

# **SARS and Public Health Systems in China**

**Jesse Huang, MB, MHPE, MPH, MBA**  
**Assistant President and Dean for Continuing Education**  
**Professor of Epidemiology**  
**Chinese Academy of Medical Sciences**  
**Peking Union Medical College**

Email: [pumcjesse@yahoo.com.cn](mailto:pumcjesse@yahoo.com.cn)  
Tel: 6529-5986 13366029153

**A Reflection on SARS Events**

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# A Reflection on SARS Events



# I will...



- Describe 2003 SARS chronology in China
- Analyze China's public health system
- Propose a framework for improving public health systems in China
- Share my observations re: 2004's system testing by SARS.



# What is SARS ?

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Originally an atypical pneumonia of unknown etiology, was recognized at the end of February 2003 by WHO as Severe Acute Respiratory Syndrome (SARS) .



# What is SARS's Impact?



According to Associated Press:

重要新聞

# 一場SARS等於五次「9.11」

全球旅業遭空前打擊 職位料減600萬個

【美聯社華盛頓十五日電】世界旅遊理事會(WTTC)指出，沙士對全球旅遊業加劇了全球旅遊業的困境。

WTTC指出，沙士對全球旅遊業加劇了全球旅遊業的困境。

亞洲區兩年後始

WTTC指出，沙士對全球旅遊業加劇了全球旅遊業的困境。

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One SARS Pandemic  
Is Equal to Five "9.11"

21

1:59 AM

9-11

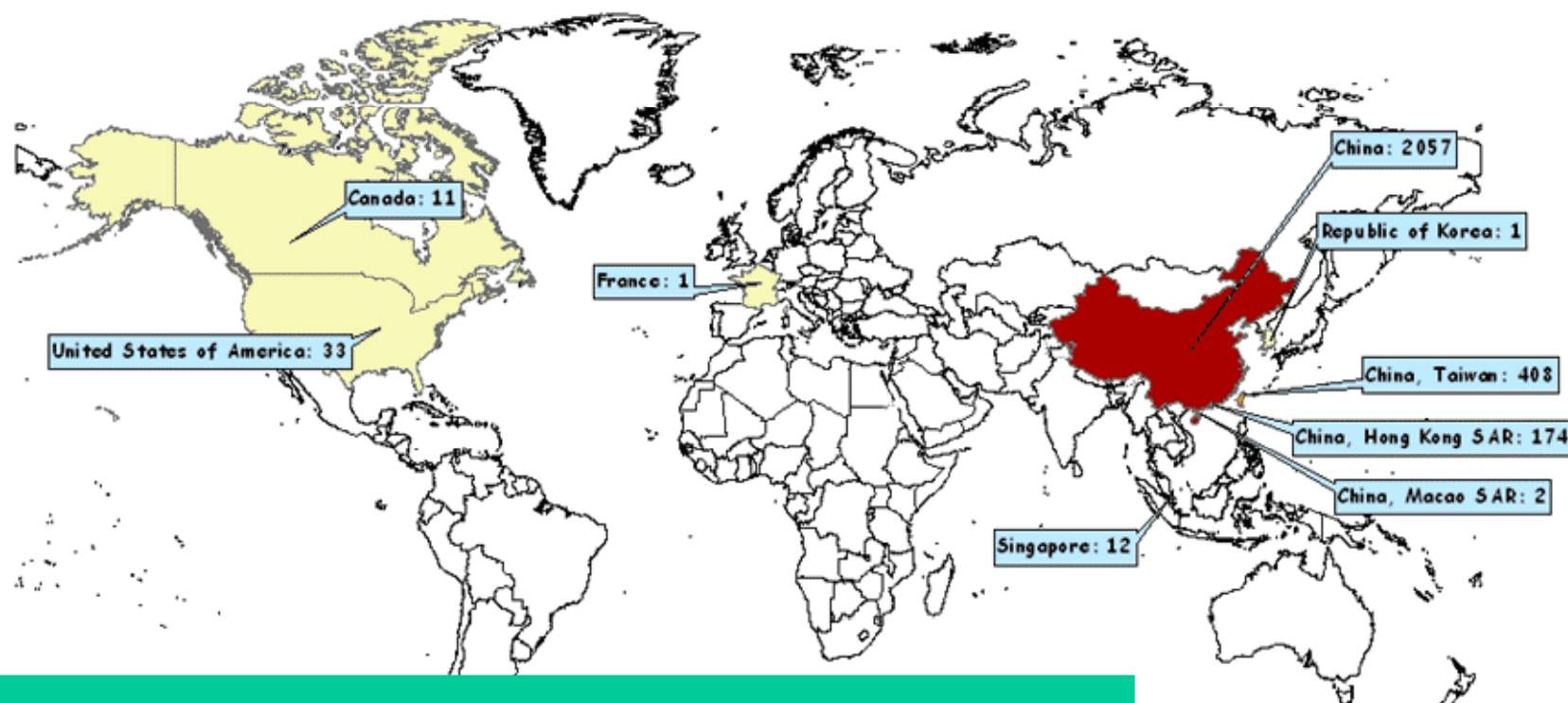




# What is SARS's Impact on China's Public Health System?



## SARS: Number of Current Probable Cases as of 27 May 2003, 18:00 GMT+2



**Total Cases: 8,422**  
**Total Deaths: 916**

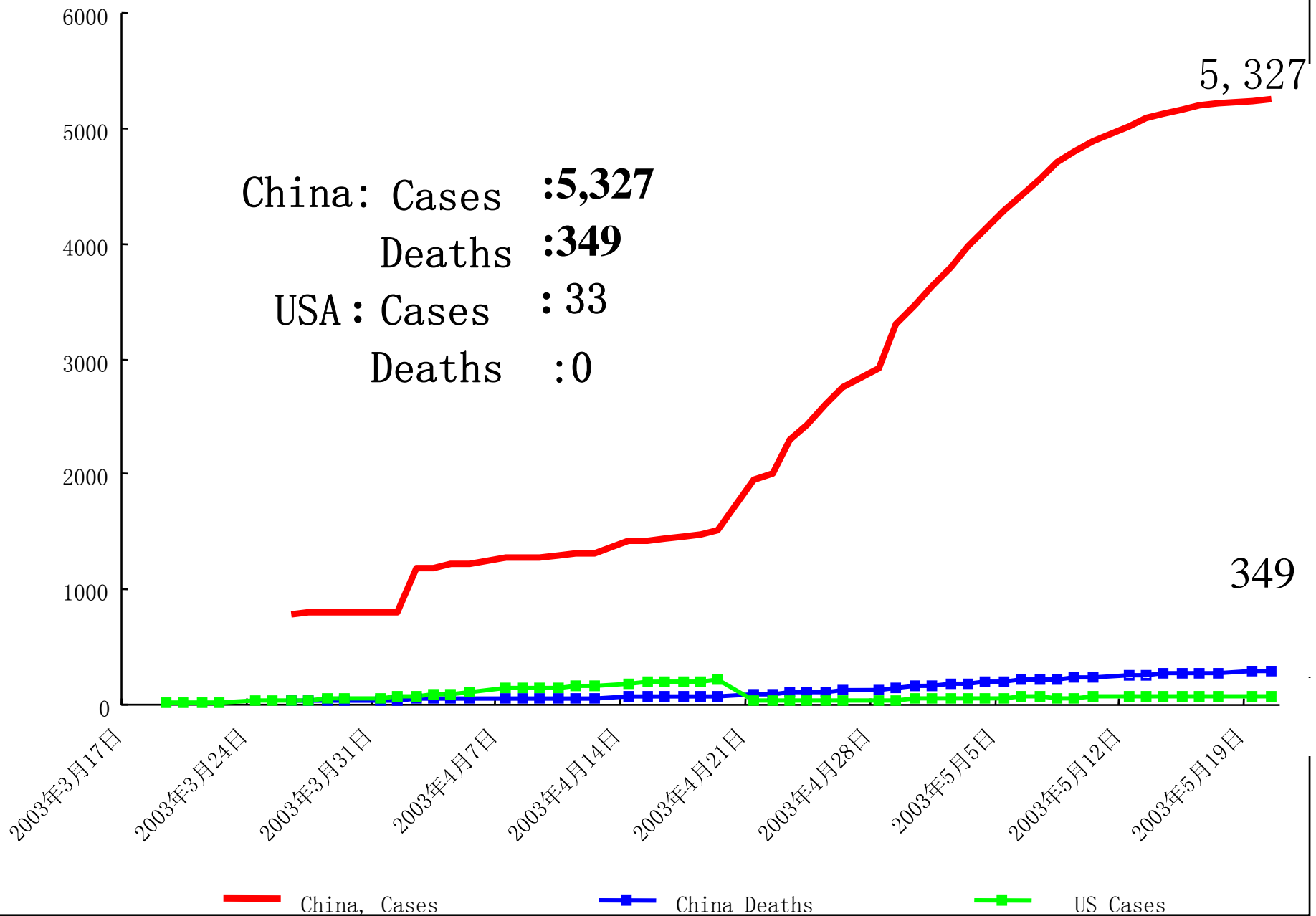


The presentation of material on the maps contained herein does not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or areas or of its authorities, or concerning the delimitation of its frontiers or boundaries.

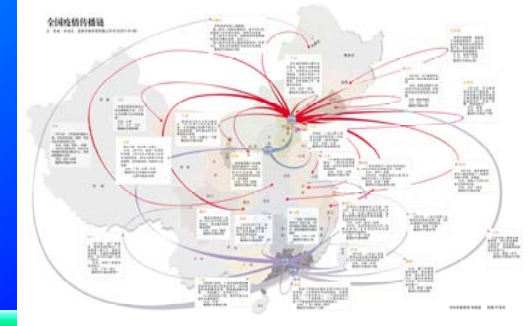
Data Source: World Health Organization  
Map Production: Public Health Mapping Team  
Communicable Diseases (CDS)  
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Accumulative # of SARS cases and deaths, China and USA, March 19 to May 27, 2003



# Chronology of SARS



- 2002
  - 11/16: 1st case of atypical pneumonia of unknown etiology (AP), Fushan city, Guangdong, China
  - 12/17- 22: 2 AP pt. transferred to Guangzhou from Heyuang. 7 HCWs: infected. Information: blocked
- 2003
  - 1/2: Population panic in Heyuang city. People rushed to buy herbal medicine.
  - 1/3: Heyuang Newspaper: There is no epidemic in Heyuang.... cough, fever and other symptoms are caused by cold whether,
    - perhaps this is the first article on SARS in China's media.

# Chronology of SARS



- 2003
  - 1/14: Provincial CDC was informed an outbreak in Zhongshan city, characterized by fever, lung infection, unknown etiology. Several pts quickly progressed to respiratory failure and die. outbreak also among HCWs.
  - The early February, epidemic reached peak in Guangzhou. Rumors: fetal diseases, bio-terrorism, etc.
  - People rushed to buy vinegar and herbal medicine. The epidemic news occurred in Hong Kong's media
  - 2/11: News Conference: 305 cases, 5 deaths since 11/16, 2002. The epidemic is under control

# Chronology of SARS



- 2003
  - 2/11 and 2/14: PROMED issued the global warnings
  - 2/18: Xinhua New Agency reported that Chinese CDC has discovered the cause the disease: chlamydia
  - The clinicians and epidemiologists in Guangdong disagreed: the cause is the virus
  - 2/21: Dr. Liu arrived Hong Kong, checked in at Metropol, room 911. It was in Metropol, Dr. Liu passed the virus to 7 persons. Consequently, the virus was disseminated around the world
  - 2/26: a businessman who was infected at Metropol carried the virus to Vietnam, infected 20 persons, including Dr. Urbani



非典型肺炎重在早预防、早发现、早治疗

What is atypical pneumonia ?

# 1、什么是非典型肺炎

非典型肺炎是相对典型肺炎而言的，典型肺炎通常是由肺炎链球菌或肺炎双球菌等常见细菌引起的。非典型肺炎是由病毒、支原体、衣原体、立克次氏体或其他微生物引起的传染性疾病，症状、肺部体征、血象相对没有典型肺炎感染那么明显。

# 3、临床表现

非典型肺炎潜伏期为1-11天，大多数人感染4天后发病。部分病人偶有血丝痰，出现呼吸加速、气促等呼吸困难症状，

# Chronology of SARS



- 2003
  - 3/1: Beijing had 1st SARS case from Shanxi, who was infected while visiting Guangzhou. SARS began to spread in the capital. The information was blocked again
  - 3/12: WHO issues a global SARS alert
  - 3/29: Dr. Carlo Urbani, 1<sup>st</sup> Dr. who identified the SARS outbreak, died of the disease in Thailand.
  - 3/26, Guangdong released it's February number: probable cases increased from 305 to 792, and the death toll increased from 5 to 31, which made people begin to suspect the previous claim that the epidemic is under control

# Epidemic chain

## 全国疫情传播链

注：各省、自治区、直辖市确诊病例截止时间为5月21日10时



# Chronology of SARS



- 2003
  - 4/3, Health Minister announced that the SARS spreading is under control. Beijing had 12 cases and 3 deaths. A retired military doctor revealed the truth that Beijing's epidemic is not under control.
  - 4/20: 2 top gov officials were removed from their post.
  - 4/25: Vice-Premier Wu Yi was appointed as the Health Minister and the commander-in-chief of the National Task Force to combat SARS
  - Measures were taken to contain SARS spreading
  - 5/23: WHO took Guangdong and Hong Kong from its travel warning list.
  - 6/24: WHO took Beijing from its travel warning list.

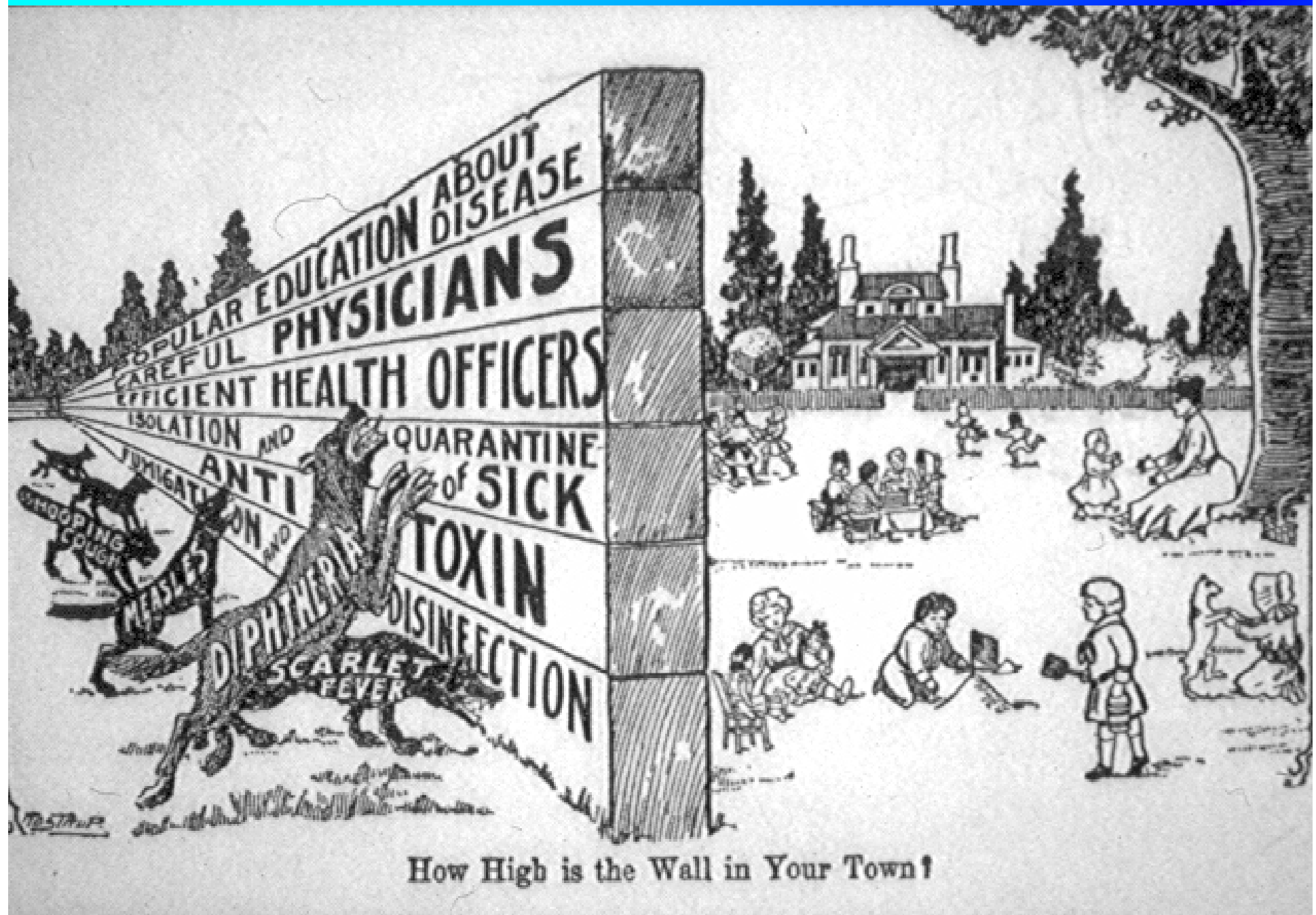


# Chronology of SARS suggests...



- China does not have a prepared public health system.
- The central command system: not working
- Information systems: not functioning
- Rapid diagnosis capacity: lacking
- Field epidemiologists: lacking
- Pharmaceutical stockpile: not enough
- Hospital and HCWs: not prepared
- Risk communication skills: poor

# A Framework for Improving Public Health Systems in China



# Principles



- **Needs based system improvement approach, using developed countries models as reference.**
- **Evidence-based system development approach, using modern public model and bio-socio-psycho medical model.**

# Priorities



- Prevention first. 99.9% of public health crises should be controlled at local level with enough capacity to handle NBC of significant health , social, economic, and political impact
- Manpower development is the key to the success of the system.
- The state-of-the-art information technology with sustainability should be employed.



# System components



- Central command and coordination system
- National electronic disease surveillance information system
- Metropolitan syndrome surveillance system
- Public health-clinician linkage information system
- Nation-wide rapid public health lab diagnosis system
- Field epidemiologist team and net work system
- Pharmaceutical stockpile
- Metropolitan medical response system and medical education system
- Risk communication and risk management systems
- Crisis management monitoring and evaluation system

# 2004's system testing observed

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- Guangdong: 1/5-31
  - 4 sporadic cases
  - Quick response, complete control
  - Investigation is undergoing
- Beijing: 4/22-5/7
  - 9 cases, clear transmission chain
  - Quick response, complete control
  - Investigation is undergoing

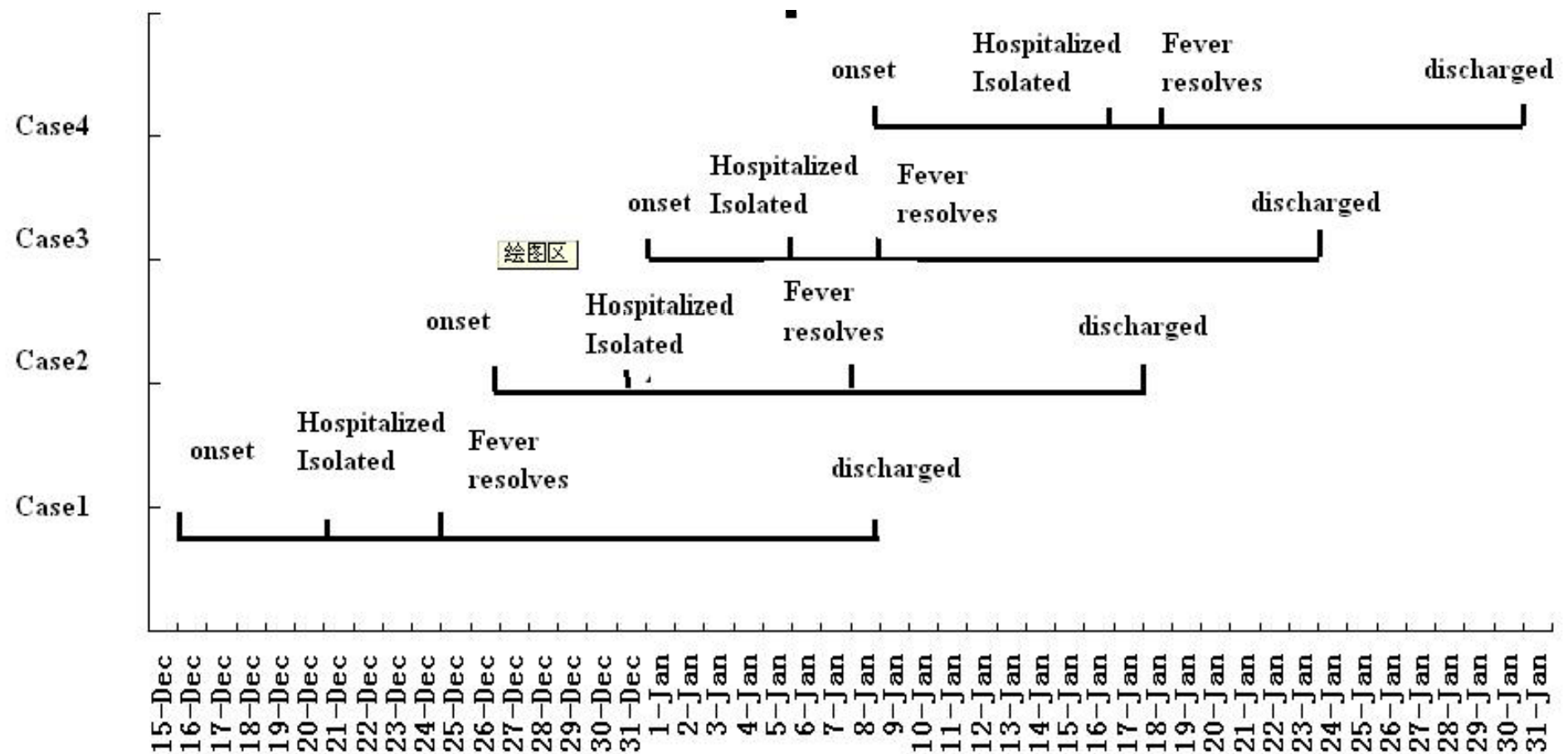


# Guangdong, 1/5-31

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## Onset and Treatment of 4 SARS Cases, Guangdong, 2004



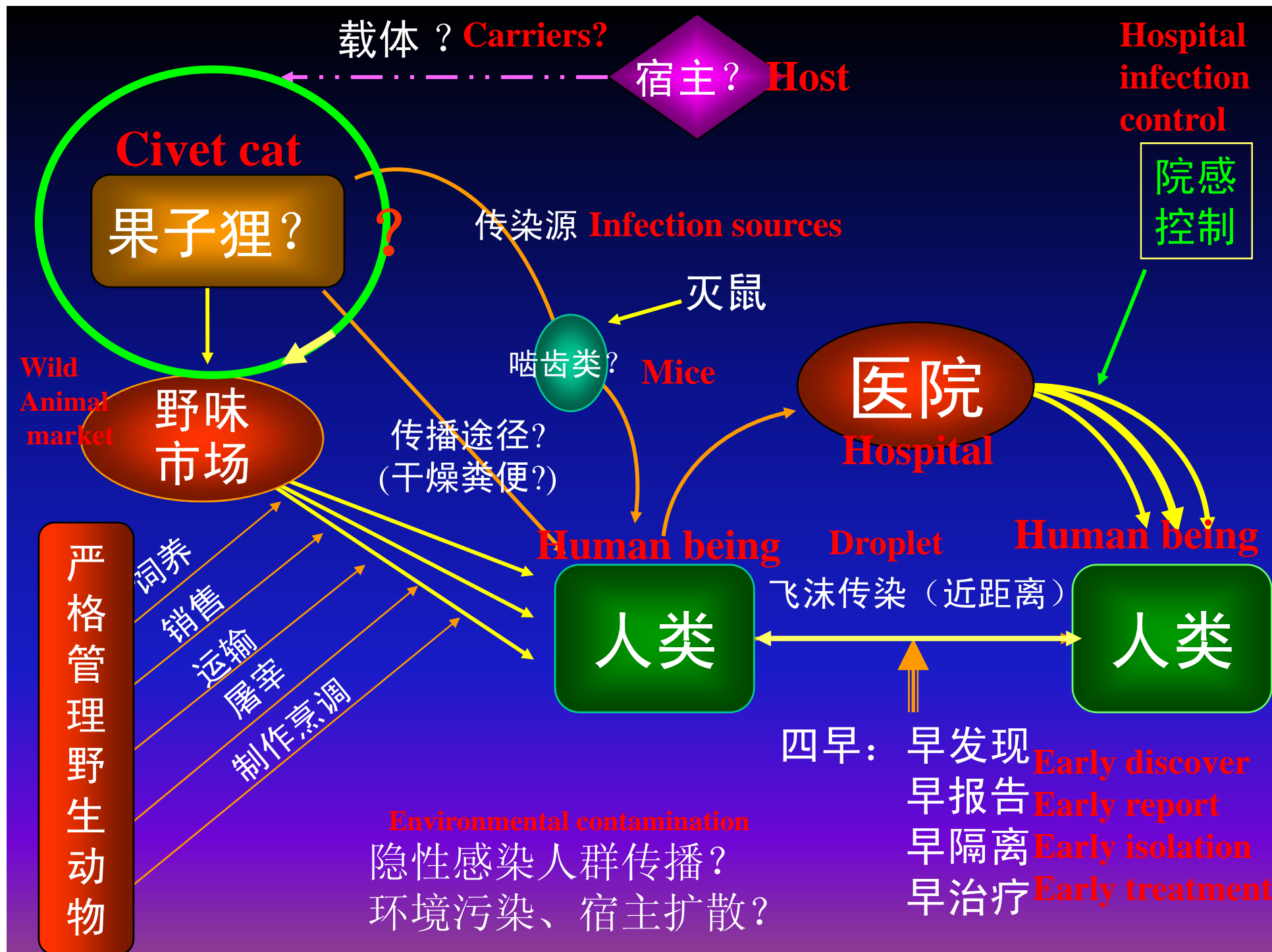
	suspected	confirmed
Case1:	27-Dec-03	5-Jan-04
Case2	8- Jan- 04	17-Jan-04
Case3	9- Jan- 04	17-Jan-04
case4	24-Jan-04	31-Jan-04









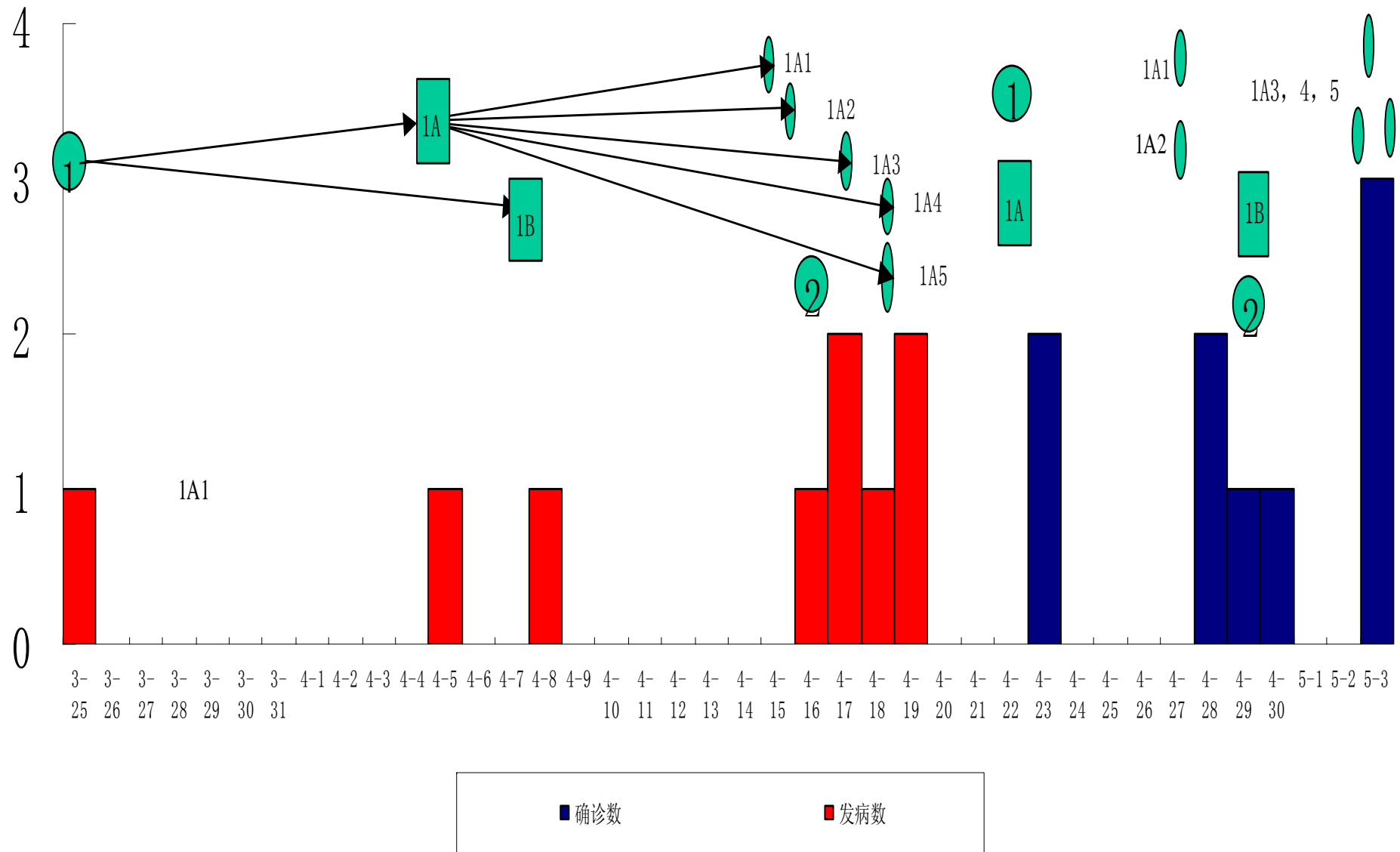


# Beijing: 4/22-5/7

Be prepared  
Keep distance  
from AP



# Onset and diagnosis time of 9 SARS cases and two transmission chains, Beijing, 2004







礼貌行 病人  
安全礼 外出

2004 4 28













完美工作, 完善自我, 让顾客满意

价  
费现金 药房

挂号取款 药房  
Registration Cashier Pharmacy

实名就

2004 5 5



# Observations

- System is working, more improvement opportunities are identified; early detection, lab quality control, etc
- I am positive China will have a good public health system- it takes time.
  - Strong national leadership
  - Responsible governments at all levels
  - Social mobilization and organization abilities
  - Economic foundation
  - The existing public health system
  - Popularity of prevention concept
  - Experience from the war against SARS
  - International resources
- Manpower is the key.





*“The GNP tells you everything about a country that is not important.*

*It does not inform about the beauty of the countryside, the joy and value of its music and art ---  
or the health of its children...”*

*Margaret Catley-Carlson,  
UN Children’s Summit, 1990*

# LESSONS FROM SARS

- Infectious diseases do not respect national boundaries - global security depends on the competence of local responses in countries around the world.
- Honest and accurate information is essential for early warning and for making effective health policy.
- Effective Responses depend on well functioning Health Systems
- Creating National and Global Health Surveillance Early Warning and Laboratory Networks must be given high priority.
- Investing in global health, beyond just SARS or AIDS, would protect every country from emerging diseases, save millions of lives, and improve the quality of life of billions of people.

Thank You  
Q & A