Importance of Pathogen Sharing
Case study – SARS
SARS – Facts

- Outbreak started around November 2002 in south-east China spread to 26 countries, causing 8,096 cases and 774 deaths.
- Estimated economic cost of US$ 30 billion (Stanley Morgan); US$ 100 billion (Nature).
- True and the first global epidemic in 21st century caused by a newly emerging virus (animal origin: bats? – no diagnostics available when outbreak surfaced).
- WHO issued ‘Global Alert’ for the first time in its history (pre-IHR2005, no ‘PHEIC’).
- Last chain of transmission was broken in July 2003, 4 month after WHO Global Alert – only by non-pharmaceutical interventions (no vaccines, no antivirals).
SARS and the economy: impact on global travel

Departures screen at Changi Airport in Singapore
SARS Chronology

Guandong
305 cases, 5†
Influenza A(H5N1) 2 cases, 1†, one returned from mainland China. 11 top labs from WHO GISN formed international lab working group to tackle with this outbreak.

HK
China reports influenza(-), clinical signs compatible with chlamydia pneumonia

Hanoi
30+ HCW and sec/tert cases
Clinical specimens collected by Dr Urbani (Hanoi)

HK SAR
50+HCW 2 Hospitals

Global Alert

Toronto

Singapore
Coronavirus identified by WHO lab network

2002 2003 Jan Feb 2003 Mar Apr
SARS – Pathogen identification

- November 2002 – February 2003: Reported by China that influenza (-), likely chlamydia and clinically compatible.

- February 2003 – HK SAR lab confirmed 2 influenza A(H5N1) human cases, 11 laboratories from WHO Global Influenza Surveillance Network engaged in pathogen identification.

- HK lab identified coronavirus as responsible pathogen. Other labs confirmed and worked around clock to develop diagnostic tests. SARS CoV infection can be only confirmed by laboratory test.

- In early days of SARS, ‘House made’ diagnostic reagents were distributed by WHO collaborating laboratories (commercially not available)
Importance of pathogen and benefit sharing

28 February 2003
Dr Carlo Urbani collected specimens from SARS patient in Hanoi. Samples were shared through the national lab internationally with WHO lab network.

28 March 2003
WHO international lab network identifies coronavirus as responsible pathogen. Diagnostic reagents have been developed and distributed worldwide by WHO network for free.

29 March 2003
WHO infectious disease specialist, Dr Carlo Urbani, the first WHO officer to identify the outbreak of this new disease and treat the earliest cases in Hanoi, dies of SARS in Thailand.

With R&D advancement, we can speed up development of medical countermeasures for emerging dangerous pathogens if pathogens are shared timely.