

**SARS OUTBREAK AT PRINCE
OF WALES HOSPITAL**

Department of Health

The Government of the Hong Kong Special Administrative Region

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11 MARCH 2003

- Media reported that more than 10 staff in ward 8A of PWH fell sick with respiratory illness
- DH NTERO joined PWH in the investigation

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DH and PWH Outbreak Management

- DH advised PWH to isolate cases, screen other wards, and monitor sick leave pattern of staff
- DH to conduct epidemiological investigation
 - Questionnaire designed
 - Survey conducted
- PWH to screen staff at a specially set-up staff clinic and report cases to DH
- DH to trace contacts of reported cases

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EPIDEMIOLOGICAL SURVEY

Objectives

- To define size and nature of outbreak and clinical features
- To find out incubation period and mode of spread

Subjects

- PWH staff reporting ill

Method

- Designed questionnaire
- Telephone interview by medical officers and health nurses

Data collected

- Demographic data, clinical, exposure and contact history

Data analysis

- Epi Info

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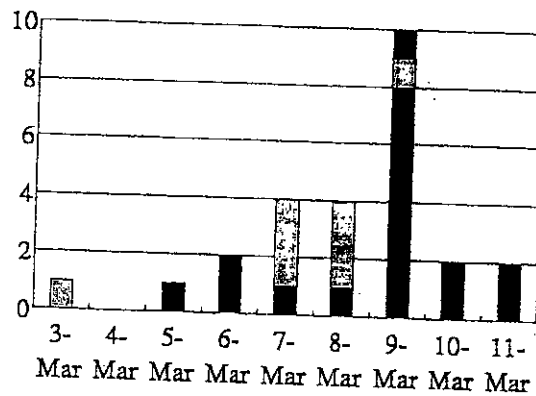
Survey Findings on Day 1

- 26 interviewed
- 10 Male, 16 Female
- Age: 20 – 53 years, median: 28 years
- Groups:
 - Medical students: 8
 - 8A health care staff: 17
 - Non-8A health care staff: 1

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Survey Findings on Day 1

■ 8A Staff ■ Medical Student ■ Non-8A Staff



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Survey Findings on Day 1 Symptomatology

Symptom	Frequency	Percentage
Fever	24	92.3
Cough	13	50
Sputum	10	38.5
Running Nose	5	19.2
Headache	18	69.2
Malaise	18	69.2
Dizziness	10	38.5
Chills	23	88.5
Rigor	15	57.7
Myalgia	19	73.1
Sorethroat	10	38.5

Initial Observation & Hypothesis

- Acute respiratory infection
 - Fever and chills most commonly reported
 - 8 with chest x-ray changes
- Common linkage: 8A ward
- Estimated incubation period: 1-7 days
- Initial laboratory investigation excluded common pathogens and influenza A
- Likely mode of transmission: droplet spread

12 March (Day 2) First Case Definition

- Case definition derived from survey results
PWH healthcare workers, including medical students,
presenting with
 - Fever and chills, or
 - Fever and rigor, or
 - Persistent fever $>38.5^{\circ}\text{C}$ for at least 3 days
since 10 February 2003
- Chest X-ray findings were used to screen cases

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DH Control Teams

- 12 March: DH set up a dedicated Control Team at NTERO to manage PWH outbreak
- 13 March: an additional DH team comprising experienced medical and nursing officers stationed at PWH to facilitate communication and outbreak investigation

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14 March

SOURCE OF INFECTION

- ^{JJ} ██████████ considered the source patient
- Onset on 24 Feb and hospitalized on 4 March
- Relatives of ^{JJ} ██████████ admitted on 13 and 14 March
- Affected staff and medical students could be linked to ██████████ ^{JJ}
- ^{JJ} ██████████ was on nebulizer

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CONTACT TRACING

- PWH traced contacts among staff, medical students and in-patients exposed to ██████████ ^{JJ}
- DH traced and followed up hospital discharged patients, visitors exposed to ██████████ ^{JJ}
- DH also traced contacts of all reported cases

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Contact Tracing

- By 15 March
 - 220 reported cases and 600 contacts followed up
- By 20 March
 - 380 reported cases and 900 contacts
- By 31 March
 - 480 reported cases → 146 confirmed as SARS
 - 2000 contacts → 59 confirmed

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Control Measures by PWH

- Protective clothing and masks for all staff and visitors
- Visits to PWH restricted
- Nebulizer use suspended
- Isolation of cases
- Disinfection of wards

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SURVEILLANCE AND DATA MANAGEMENT

- Data collection
 - Standard questionnaire
 - Interview
- Data compilation and analysis
 - Epi info / Excel / SPSS
 - MIIDIS

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SURVEILLANCE AND DATA MANAGEMENT (2)

- Epi findings
 - To monitor trend of outbreak
 - To better understand the disease:
 - incubation period, mode of spread, communicability
 - To map linkages and identify geographical clusters
- Reporting
 - Regular reporting to DH Headquarters
 - Sharing of information with PWH

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OPERATIONAL LOGISTICS

- Manpower and Organisation
 - Control Room at NTERO to support PWH outbreak
 - Additional staff deployed

- Communication and Coordination
 - DH / PWH
 - CP(NTE), Con(CM) regularly attended PWH meetings
 - DH Team stationed at PWH
 - PMO stationed at PWH
 - Control room at NTERO communicated with PWH

 - DH / HA / WHO