EDITORIAL

SARS Outbreak and Lessons Learned

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In November 2002, the first cases of Severe Acute Respiratory Syndrome (SARS) developed in Guandong Province, China. In February 2003, a physician from that province visited Hong Kong where he apparently infected at least 3 other persons who stayed at the same hotel. These 3 persons carried the infection to Canada, Singapore and Vietnam.1

It was in Vietnam at the end of February 2003 that Dr. Carlo Urbani became aware of an outbreak of atypical pneumonia among 22 hospital workers, who had presumably come in contact with the index case. Dr. Urbani notified the World Health Organization (WHO) and coined the term SARS for this outbreak.1 Dr. Urbani subsequently died of SARS in Thailand on March 29, 2003.2

In Toronto, 4 family members of the index case and 17 persons in the hospital where the index case was treated became infected, one of whom was a member of a Filipino prayer group. Subsequently, 27 out of 30 members of that prayer group also became infected.3 In Singapore, 20 out of 80 physicians, nurses, hospital staff, and family members who came in contact with the index case developed SARS.4

As of mid March, the WHO reported 167 cases of SARS and 4 deaths, the vast majority occurring within the special administrative district of Hong Kong, Canada, Vietnam and Singapore. By the end of March, the total had grown to 1622 cases and 58 deaths in 14 countries.5

This outbreak of a severe novel respiratory infection marshaled worldwide clinical, epidemiological, public health and research resources. By early April the putative agent, a new coronavirus (likely originating in a non-human host), was identified, the genome sequenced, and screening antibody tests for the virus developed.6-8

Despite public health measures, the number of cases continued to rise exponentially, as did the deaths, reaching a total of 6583 cases and 461 deaths by early May. The case fatality ratio was noted to vary by country and by age ranging from <1% for those under age 24 to >50% for those over age 65.5

Beginning in May, the pace of the epidemic was noted to slow. Although the most recent figures indicate 8459 total cumulative cases and 805 cumulative deaths, there have been only 38 new cases reported worldwide in the last 2 weeks (June 9 to 23) and all SARS travel advisories have been lifted by the WHO.5

It is unclear why the epidemic has slowed so dramatically. No vaccine has been yet developed and no clearly effective treatment exists. Without a doubt, dramatic public health measures—including the quarantining of entire cities—were a major factor in bringing this epidemic to an apparent halt. Yet there may be other factors at work as well including the simple change of seasons. It is known that the coronavirus outbreaks are more prevalent in colder months.9

While the threat of SARS may never be eradicated, it seems unlikely that it will also ever pose as severe a threat as any of the 3
major influenza pandemics which occurred this century: Spanish (1918–1919; 21 million worldwide deaths; 549,000 U.S. deaths); Asian (1957–1958; 69,800 U.S. deaths); and Hong-Kong (1968; 700,000 worldwide deaths; 34,000 U.S. deaths).10

The consequences of SARS also seem to pale in comparison to those of other endemic infections, such as infectious diarrhea (2.2 million worldwide deaths) and hepatitis B (600,000 worldwide deaths).

But does the quick containment of SARS mean that our fears concerning the disease were unfounded? Hardly so, it was rather the prompt and vigorous worldwide response to this epidemic that appears to have prevented our worst fears from being realized.

Can we rest easy now that the main threat seems to have dissipated? Again no, many experts fear the recurrence of the illness with the onset of colder weather.11 SARS seems likely to remain endemic within the population and will require ongoing surveillance with the rapid re-institution of public health measures at the first sign of recurrence.

What caveats, especially with respect to insurance risk, might be learned from this epidemic? There appear to be at least 3 lessons learned:

1. SARS is only the latest example of an apparently new infectious disease having the ability to spread rapidly, causing significant morbidity and mortality. People can now travel between countries and continents within hours increasing the likelihood that international travelers may contract these diseases and become the vectors of multiple, simultaneous outbreaks. So even domestic insurers may need to be concerned that their policyholders may come in contact with these infectious agents, either abroad or at home. Baseline insurance pricing needs to factor in the potential for such future outbreaks.

2. Even though an individual’s risk of contracting one of these infectious diseases remains small, the potential impact to an insurer may be disproportionate to the risk posed to individual policyholders. Some subgroups of policyholders may be more likely to come in contact with such infectious illnesses or succumb to those infections. These may include policyholders who frequently travel internationally, and who on the whole may have greater wealth and carry larger amounts of insurance. They may also include the elderly, who are again more likely to have larger amounts of insurance and who may be at increased risk of dying from such infections.

3. Seemingly, little can be done to mitigate the risk of adverse claims experience due to future outbreaks in blocks of existing business. Even pulling out of markets where serious outbreaks have occurred, or are likely to occur, does nothing to reduce the risk faced by existing policyholders in those markets or those traveling to those markets. However, insurers may wish to pay renewed attention to the importance of diversifying risk, avoiding the over concentration of risk in geographic areas and socioeconomic groups. This would also seem to be one of the few effective strategies to mitigate the risk of deliberate epidemics, the new term for bio-terrorism, and other terrorist attacks.

REFERENCES

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