

The SARS Experience

Princess Margaret Hospital

March – May 2003



Princess Margaret Hospital

- ✓ **One of the Major Acute Tertiary Hospital for Kowloon West Cluster (KWC), serving 1.8 m population**
- ✓ **Center for -**
 - **Nephrology & Urology**
 - **Infectious Diseases**
 - **Toxicology**
- ✓ **1st supporting Trauma Center for CLK International Airport**

Critical Dates

- ✓ 11/2 – PMH admitted family of H5N1 from China
- ✓ 22/2 - KWH admitted Prof from Zhongshan
- ✓ 6/3 – PMH admitted SARS patient from Hanoi
- ✓ 10/3 - PWH outbreak
- ✓ 24/3 - Amoy outbreak started

SARS patient from Hanoi - [REDACTED] - M/49

- ✓ Admission : 6/3/2003 02:32 hr
- ✓ Death : 13/3/2003 00:01 hr
- ✓ Travel history since mid Jan 03 :
 - Shanghai -> HK -> Shanghai -> HK -> Hanoi
- ✓ 26/2 – admitted to the French Hospital in Hanoi for flu-like illness, deteriorated rapidly
- ✓ 28/2 - serology yielded +ve IgM Influenza antibody
- ✓ 2/3 – further deterioration requiring assisted ventilation.
- ✓ 5/3 – PMH requested to accept this critically ill patient for further management
- ✓ 6/3 - transported to PMH via International SOS
- ✓ 8/3 - informed by SOS doctors that 14 HCW at the Hanoi French Hospital were infected and hospitalized. That CDC would visit Hanoi

DD [REDACTED] - M/49 cont'd

- ✓ Infection Control measures taken at PMH
 - * direct admission to negative pressure single bed isolation room in ICU
 - * All attending staff wore masks, eye protection, gloves, plus universal droplet precaution
 - * Minimize number of attending staff
 - * Care taken to treat exhaust gas from ventilator to prevent environmental contamination
- ✓ Prophylactic Tamiflu taken by 24 ICU staff
- ✓ No HCW infected

Peak Phase

24 Mar - 6 Apr

**Amoy Gardens
& Community Outbreak**

PMH as Designated SARS Hospital

- ✓ 26/3 - PMH to be designated as SARS hospital
- ✓ 27/3 - Announcement by CE HKSAR on a series of measures to fight SARS
- ✓ 27/3 - HA Chairman joined CCE Forum to announce the plan to all KWC staff
- ✓ PMH - Initial ward plan - 912 beds:
 - ✦ 4 admission wards - 120 beds
 - ✦ 20 SARS wards - 600 beds
 - ✦ 5 Paed wards - 118 beds
 - ✦ 4 adult ICU - 64 beds, 1 NICU/PICU - 10 beds
- ✓ WTSH - 400 convalescent beds

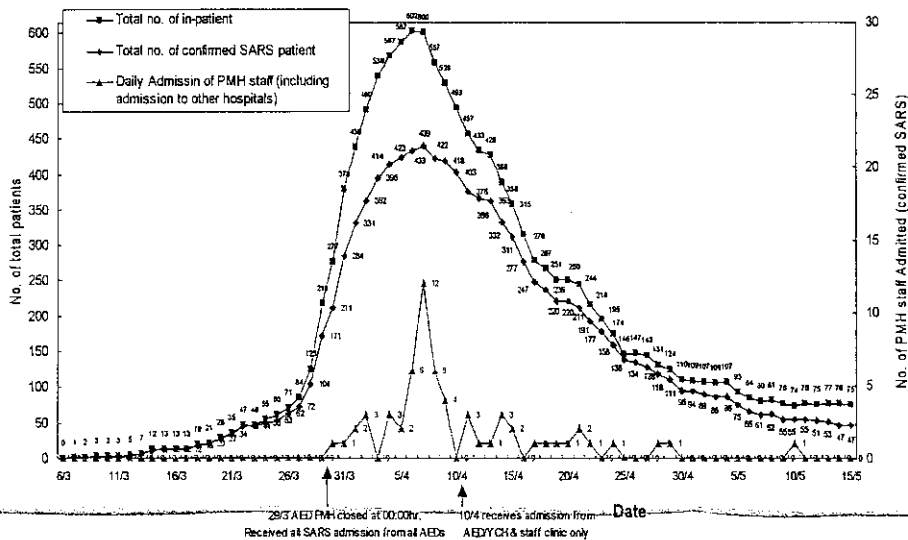
PMH as Designated SARS Hospital

- ✓ Admission source
 - ✦ Department of Health Designated Medical Centers (DMCs) for detection of early SARS cases in community
 - ✦ Referrals from A&Es of all clusters
 - ✦ Referrals from private sectors

Peak Phase - 24 Mar - 6 Apr

- ✓ 29/3 - 00.00hr close A&E PMH
 - 09.00hr start admitting all new SARS
 - Set up SARS Control Center
- ✓ 31/3 - all regular services moved out from PMH to CMC, YCH, KWH & OLMH
 - DH Surveillance team stationed at PMH
- ✓ 5/4 - total 596 SARS admitted to PMH
 - 423 confirmed SARS
 - ICU patients increased from 13 to 43
 - 5 Paed ICU patients

Admission of PMH staff (confirmed SARS) in relation to total no. of in-patients (suspected & confirmed SARS patients) from 6/3/03 to 15/5/03



Peak Phase - 24 Mar - 6 Apr cont'd

- ✓ 27/3 - No visiting policy - SARS ward
 - ✓ 3/4 - No visiting policy - all acute wards
 - ✓ 1/4 - 1st LSCS for 28 wk pregnant SARS with use of Air-mate,
 - Conversion of -ve pressure delivery suite/OT
- ✓ Total 4 LSCS done, 1 vaginal delivery

Staff Deployment to PMH

	ICU	Medicine	Total
Doctors From other hospitals	20	29	49
Doctors From PMH	14	7 (Interns)	21
Total Doctors	34	36	70
Nurses From other hospitals	42		42
Nurses From PMH	231	81	312
Total Nurses	273	81	354

PMH SARS data – 22/2 to 31/5

Total admissions	1052	
Confirmed SARS	585	55.6% (PMH), 33.3% (HK)
Confirmed Amoy	188	32% (PMH), 57% (HK)
SARS Death	60	10.2 % (SARS)
ICU admission	127	21.7 % (confirmed SARS)
SARS Discharge	573	

PMH SARS data – 22/2 to 31/5

	HA	PMH	PMH/HA%
Admission		1052	
Confirmed SARS	1739	585	33.6%
Amoy	329	188	57%
Deaths	278	60	21.6%
Discharges	1310	573	43.7%
HCW Affected	384	63	16%

PMH Staff affected

	ICU	Others	Total
Doctors	5 + 1	2	8
Nurses	11	24	35
Clerical	2	2	4
Supporting	5	11	16
Total	24	39	63

Plateau Phase : 7 Apr - 20 Apr

- 7/4 - WTSH started admitting SARS convalescent patients
 - Peak of HCW affected - total 12 on this day
- 8/4 - PMH transferred 10 potentially ill patients out to other clusters
 - Mandatory reporting and attendance at 24 hr staff clinic for all sick staff at PMH
- 11/4 - PMH stopped all SARS admission

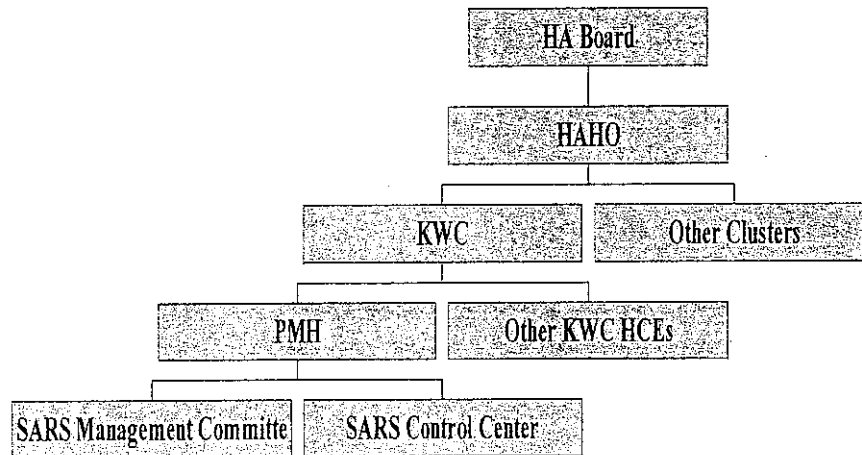
Resolution Phase : 21 Apr - 4 May

- ✓ 22/4 - outbreak at CMC Rehab ward - 8 staff and 14 patients affected
- ✓ 23/4 - visit by SETW to advise on environmental improvement
- ✓ 27/4 - outbreak at LKB - 2 staff, 2 patients
- ✓ 4/5 - 10 crewmen from a Malaysian ship requested medical assistance for suspected SARS - assessed at A&E and discharged

Normalising Phase : 5 May - 1 Jun

- ✓ 7/5 - PMH to admit all pregnant SARS
- ✓ Deep cleansing of Block EF at PMH
- ✓ 12/5 - PMH resumed all non-SARS medical admission
- ✓ 9/6 - PMH to admit all new SARS except from NTEC

SARS Management Structure



SARS Management Committee

- ✓ Key team heads as members
- ✓ Clear line of authority and responsibility, prompt response to need with better coordination
- ✓ Daily meeting plus Video conferencing with cluster hospitals
- ✓ All HCEs have clear grasp of the war-zone situation, facilitating collaboration

SARS Control Center

- ✓ SARS case registry
- ✓ Work along side with DH surveillance team
- ✓ e-SARS - direct link to CMS, HA, DH
- ✓ On-line patient data capture to facilitate contact tracing by ICT & DH
- ✓ Mapping of cases for early identification of outbreaks
- ✓ Accurate data capture for service planning, deployment, monitor and audit

Staff Training - 全民皆兵

- ✓ Infection Control training - all
 - Clinical area – 94.2%
 - Non-clinical area – 89.2%
 - Demonstration of use of PPE
 - Infection control talks and on-site briefing
- ✓ Crash course on ICU care for nurses
- ✓ Medical
 - Common Infection Control Module +
 - Either of the 3 modules on :
 - ICU; SARS; Non-SARS

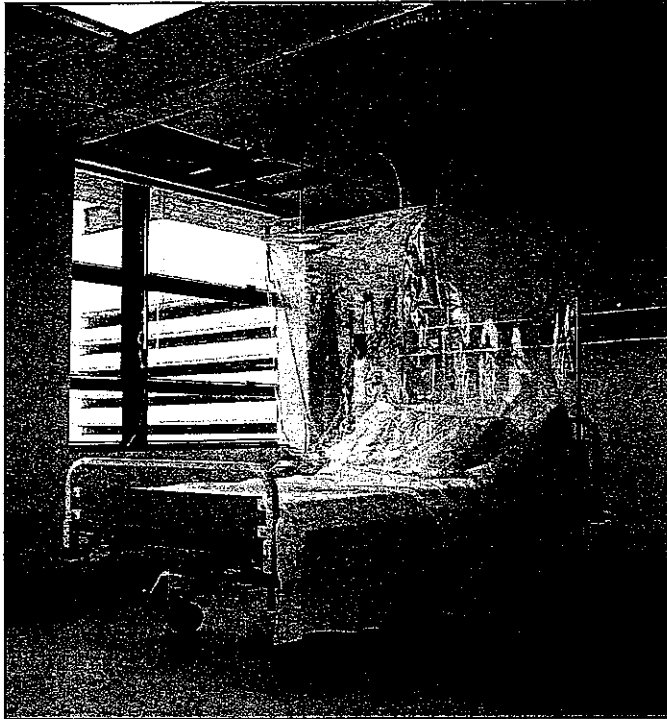
Infection Control Measures

- ✓ **Environmental Improvement – exhaust fans, space out beds, air-cleaners, step up cleansing routines – wards, toilets,**
- ✓ **Zoning – dirty, clean**
- ✓ **Infection control guidelines & training**
- ✓ **PPE supplies – standard apparel for all areas, special for high risk procedures**
- ✓ **Infection Control Audit Teams**

Environmental Improvement

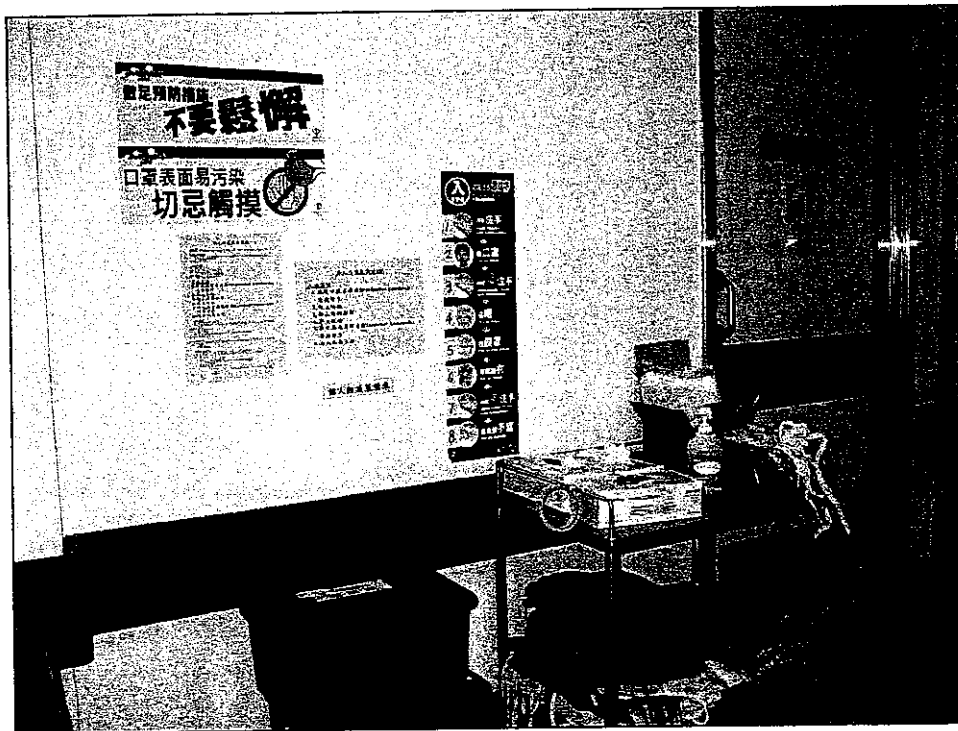
Visit by ETWB with recommendations

- ✓ **Air cleaners with HEPA filter in SARS wards**
- ✓ **Install HEPA filter in the exhaust outlet of the service tunnel where sewage pipes are housed**
- ✓ **Install automatic disinfection system in the rooftop flushing water reservoirs to provide additional disinfection at toilet bowls etc.**
- ✓ **Install local exhaust system over patient's bed to decrease viral load**
- ✓ **Renovation work to provide more negative pressure isolation rooms/cubicles**



Local Exhaust Hood



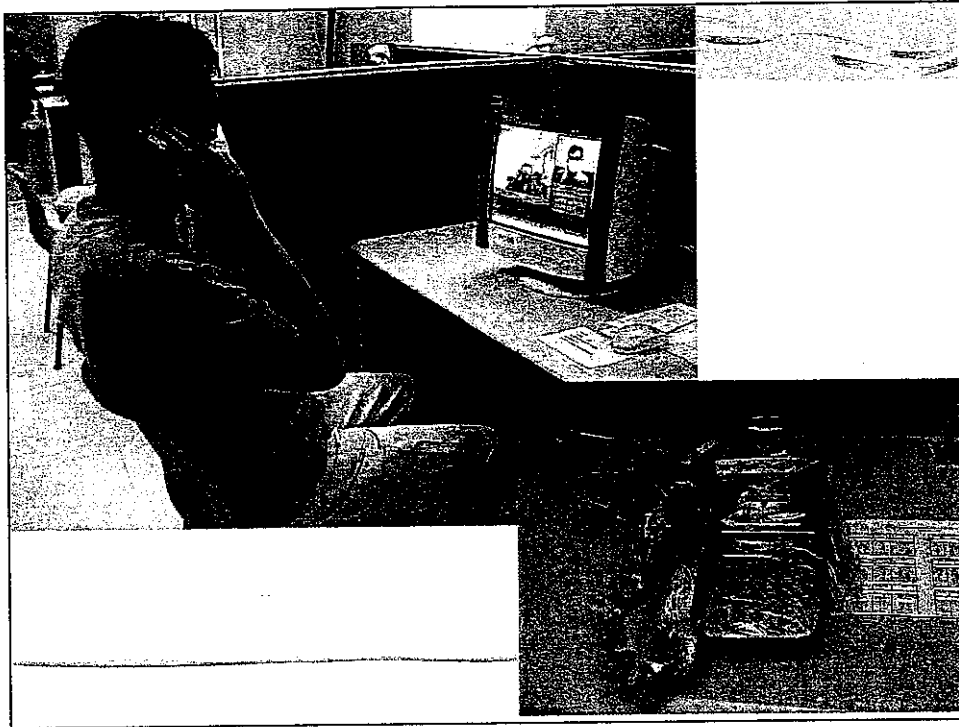


Hospital Infection Control Audit

- ✓ Compliance internal audit – Patrol nurse
- ✓ Environmental internal audit
- ✓ Surprise check
- ✓ External audit

Supports to Patients & Relatives

- ✓ No visiting policy
- ✓ Help Desk at entrance to entertain relatives' requests - telephone enquires, counseling, complaint management
- ✓ Visual communication with patient via Video Conferencing facilities



Staff Care

- ✓ Care for Carer Club, Critical Incident Support Team
- ✓ Hotline run by HKFWS
- ✓ CHRC as Staff Resource Center
- ✓ Quarter provision – NQ, TSW, with provision of transportation
- ✓ Improvement works to staff changing rooms, quarters
- ✓ 24 hr staff clinic at A&E for all staff – sick bay for observation, meals and drinks arranged
- ✓ Affected staff - attended to by SNO, daily report to families
- ✓ Sweet soups, fruits etc to staff



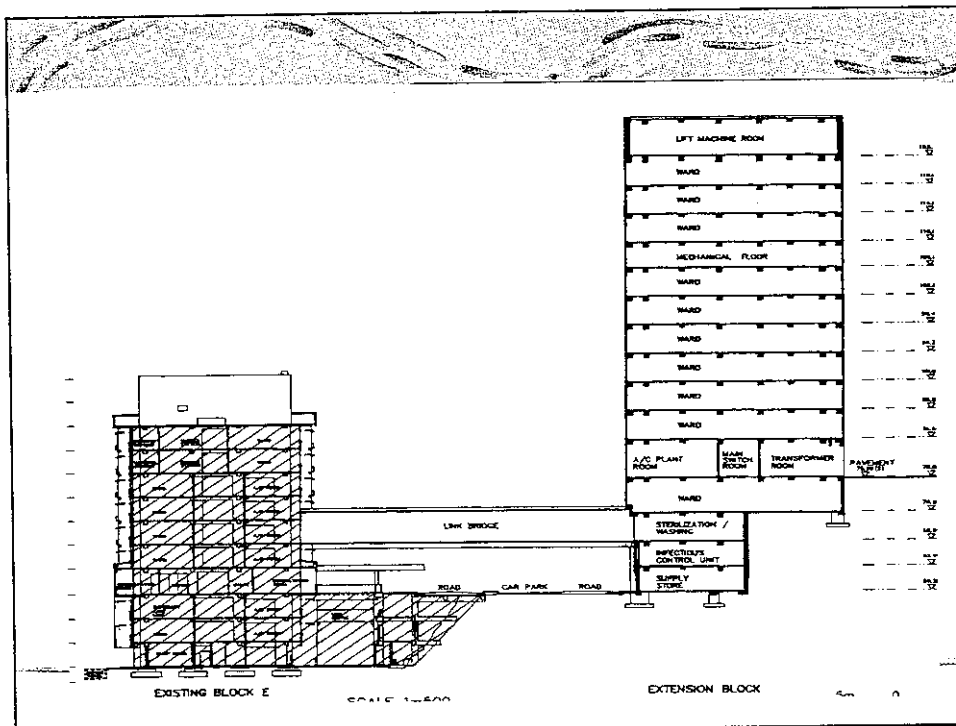
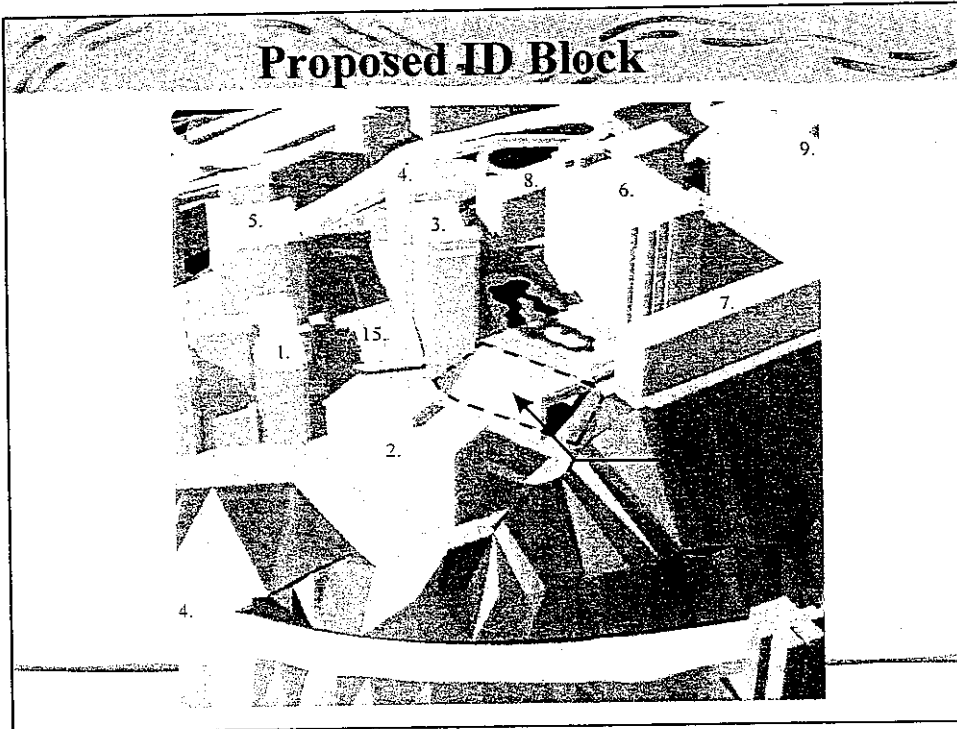
Communication

- ✓ Total 6 CCE Forums with video link to all KWC staff
- ✓ KWC website for SARS, Newsletter, Posters & Flyers
- ✓ Ward visits
- ✓ Phone contacts
- ✓ CND hotline

PMH - The Future SARS Battle

- ✓ Short-term
 - ✦ 28/6 – re-open all services including A&E
 - ✦ Renovation & upgrade present facilities to provide ~ 100 negative pressure isolation facilities
 - ✦ Designated as the 1st hospital to admit 1st 100 SARS patients should it return
- ✓ Medium term -
 - ✦ ? ID Block at PMH

Proposed ID Block



Analysis for Isolation Room

