

# SARS Containment Strategies :

## *Detect, Isolate, Quarantine*



Martin Cetron, M.D. SARS III Broadcast May 20, 2003

# Public Health Tools: Definitions

## • *Isolation\**

Restriction of movement / separation of sick infected person(s) with contagious disease;

- usually in a hospital setting, but can also be at home or in a dedicated isolation facility

## • *Quarantine\**

Restriction of movement / separation of well person(s) presumed exposed to a contagious disease;

- usually at home, but can also be in a dedicated quarantine facility
- individual(s) or community/population level

*\* Measures usually voluntary, but can be mandatory; legal quarantine authority covers “isolation” and “quarantine” tools*

# International SARS Containment:

- **Isolate** symptomatic individuals (communicable phase)
  - SARS Hospitals
  - Home
  - Recovery during period of communicability
- **Quarantine** 1<sup>0</sup> asymptomatic contacts (pre-communicable phase)?
  - Home vs. Residential facility
  - Fever surveillance of close contacts
- **Community Measures:** decrease social contacts
  - Cancel public gatherings e.g. schools, workplace, sporting
  - Limit translocation, restrict travel

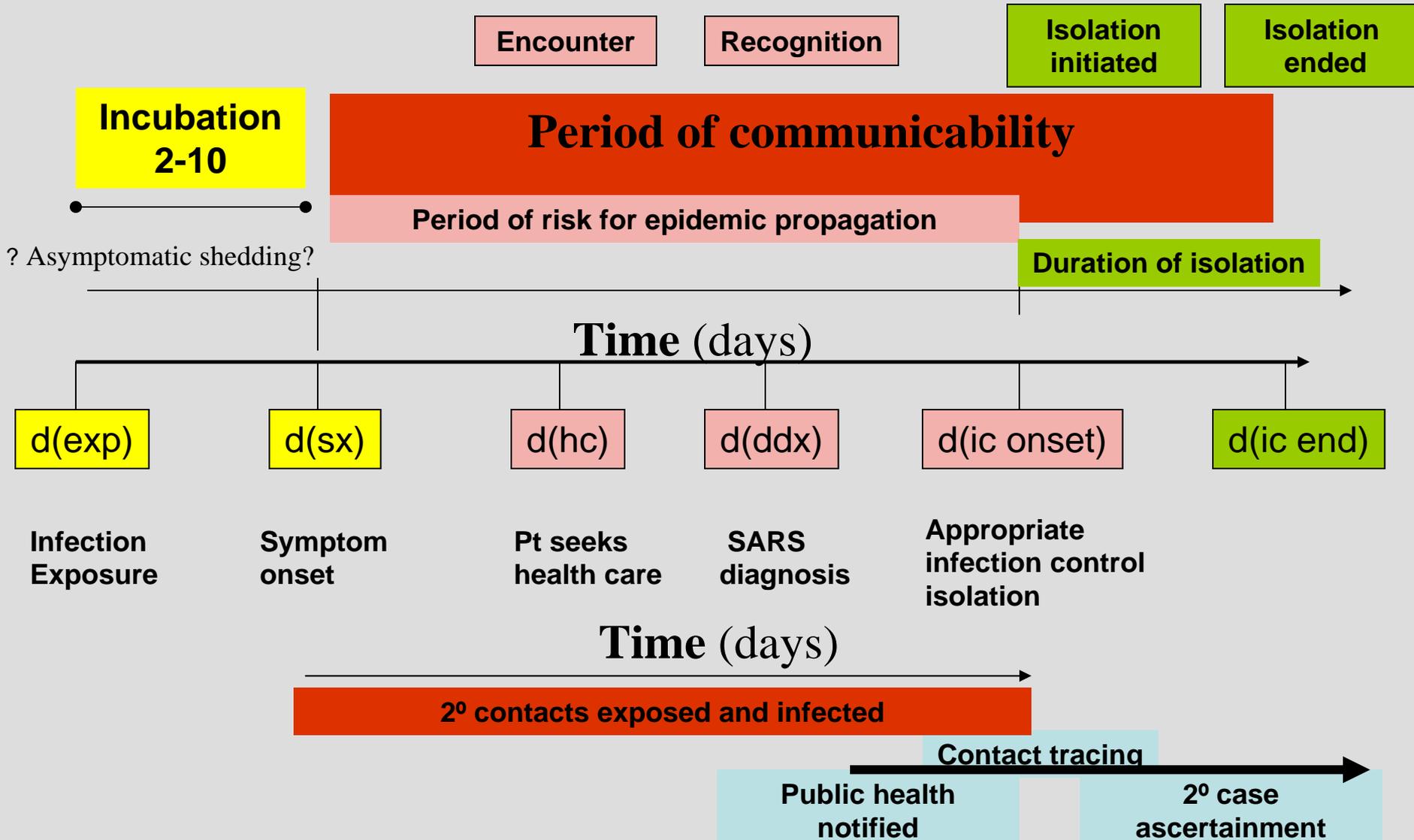


First Indian SARS patient, Punde,Goa NYT April 2003



# Contagion Epidemic Modeling

## Goal: $R < 1$ , Extinction or Quenching



# Quarantine

*A collective action for the common good*

Public good

Individual liberties



*Paramount to meet needs of individuals  
infected and exposed*



# EXECUTIVE ORDER 13295: REVISED LIST OF QUARANTINABLE COMMUNICABLE DISEASES

(a) Cholera; Diphtheria; infectious Tuberculosis; Plague; Smallpox; Yellow Fever; and Viral Hemorrhagic Fevers (Lassa, Marburg, Ebola, Crimean-Congo, South American, and others not yet isolated or named).

(b) **Severe Acute Respiratory Syndrome (SARS)**, which is a disease associated with fever and signs and symptoms of pneumonia or other respiratory illness, is transmitted from person to person predominantly by the aerosolized or droplet route, and, if spread in the population, would have severe public health consequences.

**President George W. Bush**

**April 4, 2003**



# Framework for Isolation and Quarantine Measures in a SARS Outbreak

## Individual Case Response

### Known or Presumed Infected Individuals

- Isolation: Type C (Contagious) Facility

### Determinants of Public Health Threshold for Community Response

- Number of cases/exposed
- Morbidity and mortality
- Ease/ rapidity of spread
- Movement in /out of community
- Resources
- Need urgent public health action
- Risk for public panic

### Febrile Respiratory Contacts

- Isolation: Type C (Contagious) or Type X Facility

### Asymptomatic Contacts

- Surveillance/Isolation: Type R (Residential) Facility

## Community Response

### Level 1

- Travel alerts and information
- Press releases
- Interagency partner notifications

### Level 2

- Level 1 activities
- Travel advisories
- Suspension of public gatherings
- Closing of public places

### Level 3

- Level 2 activities
- Restriction of travel (air, rail, water, motor, and pedestrian)

### Level 4

- Level 3 activities
- “Cordon sanitaire”
- Community-wide interventions (e.g. mass isolation and quarantine)

## Travel Advisory = “Defer Non-Essential”

**Interim Travel Advisory: Mainland China**

(Updated May 8, 2003; Released March 13, 2003)

**Interim Travel Advisory: Hong Kong**

(Updated May 8, 2003; Released March 13, 2003)

**Interim Travel Advisory: Taiwan**

(Updated May 11, 2003; Released May 1, 2003)

**Interim Travel Advisory: Singapore**

(Updated May 6, 2003; Released March 13, 2003)

**Interim Travel Advisory: Hanoi, Vietnam**

(Updated April 29, 2003; Released March 13, 2003)

## Travel Alerts = “Head’s Up”

### Interim Travel Alert: **Singapore**

(Updated May 6, 2003; Released March 13, 2003)

### Interim Travel Alert: **Hanoi, Vietnam**

(Updated May 15, 2003; Released April 29, 2003)

### Interim Travel Alert: **Toronto, Ontario, Canada**

(Updated May 20, 2003; Released April 23, 2003)

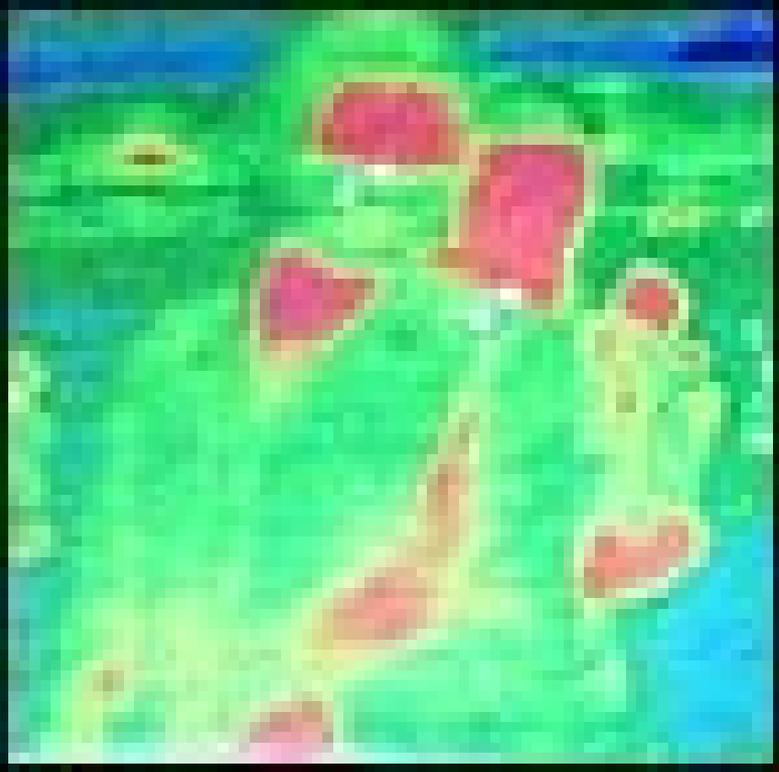


**Empty jewelry showcases from Hong Kong and Singapore  
Zurich Trade Fair**

# Airport Measures:

1. Pre-departure Screening
2. Suspected SARS Aboard Airplane
3. Disembarkation Notices





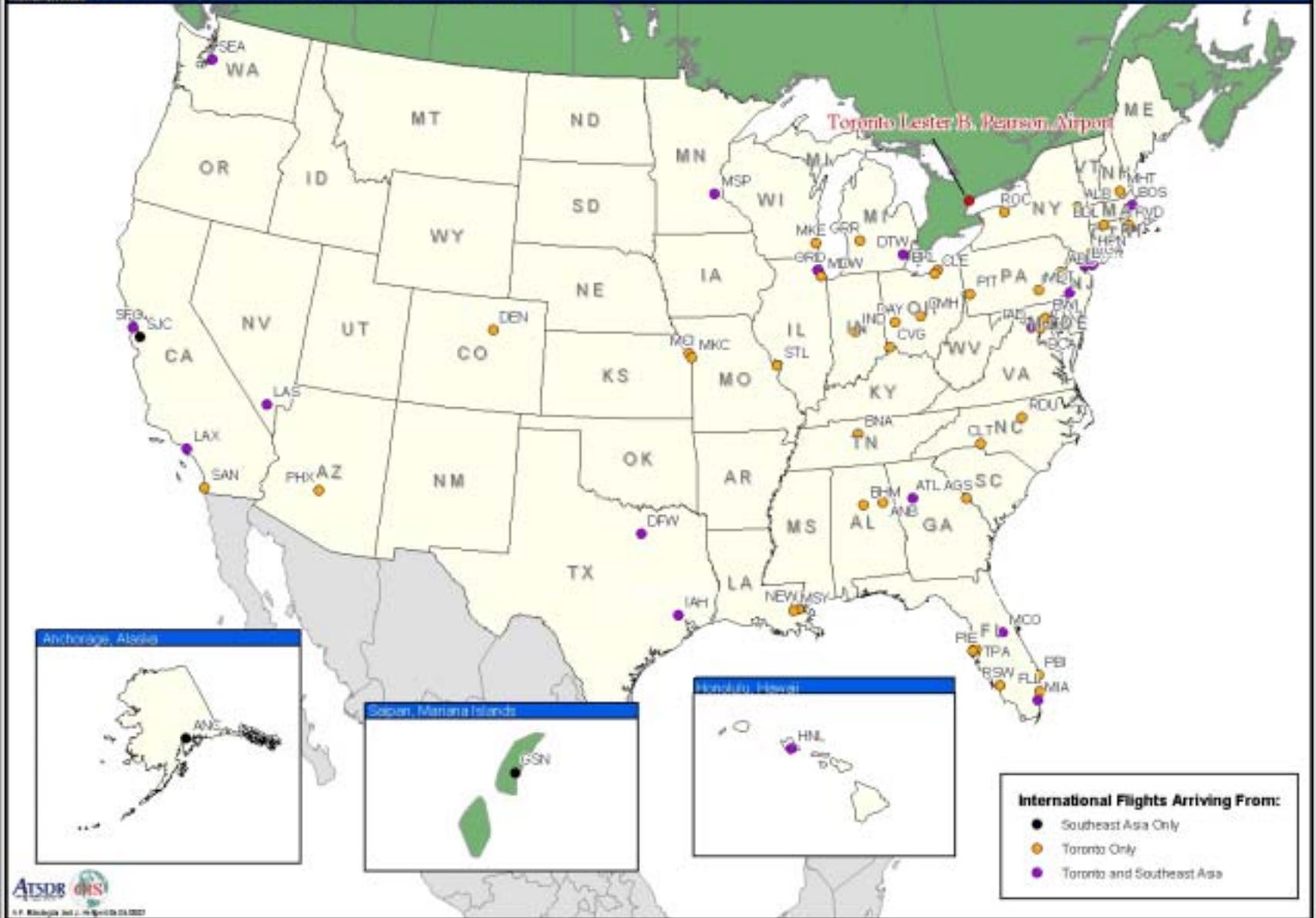
## 1. Pre-departure Screening











**HEALTH ALERT NOTICE**

**건강 경보 공지사항**

**KHUYẾN CÁO Y TẾ**

**健康に関する注意喚起**

**AVIS D'ALERTE MÉDICALE**

**AVISO DE ALERTA DE SALUD**

**緊急保健通告**

**緊急保健通告**



**DEPARTMENT OF HEALTH AND HUMAN SERVICES**



**CENTERS FOR DISEASE  
CONTROL AND PREVENTION**

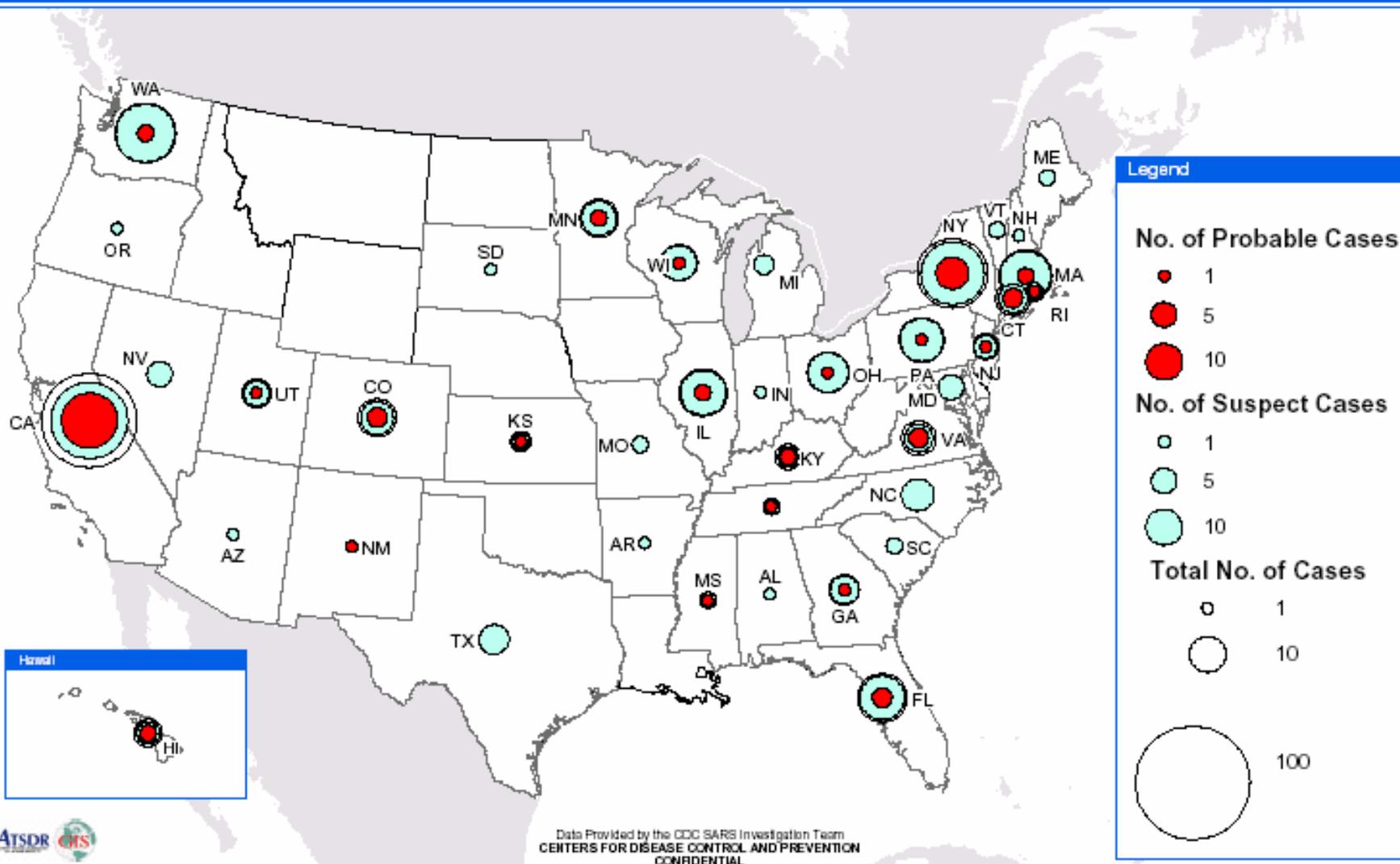
**HEALTH ALERT NOTICE  
For International Travelers  
Arriving in the United States  
from Toronto, Ontario, Canada**

**TO THE TRAVELER:** During your recent travel to areas affected by severe acute respiratory disease syndrome (SARS), including Toronto, you may have been exposed to cases of SARS. You should monitor your health for at least 10 days. If you become ill with fever, cough, or difficulty in breathing, you should consult a physician. In advance of your visit to the physician, tell him or her about your recent travel to these regions and whether you were in contact with someone who had these symptoms. Please save this card and give it to your physician if you become ill.

**TO THE PHYSICIAN:** The patient presenting this card may have recently traveled to SARS-affected areas, including Toronto, where cases of SARS have been identified. If you suspect that this patient may have SARS, please contact your city, county, or state health officer (see <http://www.cdc.gov> or call the CDC Emergency Operations Center at 770-488-7100).

English

# Reported Cases of SARS United States (05/19/2003)





Disinfecting Guangzhou City Streets, NYTimes April 2003



**Constructing a SARS Hospital in Beijing**