatment for SARS.

Coronaviruses have a relatively large genome of nearly 30,000 nucleotides and cause highly prevalent respiratory or enteric diseases in humans and animals. Their name is derived from the viral envelope studded with long petal-shaped spikes—giving the appearance of a crown (*corona* in Latin). The enveloped, positive-stranded viruses exhibit a high frequency of recombination that may have inadvertently generated a virulent strain that can cross species. A mere four weeks after alarm bells sounded a SARS epidemic, two groups of scientists have determined the complete nucleotide sequence, and have identified an apparently new family of coronaviruses. A Dutch group who injected monkeys with viruses obtained from patients have recreated the disease and fulfilled Koch's postulates. The story is not complete, however, because Canada's main virology laboratory in Winnipeg has found the virus in only 40% of probable and suspected cases. It is possible that there may yet be another accomplice lurking in the background.

Epidemics come and go. They will remain a part of our lives—a consequence of globalization and travel. But from every epidemic we can learn lessons. First, the advances in technology have allowed the identification of the pathogen in a few weeks, as compared to the few years that it took to identify the AIDS pathogen. Second, the governments of countries where an epidemic is in the making must be open and forthcoming—treating it as a global issue. Identification of epidemics will require more trained public health personnel and trained epidemiologists. In developing countries where the healthcare systems are often in a wretched state, even a small epidemic can have disastrous consequences. The healthcare professionals in countries with SARS have borne the brunt of the burden and the first casualties were the attending physicians. If we want to live as a global community, with unlimited access of travel to all parts of the world, the developing world will have to shoulder the burden of providing help to improve the healthcare services in the less fortunate places. We cannot ignore it as a problem of a distant land.

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