

As of July 4, 2003 globally 8439 cumulative cases of SARS-CoV were identified in over 28 countries resulting in 812 deaths (case-fatality proportion of 9.6%).(1) With the most recent date of onset of probable cases of SARS in Taiwan and Canada 16 and 19 days ago respectively, in four day 20 days (2 incubation periods) would have passed, the time required for the chain of human-to-human transmission to be considered broken.(2) With the rapid decline in new probable cases there is jubilation that perhaps the scrooge has been conquered. Fear prevails among researchers and scientists that the virus will persist in humanity indefinitely and will reemerge with vigilance during the winter of 2003.

The reason for this fear is valid and based upon past experiences with the influenza virus. Comparisons have been made between SARS and influenza, in particular the 1918-19 Spanish Flu pandemic. The outbreak initiated in the winter of 1918 and fizzled off during the summer, reemerging with vigilance in 1919 resulting in millions of deaths globally. Eerie similarities exist between these two mutually exclusive viruses. The 1918-19 influenza strain, like the SARS-CoV, was highly transmissible, virulent, had moved from animals to humans, shared the same seasonal pattern and the main source of transmission was through droplets. Moreover, there was no effective antiviral or vaccine. One of the advantages during the SARS-CoV epidemic was that the incidence of influenza globally was relatively low, making it easier to identify SARS. The good news is that the virus is transmitted through large virus-laden droplets (travel distance 1-2 meters) opposed to influenza which is lighter,(3,4) the disease can be identified, the genetic code of the virus is being deciphered and it is seasonal and stays quiet during summer which provides the time to prepare.

Lessons learned from the SARS-CoV outbreak clearly demonstrate that delayed reporting of unusual disease events can lead to a global catastrophe; stringent infection control practices are the cornerstone for curtailing the spread of the disease and; cooperation, collaboration and a united front by the global public health communities works. Interestingly, quarantining possible cases was perhaps the most effective tool for curtailing this outbreak. Still, a lot of questions remain unanswered. The most significant is why has there been such a wide range in mortality among different countries. Why certain people act as supper-spreaders. The question of period of infectiousness, age distribution, and transmissibility through routes other than droplets remains to be thoroughly investigated. Furthermore, risk of transmission in households, airplanes, and ships need to be evaluated. Furthermore, there is good possibility that the SARS-CoV has been circulating and exists among exotic animals in the Chinese markets.

Thus, there is a strong possibility that the virus will reemerge during the next winter season. The most critical measures for effectively combating SARS-CoV, would be for the global healthcare communities to come together by providing better surveillance, reporting and response capability; educating healthcare workers to identify the disease; developing rapid laboratory diagnostic tests; investing in hospital pandemic plans to control nosocomial transmission and housing of large number of possible cases; community preparedness plans and; vaccine and antiviral research and development. Moreover, strict measures need to be taken to control and contain the virus in the animal markets where they

have been identified. Misdiagnosis of SARS cases still remains a critical issue if influenza incidence is higher during the next winter.

It remains to be seen if SARS-CoV will reemerge in the winter of 2003 but it is better to be proactive rather than reactive for preparing for this possible pandemic as such measures can save thousands of lives as well as an enormous global economic burden.

Reference:

1. WHO SARS website.
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2. WHO SARS website. http://www.who.int/csr/don/2003_07_02/en/
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4. Lipsitch M, Cohen T, Cooper B, et al. Transmission dynamics and control of sever acute respiratory syndrome. *Science* 2003;300:1966-70.