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Medical Focus - Avian Flu Essentials

April 4, 2006

Spotlight on SARS and Lessons Learned

Dear Colleague:

This week, starting with the eighteenth letter of the Avian Flu Essentials series, I will present a brief timeline, scientific data, and impact of another disease, SARS. Not long ago, we faced an unknown disease that rapidly spread through the world and posed many challenges to the scientific community and governmental entities. It was given the name SARS, Severe Acute Respiratory Syndrome.

In February 2003, a World Health Organization epidemiologist began investigating an outbreak of atypical pneumonia in Vietnam, which became identified as SARS. It was later determined that the first case occurred in China in November of 2002. Lack of transparency and communication with the international community caused this delay in the detection of SARS and contributed to the wide spread of this disease.

In addition, the correct identification of the causative agent was crucial to developing a diagnostic test, getting a better understanding of this new pathogen, and searching for control measures. Only through the establishment of extensive collaboration were researchers quickly able to determine that the virus responsible for this disease is a SARS-associated coronavirus (SARS-CoV).

Animals may also be a reservoir for this virus. SARS-CoV was found in civets in China, as well as other animals. However, most infections resulted from close contact with an infected person. Therefore, cross species infections did not account for most human SARS outbreaks.

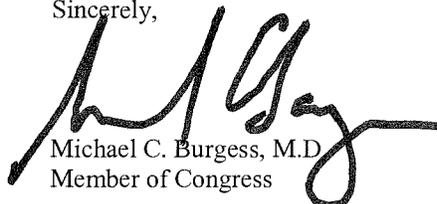
Although there were reported SARS cases in close to 30 countries over a period of a few months, this disease was effectively contained. By the end of the outbreak in July 2003, there were 8096 cases, including 774 deaths according to WHO. In addition, about 90 percent of the reported cases and deaths were concentrated in China, Hong Kong, and Taiwan. The United States only reported 27 cases with no mortality

Many components of the SARS outbreaks are applicable to avian influenza:

- The symptoms are non-specific and common
- The symptoms can be severe and some patients require intensive care for respiratory failure
- There is no vaccine or treatment yet available and diagnostics tests are of limited use. A number of antivirals are not effective
- Hospital staff, who are a vital link to the control of infection, are disproportionately affected as are other close contacts of the patients
- The disease requires intensive treatment in isolation and is a burden on health care systems

A full list of factors applicable to SARS can be found in the CRS report RL32072. The SARS outbreak has demonstrated how quickly a virus can spread today with the ease of modern travel. However, SARS is an example on a smaller scale of how the public health infrastructure can respond to a rapidly advancing infectious disease that resulted in improvements in disease surveillance and infection control.

Sincerely,

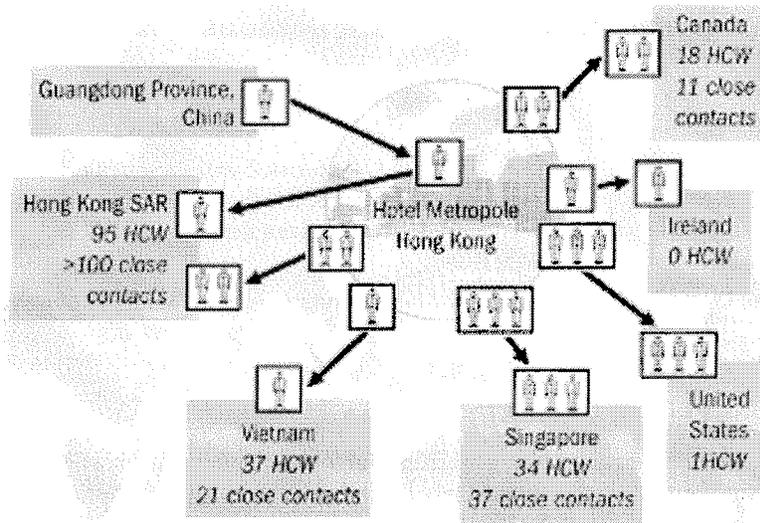

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The following figure represents the spread of SARS after the index patient stayed at the Hotel Metropole in Hong Kong. Subsequently, 12 other guests contracted the disease. Ten patients resided at the hotel during the same time and the last two when some other symptomatic patients resided there. The index patient and eight other people stayed on the same floor. This is an example of a superspreader, a person who is able to infect many others.



HCW = health care worker