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8 April 2004

Miss Flora Tai
Clerk to Select Committee
Legislative Council
Legislative Council Building
8 Jackson Road
Hong Kong

Dear Madam,

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

Thank you for inviting a written submission from me on the performance and accountability of the Department of Health (DH) in the handling of the Severe Acute Respiratory Syndrome (SARS) outbreak last year, having regard to the resources available, and the policies and procedures at the material time.

I now attach a copy of my submission for your consideration.

Yours faithfully,

(Dr P Y LAM)
Director of Health

Department of Health
Wu Chung House, 21st Floor,
213 Queen's Road East,
Wan Chai, Hong Kong.
Telephone: 2961 8888
Fax: 2836 0071

衞生署
香港灣仔皇后大道東 213 號胡忠大廈 21 樓
電話 : 2961 8888
圖文傳真 : 2836 0071

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

Performance and Accountability of the Department of Health

This paper provides an account of the performance and accountability of the Department of Health (DH) in the handling of the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003, having regard to the resources available, and the policies and procedures at the material time.

Overview

2. In the words of Dr David Heymann, Executive Director for Communicable Diseases of the World Health Organization (WHO) at the time of the outbreak, Hong Kong's efforts to stem the spread of SARS were nothing less than "heroic".

3. In the context of the Review by the SARS Expert Committee, DH has reviewed its performance in the SARS epidemic and agrees with the observations and recommendations in the Report of the Expert Committee in October 2003. Various matters brought up in the Report have been further deliberated in the planning for the Centre for Health Protection (CHP).

Hong Kong Public Health System before SARS

4. Hong Kong has a sophisticated public health infrastructure with a comprehensive system of disease surveillance and a full complement of DH staff experienced in epidemiological investigation. Our expertise in disease investigation and public health intervention measures have been borne out by successful outcomes in dealing with both existing and emerging diseases such as cholera, dengue fever and avian flu, and we have also won international recognition in this regard. Quoting examples, Hong Kong has one of the most sensitive surveillance systems for influenza which

successfully detected the novel human influenza strains A(H5N1) in 1997 and A(H9N2) in 1999. DH's Public Health Laboratory Centre also plays a major role in the WHO international laboratory network and has been recognized to contribute significantly to the global programmes on polio, influenza, tuberculosis, sexually transmitted diseases etc. The Consultant in-charge, Dr WL Lim, is a renowned expert in the field.

5. A former director of the Centers for Disease Control and Prevention of the United States, Dr Jeffrey Koplan, likened our public health 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. Hence, we are preparing for the establishment of the CHP, amongst other measures.

The SARS Epidemic

6. SARS took Hong Kong, and indeed the world, by storm. When it struck Hong Kong in March 2003, little was known about the disease. The magnitude of the outbreak, the non-specific nature of the symptoms, the lack of a quick diagnostic test for the syndrome and the speed with which workload and cases increased had all contributed to the problems in managing the outbreak.

7. In the following paragraphs, we first set out the system inadequacies identified and our answers in addressing them. These would be followed by an assessment of the major efforts taken by DH in the combat against the disease.

System Inadequacies

Surveillance

8. We have a well established surveillance system in Hong Kong and have fostered a good rapport with the Mainland Ministry of Health on exchange of information on infectious diseases of public health importance. We also enjoy a very close relationship with WHO and other international health organizations.

9. Prior to the outbreak of SARS, there was a standing arrangement for sharing of experience and exchange of information on infectious diseases between Hong Kong and the Mainland. Reports on four infectious diseases, viz., cholera, malaria, viral hepatitis and HIV/AIDS were exchanged with Guangzhou, Zhuhai, Shenzhen, Hainan and Macao on a regular basis. Ad hoc meetings / conferences were convened to foster collaboration on disease surveillance. DH also communicated with the Mainland health authorities for outbreaks of infectious diseases of public health importance. Unfortunately, these had proved to be inadequate in the SARS epidemic.

10. Hong Kong has learnt from the SARS experience. On 17-18 April 2003, Deputy Director Dr PY Leung led a Hong Kong delegation for the first expert group meeting with the Guangdong Health Department. Ensuing discussions between the health authorities in Guangdong and Hong Kong, and later Macao, have led to much closer ties in strengthening the network of information flow on infectious diseases in the Pearl River Delta and mutual visits by experts. There are now regular tripartite meetings among health officials of Guangdong, Hong Kong and Macao.

Control of Outbreaks in Hospitals

11. In managing an outbreak of infectious disease, DH has all along been responsible for epidemiological studies and the prevention of spread of diseases in the community, whereas Hospital Infection Control Teams, comprising Consultant Microbiologists, medical doctors and nurses, have been responsible for infection control measures within hospitals.

12. The SARS experience has highlighted a need in the system to enable full appreciation of the interaction between hospitals and the community. We accept the Expert Committee's recommendation (in paragraphs 8.7 and 8.8 of its Report) that the basis of future epidemic control lies with taking a population-based approach in which DH will take the lead, regardless of whether the outbreak occurs in hospitals or in the community, and work with the Hospital Authority (HA) with agreed protocols. This forms the basis for the establishment of an Infection Control Branch, with expertise seconded from HA, in the future CHP.

Emergency Preparedness and Risk Communication

13. DH has disease protocols for some 40 infectious diseases and contingency plans on influenza pandemic, dengue fever and biological attack. There was however inadequate contingency planning in tackling an epidemic of this scale and nature, which was unprecedented in modern world history, as explained in para 6 above.

14. For effective risk communication to the public, it is necessary to have an accurate assessment of the risk itself. With so little knowledge about SARS at the time, there were difficulties in how information should be disseminated. Right from the beginning, Hong Kong adopted an open and transparent stance. Indeed, WHO has acknowledged that Hong Kong has been exemplary in its transparency of reporting, even when the economic consequences of doing so were known to be significant.

15. To better prepare for the future, there will be an Emergency Response and Information Branch in the future CHP to reinforce our capability in this regard.

Assessment of Major Efforts taken by DH in combating SARS

Proactive Approach

16. DH took a proactive approach in investigating into the SARS epidemic. On learning about an abnormal pattern of sick leave among PWH Ward 8A staff through media reports on 11 March 2003, the ex-Director of Health discussed the matter with the Hospital Chief Executive and assured him that DH would work closely with the hospital on the outbreak. Concurrently, the Community Physician for New Territories East Region [CP(NTE)] also got in touch with the Deputy Hospital Chief Executive. CP(NTE) volunteered and attended a meeting at PWH later that morning. That kicked off DH's participation in the combat against SARS.

Collaboration with WHO

17. DH had involved WHO early and throughout the epidemic. The WHO epidemiological team started working in DH on 17 March 2003 and

provided expert advice or input in the PWH and Metropole Hotel investigations. In April and May, a WHO environmental health team came to Hong Kong to conduct joint investigations in collaboration with DH on the Amoy Gardens outbreak. On the laboratory side, the Government Virus Unit of DH, as part of a network of 11 laboratories in nine countries/territories set up under WHO, participated actively in testing and international exchange of laboratory findings on the SARS virus.

Flow of Information

18. Timeliness and accuracy of case information is of great importance in investigation and contact tracing. There were however difficulties in the flow of information from PWH to DH in the initial days. With joint efforts from both DH and HA, improvements in this respect had been made in the ensuing days. However, the speed and volume of cases with which the SARS outbreak hit Hong Kong had just overwhelmed the paper-based disease reporting system. We are grateful to the Secretary for Health, Welfare and Food (SHWF) who spearheaded the establishment of an on-line reporting system entitled e-SARS. Beginning on 28 March 2003, DH and HA jointly developed the system which went live on 8 April. The electronic system enabled us to share information in real time, thus enhancing our capability in case investigation and contact tracing action. This in turn had further reduced the risk of spread of infection.

Contact Tracing: Efforts and Effects

19. With mounting caseload, DH had continuously enhanced the manpower deployed to the frontline for contact tracing work. The pool of medical and nursing staff, which was the core team in contact tracing, was strengthened from 60 odd staff when the outbreak first came to notice on 11 March 2003, to over 130 during the peak period from the later part of March to mid April, and maintained at around 100 thereafter. The staff worked extended hours and also on weekends and holidays. Other administrative and supporting staff also took on additional duties to support their colleagues in contact tracing.

20. Contact tracing was imperative in the control of SARS, as it ensured that symptomatic contacts were detected early and promptly isolated

in hospitals to prevent spread in the community. Altogether, DH traced 26 000 contacts during the SARS epidemic. About 280 of them were subsequently found to be SARS cases, representing 16% of the total number of SARS cases in Hong Kong. This had helped to arrest the spread of the disease and was due to no small measure of the enormous efforts made by our staff. We would take this opportunity to pay tribute to colleagues in DH and HA for their dedication and selflessness.

Contact Tracing: Perceptions and Limitations

21. There were some perceptions about inadequacies in DH's contact tracing work. We would refer critics to the following observations of the SARS Expert Committee -

> *The Committee considers that DH carried out a large number of contact tracing in a short period of time though this may not have been immediately evident even to those close at hand. The Committee concludes that DH did the best they could within the context in which they operated, the constraints of the information system, and the nature of working relationships at the time. (Paragraph 4.18 of the Report of the Expert Committee.)*

22. The perceptions might be attributable to misunderstanding on the part of critics about the purpose, functions and limitations of contact tracing. Contact tracing cannot prevent a person already exposed to a disease from developing illness. While we were successful on most occasions in tracing contacts, some patients or their contacts had provided inadequate information because of a lapse of memory, being too ill to provide information, or, in isolated incidents, being uncooperative.

Health Intervention Measures

23. In introducing health intervention measures, DH had adopted a graduated approach, taking into account their effectiveness, implementability and public acceptability. As the outbreak situation intensified, the ex-Director of Health recommended a basket of health intervention measures on 26 March 2003, which included among other things, health declaration for incoming visitors and designated medical

centres. The health declaration requirement was introduced from 29 March 2003. DMCs became operational on 31 March 2003.

24. We would point out that although quarantine was historically one of the public health tools for managing infectious diseases, such measures had not been used in Hong Kong, and for that matter most modern societies and developed nations, for decades. It was 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 compromise outbreak control. It might also result in violent resistance from the affected population. The following quotation from an article in the Journal of the American Medical Association (December 5, 2001 – Vol 286, No.21) is relevant -

> *Imposition of large-scale quarantine – compulsory sequestration of groups of possibly exposed persons or human confinement within certain geographic areas to prevent spread of contagious disease – should not be considered a primary public health strategy in most imaginable circumstances.*

25. However, by 30 March 2003, in view of the continuing increase in the number of cases in Amoy Gardens, Block E, the Chief Executive Steering Committee endorsed the decision to isolate the residential block for the protection of both the residents and the community as a whole, by facilitating medical surveillance of potentially infected persons and preventing them from spreading the disease to others. The isolation order was implemented early in the morning of 31 March 2003.

26. Subsequently, on the following morning (1 April 2003), preliminary findings of the multi-disciplinary team led by DH suggested that the lift and sewerage systems of Amoy Gardens, Block E might have been involved in the vertical spread of SARS cases in that building. On the basis of these findings and that the stool samples of some patients had been tested PCR-positive for the SARS coronavirus, it was decided to evacuate the residents of Block E to holiday camps for temporary confinement while the building underwent an in-depth investigation.

27. Further health intervention measures included the introduction of the compulsory home confinement arrangement for household contacts of SARS cases with effect from 11 April 2003 and the taking of body

temperature of persons arriving in or leaving Hong Kong starting from 17 April 2003.

28. The successful implementation of the above health intervention measures was due to concerted efforts by colleagues from DH, a number of Government departments and other agencies, under the overall coordination of the Inter-departmental Action Coordinating Committee chaired by the Permanent Secretary for Health, Welfare and Food. We thank all colleagues for their untiring efforts and contributions.

Director of Health
8 April 2004