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Health, Welfare and Food Bureau
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The People's Republic of China

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11 March 2004

Miss Flora TAI
Clerk to Select Committee to inquire into the
handling of the Severe Acute Respiratory Syndrome
outbreak by the Government and the Hospital Authority
Legislative Council
8 Jackson Road, Hong Kong
(Fax: 2248 2011)

Dear Miss TAI,

Select Committee to inquire into the handling of the Severe Acute Respiratory Syndrome outbreak by the Government and the Hospital Authority

Further to my letter of 9 March, I now provide the Select Committee with a written statement ~~(SC09-18P-EY)~~ on my responses to the questions set out in Appendix IV of your letter of 20 February. I also attach a document ~~(SC09-19Q-EY)~~ setting out my professional qualifications and experience for the Select Committee's reference.

Yours sincerely,

Dr E K YEOH
Secretary for Health, Welfare and Food

c.c.
HWFB (Attn: Mr Patrick NIP)
D of J (Attn: Ms Ada CHUNG)

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WRITTEN STATEMENT OF DR. YEOH ENG-KIONG

Introduction

The Severe Acute Respiratory Syndrome (SARS) epidemic last year was the greatest public health challenge faced by modern Hong Kong. It was an event unprecedented not only in the modern history of Hong Kong, but also around the world. It was a painful experience for all of us, particularly for those who lost their loved ones.

An unknown disease

2. When the SARS epidemic began in Hong Kong in March 2003, little was known about the disease. We, and indeed, the international community on the whole, were facing a disease for which there was no identified causative agent, no diagnostic laboratory assays, no known treatment or preventive measures. The term "Severe Acute Respiratory Syndrome (SARS)" was only coined by the World Health Organization (WHO) on 15 March 2003 and the causative agent, a novel coronavirus, was only preliminarily identified by the University of Hong Kong on 22 March 2003. In fact, the newly identified coronavirus was only accepted by WHO as the causative agent on 16 April 2003.

3. The world had undergone a steep learning curve in the knowledge about SARS and its control measures during the epidemic. However, despite the heroic progress made by the local and international scientific community during those months and over the past year, much remains unknown about the disease.

Expert support

4. Facing an epidemic of an unknown disease, we worked closely with local and overseas experts and the healthcare sector in order to learn more about the disease. The Health, Welfare and Food Bureau (HWFB) Task Force that I established on 14 March 2003, which included experts in public health, respiratory medicine and microbiology from Department of Health (DH), Hospital Authority (HA), local universities and WHO, as well as officials from DH and executives from HA, had the role of providing a forum to collate expert advice about the disease, thus helping the health community to synthesize and generate new knowledge and understanding on how the disease was spread and how to control it.

5. During the epidemic, experts from international bodies including the WHO, the Centers for Disease Control and Prevention (CDC) in Atlanta, the

United States of America (USA) and Health Canada had rendered us much assistance and advice on control measures and the investigation into the outbreak. At various stages of the epidemic, a number of world-renowned experts, including Dr David Ho, Scientific Director and Chief Executive Officer of the Aaron Diamond AIDS Research Center, USA; Dr Robert Webster, Director of the US Collaborating Center of WHO; Dr Jeffrey Koplan, Vice President for Academic Health Affairs of the Emory University in USA and former Director of CDC in Atlanta, and Dr Meirion Evans, member of a WHO Expert team which had performed an assessment of the SARS situation in the Guangdong Province, also provided invaluable advice to the Government.

Concerted efforts

6. The rapid development of the epidemic and its scale had made enormous demands on our public health services as well as the capacity of the HWFB and its departments. Information dissemination, specific health advice and concrete actions had been constrained by how little was known about the disease, unspecific symptoms and evolving case definition at the initial stage of the epidemic. However, I myself and colleagues in the Bureau, Hospital Authority, Department of Health and the other departments under the purview of the Bureau had all tried our very best to meet the challenge within the constraints. We worked round the clock during the epidemic and did all that was humanly possible and sometimes even humanly remotely possible to fight this new and unknown disease. The guiding principle for us at all times was that public health, and the health of every member of the community must be paramount in every Government decision relating to the SARS outbreak.

7. Despite the difficulties, the outbreak had brought out the best in our community, with many people having contributed to the battle against the disease through their extraordinary service, hard work, professionalism and attention to duty. The unprecedented threat to public health brought about by SARS also highlighted the remarkable courage, dedication and resilience of our healthcare workers and health management.

8. The SARS Expert Committee, which comprised a distinguished panel of renowned experts in public health and hospital administration from various countries and chaired by Sir Cyril Chantler and Prof Sian Griffiths, had conducted a comprehensive review of what had happened before and during the SARS outbreak. The Expert Committee's report has pointed out that overall, the epidemic in Hong Kong was handled well, although there were clearly significant shortcomings of system performance during the early days of the epidemic when little was known about the disease or its cause. Many of the shortcomings were rapidly put right, while others were compensated for by the extraordinary hard work of people at all levels of the system and in very difficult circumstances. The report has made invaluable recommendations on how our

systems and facilities can be improved so that we can better prepare ourselves and guard against new and emerging infectious diseases.

9. The former director of the Centers for Disease Control and Prevention of the United States, Dr. Jeffrey Koplan, once likened our public healthcare system to that of a dam wall protecting us from floods. For 50 years, it worked well. However, an unprecedented massive flood strikes and the wall is found to be deficient. So there is a need to build a higher wall. In the light of the recommendations of the SARS Expert Committee, the Bureau and its departments have been working very hard to that end, to ensure that the healthcare system will be better prepared for possible resurgence of SARS and other new and emerging infectious diseases.

10. I would like to take this opportunity to pay tribute to all the healthcare workers who have sacrificed themselves while saving others in the epidemic, and offer my deepest condolences to their families as well as to other families who have lost their loved ones to SARS. I would also like to express my sincere gratitude and appreciation to all my colleagues in the Bureau, Hospital Authority, Department of Health, Social Welfare Department, Food and Environmental Hygiene Department, Agriculture, Fisheries and Conservation Department, and the Government Laboratory for their perseverance and efforts in the fight against SARS. The same is also extended to my colleagues in other policy bureaux, government departments and public bodies who had collaborated in and contributed to the SARS control efforts under the umbrella of the Interdepartmental Action Coordinating Committee (IACC) chaired by the Permanent Secretary for Health, Welfare and Food. These efforts were instrumental to the eventual containment and control of the SARS epidemic. The successful fight against SARS was also due to the cooperation and understanding of all people in Hong Kong, who sacrificed some of their personal freedoms to comply with the stringent measures such as temperature checks, a ban on hospital visits and home confinement, and in some instances, even a removal to isolation camps.

11. Overall, our efforts to control the spread of SARS in Hong Kong, and beyond our borders, was recognised by health experts and the international community. The World Health Organization also praised Hong Kong on a number of occasions for our openness and transparency in dealing with, and managing the epidemic. To quote Dr. David Heymann, the Executive Director for Communicable Diseases of the WHO at the time of the outbreak, Hong Kong's efforts to stem the spread of SARS were nothing less than "heroic".

Written reply on questions raised by the Select Committee

12. In response to the request of the Select Committee on 20 February 2004, I have prepared the following written replies to the questions raised by the

Select Committee to the best of my knowledge and belief. As many of the questions cover the work of the Health, Welfare and Food Bureau and the Department of Health, I have sought assistance from my colleagues in the HWFB and the DH and have perused relevant files and records in answering the questions.

Q.1 ***What were your specific responsibilities in the handling of the outbreak of Severe Acute Respiratory Syndrome (SARS) vis-à-vis those of the Director of Health (D of H)? On what matters did D of H have full authority to take decisions/actions and on what matters did D of H require your approval before actions could be taken?***

A.1 As the Policy Secretary, I had an overseeing and co-ordinating role in the management of the SARS epidemic. I was also responsible for monitoring and reviewing the work of DH in handling the outbreak. The HWFB Task Force, which I established from the outset and which comprised health officials and executives as well as experts in the field, assisted me in this respect.

As the outbreak situation progressed and with the establishment of the CE's Steering Committee (CESC) in the later part of March 2003, my role evolved from one of monitoring, co-ordinating and supervision to one that also included a more participatory and direct role in assessing and managing the outbreak. Hence, to cope with the rapid development of the situation, the management structure which existed at the time had been modified flexibly. Specific actions initiated and taken by HWFB during the SARS epidemic included-

- Establishment of the HWFB SARS Task Force.
- Dissemination of updated information about the disease and the number of cases to the public on a daily basis since 13 March 2003.
- Involvement of HWFB in reviewing operational matters of DH, such as the workflow and information system for carrying out case and epidemiological investigations, contact tracing and medical surveillance.
- Development of an electronic database which enabled DH and HA to share and exchange information on cases in real-time.
- Involvement of experts from the Environment, Transport and Works Bureau (ETWB) and its departments in the investigations of the Amoy Gardens outbreak.

- Establishment of an Inter-departmental Action Coordinating Committee (IACC) under the chairmanship of Permanent Secretary for Health, Welfare and Food to respond to emergency situations arising from the epidemic and to coordinate response efforts from different Government Bureaux and departments.

- Leading in the negotiation and communication process with the WHO after WHO's imposition of a travel advisory against Hong Kong on 2 April 2003.

The Director of Health is the chief health advisor to the Government and is the statutory authority responsible for the control and prevention of infectious diseases. During the SARS epidemic, the Director of Health and her staff provided public health expert advice to the Government and myself. The Director was also operationally responsible for undertaking the necessary public health functions for the control and prevention of infectious diseases, including outbreak management, such as case and epidemiological investigations, laboratory testing, contact tracing, medical surveillance, enforcement of public health legislation, communications and interactions with the healthcare community, public education and health advice, and liaison with Mainland health authorities and the international health community.

As the statutory powers for outbreak management of infectious diseases were vested in the Director of Health, legally my approval was not needed for the Director of Health to take decisions or actions on public health ground to control the outbreak. However, as the Director of Health was managerially accountable to me, the Director would normally consult or seek my views as regards major decisions on public health measures, such as the introduction of designated medical centres. Should the Director of Health identify the need to amend legislation, as a matter of practice the Director will recommend the proposed amendments to HWFB as the Bureau is responsible for providing policy support and liaising with the relevant authorities to carry out the legislative process.

Q.2 ***When and how did you first learn about the outbreak of atypical pneumonia (AP) in Guangdong? What was your reaction on learning about the outbreak? Did you take any follow-up action? If not, why not? If yes, what follow-up action did you take?***

Q.3 ***When and how did you learn about the difficulties encountered by D of H and her staff in obtaining information about the AP outbreak from the relevant Mainland authorities, prior to the press briefing held by the Guangzhou Bureau of Health on 11 February 2003? What was your***

reaction? Did you consider that contact with the relevant Mainland authorities should be escalated to your level? If not, why not? If yes, did you take any follow-up action?

Q.4 ***In January 2003, the health authorities in Guangdong Province issued an investigation to alert the health units in Guangdong Province of an AP outbreak? Were you aware of such a report? If yes, when and how did you first become aware of the report? Did you ask for a copy of the report? If not, why not? If yes, when and from whom did you obtain a copy of the report? Did you take any follow-up action upon receiving the report? If not, why not? If yes, what follow-up action did you take?***

Q.5 ***When and how did you learn that the Working Group on Severe Community-Acquired Pneumonia was set up by the Hospital Authority (HA), and the Department of Health (DH) was invited to send a representative to sit on the Working Group? Were you kept informed of the discussion/decisions of the Working Group? If not, why not? If yes, how were you kept informed, and how did the Health, Welfare and Food Bureau (HWFB) make use of the information?***

A.2-5 I first learnt of the outbreak of AP in Guangdong Province on 10 February 2003 through local media reports. I was concerned and contacted the Director of Health on the same day to solicit information and advice. The Director of Health told me that attempts had already been made to contact the health authorities in Guangdong through telephone and fax but there was no reply. I asked her to contact the Ministry of Health in Beijing for information, given the established channels for communication on infectious diseases was between DH and the Ministry in Beijing. The Director of Health subsequently told me that the Ministry in Beijing responded to her request for information.

On 11 February 2003, the Guangdong health authorities held a press conference on the position of the AP outbreak. The Ministry of Health also informed us that there were 300 cases and 5 deaths in the Guangdong Province and that a team from the Ministry was working with health officials in Guangdong to investigate the outbreak and collect samples for laboratory analysis. In a press briefing that day, I disseminated the information gathered from the Ministry and urged the public to take general precautions to prevent droplet infections by avoiding crowded areas and taking good precautions to build up body immunity, and advised that people may use masks if they were particularly worried but good personal hygiene was important.

On 13 February 2003, I convened a meeting with officials and experts from DH and HA to collate and review available information about the

outbreak of AP in Guangdong and to monitor the progress of local surveillance of pneumonia/influenza cases. At the meeting, DH reported that it had contacted HA, private hospitals and sentinel doctors for any unusual pattern of influenza-like illness or pneumonia and that none was observed. I was also briefed on the establishment of the HA Working Group on Severe Community-Acquired Pneumonia (SCAP) on 11 February 2003 to step up surveillance of cases of severe pneumonia in public hospitals. Although I was not informed of the subsequent operational discussions and decisions of the SCAP working group, significant findings of the surveillance system, such as the two human cases of H5N1 with history of travel to Fujian, which were confirmed on 19 and 20 February 2003, were reported to me.

I was aware that the Director of Health continued to liaise with the Ministry of Health in Beijing, which was an established and appropriate channel because disease outbreaks in all provinces in China had to be reported to the Ministry. The Director of Health kept me informed of her liaison with the Ministry and WHO, which has an Office in Beijing. I was aware of the following information at that time -

- On 14 February 2003, WHO provided further update on the outbreak in Guangdong indicating that the outbreak was coming under control.

- On 18 February 2003, the Chinese Centre for Disease Control and Prevention in Beijing reported that they had identified *Chlamydia Pneumoniae* as the probable cause of the AP outbreak in Guangdong Province.

- On 19 February 2003, DH informed the Fujian health authorities, the Ministry of Health in Beijing and WHO about a human case of H5N1 with history of travel to Fujian. The Ministry provided DH with the preliminary investigation results and WHO alerted its Global Influenza Surveillance network.

At that time, I was not aware of the existence of the investigation report issued by the Guangdong health authorities in January 2003.

Q.6 ***When and how did you first learn about the investigation conducted by DH at [redacted] Hotel? What details about the investigation were you given? What was your reaction on learning about the investigation? Did you consider that the investigation should have been launched earlier? If not, why not? If yes, what was the basis for your view?***

A.6 I first learnt about the investigation conducted by DH at [redacted] Hotel on 19 March 2003, prior to the Director of Health's press conference

announcing DH's findings on the chain of transmission at the hotel. In our telephone conversation on 19 March, the Director of Health informed me that DH had launched an investigation on 18 March 2003 and found that at least 7 SARS cases were related to the hotel.

The proper timing of the investigation is a matter which should be judged by peers, namely public health practitioners/experts. In this regard, I would refer the Select Committee to the views of the SARS Expert Committee, which comprised world-renowned experts in the field, as expressed in paragraph 4.7 of the Committee's report –

> *"The Committee considers that the authorities in Hong Kong acted reasonably on the information available, and pursued with due diligence a course of investigation commensurate with the evidence available at the time."*

Q.7 ***When and how did you first learn that a large number of healthcare workers (HCWs) in Prince of Wales Hospital (PWH) had gone on sick leave on 11 March 2003? What was your reaction? Did the Government consider that the number of HCWs infected to be unusually high, and that an outbreak of an infectious disease might have occurred?***

Q.8 ***You led a review on the outbreak at PWH. When was the review conducted and who were involved in the review? Did you visit PWH for the purpose of the review? If not, why not? If yes, when did you visit PWH and what did you observe during the visit? What information was studied/examined in the review and what were the findings? What decisions and follow-up actions were taken? Did the review make any recommendation on the respective roles that should be played by HA, DH and HWFB in the handling of the outbreak? If yes, what were the details of the recommendation and was it implemented?***

A.7-8 I first learnt that a group of healthcare workers in PWH had gone on sick leave with respiratory infection symptoms through media reports on 11 March 2003. I was very concerned and immediately contacted the Director of Health and the Chief Executive of HA for more information because I considered it unusual for a group of healthcare workers from the same ward to become ill at the same time. I was told that DH's New Territories East Regional Office and the Prince of Wales Hospital were working together to investigate the situation including ascertaining the epidemiology (time, place, person) of the outbreak, and that the hospital was taking the necessary infection control measures. DH subsequently notified WHO of the PWH outbreak on 12 March 2003. I also discussed

with the Director of Health on the arrangements made to seek external expert help from WHO.

I convened a meeting on 13 March 2003 to review the outbreak situation in PWH. Participants included a senior expert from the Centers for Disease Control and Prevention (CDC) in Atlanta, USA, Dr. Keiji Fukuda, who attended the meeting in his capacity as a representative of WHO. Other participants were local health experts in the field and health officials and executives, including Dr Margaret Chan, Dr P Y Leung of DH, Dr William Ho, Dr W M Ko and Dr Fung Hong of HA.

At the meeting, it was noted that Ward 8A of PWH had been made a restricted area to visitors and closed to admissions and discharge since 10 March 2003. Healthcare staff had also been segregated into "clean" and "dirty" teams to prevent cross-infection. DH's New Territories East Regional Office had also set up a special control team to handle matters relating to the PWH outbreak, including case follow-up, contact tracing and surveillance, and epidemiological analysis. According to the expert members, the actions taken by the hospital and DH were appropriate. Local surveillance data on pneumonia cases were also presented at the meeting. The meeting noted that there was no unusual increase of pneumonia cases in the community and that there was no abnormal outbreak in the community. The meeting further noted that there was no other hospital outbreak similar to that of PWH and agreed that -

- Both DH and HA would work together to investigate the outbreak, including the sharing of laboratory specimens.
- DH's surveillance of cases and contacts would be intensified.
- Both DH and HA would inform their relevant departments, divisions or groups to ensure adherence to infectious disease guidelines.
- DH's exchange of information with WHO, Mainland China and CDC Atlanta, USA would be maintained and strengthened.
- HA would issue email to all colleagues on the current situation and enhance transparency on information to patients.
- SHWF would chair a steering group to coordinate efforts of outbreak control and enhance information exchange; and
- Deputy Director of Health would chair an expert group with experts from DH, HA, the University of Hong Kong, the Chinese University of Hong Kong and WHO to focus on investigation.

I held a press conference in the afternoon of 13 March. For effectiveness and operational efficiency, the steering group and the expert group were later combined to become the HWFB Task Force on 14 March 2003.

On 14 March 2003, the Chief Executive and I visited PWH to meet with frontline staff and keep abreast of the outbreak situation. The hospital management provided an update on the outbreak situation and its infection control measures. We also visited the disease control centre set up at the hospital and observed that staff of both DH and HA were working together side by side in the investigation and management of the outbreak.

Q.9 ***On 12 March 2003, World Health Organization (WHO) issued a global alert about cases of acute respiratory syndrome in Vietnam, Hong Kong and Guangdong Province. When and by whom were you informed of the global alert? Did you discuss with D of H the implications of the global alert and/or the follow-up action to be taken? If not, why not? If yes, what were the details of your discussion with D of H? Did you report WHO's global alert to the Chief Executive (CE) and advise him on the follow-up action to take? If not, why not? If yes, when did you report WHO's alert to CE and what were the details of your advice?***

A.9 Based on the information supplied by DH on the PWH outbreak, WHO issued a global alert on 12 March 2003 Geneva time. The alert described cases of acute respiratory syndrome with unknown aetiology in Vietnam, Hong Kong and Guangdong Province in China that appeared to place health workers at high risk.

The WHO alert was discussed at the review meeting I convened on 13 March 2003. Amongst other things, the meeting agreed on intensifying surveillance efforts, the sharing of laboratory specimens, and enforcing adherence to the infectious disease guidelines issued by both DH and HA. CE was kept informed of the development.

Q.10 ***On 14 March 2003, you chaired the first meeting of the HWFB Task Force. Why was it necessary to set up the Task Force? What matters were considered by the Task Force, and what decision/actions were taken by the Task Force?***

A.10 As the outbreak involved an unknown disease with no diagnostic test, non-specific symptoms and case definition, the Task Force was established to collate new information and obtain expert advice about the disease, its management and control, provide a forum for the principles of outbreak management to be articulated, coordinate control efforts in the

health sector and oversee outbreak management. Membership of the HWFB Task Force included experts in public health, respiratory medicine and microbiology from DH, HA, the University of Hong Kong, the Chinese University of Hong Kong and WHO, as well as officials from DH and executives from HA. Key discussion items included-

- evolving case definition from WHO, including clinical features;
- epidemiological investigations to provide better understanding of the outbreak, identify index case and trace close contacts for further public health actions;
- laboratory investigations to identify the causative agent;
- infection control measures particularly on droplet precautions, and
- empirical evidence on treatment of cases.

Six meetings were held during the period from 14 to 30 March 2003 to review the latest position of the outbreak and the accumulated knowledge and scientific research of the unknown causative agent, as well as to provide steering on the actions to be taken to contain the spread of the disease, such as the endorsement of public health measures recommended by DH, the need for isolation measures, public education strategy on personal hygiene and the development of sector-specific guidelines.

Q.11 ***What was the working relationship between the HWFB Task Force and HA's "Daily SARS Round Up" Meeting? Who was responsible and what were the measures for ensuring that the decisions/actions taken by the two bodies did not duplicate or contradict each other? Were there such duplication and/or contradictions? If yes, how were they resolved?***

A.11 The terms of reference of the HWFB Task Force were to monitor the outbreak of the disease and to oversee its control, including the measures to be taken within the public health care sector. Its membership included experts in public health, respiratory medicine and microbiology from DH, HA, local universities and WHO, as well as officials from DH and executives from HA. (see also A10). HA's Daily SARS Round Up Meeting, on the other hand, was an internal forum within the HA that was concerned about hospital management and operational matters arising from the SARS outbreak and management of cases. It was chaired by the Chief Executive of the Hospital Authority (CE/HA), and by the Deputizing CE/HA after CE/HA was hospitalized. Participants included

all Cluster Chief Executives and relevant executives of the Head Office and hospital management staff.

With different focus and responsibilities, the HWFB Task Force and HA's Daily SARS Round Up Meeting served as two different mechanisms fulfilling different and complementary functions. The former was more strategically focused on investigating and controlling the outbreak whilst the latter was concerned about the operational issues of hospital management and infection control. There was no duplication or overlap in the work they undertook respectively.

Q.12 ***On 14 March 2004, you told the media that the cases in PWH appeared to be a subset of AP. You said that surveillance data at that time did not reveal any unusual or abnormal increase in AP cases in the community. On the same day, you also told the Panel on Health Services of the Legislative Council that there was no sign of the spread of AP in the community. Why did you make such statements given that WHO had issued a global alert about cases of acute respiratory syndrome in Hong Kong and other places on 12 March 2003? What was the basis of your statements? Did DH provide you with any advice and/or data prior to your making the statements? If yes, what were the details of the advice and/or data and by whom? Did the Government underestimate the seriousness of the situation at that time?***

A.12 The term atypical pneumonia has been in use since 1930s when it was coined to describe a heterogeneous group of patients with chest infection caused by different viruses and bacteria and other micro-organisms but whose clinical presentations were different from that of the typical pneumonia. Classically, typical pneumonia presents with sudden onset of fever and shaking chills, pleuritic chest pain and production of rusty brown sputum. In cases of atypical pneumonia, the onset of disease was more gradual and usually accompanied by a prodrome consisting of headache, sore throat and a dry, non-productive cough. In a large proportion of cases of atypical pneumonia, the causative agent could not be identified. This is referred to as idiopathic. The identifiable causes include Mycoplasma, Chlamydia, Coxiella, Legionella and some viral agents such as chickenpox and measles.

The nomenclature "Severe Acute Respiratory Syndrome" ("SARS") was not in existence on 14 March 2003. This nomenclature was only proposed by WHO on 15 March 2003. The public perception at that time was that "atypical pneumonia" was a unique and specific entity, and it was equated with the Guangdong outbreak of what is now known as SARS.

At the meeting on 13 March 2003 mentioned in A.7-8, local surveillance data on pneumonia cases presented at the meeting by DH and HA had shown no unusual increase of pneumonia cases in the community. Specifically, DH reported that no unusual pattern of Influenza and pneumonia was seen in the community and that their investigation and contact tracing into the PWH outbreak thus far had shown no abnormal outbreak in the community. HA also reported that the number of cases of severe community-acquired pneumonia had not deviated from the normal trend.

On 14 March 2003, the HWFB Task Force held its first meeting in the morning. At the meeting, DH and HA further reported that according to their surveillance data, there were 1,500-2,000 cases of hospital admissions of pneumonia in Hong Kong every month. Against this baseline data, it was reported that there had been no abnormal increase in the number of pneumonia hospital admissions from the community in the past few months. The meeting also noted that according to clinical experience, it was the usual occurrence that a causative agent could not be found in about half of the pneumonia cases.

After the meeting, a press briefing was held in the afternoon to inform the public about the outbreak at PWH and its management. The release of information was intended to be both open and transparent. It was in the context of atypical pneumonia as a generic term that I explained the new phenomenon of cases that we had observed, which involved a clustering of cases in the healthcare setting, as a subset of atypical pneumonia cases. I said in the press briefing that it was absolutely correct to say that cases of atypical pneumonia were found to have occurred in the community. I explained, as recorded in the transcript on 14 March 2003, that -

> *"In Hong Kong, every month we have 1,500 to 2,000 cases of pneumonia, and about half we can identify the bacteria and the other half usually we can't. The pattern has not changed and our experience is very similar to those other developed countries. So we are not talking about any outbreaks in the community, and that is why yesterday we were talking about particularly looking at a particular group."*

> *"We are not saying that infection is [not] going to occur in the community, that it doesn't go into the community. What we are saying is that all these community pneumonias seem to have a subset which is very very particular that it does appear to [have a] predisposition [to] affect health care professionals who care for these patients and also very close family contacts."*

Based on information from the meeting, I also highlighted the four groups of patients which were a subset of atypical pneumonia that were known to us at the time and which appeared to have a tendency to affect healthcare workers. This observation was in keeping with the WHO global alert which stated that-

> *"Overall the outbreaks in Hanoi and Hong Kong SAR appear to be confined to the hospital environment. Those at the highest risk appear to be staff caring for the patients."*

What I said was based on information and data from DH and HA at that time and was really an attempt to explain to the public a complex situation including what was known as well as unknown to us. As I said at the special meeting of the LegCo Panel on Health Services later that day, there was no question of the Administration downplaying the severity of the infection, as support and cooperation from the public was crucial in containing the spread of the infection. What we had been trying to do at that time was to find out the cause of the disease and its mode of transmission, to ascertain the extent of infection in the community, and to control the outbreak.

At the special meeting of the LegCo Panel on Health Services, my reference to atypical pneumonia was also in the context of the mix-bag generic entity. I said that:

> *"the Administration had been totally honest and forthcoming in telling the public what it knew and did not know. The Administration believed that although the causative agent of the disease existed in the community, the virus was rather unusual that it did not easily spread in the community. However, it was easy for the virus to spread in a hospital environment and so far only health care workers had been infected."*

Q.13 ***You "urge people not to depict Hong Kong as an infected place, which was not only untrue and would cause alarm in the community" at the meeting of the Panel on Health Services on 14 March 2003? If Hong Kong was not an infected place, was it not correct for WHO to have issued a global alert about cases of respiratory syndrome in Hong Kong? If so, did you make any representation to WHO? Was "not causing alarm in the community" your major concern when handling the SARS outbreak in 2003?***

A.13 The global alert issued by WHO on 12 March 2003 Geneva time was not directed at a specific place, and it did not brand any places as an infected place. The purpose of the global alert was to place the international

community on high alert about cases of acute respiratory syndrome with unknown aetiology that appeared to place health workers at high risk according to reports from Vietnam, Hong Kong and Guangdong province. The term SARS was not coined by WHO until 15 March 2003.

My primary concern when handling the SARS epidemic was public health and the health of every member of the community. This was also the guiding principle for the Government in the management of the SARS epidemic. From the public health perspective it was important to correct any misinformation in order to avoid unnecessary fear and panic which could impede our efforts of outbreak control. Since the early stage of the epidemic, I had endeavoured to be open and transparent about the situation and tried to provide as much information as possible to the public. What I had done was to give more, including technical details about the latest position, what was known/unknown about the causative agent, transmission mode, precautionary measures, etc. I had been open on how little was known about the disease right from the beginning, and I constantly advised the community to take precautionary measures based on what was known at the time.

Q.14 ***At which point in time during the SARS outbreak, and on what basis, did you consider that the infection had spread in the community? Did you report to CE and advise him on the measures to be taken to control the spread? If not, why not? If yes, what were the details of your report and advice? Did the Government inform the public of the spread of SARS in the community? If not, why not? If yes, when and how was the public informed? If the public had been informed of the fact that SARS had spread to the community, did you make an assessment of whether the public was alarmed at the announcement? If so, was the public alarmed?***

A.14 At the initial stage of the epidemic, little was known about the disease. During that time, what we had been trying to do was to find out the cause of the disease and its mode of transmission, to ascertain the extent of infection in the community and to control the outbreak. I worked closely with local and overseas experts and the healthcare sector in order to help the health community to learn more about the disease and how to control it. In the process, I had endeavoured to ensure that as much information as possible was provided to the public. Daily press briefings were made to disseminate information about the latest position and what was known/unknown about the causative agent, transmission mode, precautionary measures, etc. These had not been easy, particularly because the outbreak situation was changing rapidly and case definition and knowledge about the clinical features of the disease were all still evolving. Furthermore, as the definitive laboratory tests were

still in the process of development, new and suspected cases took time to be diagnosed and verified before they could be confirmed. Therefore, I had focused on presenting facts and figures at press briefings, and describing known results and investigations being undertaken. I also constantly advised the community to take precautionary measures based on what was known at the time.

During the initial stage of the SARS epidemic, cases or clusters of infection brought to my attention were all linked to outbreaks in healthcare settings, which mainly affected health care workers and patients' relatives. It should be noted that I had not denied that the disease did exist in the community, as evident in the following extracts of my transcripts made at press briefings-

14 March 2003

"It is absolutely correct to say that cases of atypical pneumonia were found to have occurred in the community."

"We are not saying that infection is [not] going to occur in the community, that it doesn't go into the community. What we are saying is that all these community pneumonias seem to have a subset which is very very particular that it does appear to [have a] predisposition [to] affect health care professionals who care for these patients and also very close family contacts."

18 March 2003

"There are patients who carry this virus in the community, they are then brought into hospital because they are sick and because we are unaware of this virus, it then spreads to the health care workers and to close family contacts."

The CE visited PWH on 14 March 2003 and had been kept informed of developments. Various departments had already started taking follow up actions since the beginning of the epidemic. For example, DH had provided health advice to the public based on what was known at the time and Education and Manpower Bureau had issued health advice to schools since 13 March 2003. These actions were, of course, constrained by how little was known about the disease before the causative agent was preliminarily identified on 22 March 2003. On 20 March 2003 after the findings of the Metropole Hotel were announced the previous night, I made the following remarks-

"It is a very, very unusual phenomenon. On the one hand, you worry because it's highly infectious. I've spoken to our experts again

today. Obviously it seems to be very, very infectious. Their opinion is that it is still droplets. If we're able to link up almost 80 percent of cases to the one person, and it seems that if the other four clusters have nothing to do with it, then the numbers in the community may be smaller, at least for the severe infections. Of course, we are just speculating as we are still without a test that breaks down prevalence in the community."

Q.15 ***On 15 March 2003, WHO issued an emergency travel advisory naming the illness SARS and listing out the main syndromes and signs. What was your reaction on learning about WHO's travel advisory? Did you discuss with D of H the implications of the emergency travel advisory and/or the necessary follow-up action to be taken? If not, why not? If yes, what were the details of your discussion with D of H? Did you report WHO's travel advisory to CE and advise him on the follow-up action to take? If not, why not? If yes, when did you report to CE and what were the details of your report/advice?***

A.15 The emergency travel advisory issued by WHO on 15 March 2003 Geneva time was not directed at a specific place. The travel advisory did not contain a recommendation to member countries to restrict travel to any destination. The advisory was issued to put the international community on high alert that SARS was a worldwide health threat and it offered guidance to travellers, airline crew and airlines so that they are aware of the main symptoms and signs of SARS for their own protection and/or for alerting the destination airport. The Director of Health reported to me that letters had been issued to all airlines via the Airport Authority to alert them of the travel advisory and advise on ways to deal with suspected SARS cases on board aircrafts. The CE was also kept informed of the development.

Q.16 ***At that time, did anyone in the Government raise the need to immediately add SARS to the list of infectious diseases specified in the First Schedule to the Quarantine and Prevention of Disease Ordinance (Cap. 141)? If yes, who raised the need and why did the Government have to wait until 27 March 2003 to amend Cap. 141? If not, should D of H have raised the need, given that D of H was the authority to amend the First Schedule?***

A.16 Please see A.26-27.

Q.17 ***When did you learn about the public statement made by Professor Sydney CHUNG, Dean of the Faculty of Medicine of the Chinese University of Hong Kong, on 17 March 2003 that SARS had spread in the community? What was your reaction? Did you agree with Professor CHUNG? If yes, what was the basis for your view? If not, did the Government openly refute Professor CHUNG's statement? If not, why not? If yes, how and when did the Government openly refute Professor CHUNG's statement?***

Q.18 ***Did you call Professor Sydney CHUNG on 18 March 2003? If yes, why did you call Professor CHUNG? What were the details of your telephone conversation with Professor CHUNG on that day?***

A.17-18 Since an early stage of the epidemic, I had endeavoured to be open and transparent about the situation and had tried to provide as much information as possible to the public. As a matter of fact, daily press briefings had been held since 13 March to inform the public of the latest position. I learnt of Prof Sydney Chung's remarks from media report on 18 March 2003. I was concerned that Prof Chung might have information which I was not aware or in possession of. On the same day, I contacted Prof Chung by phone in order to gain a better understanding of his remarks and concerns. In the conversation, we discussed the situation in PWH and the fact that some family members of patients who had not been to the hospitals were infected. I told Prof Chung that I had been kept informed of the situation and that my information was that these cases could be traced to the PWH cluster. Prof Chung expressed concerns that there could be more cases among patients' contacts. In response, I told him I shared his concerns and of my understanding of the contact tracing work being carried out by DH at the time.

In late morning that day, DH announced health advice to further heighten awareness amongst the general public on the prevention of respiratory tract infections. The advice included keeping hands clean and washing hands properly, covering nose and mouth when sneezing or coughing, maintaining good in-door ventilation, and consulting doctor promptly if symptomatic. Special advice to those taking care of sick family members with respiratory tract infections was also provided, including advice to patients to put on masks to reduce the chance of spread of infection, and caregivers to put on masks to reduce the chance of being infected.

In the late afternoon, I met with CE/HA and a panel of experts from the HWFB Task Force – Prof John Tam of CUHK, Prof K Y Yuen of HKU, and Dr Dominic Tsang of HA. We then held a press briefing together, disseminating further information on what we knew or did not know

about the disease at the time. The following is an excerpt from my transcript:-

> *"The figures given to you by Prof Sydney Chung yesterday implied that there are community cases that we are not including in our presentations. And as we have mentioned before, in any community, there will always be AP. What we know is that we have not seen any increases in AP cases presenting to the hospitals. But what we do not know is what percentage of these AP cases are the cases that are of concern to us – that seems to infect health care workers and their families so readily. And this is ongoing research that we are doing."*

> *"Of course, if we don't know the virus, we would not begin to discern the number in the community. But we have certainly not seen widespread outbreaks in the community, because if they were as widespread as in the hospitals, you can imagine that we'd have large numbers of AP in the hospitals. So while we said that we have seen no widespread outbreaks in the community, the outbreaks [in hospital] are from the community spreading to healthcare workers who take care of them and to immediate family members."*

At the press briefing, CE/HA gave an update on the number of cases and clusters and announced that the A&E department at PWH would be closed for 3 days. The following is an excerpt from the relevant transcript:

> *"As mentioned by Dr Yeoh, pneumonia is always there and sometimes we cannot really tell whether it's typical or atypical because we had not been able to identify the pathogen. Whether these medical staff, medical students and family members/visitors got sick because of infection, we have been talking to the hospital management, the medical faculty, the teaching staff and operation staff there. I have been spending some time on the PWH as a matter of fact. The night before last, I talked to Prof Chung and other senior management staff about staffing. There is a need to adjust downwards the number of staff in service. As a result, we have to cut down on some activities of the various clinics and departments."*

Dr Dominic Tsang, member of the HA Central Committee on Infection Control also gave an account of HA's surveillance of pneumonia cases, as follows:-

> *"Secretary, I think in February I explained to you in clear term. Pneumonia is a rather common disease and you don't need to be alarmed by the figures because in February we already knew in*

neighbouring regions there were cases of AP. As I said at the beginning of February, pneumonia is very common. Just to give you a rough figure, there could be more than a thousand cases each month especially during winter months. At HA and all our hospitals, we do keep surveillance of pneumonia cases that result in admission to the intensive care unit or in cases where the respirators are used. We could then compare the figures with the last winter before we can tell if there is any increase in number or if there are serious pneumonia cases. I think we are confident in telling you that there are actually not many cases. We are not trying to hide anything, either we know it or we don't."

Q.19 ***On 20 March 2003, you attended a staff forum at PWH. What was the purpose of your attendance at the forum? While you were at PWH, did Professor Sydney CHUNG discuss the handling of the SARS outbreak with you? If yes, what exactly was discussed and what was your reaction?***

Q.20 ***On 21 March 2003, the Chairman of HA and senior executives of the head office of HA (HAHO) approached you to discuss the need to inform the wider community of the seriousness of the situation. What were the details of the discussion at the meeting? Did you take any follow-up action after the meeting? If not, why not? If yes, what follow-up action did you take? What senior executives of HAHO and other government officials were also present at the meeting? Did D of H attend the meeting? If not, why did D of H not attend the meeting? Was she aware of the meeting? Did you brief her on the details of the meeting afterwards? If not, why not?***

A.19-20 On 20 March 2003, I chaired the third meeting of the HWFB Task Force. An update of the outbreak situation was provided including the work of contact tracing in 240 of the family members of the affected health workers. Six were reported to have become ill at that time. The meeting also noted the tentative identification of prarmyxoviridae virus and the investigation results of Metropole Hotel. Contaminated surfaces or fomite were considered a potential mode of spread, in addition to the droplets, close contact spread. There was no evidence that disease could spread through air ventilation systems.

In the subsequent press briefing, apart from providing an update on the clusters of cases, I also described the contact tracing work as reported in the meeting of the HWFB Task Force.

In the evening of 20 March 2003, I attended the PWH staff forum as part of my on-going efforts to listen to the concerns of frontline staff, lend

support to them and solicit first hand information on the ground. The forum discussed the unknown nature of the disease and the speed of the outbreak as well as the stress and emotions of frontline staff in taking care of their infected colleagues. After the forum, I had a short conversation with Prof Chung and Dr Fung Hong. Prof Chung mentioned to me his concerns that there were cases of infection in the community from contacts of infected staff and patients and on the contact tracing work of DH. Dr Fung expressed the concerns of the PWH on the recent staff movement of DH staff involved in contact tracing. He reported that a senior member of the DH team had reported sick a few days ago and that they were concerned about the contact tracing work of DH which done effectively could limit the potential of spread of the infection.

The next morning on 21 March 2003, CE/HA, Dr Fung Hong and Dr W M Ko requested to meet with me. It should be noted that the Chairman of HA did not participate in the meeting. He rang me subsequently. In the meeting, CE/HA informed me of the admission of two GPs to PWH and the concerns of PWH management and CUHK's Faculty of Medicine about DH's contact tracing work. The same message was conveyed by the Chairman over the phone on the same day.

I was most concerned of the developments and contacted the Deputy Director of DH, Dr PY Leung. I understood from Dr Leung that he was visiting PWH and the New Territories East Regional Office (NTERO) to investigate their concerns. I asked him to strengthen the contact tracing work in PWH. He subsequently reported that he had discussed with key PWH staff their concerns and noted that there were some misunderstanding. He had redeployed an additional senior colleague of DH to take charge of the DH team at PWH.

Q.21 ***Did anyone in DH and/or HA raise with you the need to close PWH and/or quarantine infected persons, including infected HCWs and people who might have come into contact with infected persons, following the outbreak of AP/SARS in Ward 8A? If yes, who raised the matter and what was your reaction? Did you discuss with D of H the legal considerations if PWH was to be closed and/or the infected persons quarantined? If not, why not? If yes, what were the details of your discussion with D of H and the outcome?***

A.21 No one raised with me the issues as described.

Q.22 ***When and how did you first learn about the outbreak at Amoy Gardens? What was your reaction on learning about the outbreak? What was your assessment of the large number of SARS cases at Amoy Gardens at that time? Did you take any follow-up action on learning about the outbreak? If not, why not? If yes, what follow-up action did you take?***

A.22 I first learnt about the outbreak at Amoy Gardens on 26 March 2003 when DH reported the situation at the 5th meeting of the HWFB Task Force. The meeting noted that there was a need to adjust public health measures given the emergence of cases in Amoy Gardens. In response to my inquiry at the meeting, the Director of Health recommended a basket of measures which included, among other things, adding SARS to the First Schedule of the Quarantine and Prevention of Disease Ordinance (Cap. 141), requiring incoming and outbound passengers to complete health declaration forms, the setting up of medical surveillance post at border checkpoints, temporarily suspending schools, setting up medical surveillance centres at designated locations to screen contacts of SARS patients, and designating PMH to receive new SARS cases. The situation was reported at the CESC meeting later that day.

After the Task Force meeting on 26 March, I instructed the IACC, which was chaired by the Permanent Secretary for Health, Welfare and Food, to facilitate DH's work in carrying out the investigation of the Amoy Garden's outbreak and in implementing the necessary public health measures to control the outbreak. Intensive investigations and control efforts were undertaken by DH and its multi-disciplinary team as a consequence.

I had frequent contacts with the Director of Health and the staff of DH to keep track of the progress of the investigation. In the evening of 28 March 2003, in a telephone conversation with Dr Thomas Tsang of DH, he informed me that there was a concentration of cases in units 7 and 8 of Block E. I gave the instruction that the investigations at Amoy Gardens had to be intensified and that assistance from the Environment, Transport and Works Bureau and its departments should be sought to carry out a comprehensive investigation. Separately, later in the night of 28 March 2003, I also asked the Director of Health to send her staff to conduct door-to-door visits to all the flats in Block E and other affected blocks in the Amoy Gardens in order to assess the health condition of all the residents and provide health advice. DH subsequently led a multi-disciplinary team to conduct site inspections at Amoy Gardens on 29 March 2003 and reported the preliminary investigation findings at the HWFB Task Force meeting on 30 March 2003. Over these and the subsequent days, I continued to keep in frequent contact with colleagues in DH who were conducting the investigation in order to keep a close eye

on progress and to ensure that the investigations were proceeding in the most urgent manner.

Q.23 ***On 28 March 2003, you told the Panel on Health Services of the Legislative Council that the Administration would not consider setting up a quarantine centre for people who had come with close contact with those suffering from SARS at that moment. On what basis did you consider it unnecessary to set up a quarantine centre at that moment? Did DH provide any advice to you in this regard prior to your making the statement to the Panel? If yes, what were the details of the advice and by whom was the advice provided?***

A.23 I had prior discussions on the issue of quarantine with the Director of Health and experts. We noted that although quarantine was historically a public health tool for managing infectious diseases, quarantine measures had not been used in Hong Kong, and for that matter most modern societies and developed nations, for decades. This was because of significant medical advancements in recent years, improvement in infection control and much better understanding of the pathogenesis of infectious diseases. I understood that the prevailing views of the public health community including those of international experts had cautioned on the imposition of quarantine in modern societies. It was considered an intrusive public health measure that might at best not be readily acceptable by citizens of modern societies, and at worst drive affected individuals underground thereby further spreading the disease and could compromise outbreak control. It might also result in violent resistance from the affected population.

Given the above, DH adopted a graduated enhancement approach in introducing isolation and quarantine measures: medical surveillance and voluntary home confinement, designated medical centres, mandatory home confinement, and in specific instances, isolation camps.

Q.24 ***Was there a contingency plan, including the setting up of quarantine centres, for dealing with a major outbreak of an infectious disease in the community prior to the SARS outbreak? If yes, what were the details of the plan and to what extent had the handling of the SARS outbreak adhered to the plan? If not, was it the Government's policy not to have such a contingency plan, or was it that the need for such a contingency plan had never been considered?***

A.24 Prior to the outbreak of SARS, DH had established disease investigation protocols and management plans for 36 infectious diseases and contingency plans to handle outbreak of known infectious diseases, including influenza pandemic, dengue fever and biological attack. Specifically for hospital outbreaks, HA had an established mechanism for the surveillance and control of hospital-acquired infections, which is overseen by a corporate-wide committee on infection control, with representative from DH.

As explained in A.23, quarantine is historically recognized as a public health tool used, for instance, to manage the plague epidemic in the 13th century. Because of significant medical advancements in recent years, improvement in infection control and much better understanding of the pathogenesis of infectious diseases, quarantine as a public health tool to enforce compulsory physical separation, including restriction of movement, of populations or groups of healthy people who have been potentially exposed to a contagious disease had not been deployed in modern societies or developed nations for decades. For instance, a review of the medical literature found that no large-scale human quarantine had been implemented within US borders during the past 8 decades.

In the light of the above, the setting up of quarantine centres was not a part of the contingency plans which existed prior to the SARS outbreak.

Q.25 ***When and how did you learn that many residents of Amoy Gardens were moving out following the SARS outbreak in Block E of Amoy Gardens? Did you consider that actions should be taken by the Government to prevent residents from moving out Amoy Gardens? If not, why not? If yes, what were the actions considered and were they implemented?***

A.25 I understood that since 26 March 2003, DH had made daily site visits to the Amoy Gardens to carry out contact tracing, medical surveillance and outbreak investigation. Family members of cases from all affected blocks were put under medical surveillance and letters were distributed to

all residents asking them to contact DH or seek medical attention if they developed symptoms.

As mentioned in A.22, in the night of 28 March 2003, I asked the Director of Health to send her staff to conduct door-to-door visits to all the flats in Block E and other affected blocks in the Amoy Gardens in order to assess the health condition of all the residents and to provide health advice. On 29 March 2003, DH set up medical stations at Amoy Gardens to take body temperature of residents and provide SARS-related information and advice. Under DH's surveillance, residents who were found to be symptomatic were referred to hospitals for further investigation.

Q.26 ***On 27 March 2003, SARS was added to the list of infectious disease specified in the First Schedule to the Quarantine and Prevention of Disease Ordinance (Cap.141). What was your role in the making of the decision? Had there been measures taken without legal backing before SARS was added to the list?***

Q.27 ***If SARS were not added to the list of infectious diseases specified in the First Schedule to the Quarantine and Prevention of Disease Ordinance, what actions/measures that the Government should take could not be taken? What was the consequence of not taking such actions? Was there any delay in making the above-mentioned amendment to Cap. 141?***

A.26-27 At the 5th meeting of the HWFB Task Force held on 26 March 2003, the Director of Health recommended a basket of public health measures, including adding SARS to the list of infectious diseases specified in the First Schedule to the Quarantine and Prevention of Disease Ordinance (Cap 141). I agreed with the recommendation to amend the law and indicated my policy support. My Bureau subsequently made the necessary arrangement with the Department of Justice for the drafting and gazettal of the order.

It should be noted that prior to making SARS a notifiable disease, HA and DH had already established a system for the identification of cases and their contacts and DH was already conducting medical surveillance of the contacts; DH had also received full support from doctors in voluntarily reporting cases. Legislative amendment to the First Schedule to Cap 141 was made once there was a need to do so.

Prior to the HWFB Task Force meeting held on 26 March 2003, the Director of Health did not raise the issue of legislative amendment to the First Schedule to Cap 141 with me. It should be noted that the use of the name "SRS" instead of "SARS" had never been at any stage a hindrance

to the Government to amend Cap 141. There was no discussion on the use of "SRS"/"SARS" at the Task Force meeting or at any other meeting where the inclusion of SARS to the list of infectious diseases was considered. After the Task Force meeting on 26 March, in response to enquiry from DH, I confirmed that the full name "Severe Acute Respiratory Syndrome" should be adopted in the gazette order, in line with the references to the full names of other infectious diseases in the legislation. The order was gazetted and put into effect on 27 March 2003.

Q.28 ***On 27 March 2003, the Government also announced other measures to combat SARS. What was your role in deciding on these measures?***

A.28 On 27 March 2003, the Government announced the following control measures -

- health declaration for incoming visitors to Hong Kong effective from 29 March;
- close contacts of SARS patients to report to designated medical centres from 31 March; and
- suspension of classes in all schools from 29 March to 6 April.

The above measures were endorsed by the CESC meeting on 26 March 2003, during which the basket of public health measures recommended by the Director of Health were presented and discussed. I had prior discussions with the Director of Health and her colleagues on the proposed measures and fully supported them. The IACC was instrumental in facilitating DH in implementing these measures.

Q.29 ***On 30 March 2003, the Government made the decision to issue an Isolation Order for Block E and on 31 March 2003, D of H imposed an Isolation Order on Block E for a period of 10 days starting from 6:00 am on that day. On what basis was the decision to issue the Isolation Order made? Why was it issued for Block E only? What role did you play in the making of the decision? Were you in favour of this measure and did you support it?***

A.29 At the 6th meeting of the HWFB Task Force held on 30 March 2003 it was noted that there was a possibility that Block E residents had already formed an infected pool in view of the high number of cases coming from the block. Against the background of the continuing increase in the number of cases in Block E, the meeting also discussed the option of isolating the building to control the spread of the disease in the

community. It was considered that isolating Block E would protect the health of both the residents and the community as a whole, by facilitating medical surveillance of potentially infected persons and preventing them from spreading to others. The meeting also noted that the other blocks would not require isolation at that stage because their case distribution pattern was different, there were much fewer cases compared to Block E and their chance of infection would be minimized once Block E was isolated.

Taking into account the views given by the expert members of the Task Force, after the meeting I asked the Director of Health to exercise the necessary statutory power to isolate Block E residents as a public health protection measure. The Permanent Secretary for Health, Welfare and Food also initiated the planning and preparation for the isolation exercise. In the evening of the same day, which was a Sunday, an emergency meeting of the CESC was convened and the decision to issue an isolation order in respect of Block E was endorsed by the meeting. The next morning on 31 March 2003, DH imposed an Isolation Order on Block E for a period of 10 days.

Q.30 ***On 1 April 2003, the Government announced evacuation of the residents of Block E of Amoy Gardens to designated holiday camps under a Removal Order to continue the 10 days' quarantine. What had triggered off Government's decision to issue the Removal Order one day after issuance of the Isolation Order? What role did you play in the making of the decision? Were you in favour of this measure and did you support it?***

A.30 As mentioned in A.22, at my instruction, DH invited experts from the Environment, Transport and Works Bureau (ETWB) and its departments to help in the investigations of the Amoy Gardens outbreak on 29 March 2003. DH led a multi-disciplinary team comprising experts from the departments under the purview of ETWB to conduct site inspections at Amoy Gardens on that day and reported the preliminary investigation findings at the HWFB Task Force meeting on 30 March 2003. The team continued with the investigation and conducted another site inspections at Amoy Gardens on 31 March 2003.

In the morning of 1 April 2003, the Secretary for the Environment, Transport and Works (SETW) informed me that her team of experts working with DH investigators had some preliminary findings regarding the ventilation system of the lifts and sewerage system of Block E. As the stool samples of some patients had recently been tested PCR-positive for the SARS coronavirus, I was alarmed when SETW told me of her preliminary findings. We became suspicious that the sewerage system

might have been involved in the vertical spread of SARS cases in Block E. I immediately reported the suspicions and concerns to the Chief Executive, who then instructed a meeting of CESC be convened that morning. SETW and I reported the emerging evidence at the CESC meeting. Given the emerging evidence, I was convinced of the need and strongly recommended evacuating all Block E residents. The recommendation was endorsed and a decision was made to evacuate Block E residents to another place for isolation, so that thorough cleansing and in-depth investigation work could be carried out. I instructed IACC to immediately start preparation for an evacuation exercise. Later that day, the Removal Order was issued.

Q.31 ***When did you first meet with Dr Stephen NG Kam-cheung to discuss the SARS outbreak at Amoy Gardens? What exactly did you discuss with Dr NG and what was the outcome of the meeting?***

Q.32 ***When did you meet with Dr Stephen NG again to discuss the SARS outbreak at Amoy Gardens? Which other government officials were also present at the meeting? In what capacity did Dr NG attend the meeting? What exactly was discussed at the meeting? What were the details and outcome of the discussion? Did Dr NG stay until the end of the meeting? If not, why not? Since the meeting, did you have further contact with Dr NG regarding the SARS outbreak at Amoy Gardens? If yes, when was the contact made and what was the outcome?***

A.31-32 Dr Stephen Ng Kam-cheung was introduced to the Government through the University of Hong Kong on 3 April 2003 as someone who had training in the field of epidemiology and who wished to assist in the investigation of the outbreak. We understood that he was no longer working in the field and was a businessman. We were also not aware of him being active in research. Subsequent to the initial introduction of Dr Ng to me through the Office of the Chief Executive on 3 April, I made arrangements for representatives from various Government departments to meet him on 4 April 2003 and 5 April 2003 to exchange views on the SARS outbreak, and the Amoy Gardens outbreak in particular. It should be noted that Dr Ng had never been employed or commissioned by the Government in any capacity, or at any stage, during the SARS outbreak. Neither was he a consultant to the Government. He also did not participate in the field investigation of the Amoy Gardens outbreak in association with Government departments.

On 4 April 2003, Dr Ng met with me and the Secretary for the Environment, Transport and Works (SETW). Also in attendance were representatives from the Environment, Transport and Works Bureau and

DH. At the meeting, Dr Ng expressed his views on the outbreak at Block E of the Amoy Gardens, citing rats as the most probable cause. He postulated that the rats were contaminated at the garbage collection point or the restaurants at the podium of Block E, and they in turn contaminated the water supplies either by urinating on the pipes or at the main water tanks of Block E.

In response to Dr Ng's hypothesis, SETW made the observation that it was not possible that the urine of the rats could have seeped through the cracks, if present, of the pipes supplying water to the residential units due to the positive pressure inside the pipes. SETW also highlighted that the chlorine in the water contained in the water tanks should have prevented the extended isolated survival of the virus. The meeting also noted that no worker at the garbage collection point and the restaurants at the podium of Block E was infected. If those areas had been the "sources" of the contamination for the rats, then the possibility of infections of those individuals would be extremely high.

At my invitation, Dr Stephen Ng attended another meeting in the morning of 5 April 2003 (a public holiday) with representatives from DH, Agriculture, Fisheries and Conservation Department (AFCD), and Food and Environmental Hygiene Department (FEHD) to exchange views with him on the epidemiological investigations carried out by the Government on the Amoy Gardens outbreak. Dr Ng stayed until the end of the meeting.

Apart from the epidemic curve information, the meeting also noted that initial test results for rat droppings collected by FEHD had shown positive Polymerase Chain Reaction (PCR) results for coronavirus in some of the samples. Dr Ng indicated that this was the confirmation that rats were the cause of the Amoy Gardens outbreak. As there had already been earlier reports of domestic cats kept by residents being tested positive for coronavirus but with the subsequent evidence pointing to cats being carriers rather than the cause, the meeting recognized that the positive PCR results in the rat droppings could have been due to a number of factors, including environmental contamination, and hence rats could be carriers rather than the cause. Noting that autopsies would show changes in the rats if they had been infected, I instructed the AFCD expert to carry out autopsies on trapped rats immediately. The AFCD expert subsequently left the meeting to head back to his laboratory to conduct the autopsies. He reported the preliminary results on the same day, which indicated no changes indicative of a severe respiratory virus infection in the rats. Moreover, the PCR results of the swabs and tissues taken from these autopsied rats were all later found to be negative.

In order to further clarify the precise role, if any, played by rats in the Amoy Gardens outbreak, I instructed in the meeting that investigations on rats should be intensified with additional tests (including autopsies) to be carried out on more rat specimens. The Government Virus Unit also carried out additional PCR tests on tissue samples and antibody tests on the blood samples from the rats. The reports of these serological tests also did not show evidence of SARS coronavirus infection in the rats.

To better understand the rat infestation situation in Amoy Gardens, a pest control expert from FEHD was summoned to the meeting. The expert explained there were two main species of rats commonly seen in Hong Kong - sewer rats (*Rattus norvegicus*) and roof rats (*Rattus rattus*). As their names implied, sewer rats mainly infested sewers and lower levels of buildings while roof rats were normally found at higher levels. The two types of rats usually did not mix as rats were territorial creatures. The expert further gave details of the pest control measures in the Amoy Gardens area. He observed that rat infestation did not appear to be a problem in Amoy Gardens and there were few rat signs. He further explained that obvious signs of rat infestation had not been detected in the common areas of Block E, including the roof-top, staircases, light wells, utility rooms, as well as pipes on walls.

Following the briefing by the FEHD pest control expert, I instructed FEHD to intensify their pest control efforts in Amoy Gardens and the surrounding areas. I also asked FEHD to collect more specimens and to extend the collection area to beyond Amoy Gardens, such as Lower Ngau Tau Kok Estate and Telford Gardens.

In response to allegations made against me, I would like to point out that at the meeting on 5 April 2003, there was no discussion on the evacuation of all the residents of Amoy Gardens. Evidence at that time, and even in retrospect, did not provide a basis for any further evacuation plan other than the removal of Block E residents, which had already been carried out on 1 April. Further, at no point during the meeting nor at any other point in time did I make any statement to the effect that the residents of Amoy Gardens would have to be sacrificed.

Subsequent to the meeting on 5 April, I did not have further contact with Dr Ng regarding the SARS outbreak at Amoy Gardens but I have received a letter dated 7 April from Dr Ng. This was dealt with by one of my staff who telephoned Dr Ng on 8 April. I understand Dr Ng was informed that further investigations were being performed by environmental health, veterinary and public health personnel and that results were pending before a picture could be pieced together. I also understand that Dr Ng subsequently published a hypothesis that roof rats were the culprits responsible for the transmission of the SARS coronavirus in the Amoy

Gardens outbreak. However, the hypothesis does not tally with the findings of the field investigation by FEHD that rat infestation in Amoy Gardens was not serious, and that sewer rats, rather than roof rats, was the more common species in Amoy Gardens.

It should be noted that even before the meetings with Dr Stephen Ng, I had already raised in the CESC meetings on 2 and 3 April 2003 the issue of investigating whether rats were linked to the outbreak in Amoy Gardens. In fact, the investigations on rats had already started on 2 April 2003 and an extensive investigation on the Amoy Gardens outbreak had been conducted by DH and its multi-disciplinary team (which included WHO experts). With regard to rats, a series of investigations were carried out, including the following –

- Autopsies were carried out on all the 14 rats that could be trapped in the Amoy Gardens. The autopsies showed no gross abnormalities.

- A total of 83 rat specimens were collected and tested. Of these, 61 specimens were taken from the 14 autopsied rats and 22 were from rat droppings collected in the field.

- A total of 176 tests, including repeat-PCR, sequencing, culture and neutralization tests were carried out on the rat specimens.

- Of the 83 rat specimens, six samples from droppings and two samples from throat swabs were positive. However, all the blood samples were negative, indicating that the rats themselves were not infected. All the culture results were also negative. The results tended to lend support to the conclusion that the rats were mere mechanical carriers for the virus.

Q.33 ***Was it the Government's intention to designate only one SARS hospital? What was the meaning of a SARS hospital? Did it mean that the hospital was to receive all new SARS cases referred by DH's designated medical centres, or did it mean that the hospital would admit all new SARS cases referred by DH plus SARS cases referred by the Accident and Emergency Departments of other HA hospitals? What would be the difference in terms of the SARS cases between the former and latter scenario? Were patients who were confirmed to be SARS cases after the designation of the SARS hospital to be transferred to the designated hospital? Were other HA hospitals considered suitable to serve as SARS hospitals? If not, why not? If yes, what other hospitals were considered suitable and why were they not designated?***

Q.34 ***When and how were the HA Board, HAHO and/or the PMH management consulted on the designation of PMH as a SARS hospital? Who made the decision to designate PMH as a SARS hospital and what were the considerations? What role did you play in making the decision?***

Q.35 ***How much time was PMH given to make the necessary preparations to serve as a SARS hospital? Who made the decision that PMH should commence to serve as a SARS hospital on 29 March 2003? Did you visit PMH on 28 March 2003? If yes, who accompanied you on the visit and what was the purpose of your visit? Was it to assess the readiness of PMH to serve as a SARS hospital on 29 March 2003? If not, why not? If yes, what was observed during the visit and what was your assessment of PMH's readiness? Did anyone ever raise with you that PMH was not ready to serve as a SARS hospital on that date? If yes, when was the matter raised and by whom? What was your reaction?***

Q.36 ***On 28 March 2003, you instructed both DH and HA to develop an electronic database to share and exchange information for contact tracing and case investigation? Why was it necessary for you to give such an instruction? Had the exchange of such information been made in a timely manner? If not, how had the contact tracing and case investigation work of DH been affected? Should you have given the instruction earlier?***

A.33-36 At the HWFB Task Force meeting held on 26 March 2003, DH recommended a basket of public health measures, including the establishment of Designated Medical Centres (DMCs) to screen contacts of SARS patients. It was considered desirable for all these new cases to be referred to one hospital, so that case information could be collected more efficiently and effectively by stationing a health team there. In this context, PMH, being the only infectious disease hospital in Hong Kong, was preferred to be the hospital to receive these cases. At the meeting, DH made the recommendation that PMH be designated to receive new SARS cases. I enquired of HA the feasibility of the facilities and manpower of the hospital to serve the recommended function. HA indicated at the meeting that the recommendation was feasible and acceptable.

I understood that HA subsequently discussed and agreed on the same day at their Daily SARS Round Up Meeting for PMH to receive all new SARS cases referred by the DMCs and the A&E departments of other HA hospitals after due consideration of the capacity and expertise of PMH. HA's plan was for PMH to serve as the first designated SARS hospital, with back-up from Wong Tai Sin Hospital.

As the situation relating to the outbreak developed rapidly, I had frequent meetings with DH staff including community physicians and officials of DH in order to keep abreast of the latest position. Other than monitoring the progress of their work, in view of the number of new cases reported at the time, I and my colleagues in the Bureau were also directly involved in reviewing operational matters of the Department, such as the workflow and information system for carrying out case and epidemiological investigations, contact tracing, and medical surveillance, to make sure that DH was able to cope with the rapid development in the situation. My assessment at the time was that DH's efforts in contact tracing and case investigation could be further strengthened and enhanced by the deployment of modern technology. I therefore asked DH and HA on 28 March 2003 to develop an electronic database that would enable them to share and exchange information in real-time. In this context, I visited PMH on that day to initiate the development of an electronic database to capture on-line and real time clinical and administrative details of all SARS patients admitted to HA hospitals for sharing between HA and DH. I also took the opportunity to understand the arrangements made for the preparation of PMH to receive new SARS cases.

An online database called e-SARS, with internet access, was subsequently launched on 8 April 2003. At about the same time in early April, the Police, through its involvement in the Inter-departmental Action Coordinating Committee (IACC), offered their sophisticated computer-cum-geographical information system called the Major Incident Investigation and Disaster Support System (MIIDSS) to facilitate DH's work on contact tracing. The combination of e-SARS and MIIDSS facilitated DH's work in conducting prompt case investigation and swift contact tracing.

Q.37 ***During the SARS outbreak, did the Government ever make an estimate of the total number of SARS cases that HA hospitals would need and be capable to handle? If not, why not? If yes, what was the number? Did HWFB and/or DH discuss with HA the need for a plan as to how many SARS patients would need to be handled by individual Clusters and hospitals? If not, why not? If yes, what were the details of the plan? Did you consider with either the HA Board and/or HAHO the need for a plan to cope with the situation whereby the number of SARS patients was larger than the total capacity of all the HA hospitals?***

A.37 During the SARS epidemic, the Government and HA had discussed the contingency arrangements for various scenarios on the basis of the number of cases that would arise. However, as not much was known about the disease at the time, there was no available tool to estimate the

progression or otherwise of the outbreak situation and ascertain the effects of the outbreak control measures. As such, HWFB commissioned the Department of Community Medicine, Faculty of Medicine of the University of Hong Kong to undertake epidemiological and modelling work on the outbreak situation in Hong Kong. Working together with Imperial College London, the research team quantified the transmission dynamics of the aetiological agent of SARS in which the effective reproduction number, R_t of SARS coronavirus was determined. R_t, the number of infections caused by each new case occurring at time t, was the key epidemiological parameter that would shed light on the progression of the outbreak and whether the control measures were having the intended effects. This piece of work was subsequently fast tracked and published in a top grade peer-reviewed journal, Sciencexpress, with a high impact factor.

Q.38 ***In addition to PWH, there were also outbreaks of SARS at Alice Ho Mui Ling Hospital, United Christian Hospital, PMH, and Tuen Mun Hospital. Did you also lead reviews on these outbreaks, as in the case of PWH? If not, why not? If yes, when were the reviews conducted and who were involved? Did you visit these hospitals for the purpose of the reviews? If not, why not? If yes, when did you visit these hospitals and what did you observe during the visits? What information was studied/examined in the reviews and what were the findings? What decisions and follow-up actions were taken? Did the reviews make any recommendations on the respective roles that should be played by HA, DH and HWFB in the handling of the outbreaks? If yes, what were the details of the recommendations and were they implemented?***

A.38 When the PWH outbreak came to light, little was known about the disease. There was no identified causative agent, no diagnostic laboratory tests, and no known treatment or preventive measures. The paramount task then was to obtain new information and collate expert advice regarding the disease and the control of the outbreak. The review of the PWH outbreak at the meeting I convened on 13 March 2003 was conducted in this context, which also led to the establishment of the HWFB Task Force comprising health experts, government officials and HA executives.

The terms of reference of the Task Force were to monitor the outbreak of the disease and to oversee its control, including the measures to be taken within the public health care sector. The Task Force therefore served as a forum for DH and HA to collate expert advice and allowed investigation and control efforts to be coordinated. With regard to the subsequent

hospital outbreaks, I deployed multiple channels to keep track of the situation in the hospitals, as follows:-

- Frequent contacts with key HA executives, through meetings and modern communication means.

- I also had frequent interaction with the Chairman of HA to exchange views about the situation in the hospitals. I had further met with the HA Board and asked that infection control in the hospitals be enhanced, and discussed with them their role in this aspect.

- Members of the HWFB had close liaison with HA and also attended HA's Daily SARS Round Up Meeting since mid April to keep abreast of the latest situation of hospital outbreaks, the conditions of SARS patients and treatment results and the measures taken by HA to protect healthcare workers, patients and visitors from infection.

- A senior consultant from HA was seconded to HWFB to enhance information exchange, communication and understanding of the work of HA in managing the outbreak.

- During the epidemic, I made a number of hospital visits such as those to PWH on 14 March 2003, 20 March 2003 and 24 March 2003, PMH on 28 March 2003, 2 April 2003 and 4 April 2003, and Alice Ho Miu Ling Nethersole Hospital. This was part of my on-going efforts not only to listen to the concerns of frontline staff, lend support to them and management staff and to visit sick healthcare workers, but also to solicit information from the ground which would assist in understanding and controlling the outbreak.

Q.39 ***Did HWFB ask HA to make an assessment of why so many HCWs in HA hospitals were infected during the SARS outbreak? If not, why not? If yes, what was the assessment? Did HWFB also ask HA to review what could have been done to prevent HCWs and non-SARS patients in as well as visitors to HA hospitals from contracting SARS during the outbreak? If not, why not? If yes, what was the outcome of the review?***

A.39 The SARS experience worldwide showed that HCWs were vulnerable to being inflected, as follows-

Number and percentage of infected Healthcare Workers

Areas	Number of probable cases	Number of healthcare workers infected(%)
Mainland China	5,327	1,002 (19%)
Hong Kong, China	1,755	386 (22%)
Taiwan, China	665	86 (13%)
Canada	251	108 (43%)
Singapore	238	97 (41%)
Vietnam	63	36 (57%)

Source: WHO website, data as released on 15 August 2003

HWFB had asked HA to review staff infection in the hospitals. The review indicated that factors contributing to infection of HCWs included environmental constraints such as overcrowding and insufficient isolation facilities, patients with cryptic or atypical presentation, patient volume, viral load, and certain high risk clinical procedures.

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