Select Committee Question 27(10) & (15)

Request from LegCo's letter dated 5/12/03-Select Committee to inquire into the handling of the SARS outbreak by the Government and the HA.

10. Infection control measures adopted in public hospital in respect of different levels of infection control at various stages of SARS outbreak.

15. Policies regarding the provision of personal protective equipment and infection control training for different levels of HCWs and contractor's staff in public hospitals and the mechanism for inseminating such policies.

SARS was a mysterious new disease. We, like the rest of the world, had no knowledge of this disease at the outset. Our knowledge culminated as we progressed. Even up to now, while certain modes of transmission are known, we cannot say that we have exhausted all modes. Adoption of infection control measures in HA hospitals was hence an evolutionary process and recommendations were revised in light of the new knowledge that surfaced with new experience at different phases.

1. Pre-SARS Phase (21.2.03-10.3.03)

In this phase, HA implemented a surveillance programme following media reports of increase in pneumonia cases in Mainland. In addition to Universal Precautions (UP) being practised at all hospitals, Droplet Precautions (DP) were recommended as the infection control measures for this phase. The following sets out the key features of infection control measures:

- proper placement of patients
- use of barrier apparels (gloves and gowns) when coming into contact with patients' blood, body fluids, secretions, excretions, mucous membranes and contaminated item
- use of mask
- hand-washing and disinfection of environment and equipment

The recommended PPE in this phase was:

UP (PPE)	Barrier apparels (gloves and gown) when staff come into contact with patients' blood and body fluids.
DP (PPE)	(i) In addition to barrier apparels, staff were required to wear a mask when working within 3 feet of the patient.

	(ii) Staff with respiratory symptoms were required to wear a mask

2. Early phase (10.3.03-23.3.03)

In this phase, the disease was officially named 'SARS' by the World Health Organization WHO on 15 March 2003. The causative agent of SARS was reported on 22 March 2003. DP & UP continued to be the recommended infection control measure. In addition to UP and DP, avoidance of use of nebuliser* in patients with fever and chest x-ray infiltrates was recommended following the PWH outbreak.

The recommended PPE in this phase was:

UP (PPE)	Ditto
DP (PPE)	(i) Ditto (ii) Ditto (iii) Patients with respiratory symptoms were required to wear a mask.

* Nebulizer is a device used to generate minute water droplets with or without mediation to moisturise or dilate small airways

3. Peak Phase (24.3.03-6.4.03)

During this period, SARS CoV was recognised as the causative agent of SARS. In light of the knowledge gained from the early phases, the main mode of transmission was considered to be by droplets and direct contact with patients' secretion. UP & DP continued to be recommended. The following additional infection control measures was recommended: -

- Contact Precautions (CP): Precautions with emphasis on barrier apparel and eye protection.
- Proper wearing of mask (surgical or N95), frequent disinfection of environment and equipment with hypochlorite solution.
- Use of alcoholic hand rub was encouraged in addition to frequent hand washing.
- Special advice on high risk procedures like intubation, use of ventilators and use of nebulizers.
- Increase shower facilities for staff.

- Visiting to hospital was restricted but subsequently not allowed in acute wards on 27.3.2003 unless under very exceptional circumstances.

- All personnels (HA staff and contractor's staff) were required to undergo training/instructions on infection control precautions against SARS.

The recommended PPE in this phase was:

UP(PPE)	Ditto
DP(PPE)	(i) Ditto (ii) Ditto (iii) Ditto
PPE for staff when attending to SARS patients PPE for visitors when allowed under exceptional circumstances to visit SARS patients	All staff and visitors were required to put on surgical/N95 mask, goggles/protective eyewears, gloves, gown and caps before attending to SARS patients.
PPE for staff when attending to non-SARS patients	Staff were required to put on surgical/N95 masks.
PPE at home - for staff caring for SARS patients - close contacts with SARS patients - discharged SARS patients	) surgical mask

4. Plateau Phase (7.4.03-20.4.03)

During the plateau phase, the importance of a structured infection control enforcement at all level was emphasized to enhance staff protection. All infection control measures continued. The following key infection control measures were recommended:

- An Infection Control Enforcement Team for each hospital was established. Inspection rounds were carried out to monitor implementation of Infection Control measures at workplace.
- Precautionary advice for close contacts, discharged patients and convalescent patients.

The recommended PPE in this phase was:

UP(PPE)	Ditto
DP(PPE)	(i) Ditto (ii) Ditto (iii) Ditto
PPE for staff when attending to SARS patients PPE for visitors when allowed under exceptional circumstances to visit SARS patients	Ditto
PPE for staff when attending to non-SARS patients	Ditto
PPE at home ° for staff caring for SARS patients ° close contacts with SARS patients ° discharged SARS patients	Ditto
Additional PPE requirement ° for staff ° for procedures with close patient contact	 ° working clothes ° mandatory eye protection

5. Resolution Phase (21.4.03-23.6.2003)

All infection control measures continued. The following key infection control measures, having regard to the then known modes of transmission, were recommended:

- Prevention Strategy for droplet precaution :
  - surgical masks for symptomatic patients and all health care workers
  - protective eyewears
  - space out patients ± physical barriers
- Precaution Strategy for aerosolized respiratory secretions :
  - Avoid use of neublizers
  - limit high-risk procedures & consider additional precautions
  - good ventilation (increase air change, directional air flow).
- Precaution Strategy for contact with patient's secretion, excreta & fomites :
  - frequent environment cleaning & disinfection

- hand hygiene
- avoid touching masks & face (eyes, nose & mouth).

- Infection control training and enforcement - All PPE users were required to receive training on the proper usage and maintenance of PPE.

The recommended PPE in this phase was:

UP(PPE)	Ditto
DP(PPE)	(i) Ditto (ii) Ditto (iii) Ditto
PPE for staff when attending to SARS patients PPE for visitors when allowed under exceptional circumstances to visit SARS patients	Ditto
PPE for staff when attending to Non-SARS patients	Ditto
PPE at home ° for staff caring for SARS patients ° close contacts with SARS patients ° discharged SARS patients	Ditto
Additional PPE requirement ° for staff ° for procedures with close patient contact	Ditto Ditto
Additional PPE for staff when attending to dependent, confused or uncooperative patients	Tight-fitting goggles, full face shields and water repellent gowns.
Additional PPE in high-risk procedures and nursing patients with high infectivity	Cover-all-suit, full PPE: power Assisted Respirators may be used.
PPE for outreaching staff: UP(PPE) DP(PPE) When attending to SARS patients (PPE)	 Ditto Ditto Ditto