



IOM International Organization for Migration
OIM Organisation Internationale pour les Migrations
OIM Organización Internacional para las Migraciones

IOM's International Dialogue on Migration
Co-sponsored by WHO and CDC



Seminar on Health and Migration, 9-11 June 2004

Session IIA: Public Health and Migration

The case of SARS: Lessons learnt, Assoc. Professor Suok Kai CHEW



INDEX CASE

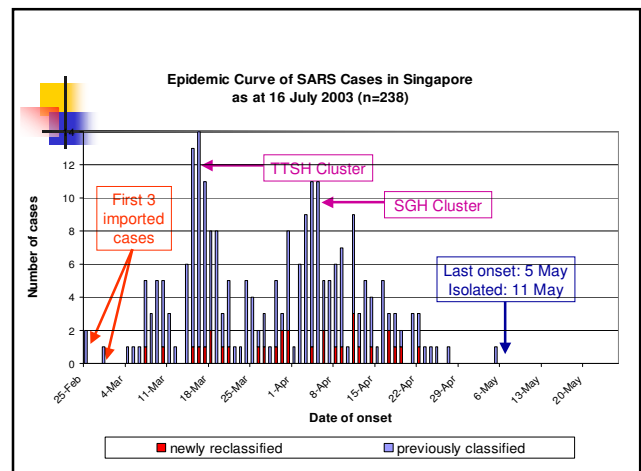
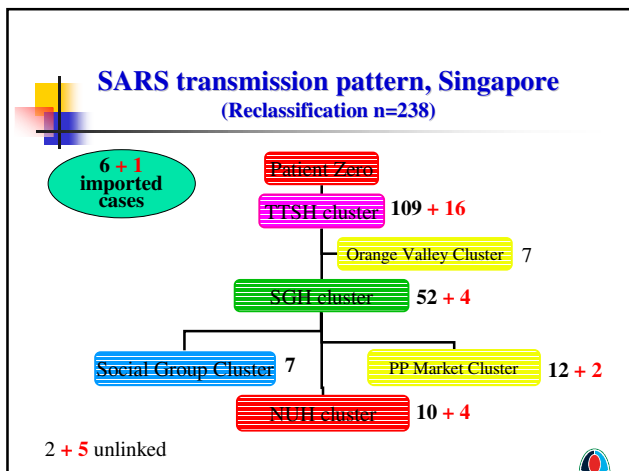
23 year old Chinese female

Was in Hong Kong 20-25 Feb 03

Developed fever and headache 25 Feb 03

Dry cough 28 Feb 03

Admitted to hospital on 1 Mar 03





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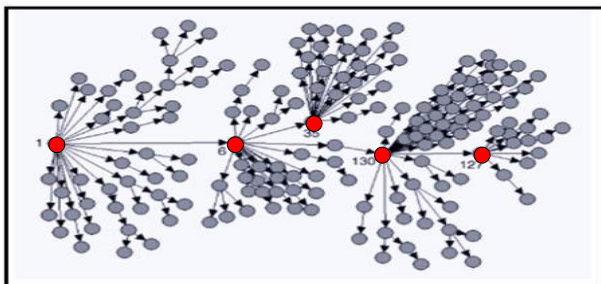


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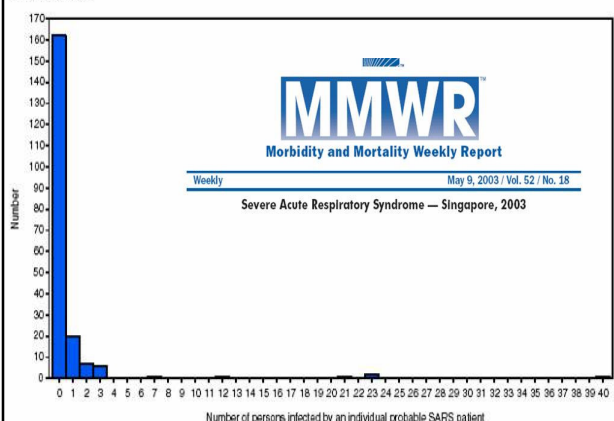
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FIGURE 2. Probable cases of severe acute respiratory syndrome, by reported source of infection* — Singapore, February 25–April 30, 2003



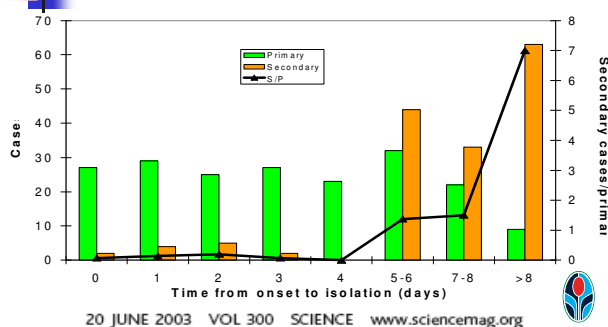
* Patient 1 represents Case 1; Patient 6, Case 2; Patient 35, Case 3; Patient 130, Case 4; and Patient 127, Case 5. Excludes 22 cases with either no or poorly defined direct contacts or who were cases translocated to Singapore and the seven contacts of one of these cases.
Reference: Bogatti SP. Netdraw 1.0 Network Visualization Software. Harvard, Massachusetts: Analytic Technologies, 2002.

FIGURE 3. Number of direct secondary cases from probable cases of severe acute respiratory syndrome — Singapore, February 25–April 30, 2003



Transmission Dynamics and Control of Severe Acute Respiratory Syndrome

Marc Lipsitch,¹ Ted Cohen,¹ Ben Cooper,¹ James H. Robins,¹ Stefan Ma,² Lyn James,² Gowri Gopalakrishna,² Suok Kai Chew,² Chieh Chuan Tan,² Matthew H. Sanders,² David Raman,^{4,5} Megan Murray^{1,6}



A National Response

Ministerial Committee on SARS
supported by an Executive Group on SARS

- Public Health Measures
- The Economy
- The Society

SARS Combat Unit

- The Healthcare System



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3-Pronged Strategy

Prevention & control in hospitals

- centralising all SARS cases in one hospital
- Restriction of movement of healthcare workers and patients across hospitals
- strict infection control procedures in hospitals (and medical, dental and TCM clinics)
- mandating protective gear for all workers in all hospitals
- close monitoring of health care workers
- restrictions on visitors



3-Pronged Strategy

Prevention & control in community

- public education e.g. symptoms, mode of transmission of SARS, social responsibility
- travel and health advisories
- temperature taking, early detection and isolation
- rigorous contact tracing
- mandatory home quarantine under the Infectious Diseases Act



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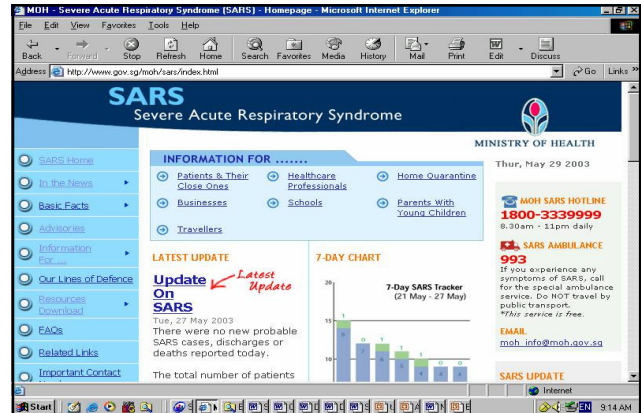
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Appealed to Singaporeans to exercise personal responsibility in our fight against SARS

All must play a part to ensure that there are no holes in our ring-fence against SARS



<http://www.gov.sg/moh/sars>

FACTS YOU SHOULD KNOW ABOUT SEVERE ACUTE RESPIRATORY SYNDROME SARS

Everyone today is worried about SARS and whether they could be affected by it. The Ministry of Health has taken extra precautionary steps, beyond WHO's recommended measures to minimise the spread of SARS. It is unlikely that you or your loved ones can contract SARS in Singapore, particularly if you had not travelled to the affected countries or had not come into contact with a SARS patient.

What you can do

- Head our travel advisory not to travel to Hong Kong, Guangdong Province, Beijing, Taiwan, Korea and Thailand.
- Seek immediate medical attention at the Tan Tock Seng Hospital if you develop the symptoms and have been in contact with someone who has been infected with SARS.
- Be responsible. If you are unwell, avoid close contact to protect those around you. Do not go to work or school. See a doctor immediately.
- Observe personal hygiene. Cover your mouth with tissue when you cough or sneeze, and wash your hands with soap and water.
- Build up your body's resistance by eating a balanced diet, adequate rest and exercise.

What is SARS?

Sudden onset of high fever (>38° Celsius)

Dry cough

Chills and shivering

Muscle aches

Breathing difficulties

What is SARS and what causes it?

- A new type of atypical pneumonia that infects the lungs.
- Caused by a virus which is yet to be determined.

How is SARS spread?

- Through droplets spread when an infected person coughs or sneezes and droplets are spread to a nearby contact.
- A small number of individuals with SARS who are very sick can be very infectious when they develop SARS symptoms.

How fast can SARS spread?

- From the cases so far, it appears that SARS becomes infectious only after the infected person develops symptoms, first of which is usually the sudden onset of high fever.
- A person is not infectious during the incubation period which is about 3 to 7 days, but for some, it may be up to 10 days.

Lines of Defence

- Tighter health screening procedures for passengers arriving at Changi Airport from affected countries**
- All suspected and SARS patients are treated at Tan Tock Seng Hospital and the Communicable Disease Centre (CDC)**
- Enhanced protective measures (gloves, gowns) for hospital staff at Tan Tock Seng Hospital and CDC to protect everybody**
- At an A&E department, patients who may have SARS are kept separately from other patients**
- Those who have come into contact with people diagnosed with SARS are quarantined at home**

PROTECTING YOU

For public enquiries, call: Ministry of Health Hotline: 1800-2254 122 • Log on: www.moh.gov.sg Ministry of Health

Preventive Actions by Ministries

- Clean and disinfect public areas (ENV, MND)
- Temperature taking for Food Handlers (ENV)
- SARS education package and personal thermometer for every student (MOE)
- Hygiene precautions for child-care centres and kindergartens (MCDS)
- Quarantine measures for foreign workers from SARS affected regions (MOM)



A National Response



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Sars relief

Here's help for the hardest-hit tourism and transport industries

TOURISM	Amount
Additional property tax rebates for conversion of properties	\$54m
Market property tax rebates for hotels	\$8m
Foreign worker levy for hotel and transport industry (reduced to \$0.02 a month)	\$2m
Bill for cash rebate of 1% for hotel and transport industry	\$2m
Grant rebate and award of costs savings support	\$20m
Refund for hotel and transport industry (SARS testing costs)	\$10m
Foreign worker levy grant for transport industry	\$97m

TRANSPORT	Amount
Grant for transport industry (SARS testing costs)	\$25m
Rebate of bus operator's operating costs	\$3m

\$230 million relief package

Help for the hardest-hit tourism and transport industries

3-Pronged Strategy

Prevention of transborder spread

- health screening at border checkpoints with thermal imaging scanners - airport, seaport and land
- health declarations requirements
- health alert notices
- transborder contact tracing
- working with WHO and other health authorities

Thermal imaging scanner





International Collaboration I

- WHO's leadership in the fight against SARS
- International and regional forums
- ASEAN and ASEAN+3
- APEC
- Bilateral cooperation with neighbouring countries

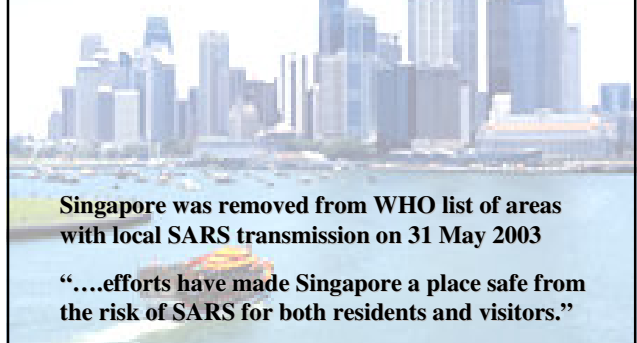
International Collaboration II

- Sharing of information and best practices
- Agree on measures to adopt to contain SARS
- Common protocols for travellers to keep borders open and prevent international spread
- Cooperation in disease surveillance and treatment
- Multi-sectoral, involving health, transport, immigration and other agencies

International Collaboration III

ASEAN+3 initiatives

- Strengthening epidemiological capacity
- Strengthening laboratory capacity
- Information management
- ASEAN+3 Emerging Infectious Disease Programme



Singapore was removed from WHO list of areas with local SARS transmission on 31 May 2003

"....efforts have made Singapore a place safe from the risk of SARS for both residents and visitors."



Moving forward – The Need for Vigilance

- The key preventive and control measures which need to be continued for the longer term are :
 - Prevention of cross border cases
 - Continued good surveillance for SARS, early identification and isolation of all suspected cases
 - A high state of vigilance in hospitals and other health care institutions with all preventive measures put in place



Cost to societies goes beyond health

- High economic and trade impact
- Impact of travel advisories
- Decline of tourism
- Reduced demand for services
- Cancellation of major events
- Closure of schools

"Every dark cloud has its silver lining"

3 areas in which something good has come out of the SARS outbreak

- Global cooperation is enhanced
- Transparency is valued
- Good public health defence capability is much appreciated



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