

## **Investigation of a cluster of SARS cases in Hing Tung Hse, Tung Tau Estate**

The Department of Health has received reports of 6 confirmed SARS cases involving 3 families in Hing Tung House, Tung Tau Estate. The affected households were along the same vertical block (unit 14) on different floors. The cases comprised 2 males and 4 females, ranging from 19 to 59 years old. Their onset dates were from 02.04.03 to 12.04.03. The main presenting symptoms were fever and upper respiratory symptoms. In addition to the 6 confirmed cases, there was one resident living in another household in unit 14 admitted to hospital, but this case has not been confirmed as SARS at the time of writing this report.

The households did not know each other and had not joined any social functions with other residents of the same estate. They had not contacted any friends or relatives with SARS. None of them were health care workers, and they had no travel history outside Hong Kong during the incubation period.

Hing Tung House has 25 floors, each of which accommodates 26 units. They are independent units with their own toilets and kitchens. Four lifts serve either odd or even number floors.

### **Investigations**

Detailed investigations to Hing Tung House were conducted by the Multidisciplinary Response Team comprising the Department of Health, Food Environmental Hygiene Department, Housing Department and Environmental Protection Department. The departments conducted inspection of the building common areas and household interior of vertical block concerned. Drainage systems and pest nuisance were also closely inspected.

Large numbers of environmental swabs and 2 water samples were taken inside and outside the affected households. Testing results of the swabs were all negative for coronavirus except for one which was taken on 29.4.03 from the rooftop soil stack serving the vertical block and showed presence of residual genetic material of dead coronavirus. Viral culture did not yield any growth. The finding of genetic traces of dead coronavirus probably reflects previous virus excretion by SARS patients into the soil stack, but it by no means proves spread of disease via the soil stack. The water samples for bacterial culture revealed insignificant coliform bacterial count.

### **Medical surveillance**

Household members of units in the vertical block concerned were closely monitored by door-to-door interviews and daily telephone follow-up. No new case was identified since the last confirmed case with onset of 12.4.03

### **Health Education**

Household disinfection guidelines were distributed to all units of Hing Tung House with the help of Housing Department.

### **Cleansing and disinfection**

The Housing Department thoroughly cleansed and disinfected the building common areas. Bleach was applied to disinfect the toilet flush water and soil stack.

Food and Environmental Hygiene Department disinfected all households that they could gain entry in the vertical block in question as well as the adjacent vertical block on 26.04.03.

### **Inspection of the Sewage System**

Inspection by staff of Housing Department revealed that the pipes and drains were in good condition. Only one small crack was observed at the U-trap of the soil pipe in one of the households in the vertical block concerned. The unit in question did not have a SARS case and prompt repair of the crack was completed on 22.4.03. According to the repair records, units in the vertical block concerned were not particularly prone to complaints. There was no record of leakage or flooding. The main waste pipe collects waste from kitchen sink and kitchen floor drains. Another waste pipe collects effluent from the toilet, basin and the toilet floor drain. Both pipes run vertically, collecting discharges from the units on different floors of the same vertical block without connecting with pipes serving units of the other vertical blocks. Insects and gas from the waste pipe are prevented from entering each unit by the U-trap of the floor drain. Since there is no shower cubicle or bath in the toilet, water used for showers is discharged via the floor drain of the toilet. It is therefore unlikely for the unit occupants to have a dry toilet floor drain.

A few anti-syphonage devices connected to the unit traps were found not functioning properly. Similar to all sanitary fittings and drainage installations, these devices should be regularly and properly maintained. Test results of the swabs collected at the anti-syphonage devices were however all negative. All these anti-syphonage devices were checked and repaired.

### **Disinfestation**

Cockroach nuisance was common in refuse collection room and manhole areas. Corresponding disinfestation measures had been conducted and advised by Food and Environmental Hygiene Department. No rodent nuisance was detected.

### **Summary**

Findings showed that this building did not have any structural factors similar to those in relation to the Amoy Gardens that would lead to an outbreak. The design of the sewer drainage systems is different from that of Amoy Gardens. Prompt response by the Multi-disciplinary Response Team and thorough disinfection of the Estate were effective in halting spread of the infection. The cluster ended with the last case having date of onset 12.04.03.

20.5.2003