Chapter 11 Outbreak at the Tai Po Hospital

Finding of facts

Focus of inquiry

11.1 The Tai Po Hospital (TPH) is one of the seven hospitals/healthcare institutions managed by the Hospital Authority (HA) in its New Territories East Cluster (NTEC). One of the major roles of the Hospital is to provide convalescent support for the acute medical units in other NTEC hospitals. TPH is also a gazetted mental hospital and the teaching hospital for the Department of Psychiatry of the Faculty of Medicine of The Chinese University of Hong Kong (CUHK).

11.2 While the SARS epidemic in Hong Kong appeared to be subsiding in the latter half of April 2003 with the number of people infected reducing every day, TPH, which had so far been unaffected by the SARS onslaught, was struck by the epidemic on 21 April 2003 when a patient in Ward 3DR developed SARS symptoms. At the same time, a workman in Ward 4BR and a Medical Officer in Ward 4DR were admitted to the Alice Ho Miu Ling Nethersole Hospital (AHNH) for suspected SARS. It was later found out that these three Wards had six index patients who had been transferred from Wards F5 and F6 in AHNH between 9 April and 14 April 2003. The six index patients infected 22 other patients, three visitors and three healthcare workers (HCWs). Information about the admission and onset dates of the six index patients is set out in Appendix IX.

11.3 The Select Committee has focused its inquiry on the causes of the SARS outbreaks in Wards 3DR, 4BR and 4DR in TPH. Furthermore, as there was a proposal to make available 180 beds in TPH for receiving SARS patients from the Prince of Wales Hospital (PWH) and AHNH, the Select Committee has also examined that proposal.

Before the SARS outbreak

Infection control

11.4 Having heard about the atypical pneumonia (AP) epidemic in Guangzhou and received the memorandum on surveillance on Severe Community-Acquired Pneumonia from the Head Office of HA in February 2003, the Hospital Chief Executive (HCE) of TPH, Dr TUNG Sau-ying, started organizing briefings on infection control measures for HCWs in TPH in late February 2003. Since 14 March 2003, following the outbreak of AP/SARS at PWH, precautionary measures on infection control were taken, including the upgrading of personal protective equipment (PPE), the improvement of ventilation in all medical wards, and the enhancement of medical surveillance on both patients and HCWs. From 15 March 2003, TPH began to cohort suspected patients with contact history and isolate patients with suspicious SARS symptoms. Patients suspected to have SARS were transferred to acute hospitals for further management. Additional shower facilities were provided on 26 March 2003 and since 28 March 2003, there was more cleansing in all wards.

11.5 To ensure that HCWs were updated with the latest instructions and guidelines on infection control measures, such information was disseminated to HCWs in TPH through emails, departmental briefings, briefings during hand-overs of shifts, messages posted on notice boards, etc. To further strengthen communication with and among HCWs, meetings with department heads and staff forums were organized starting from 18 March 2003. A staff hotline was set up on 9 April 2003. Responses from the hospital management to frontline workers' concerns were posted on notice boards.

11.6 Since 15 March 2003, TPH discouraged visits to patients and restricted visits to potential SARS patients. Patients and visitors were provided with masks and advice on infection control. Visitors were also advised that if they developed SARS symptoms after their visits to the Hospital, they should contact the Department of Health. All patients were also given the same advice upon discharge.

Transfer of patients from the Alice Ho Miu Ling Nethersole Hospital

11.7 Following the SARS outbreak at AHNH, a meeting was held on 1 April 2003 among the Service Director (Risk Management and Quality Assurance) of NTEC, Dr LUI Siu-fai, and the senior management staff in AHNH and TPH to assess the outbreak at AHNH. It was agreed at the meeting that 14 patients in Ward E1 in AHNH would be cohorted in a ward in TPH for convalescence so that Ward E1 could be vacated for terminal cleansing. The proposal was endorsed by the Deputizing Cluster Chief Executive (NTEC), Dr Philip LI Kam-tao.

11.8 According to the General Manager (Nursing) of TPH, Ms Helena LI Yuk-lin, before the transfer of the 14 patients, four other convalescent patients from Ward E1 and two other patients from Wards E6 and F6 had already been transferred from AHNH to TPH on 29 March 2003. When the six patients arrived at TPH on 29 March 2003, the Nursing Officer of the Department of Medicine and Geriatric, Mr WONG Wai-ming, noticed that the transfer forms of these patients contained the request "please observe temperature", and that all HCWs involved in the transfer of these patients wore full PPE. He immediately made the decision that the six patients from AHNH should be placed in Ward 4CR which was a high-grade isolation ward with double doors and single-compartment toilets. The Select Committee noted that the first infected HCW in Ward E1 in AHNH was confirmed to have contracted SARS on 28 March 2003. The decision of Mr WONG to place the six patients from AHNH in a high standard isolation ward on 29 March 2003 was prudent, even though none of these patients was a SARS patient.

11.9 The 14 patients from Ward E1 in AHNH were transferred on 3 April 2003 and placed in Ward 3AR in TPH. When Ward 3AR was closed on 15 April 2003, none of these patients showed any SARS symptoms. Two of them developed SARS symptoms on 25 April 2003. They were eventually confirmed to have contracted SARS but none of them was an index patient.

11.10 Between 1 April and 14 April 2003, a total of 62 patients were transferred from AHNH, comprising 14 patients from Ward E1, 35 from Wards F5 and F6, and 13 from Wards E6 and F1. Dr TUNG told the Select

Committee that these patients transferred from AHNH to TPH at different times were all supposed to be non-SARS patients. Depending on the availability of bed space, they were placed in different wards upon admission.

The outbreak

Outbreaks in Wards 3DR, 4BR and 4DR

11.11 Wards 3DR, 4BR and 4DR were convalescent wards for both female and male patients in the Department of Medicine and Geriatric. There were four cubicles and one two-bedded isolation room in each ward, accommodating a total of 38 beds. In each cubicle, there were nine beds and the distance between patients, in accordance with the guideline on droplet precautions, was at least three feet. Each ward was manned by one nursing officer, 13 nurses, eight healthcare assistants, and one general service assistant. All the witnesses from TPH told the Select Committee that there was sufficient manpower in these wards at the time of the outbreak.

11.12 On 21 April 2003, a patient in Ward 3DR developed SARS symptoms. Four index patients were later identified in the Ward. Three of the four index patients were transferred from Ward F6 in AHNH on 9 April 2003. The remaining one was transferred from Ward F5 in AHNH on 11 April 2003. The conditions of these four patients upon admission to TPH were fair and afebrile. The four index patients infected a total of six patients. The last patient suspected to have been infected in the Ward was transferred out of TPH on 30 April 2003.

11.13 On 21 April 2003, a workman in Ward 4BR and a medical doctor in Ward 4DR were admitted to AHNH and were confirmed to have been infected with SARS on 22 April 2003. On 23 April 2003, one index patient was identified for each of these two Wards. They both came from Ward F5 in AHNH and were admitted to Wards 4BR and 4DR on 14 April and 11 April 2003 respectively. Both patients were recovering from bacterial chest infection and their conditions upon admission were fair and afebrile. The index patient of Ward 4BR infected nine patients, one visitor and one HCW, while the one of Ward 4DR infected seven patients, two visitors and two

HCWs. The last patient suspected to be infected in Ward 4BR was transferred out of TPH on 2 May 2003, while the last one in Ward 4DR was transferred out on 16 May 2003.

Transfer procedure

11.14 The Department Operations Manager (DOM), Ms Maria CHUI Yeuk-ping, and the Ward Manager of Wards 4BR and 4DR, Mr Boris TO Hing-kuen, told the Select Committee that a stringent screening procedure was adopted in the transfer of non-SARS patients from AHNH to TPH. First of all, the resident doctors in the respective wards in AHNH had to screen patients so that only non-SARS patients were transferred. These patients were screened again by senior physicians in AHNH before the transfer. Since the outbreak of SARS at NTEC, more information such as the results of blood test and chest X-ray as well as special medical requirements of a patient was included in the transfer form. The information of the patient was then sent to the relevant DOM in TPH for screening. If the DOM concerned was uncertain of the condition of a patient upon admission, she referred the case to her Chief of Service for advice. Before admission to a ward, a patient had to go through a temperature check. If the patient developed a fever, he was isolated immediately and attended by a senior physician. If the patient was found to be a suspected SARS case, he was either transferred to other acute hospitals for further management or to the SARS ward in TPH which was opened on 21 April 2003.

11.15 According to HCE of AHNH, Dr Raymond CHEN Chung-i, there was a clear understanding between AHNH and TPH that TPH was to handle with caution all the patients transferred from AHNH as AHNH was then hard hit by SARS. Both AHNH and TPH screened and vigilantly monitored all cases, irrespective of the wards from which the patients were transferred. According to Ms CHUI, in order to step up communication between the two Hospitals, it was agreed between the medical departments of the two Hospitals around the end of March 2003 that when there was an outbreak in a ward in AHNH, both the DOM concerned and the nursing officer of that ward should notify, in parallel, their counterparts in TPH.

11.16 The SARS outbreak in Ward F6 was noted in the late evening of 12 April 2003 when two HCWs were admitted to PWH and one HCW was admitted to AHNH. Dr CHEN informed the Select Committee that as only one HCW in Ward F5 was infected with SARS on 15 April 2003, it was not considered an outbreak. He further told the Select Committee that the senior management staff in NTEC, including those in TPH, had been kept informed of the SARS infection situation in AHNH since early April 2003. The infection situation in the AHNH wards was reported to the senior management staff in NTEC at least three times a week. The infection of the three HCWs in Ward F6 in AHNH was reported on 14 April 2003. The cases of one HCW infected in Ward F5 and five HCWs infected in Ward F6 were reported on 16 April 2003. The Select Committee noted from the minutes of the NTEC Meeting on Management of AP Incidence that the closure of Ward F6 was not discussed until 22 April 2003. Dr TUNG told the Select Committee that she did not recall that the SARS infection in Wards F5 and F6 was mentioned at any NTEC Meeting on Management of AP Incidence.

11.17 DOM of the Department of Medicine in AHNH, Ms CHAN Kit-hoi, told the Select Committee that she was not instructed to relay information about the SARS cases in Wards F5 and F6 to TPH. Dr CHEN explained to the Select Committee that due to heavy workload, it was decided at a meeting on 11 April 2003 that the duty to notify TPH of any outbreak in a ward would be taken up by the Ward Manager concerned. Unfortunately, the Ward Manager of Ward F6 was not present at that meeting and she was not notified of the decision until 14 April 2003. Dr CHEN further explained that the Ward Manager thought that the decision did not have retrospective effect. The Ward Manager of Ward F6, Ms FOK Sum, informed the Select Committee that she was not instructed to inform TPH of the SARS outbreak in Ward F6 when it occurred on 12 April 2003.

11.18 When asked by the Select Committee, all the four witnesses from TPH confirmed that AHNH did not notify them of the SARS infection in Wards F5 and F6 in AHNH from where the six index patients of TPH were transferred. Ms CHUI said that after the outbreak at TPH, she raised the matter with DOM of Wards F5 and F6 in AHNH after the outbreak at TPH and learnt that some HCWs in Wards F5 and F6 had been infected. Mr TO told

the Select Committee that he could not recall when he learnt about the SARS infection in Wards F5 and F6 in AHNH. Ms LI believed that she first learnt of the situation in Wards F5 and F6 in AHNH around 22 April 2003, and that AHNH did not inform TPH of the infection cases in the two Wards because HCWs there were preoccupied with the handling of patients.

11.19 Dr TUNG told the Select Committee that TPH learnt about the respective situations in Wards F5 and F6 a few days later. Both Dr TUNG and Ms CHUI told the Select Committee that even if TPH was notified of the SARS cases in Wards F5 and F6 in AHNH on 15 April and 13 April 2003 respectively, it would not have prevented the outbreaks in Wards 3DR, 4BR and 4DR in TPH because by that time, the index patients had already been admitted to TPH and they were "cryptic" on admission.

Infection control

11.20 All the four witnesses from TPH told the Select Committee that HCWs in TPH were vigilant in infection control following the outbreak at PWH and the transfer of patients from Ward E1 in AHNH to TPH on 3 April 2003. By the end of March and early April 2003, they were aware that there were "cryptic" patients who did not display SARS symptoms, such as fever or unclear chest X-ray. As many of the patients in TPH were elderly persons, HCWs were fully aware of the possibility of some patients being "cryptic" SARS patients. All the medical wards were upgraded to high risk wards in order to raise the alertness of HCWs there. All HCWs in Wards 3DR, 4DR and 4BR took appropriate precautionary measures, including wearing N95 masks, gloves and eye protection equipment, and washing hands after attending to each patient. A buddy system was introduced under which HCWs provided mutual support for each other by reminding their partners to be cautious and monitoring their partners' work procedure. There was also the SARS Prevention Team in TPH to conduct infection control compliance check on HCWs. When asked by the Select Committee, all the four witnesses from TPH refuted the rumour that an HCW was infected because she did not wear a mask while attending to patients. They also told the Select Committee that they did not receive any complaints from HCWs directly about the lack of PPE.

HCWs in TPH followed the infection control guidelines issued by both the Head Office of HA and NTEC during the SARS epidemic.

11.21 Despite the vigourous infection control measures that the witnesses claimed to have been adopted in TPH, the index patients in the three Wards infected three HCWs, one of whom died. Ms CHUI told the Select Committee that all the index patients were "cryptic" patients. Their conditions on admission indicated that they were low risk patients. They were placed in the rehabilitation wards for patients who were recovering from stroke, where bed space was available. All the witnesses told the Select Committee that the three infected HCWs were asked if they knew how they were infected but none could explain the cause.

11.22 The Select Committee noted that all the index patients came from Wards F5 and F6 in AHNH, and that between 1 April and 14 April 2003, the 35 patients transferred from Wards F5 and F6 in AHNH were placed in four separate wards in TPH, namely Wards 3DR, 4BL, 4BR and 4DR. When the Select Committee asked why arrangements were not made by TPH to cohort all the patients transferred from Wards F5 and F6 in AHNH in one ward after the outbreaks in Wards 3DR, 4BR and 4DR, Dr TUNG explained that TPH did not consider it prudent to do so because this would expose the non-SARS patients to the risk of infection. Moreover, opening a new ward to accommodate patients from Wards F5 and F6 would involve additional manpower and facilities. Dr TUNG told the Select Committee that the transfer of patients from Wards F5 and F6 in AHNH stopped after the outbreaks in these two Wards.

11.23 Dr TUNG also told the Select Committee that Wards 3DR, 4BR and 4DR were closed to admission, discharge and visiting on 22 April 2003. On the same day, the no-visiting policy was implemented in TPH. When asked by the Select Committee why the no-visiting policy was not implemented earlier, Dr TUNG and Mr TO explained that many patients in TPH were suffering from chronic diseases and had to stay in TPH for relatively long periods before they were fit for discharge. Visits had to be allowed as family support was very important to these patients.

11.24 The Select Committee noted that the mortality rate of the SARS patients in TPH was 30%, which was high compared with those of other hospitals. Dr TUNG explained to the Select Committee that TPH, being a convalescent hospital, treated many elderly patients with chronic diseases. Statistics indicated that the mortality rate of elderly SARS patients and SARS patients with chronic diseases was higher than that of young SARS patients.

Plan for the Tai Po Hospital to handle SARS cases

Isolation Ward 4CR for SARS patients

11.25 Following the rapid increase in the number of SARS patients, TPH was asked to consider the feasibility of admitting SARS patients to Ward 4CR, which was a high standard isolation ward, at the NTEC Meeting on Management of AP Incidence on 27 March 2003. The senior management of TPH then discussed the feasibility of the suggestion internally and decided that preparation work had to be taken, including improving the environment in the Ward; increasing the manpower; planning the routing and segregation of patients; providing training and preparing HCWs; planning the supply and distribution of PPE; and improving the staff amenities. After four weeks of preparation, Ward 4CR was upgraded with a positive pressure ante-room, additional exhaust fans, and high efficiency filters installed at exhaust ducts. A total of 28 beds were made available for SARS patients. HCWs with experience in handling SARS patients were deployed from PWH to work in this Ward. In addition, an empty ward adjacent to Ward 4CR was converted into a staff amenities area.

11.26 Between 21 April and 30 April 2003, Ward 4CR in TPH handled a total of 40 SARS patients. The Select Committee noted that there was no SARS outbreak in this Ward.

Diverting SARS patients to the Tai Po Hospital

11.27 The Select Committee noted from the minutes of the NTEC Meeting on Management of AP Incidence held between 9 April and 28 April 2003 that the plan to divert SARS patients from PWH and AHNH to TPH in order to restore the level of healthcare service in NTEC to some normality was discussed on several occasions. It was proposed that TPH was to make available 180 beds for receiving SARS patients from PWH and AHNH. Given that TPH was a gazetted mental hospital, the Chairman of the Department of Psychiatry of the Faculty of Medicine of CUHK, Professor Helen CHIU Fung-kum, raised the concern at the NTEC Meeting on Management of AP Incidence on 23 April 2003 that it would be difficult for the psychiatric patients in TPH to comply with infection control measures. Her concern was shared by the Cluster Chief Executive of NTEC, Dr FUNG Hong, who said on 26 April 2003 that NTEC would be in great trouble if psychiatric patients contracted SARS. He cautioned that it would be risky to overload TPH with SARS cases.

11.28 On the same day, the South China Morning Post reported that the Chief of Service of the Department of Medicine and Therapeutics in PWH, Professor Joseph SUNG Jao-yiu, had said that there was a plan to divert all SARS patients from PWH and AHNH to TPH by mid-May 2003 to allow PWH and AHNH to resume normal services. According to the press report, TPH could treat more than 150 SARS patients when its preparation was completed. A spokesman of PWH later clarified in the Hong Kong Economic Times that the proposal mentioned by Professor SUNG was only one of the options considered by NTEC.

11.29 At the NTEC Meeting on Management of AP Incidence held on 28 April 2003, Professor CHIU again appealed to its members to reconsider the plan to admit SARS patients in TPH. She said that it was difficult to contain the infection if psychiatric patients contracted SARS because HCWs would have difficulty in managing them. The meeting accepted Professor CHIU's argument and re-examined other options. On 29 April 2003, according to a report in the Ming Pao Daily News, Dr FUNG said that as TPH did not have any Intensive Care Unit (ICU) facility and was not an acute hospital, it would

not be designated to receive SARS patients. When asked by a member of the Legislative Council Panel on Health Services at the meeting on 30 April 2003 as to whether HA planned to transfer all the SARS patients from PWH and AHNH to TPH, the Deputizing Chief Executive of HA, Dr KO Wing-man, clarified that the future role of TPH had yet to be determined. In the minutes of the NTEC Meeting on Management of AP Incidence held on 10 May 2003, it was recorded that TPH might be spared for SARS cases.

11.30 According to Dr TUNG, the proposal of requiring TPH to admit more SARS patients was merely one of the options considered by the NTEC Meeting on Management of AP Incidence. TPH did not make any preparation to implement such a proposal, apart from preparing Ward 4CR to receive SARS patients. She pointed out that turning TPH into a SARS hospital would be a huge project involving planning in many areas, such as manpower resources, infection control training for HCWs, provision of enhanced infection control facilities and equipment, etc. Whether it was feasible for TPH, which had no ICU facility, to receive SARS patients from PWH and AHNH remained to be examined. When asked by the Select Committee whether TPH was under pressure to agree to the proposal, Dr TUNG said that the SARS outbreaks at PWH and AHNH were serious at that time, and that all HCWs in TPH were more than willing to make their contribution in whatever way possible to fight against SARS. She did not sense any pressure from her colleagues in NTEC to make TPH admit SARS patients from PWH and AHNH. She, however, admitted that she was surprised at the announcement made by Professor SUNG on 26 April 2003 that TPH was to admit over 150 SARS patients as she, being HCE of TPH, was not aware that such a decision had been made. After Professor SUNG had made the above remarks, she sought clarification from Dr FUNG before she could advise the residents in Tai Po that admitting SARS patients to TPH was merely a proposal and not a decision.

Analysis

11.31 The Select Committee notes that TPH stepped up its infection control measures and screening procedures since as early as February 2003,

well before the admission of the patients from the acute medical units of two other hospitals within the cluster for convalescence. The decision to place the six patients transferred from Wards E1, E6 and F6 in AHNH in Ward 4CR in TPH on 29 March 2003 demonstrates that HCWs in TPH were highly alert to the risk of infection and took the necessary precautionary measures when the situation warranted.

11.32 The Select Committee considers that upon transfer of patients between hospitals, it was vital for the hospitals to exchange all the relevant information, including ward information before and after the transfer, so that appropriate infection control measures could be put in place at the first available opportunity. The Select Committee notes that AHNH, apparently, did not inform TPH of the SARS outbreak in Ward F6 in AHNH. The decision made on 11 April 2003 requiring ward managers to notify TPH of any outbreak in AHNH wards was not relayed to the Ward Manager of F6 until three days later on 14 April 2003. The Select Committee, however, cannot find any evidence to enable it to conclude that the outbreaks in Wards 3DR, 4BR and 4DR could have been prevented if AHNH had notified TPH of the infection cases in Wards F6 and F5 in AHNH on 13 April and 15 April 2003 respectively. Nevertheless, if TPH had received an earlier notification, it might have considered cohorting the patients transferred from Wards F5 and F6 in AHNH, thereby reducing the risk of spreading the disease to other patients.

11.33 The Select Committee commends TPH for the effective measures that HCWs took in handling the first two batches of patients transferred from AHNH by either cohorting them in one ward or placing them in a high standard isolation ward. Two of the patients transferred from Ward E1 were later found to be SARS patients but they did not spread the disease in TPH because of the stringent infection control measures implemented.

Performance and accountability

11.34 The Select Committee is of the view that Dr Raymond CHEN Chung-i, as HCE of AHNH, has the responsibility for ensuring that all the information relating to patients transferred from AHNH be passed to TPH in a

timely manner, and that the HCWs concerned in AHNH were made aware of this requirement. The decision made on 11 April 2003 requiring ward managers to notify TPH of any outbreak in AHNH wards was not relayed to the ward manager concerned until 14 April 2003, a delay of three days. Dr CHEN should be held responsible in this regard.

11.35 The Select Committee has taken evidence from Dr CHEN and Dr TUNG Sau-ying to ascertain whether AHNH had notified TPH of the infection cases in Wards F5 and F6 at the senior management staff meeting of NTEC and if so, whether Dr TUNG should have taken appropriate follow-up actions. The Select Committee considers that the relevant evidence, as set out in paragraph 11.16 above, does not provide sufficient basis for drawing conclusions in this regard.