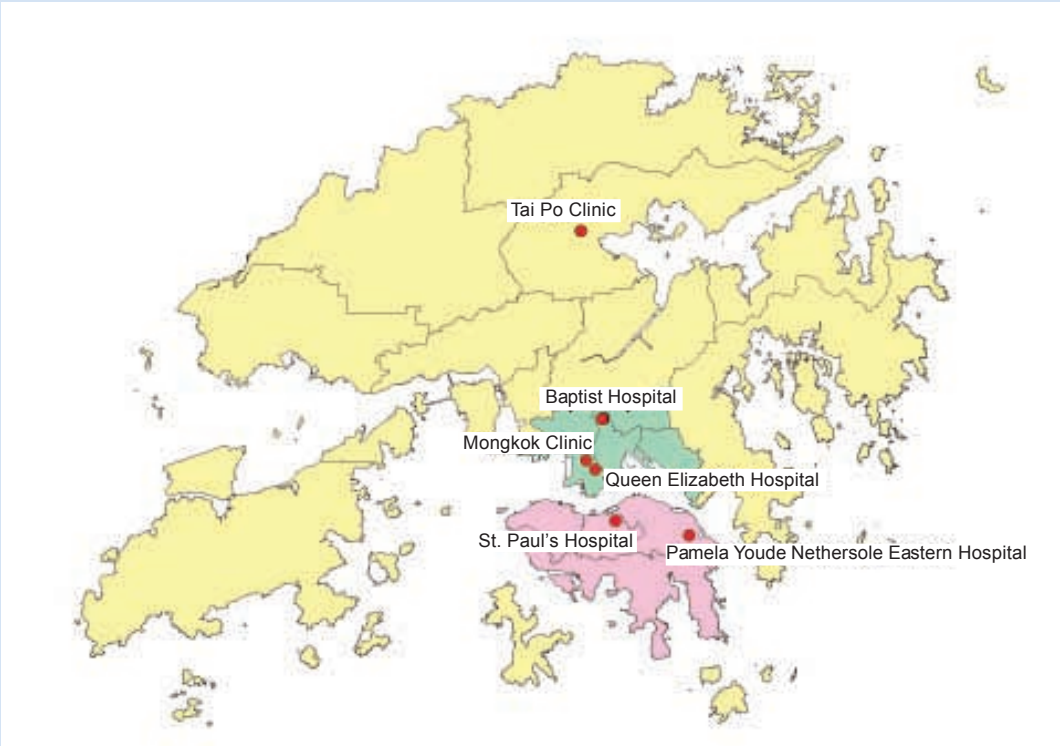
Outbreak in Other Healthcare Establishments

3.48 The WHO global alert on 12.3.03 (Geneva time) heightened awareness amongst the medical community about cases of acute respiratory syndrome with unknown aetiology that appeared to place health workers at high risk. Between 13.3.03 and 21.3.03, six mini-outbreaks in healthcare establishments other than Prince of Wales Hospital were reported to DH or came to DH's attention through media reports. These involved two public hospitals, two private hospitals and two private clinics.

Reports on 13.3.03: Pamela Youde Nethersole Eastern Hospital and a Mongkok Clinic

3.49 Two reports came to the attention of DH on 13.3.03. The first was a notification made by HA's Pamela Youde Nethersole Eastern Hospital situated on the Hong Kong Island. It reported that six of its healthcare workers had atypical pneumonia and that all had come from the same ward. The second was a media report given by the President of the Hong Kong Doctors Union concerning a general practitioner in Mongkok, *KK*, and his nurses who were suspected to have atypical pneumonia. *KK* was subsequently admitted to Princess Margaret Hospital.

Figure 3.7 Distribution of Mini-outbreaks in Healthcare Establishments other than Prince of Wales Hospital between 13.3.03 and 21.3.03



3.50 On the same day, the respective regional offices of DH commenced epidemiological investigation and contact tracing. The Hong Kong Regional Office investigated the Pamela Youde Nethersole Eastern Hospital outbreak while the Kowloon Regional Office investigated the cases involving the Mongkok clinic.

3.51 The index case of the Pamela Youde Nethersole Eastern Hospital outbreak was subsequently identified as a middle-age man, *LL*, who made frequent visits to Southern China. He last visited Zhongshan on 22.2.03 to 23.2.03. He was reported to have developed fever during the trip. The patient was admitted to the affected ward on 2.3.03 with fever, cough and sputum. His clinical condition deteriorated on 7.3.03 and was transferred to the high dependency unit where he was intubated two days later. *LL* had a progressive downhill course and passed away on 16.3.03. Exhaustive laboratory investigations at the time did not identify any pathological organism.

3.52 The 6 healthcare workers of Pamela Youde Nethersole Eastern Hospital developed symptoms between 4.3.03 and 10.3.03. Contact tracing and medical surveillance were carried out in partnership between DH and the hospital. At the conclusion of this outbreak, the number of affected persons totalled 14, comprising the index case, 7 healthcare workers, 4 close contacts of the affected healthcare workers, 1 patient, and 1 visitor.

3.53 For the Mongkok clinic, case investigation by DH revealed that 5 persons were involved, namely *KK*, his wife and 3 nurses in his clinic. A nurse first developed symptoms on 3.3.03, followed by another nurse two days later. *KK* became ill on 10.3.03, followed by his wife on 12.3.03 and the third nurse on 16.3.03.

3.54 At the time of the epidemiological investigation, the infection source of the Mongkok clinic was not immediately obvious. Subsequent work revealed that the first nurse who fell sick could have acquired the infection from a patient who attended the clinic on 23.2.03 and died of severe community-acquired pneumonia on 15.3.03. The patient had a history of travelling to the Mainland before becoming ill.

3.55 Close contacts of *KK*, his wife, the nurses and their visitors were given health advice and placed under medical surveillance. Apart from *KK*'s wife, no other contacts became infected. All patients eventually recovered.

Report on 17.3.03:
St Paul's Hospital

3.56 St Paul's Hospital, a private hospital on the Hong Kong Island, reported to DH an outbreak of atypical pneumonia among three healthcare workers of the same ward on 17.3.03. The outbreak was investigated by DH's Hong Kong Regional Office.

3.57 Epidemiological investigations identified the index patient as a 72-year-old visitor from Canada who had been staying in *Hotel M* since 12.2.03. He had onset of illness on 27.2.03 and was admitted to St Paul's Hospital on 2.3.03. He was transferred to Queen Mary Hospital for further management on 8.3.03. His case was notified to DH by Queen Mary Hospital under the severe community-acquired pneumonia reporting system on 13.3.03, and contact tracing and medical surveillance were carried out in the usual manner. The three healthcare workers of St Paul's Hospital had symptoms onset between 9.3.03 and 14.3.03.

3.58 Upon receipt of the notification, DH's Hong Kong Regional Office advised St Paul's Hospital to step up hospital infection control and monitor the health of other healthcare workers. The regional office conducted contact tracing, and eventually identified 8 infected contacts, comprising 5 visitors, a patient, a family contact of an infected healthcare worker, and a family contact of an infected visitor. Altogether, there were 12 affected persons in the St Paul's Hospital outbreak, including the index case.

Report on 18.3.03:
Queen Elizabeth Hospital

3.59 On 18.3.03, DH's Kowloon Regional Office initiated contact with HA's Queen Elizabeth Hospital. Three healthcare workers from the same ward, comprising a doctor and two nurses in the hospital, had apparently become sick with pneumonia.

3.60 The regional office conducted epidemiological investigations and found that the index case was a frequent traveller to Guangzhou. He was admitted to Queen Elizabeth Hospital on 9.3.03 and died on 30.3.03 from pneumonia, later identified as SARS. The 3 healthcare workers developed symptoms between 12.3.03 and 16.3.03. All made an eventual recovery. No other contact was found to be infected.

Reports on 21.3.03:
Baptist Hospital and a Tai Po Clinic

3.61 DH became aware of another two outbreaks involving a private hospital and a clinic on 21.3.03. The outbreak in Baptist Hospital was notified by the hospital itself, whilst the outbreak in the clinic of *PP*, a general practitioner in Tai Po, was uncovered by DH's staff in the course of contact tracing of discharged patients exposed to the index case of the Prince of Wales Hospital outbreak. Subsequent investigations linked both outbreaks to that of Prince of Wales Hospital.

3.62 The Baptist Hospital notification indicated that a total of 4 healthcare workers from two wards were suspected to have developed SARS. The source of infection was eventually traced to a patient who was the sister-in-law of the index case of the Prince of Wales Hospital outbreak. She had symptoms onset on 10.3.03 and was admitted to Baptist Hospital on 13.3.03. She had stayed in the two affected wards before transfer to a public hospital.

3.63 DH's Kowloon Regional Office advised Baptist Hospital to step up infection control measures. Admission to the affected wards was temporarily suspended on 22.3.03 and ward movement frozen. They were later closed for thorough cleansing and disinfection. Advice on personal and environmental hygiene was also provided.

3.64 Contact tracing and medical surveillance eventually revealed that there were a total of 34 affected persons in this outbreak. These comprised the index case, the 4 notified healthcare workers, 6 other healthcare workers, 11 patients of the two wards, 5 household contacts of patients, 3 ward visitors, and a visiting private doctor, *SS*, his wife and 2 of his patients. Four patients, including the visiting doctor, died. The rest were discharged between March and May 2003.

3.65 The case of the general practitioner, *PP*, came to light in the course of contact tracing when DH's New Territories East Regional Office noticed on 15.3.03 that *TT*, a discharged patient who had stayed in ward 8A of Prince of Wales Hospital during 6.03.03 to 7.03.03 had been re-admitted to the hospital on 13.3.03. *TT* had onset of fever on 9.3.03. All his close contacts were traced and put on medical surveillance. Three of his close contacts were subsequently found to have developed symptoms and hospitalised on 20.3.03. When they were interviewed again, they revealed that they and *TT* had all visited *PP*'s clinic after onset of illness. The regional office tried to contact *PP* to monitor his medical condition, but in vain. They later found on 21.3.03 that *PP* had already been admitted to Prince of Wales Hospital on 20.3.03.

3.66 In all, DH traced 544 contacts connected to the case of *PP*. Two contacts, including a child, were later found to have the infection. Further tracing of the two infected contacts were subsequently carried out, including the child's kindergarten. No cases were detected among them.