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Session II A – The case of SARS: lessons learnt

Population Mobility and Public Health

The case of SARS: lessons learnt

Severe Acute Respiratory Syndrome (SARS) is a recent example of an outbreak in one country that spread within weeks along the routes of international air travel to over 25 countries and five continents¹. As a result, the World Health Organization established SARS-related travel advice, requiring travelers to postpone all but essential travel in affected areas, in order to protect global public health and reduce further opportunities for international spread.

There are important lessons to be learnt from this experience. Mismanagement of mobility and of public health can do more than exacerbate a disease. The cost to societies can go beyond health to affect trade, political relationships, financial loss in a global economy, decline of tourism in affected regions, cancellation of major events, closure of schools and passengers who exhibit generalized symptoms being denied boarding on aircraft. SARS has demonstrated the importance of integrating global public health into a strategy of comprehensive management of population mobility.

SARS – The Singapore Experience²

The last reported case of SARS was isolated on 11 May 2003 and Singapore was removed from the World Health Organisation list of areas with recent local transmission of SARS on 31 May 2003. A total of 238 cases of SARS were diagnosed in the Singapore SARS outbreak between March and May 2003. There were 33 deaths. Thirty-two of the 238 SARS cases were diagnosed when laboratory tests were available and carried out on all probable, suspect and observational SARS cases detected during the outbreak period.

The control of the epidemic was the result of intensive measures aimed at preventing and controlling the spread of the disease within health care settings, the community and across borders. Specific measures included temperature surveillance at health care settings, workplaces and border checkpoints; the centralization of all cases at a designated SARS hospital, institution of strict infection control measures and restrictions on hospital visitations; vigorous active surveillance, contact tracing and mandatory quarantine for close contacts; and extensive public education activities. Many of these measures were continued into the post-SARS period though a staggered relaxation on some measures were carried out.

To guard against a possible winter resurgence of SARS, the main areas of focus were:

- i. Prevention through triaging of patients at Emergency Departments, Specialist Outpatient Clinics and Polyclinics and the use of personal protective equipment by healthcare workers in higher risk areas;
- ii. Early detection through temperature surveillance of staff and monitoring for fever clusters in hospitals and nursing homes; and
- iii. Rapid response in the form of effective contact tracing and home quarantine of close contacts should the need arise.

¹ The first cases of SARS are now known to have emerged in mid-November 2002 in Guangdong, China. When the disease moved out of the southern China, the outbreaks it seeded – in Hanoi, Hong Kong, and Toronto – became the initial “hot zones” of SARS, characterized by rapid increase in the number of cases, especially in health care workers and their close contacts. *Severe Acute Respiratory Syndrome (SARS): Status of the outbreak and lessons for the immediate future*, Geneva, 20 May 2003 WHO Communicable Disease Surveillance and Response

² Drawn from an abstract submitted by Suok Kai CHEW, Epidemiology and Disease Control Division, Ministry of Health, Singapore

Preventing the import of SARS

Preventing the import of SARS cases was one of the 3 rings of defense. While Singapore was confident of containing the outbreak through stringent public health measures, any new imported cases that remained undetected could potentially trigger a new chain of transmission.

The risk of imported SARS cases was minimised through the following measures :

- i. Temperature Screening. All arriving air and sea passengers were screened. In addition, passengers arriving by bus, train, car and walk-in passengers at our land checkpoints were screened with thermal scanners.
- ii. Health Declaration Cards. All visitors to Singapore through air, sea and land checkpoints were required to complete a Health Declaration Card (HDC).
- iii. Health Alert Notice. All travellers who enter Singapore from affected areas were given a Health Alert Notice to explain the symptoms of SARS and how they could get help if they fell ill with suspected SARS.
- iv. Assessing High-Risk Passengers. Persons picked up by thermal scanners have their temperatures re-checked by nurses and referred for further examination by doctors at the airport if they were found to have fever. Persons who were suspected of having SARS were transferred by a dedicated ambulance to the designated SARS hospital in Singapore for further assessment and admission for isolation and treatment if necessary.

Preventing export of SARS

During the SARS outbreak in Singapore, stringent measures were implemented to prevent the export of SARS cases to other countries. The main strategy to prevent the export of SARS cases was through rapid containment of the outbreaks in Singapore. This was done through isolation of cases, rigorous contact tracing and mandatory quarantine for close contacts. This ensured that the possibility of any visitor to Singapore or Singapore residents themselves being infected in the community was kept as low as possible.

The other measures taken to prevent the export of SARS included:

- i. Temperature Screening for Departing and Transit Passengers. During the SARS outbreak, temperature screening was conducted for all departing travellers at our airports, seaports and bus, car and train travellers at our land checkpoints. All transit passengers at the airport also had to undergo temperature screening during the SARS outbreak. The rationale was to prevent transborder spread to countries which used Singapore as a transit hub.
- ii. Communicating “What We Know”. It was important to consistently communicate “what we know, based on facts that we have ascertained”, to our foreign and international counterparts. Foreign missions in Singapore were routinely informed if contact tracing showed that their nationals had been in contact with probable SARS patients. Special bilateral arrangements on the exchange of information necessary to conduct contact tracing and quarantine was set up with both Malaysia and Indonesia. This was due to the high volume of people movement between our neighbours. Agreement on bilateral procedures when persons with fever were detected at the land checkpoints between Singapore and Malaysia had also been established.
- iii. Cross Border Contact Tracing. During the SARS outbreak, Singapore worked closely with the World Health Organisation (WHO) and other health authorities to investigate all cases of SARS purportedly exported from Singapore. Based on these investigations, there was no evidence that any of the cases purportedly exported by Singapore were indeed SARS patients.

International and Regional Collaboration

The SARS outbreak clearly illustrated that communicable diseases do not respect international boundaries. Hence, there is a need for greater international cooperation in the prevention and control of communicable diseases, especially in the management of emerging infectious diseases.

The WHO's authority and leadership in the fight against SARS were accepted by all at an unprecedented level. Health authorities worldwide looked to the WHO for information on the latest developments of the epidemic and the virus and for its advice on effective control measures. The WHO's guidelines were regarded as authoritative and adopted by countries as national guidelines. Likewise, the WHO's travel advisories had an impact on economies and countries fought to stay out of the WHO's list and to get out of it as quickly as possible.

Many countries, including Singapore, participated in numerous international and regional meetings organised during the outbreak to discuss measures to deal with the enemy in a concerted fashion. Health cooperation on SARS and other emerging infectious diseases was discussed at the regional level, such as at the ASEAN+3 and APEC meetings, with the objectives to agree on the measures to adopt to contain the spread of SARS among member countries through the sharing of information and best practices, and to keep borders open amongst member countries. Member countries pledged their commitment to promote common guiding principles on health screening measures at borders which are transparent and effective while not unduly restricting mobility of people, and to put in place a credible communications strategy to rebuild business confidence.

A calibrated set of measures ranging from health screening and temperature checks to quarantine was adopted to enable travellers not affected by SARS to travel. Countries with recent local transmission were urged to undertake stringent pre-departure screening, and those without local transmission to continue arrival screening, including the use of health declaration forms, to improve early detection of import cases and their contacts. Common protocols were adopted for travellers in order to keep borders open, particularly for air travel and to prevent international spread of SARS. Cooperation was also established in the areas of disease surveillance and treatment of SARS. Such cooperation required the health, transport and immigration authorities, as well as other relevant authorities of member countries to work closely together. These measures had quickly helped to prevent the further loss of confidence among tourists, foreign investors, and international businessmen in the region.