

THE 2003 SARS OUTBREAK IN HONG KONG: A REVIEW OF LEGISLATIVE AND BORDER CONTROL MEASURES

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Deemed “the first severe and readily transmissible new disease to emerge in the 21st century”,¹ Severe Acute Respiratory Syndrome (‘SARS’) took the world by shock. Originating from Guangdong Province in the People’s Republic of China in mid-November 2002, the disease spread to some 30 countries within a matter of weeks.² By August 2003, the World Health Organisation had reported 8422 cases of confirmed SARS, of which 916 resulted in the death of the patient.³ This article examines the legislative changes the Hong Kong Special Administrative Region of China government implemented in its fight to contain the disease, regional initiatives undertaken, and the border control measures adopted by the Hong Kong Government in order to prevent the transmission of SARS. Finally, the article discusses the effectiveness of such measures and provides recommendations in the anticipation of another SARS or SARS-like epidemic.

I. INTRODUCTION

On 12 March 2003, the Hong Kong Special Administrative Region of China (‘Hong Kong SAR’) government officially notified the World Health Organisation (‘WHO’)⁴ of “an outbreak of respiratory illness among health care workers.”⁵ That

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¹ WHO, *Severe Acute Respiratory Syndrome (SARS): Status of the Outbreak and Lessons for the Immediate Future* (Geneva: WHO, 2003) at 1 [*Status of the Outbreak*].

² WHO, *World Health Report 2003: Shaping the Future* (Geneva: WHO, 2003) at 75, online: World Health Organisation <<http://whqlibdoc.who.int/whr/2003/9241562439.pdf>> [*World Health Report 2003*]; Canada, National Advisory Committee on SARS and Public Health, *Learning From SARS: Renewal of Public Health in Canada* (Ontario: Health Canada, 2003) at 197 [*Learning from SARS*].

³ *World Health Report 2003*, *supra* note 2 at 75.

⁴ The World Health Organisation (‘WHO’) was established on 7 April 1948 as a branch of the United Nations (‘UN’), and is the UN’s “specialised agency for health.” The WHO currently has 192 Member States. The aim of the WHO is to achieve “the attainment by all peoples of the highest possible level of health”: WHO, *About WHO* (Geneva: WHO, 2004), online: World Health Organisation <<http://www.who.int/about/en>>. The WHO’s power is vested in both the *United Nations Charter* and the *WHO Constitution*. See Michelle Forrest, “Using the Power of the World Health Organisation: The International Health Regulations and the Future of International Health Law” (2000) 33 *Columbia Journal of Law and Social Problems* 153 at 153.

⁵ *Severe Acute Respiratory Syndrome (SARS)*, WHO, 54th Sess., Annex, Agenda Item 14, WHO Doc. WPR/RC54/8 (2004) at 3.

same day, a ‘global alert’⁶ was issued by the WHO on atypical pneumonia, now identified as Severe Acute Respiratory Syndrome (‘SARS’).⁷ The SARS outbreak in Hong Kong was the largest recorded outside of mainland China⁸ spanning a period of over three months, with a total of 1,755 reported cases,⁹ and claiming 299 deaths in Hong Kong alone.¹⁰ The 2003 Outbreak affected every sector of the Hong Kong community, extending beyond the health sector, to the territory’s economy and employment, resulting in significant social disruption.¹¹

This article explores and discusses the legislative changes made during the crisis in the Hong Kong SAR to prevent the transmission of SARS across Hong Kong’s borders and the regional initiatives undertaken by the Hong Kong Administration. The article identifies relevant border control measures adopted, evaluates their effectiveness, and puts forth recommendations for law reform and policy changes in the anticipation of another SARS pandemic.

Most of the conventional wisdom about the SARS epidemic and the measures adopted to contain the virus derives not from academic research but from the media, governmental sources and reported anecdotal evidence. It is therefore necessary to explain where the information for this study came from, how it was handled, and the problems that have been encountered. The collection of material and data for this study closed on 31 July 2004. Unless stated otherwise, this study reflects the research, data and legislation current at this cut-off date.

The Hong Kong SAR Government has released abundant information and has given much credit to the success of the internal measures implemented, such as

⁶ On 15 March 2003, this global alert was heightened as the WHO issued “a rare emergency travel advisory as a global alert to international travellers, health care professionals, and health authorities”: *Status of the Outbreak*, *supra* note 1 at 4. See also *World Health Report 2003*, *supra* note 2 at 73.

⁷ Hong Kong Special Administrative Region, SARS Expert Committee, *Public Health Control Measures* (Hong Kong: Department of Health, 2003) at 4 [*Public Health Control Measures*].

⁸ According to the WHO, by 7 August 2003, a total of 8,422 SARS cases had been reported in 30 countries with 916 deaths. Of the probable cases, 5,327 (or 63 percent) were in China, 1,755 (21 percent) in the Hong Kong SAR and 665 (8 percent) in Taiwan (Chinese Taipei), *World Health Report 2003*, *supra* note 2 at 75. For more statistics, see W.K. Lam, N.S. Zhong & W.C. Tan, “Overview on SARS in Asia and the World” (2004) 8 *Respirology* 2 at 2; Lawrence O. Gostin, Ronald Bayer & Amy L. Fairchild, “Ethical and Legal Challenges Posed by Severe Acute Respiratory Syndrome” (2003) 290 *Journal of the American Medical Association* 3229 at 3229; SARS Expert Committee, Hong Kong SAR, *SARS in Hong Kong: From Experience to Action* (Hong Kong: Department of Health, 2003) at 5 [*SARS in Hong Kong*].

⁹ This figure includes 386 hospital staff and medical interns who were infected: Hong Kong Special Administrative Region, Health, Welfare and Food Bureau, *SARS Bulletin* (23 June 2003) (Hong Kong: Health, Welfare and Food Bureau, 2003) at 1.

¹⁰ Sarah J. Marshall, “World Health Organisation, Expert Committee Finds Little Fault in Hong Kong’s Response to SARS” (2003) 83(11) *Bulletin World Health Organisation* at 848. Note: the figure given by the SARS Expert Committee is 300 deaths, *SARS in Hong Kong*, *supra* note 8 at 6.

¹¹ Social effects of the 2003 Outbreak in the Hong Kong SAR include the closure of schools from 29 March 2003 until the resumption of classes “in phases” during April and May 2003: *Public Health Control Measures*, *supra* note 7 at 7. Household contacts of SARS patients were placed under home confinement and quarantine, travel warnings issued by the WHO had enormous detrimental effects on the travel industry, while patients and ethnic groups experienced prejudice and discrimination during the period. Furthermore, the psychological impact on health care workers and families of SARS patients was incalculable: *Status of the Outbreak*, *supra* note 1 at 2.

quarantine, isolation and contact-tracing measures¹² in the containment of the 2003 SARS Outbreak in Hong Kong. In comparison, very little attention has been drawn to the effectiveness of the border control measures adopted to prevent the importation and exportation of SARS into the Hong Kong SAR.

At the time this study was completed,¹³ there was limited academic literature available on the subject matter. The main sources used in this study are reports issued by the WHO, the Hong Kong SAR Government, and reports published by the Hong Kong SARS Expert Committee.¹⁴ Much of the source material available has been published by government agencies, thus, potential reservations arise regarding their objectivity. Where inconsistencies arose regarding sources or statistics, the WHO figures were adopted preferentially.

II. SARS

The disease now known as SARS or 'Severe Acute Respiratory Syndrome' was a formerly unknown syndrome and was given its first case definition by the WHO on 15 March 2003.¹⁵ According to the clinical case definition by the WHO, the virus begins with a fever of over 38 degrees Celsius¹⁶ and is followed by the development of "[o]ne or more symptoms of lower respiratory tract illness ([such as] cough, difficulty breathing, [and] shortness of breath)"¹⁷ after a period of 3 to 7 days.¹⁸ Some cases have also reported the presence of diarrhoea.¹⁹ In addition, the WHO

¹² A tracking device was used by the police "to detect clusters of SARS cases" in the Hong Kong SAR and to identify their relationships. "Moreover, a computer system was developed by the Department of Health to combine information about SARS cases and their contacts." Between March and May 2003, some 23,000 persons had been covered by contact-tracing. Some 240 individuals were subsequently identified as probable SARS cases, amounting to "approximately 14 [percent] of the 1,755 SARS cases diagnosed in Hong Kong": Thomas Tsang & T.H. Lam, "SARS: Public Health Measures in Hong Kong" (2003) 8 *Respirology* S46 at S47. See also *Status of the Outbreak, ibid.* at 2. As a result of contact tracing, 91 percent of SARS cases were successfully "linked to a known source of exposure": Hong Kong Economic and Trade Office, "Update on SARS (20 May 2003)," online: Hong Kong Economic and Trade Office, Brussels <<http://www.hongkong-eu.org/Pneumonia200503.html>> [*Update on SARS*].

¹³ The paper was written approximately 12 months after the WHO officially announced the end of the chain of transmission on 5 July 2003 when the last infected area (Taiwan) was declared SARS-free. See *World Health Report 2003, supra* note 2 at 78.

¹⁴ The SARS Expert Committee was established by the Chief Executive on 28 March 2003 and was composed of experts from a variety of fields in order to assess the policies implemented by the Hong Kong SAR during the crisis: *SARS in Hong Kong, supra* note 8 at 1-2.

¹⁵ *World Health Report 2003, supra* note 2 at 73-74.

¹⁶ WHO, *Alert, Verification and Public Health Management of SARS in the Post-Outbreak Period* (Geneva: WHO, 2003) online: World Health Organisation <<http://www.who.int/csr/sars/postoutbreak/en>> [*Alert, Verification and Public Health*].

¹⁷ *Ibid.*

¹⁸ *SARS in Hong Kong, supra* note 8 at 5. Note that the figure given by the United States Department of Health is 2-7 days: U.S. Department of Health and Human Services, *Severe Acute Respiratory Syndrome (SARS)* (Atlanta: Department of Health and Human Services, 2004), online: Centres for Disease Control and Prevention <<http://www.cdc.gov/ncidod/sars/factsheet.htm>>.

¹⁹ Approximately 10-20 percent report the presence of diarrhoea: U.S. Department of Health and Human Services, *ibid.* at 18.

case definition requires chest x-ray evidence²⁰ “of lung infiltrates consistent with pneumonia or RDS [Respiratory Distress Syndrome] or autopsy findings consistent with the pathology of pneumonia or RDS without an identifiable cause”, and that the illness necessarily fails any other “alternative diagnosis” available.²¹

The incubation period of the disease has been found to be between 2 to 7 days,²² averaging approximately 5 days.²³ Nevertheless, periods of 10 days have been reported in some cases,²⁴ leading to the inference that an infected person could theoretically be a carrier of the virus for up to 10 days while not presenting any symptoms. Therefore, it becomes considerably more difficult to detect and contain the spread of the virus. However, reports suggest that the virus is not contagious until the patient becomes symptomatic.²⁵

Moreover, in contrast to other respiratory illnesses, SARS has been found to be most infectious after 10 days of its initial transmission.²⁶ At that stage, and for reasons yet unknown, patients either subsequently recover, or, in contrast, undergo rapid decline “to severe respiratory illness, often requiring ventilatory support”.²⁷ It has been estimated that approximately 10 to 20 percent of SARS patients require ventilation support.²⁸

The transmission of SARS is believed to occur when one person comes within close contact of an infected person, resulting in “exposure to infected respiratory droplets expelled during coughing or sneezing”,²⁹ or “following contact with body fluids during certain medical interventions”.³⁰ The virus is also believed to survive in human excrement which has been attributed to the community outbreak within the Hong Kong SAR through faulty drainage and sewage systems, infecting some 300 residents living within the same housing estate in late March 2003.³¹

The mortality rate for SARS varies significantly depending, in particular, on the age of the infected person; it has been reported to be directly proportional to the age of the patient and is further exacerbated in patients suffering an “underlying chronic disease”.³² In Hong Kong, the mortality rate during the 2003 SARS outbreak was reportedly 17.1 percent, considerably higher than the corresponding figure of 7 percent in other parts of China.³³ Based on data received from affected

²⁰ SARS in Hong Kong, *supra* note 8 at 61.

²¹ Alert, *Verification and Public Health*, *supra* note 16.

²² WHO, *Preliminary Clinical Description of Severe Acute Respiratory Syndrome* (Geneva: WHO, 2003) online: World Health Organisation <<http://www.who.int/csr/sars/clinical/en>> [*Preliminary Clinical Description*].

²³ Alert, *Verification and Public Health*, *supra* note 16.

²⁴ *Preliminary Clinical Description*, *supra* note 22.

²⁵ Alert, *Verification and Public Health*, *supra* note 16.

²⁶ *Severe Acute Respiratory Syndrome (SARS)*, WHO, 113th Sess., Annex, Agenda Item 8.3, WHO Doc EB113/33 (2003) at 2.

²⁷ *Ibid.*

²⁸ *Preliminary Clinical Description*, *supra* note 22.

²⁹ *World Health Report 2003*, *supra* note 2 at 74. See also *Update on SARS*, *supra* note 12.

³⁰ *Ibid.*

³¹ The community outbreak occurred in the Amoy Gardens Housing Estate: *World Health Report 2003*, *ibid.* at 74.

³² WHO, *Severe Acute Respiratory Syndrome (SARS)*, *supra* note 26 at 2.

³³ Sarah J. Marshall, *supra* note 10 at 848.

countries, the average global mortality rate of the disease according to the WHO is approximately 11 percent.³⁴

On 16 April 2003, one month after a “global alert”³⁵ on the SARS virus had been issued, the WHO officially announced the “causative agent”³⁶ of the virus to be a coronavirus that had, as yet, never been detected in humans.³⁷ At the time of writing, no effective vaccine or cure had yet been found.³⁸ The treatment administered to patients during the 2003 outbreak “included a variety of antibiotics to presumptively treat known bacterial agents of atypical pneumonia”.³⁹ Steroids, ribavirin, and other antimicrobials have also been known to be administered, often in combination.⁴⁰ However, it is yet unknown which “treatment regimen” is the most effective.⁴¹

III. SARS IN HONG KONG

SARS was first ‘imported’ into the Hong Kong SAR on 21 February 2003 by an infected physician⁴² who had treated atypical pneumonia patients in Guangdong Province, the People’s Republic of China.⁴³ The doctor stayed in a city hotel and subsequently infected at least 16 guests and other foreign visitors on the same floor.⁴⁴ As a result, the virus was carried “along international air travel routes as guests at the hotel flew home”.⁴⁵ In the following days, outbreaks were reported in hospitals in Hong Kong, Vietnam, Singapore, and Canada.⁴⁶

³⁴ *World Health Report 2003*, *supra* note 2 at 74. This figure is subject to further variation depending on the age of the patient. The mortality rate for a 24 year-old patient is 1 percent and 50 percent for patients 65 years of age and above: Abu S.M. Abdullah *et al.*, “Lessons From the Severe Acute Respiratory Syndrome Outbreak in Hong Kong” (2003) 9(9) *Emerging Infectious Diseases* 1042 at 1043.

³⁵ The WHO issued a ‘global alert’ on 12 March 2003: *Status of the Outbreak*, *supra* note 1 at 4. On 16 April 2003, the WHO officially announced the virus to be caused by a coronavirus.

³⁶ WHO, “Where Do We Go From Here?” (Summary Report, WHO Global Conference on Severe Acute Respiratory Syndrome (SARS), Kuala Lumpur, Malaysia, 17-18 June 2003), online: World Health Organisation <http://www.who.int/csr/sars/conference/june_2003/materials/report/en> [*WHO Global Conference*].

³⁷ WHO, “Severe Acute Respiratory Syndrome (SARS)—Multi-Country Outbreak—Update 31: Coronavirus Never Before Seen in Humans is the Cause of SARS” (16 April 2003), online: World Health Organisation <http://www.who.int/csr/don/2003_04_16/en/>. The coronavirus in humans was later found in “almost identical” form in the masked palm civet cat and raccoon dog, considered a delicacy in Mainland China. However, the role played by such “domesticated game animals” in the transmission of the disease is inconclusive: *World Health Report 2003*, *supra* note 2 at 74.

³⁸ *World Health Report 2003*, *supra* note 2 at 78.

³⁹ *Preliminary Clinical Description*, *supra* note 22.

⁴⁰ *Ibid.* Treatment during the 2003 Outbreak also included the administration of “corticosteroids, antiviral therapy, [and] Chinese medicine”: *SARS in Hong Kong*, *supra* note 8 at 14.

⁴¹ *Preliminary Clinical Description*, *supra* note 22.

⁴² Dr. Liu had treated patients with atypical pneumonia between 11 and 13 February 2003 and developed symptoms of the disease on 15 February 2003. Nevertheless, the disease was only confirmed as being SARS in mid-April 2003 once a diagnostic test had been developed: *SARS in Hong Kong*, *supra* note 8 at 18.

⁴³ *Status of the Outbreak*, *supra* note 1 at 1.

⁴⁴ *World Health Report 2003*, *supra* note 2 at 74-75.

⁴⁵ *Status of the Outbreak*, *supra* note 1 at 1.

⁴⁶ *Ibid.*

Travel advisories were issued by the WHO to countries with “recent local transmission”⁴⁷ when it was found that infected persons and close contacts of infected persons were continuing to travel, thereby transmitting the disease to other passengers and bringing it to their destinations of arrival.⁴⁸ On 2 April 2003, the WHO issued a travel advisory suggesting that travellers defer “all but essential travel”⁴⁹ to the Hong Kong SAR,⁵⁰ when it was found by the WHO that “[d]espite the implementation of strict measures to control the outbreak, there had continued to be a small number of visitors to Hong Kong who ha[d] been identified as SARS cases after their return from Hong Kong.”⁵¹ The advisory remained in force until 23 May 2003.⁵²

The three-month SARS epidemic in Hong Kong, which directly affected 1,755 individuals and resulted in 299 deaths,⁵³ reached its peak in March 2003.⁵⁴ It was not until 23 June 2003,⁵⁵ twenty days⁵⁶ after the last reported case on 2 June, that Hong Kong was finally removed from the WHO’s list of “areas with recent local transmission”,⁵⁷ thereby bringing the 2003 SARS outbreak in Hong Kong to a close.⁵⁸ The global outbreak was to continue until the last travel advisory

⁴⁷ WHO Press Release, “SARS- Hong Kong Removed From List of Areas With Local Transmission” (23 June 2003), online: World Health Organisation <http://www.wpro.who.int/sars/docs/pressreleases/pr_23062003_.asp> [WHO Press Release 23 June 2003]. “Local transmission” is defined by the WHO “as an area in which local chain(s) of transmission of SARS is/are occurring as reported by the national public health authorities”: WHO, “Update 17—Travel Advice—Hong Kong Special Administrative Region of China, and Guangdong Province, China” (2 April 2003), online: World Health Organisation <http://www.who.int/csr/sars/archive/2003_04_02/en> [WHO Update 17].

⁴⁸ WHO Update 17, *ibid.*

⁴⁹ *Ibid.*

⁵⁰ The travel advisories issued during the 2003 epidemic were said to be “the toughest travel advisories [issued by the WHO] in its 55-year history when it recommended postponement of all but essential travel to designated high-risk areas”: *Status of the Outbreak*, *supra* note 1 at 6.

⁵¹ WHO Update 17, *supra* note 47.

⁵² Hong Kong Economic and Trade Office, “SARS Update—New Cases in Decline” (28 May 2003), online: Hong Kong Economic and Trade Office, Washington D.C., USA <<http://www.hongkong.org/miscellaneous/sarsreport052803.html>>.

⁵³ Sarah J. Marshall, *supra* note 10 at 848. Note: The figure given by the SARS Expert Committee is 300 deaths, *SARS in Hong Kong*, *supra* note 8 at 6.

⁵⁴ S.H. Lee, “The SARS Epidemic in Hong Kong” (2003) 57(9) *Journal of Epidemiology & Community Health* 652 at 652.

⁵⁵ WHO, “Update 86—Hong Kong Removed From List of Areas with Local Transmission” (23 June 2003), online: World Health Organisation <http://www.who.int/csr/don/2003_06_23/en>. See also, *SARS in Hong Kong*, *supra* note 8 at 6.

⁵⁶ Twice the disease’s maximum incubation period.

⁵⁷ WHO Press Release 23 June 2003, *supra* note 47.

⁵⁸ Since the Hong Kong SAR was declared SARS-free by the WHO on 2 June 2003, there has been no new reported case of SARS in Hong Kong: “Hong Kong Steps Up Measures After China’s SARS Case Confirmed” *Asian Economic News* (12 January 2004), online: Asian Economic News <http://www.findarticles.com/p/articles/mi_m0WDP/is_2004_Jan_12/ai_112093272>. Nevertheless, the SARS Alert Level has been reactivated by the Hong Kong SAR Government on several occasions as a result of confirmed SARS cases in neighbouring countries. “Since September 2003, a total of 15 confirmed SARS cases have been reported outside Hong Kong: one in Singapore, one in Taiwan, four in Guangdong, two in Anhui and seven in Beijing”: Hong Kong SAR Government, “SARS Situation Report” (28 May 2004), online: Hong Kong SAR Government Information Centre <<http://www.info.gov.hk/info/sars/SARSupdate/su20040528.htm>>.

imposed on Beijing was removed by the WHO on 24 June 2003, followed by the removal of Taiwan from the WHO's list of areas with recent local transmission on 5 July 2003,⁵⁹ deeming all "human chain[s] of transmission" to be effectively broken.⁶⁰

IV. HONG KONG'S HEALTH LEGISLATION

A. *Quarantine and Prevention of Disease Ordinance*

The *Quarantine and Prevention of Disease Ordinance* ('QPDO')⁶¹ and its subsidiary legislation, the *Prevention of the Spread of Infectious Diseases Regulations* ('PSIDR'),⁶² provide the legal basis for the prevention and control of infectious diseases in the Hong Kong SAR.⁶³ The Ordinance is primarily concerned with the prevention of the importation and exportation of an infectious disease into and from the Hong Kong SAR. On 27 March 2003, the Director of Health⁶⁴ ordered an amendment to the First Schedule of the Ordinance, under the *Quarantine and Prevention of Disease Ordinance (Amendment of First Schedule) Order 2003*,⁶⁵ adding SARS to the list of infectious diseases, thus, empowering the Director of Health under the relevant provisions of Chapter 141 and its subsidiary legislation⁶⁶ to legislate on SARS.⁶⁷

⁵⁹ *World Health Report 2003*, *supra* note 2 at 78.

⁶⁰ *Alert, Verification and Public Health*, *supra* note 16.

⁶¹ Cap. 141, H.K.O [QPDO]; The drafting of the QPDO "was based on the principles stipulated in the International Health Regulations (the 'IHR'), previously known as the International Sanitary Regulations which were adopted by the Fourth World Health Assembly (the 'WHA') in 1951." The Regulations were the first attempt at creating an "international code of measures for preventing the international spread of designated infectious diseases and requirements for reports and notifications of cases of these diseases." State Parties have an obligation under the IHR to report three quarantinable diseases (cholera, plague and yellow fever). The Hong Kong SAR's obligations "are given effect in Hong Kong through Cap. 141 [the QPDO] which stipulates detailed provisions for the prevention and control of these three quarantinable diseases": SARS Expert Committee, Hong Kong SAR, *Public Health Legislation on Infectious Diseases Control in Hong Kong* (Hong Kong: Department of Health: 2003) at 1 [*Public Health Legislation*]. See also, David P. Fidler, "'SARS: Political Pathology of the First Post-Westphalian Pathogen'" (2003) 31 *Journal of Law, Medicine & Ethics* 485 at 487; J. Speakman, Fernando González-Martín & T. Perez, "Quarantine in Severe Acute Respiratory Syndrome (SARS) and Other Emerging Infectious Diseases" (2003) 31 *Journal of Law, Medicine & Ethics* 63 at 64.

⁶² *Prevention of the Spread of Infectious Diseases Regulations*, Cap. 141B, H.K.O [PSIDR].

⁶³ *Public Health Legislation*, *supra* note 61 at 1.

⁶⁴ The Director of Health is attributed the responsibility "for the enactment of a total of 23 public health legislations," including the QPDO: SARS Expert Committee, Hong Kong SAR, *Briefing Paper For SARS Expert Committee On Prevention and Control of Communicable Diseases in Hong Kong* (Hong Kong: Department of Health: 2003) at 5.

⁶⁵ L.N. 79 of 2003.

⁶⁶ *Supra* note 62.

⁶⁷ Prior to SARS being added to the list, there were 27 infectious diseases listed in the First Schedule. These were: Acute Poliomyelitis, Amoebic Dysentery, Bacillary Dysentery, Chickenpox, Cholera, Dengue Fever, Diphtheria, Food Poisoning, Legionnaires' Disease, Leprosy, Malaria, Measles, Meningococcal Infections, Mumps, Paratyphoid Fever, Plague, Rabies, Relapsing Fever, Rubella, Scarlet Fever, Tetanus, Tuberculosis, Typhoid Fever, Typhus, Viral Hepatitis, Whooping Cough, and Yellow Fever. Severe Acute Respiratory Syndrome became the 28th infectious disease to be listed on the First Schedule to the QPDO.

Under provisions of the *QPDO*, health officials can board an aircraft, vessel,⁶⁸ or train⁶⁹ for the purposes of detecting an infectious disease. Masters of any vessel or aircraft are required to declare the presence on board of an infectious disease.⁷⁰ Moreover, the *QPDO* grants statutory powers to health officials to conduct medical examinations of any passenger on board, for the purposes of detecting an infectious disease,⁷¹ and to quarantine any infected person wishing to land in Hong Kong until such time as the disease is no longer contagious.⁷² These were existing provisions under the *QPDO*, and only became applicable to SARS once it was added to the list of infectious diseases as stipulated in the First Schedule of the Ordinance.

B. Prevention of the Spread of Diseases Regulations

The *Prevention of the Spread of Infectious Diseases (Amendment) Regulation 2003*,⁷³ gazetted on 17 April, amended the *PSIDR*⁷⁴ by inserting Part VIA which is titled “Restriction on departure from Hong Kong and medical examination of travellers to prevent spread of severe acute respiratory syndrome”.⁷⁵ Part VIA contained provisions expressly preventing the departure of any person having a history of contact with SARS-infected persons or persons suspected of having SARS,⁷⁶ authorised the

⁶⁸ *QPDO*, s.22(1): Any vessel or aircraft arriving in Hong Kong may be visited by a health officer, who may exercise all or any of the powers vested in him by section 31, and shall deal with the vessel or aircraft in the manner prescribed by or under this Ordinance.

⁶⁹ *QPDO*, s.29(1): “The guard of any train on which a case of any quarantinable disease is present shall on arrival at the first station report the facts to the station master, who shall telephone or telegraph them to a health officer.”; s.29(2): “The station master shall detain the carriage in which the sick person is and all other occupants thereof for examination by a health officer, and shall detach the carriage from the rest of the train and keep it at the station until the examination has been made, or send the carriage to another station at which the examination can be more expeditiously carried out and from which the sick person and other persons may be more easily conveyed to a hospital or place of isolation”; s.29(3): “Any person suffering or suspected to be suffering from any such disease shall be removed to a hospital or place of isolation and remain there until discharged by the officer in charge thereof.”

⁷⁰ *QPDO*, s.28(2): “The master of any vessel or aircraft shall report to a health officer any case of infectious disease which he knows to exist, or to have existed during the voyage, on his vessel or aircraft.”

⁷¹ *QPDO*, s.31: “On the arrival of any vessel at the quarantine anchorage, a health officer shall go on board and put to the master and surgeon, if any, or to any other person on board such questions as he deems necessary in order to ascertain the state of health of persons on board, the sanitary condition of the ship and cargo and the sanitary conditions of the port of departure or of intermediate ports touched at, and may require the presence for inspection and examination of all persons on board, and may inspect every part of the ship and demand to see the journal or log book and all the ship’s papers.”

⁷² *QPDO*, s.37: “Whenever a health officer shall so require, all passengers on board any vessel which is infected or suspected vessel with respect to any quarantinable disease or so many as he may direct shall be taken to a quarantine station and there kept and attended to for such a time as he may deem proper before allowing them to return on board the vessel or to be transferred to any other vessel or to land in Hong Kong. The period of detention shall in no case be greater than is permitted by this Ordinance or any regulation made thereunder”; s.38: “A health officer may detain in a quarantine station, until such time as the disease is no longer communicable to others, any person desirous of landing in Hong Kong who on arrival is found to be suffering from an infectious disease.”

⁷³ L.N. 107 of 2003.

⁷⁴ *Supra* note 62.

⁷⁵ *Ibid.*

⁷⁶ *PSIDR*, reg. 27A:

“Where a health officer has reason to believe or suspect that a person—
(a) is suffering from Severe Acute Respiratory Syndrome;

checking of body temperature⁷⁷ and medical examinations⁷⁸ of passengers arriving in and departing from Hong Kong for the purposes of detecting SARS, and empowered health officials to detain any suspected SARS-infected persons.⁷⁹ Furthermore, Regulation 27D of the Amendment, provided that Part VIA was subject to and “not to derogate from other provisions” of the *PSIDR*. These new provisions were enacted solely for the purpose of preventing the transmission of SARS into and out of Hong Kong during the 2003 outbreak and did not apply to any other infectious disease stipulated in the First Schedule of the *QPDO*.

V. REGIONAL INITIATIVES

From the onset of the 2003 SARS outbreak, the Hong Kong SAR adopted a proactive role in the global and regional containment of SARS. On a global level, Hong Kong has received international recognition, particularly in regards to the initial discovery of the coronavirus,⁸⁰ descriptions of the early symptoms of the virus, and publication of a comprehensive analysis of the syndrome’s epidemiology.⁸¹

On a regional level, the Hong Kong SAR implemented the *Entry-Exit Quarantine Action Plan for Controlling the Spread of SARS by Governments of the People’s Republic of China and ASEAN*, as agreed between the Association of the Southeast Asian Nations (‘ASEAN’) Member Countries and the People’s Republic of China, 1 to 2 June 2003, and the uniform immigration and customs measures adopted in the Asia-Pacific Economic Cooperation (‘APEC’) meeting on 28 June 2003.⁸² Furthermore, in order to prevent the transmission of SARS between the Hong Kong SAR

(b) has been exposed to the risk of infection of Severe Acute Respiratory Syndrome by contact with a person suffering from that disease; or

(c) is a carrier of Severe Acute Respiratory Syndrome, the health officer may make a direction in writing prohibiting the person from leaving Hong Kong without the permission in writing of a health officer during a period specified in the direction.”

⁷⁷ *PSIDR*, reg. 27C(1): “As a measure for preventing the introduction into, the spread in and transmission from Hong Kong of Severe Acute Respiratory Syndrome, any person authorized by the Director of Health for the purposes of this paragraph may take the body temperature of any person arriving in Hong Kong or leaving Hong Kong” (L.N. 145 of 2003).

⁷⁸ *PSIDR*, reg. 27C(2): “A health officer, or a medical practitioner authorized by the Director of Health for the purposes of this paragraph, may carry out a medical examination on, and for that purpose stop and detain, any person arriving in Hong Kong or leaving Hong Kong, for the purpose of ascertaining whether that person is likely to be infected with Severe Acute Respiratory Syndrome.”; reg. 27C(3): “Without limiting paragraphs (1) and (2), any person referred to in regulation 27(1)(a), (b) or (c) may stop and detain any person arriving in Hong Kong or leaving Hong Kong, until (a) the person’s body temperature can be taken under paragraph (1); or (b) a medical examination can be carried out on the person under paragraph (2).”; reg. 27C(4): “If after a medical examination on a person under paragraph (2), the health officer or the medical practitioner referred to in that paragraph has reason to believe or suspect that the person is likely to be infected with Severe Acute Respiratory Syndrome, that person may be detained and removed by any person referred to in regulation 27B(1)(a), (b) or (c) to an infectious diseases hospital or such other place as appointed by a health officer.”

⁷⁹ *PSIDR*, reg. 12: “Any person removed to an infectious diseases hospital or other place under regulation 10, 27B(2) or 27C(4) may be detained there until, in the opinion of the medical officer in charge of such infectious diseases hospital or other place, such person is no longer infectious.” (L.N. 107 of 2003).

⁸⁰ The causative agent was initially identified by the microbiology team of The University of Hong Kong: *SARS in Hong Kong*, *supra* note 8 at 21.

⁸¹ *Ibid.* at 137.

⁸² *Public Health Legislation*, *supra* note 61 at 5.

and other parts of China, cooperation was enhanced between the Hong Kong SAR Government and the Municipal People's Government of the neighbouring province, Shenzhen.⁸³

A. Special ASEAN-China Leaders Meeting

On 26 April 2003, Health Ministers or their respective representatives of the ASEAN Member Countries⁸⁴ and the People's Republic of China gathered in Kuala Lumpur, Malaysia, for the ASEAN + 3 Ministers of Health Special Meeting on SARS.⁸⁵ The commitment to implement uniform border control measures agreed upon in this meeting was later reaffirmed in the Special ASEAN-China Leaders Meeting held in Bangkok, Thailand, on 29 April 2003.⁸⁶

The Bangkok Meeting sought to enhance cooperation between the ASEAN Member Countries and aimed to encourage the implementation of uniform measures for the regional containment of SARS.⁸⁷ The Meeting concluded with an agreement to implement more "stringent pre-departure border checks and mandatory health declaration forms for travellers from affected countries,"⁸⁸ in addition to the screening of all arriving travellers⁸⁹ and the "establish[ment of] a cooperation mechanism [to] exchange...information."⁹⁰

These agreements were formalised in the *ASEAN + 3 Action Plan on Prevention and Control of SARS and Other Infectious Diseases* ('Action Plan').⁹¹ The Action Plan encouraged countries with recent 'local transmission' to continue the screening of all departing travellers.⁹² Furthermore, countries with no recent 'local transmission,' were encouraged to maintain the screening of all arriving travellers and to continue the circulation of health declaration forms as a means of early detection of the importation of SARS.⁹³ These measures were to be implemented subject to the country's domestic laws and situation, public health system, and the global situation as monitored by the WHO.⁹⁴

⁸³ Hong Kong SAR, Health, Welfare and Food Bureau, "SARS Bulletin" (25 April 2003) at 2-3 [*SARS Bulletin*].

⁸⁴ As at 31 July 2004, ASEAN has ten Member Countries: Indonesia, Malaysia, Philippines, Thailand, Singapore, Vietnam, Brunei Darussalam, Cambodia, Laos and Myanmar.

⁸⁵ Present at the special meeting were Health Ministers or their respective representatives of the ten ASEAN Member Countries, the People's Republic of China, Japan, and Republic of Korea: ASEAN, "ASEAN is a SARS Free Region" (Joint Statement of the Special ASEAN + 3 Health Ministers Meeting On SARS, Siem Reap, Cambodia, 10-11 June 2003), online: Association of the South East Asian Nations <<http://www.aseansec.org/14823.htm>> [*ASEAN Joint Statement*].

⁸⁶ *Ibid.* See also Asia Regional Information Center, "Chronology of Country Responses" (3 December 2004), online: Asia Regional Information Center <http://aric.adb.org/sars/chronology_sars_policy.asp> [*Chronology of Country Responses*].

⁸⁷ *Chronology of Country Responses, ibid.*

⁸⁸ Amrin Amin *et al.*, "South-East Asia and International Law" (2003) 7 Sing. J.I.C.L. 284 at 312. See also, Michael Vatikiotis, "ASEAN and China—United in Adversity" (2003) 166(18) Far Eastern Economic Review 14 at 15.

⁸⁹ Amrin Amin *et al., ibid.* at 312.

⁹⁰ *Public Health Legislation, supra* note 61 at 4.

⁹¹ *ASEAN Joint Statement, supra* note 85.

⁹² *Ibid.*

⁹³ *Ibid.*

⁹⁴ *Ibid.*

A further meeting, the China-ASEAN Entry-Exit Quarantine Meeting on SARS,⁹⁵ was held on 1 June 2003 in Beijing, which Hong Kong attended as part of the Chinese delegation.⁹⁶ The Beijing meeting concluded with the adoption of the *Entry-Exit Quarantine Action Plan for Controlling the Spread of SARS by Governments of the People's Republic of China and ASEAN*,⁹⁷ which resulted in measures being extended to all land and sea passengers.⁹⁸

B. APEC

A meeting held on 28 June 2003 in Bangkok, Thailand, between the Health Ministers of APEC (of which Hong Kong is a Member)⁹⁹ adopted and endorsed the measures agreed upon in the ASEAN + 3 Ministers of Health Special Meeting on SARS and reaffirmed in the Special ASEAN-China Leaders Meeting.¹⁰⁰

The border control measures endorsed by APEC promote the establishment of uniform measures to prevent the importation and exportation of SARS between APEC Member Economies.¹⁰¹ Member Economies agreed to screen all departing travellers from areas affected by SARS in accordance with the WHO recommendations, such as, the distribution of health declaration forms and temperature screening of all departing travellers "to prevent the spread of SARS to other economies and boost the confidence of the international community in the APEC region."¹⁰² It was further agreed that all travellers arriving from areas of recent local transmission, be subjected to screening measures, provided that no incoming infected traveller was to be denied entry and medical treatment from a host economy, on protectionist grounds.¹⁰³

Furthermore, it was agreed that Member Economies were to notify APEC promptly, if there was any transmission of SARS between APEC States in order to enhance the efficiency of contact-tracing. Moreover, the agreement reached by APEC extended beyond that reached between ASEAN and the People's Republic of China, requiring economies that "share common land borders and/or which have regular point-to-point sea-links" to establish "a common set of protocols" in order to prevent the importation and exportation of SARS via land and sea travel.¹⁰⁴

C. Hong Kong-Shenzhen Co-Operation

On 25 April 2003, a meeting between officials from the Municipal People's Government and the Hong Kong SAR Government was held in Shenzhen, the

⁹⁵ *Ibid.*

⁹⁶ Amrin Amin *et al.*, *supra* note 88 at 312.

⁹⁷ *ASEAN Joint Statement*, *supra* note 85.

⁹⁸ Amrin Amin *et al.*, *supra* note 88 at 312.

⁹⁹ The Hong Kong SAR became a member economy of the Asia-Pacific Economic Cooperation (APEC) on 12 to 14 November 1991: APEC, "Member Economies" (2004) online: APEC <http://www.apec.org/apec/member_economies.html>.

¹⁰⁰ 2003 Meeting of APEC Ministers Responsible for Trade, "APEC Action Plan On Severe Acute Respiratory Syndrome" (2003), online: APEC <http://www.apecsec.org/apec/ministerial_statements/sectoral_ministerial/trade/2003_trade/action_on_sars.html> [APEC Action Plan on SARS].

¹⁰¹ *Ibid.* See also, Amrin Amin *et al.*, *supra* note 88 at 312.

¹⁰² *APEC Action Plan on SARS*, *ibid.*

¹⁰³ *Ibid.*

¹⁰⁴ *Ibid.*

People's Republic of China, to enhance cooperation at all shared border control points.¹⁰⁵ At the meeting, it was agreed to "install 15 infrared thermal imaging machines at the Lo Wu¹⁰⁶ control point on 26 April."¹⁰⁷ A further 200 infrared thermal imaging machines were to be installed at all other border control points for the screening of all incoming passengers by mid-May 2003.¹⁰⁸ In addition, it was agreed that incoming passengers were to be screened on both sides of the border to further guard against importation and exportation between the Hong Kong SAR and other parts of China.¹⁰⁹ It was also agreed to "enhance communication and co-operation by having regular visits and exchange of information, with the aim to tighten mutual cooperation in implementing preventive measures against SARS".¹¹⁰

A subsequent meeting held between Hong Kong and Shenzhen on 11 and 12 August 2003 further affirmed the agreements reached earlier where:

Specific areas of discussion in this regard include[d] joint efforts in health screening of travellers; information exchange; experience and knowledge sharing on public health issues and communicable diseases; control of vector and vector-borne diseases; and designation of respective liaison officers for coordination of these tasks.¹¹¹

As a result, the Hong Kong Department of Health credits the subsequent "effective handling of special cases" detected at border control points, to the enhanced communication and cooperation between the Hong Kong SAR and other parts of China.¹¹²

Moreover, throughout the 2003 SARS outbreak in Hong Kong, daily exchange of information was maintained between Hong Kong and the health authorities in other parts of China until the Hong Kong outbreak was contained in late June, in order to gain situational updates and hence, further enhance the efficiency of border control measures. From mid-July 2003 information exchange decreased to once weekly.¹¹³

VI. BORDER CONTROL MEASURES

A. *Entry and Immigration Control*

As a result of the regional agreements discussed above and authorised by the *QPDO* and its subsidiary legislation, the *PSIDR*, several border control measures were implemented by the Hong Kong SAR Government in an attempt to prevent the transmission of SARS into and out of Hong Kong during the 2003 outbreak.

¹⁰⁵ See *Chronology of Country Responses*, *supra* note 86.

¹⁰⁶ Lo Wu is the main immigration control point between the Hong Kong SAR and Shenzhen, People's Republic of China.

¹⁰⁷ *SARS Bulletin*, *supra* note 83.

¹⁰⁸ *Ibid.*

¹⁰⁹ *Ibid.*

¹¹⁰ *Ibid.* See also, Hong Kong Economic and Trade Office, *supra* note 52.

¹¹¹ Hong Kong SAR, Department of Health, *Enhanced Communication Between DH and the Mainland Hong Kong*: Department of Health, (2003) at 4.

¹¹² *Ibid.*

¹¹³ *Ibid.* at 5.

1. Health declaration forms

From 29 March 2003, all passengers arriving at Hong Kong International Airport¹¹⁴ were asked to complete mandatory health declaration forms which were distributed by airline staff.¹¹⁵ Similarly, all passengers arriving by sea and those entering through land control points were required to complete the health declaration forms.¹¹⁶ The introduction of health declaration forms served a dual purpose: First, they sought to ensure “early detection of people with SARS-like symptoms or exposure to the disease, [thus] facilitating contact tracing,” and second, to “maintain the public’s vigilance against SARS.”¹¹⁷

Declaration forms distributed at the airport and seaports contained two questions: Firstly, the forms required the traveller to identify his/her travel history within the last 10 days prior to arrival in the Hong Kong SAR, and secondly, to declare “[t]he presence of fever, cough, shortness of breath or breathing difficulty.”¹¹⁸ Health declaration forms distributed to travellers at land border control points only required the completion of the latter question.¹¹⁹ The distribution of so-called Health Alert cards was also mandatory to all incoming passengers at the airport.¹²⁰

Mandatory health declarations were introduced to meet obligations under the *ASEAN + 3 Action Plan on Prevention and Control of SARS and Other Infectious Diseases*, the *Entry-Exit Quarantine Action Plan for Controlling the Spread of SARS by Governments of the People’s Republic of China and ASEAN*, and the agreement made between the APEC Economy Members. Even after the Hong Kong SAR was declared ‘SARS-free’ on 23 June 2003, incoming travellers continued to be required to complete a health declaration form, in addition to undergoing temperature screening at all border control points.¹²¹

2. Temperature checks

From 24 April 2003 onwards, all incoming, departing, and transit passengers at Hong Kong International Airport were required to undergo temperature checks upon arrival, using infra-red screening devices designed to detect the presence of a fever

¹¹⁴ Hong Kong International Airport (HKG) is one of only eight immigration control points available to travellers for entry and exit into and from the Hong Kong SAR.

¹¹⁵ Hong Kong SAR, Department of Health, “Health Control Measures for Travellers at Airport, Seaport and Land Boundary Control Points” (11 October 2003), online: Hong Kong SAR Government <<http://www.info.gov.hk/dh/diseases/ap/eng/boundarycontrol.htm>> [*Health Control Measures for Travellers*]. See also Tsang & Lam, *supra* note 12 at 48; Hong Kong Economic and Trade Office, *supra* note 52.

¹¹⁶ *Health Control Measures for Travellers, ibid.*

¹¹⁷ Hong Kong SAR, Press Release, “Health Control Measures At Immigration Control Points” (19 November 2003), online: Hong Kong SAR Government <<http://www.info.gov.hk/gia/general/200311/19/1119239.htm>> [*Health Control Measures*].

¹¹⁸ *Health Control Measures for Travellers, supra* note 115. This satisfies the WHO requirements: WHO, “Severe Acute Respiratory Syndrome—Press Briefing” (27 March 2003), online: World Health Organisation <http://www.who.int/csr/sars/2003_03_27/en>.

¹¹⁹ *Health Control Measures for Travellers, ibid.*

¹²⁰ *Ibid.*

¹²¹ Hong Kong SAR, Health, Welfare and Food Bureau, LegCo Panel on Health Services, *Measures to Prevent and to Prepare for the Resurgence of SARS*, Doc. Number CB(2)2747/02-03(05) (2003) at 1 [*Measures to Prevent and to Prepare*].

(38 degrees Celsius or above)¹²² as required under Regulation 27C(1) of the *PSIDR*, for the purposes of preventing transmission of SARS across Hong Kong's borders. Temperature checks were also mandatory for all crew and staff entering and transiting at, or departing from, the airport.

A similar requirement was introduced on 26 April 2003 for passengers arriving through seaports and land border points in Sha Tau Kok, Man Kam To, and Lok Ma Chau.¹²³ With the aim of minimising 'the duplication' of labour and to maximise efficiency, both Hong Kong and Shenzhen authorities "agreed to implement synchronised temperature screening procedures for arriving passengers crossing the land border control points."¹²⁴ Similarly, arrivals by train from Hung Hom and Lo Wu stations were also required to undergo temperature checks by 24 April 2003.¹²⁵

The temperature screening of entrants into Hong Kong under Regulation 27C(1) of the *PSIDR*, satisfied Hong Kong's obligations under the ASEAN + 3 Action Plan on Prevention and Control of SARS and Other Infectious Diseases, the *Entry-Exit Quarantine Action Plan for Controlling the Spread of SARS by Governments of the People's Republic of China and ASEAN*, the APEC agreement, and went beyond the WHO recommendations of 27 March 2003 which only required screening of departing international travellers.¹²⁶

3. Establishment of medical posts

Medical posts were established at the airport and all other major border control points. Those passengers who either showed a body temperature above 38 degrees Celsius or displayed other symptoms of SARS, such as, for instance, a cough or shortness of breath, were referred to medical practitioners or other authorised health officers for a medical examination as required under Regulation 27C(1) of the *PSIDR*. Travellers suspected or confirmed of being infected with SARS were then referred to hospitals and detained for further management and evaluation by the authorised health officer¹²⁷ under regulation 27C(4) of the *PSIDR*.

¹²² *Health Control Measures for Travellers*, *supra* note 115. See also, Tsang & Lam, *supra* note 12 at 48; Hong Kong Economic and Trade Office, *supra* note 52.

¹²³ *Health Control Measures for Travellers*, *ibid.* From 27 January 2003, the immigration control point at Lok Ma Chau is open 24-hours daily for the crossing of passengers and vehicles to and from the Hong Kong SAR and the Mainland. Due to the increased operation hours, a 46.4 percent increase in passengers crossing the immigration control point was recorded between 2002 and 2003, with an average of 67,000 persons reported to cross the control point daily: Hong Kong SAR, Press Release, "CQ17: Border Crossing Facilities At Lok Ma Chau Control Point" (24 March 2004), online: Hong Kong SAR Government <<http://www.info.gov.hk/gia/general/200403/24/q17e.htm>>.

¹²⁴ Synchronised temperature screening procedures between the Hong Kong and Shenzhen authorities occurred at Lo Wu, Lok Ma Chau, Man Kam To, and Sha Tau Kok border control points: *Health Control Measures for Travellers*, *ibid.* See also, *Public Health Control Measures*, *supra* note 7 at 5.

¹²⁵ *Health Control Measures for Travellers*, *ibid.* As at 26 April 2003, 62 "infra-red thermal imaging devices were already installed at the Lo Wu and Lok Ma Chau immigration control point for fever screening of passengers from Mainland China." By the end of May 2003, it was proposed that some 300 devices be "installed at other various immigration control points, eventually to mandate all passengers to undergo screening": Hong Kong Economic and Trade Office, *supra* note 52.

¹²⁶ WHO, "Update 11—WHO Recommends New Measures To Prevent Travel-Related Spread of SARS" (27 March 2003), online: World Health Organisation <http://www.who.int/csr/sars/archive/2003_03_27/en> [WHO Update 11].

¹²⁷ Hong Kong Economic and Trade Office, *supra* note 52.

B. *Departure From Hong Kong*

1. *Health declaration form*

From 29 March 2003, upon check-in at the airport or seaports, all departing passengers from Hong Kong were required to provide information regarding any history of contact with SARS-infected persons or the presence of a fever of 38 degrees Celsius or above. Passengers answering in the affirmative to either question were referred to a medical practitioner and, subsequently, to a hospital for further assessment where necessary,¹²⁸ as directed by regulation 27C(4) of the *PSIDR*.

Moreover, from 14 June 2003, all departing passengers from Hong Kong International Airport were required to complete and sign a health declaration form stating:

1. The countries and cities that had been visited in the past 10 days;
2. Any contact with people with SARS in the past 10 days [...];¹²⁹
3. The presence of fever, cough, shortness of breath or breathing difficulty.¹³⁰

The health declaration form sought to promote early detection of the disease and to facilitate contact-tracing while enhancing public awareness of the disease.¹³¹ The form satisfied Hong Kong's obligation under the *Entry-Exit Quarantine Action Plan for Controlling the Spread of SARS by Governments of the People's Republic of China and ASEAN* and the agreement of 1 to 2 June 2003 made between APEC Member Economies. Even after the Hong Kong SAR was declared 'SARS-free' on 23 June 2003, departing travellers continued to be required to complete a health declaration form.¹³²

2. *Temperature checks*

To meet the WHO's recommendations,¹³³ international travellers were required to undergo temperature checks upon departure in Hong Kong from 17 April 2003.¹³⁴ Similarly, from 16 May 2003, passengers departing from the Macao Ferry Terminal, China Ferry Terminal, and Hung Hom Train Station were subjected to mandatory

¹²⁸ *Health Control Measures for Travellers*, *supra* note 115.

¹²⁹ "Contact" is generally taken to mean "individuals who stayed in the same room as a patient with SARS at home, work, or school; who directly contacted a patient with SARS by visiting, caring for, transporting, or sharing an elevator; who were health care workers in contact with a patient with SARS without wearing full personal protective equipment (PPE); or who had other exposures to a patient with SARS deemed risky by public health personnel (*i.e.*, contact with bodily secretions) in a period from 3 to 14 days before the case's onset of symptoms (varied during different phases of outbreak) to the time of last contact": Xinghuo Pang *et al.*, "Evaluation of Control Measures Implemented in the Severe Acute Respiratory Syndrome Outbreak in Beijing, 2003" (2003) 290 *Journal of the American Medical Association* 3215 at 3216. See also U.S. Department of Health and Human Services, *supra* note 18.

¹³⁰ *Health Control Measures for Travellers*, *supra* note 115.

¹³¹ *Health Control Measures*, *supra* note 117.

¹³² *Measures to Prevent and to Prepare*, *supra* note 121 at 1.

¹³³ *WHO Update 11*, *supra* note 126; *PSIDR*, reg. 27C(1). See also *Public Health Control Measures*, *supra* note 7 at 5; *Status of the Outbreak*, *supra* note 1 at 6.

¹³⁴ *Health Control Measures for Travellers*, *supra* note 115.

temperature checks.¹³⁵ Those found to have a fever were detained and prohibited from boarding until clearance was obtained from a medical practitioner or health officer.¹³⁶ The temperature screening of travellers via land and sea fulfilled Hong Kong's obligations under the *Entry-Exit Quarantine Action Plan for Controlling the Spread of SARS by Governments of the People's Republic of China and ASEAN* and the agreement made between APEC members. Even after Hong Kong was declared 'SARS-free' on 23 June 2003, the Government announced that health checks at border control points would be continued.¹³⁷

3. Prohibition of departure

In order to prevent the cross-border transmission of SARS, all persons having contact with a SARS-infected person whilst still in their "home confinement period"¹³⁸ were prohibited from leaving Hong Kong as of 14 April 2003.¹³⁹ This was later extended to all persons having contact with suspected SARS cases. This prohibition of departure of suspected and confirmed SARS patients and other 'carriers' of the syndrome was authorised under Regulation 27A of the *PSIDR*. After Hong Kong was declared 'SARS-free', household contacts of suspected and confirmed SARS patients continued to be prohibited from leaving Hong Kong during the prescribed 10-day 'home confinement period'.¹⁴⁰

4. Public education

In addition to the screening measures introduced at departure points, the Hong Kong Government commenced a public education campaign, using brochures, visual materials, and the media to inform travellers not only about the nature of SARS, but also about the border control measures which had been adopted.¹⁴¹ Persons suffering from fever above 38 degrees Celsius or who did "not feel well" were discouraged from travelling.¹⁴² So-called Health Alert Cards were also made available to travellers, and a new internet website was created "to enhance vigilance while travelling."¹⁴³ Moreover, the Hong Kong Department of Health established a 24-hour SARS telephone hotline to assist travellers with health concerns.¹⁴⁴

¹³⁵ *Ibid.* See also, Hong Kong SAR, Press Release, "Temperature Taking For Passengers Departing From Hung Hom Station" (20 May 2003), online: Hong Kong SAR Government <<http://www.info.gov.hk/gia/general/200305/20/0520198.htm>>.

¹³⁶ Hong Kong SAR Press Release, *ibid.*

¹³⁷ *Measures to Prevent and to Prepare*, *supra* note 121 at 1.

¹³⁸ As at 10 April 2003, all "household contacts of probable [and by this time, confirmed] SARS cases were required to undergo home confinement for 10-days", with regular monitoring by visiting nurses. Compliance was enforced by the assistance of the police force: Tsang & Lam, *supra* note 12 at 47.

¹³⁹ *Health Control Measures for Travellers*, *supra* note 115. See also Tsang & Lam, *ibid.*

¹⁴⁰ *Measures to Prevent and to Prepare*, *supra* note 121 at 1.

¹⁴¹ Hong Kong SAR Health, Welfare and Food Bureau, *Monitoring Committee on Implementation of the SARS Expert Committee's Report: Cooperation with the Pearl River Delta* (Hong Kong: Health, Welfare and Food Bureau, 2004) at 4.

¹⁴² *Public Health Control Measures*, *supra* note 7 at 5.

¹⁴³ *Ibid.*

¹⁴⁴ *Ibid.* at 7. More than 89,000 calls were registered in the three-month period of the SARS outbreak in Hong Kong.

During the three-month period of the SARS outbreak in Hong Kong, the Department of Health “produced over 110 [different] items of health educational materials that ranged from pamphlets, posters, guidelines, presentation slides, fact sheets to display boards”.¹⁴⁵ Furthermore, “[o]ver 550 sessions of health talks, exhibitions, media interviews and press briefings were held [and a] total of 48 issues of the SARS Bulletin were published” in order to heighten the awareness of SARS.¹⁴⁶

C. Hong Kong’s International Obligations

The measures implemented by the Government of Hong Kong during the 2003 SARS outbreak largely reflected obligations under the regional agreements made between ASEAN and the People’s Republic of China, Hong Kong and APEC, and Hong Kong and Shenzhen. Furthermore, the border control measures complied with the WHO’s recommendations of 27 March 2003 for the screening of all departing international travellers from areas of ‘local transmission.’¹⁴⁷ Hong Kong went beyond its obligations by also screening all arriving international travellers.

In addition, the International Civil and Aviation Organisation’s (‘ICAO’) Anti-SARS Airport Evaluation Project¹⁴⁸ conducted at Hong Kong International Airport between 6 to 9 July 2003—in an attempt to maintain uniform inspection standards at international airports—endorsed all ground operations implemented by Hong Kong in the wake of SARS, including those measures adopted by Hong Kong’s national air carrier, Cathay Pacific.¹⁴⁹ The *Evaluation Project* consisted of the examination of “[m]easures to screen passengers and airport staff, passengers’ access to information about SARS and procedures for handling any suspected case both on board an aircraft and upon arrival”.¹⁵⁰

VII. EFFECTIVENESS OF THE MEASURES ADOPTED

Much has been published by the Hong Kong SAR Government and the WHO with regards to the success of internal measures implemented, such as quarantine and contact-tracing in the containment of SARS.¹⁵¹ However, comparatively little has been written regarding the success of the Hong Kong SAR border control measures.¹⁵²

¹⁴⁵ *Ibid.* at 6.

¹⁴⁶ *Ibid.*

¹⁴⁷ *WHO Update 11*, *supra* note 126.

¹⁴⁸ The evaluation criteria of the ICAO Anti-SARS Airport Evaluation Project was set by the ICAO, World Health Organisation and International Air Transport Association (‘IATA’). ICAO sought to inspect all international airports, with Hong Kong being the first: Vicky Karantzavelou, “ICAO endorses Hong Kong airport’s anti-SARS measures” *Travel Daily News* (11 July 2003), online: *Travel Daily News* <http://www.traveldailynews.com/new.asp?newid=12687&subcategory_id=53>. See also, Hong Kong SAR, Press Release, “Hong Kong Airport Meets Anti-SARS Evaluation” (9 July 2003), online: Hong Kong SAR Government <<http://sc.info.gov.hk/gb/www.info.gov.hk/gia/general/brandhk/0709006.htm>>.

¹⁴⁹ Karantzavelou, *ibid.*

¹⁵⁰ *Ibid.*

¹⁵¹ See *WHO Global Conference*, *supra* note 36.

¹⁵² At the WHO Global Conference 2003, the WHO acknowledged that measures such as “public information and education campaigns to encourage prompt reporting of symptoms, hotlines to report fever,

Some writers have described the measures implemented by the Hong Kong Government and in other parts of China as “new Chinese walls” and “draconian”, arguing that the majority of measures were far more severe than what was necessary.¹⁵³ Others argued that the border control measures had little effect other than causing major inconvenience and delay to travellers.

The lack of critical analysis of the measures employed by the Government of Hong Kong can be explained by the lack of sound and comparative metrics to measure success and effectiveness. The objective of this study is not to provide a medical or statistical analysis of SARS infection rates, nor does it attempt to comment on the adequacy (or inadequacy) of Hong Kong’s public health system. The focus here is on the effectiveness and appropriateness of the border measures adopted in Hong Kong in (1) preventing, (2) detecting, and (3) containing the spread of the Severe Acute Respiratory Syndrome. Side-effects and other impacts are discussed in Part VII, Section D.

A. Prevention

1. Prevention of transmission of SARS

Perhaps the best testimony to the effectiveness of the border control measures implemented by the Hong Kong SAR in 2003 are the statistics suggesting success in preventing cross-border transmission of SARS into and out of Hong Kong. The WHO noted that after the implementation of temperature screening at border control points under Regulation 27C(1) of the *PSIDR* and the introduction of mandatory health declaration forms in late March 2003, there has been no new imported case of SARS recorded in Hong Kong.¹⁵⁴ In contrast, prior to the implementation of border control measures, it was estimated that some 6 percent of SARS cases in Hong Kong were “imported” from abroad or from other parts of the People’s Republic of China.¹⁵⁵

The very reason the WHO initially issued an advisory to postpone “all but essential travel”¹⁵⁶ to Hong Kong was due to the infection of travellers returning from Hong Kong with the syndrome despite the stringent measures that had been adopted.¹⁵⁷ Following the introduction of the departure prohibition for persons with confirmed or suspected SARS infection on 14 April 2003 under Regulation 27A of the *PSIDR*, there were no new reported cases of SARS being exported from Hong Kong by means of international travel.¹⁵⁸

establishment of fever clinics to relieve pressure on emergency rooms, temperature screening in public places, recommendations to travellers, and entry and exit screening at borders using questionnaires and temperature checks” required further evaluation in order to determine their effectiveness in the overall containment of SARS. In contrast, it was agreed that the effectiveness of internal measures such as contact-tracing and quarantine were “amply demonstrated”: *ibid.*

¹⁵³ Ben Dolven & David Murphy, “Building New Chinese Walls” (2003) 166(20) *Far Eastern Economic Review* 24 at 24.

¹⁵⁴ WHO, “Update 74—Global Decline in Cases and Deaths Continue” (5 June 2003), online: World Health Organisation <http://www.who.int/csr/don/2003_06_05/en>.

¹⁵⁵ *Ibid.*

¹⁵⁶ WHO, “Update 17—Travel Advice—Hong Kong Special Administrative Region of China, and Guangdong Province, China” (2 April 2003), online: World Health Organisation <http://www.who.int/csr/sars/archive/2003_04_02/en>.

¹⁵⁷ *Ibid.*

¹⁵⁸ Tsang & Lam, *supra* note 12 at 48.

Despite an allegedly low-risk of in-flight transmission of SARS,¹⁵⁹ it was believed that such transmission did occur onboard five flights that carried passengers with suspected SARS symptoms.¹⁶⁰ However, since the implementation of screening measures at airports, as recommended by the WHO on 27 March 2003,¹⁶¹ there were no further recorded transmissions of SARS onboard an aircraft.¹⁶²

2. Public awareness and education

The border control measures implemented under the *QPDO* and the *PSIDR* may have had indirect effects on the prevention of SARS which are, however, difficult to ascertain. The requirement of temperature checks of travellers and potential isolation and quarantine of suspected SARS cases, may have acted as a strong deterrent, discouraging persons with SARS symptoms from travelling, thus, indirectly contributing to the prevention of an even greater spread of the syndrome.¹⁶³ Although border control measures implemented during the 2003 outbreak in the Hong Kong SAR may not have had a direct effect on the detection of SARS-infected travellers, they may have been effective in heightening the awareness of potential travellers and preventing the spread of SARS.¹⁶⁴

Some, however, have argued that the border control measures failed to enhance public awareness as travellers were more concerned about avoiding delays than monitoring their personal health. As stated elsewhere, “we’re not travelling, not because of SARS, but because of the possibility of quarantines,”¹⁶⁵ suggesting that border control measures failed to increase public awareness, causing only inconvenience and delay.

Much of the information required to make an accurate evaluation here is unavailable. It is impossible to ascertain the number of potential travellers who had been discouraged from travelling as a result of the awareness promoted by the implemented measures,¹⁶⁶ or the number of passengers who made false declarations about their health conditions in order to avoid delays or prohibition from travelling.¹⁶⁷

¹⁵⁹ WHO, “Summary of SARS and Air Travel” (23 May 2003), online: World Health Organisation <<http://www.who.int/csr/sars/travel/airtravel/en>>.

¹⁶⁰ *Ibid.* Evidence also appears to support the findings that SARS is transmitted by close contact with SARS-infected persons. It was found that contracting SARS was most likely for passengers sitting within two rows in front or behind a SARS patient: WHO, *Severe Acute Respiratory Syndrome (SARS)*, *supra* note 26 at 3. See also, Sonja J. Olsen *et al.*, “Transmission of the Severe Acute Respiratory Syndrome on Aircraft” (2003) 349(25) *New Eng. J. Med.* 2416.

¹⁶¹ WHO *Update 11*, *supra* note 126.

¹⁶² WHO, *Severe Acute Respiratory Syndrome (SARS)*, *supra* note 26 at 3. The IATA, too, supports this finding. It stated that since the WHO recommendations of 27 March 2003, 150 million travellers had been screened with no new cases of in-flight transmission: Hong Kong Economic and Trade Office, “Update on SARS” (21 May 2003), online: Hong Kong Economic and Trade Office, Brussels <<http://www.hongkong-eu.org/Pneumonia210503.html>>.

¹⁶³ Xinghuo Pang *et al.*, *supra* note 129 at 3220.

¹⁶⁴ S.H. Lee, *supra* note 54 at 654.

¹⁶⁵ Mr Rick Herzfelder, Vice-President of China Food and Agricultural Services, cited in Dolven & Murphy, *supra* note 153 at 26.

¹⁶⁶ Xinghuo Pang *et al.*, *supra* note 129 at 3220.

¹⁶⁷ *Health Control Measures*, *supra* note 117.

B. Detection

The fact that the border screening implemented at Hong Kong International Airport only detected two SARS cases¹⁶⁸ may be sufficient evidence of the effectiveness of those measures in itself; or it may raise questions about the necessity of the rigid measures adopted and the costs entailed. Considering only one infected person initiated the global outbreak of SARS in 2003, spreading the disease to some 30 countries within a matter of weeks,¹⁶⁹ and, subsequently, threatening airline and other industries as well as national economies, the effect of border control measures implemented by the Hong Kong Government under the *QPDO* and the *PSIDR*, may be immeasurable.¹⁷⁰ As the WHO quite rightly stated, “[c]ountries could not afford to miss a *single* person”.¹⁷¹

On the other hand, critics have argued that the border control measures adopted under the *QPDO* and the *PSIDR* had limited numeric effect on the containment of SARS. For example, statistics show that as of 16 November 2003, some 55 million passengers who passed through Hong Kong International Airport had declared their health conditions. Of those 55 million, 5,311 person or 0.01 percent had declared that they were ill, and a further 239 persons were referred to hospitals for further assessment.¹⁷² Of these 239 persons, 59 were later admitted and detained in hospital, only two of which were later confirmed of carrying SARS.¹⁷³ Figures from Canada, Beijing, and Singapore, too, reveal an extremely low detection rate of SARS at border control points; in fact, although millions of passengers were screened at Beijing, Singapore, and Canada’s airports, none were found to have SARS.¹⁷⁴

There is, at present, no medical evidence to suggest that the border measures did not detect all positive SARS cases or that persons who contracted SARS were left otherwise unapprehended at airports in these countries. Perhaps not surprisingly,

¹⁶⁸ *Ibid.* See also, *Learning from SARS*, *supra* note 2 at 206.

¹⁶⁹ *Learning from SARS*, *ibid* at 197. Furthermore, of the total of 206 SARS cases diagnosed in Singapore, 103 were linked to only five patients: WHO, “Update 83—One Hundred Days Into the Outbreak” (18 June 2003), online: World Health Organisation <http://www.who.int/csr/don/2003_06_18/en>.

¹⁷⁰ “Screening at entry points is costly [in Singapore], has a low yield and is not sufficient in itself, but may be justified in light of the major economic, social and international impact which even a single imported SARS case may have.”: Goh K.T., Paton N.I. & Wilder-Smith A., “Experience of Severe Acute Respiratory Syndrome in Singapore: Importation of Cases, Defense and Strategies at the Airport” (2003) 10(5) *Journal of Travel Medicine* 259 at 259. See also Tsang & Lam, *supra* note 12 at 48.

¹⁷¹ WHO, *Severe Acute Respiratory Syndrome (SARS)*, *supra* note 5 at 2 [emphasis added].

¹⁷² During the 2003 Outbreak, between 24 and 44 travellers per month were referred to hospitals for further management as a result of screening at border control points. The average of any one month was 32 travellers: *Health Control Measures for Travellers*, *supra* note 115.

¹⁷³ *Ibid.* See also *Learning from SARS*, *supra* note 2 at 206.

¹⁷⁴ In Beijing, more than 275,000 travellers had been screened in the period between 24 April and 20 June 2003, with only 0.2 percent detected as having a fever, and no cases of SARS were detected. In Singapore, 30,000 travellers were screened on a daily basis. 60 were referred to medical staff for further assessment. However, again, no cases of SARS were detected. Similarly, in Canada, by 27 August 2003, some 6.5 million travellers had been screened with 9,100 “referred for further assessment” and no SARS cases were detected. Hong Kong was the only exception. Millions of travellers were screened in Hong Kong using thermal scanners, and, as a result, two SARS cases were detected: *Learning from SARS*, *ibid.* at 205-206. See also Goh, Paton & Wilder-Smith, *supra* note 170 at 259. Goh, Paton & Wilder-Smith report that in Singapore, of the 442,973 travellers screened, 136 were referred to hospital but no SARS cases were detected.

critics have argued that the border control measures were overly expensive, unnecessarily intrusive and time-consuming to the traveller, while producing very little effect.¹⁷⁵

A major deficiency of the border control measures is that they fail to detect asymptomatic cases of SARS, especially those persons who are yet to display symptoms. Thus, it is arguable whether the costs associated with these measures can be justified if, at best, border screening can only detect those few cases who, at the time of screening, were both infected with the virus and displayed symptoms. Adding to this is the fact that the incubation period of SARS is somewhat longer than that of other diseases, extending in some cases to 10 days.¹⁷⁶ Thus, there can be as many as 10 days between the initial infection of the patient and the display of any symptoms making it extremely difficult, if not impossible, to detect all cases, especially if the inspection is limited in order to minimise the disruption to travel. All border-screening mechanisms discussed above were designed to be fast and efficient—rather than detailed and comprehensive.

Furthermore, at the time of the outbreak in Hong Kong, no definitive case-definition or effective diagnostic test was available for the detection of the SARS virus. The only information available at the time included symptoms that are common to many respiratory illnesses and even resembled that of the common flu, thus, deeming any control mechanisms implemented imperfect and, inevitably, fallible.¹⁷⁷ Thus, it is debatable whether investing such large amounts of resources on a vague and inconclusive definition of SARS, and in the absence of an effective diagnostic test for the virus, was justifiable. Indeed, the lack of information available on the new disease and the inevitable inadequacy of any preventative measures implemented were well acknowledged by the WHO:

[T]he non-specific clinical features of SARS, the lack of a current rapid diagnostic test that can reliably detect SARS-CoV [the SARS Coronavirus] in the first few days of illness, and the seasonal occurrence of other respiratory diseases, including influenza, may confound any surveillance for SARS or demand a level of quality and intensity which few health care systems worldwide can sustain. Even with the most sophisticated surveillance systems, the first case of SARS in the post-outbreak period may escape early detection.¹⁷⁸

C. Containment

The fact that Hong Kong was able to effectively contain the spread of SARS in a matter of three months despite its dense population and shared border with other parts of the

¹⁷⁵ For discussion on the effects and justifications of the restriction of a traveller's "privacy, freedom of association and liberty", see Gostin, Bayer & Fairchild, *supra* note 8.

¹⁷⁶ *Preliminary Clinical Description*, *supra* note 22.

¹⁷⁷ "The clinical presentation of SARS-CoV [SARS coronavirus] infection has some but not enough distinctive features to enable diagnosis by clinical signs and symptoms alone": U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, *Public Health Guidance for Community-Level Preparedness and Response to Severe Acute Respiratory Syndrome (SARS) Draft* (2003) at 19, online: Centers for Disease Control and Prevention <<http://www.cdc.gov/ncidod/sars/guidance/>>.

¹⁷⁸ *Alert, Verification and Public Health*, *supra* note 16.

People's Republic of China¹⁷⁹ was certainly no easy task.¹⁸⁰ Such feats suggest that the border control measures recommended by the WHO and implemented in Hong Kong have at least contributed to the containment both locally and globally.

Many sources, including official Hong Kong Government sources, attribute the rapid containment of SARS to the implementation of quarantine, isolation, and contact-tracing measures, with comparatively little attention given to the effectiveness of border screening.¹⁸¹ This is in line with the copious detail to which the Hong Kong SARS Expert Committee attributes the containment of SARS to the strengths of the public healthcare system, whilst barely addressing the issue of border control in their Report.¹⁸² This may lead some to think that the border control measures contributed little to Hong Kong's fight to contain the 2003 outbreak. It is noteworthy that Government sources praise the effectiveness of the measures adopted in Hong Kong without ever addressing (positively or critically) the very rigid border control measures discussed earlier.¹⁸³

In contrast, there was wide dissatisfaction expressed by Hong Kong nationals regarding the overall management of the outbreak by the Hong Kong SAR Government which culminated in—or at least contributed to—the 1 July 2003 protests against Article 23 of the *Basic Law*¹⁸⁴ and the announcement of the resignation of the former Secretary for Health, Welfare and Food, Dr Eng-Kiong Yeoh in July 2004.¹⁸⁵

D. Others

1. Fear versus security

The border control measures implemented under the *QPDO* and the *PSIDR* served a political purpose by assuring “the local as well as international community that

¹⁷⁹ The People's Republic of China recorded the largest outbreak in the world.

¹⁸⁰ *WHO Press Release 23 June 2003*, *supra* note 47.

¹⁸¹ *Public Health Control Measures*, *supra* note 7 at 9. See also, Xinghuo Pang *et al.*, *supra* note 129 at 3221.

¹⁸² *SARS in Hong Kong*, *supra* note 8 at 166. Of the forty-six recommendations provided by the Committee, none relate directly to border control, except perhaps with regard to the recommendations made for the Pearl River Delta region.

¹⁸³ In his speech during a briefing session on SARS at the 56th World Health Assembly held in Geneva on May 20 2003, Dr Eng-Kiong Yeoh, Secretary for Health, Welfare and Food, stated: “The stringent control measures that the Hong Kong Government has implemented have proved to be effective... demonstrating that Hong Kong has been most cautious, prudent, and responsible in managing the SARS epidemic”: Hong Kong Economic and Trade Office Brussels, “Update on SARS” (21 May 2003), *supra* note 162.

¹⁸⁴ The public attributed blame for the slow reaction to the outbreak to officials in Government, including Dr Eng-Kiong Yeoh, Secretary of the Department of Health. The dissatisfaction with the Tung Government's response to the 2003 SARS Outbreak is thought to have motivated, or at least contributed to, the protest: Christine Loh & Veronica Galbraith, “SARS and Civil Society in Hong Kong” (2003) 23(3) *China Rights Forum* 64 at 65.

¹⁸⁵ Hong Kong SAR, Press Release, “CE Announces Resignation of SHWF” (7 July 2004), online: Hong Kong SAR Government <<http://www.info.gov.hk/gia/general/200407/07/0707375.htm>>.

proactive steps were being made toward controlling the outbreak.”¹⁸⁶ It remains speculative whether the measures, even if only giving the ‘appearance’ of protection, actually minimised the potential social disruption, thereby granting the Government time to act and to contain the situation. Participants at the 2003 World Health Organisation Global Conference went as far as stating that “...visible measures to control community and international spread were important in restoring public and business confidence and as deterrents, regardless of their efficiency in detecting SARS cases.”¹⁸⁷

However, critics of the WHO recommendation to screen all departing international travellers from SARS-affected areas¹⁸⁸ argue that “[t]he panic created by this kind of travel advisory may be bigger than the real problem.”¹⁸⁹ Furthermore, some countries believed they had developed their own strategies which were more efficient in countering SARS without the need for travel warnings that would create unnecessary panic and had severe detrimental impact on local economies.¹⁹⁰

The Canadian National Advisory Committee on SARS and Public Health¹⁹¹ argued that border screening “can create a false sense of security or needless anxieties.”¹⁹² The Committee, in its evaluation of the border control measures implemented in Canada, similar to those implemented by the Hong Kong SAR, argued that border screening, whilst achieving negligible results, has the further danger of creating complacency within the public and, thus, decreasing personal awareness and monitoring of the virus. The Committee concluded that the maintenance of border control measures is “more about conformity than logic or evidence with no country prepared to take the first step of abandoning these measures.”¹⁹³

2. Costs

Costs associated with the SARS outbreak included travel cancellations and decreased investment in Asia to the tune of US\$ 30-140 billion.¹⁹⁴ During the peak of the

¹⁸⁶ Xinghuo Pang *et al.*, *supra* note 129 at 3220. See also *Public Health Control Measures*, *supra* note 7 at 5-6.

¹⁸⁷ *WHO Global Conference*, *supra* note 36.

¹⁸⁸ The WHO recommended the screening of departing travellers. However, the Hong Kong SAR went beyond the WHO recommendations in also screening all arriving and transit passengers in addition to departing travellers: *WHO Update 11*, *supra* note 126.

¹⁸⁹ Su Yi-ren, Chief of the Taiwan Center for Disease Control, cited in Charles Pillar, “In SARS Aftermath, The WHO’s In Charge” *Los Angeles Times* (13 July 2003), online: UCLA School of Public Health, Department of Epidemiology <<http://www.ph.ucla.edu/epi/bioter/sarsaftermathwho.html>>.

¹⁹⁰ *Ibid.*

¹⁹¹ The Canadian National Advisory Committee on SARS and Public Health was established by the Government of Canada to study and evaluate the effectiveness and successfulness of the Canadian containment of the SARS outbreak and to make recommendations where necessary. In general, the Committee tended to portray a negative image of the border control measures adopted (essentially temperature screening and distribution of information cards), emphasising the limited extent of effectiveness in the containment of the SARS outbreak in Canada. Although the outbreak in Canada was considerably smaller than that of Hong Kong, the measures adopted and the low detection rate as a result of screening, is consistent with the findings in Hong Kong.

¹⁹² *Learning from SARS*, *supra* note 2 at 206.

¹⁹³ *Ibid.*

¹⁹⁴ WHO, *Severe Acute Respiratory Syndrome (SARS)*, *supra* note 26 at 2.

outbreak, aircraft movement decreased by as much as 49 percent at the Hong Kong International Airport. Similarly, hotel occupancy plummeted to a record-low of 17 percent in May 2003, compared to 83 percent occupancy in May 2002.¹⁹⁵

Furthermore, implementing and maintaining the border control measures against SARS were both financially burdensome and labour-intensive. At the meeting held between ASEAN and the People's Republic of China on 29 April 2003 in Bangkok, China pledged US\$ 1.21 million "in support of the PRC-ASEAN bilateral cooperation programs on SARS control and prevention," which included imposing uniform border control measures between the relevant countries.¹⁹⁶ No further figures regarding the costs of the border control measures implemented in Hong Kong are available. However, there is little doubt that such costs were substantial, considering the necessary infrastructure required. To illustrate this point, in order to meet the initial increased demands and workload created by the introduction of the health declaration forms at all border control points, the Hong Kong Department of Health deployed an additional 300 staff.¹⁹⁷

VIII. LESSONS LEARNT

On hindsight, with the exception of sealing her borders completely, it appears that Hong Kong did everything possible to prevent, detect, and contain the spread of SARS across its border. The question remains, what lessons can be learned from the SARS experience and what can be done better in the event of another SARS epidemic?

A. Review Domestic Health Legislation

As a result of the SARS experience, the WHO is now in the process of reviewing the *International Health Regulations* (the 'IHR'), which is "the principle guide of regulatory instrument in control of infectious diseases" expected to be completed by 2005.¹⁹⁸ The Hong Kong Department of Health ought to closely monitor the amendments and developments in order to ensure that domestic legislation is in line with international standards.¹⁹⁹ Current legislation, especially that which regulates border control, ought also to be reviewed to ensure "that there is cooperation and coordination and common purpose in dealing with [the] threat of infectious diseases," while allowing for flexible responses.²⁰⁰

¹⁹⁵ Lam, Zhong & Tan, *supra* note 8 at 3.

¹⁹⁶ See *Chronology of Country Responses*, *supra* note 86. Thailand pledged US\$250,000 and Cambodia US\$100,000 to the fund.

¹⁹⁷ See "Fighting SARS At the Border" (2003) Civil Service Newsletter Issue No. 57 at 16, online: Hong Kong SAR Government, Civil Service Bureau <<http://www.csb.gov.hk/hkgcsb/csn/csn57/57eng/e16-17.pdf>>.

¹⁹⁸ *Public Health Legislation*, *supra* note 61 at 5.

¹⁹⁹ *Ibid.*

²⁰⁰ *SARS in Hong Kong*, *supra* note 8 at 166.

B. Border Control Measures

It must be asked whether the border control mechanisms adopted in Hong Kong were appropriate, too modest, or excessive. It is necessary for the Government of Hong Kong to thoroughly re-examine all border screening measures under the *QPDO* and the *PSIDR*. The Government ought to evaluate the effectiveness of such measures in protecting public health while comparing the costs associated with maintaining these measures in the medium and long-term.²⁰¹ Moreover, Hong Kong should initiate a multilateral dialogue with other countries currently implementing border control strategies for the prevention of SARS, in order to determine whether a measure ought to be continued or modified in full or in part.²⁰²

C. Training

During the 2003 SARS outbreak, government staff deployed at the frontline—either in the health sector or at border control points—often lacked preparedness, training, and skills to deal with the issues brought on by the sudden SARS outbreak. Hong Kong, along with other countries and territories, must invest in better equipment and training of such staff.²⁰³ With the experience gained from the 2003 crisis, methods and training materials need to be reviewed in preparation for future outbreaks of potentially more dangerous diseases. Training is directly proportional to the efficiency and success of any border control measure and it may also reduce the psychological and emotional distress experienced by some officers.²⁰⁴

D. Communication

Perhaps the most obvious lesson learnt from the 2003 outbreak is the great need for more transparent communication.²⁰⁵ A regular reporting system ought to be established in the Pearl River Delta region by the Hong Kong and Guangdong authorities in order to facilitate and encourage the exchange of experts, medical and technical staff to prepare for any future outbreak of similar or even greater magnitude.²⁰⁶

Enhanced communication is not only relevant on an international level, but also on the local scale. Perhaps one of the major flaws in Hong Kong's management of the SARS outbreak was the lack of communication between different sectors of the Hong Kong SAR Government, and between the Government and the general public.²⁰⁷

²⁰¹ *Learning from SARS*, *supra* note 2 at 207.

²⁰² *Ibid.*

²⁰³ See Recommendations 38 and 39, *SARS in Hong Kong*, *supra* note 8 at 171.

²⁰⁴ For more information on the psychological and emotional effect the 2003 SARS Outbreak had on hospital workers, see Robert Maunder *et al.*, "The Immediate Psychological and Occupational Impact of the 2003 SARS Outbreak in a Teaching Hospital" (2003) 168(10) *Canadian Medical Association Journal* 1245.

²⁰⁵ Tsang & Lam, *supra* note 12 at 48. See also Gostin, Bayer & Fairchild, *supra* note 8; *Status of the Outbreak*, *supra* note 1 at 8.

²⁰⁶ *SARS in Hong Kong*, *supra* note 8 at 166.

²⁰⁷ As stated by the SARS Expert Committee: *ibid.* at 161-164.

Regardless of what control measures are implemented, they cannot have optimal effect without the cooperation and trust of the public at large.²⁰⁸ More transparent, accurate and timely communication would have strengthened public confidence in Government authorities and Hong Kong's public health system, thereby reducing the fear and panic.²⁰⁹

IX. THE WAY FORWARD

In the 12 months following the 2003 SARS outbreak, much has been done by the Hong Kong Government to equip and restructure the public health system in preparation for any future SARS or SARS-like outbreak.²¹⁰ The focus here will be on those measures adopted that will affect border control. Perhaps the most significant achievement of the Hong Kong SAR Government in its attempt to restructure the public health system is the establishment of the new Centre for Health Protection ('CHP') which is to be incorporated into the Department of Health, thus implementing recommendations made by the SARS Expert Committee.²¹¹

On 1 June 2004, 12 months after the WHO declared Hong Kong "SARS-free", the Government officially opened the CHP to "harness and consolidate professional knowledge and expertise in combating infectious diseases, making Hong Kong better placed in tackling health threats and responding to outbreaks."²¹² It is anticipated that "[t]he CHP will expand the disease surveillance network with the aid of information technology, set up a structured epidemiology training programme, enhance laboratory services, develop applied research and prepare emergency response plans."²¹³ It is hoped that in the event of any future outbreak, "the CHP will be equipped for timely and effective risk communication, prompt response and activating surge capacity in collaboration with parties concerned."²¹⁴

Much of the criticism surrounding the management of the SARS outbreak in Hong Kong was founded on the lack of coordination, leadership, and accountability of the various government departments involved. Given the population density in Hong Kong and its strategic position as an international port for the transit of people and

²⁰⁸ The primary reason given for the rapid containment of the outbreak in Vietnam despite the weak economy and infrastructure was the efficient communication between authorities and medical staff: Melissa Curley & Nicholas Thomas, "Human Security and Public Health in Southeast Asia: the SARS Outbreak" (2004) 58(1) *Australian Journal of International Affairs* 17 at 28-29. The Canadian Committee also commended the strong leadership "with a single point of command-and-control" of Dr Tony Tan, Deputy Prime Minister, Singapore, which led to the successful and rapid containment of SARS in Singapore: *Learning from SARS*, *supra* note 2 at 200. See also *SARS in Hong Kong*, *supra* note 8 at 169.

²⁰⁹ U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, *supra* note 177 at 13.

²¹⁰ Hong Kong SAR, Press Release, "Government Rebuilds Public Health Defence System" (23 June 2004), online: Hong Kong SAR Government <<http://www.info.gov.hk/gia/general/200406/23/0623241.htm>>.

²¹¹ *SARS in Hong Kong*, *supra* note 8 at 165, Recommendation 2.

²¹² Hong Kong SAR, Press Release, "Welcoming Speech By SHWF On Anti-SARS Measures" (23 June 2004), online: Hong Kong SAR Government <<http://www.info.gov.hk/gia/general/200406/23/0623122.htm>>. See also Hong Kong Economic and Trade Office, "Increased Anti-SARS Measures" (9 January 2004), online: Hong Kong Economic and Trade Office, San Francisco <<http://www.hongkong.org/ehongkong25/measures.htm>>.

²¹³ Hong Kong SAR, Press Release, *ibid*.

²¹⁴ *Ibid*.

goods, rapid coordination and communication between different government departments such as health and immigration, is essential in combating another outbreak.²¹⁵ Strong leadership and professional management of staff during any future outbreak are essential and ought to “be maintained with all relevant sectors including the health professionals, policymakers, community leaders, media, and the public.”²¹⁶ It is hoped that the CHP will provide that level of coordination, management, and leadership in the future.

X. CONCLUSION

There is little doubt that the combination of measures adopted by the Government of Hong Kong effectively contained the SARS epidemic. Considering Hong Kong’s extraordinary population density and its fluid boundaries with neighbouring areas,²¹⁷ containing an outbreak within three months was no easy feat.²¹⁸ Credit must be given to the proactive role the Hong Kong SAR adopted, both on an international and regional level, leading up to the containment of the outbreak.

The questions that remain are: Has Hong Kong done too much? Has it unnecessarily inconvenienced international travellers? Has it created costs that were not justified? And has it unreasonably infringed on persons’ freedom and rights? There is no doubt, that on hindsight, more effective and efficient measures might have been adopted. However, such a conclusion forgets the suddenness with which the disease spread across international travel routes—by means yet unheard of, and for which, no conclusive diagnostic test or vaccine was available.²¹⁹

²¹⁵ See Curley & Thomas, *supra* note 208 at 29, recommending that the “establishment of a high-level body able to coordinate information and policies horizontally across all government departments” is essential. They further argue that if efficient communication and the establishment of a central body are achieved, public trust and ‘state legitimacy’ will indirectly be enhanced.

²¹⁶ Abdullah *et al*, *supra* note 34 at 1045.

²¹⁷ For these reasons, the WHO regarded Hong Kong as one of the hardest regions to contain SARS: *WHO Press Release 23 June 2003*, *supra* note 47.

²¹⁸ The WHO Executive Director of Communicable Diseases, Dr David Heymann, described the efforts undertaken during the SARS crisis by Hong Kong as “heroic”: “All of us have nothing but admiration for you [Dr Eng Kiong Yeoh, Hong Kong Secretary for Health, Welfare and Food] and your team”, cited by the Hong Kong Economic and Trade Office, *supra* note 52.

²¹⁹ Dr. Gro Harlem Brundtland, Director-General WHO, “Day One Conclusion: The Response So Far” (Speech at the WHO Global Meeting on SARS, Kuala Lumpur, 17 June 2003), online: World Health Organisation <http://www.who.int/dg/brundtland/speeches/2003/kuala_lumpur_sars/en>. See also Sian Griffiths, “SARS in Hong Kong” Vol. 54(1) Oxford Medical School Gazette, online: Oxford Medical School Gazette <<http://www.medsci.ox.ac.uk/gazette/volume54-1/22/>>.