Report 1

Alice Ho Miu Ling Nethrsole Hospital (AHNH) – Infection Control Inspection

Date of Audit: 12th-19th May 2003

Audit/ Inspection type: Audit with HO Checklist incorporated

The SARS Infection Control Audit Task Force (Task Force) of AHNH has conducted an infection control audit with follow up actions taken during the period from 12th to 19th May 2003.

Findings were sent to the Unit Infection Control Officers and Department Heads and immediate improvements were expected. Re-inspection was carried out in two to three days' time to check if improvements were implemented.

The full audit report was furnished to the HAHO. An Executive Summary of the audit is attached.

NTEC
ALICE HO MIU LING NETHERSOLE HOSPITAL

INFECTION CONTROL AUDIT

May 12-19, 2003

Executive Summary

The audit included all clinical areas of the hospital which was providing service during the period from May 12-May 19, 2003. The focus of the audit was on infection control measures with relevance to prevention of SARS cross infection. The main focus of this report is on the 14 wards. Audit of other areas such as the Department of Pathology, Laundry, OPDs were preliminary. The audit forms of those areas are attached for reference. The Task Force is starting to define the risks in each area and refine the infection control procedures required in each area based on the audit findings.

A tool prepared by the SARS Infection Control Audit Task Force of the hospital was used. Most wards were audited on 12th May, the major findings were discussed and summarized at the end of each day during a meeting of the Task Force. The findings were then feedback to the Unit Infection Control Officers and Department Heads by e-mail. Immediate improvements were expected. The wards were re-inpected 2-3 days later to see if improvements were implemented. The major findings of each clinical area is summarized and attached in Appendix 1.

RESULT

The Audit was structured into 4 major areas: staff, environment, supplies and procedures.

Staff

It is most important that there is an effective infection control enforcement structure in each clinical area.

1. All units have appointed there UICO and safety controllers and all but one them are trained according to the requirement of the hospital and they understand their role.
2. Messengers in 2 areas are not familiar with their role. Use of standardized work schedule and checklists has found to be useful.
3. All staff have undergone proper training.
4. The major issue was with ISS (contracted) staff: 14% of them have problem in understanding their work schedule and the color-code system. Again, the use of standardized work schedule, checklist and intensive training for a few hours have been shown to be effective in correcting this problem.

Environment

1. One important lesson to learn is that "haste makes waste". One ward (F5) have to be set up within 1 day and a lot of problem was identified. They corrected most of the problems within 2 days after auditing. An accreditation system in which all clinical areas have to be accredited before they are allowed to operate has been introduced but was only partially effective. The pressure to produce is too big and this is potentially very dangerous.
2. Entrance
   Up to 36% of wards were not properly labeled. These were easily corrected.
3. Gown up area
   Again, the major problem was with use of proper notice and posting of N95 fit test results. They were easily corrected: red rubbish bags were not used where necessary in 2 wards.

4. Gown down area
   Problems like insufficient supply of surgical masks, lack of warning notice and shower pack were easily corrected upon notification of the UICO.

5. Patient area
   Not all wards are as tidy as desirable and there is a shortage of posters to remind patients to wear surgical mask and staff to wash hands. Posters were subsequently prepared by Central Nursing Department and distributed to all wards.
6. Patient toilet
   The major issue is lack of fixed dispenser for liquid soap in nearly 30% of wards and lack of regular cleaning schedule and signing of record in 20% of wards.
7. Dirty utility room
   Proper storage of rubbish is a major issue. It will only be resolved when enough carts of proper size are available. There is still quite a number (15%) of wards not disposing excreta and PD fluid properly. All were corrected by proper training. Use of proper bags for storage of soiled linen was another issue which was subsequently corrected. Nearly 20% of dirty utility room were not tidy enough.
8. Cleaners Room
   There is need to improve poster for cleansing instruction and labeling of cleansing equipment.

Supplies

1. Supply of PPE is adequate except for selected items such as face shields but 15% of wards cannot produce evidence of an effective mechanism to ensure adequate supply of PPE.
2. Up to 20% of resuscitation trolleys are not properly equipped.

Procedures

1. Over 90% of staff are following proper procedures for use of PPE.

2. Disposal of rubbish is an issue that needs improvement: up to 14% are still too full or being shaken or pressed. Red rubbish bags are sometimes not used when indicated.

OTHER IMPORTANT POINTS

1. There are still many procedures in the ward that we have to look into. Some of these are common to many areas while others are only performed in some departments only. The GM(N) will establish a task force to look into the common procedures while meetings will be arranged with individual departments to look into specific issues.
2. Use of isolation rooms is still an issue. The use of PPE is tedious and complicated. Clear instructions, training and supervision are essential.
3. Handwashing is a habit that takes time to establish. Constant reminding and reinforcement is important. We shall go into the vast literature on handwashing and learn from those.
4. Use of standard instruction, work schedule and checklist for HCA and cleansing staff is effective in improving quality within a short time.
5. The use of color coding for cleansing different parts of the ward is useful in preventing confusion for staff responsible for cleansing.

HY So
Hospital Infection Control Officer
AHNH, NTEC

Report 2

Caritas Medical Centre—Infection Control Inspection

Date of Inspection: 20 May – 7 June 2003

Audit/ inspection type: Inspection

CMC is an acute hospital and there have been SARS patients admitted at different times. 22 units were inspected in the exercise.

The HO Inspection Checklist was used.

Quantitative aspect
[aspects having less than 80% compliance]

1. Warden to remind staff—5/22 have scored `no'.
2. Gowning up area guarded—6/22 wards were not well guarded against intrusion.
3. PPE used appropriately—7/22 have scored `no'.

Qualitative aspect

1. Changing gloves between patients—2 units were observed to have inadequate gloves changing.
2. Hand washing—3 units were observed to have inadequate hand washing.
3. Staff's most concern issues—supply of small size N95 masks.
4. Numbers of workplaces deployed in the last 14 days—all have worked in only one workplace.
5. Frequency of washing uniform—all staff replied they wash uniform everyday.
6. Distance between patients—2 units had reported of a distance of less than 3 feet. The rest were more spacious.
7. Improper use of PPE and practice—2 units were observed to have inadequate hand washing and not changing gloves between patients.

Action taken by Hospital

Deviations identified were reviewed by related Department Managers. Actions were taken to remedy the deficits and reports were sent to HCE.

Report 3

Cheshire Home, Shatin—Infection Control Audit

Date of Audit: 9th –21st May 2003

Audit/ Inspection type: Inspection

Cheshire Home, Shatin is a convalescent hospital with 300 beds. Only one ward was converted to receive SARS convalescent patients.

12 clinical units and the General Office were audited. The NT East Cluster Audit Checklist on SARS Precaution was used and the audit was conducted by Infection Control Nurses.

Quantitative aspect

The overall compliance rate was good. The only aspect having a compliance rate lower than 80% was the proper use of PPE.

Qualitative aspect

One incident of not changing gloves between patients was observed and two incidents of double gloving were also detected.
Staff were also observed to have entered the PPE application room with protective gown on.

Actions taken by hospital:

1. Educational programs on masks wearing were launched for all patients and residents.

2. Staff were advised to remove both gloves and wash their hands between handling different patients. Only those who were sensitive to latex gloves were allowed to wear a polythene glove beneath the latex gloves.

3. Gowning up areas was reallocated to the entrance of ward and staff must ungown before they exit the ward.

Kwong Wah Hospital – Infection Control Inspection

Date of Inspection: 7th-21st May 2003

Audit/ inspection type: Inspection

Infection Control Inspections were carried out during second and third week of May 2003. 30 units were inspected and 5 units (endoscopy S1, GOPD, NS unit, E2, ICU) were inspected twice. 5 out of the 30 units received SARS patients. The Nurses'quarters were also inspected as one unit.

The HAHO inspection checklist was used. The units inspected twice were counted as 10 (5x2) inspection-units in the analysis.

Quantitative aspects

Aspects showing less than 80% compliance:

1. Proper use of Personal Protective Equipment (PPE)—19/30 units have shown non-compliance. Incidents of double gloving, reuse of single use items, not changing gloves between patients were detected.

2. Gowning areas guarded against intrusion—12/30 of the units considered their gowning areas not well guarded and 5/30 considered the question inapplicable.

3. Infection Control Training for staff—7/30 of the units answered that some staff had not received Infection Control Training.

Qualitative aspects

1. Frequency of gloves changing—5 units have been detected to have incidents of inadequate gloves changing. The rests have good compliance.

2. Frequency of hand washing — 4 units have been observed to have incidents of inadequate hand washing. The rest have good compliance.

3. Staff's most concern issues—supplies of PPE, being infected, safety in wards, and quality of PPE.

4. The number of workplaces a staff was deployed in the last 14 days — 3 incidents of staff being deployed to more than three workplaces were reported.

5. Frequency of uniform changing – 3 staff were reported to have changed their uniforms every two days; another 2 worn their uniforms for more than two days.

6. Average distance between patients—3 units had reported of distance between patients was less than 3 feet.

Actions taken by hospital:

1. Proper use of PPE and infection control practices: The reuse was mainly on face shields. The rest of the practice issues were brought up at the Infection Control Enforcement Team (ICET) meeting and ICNs have followed up the issues.

2. Extra Infection Control Courses in the hospital were run to improve infection control practice.

3. Plans on zoning and patient segregation were implemented to improve the situation of gowning areas and cross infection issues.

4. Issue of sophisticated PPE at E2 was followed up by ICN.

Report 5

North District Hospital- Infection Control Audit

Date of Audit: 19- 21 May 2003

Audit/ Inspection type: Audit (HO inspection checklist incorporated)

32 units were audited and 13 of them were admission wards or fever wards probably receiving SARS patients.

The NT East Cluster Audit Checklist was used for the audit.

A Report of SARS Precaution Audit was furnished by the Hospital.

Report on

North District Hospital

SARS Precaution Audit

May 2003

Prepared by:

NDH SARS Prevention Team

External Auditors:

Public Doctor Association Representative

David TJIU, Medical Officer

NDH Doctor Association Representatives

LEE Kwok Tung, Rayson, Senior Medical Officer

LI Ka Wah, Medical Officer

Nursing Audit Task Force Representatives

TANG Mei Ha, Nursing Officer

KWOK Kun-mei, Nursing Officer

LEUNG Po Chu, Cecilia, Nursing Officer

WAN Po Yuk, Nursing Officer

CHOI Ngok Ming, Nursing Officer

LI Wing See, Nursing Officer

Viola LEUNG, Nursing Officer

CHUI Suk Ping, Nursing Officer

Nominees from Unit Heads

Jimmy TSUI, Hospital Administrator (Special Duties), Hospital Administration

Louisa LEUNG, Registered Nurse, Operating Theatre

CHIU Chim Keung, Julian, Occupational Therapist I, Occupational Therapy

Dorothy WONG, Nursing Officer, Combined Endoscopy Unit

George LAM, Physiotherapist II, Physiotherapy Department

EXECUTIVE OVERVIEW

INTRODUCTION

The report is the result of an audit initiated by HAHO serving the purposes of identifying improvement opportunities and staff concerns on SARS Precaution for management information and action.

The audit was carried out by a group of auditors independent from the existing NDH SARS Prevention Team. The auditors of NDH were recruited from representatives of Public Doctors' Association, North District Hospital Doctors' Association, Nursing Audit Task Force and nominees from unit heads. The auditors were offered a briefing on the background and rationale of the audit on 13.5.2003. Additional items (NDH specific items) which were regarded as important to infection control in NDH were added into the checklists to enhance the yield of the exercise. The work places to be audited were expanded to cover more areas of the hospital than the original suggested sites. There is no SARS ward in the hospital. There are only fever wards and wards with isolated rooms to handle suspected SARS cases, details as set out at Appendix I. The auditors worked in pair and they filed a single return afterwards. The actual audit was carried out from 14.5.2003 to 24.5.2003. Audit form returns were collected and unclear item answers were clarified with the responsible auditor to ensure quality of the data using email and direct telephone contacts.

On the whole the infection control organization in clinical units are good in terms of the awareness of ICOs, IC training, IC discussions and warden system to remind workers on IC precautions. The replies that no recent audit/inspection within last one month in 2D, 1A, 1C, 3H, 3A, 3C, 3D wards might not be genuine. Cross checking with Infection Control Nurses (ICN) records suggested that the most likely reasons are the staff interviewed might not be aware the earlier visits of ICNs.

In terms of practice of changing gloves in between patients, there are still rooms for improvement. It was reported 'always' in only 22/29 (76%) returns. In one return, it was commented that gloves was changed less than 50%. In terms of hand washing, it was observed to be always in 26/31 (84 %) returns. All staff interviewed knew the high-risk procedures and all except one staff interviewed knew about the correct response when splashed by respiratory secretions or body fluid of patient. All units except one have photograph guide issued by NDH on the correct PPE required for high-risk procedures. Staff concerns are mainly around the supply of PPE especially the N95 masks and the occurrence of hidden SARS patients. In terms of actual practice being observed, only 83% of doctors used PPE appropriately in the workplace compared with 100% of nurses, HCA and cleaning workers. 90% of visitors were noted to be using PPE appropriately. In terms of gowning down, there are rooms for improvement. Overall, 85% returns showed the gowning down procedures were properly done. Better hand washing and handling of reuse N95 masks can be achieved.

Clean zones are clearly delineated and clearly labelled in 90% of work places. Although there are notices and posters, the gowning up area cannot be physically isolated and guarded against inadvertent intrusion by person wearing potentially contaminated PPE in 29%. This is due to the physical environment limitation. Nearly all clinical units have either sample photograph or mirror or patrol to remind staff of appropriate PPE being used. 82% of returns showed separation between gown up and gown off area is adequate. In terms of PPE provision (gloves, disposable gowns, alcohol hand rub, alcohol wipe, protection eyewear and paper bag for masks) at ward entrance, only 86% of units were able to comply all requirements. This may reflect the shortage of protection eyewear during the time of audit. Doors are kept closed most of the time in all units. As observed by auditors, 97% workplace have adequate changing facilities. 94% have PPE application & removal instructions and 97% hand-washing areas (staff, patients and visitors) are sufficiently provided with soap & paper towel. Only 3 wards were found to have the average distance between patients < 3 feet because of high admission rate.

Patient lavatories and dirty utility room were clean in 100% returns. But nearly up to 60% of returns found the rubbish bags exceed 2/3 full. Nevertheless, 97% of the waste bags are properly tied and handled.

In terms of supply, goggles, face shields, N95, 1860 small size were the most common items noted to cause staff concerns. Suggestion to top up PPE regularly was received. Other staff concerns are the availability of fit test for N95 masks to staff of non-SARS area. In the returns on sophisticated & reusable PPEs, there may be problems of interpretation by auditors as there are very few ward areas in NDH have these provisions. Nearly all units stored the PPE outside dirty area and are not prone to contamination.

The resuscitation trolleys are adequately equipped except supply of sedatives & muscle relaxants in two wards. There is no practice of reusing single-use items nor double gloving. 93% change gloves between patients

97% of staff change to working cloths before work. In 4/27 (15%) staff, they washed the uniform less frequent than daily. 100% of them replied having received adequate instruction from nurses 93% correctly identify which of his/her duty has a higher risk. All clinical units (except one) have a cleaning checklist and cleaning schedule.

The restricted visiting policy to the ward is strictly observed, visitors are allowed in 67% of ward areas mainly due to exceptional situation such as for visiting very ill patient, paediatric patient which is in line with advice given by SD(RM&QA), NTEC through memorandum dated 3 April 2003 on the subject of "Visitor to the ward" .93% have physical barrier to prevent intrusion of visitors. 96% work areas screen visitors for symptoms and visitors' details are recorded in 92%. 91% work units provide adequate PPE for visitors & instruction.

Overall 65% of all audited areas found that all patients had worn a mask. For those areas where not all patients wore a mask, the percentage of those wear masks ranged from 50% to 90%. This can be area for improvement.

Overall, the audit showed staff have done a lot in improving infection control measures. On the other hand, we should not be complacent with the existing infection control measures. There are still rooms for improvement. Staff need to focus on the practice of changing gloves and hand washing in between patients, correct use of PPE in all professional groups and visitors and proper gowning down process. More patients can be encouraged to wear masks in certain ward areas. Frequent attention to the waste handling like keeping rubbish bags not exceeding 2/3 full also need to be done. At the time of preparing the present report, ICNs have followed all the deficiency areas (details as set out at Appendix I) and with improvement measures installed. A briefing on preliminary audit result was done on 22 May 2003. Another briefing on complete audit result to unit heads, department ICOs was also done on 6 June 03. Audit results of individual department were distributed to department heads for sharing and following up within the department.

Pamela Youde Nethersole Eastern Hospital (PYNEH)—Infection Control Inspection

Date of inspection: 19- 27 May 2003

Audit/ inspection type: Inspection

PYNEH has 47 clinical units inspected. They included 1 SARS ward, one medical ward and one pediatric ward, which could receive SARS patients. The rest of the clinical units belonged to all different specialties which could receive SARS patients.

Quantitative aspect
The compliance rate was good and higher than 80%.

Qualitative aspect

1. Gloves changing between patients - 1 ward has reported to have less than 50% gloves changing.

2. Hand washing – inadequate hand washing was observed in some wards.

3. Staff's most concern issues—The most concerned two issues were supply of PPE and worries of being infected.

4. Number of workplaces being deployed to during the past 14 days—1 incident of staff being deployed to more than 3 places in the last 14 days.

5. Frequency of changing uniform—some staff reported that they changed infrequently (more than 2 days)

6. Average distance between patients—most were more than 5 feet, some were between 3 to 5 feet.

Action taken by hospital:

1. Wards were reminded of their deviations. Suggestions were made to remedial the situation.

2. Some extra training was carried out to help improving staff's knowledge and skills in using PPE, records and signage.

3. ICN have further explained on the proper application and maintenance of sophisticated PPE.

Report 7

Prince of Wales Hospital—Infection Control Audit

Date of audit: 19 –21 May 2003

Audit/ Inspection type: Audit (HO Inspection Checklist incorporated)

A full report of the audit and action taken was furnished by the Hospital Audit Team.

An Executive Summary of the report is attached for reference.

Executive summary

As a joint project with the "Anti-SARS Task Force" of HAHO, a hospital-wide audit on SARS precautions was conducted in PWH on 19 – 20 May 2003. During the audit period, 37 auditors were recruited to assess the SARS precaution measures of 60 clinical areas in PWH by using an audit checklist.

Overall results showed that major problems included: a) Space constraint resulted in close distance between patients, difficulty in separation of the gowning up and gowning down areas, difficulty in clear identification of clean and dirty zones. The existing facilities could not facilitate frequent handwashing and immediate shower for staff after contamination, b) Staff's handwashing technique and gowning down procedures were noticed to be improper in different occasions, c) the infection control (IC) practice and knowledge of supporting staff was noted to be inadequate.

On the other hand, audit results showed that well-established infection control structure and mechanism were in place. Training on infection control had been given to nearly all staff in clinical areas at the time of audit. Staff had maintained good ward hygiene as well as cleanliness and tidiness of the workplace. In addition, very good record keeping was made.

Regarding the staff's concern, they were very concerned about the supply and quality of PPE, as well as the practice of supporting staff, hospital environment, facilities, and IC information.

After the hospitalwide audit, results will be disseminated to hospital management, ICOs, departments and staff for information. With reference to the audit results, recommendations will be given to respective departments according to their needs. After that, follow up actions will be undertaken by Infection Control Unit, HICO and departments where necessary.

To improve the setting and facilities, standard colour-code signage will be designed and posted up to facilitate easy identification of the gowning up and gowning down areas. HICO & DICOs will work together for better identification of clean and dirty zones. Furthermore, to avoid cross infection, HICO will review the required IC equipment and facilities in clinical areas.

To improve the IC practice, infection control training will be regarded as a mandatory

requirement for all staff, including the contractor staff. To ensure that staff are competent to carry out proper infection control practices, skill assessment and knowledge test will be conducted.

For the supporting staff, more intensive training will be given to focus on practical skills and knowledge required in their day-to-day work. In addition, nurse managers will be invited to maintain close supervision on the supporting staff's practices.

The staff's concern on the supply and quality of PPE will be relayed to the hospital management for consideration. Furthermore, PPE in better quality will be identified to provide better protection to staff and to promote their comfort, Besides, continuous education and monitoring will be implemented to ensure that PPEs are used properly so that the staff can be adequately protected and cross infection can be minimized.

Finally, the NTEC SARS Prevention Team will continue to work closely with departments to upkeep the staff's awareness on infection control and maintain a good standard of practice.

Princess Margaret Hosptial –Infection Control Inspection

Date of inspection: 7th May 2003

Audit/ Inspection type: Inspection
PMH was turned into a hospital for receiving SARS patients referred from the four Designated Medical Centers of Department of Health since 29th March 2003.
12 clinical units inspected were all SARS wards during the inspection in mid May.

The HO Inspection Checklist was used as the tool for inspection.

Quantitative aspects (26aspects)

There were three aspects showing less than 80% compliance:

1. Infection Control Training for staff—3/12 units reported that some staff had not gone through Infection Control training.

2. Buddy system to remind staff – 8/12 units have shown not having such system to remind staff on infection control.

3. Improper practice involving the use of PPE—2/12 units were observed to have double gloving; and 1/12 unit was observed to have no hand washing before and after putting on mask.

One more question was excluded as it was not applicable:

1. Question 25—As staff of this SARS hospital were all wearing their Personal Protective Equipment (PPE) when they enter their wards, they needed no extra PPEs in their Emergency-trolleys.

Only Intensive Care Unit has been using sophisticated PPE and they were well maintained.

Qualitative (6 aspects)

1. Frequency of gloves changing—All units had good compliance.

2. Frequency of hand washing—All units had good compliance.

3. Staff's most concern issues—the most concerned issues were getting infected and cross infection to family and friends; 1 unit mentioned inadequate staff during night duty; and 1 unit had concerns on stock of masks and shields in this hospital.

4. The number of workplaces deployed to during the last 14 days—1 staff was deployed to three workplaces and 2 were deployed to two areas. The rest were all working in the same place during the last two weeks.

5. Frequency of uniform changing—6 staff had reported of wearing the same uniform for more than two days, 4 changed their uniform every two days and the rest washed their uniform daily.

6. Average distance between patients—6 units have reported of a distance of more than five feet, another 6 units reported a distance of between three to five feet.

Actions taken by hospital:

1. More training programs and workshops were organized for staff to improve various infection control practices.

2. The issue of staff being deployed to different wards frequently has been taken up by the ICN with Hospital Administration.

3. All staff were changed into working clothes before entering any wards. Uniforms were worn only outside clinical areas.

Report 9

Queen Elizabeth Hospital—Infection Control Audit

Date of Audit: 16, 19 and 20 May 2003

Audit/ Inspection type: Audit (HO Inspection Checklist incorporated)

79 areas, including in-patients wards, day wards, OT, ACC, Physiotherapy department, X-ray department were audited.

The audit was carried out by the SARS Infection Control Enforcement Team of the hospital. A questionnaire developed with reference to the HO Inspection Checklist was used.

A full report was furnished by the hospital. The 'Audit observations' and 'Recommendation for improvement' of the report are attached for reference.

Audit Observations:
The following is a summary of unsatisfactory findings in the audit:

Item 6 – Practice of triage system to identify high risk patient
Documented triage was found not generally practiced in 6 areas which included both in-patient areas and out-patients areas.

Item 16 – Guarding of gowning against inadvertent intrusion by person wearing potentially contaminated PPE
Guarding system was in place in 36 areas where there were designated gowning areas by using posters / notice or by the safety officers. Designated gowning areas were found not well guarded in both SARS and non SARS areas.

Item 26 – Control of Visit apart on compassion ground
Visit apart on compassion grounds was still allowed in 34 areas where the relatives insisted to visit.

Item 34 – Adequacy of notice / poster to remind people on precautions of SARS
Reminder posters were observed to be inadequate. The 'Seven tips' for gowning were not posted in the gowning areas in some inpatient wards. Notice / posters were also found inadequate in public waiting areas.

Item 36 – Readiness of bacterial – viral filter and PPE in resuscitation trolley for emergency use
Bacteria-viral filter were prepared in 67 resuscitation trolleys (89.3%), but were not ready for use during resuscitation in 8 areas.

Item 37 – Reuse of single use items
Single-use items were found reused in 8 areas and gown was the commonly reused PPE and the users were mostly supporting staff.

Item 38 – Mask wearing of patients
In 27 areas, a few (1-3) patients were found not wearing mask properly. Although masks were provided, they were removed or pulled down to the chins by some patients.

Recommendations for improvement:
The Audit Team recommended the following reinforcement measures to enhance infection control practice in the hospital:

1. Reinforce screening system for early identification of SARS suspects
   – Use of checklist in areas especially those with out patients, and effective monitoring of patients' temperature in in-patient areas.

2. Arrange designated areas for gowning especially in ultrahigh risk areas. The gowning areas should be guarded against inadvertent intrusion by Safety Officers or notices / signs to prevent cross contamination. To facilitate full protection of staff during emergency resuscitation,

3. Prepare bacterial – viral filter and PPE in emergency trolley to facilitate full protection of staff during emergency resuscitation. (3 sets of PPE would be recommended to guard the number of staff involved)

4. Discourage reuse of single-use items to minimize chance of cross contamination
   – communicate with staff to ensure adequate supply.

5. Reinforce the roles and responsibilities of Safety Officers
   – In clinical monitoring of proper infection control practice – in accordance with KCC Guidelines
   – Use of an inspection checklist in daily monitoring

6. Health education to both staff and public is important in continuing the containment of infection. –
   Staff – through continuous training and reinforcement on infection control practice, and timely communication of updated information.
   Public – use of SARS related publications / notices to increase alertness and understanding on the necessary precautions; and gain cooperation in hospital arrangements such as restriction of visit and use of mask and PPE during visit.

Report 10

Queen Mary hospital—Infection Control Audit

Date of audit: 6, 7, 9, 13 May, 6 June 2003

Audit/ Inspection type: Audit (self-designed)

Queen Mary hospital, and the Hong Kong West cluster have adopted their own unique Infection Control system.

Infection control Audits were carried out in May and June for 19 SARS Cohort Ward and general wards.

Two reports were furnished by the Infection Control Nurses of the Hospital.

Report on Audit of general ward and SARS cohort wards

Objectives of the audit:

- To identify training needs
- To assess glove practice
- To assess handwashing practice
- To assess adequacy of paper hand towels and soap for handwashing
- To assess adequacy and appropriate of PPE

Results

Date : 6.5 7.5 9.5 13.5
General ward : 17
SARS cohort wards : 5

Table 1: training and coordinators (%)

Wards	Received training	Know ICLN/ coordinator
Non SARS N=17	94	83
SARS N=5	95	98

Table 2: glove change and washing in %

Wards	Always change glove	HW after removal Of gloves
Non SARS N=17	72	89
SARS N=5	80	100

Table 3: Appropriate PPE by rank

Wards	Nurses	Doctors	HCA	Cleaners
Non SARS N=17	100	62.5	93.5	87.5
SARS N=5	100	100	100	100

Table 4: Handwashing paper & soap, sufficiency of PPE

Wards	All sinks with HW soap AV	All sinks with paper hand Towel AV	Sufficient PPE Yes	Reuse of N95
Non SARS N=17	95	95	88	12
SARS N=5	100	100	100	0

GW=non SARS wards, SW=SARS wards

Results reviewed that SARS cohort wards fair much better than the general ward in particular the availability of the PPE and handwashing soap and paper towel. All staff in the SARS ward received training and knew the coordinators while for the general ward there was a minority need update on the training. All staff in SARS wards wore appropriate PPE. However inadequacies were noticed in the general ward in particular the cleaners (87.5%) and doctors (62.5%). Data in table 2 showed that many did not change gloves (72 in GW & 80 in SW). Handwashing after removal of gloves was better in SW (100) than non-SARS wards (89%)

It was also noticed that 12 of the general ward expressed insufficient PPE supplies while the SARS wards were satisfied with their PPE supplies. None of the SARS ward staff reported reuse of N95 while 12% of general ward report reuse of N95.

Conclusion

Much of deficiencies were noticed in the general ward such as low compliance on handwashing, change of gloves and reuse of N95. Such data were reported back to the nurse managers for improvement. To discontinue reuse of N95, staff in the general ward will be advised to use surgical mask instead of N95. For the SARS wards, change of gloves and handwashing should be enhanced. Data were fed back to nurse manager for improvement.

Report on observation study done in QMH

Date: 6.6.03
Wards: E2, E3 (general medical call wards)
Objectives:

- To identify procedures done in rounds
- To evaluate appropriate PPE use
- To evaluate appropriate handwashing

Background on hospital policies on PPE for the general wards and monitor system

In QMH and the HKW cluster, the minimal personal protective equipments are to wear surgical mask while gown and cap are optional. Handwashing is emphasized before and after touching of patients and especially after touching of mucus membrane, secretions and excretions. Gloves should not be worn all the time. Handwashing should be done immediately after removal of gloves.

Infection control structure for SARS (refer appendix)

The central coordination is mainly from Infection Control Unit and Occupational Health and Safety. The SARS infection coordination is through mainly the nursing hierarchy, DOM and ward managers. Infection control link nurses in each ward form the main core. The buddy system is not promulgated while the motto of 'taking care of your own self 'is emphasized.

Results:

A total of 81 procedures were observed which include:
Rounds of bed making, bed bath, bedpan, change of napkin, Ryles tube feeding, oral feeding. and oral suction

Data were analyzed on the appropriate use of PPE, glove and handwashing practices.

Table 1: Observed PPE worn in %

Ward	Cap	Glove / 2 gloves	Surgical Mask	Gown	Goggles /face-shield
E2 n=33	97	78 / 22	100	100	27
E3 n=48	18	86 / 15	100	98	8

Table 2: Handwashing (HW) practice compliance in %

Ward	HW after Procedures done without glove	HW before procedure with glove	HW after removal of gloves
E2 n=33	100	70	100
E3 n=48	50	71	60

As shown in table 1, 100% of staff in both general medical ward were wearing surgical mask. Over 90% were wearing cotton 'purple' gowns and they were mainly for staff protection. Majority of staff of E2 ward wore caps while the other ward did not. As for eye protection, only 8-27% were wearing goggles or face-shields during the procedures. As for glove use, gloves were worn when staff were performing procedures. Glove all the time was not a common practice. For the above listed patient care procedure, there were only 78-86% of staff were wearing glove.

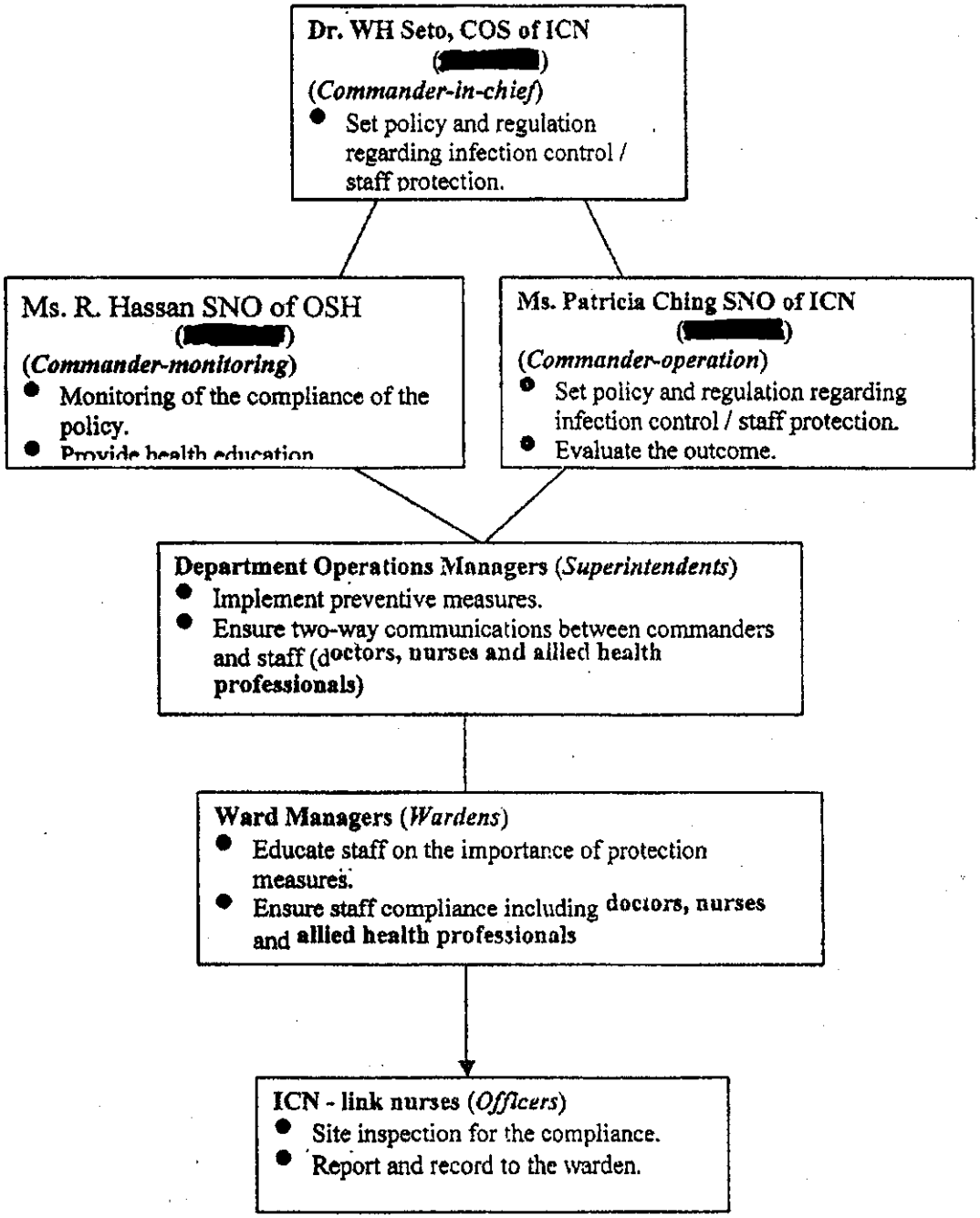
Compliance of handwashing practices was better in E2 (100%) than E3 (50-60%) as shown in table 2

Conclusions

Results showed nurses and HCA in these 2 wards conformed 100% to the HKW cluster recommendations on basic PPE requirement of wearing surgical masks. Most staff also preferred to protect themselves with gowns and some with caps. Eye protection were worn for high risk procedures such as Ryle's tube feeding and oral suctioning that account for the low percentage which was correct.

However handwashing in E3 ward was not as good as E2. Results were fed back to the link nurse and the ward manager for improvement.

Staff protection / infection control for combating SRS
Organization chart and role of members
9 April 2003



Appendix

Ruttonjee Hospital & Tang Shiu Kin Hospital—Infection Control Inspection

Date of inspection: 7 –31 may 2003

Audit/ inspection type: Inspection

24 units of the hospital were inspected and 3 of them were designated SARS units and SARS washout units. 12 of these units were inspected twice (AB 5, B9, A4, A6, A7, A8, A9, B4, B6, B7, B8, B10). The kitchen was also inspected in the exercise.

The HAHO Inspection Checklist was used. Those units inspected twice were counted as 24 (12X2) inspection-units in the analysis.

Qualitative aspects
[Areas having less than 80% compliance]

1. Gowning up area protected against intrusion—8/36 units were reported to be not well guarded.
2. Proper use of PPE and practice—11/36 units were observed to have improper practice.

Qualitative aspects

1. Changing gloves between patients—some incidents of not changing gloves between patients were observed.
2. Hand washing when changing gloves—some incidents of inadequate hand washing were observed.
3. Staff's concern—need of more washing basin, adequacy of PPE and getting infected with SARS.
4. Being deployed to more than one workplace during the last 14 days—6 staff had reported of being deployed to 2 workplaces and 1 to three workplaces.
5. Frequencies of changing uniform—all staff were reported to be changing uniform daily.
6. Average distance between patients—4 units had reported of having less than 3 feet. The rest were between 3 to 5 feet or wider distance.
7. Proper use of PPE and practice—some improper practice were observed.

Actions taken by hospital

Inspectors had taken up the issues with ICO/ ICNs :

1. Although there were physical constraints on the space and design of different wards, actions were taken to re-design the flow and re-locate such gowning areas.
2. Actions were taken by Inspector and ICN to remind their colleagues on proper practice.
3. Suggestions concerning PPE in E-trolley were made.
4. Other problems identified were taken up by inspector and ICNs.

Tseung Kwan O Hospital—Infection Control Inspection

Date of Inspection : 26 – 31 May 2003

Audit/ Inspection type: Inspection

29 units, including one SARS ward, two suspected SARS wards, AED, ICU and others were inspected.

The HAHO Inspection Checklist was used as the tool for inspection.

Quantitative aspect
[aspects showing less than 80% compliance]

1. PPE used appropriately—8/29 units scored 'no' over this aspect;
2. Gowning down properly—6/29 units scored 'no';
3. Instructions for wearing/ removal available—6/29 units scored 'no';
4. Sophisticated PPEs well maintained—6/10 units having sophisticated PPEs scored 'no';
5. E-trolley with PPE—7/24 units having E-trolley scored 'no';
6. Proper use of PPE and practice—7/22 units scored 'no'.

Qualitative aspect

1. Changing gloves between patients and hand washing—some incidents of inadequacy were observed.

2. Most important concern of staff—Worries of being infected came first and supply of PPE and discomfort after putting on PPE came second.

3. Number of workplaces being deployed in the last 14 days—all staff replied had worked in one workplace during the last 14 days.

4. Frequency of washing uniform – most of the staff washed their uniform daily. A few washed their uniform every two days.

5. Distance between patients—2 units have reported of a distance less than 3 feet. The rest were all more spacious

6. Improper use of PPE and practice—a number of units have reported of improper practices.

Actions taken by Hospital

1. All workplaces have a gown-up and gown-down areas installed;

2. All workplaces with 'airmate' were requested to have detail documentation of the maintenance and usage.

3. Disinfection of goggles were done centrally;

4. Shower facilities shall be installed at workplace;

5. Standard packages of PPE were arranged to put in each E-trolley. Muscle relaxants were put into the fridge with a card reminding staff at the E-trolley.

6. More continue education was provided to improve infection control practice.

Tuen Mun Hospital –Infection Control Audit

Date of audit: May 2003

Audit /Inspection type: Audit (HO inspection checklist incorporated)

The audit was carried out by a conjoint team of Infection Control Audit Team of TMH and Workplace Inspection Team of HAHO. 29 units were audited in May 2003.

The tool used was a checklist designed by TMH taking reference to the HAHO inspection checklist.

Deviations were identified and actions were taken to remedial the problems. A second round of audit was carried out for those having low scores at the first round and improvement were seen.

The Audit Team has concluded that the exercise has helped gathering valuable information for providing insight, effective for ensuring infection control and heightening of alertness of staff.

A report of the audit was furnished by the Infection Control Audit Team of the Hospital.

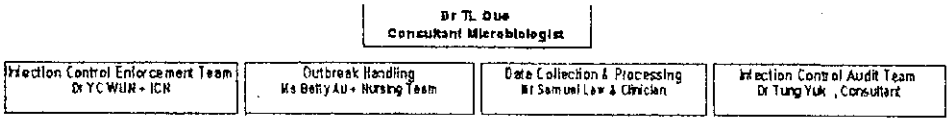
Report on
Infection Control Audit on SARS Precautions
in Tuen Mun Hospital

Prepared by
Infection Control Audit Team
Tuen Mun Hopsital
June 2003

Background

Concerning the Outbreak of Severe Acute Respiratory Syndrome (SARS) in Hong Kong and infections among Health Care Workers , New Territories West Cluster had strengthened the organization of the Infection Control Team as a contingency measure .

ORGANIZATION OF INFECTION CONTROL TEAM FOR SARS IN TUEN MUN HOSPITAL



- **Formulate Standard**
- **Enforce Practices**
- **Advices on PPE/ Daily operation**
- **Resources Evaluation**
- **Staff Communication**
- **Outbreak Investigation**
- **Contact Tracing**
- **Update Clinical Data**
- **Compile SARS Statistics**
- **Checking Compliance**
- **Filing Alert to Workplaces**

Infection Control Guidelines become well consolidated afterwards. Upgrading process to Isolation Ward Standard was also completed in all acute wards in mid-April. As the hardware for SARS Infection Control was readily available, audit exercise aimed at effective implementation and strict compliance of Infection Control Measures in all workplaces were emphasized .

The Infection Control Audit Team TMH was headed by Consultant Dr Tung Yuk . As another team from HAHO Infection Control Task Force also planned to do similar audit on Infection Control in Tuen Mun Hospital , the two teams were collaborated to improve efficiency and reduce interference to the workplaces.

Infection Control Audit Team TMH :

Conjoint Team : *Infection Control Audit Team TMH & Workplace Inspection Team HAHO*

Team Head : Dr Tung Yuk (Consultant)

Team Members :

Loo Ka Tai	Clinical Pathology	Consultant
Man Chi Wai	Surgery	Consultant
Chan Wing Chung	Diagnostic Radiology	Department Manager
Y C Wun	O&T	Senior Medical Officer
Lai Yuet Yee	Physiotherapy	Physiotherapist I
Wo Chun Kuen	Surgery	Registered Nurse
Esther Siu	O&G	Nurse Specialist
Ng Suk Hing	Diagnostic Radiology	Registered Nurse
Wong Wai To	Clinical Pathology	Medical Technologist
Daisy Yeung	Clinical Pathology	Medical Technologist
Tsang Mo Fan	O&T	Registered Nurse
Ng Wai Po	ICN	Registered Nurse
Chow Man Sing	ICN	Registered Nurse
So Shui Mei	ICN	Registered Nurse

Methodology :

Basically, the audit format was based upon the HAHO Inspection Team Audit Checklist with some refinements. The Audit checklist is attached for reference

It consists of 2 parts:

(a) On knowledge & awareness, IC organization , environment & PPE ,minor staff and visiting policy, staff of 3 different ranks (WM/NO; RN/EN; Ward Clerk/HCA/minor staff) were interviewed.

(b) Observation on actual IC practices inside the ward.

Majority of the survey were designed and conducted through series of Closed Questions (Yes or No). The percentage of "YES" return would indicate positive response, which reflect favorable infection control practices.

Some Open Questions were also included in the checklist for staff knowledge evaluation and staff opinion evaluation.

Audit Result:

29 Different workplaces were inspected during the exercise in May 03 by the audit team.

The data collected were summarized in the 2 tables attached.

Those workplaces could basically categorized into 5 groups:

(a) SARS Wards & Intensive Care Unit
(b) Medical Non-SARS Wards
(c) Other Acute Wards
(d) Mental Health Units & Psychiatric Ward
(e) A&E Department & X-Ray Department

General Remarks:

In general, all workplaces had developed their Infection Control Enforcement Team with designated Co-ordinators in every shift duty. Nearly all staff received some form of Infection Control Training for SARS precautions. Awareness and Knowledge on infection control among staff were good.

Concerning the quantity & quality of the PPE supply, 93.1% of the staff in the 29 workplaces were satisfied with the current situations. Intolerance after prolong use of PPE was a common concern in different workplaces.

Inadequate Hand Washing after patient contact was a common deviation.

Improper use of PPE outside Isolation Area was also noted occasionally.

(a) SARS Wards & Intensive Care Unit

- All SARS Wards and ICU scored well in the audit. Staff in those workplaces were practicing Hot/Warm/Cold zone concept. High degree of awareness and alertness was noted. Supervision of infection control precautions was strict and effective.
- Staff working in the hot zone were using double glove practices. But the principle of frequent changing gloves and hand washing was observed. Alcoholic Disinfection were used when handwashing facilities not readily available.
- PPE supply was satisfactory.
- The deficiencies observed were mainly related to the constraint of space. The Gown-up and de-gown area were suboptimal in term of the space available for proper application and safe removal of PPE. The situation was worse in ICU .
- There were also shortage of spaces for proper disinfection of reusable PPE.
- Team spirit was high while concern about being infected whilst at work existed.

(c) Medical Non-SARS Wards

- Isolation Ward Standard was confirmed and principles were followed.
- All Medical Wards were up to standard (Scored > 80 in term of "Yes Return" in the Checklist) particularly for Infection Control Knowledge & Infection Control Organization
- 4 out of the 8 Medical non- SARS wards were found to have area of deficiencies for improvement and reinforcement in IC practices
- Observed deviations from Infection Control Practices:

  Inadequate hand washing
  Not changing gloves between patients, esp. with clinicians
  Absence of soap/disinfectant for washing basin inside sluice room
  Absence of alcohol/hexol spray in degowning area inside fever cohort area
  Plastic curtain still hanging in fever cohort area with staff observed touching the curtain
  Plastic curtain still hanging in cubicles (against the ventilation principles)
  Improper use of PPE for some staff (part. Contractor Staff)
  E-trolley not properly equipped
  Patient clustering in a cubicle
  Bedpan round in practice
  Urinal with urine inside hanging on a trolley inside sluice room with danger of splashing

- Feedback gathered in the Workplaces

  Some doctors still do not remove gloves after patient contact,
  IC safety controller , most are nurse, found difficulty to enforce patrol on doctors
  Frequent changing in guidelines make the staff difficult to follow
  More training with actual role play, e.g. role play on handling of excreta needed
  More Face-to-face and on-site education & Training were expected
  Too frequent changing of central pool and contracted team staff making training difficult
  Further enhancement of central training to those central pool and contract team are needed
  Some of the Central pool minor staff failed to comply despite sufficient training & remind

- In summary , the following 6 areas was found to be suboptimal :

  (1) Inadequate Hand Washing and Improper Use of gloves
  (2) Lack of knowledge concerning safe practice of handling patient's excreta
  (3) Insufficient compliance of Isolation Ward Workflow is expected
  (4) Environmental Factors(Overcrowded Ward,Using curtain reduce Exhaust Fan efficiency)
  (5) Suboptimal Infection Control Practice in Clinicians
  (6) Quality of minor staff were highly variable which make training and supervision difficult

(c) Other Acute Wards & Mental Health Unit

- All the Surgical , Orthopaedic , O& G and Paediatric Wards were operating as Isolation Ward Standard
- As the patient load was reduced during the SARS outbreak, staff were more readily to comply with the Infection Control Measures.
- No problem of Overcrowding noted. Cohort cases were managed in small cubicles with adequate spacing with SARS precautions.
- Some confusion about excreta handling did exist.
- Inadequate Hand Washing was noted occasionally.
- Some E-trolley was not equipped with PPE
- Concern about frequent update or change in the Infection Control Guidelines was raised

(d) Mental Health Unit & Psychiatric Ward

- MHU & Psychiatric Wards were considered to be moderate risk area. The infection Control principles for Fever Cases Cohorting was satisfactory. Isolation policy was effective.
- It was well understood that patients in MHU or Psychiatric Wards seldom able to tolerate wearing mask.

(e) A&E Department & X-Ray Department

- The AED & X-ray Department scored low in the Audit Round
- The nature of services of AED & X-ray Department were known to be very different from other Clinical Departments. The Isolation Principles operating in those Clinical Department were not expected to be fully implemented in both AED & X-ray Department.
- Concerning the Infection Control Education, Staff in AED preferred more face-to-face training and direct communication.
- Inadequate Hand Washing and improper use of gloves was noted in both AED & X-ray department.
- The Clean and Dirty Zone demarcation were not well defined in both Departments.
- Designated waiting zone for high-risk case was implemented in X-ray department.
- Heavy patient and material traffic in both departments imposed difficulty in infection control implementation

Discussion

(a) SARS Wards & Intensive Care Unit

Staff working in those workplaces satisfied with the supply of high level PPE . Zoning concept was well observed and utilized to limit unnecessary traffic within the workplace.

There is no easy solution to the problem of inadequate space for further improvement of the Gowning, Degowning and PPE disinfection. Limiting number of staff in the treatment room for decontamination was crucial in the present setting. Staff appeared readily to comply and quite considerate to other colleagues.

Team spirit was high and mutual support among staff were appreciable.

(b) Medical Non-SARS Wards

The Medical Non-SARS Wards were considered to be high-risk area. A number of hidden cases of SARS carrier might appear in General Medical Ward and impose risk of catastrophic cross infection. Although most Medical Wards did not score badly, Further enhancing the compliance to the Infection Control Measures in Medical Wards was definitely expected.

With reference to the audit observation, we witnessed some delay in replacing the old work culture to the Anti-SARS Infection Control Awareness & Alertness.

Further enforcement exercise would become necessary to correct those deviations in Infection Control Practices. A second round of Audit Exercise was performed on 19.05.2003. Details of the follow-up action will be discussed in the next session.

(c) Other Acute Wards

Deviation of Infection Control Practices mainly related to inadequate hand washing and improper use of gloves. Performance of minor staff , eg contracted GCA , GSA , was quite variable and close supervision was needed.

Dress code for escorting patient to and from Operating Room had to be clarified to ensure proper use of PPE.

(d) Mental Health Unit & Psychiatric Ward

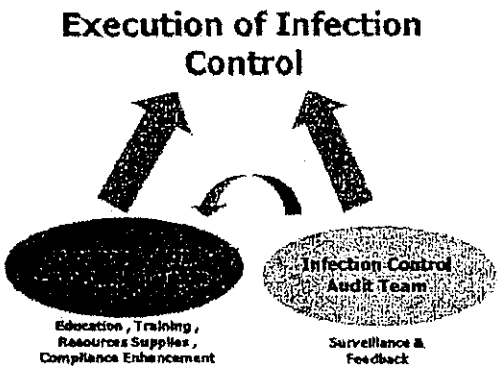
Those workplaces were not feasible for isolation practices .The existing cohort area and policy is satisfactory and adequate for the ongoing operation of the unit.

(e) A&E Department & X-Ray Department

The design of the checklist may not be applicable to specific type of workplaces. The isolation setting and infection control practices in AED & X-ray departments are very different from clinical ward setting. The low score attained by both departments might be accountable. But the crucial basic principles of infection control measures like handwashing, proper triage and isolation of at risk cases still have to be stressed.

Follow-up Action and Infection Control Measure Implementation

The Infection Control Team worked closely with the Hospital Administration and Infection Control Enforcement Team Tuen Mun Hospital. Follow-up action was planned and executed, as the observations from the audit result were available and analyzed.



Phase 1:

Identification of Deviations Common in most Workplaces and Implement Improvement

The 4 common deviations those required improvement of high priority were as follows:

(1) Inadequate Hand Washing and Improper Use of gloves
(2) Safe practice of handling patient's excreta remained unclear
(3) Strict Compliance of Isolation Ward Workflow is expected
(4) Environmental Factors(Overcrowded Ward, Using curtain reduce Exhaust Fan efficiency)

Exercise of "*Enforcement of Infection Control Practice --- 4 Emphases* " was launched and announced openly in CCE forum about the expectation of full implementation. Details were put on the Intranet web for reference.

Hand Washing

Adequate Hand Washing and proper use of gloves was further stressed by CCE in the "Special Message" in the NTWC SARS Web page.

Continuous surveillance of the practice of Hand Disinfection in different workplaces was conducted by Infection Control Enforcement Team and Workplace Safety Controllers.

Proper Handling of Patients' Excreta

Guidelines for the proper handling of excreta was further simplified to an easily comprehensible pattern for all staff by ICN. In addition, instruction with step-by-step illustrations was also prepared , distributed and launched in the intranet WebPages.

Focus training designed particularly for minor staff was conducted by ICN. 3 intensive training courses on excreta handling were held on 19,22& 23 May 03. Over 300 staff attended the courses.

Frequent patrolling and on-site guidance with drilling by ICN and Infection Control Enforcement Team were executed after formal training provided.

Review the performance of the existing bedpan-washing facilities was done. The hospital administration was advised to install more bedpan washers and renew the old ones.

Standardization of Isolation Ward Setting

To ensure effective operation of isolation policy in all acute ward, the standard of setting workflow was further consolidated. The standard isolation ward design was announced in CCE forum, launched in the SARS Intranet web site with photographs illustration and E-mail to all DOM and Ward Manager.

One Medical ward was chosen to be prepared as " Model Sample" for reference to other ward for improvement of the existing isolation design.

On site advice for the set up was also provided to individual workplace by ICN and Infection Control Enforcement Team.

Environmental Factors

CCE endorsed the policy of limiting the bed stat to no more than 34 patients per ward. In addition, spacing out patients within the ward was strongly recommended.

Recruitment of the Ward B7 & T8, utilization of their single/double room facilities , as high infectious risk medical ward was completed in early June to alleviate the overcrowding condition in the fever cohort in general medical ward.

The ventilation and airflow within the workplaces was further explained to ward managers and the infection control safety controller. The adverse effect of the curtains to overall air exchange was explained and accepted. Unnecessary curtains were subsequently removed.

All wards were also requested to reserve and explored showering facilities for staff to achieve quick decontamination when necessary.

Phase 2

Follow –up action to Individual Department

Medical Non SARS Ward

The audit result was feedback to the workplaces and the relevant department. Recommendation for improvement and implementation were provided by the Infection Control Core Team and Infection Control Enforcement Team.

To ensure improvement of the infection control practices, second audit round was conducted in the 4 medical wards those had scored low in the first audit round. Definitive improvement was seen. Recommendations raised after the first audit round were well implemented. To further improve communication, the Infection Control Audit Team also interviewed the ward managers of the 4 medical wards with CGM(Nursing) and the ICN team on 30th May 03 probing into their difficulties and problems.

Concerning the problem of inadequate hand washing among clinicians, the Infection Control Audit Team sent a reminder to the Chief of Service to reinforce all medical staff to follow the practice of removing all gloves and wash hands after every single patient contact.

Problem of variable quality and performance of minor staff was addressed and reflected to the administrative Department for subsequent action.

AED & X-ray Department

The Safety Controller of both Departments were interviewed and the problems identified in the audit round was reflected. The condition of high patient load and heavy traffic in those two departments was understood.

The Safety controller promised to put more emphasis on face-to-face training and on-site supervision to the staff. Stock of PPE was confirmed to be sufficient but better communication between the senior staff and the frontline staff was recommended.

The Safety Controller of X-ray department expressed the difficulties for full compliance of infection control measures in certain area. Direct communication and advice were provided by the Enforcement Team Co-ordinator to settle the existing difficulties and ensure implementation.

Guideline on " Proper use of PPE - - Dress Code in Communal Area" was issued by the Infection Control Enforcement Team to assist staff in performing escorting duty or Portable X-ray Examination.

Other Workplaces

The audit result was also feedback to other department and recommendations were provided by the Infection Control Enforcement Team if necessary.

Phase 3

Continuous Enhancement & Improvement Work

Establishment of "Coaching & Reviewing Team"

In order to reinforce infection control awareness and ensure practices are in line with the infection control guidelines, it was decided that a "Coaching & Reviewing Team" would be formed and would round all the wards from 5 June 2003 in Tuen Mun Hospital. The team aims at improving individual skills and operational effectiveness on infection control issues, with the following objectives:

1. Review and give feedback on operation and environmental layout on infection control issues
2. Upgrade individual skills in handling PPE and infection control issues
3. Reinforce positive attitude in the management of Infection Control

Wards were reviewed by the designated CRT members. Discussion were made and immediate feedback was given to the staff on inappropriate practice or non-compliance with prompt improvement expected.

Inspection of all the workplaces in Tuen Mun Hospital was completed in mid June. Round table discussion with the Infection Control Core Team and Enforcement Team was held afterwards. It was concluded that more frequent on-site coaching for infection control practice would be more effective and successful.

Strengthen the education and training to minor staff

As observed from the audit round and staff feedback, we are obliged to strengthen the training and support to minor staff for infection control.

Regular and continuous formal training for supporting staff was organized by designated staff from Nursing Service Department. In addition, more direct coaching was enforced by the ICN team.

More communication channels for supporting staff, specific open forum, was established to reflect their need to the Administration Department.

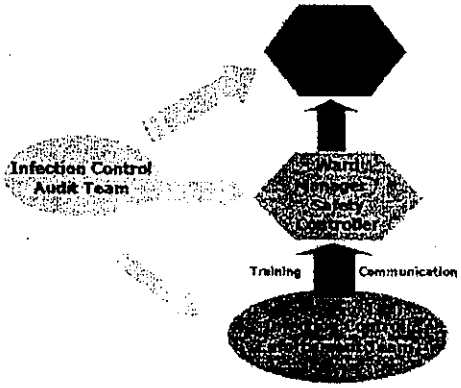
Further Improvement work

For continuous quality infection control practice, the following improvement work will be accomplished.

- Better design of SARS Ward
- Better availability of interim isolation facilities
- Enhance hand-washing facilities and Bedpan washer facilities
- Spacing out beds in ward
- Better utilization of ambulatory and community care model to reduce in-patient load

Conclusion:

The Infection Control Audit Exercise performed in workplaces in Tuen Mun Hospital gathered valuable observation and information to the hospital administration and the Infection Control Team. It provided the correct insight for enforcement of infection control against SARS in the Hospital.



The collaboration working partnership of the Audit team and the Enforcement team have been proved to be effective for ensuring infection control compliance and alertness among staff.

Report 14

TWGH Wong Tai Sin Hospital- Infection Control Audit

Date of audit: 19 May to 2 June 2003

Audit/ Inspection type: Audit (self designed)

WTSH was turned into a SARS convalescent hospital in April 2003. Some other patients were also transferred to the hospital and cohorted for special obsevation.

Self designed audit tools were used and three audit reports were prepared by the Infection Control Nurses:

1. Tidiness and cleanliness of changing room;
2. Compliance on de-gowning procedures;
3. Compliance of putting on PPE.

The overall compliance rate was good and actions were taken to remedial all problems identified.

Copies of the reports are attached for reference.

東華三院黃大仙醫院

感染控制組

更衣室整齊及清潔審核報告

目的: 審核病房內更衣室的整齊及清潔程度

對象: SARS 病房內更衣室

樣本數目: 102 (每病房於不同時段每日審核一次)

審核期: 2003 年 5 月 19 日至 5 月 31 日

審核員: 感染控制聯絡護士

方法: 審核員跟據審核表審核

結果: 參看下頁

總結:

1. 下列各項請各同事注意跟進及改善
   - 1.1 病房 A1&A2、A5、A3&A4、A7、A8 工作服誤放在非其所屬的尺碼的櫃內。
   - 1.2 病房 B1 的同事數次把工作服/制服留在掛几上，沒有放置在適當的架上。
   - 1.3 病房 A5、B1、B2 、A7 的同事把制服/工作鞋擺在不適合的鞋架上。
   - 1.4 病房 A7、A8 的地面有少許濕滑。
   - 1.5 病房 A5、A8 污衣桶過滿令污衣外露。
   - 1.6 病房 A8 的同事棄置污衣的方法不當，致令部份污衣露出桶外。

2. 各項的達成比率平均皆高於 93%，顯示更衣室的整齊及清潔程度良好。病房 A8 一些項目的達成比率稍低，將會再次進行審核。

	項目	資料來源	達成比率								
			A1&A2 n=13	A5 n=13	A6 n=13	A3&A4 n=12	B1 n=12	B2 n=13	A7 n=13	A8 n=13	整體
1	各種保護衣物按照指示分類放置	觀察	100%	100%	100%	100%	100%	100%	100%	92%	99.0%
2	清潔的工作服按照指示分類放置										
	2.1 顏色	觀察	100%	100%	100%	100%	100%	100%	100%	100%	100.0%
	2.2 尺碼	觀察	92%	92%	100%	83%	100%	100%	85%	92%	93.1%
3	現用工作服放置位置										
	3.1 工作服掛架上	觀察	100%	100%	100%	100%	100%	100%	100%	100%	100.0%
	3.2 工作服黑衣架上	觀察	100%	100%	100%	100%	92%	100%	100%	100%	98.8%
4	制服放置位置										
	4.1 制服掛架上	觀察	100%	100%	100%	100%	75%	100%	100%	100%	97.1%
	4.2 制服白衣架上	觀察	100%	92%	100%	100%	100%	100%	100%	100%	99.0%
5	工作鞋擺放在工作鞋架上	觀察	100%	92%	100%	100%	83%	92%	92%	100%	95.0%
6	制服鞋擺放在制服鞋架上	觀察	100%	100%	100%	100%	83%	100%	100%	100%	98.0%
7	洗手物品供應										
	7.1 有抹手紙	觀察	100%	100%	100%	100%	100%	100%	100%	100%	100.0%
	7.2 有洗手液	觀察	100%	100%	100%	100%	100%	100%	100%	100%	100.0%
8	地面										
	8.1 不濕滑	觀察	100%	100%	100%	100%	100%	100%	77%	77%	94.1%
	8.2 沒有垃圾	觀察	100%	100%	100%	100%	92%	100%	100%	100%	99.0%
	8.3 沒有已使用過的保護衣物	觀察	100%	100%	100%	100%	100%	100%	100%	100%	100.0%
9	污衣的放置										
	9.1 污衣桶沒有過滿而致衣物露出桶外	觀察	100%	92%	100%	100%	100%	100%	100%	85%	97.1%
	9.2 沒有污衣放置不當而露出桶外	觀察	100%	100%	100%	100%	100%	100%	100%	69%	96.1%
10	垃圾桶沒有過滿至不能蓋上桶蓋	觀察	100%	100%	100%	100%	100%	100%	100%	100%	100.0%
	整體		99.5%	98.2%	100.0%	99.0%	95.6%	99.5%	97.3%	95.1%	98.1%

東華三院黃大仙醫院

感染控制組

除去保護衣物審核報告

目的： 審核員工於污染區工作後是否按既定的指引除去保護衣物

對象： 離開污染區的員工

樣本數目： 共 385 人次，包括護士(162)、病房助理(159)、醫生 (31) 、專職醫療人員(25)及支援人員(8)

審核期： 2003 年 5 月 19 日至 6 月 2 日

審核員： 感染控制聯絡護士

方法： 審核員跟據審核表來審核

結果：

	項目	資料來源	達成比率					
			護士 n=162	病房助理 n=159	醫生 n=31	專職醫療人員 n=25	支援人員 n=8	整體
1	已除藍紙帽	觀察	100%	100%	100%	100%	100%	100.0%
2	已除全面罩* (如適用)	觀察	100% n=88	100% n=88	100% n=22	100% n=17	100% n=8	100.0% n=223
3	已除眼罩/護目鏡	觀察	100%	100%	100%	96%	100%	99.7%
4	已除保護大衣	觀察	100%	100%	100%	100%	100%	100.0%
5	已除白色袍** (如適用)	觀察	100% n=22	100% n=28	100% n=6	100% n=5	-	100.0% n=61
6	已除鞋套	觀察	100%	100%	100%	100%	100%	100.0%
7	已除手套	觀察	100%	100%	100%	100%	100%	100.0%
8	最後在 Nursing Station (2) 洗手	觀察	100%	100%	100%	100%	88%	99.7%
	整體		100.0%	100.0%	100.0%	99.5%	98.2%	99.9%

*只用於高危程序

**只適用於用於胸肺科，非強制性使用。

總結：

(1) 有一位專職醫療職系的同事忘記除下眼罩/護目鏡；另有一位支援人員忘記最後在 Nursing Station (2) 洗手，感染控制聯絡護士已提醒同事補做。

(2) 各項的達成比率平均皆高於 99%，顯示絕大部份員工在離開污染區後皆除去保護衣物及洗手。

東華三院黃大仙醫院

感染控制組

穿著保護衣物審核報告

目的： 審核進入污染區的員工是否穿上合乎既定指引的保護衣物

對象： 進入污染區的員工

樣本數目： 共 379 人次，包括護士 (157)、病房助理(159)、醫生(32)、專職醫療人員(26)及支援人員(5)

審核期： 2003 年 5 月 19 日至 6 月 2 日

審核員： 感染控制聯絡護士

方法： 審核員跟據審核表來審核

結果：

	項目	資料來源	達成比率					
			護士 n=157	病房助理 n=159	醫生 n=32	專職醫療人員 n=26	支援人員 n=5	整體 n=379
1	已戴上藍紙帽	觀察	100%	100%	100%	100%	100%	100.0%
2	已戴上眼罩/護目鏡	觀察	100%	99%	100%	100%	100%	99.7%
3	已戴上全面罩* (如適用)	觀察	96% n=67	98% n=84	95% n=18	95% n=21	100% n=4	96.5%
4	已換上 N95 口罩	觀察	100%	100%	100%	100%	100%	100.0%
5	已穿上工作服	觀察	100%	100%	97%	100%	100%	99.7%
6	已更換工作鞋	觀察	100%	100%	100%	100%	100%	100.0%
7	已穿上白色袍** (如適用)	觀察	100% n=29	100% n=21	100% n=3	100% n=5	-	100.0%
8	已穿上保護大衣	觀察	100%	100%	97%	96%	100%	99.5%
9	已穿上鞋套	觀察	100%	100%	100%	100%	100%	100.0%
10	已戴上手套	觀察	100%	100%	100%	100%	100%	100.0%
	整體		99.6%	99.7%	98.8%	99.2%	100.0%	99.5%

*只適用於高危程序

**白色袍只適用於胸肺科，非強制性使用。

總結：

(1) 各職系皆有同事忘記佩帶全面罩，感染控制聯絡護士已提醒同事在未入污染區前補戴。

(2) 有少數醫生職系及專職醫療職系的同事忘記穿上保護大衣，感染控制聯絡護士已提醒同事在未入污染區前補穿。

(3) 各項目的達成比率平均達 96%或以上，顯示絕大部份同事皆接既定的指引穿著保護衣物。

United Christian Hospital—Infection Control Inspection

Date of inspection: 13 May –17 June 2003

Audit/ Inspection type: Inspection

United Christian Hospital has had 7 wards (5 adult wards, 1 pediatric and 1 ICU) receiving SARS patients during the peak of the outbreak.

45 clinical units were inspected and the HO Inspection Checklist was used as the tool.

Quantitative aspect

There was only one aspect having a compliance rate of lower than 80%.

Qualitative aspect

1. Changing gloves in between patients—inadequacy was observed in 6 wards.
2. Hand washing when changing gloves—inadequacy was observed in 2 wards.
3. Staff's most concerned issues—being infected, asymptomatic patients and supply of PPE.
4. Being deployed to more than 3 working places in the last 14 days—4 staff have reported of being deployed to 3 or more workplaces during the last 14 days.
5. Frequency of washing uniform—all staff replied washed their uniform daily.
6. Distance between patients—4 units has reported of having a distance of less than 3 feet.
7. Improper use of PPE and practice—a few incidents of improper practice were observed.

Actions taken by Hospital Authority

The hospital management has studied the data collected and remedial actions were taken.

A `Summary of Problem Identified and Action Taken' was submitted and attached for reference.

United Christian Hospital

Workplace Inspection on SARS Precautions
(Nurse Association Team)

Summary of Problems Identified & Actions Taken

According to the raw data (audit form) collected by team members of Nurse Association, it is complied as:

Problems Identified	Actions Taken
1. < 50% fellow workers change gloves in between patients	● I C Coordinators in the workplace are reminded to reinforce established IC policy including change of glove in between patients.
2. Some staff did not know how to respond when splashed by respiratory secretions or body fluid of patient.	● Regular communication with staff to reinforce established IC policy including how to respond when splashed by contaminants. ● Shower packs are available in wards to facilitate staff to take a shower immediately when splashed by secretion or body fluid.
3. The staff's most important concerns are: Asymptomatic SARS patients, PPE supply, health and decrease social life.	● Meetings on PPE for SARS are regularly held to enhance the communication between P&S department and clinical departments. ● SARS information and IC precautions are frequently updated and communicated to staff via various channels such as UCH's web page, open forums , emails and circulars. ● Provide psychological support to staff and encourage them to seek advice from counsellors when necessary.
4. No partition to guard against inadvertent intrusions in gowning up area by person wearing potentially contaminated PPE.	● Regular communication with staff to reinforce established IC policy including not to intrude gowning up area when wearing potentially contaminated PPE. ● Notice at entrance to remind staff. ● Patrol and daily briefing are carried. ● One-way flow path is established in some workplaces.

5.	Feedback / Concerns about PPE: a) Allergy to PPE (such as skin rash, running nose and coughing) b) Water resistance disposable gown (discomfort, not transpired and not tight collar)	In order to address the concerns of staff, there are: ● Alternative PPEs provided include latex-free surgical glove, different model of N95 and N100. ● Meetings on PPE for SARS are regularly held to collect feedback on PPE and to enhance the communication between P&S department and clinical departments. ● Water resistance/ repellent disposable gowns are provided. ● Additional uniforms are provided and staff are encouraged to change uniform as well as gown when necessary. ● Staff are encouraged to have short break when necessary. ● Advise staff to tie up the strap of gown collar properly.
6.	Some contractor staff cannot correctly identify which of her duty has a higher risk.	● Encourage workplace IC coordinator to brief minor staff (& contractor staff) which of her duty has a higher risk, IC measures and related issues daily.
7.	There are inadequate notice/ posters to remind staff & visitors of SARS precautions in CNS and 13B	● Hand washing, application of N95 mask , and fit checking method posters have been distributed and posted in all departments ● Advise workplace IC coordinator to post up adequate notice/ poster of SARS precautions.
8.	The resuscitation trolley is adequately equipped. However, Air-mate need to be borrowed from other department	● More Air-Mate have been procured and allocated to each department.
9.	<10% of patient did not willing to wear a mask	● To remind staff to keep high vigilance and to explain repeatedly to those patients who are uncooperative / refuse to wear a surgical mask.
10.	There was no gowning up area in Psychiatric OPD.	● Gowning up and gowning down have been set up in Psychiatric OPD.

Report 16

Yan Chai Hospital—Infection Control Inspection

Date of Inspection : 17, 22, 23 April & 2, 29 May 2003

Audit/ Inspection type: Inspection (self designed)

A report of the inspection is attached for reference.

Progress Report of Managing SARS in Yan Chai Hospital

A) Introduction

When SARS was noted at the early March, re-inforcement of infection control measures as our isolation guidelines has been initiated in all clinical areas accordingly. The step up measures were initiated in April and the details of progress of the managing SARS in YCH is summarized in the following part.

B) Infection Control Measure

I) Re-arrangement Service Meeting

To participate in the meeting to provide infection control advise, when necessary since April 2003.

II) Infection Control Talks

To equip the staff to protect themselves from infection including SARS. The infection control talk on mandatory basis were initiated on 2 April 2003. The details of talks / briefing are as belows :

1) Briefing

No.	Date	Ward / Areas	Remarks
1.	15.4.2003	N11 / S11	Demonstration : Gowning on & off
2.	15.4.2003	ICU	Demonstration : Gowning on & off
3.	17.4.2003	Medical Department	Degowning
4.	26.5.2003	SDC	Reassure staff after the event-environmental contamination by excreta
5.	28.5.2003		

2) Education talks : (1 hour) 36 talks on isolation precaution guideline and SARS precautions were held during 2 April to 23 May (appendix 1)

	No. of talks	Description of Talk	Remarks
	19	Open to all staff	
	17	Tailor-made for ward / units on request and conducted in their areas	Pharmacy : 1 Medical : 4 (13S, 13N. 11S, 15S) Paed : 2 A&E : 2 Surgical : 1 O&T : 1 X-ray : 1 General Adm : 2 H.F.O. : 2 Pathology :1
Total	36		

Total Attendance : 1508

3) Refreshment talk : To reinforce the SARS precautions to staff starting from 6 May.
(45 Mins) The details is as follow (appendix 2)

Date	No. of talks	Target Group
26 & 29 May	2	HCA / GSA / Portering / Artisan
6, 13, 20 & 30 May	4	Open to all staff

III) Recommended Infection Control Measures Against SARS :
Start masking at all times on 24.3.2003

Recommended Infection Control Measures	Effective date	Other measures
1st edition	11.4.2003	1) 25/4 Method of goggle decontamination distributed
1st revision	24.4.2003	2) 30/4 PPE kit for resuscitation : equipped with 3 sets of N95 & N100 mask and face shield
2nd revision	28.4.2003	
3rd revision	13.5.2003	Ambu-bag connecting to viral filter when stand-by.
4th revision	26.5.2003	
Revision on portering	6.6.2003	

IV) Formation of Infection Control Enforcement Team

1) This team was formed on 11.4.2003. Member list (appendix 3)

2) Medical staff of each specialty as a contact person is added on 6.5.2003.

3) 1st team meeting was held on 28.4 while the 1st Dr's meeting held on 12.5.2003.
i) Matters discussed and managed are summarized as follows :

Meeting	Date	Presentation	Problems raised	Follow-up action
1st	28.4.03	1) Objectives of the team 2) Revised version of Infection Control Measures against SARS 3) Demonstration of removal of all PPE, closed method of removing gloves and gown.		
2nd	5.5.03	1) Discuss the most update Infection control measures (2nd revision) 2) Demonstration of removal of all PPE, closed method of removing gloves and gown.	1) Gown : overheating	Check temperature and it is around 23-24.
			2) Size of the rubbish bin too small, stainless steel one is desirable	To explore suitable size
			3) Unco-operative visitor, if control can be at entrance	Help desk initiated 30.5.2003
			4) Relocating tea room outside the ward	To vacate the common area for this
			5) Porters wear gloves at all times	Re-inforce by education and advise when occurs
			6) Changing room in block E over crowded	Site visit after meeting and raised in coming re-service meeting : Trying to space out.
			7) Handwashing basin of N11 too small	Replaced by a better one

Meeting	Date	Presentation	Problems raised	Follow-up action
3rd	13.5.03	1) The latest Infection Control Recommendation (3rd revision) 2) Proper use of PPE 3) Keep vigilance though cases reported are falling 4) Proposal lift for patient transport		Initiated lift 1 & 2 as patient transport.
1st Dr's	12.5.03		1) Instruction for use of gown : water proof and repellent. 2) Demand for waterproof cap 3) Hospital should i) have plan to upgrade hospital's hardware. ii) Fever cohort system 4) Supply of N100 5) Designated patient transport lift 6) ICU Dr : disposable gown to rush between ICU and ward for urgent consultation	Explained the use and labelled in June. Support sent to supply Raised in re-service meeting for long term goal. In Practice Provided since April Initiated later Revised guideline : 13.5.03
4th	20.5.03	1) Update Infection Control Guidelines	1) Visitor restriction 2) Lack of clear instruction of Barrier man which is provided in ward 3) Lack of clear explicit guideline on management of staff having fever to enforce to seek medical assistance 4) Frontline manager : difficulty when staff not under charge of the manager at the work site violated infection control measure.	Help desk initiated 30.5.03 Explained the risk and not recommended by infection control Memo issue on 27.5.03 on instruction to attend medical assistance. Empowered to advise and report to Infection Control. If not co-operative yet, advise to leave.
5th	27.5.03	1) Update the latest Infection control recommendation (4th revision) 2) Discuss about the audit on Infection Control 3) Distribution of CD : degowning and proper dress 4) Follow-up : if barrier man used by medical staff	1) Gown : Lack of size marker 2) Patient reported coronavirus 1 week after death. Ward staff came down to mortuary for bagging the dead. Ask for preventive measures 3) ? Adequate information given to relative of deceased SARS patient	Hospital administration will look into this matter and explore possible solution To explore other hospitals practices after being tabled in the re-service meeting Given already Medical staff of medical department will try to see their department's choice and report later. Advise the risk.

Meeting	Date	Presentation	Problems raised	Follow-up action
6	6.6	1) Report the follow-up action by the last re-service meeting 2) Discuss the revised audit tool		Feedback / Comment can be forwarded to ICT before 13.6 and the audit'll be performed before end of June. Before audit, a briefing to train the rater will be provided.

ii) Hospital round to see the infection control practices was performed as belows :

No. of round	Date
1st	17/4, 23/4
2nd	2/5
3rd	29/5

Problems on 17/4 & 23/4	Follow-up (2/5 & 29/5)
1. Gloves and gown not removed immediately after patient care	Continue to advise and improving
2. Improper disposal of used contaminated gown and equipment in some wards.	Bigger waste-bin provided to cope with the increasing waste generation and continue to explore better one.
3. Handwashing facilities are not properly used.	Most put into service and equipped with soap and paper.
4. Some patient do not have mask on.	Continue to advice
5. Hospital records are placed too close to patients.	Some departments have moved the notes beyond patient's table.
6. Personal belonging ↑	Continue to advise and seems ↓
7. Linen curtain : suggested to be replaced by plastic.	explore washable type to change more frequently.
8. Massive increase in waste generation.	More frequent collection.
9. Requiring N95 mask fit test	Initiated in 30 April.

V) **Action done for SARS ward opening** (15 April, decided to withheld the opening)

1) Visit KWH's SAR ward on 12 April 2003. Members included GM(N), ICO, ICN, N16-WM, N11-WM, Medical-DOM, Surgical-DOM.

2) Briefing session held on AM 15.4.2003
Participants : All staff will be deployed to work at SARS ward (N11, S11) including medical staff, Nurses, GSA, HCA, X-ray, HFO (e.g. WM : Ms Rita Cheng, 14S – Wu S.K., 13N – Lo S. K., 15S – Josephine Wong, Med DOM : Ms R Liu, SMO : Li Kam Yin, Kong Fung Yip, Mo : Chan Kam Hoi, Fok Wai Ming, S.S. Pang & etc)

Practice session : PM 15.4.2003. ICN was present to instruct for proper gowning up and down.

3) Workflow development for ICU & N11 & S11.

VI) Early detection of staff suspect of SARS

1) Reporting system on staff having respiratory illness initiated on 14.3.03 (appendix 4)

   i) A&E / Staff clinic : Report staff attending for the respiratory illness to ICT on a daily basis.

   ii) Other clinical areas : Report staff calling sick and seeked medical assistance outside YCH if reported by staff.

   Upon receiving the notification, ICN will follow up these admitted until SARS ruled out.

2) Contact Tracing
   If a staff is admitted for suspected SARS, the following advice is given to the unit / ward :

   i) Mask and handwashing reassurance

   ii) Mask at all times including social activities and at home

   iii) Health Surveillance for the next 10 days

Summary of the Progress

Case no	Specialty	Date (Admitted)	Rank	Staff involved	Briefing session	Result of Health Surveillance	Final diagnosis	Possible cause
1.	OPD	26.3 (PMH)	EN	All nurses, Dr., HCA, Clerk	2	NO SARS reported	NOT SARS	
2.	Catering	27.3 (UCH)	Cook	All staff in catering	1	NO SARS reported	SARS	Resident of Amoy Garden
3.	A&E	16.4 (TMH)	GSA	All staff in A&E, HFO	2	NO SARS reported	SARS	NOT always wash hands after removal of gloves

VII) Action taken when a patient is confirmed / highly suspect SARS

1) Before HA develop contact tracing guideline :
   All staff have to comply to the following when a patient is suspected highly / confirmed (yielded coronavirus) :

   i) Mask and handwashing reassurance

   ii) Health surveillance for the next 10 days

   iii) Mask at all times including at home & social activities

Case	Ward	Date	*Staff health Surveillance	Patient no. of contacts handled
1	15S	27.3	Well	
2	14S	28.3	Well	
3	15S	28.3	Well	
4	14N	2.4	Well	19
5	12S	5.4	Well	Diagnosed after sending out
6	ICU	16.4	Well	1
7	11N	19.4	Well	0 (single room)
8	11S	23.4	Well	1
Total : 8 cases				

* including all staff

2) After contact tracing guideline has been implemented in HAHO. There are 4 patient yielded coronavirus and the contact tracing involved are listed as follows :

Case	Name of patient (Sex / Age)	Wards	Date of + ve Result	Contact involved		Result
				Patient	staff	
1.	[redacted] (F / 32)	N11	7.5.03 (PCR +ve)	4	All	All reported well
2.	[redacted] (M / 58)	S14 S11 ICU	9.5.03 (Clinical)	4	All	All reported well
3.	[redacted] (F / 79)	S11 S13 E10	14.5.03 (Died 10/5) (Coronavirus +ve) Final result : HSV1	42	All	All reported well
4.	[redacted] (F / 69)	N13	15.5.03 (PCR +ve)	29	All	All reported well

VIII) Monitoring

1) Availability of the PPE
Performed in May and the result is attached at appendix 5

2) Degowning practice

3) Infection Control Practice related to SARS

IX) Support of Infection Control Practices

Measures	When	Action done	Areas installed more basins
Handwashing basin	Since March	Activated and installation more basins to facilitate handwashing	1. Fever cohort 2. 16N 3. A&E 4. Paed 5. Other areas in progress
Goggle	Mid April	One staff one goggle implemented in early April	
Handrub	Mid April	Implemented	
PPE kit in E-trolley	End of April	N95 N100 Face shield Antiviral filter connecting to Ambu-bag	
Uniform	Early April	Daily change of uniform	All nurses and then extend to all staff requiring uniform
Self PPE	End of May	Memo to inform staff the self-provided PPE have to be consulted Infection Control Team for advice on safety for staff and colleagues	All clinical areas
Enforcement for seeking medical assistance if falling sick	End of May	By April, staff are provided thermometer to check temperature before duty. A memo to remind and enforce was issued by end of May.	

Workplace Inspection Checklist on SARS Precautions **Appendix 1**

Fax report to HO Infection Control Task Force at 21946049

Guidelines for Inspectors:

1. Do not inspect if the workplace (i) has been inspected or audited within 14 days; (ii) is busy and no staff can be spared for interview.
2. Explain your purpose and establish rapport / understanding with staff before inspection.
3. Limit each inspection to no more than 30 minutes even if the checklist cannot be completed.
4. Do not advise apart from obvious deviation from basic IC practices (e.g. inadequate hand washing, reuse isolation gown, etc.) or on practices that could cause serious harm to patients / staff. Even good ideas could have unintended outcomes or may not be practical or immediately applicable, it is therefore better to report your observations and suggestions to HAHO for analysis and planning.

Hospital	Workplace	Date & time of inspection	Inspector

Ask

IC Organization in Workplace	Y	N	Observations	Suggestions
Is there an IC coordinator in the workplace?			Could a junior staff name the IC coordinator? Yes / No	
Have all staff in the workplace received IC training?			If no, estimate percentage:	
Are there regular discussions on IC issues in the workplace?			Frequency: Usefulness: Very / Fair / Not much / No use	
Is there a warden or buddy system to remind workers on IC precautions?			Among doctors / nurses / HCA / minor staff Usefulness: very / fair / not much / no use	
Does your workplace receive the 'SARS battling update' daily?			Frequency: daily / irregular / rarely / none Usefulness: very / fair / not much / no use	
Has the workplace been inspected / audited in the last 4 weeks?				
Awareness & IC practice of HCW	Y	N	Observations	Suggestions
How frequent does fellow workers change gloves in between patients?			Always / often / <50% / sometimes / rarely	
How frequent does fellow workers wash hands when changing gloves?			Always / often / <50% / sometimes / rarely	
What would you do if splashed by respiratory secretions or body fluid of patient?				

What are your most important concerns?				
Environment	Y	N	Observations	Suggestions
Is the gowning up area guarded against inadvertent intrusion by person wearing potentially contaminated PPE?			Patrol / notice at entrance / daily briefing / practice.....???	
PPE	Y	N	Observations	Suggestions
Is there sufficient stock of PPE in the workplace? *				
Are there any complaints about PPE?			List complaint (cause):	
(Ask & check) Are sophisticated & reusable PPEs (e.g. Tight fitting respirator, Air-mate, Stryker hood) adequately maintained?			Not applicable (no such PPE) Record of user training A staff responsible for maintenance Record of use, disinfection & maintenance Signage to indicate fit for use	
Minor staff (& contractor staff)	Y	N	Observations	Suggestions
How many workplaces have you been assigned to in the last 14 days?				
Do you change to working cloths before work?				
Are there changing facilities for you?				
How often do you wash uniform / working cloths?				
Do you receive adequate instruction from nurses?			Daily briefing / before risky procedures / sometimes / rarely	
Can staff correctly identify which of his/her duty has a higher risk?			Dirty utility room / handling bedpan / toilet cleaning	
Visitor	Y	N	Observations	Suggestions
Are visit still allowed (apart on compassion grounds)?			To what extent?	
Does visitor get adequate PPE & instruction?			(Should be similar to HCW)	

Observe / check

Awareness & IC practice of HCW	Y	N	Observations	Suggestions
Is PPE used appropriately in the workplace? *			Doctors: yes / no / not available Nurses: yes / no / not available HCA: yes / no / not available Cleaning workers: yes / no / not available Visitors: yes / no / not available	
Is gowning down properly done?			Overall: satisfactory / unsatisfactory Hand washing: adequate / inadequate Removing apparels: careful / hasty	
Environment	Y	N	Observations	Suggestions
Does the workplace have adequate changing & washing facilities?			(Assess according to risk of SARS) Good / OK / limited / poor (e.g. open area)	How can it be improved?
Are there PPE application & removal instructions in the changing areas?				
What is the average distance between patients (nose to nose distance)?			> 5 feet / >3 & <5 feet / <3 feet	
Is the workplace tidy & clean?			If no, frequency of disinfection & cleaning:	
Are the patient toilets tidy & clean?			If no, frequency of disinfection & cleaning:	
Is the dirty utility room tidy & clean?			If no, frequency of disinfection & cleaning:	
Are there notice / posters to remind staff & visitors of SARS precautions?			Excessive / appropriate / not in the right place / rare / none	
PPE	Y	N	Observations	Suggestions
Are sophisticated & reusable PPEs (e.g. Tight fitting respirator, Air-mate, Stryker hood) adequately maintained?			Not applicable (no such PPE) Record of user training A staff responsible for maintenance Record of use, disinfection & maintenance Signage to indicate fit for use	
Is the resuscitation trolley adequately equipped?				

Do you notice any improper use of PPE?			Double gloving / reuse single-use items / wear used PPE outside workplace / wear PPE (except surgical mask) outside clinical areas	
Patient	Y	N	Observations	Suggestions
What percentage of patients is wearing a mask?			(Excluding the medically & technically unfit)	

*** Personal Protection Equipment**

SARS cohort & other high risk areas (e.g. AED, admission ward, bronchoscopy room, etc.)

Standard PPE

- Disposable cap
- N95 / surgical mask (fit check for N95)
- Protection eyewear (visor is the minimum standard, use goggles +/- full face shield for procedures)
- Uniform (or linen gown protecting own cloths)
- Disposable isolation gown (water resistant or repellent according to procedure)
- Gloves (change after procedure & between patients, must wash hands or use hand rub before putting on a pair of new gloves)

Additional PPE for high risk procedures

Other clinical areas (considered lower risk)

Standard PPE

- Surgical mask
- Protection eyewear (visor is the minimum standard, use goggles +/- full face shield for procedures)
- Uniform (or linen gown protecting own cloths)

Additional PPE

- Staff preference
- Procedures & extensive nursing care
- High index of suspicion for new admissions / transfer-ins
- As drills / training

PPE is not meant to be foolproof, wash liberally without delay if body gets contaminated

Gloves are indicated for protection against gross contamination & not to replace hand washing. Double gloving is not recommended

Change mask if it gets wet or is visibly soiled

Careful gowning down is crucial in avoiding contamination

Used PPE must be treated as contaminated & not allowed outside clinical areas

Apart from surgical mask, do not use PPE outside clinical areas