

# LCQ11: Rodent prevention and control

Following is a question by Dr the Hon Chiang Lai-wan and a written reply by the Secretary for Food and Health, Professor Sophia Chan, in the Legislative Council today (December 11):

Question:

The world's first case of human infection of rat Hepatitis E virus (HEV) was found in Hong Kong in September last year. Since then, a total of nine cases of this type have been identified globally with eight of them being found in Hong Kong. Some academics consider that the fact that a number of rat HEV infection cases were found in Hong Kong within a short time span has reflected signs of persistent spreads and outbreaks of the disease. In this connection, will the Government inform this Council:

- (1) of the latest progress of the Government's anti-rodent work and investigations into the relevant infection cases, as well as the up-to-date results of the rat HEV detection tests performed on rat samples;
- (2) whether it will conduct regular anti-rodent operation in designated target areas with a view to enhancing the effectiveness of rodent prevention and control work in the districts; if so, of the timetable and details; if not, the reasons for that;
- (3) given that the Food and Environmental Hygiene Department (FEHD) is currently conducting tests on different rodent baits for identifying the most suitable one for the situation in Hong Kong, of the details of the tests concerned;
- (4) given that FEHD has, since April this year, put on trial the use of night-vision and thermal imaging cameras with artificial intelligence functionality to monitor the whereabouts of rodents, of the effect of such monitoring work in eradicating the rodent problem;
- (5) whether it will review the methodology for calculating the Rodent Infestation Rate (RIR), and include in the formula for calculating RIR the number of complaints about rodent infestation, the number of live rodents caught, the number of dead rodents collected, etc. with a view to reflecting more comprehensively the seriousness of rodent infestation in the districts; if so, of the details; if not, the reasons for that; and
- (6) how the Pest Control Steering Committee will step up its efforts in coordinating and synergising interdepartmental rodent control work?

Reply:

President,

My reply to the Member's question is as follows:

(1) After confirming the eight cases of human infection of rat Hepatitis E virus (HEV), the Government has conducted immediate and intensive anti-rodent work in the vicinity of the patients' residence. In so far as public places are concerned, the Food and Environmental Hygiene Department (FEHD) has already strengthened cleansing services, carried out rodent prevention and control work (including placing rodenticides and trapping devices as well as filling rat holes) and taken enforcement actions against illegal disposal of refuse. As for private places and public housing estates, FEHD, together with property management companies of private housing estates, the Housing Department as well as District Councillors, have conducted site inspections to observe the rodent infestation situation and provided professional advice and technical guidance on placing rodenticides and trapping devices, destroying rat holes, improving rodent proofing structures in buildings and stepping up refuse clearing work etc.

Upon notification of the cases, the Centre for Health Protection (CHP) of the Department of Health (DH) has immediately commenced epidemiological investigations to determine the source and route of infection, which however cannot be confirmed based on the available epidemiological information. The CHP's investigation is still in progress.

Regarding the laboratory tests for HEV, the DH has been working in close collaboration with the Hospital Authority and the Department of Microbiology of the University of Hong Kong (HKU). Since November 2018, the DH has enhanced the surveillance of HEV by conducting further testing on rat HEV in the samples collected from HEV patients, in addition to regular testing on human HEV types.

As for the tests performed on rat samples, HKU's Department of Microbiology has performed 62 tests in 2019 on samples provided by the FEHD and detected rat HEV in one of the rat samples collected in Wong Tai Sin in May 2019.

(2) In view of the effectiveness of anti-rodent operations in designated target areas over the past two years, the FEHD plans to conduct such exercises regularly. An eight-week operation will be carried out on a territory-wide basis in both May and November 2020. Each District Environmental Hygiene Office of the FEHD will identify target areas in its district, taking into account factors including the Rodent Infestation Rate (RIR), the number of complaints received, views of the local community and the number of food premises and "three-nil" buildings. The FEHD will also consider the views of District Councillors. The operation will target at the three fundamental survival conditions of rodents, namely food, harbourage and passages, i.e. elimination of the food sources and hiding places of rodents as well as blockage of their dispersal routes. Multi-pronged strategies including improving environmental hygiene, stepping up rodent disinfection and reinforcing enforcement will be adopted to strengthen rodent prevention and control work. The FEHD will also collaborate with District Councils and District Offices of the Home Affairs Department (HAD) to organise anti-rodent

promotional activities and encourage active participation of the community.

(3) The FEHD has been monitoring the effectiveness of rodenticides in use currently, including whether rodents have developed resistance to the rodenticides.

Upon recommendation of the World Health Organization, the FEHD invited a British anti-rodent expert to Hong Kong in November 2019 to advise on the local rodent control work. The expert confirmed the effectiveness of the methods currently adopted by the FEHD while suggesting that enhancement can be made by further improving environmental hygiene with more public participation. As rodents are omnivores with food choices depending on environmental conditions, time and weather etc., no particular type of food is appealing to all rodents. The expert recommended using different types of baits at the same time and place to attract rodents. The FEHD will examine the effectiveness of using mixed rodent baits through tests in the coming few months.

(4) and (5) At present, the FEHD conducts RIR surveys by setting baits in selected areas. The percentage of baits bitten will be used to infer the distribution of rodents in public places. There is no internationally adopted RIR. The FEHD has, when devising the RIR, made reference to overseas practices and the actual situation of Hong Kong. We are open to methods on improving the RIR.

In devising and implementing rodent prevention and control work, government departments concerned will take into account, in addition to the RIR surveys, factors such as complaint figures and reports, views of the local community and trails left by rodents found during inspections, in order to have a comprehensive assessment of the rodent problem in the district concerned and carry out targeted anti-rodent operations in problematic areas.

The FEHD is studying the use of thermal imaging cameras with artificial intelligence analytical function for monitoring the areas and extent of rodent activities. Initial test results have shown that the data can quantify and assess the effectiveness of anti-rodent work by directly comparing the rodent population density before and after anti-rodent operations. The technology can also be used to identify rodents' entry points, travel routes and areas they frequently visit, so that rodenticides and trapping devices can be placed in a more effective manner and more targeted rodent control measures can be implemented. The FEHD has planned to conduct field trials in Kowloon City District in early 2020 in order to update and upgrade the quantifying functions of the RIR. Furthermore, cameras will be installed before and after anti-rodent operations in designated target areas next year with a view to quantifying and reviewing the effectiveness of the operations.

(6) The Pest Control Steering Committee (PCSC) led by the Food and Health Bureau is responsible for formulating policies on pest control, promoting inter-departmental co-ordination and regularly reviewing the effectiveness of pest control measures carried out by government bureaux and departments. The

PCSC has set objectives in three areas for its work plan in 2019, namely strengthening prevention, co-ordination and surveillance.

On enhancing inter-departmental co-ordination, the PCSC launched a territory-wide cleaning campaign in May 2019, requiring various government departments to strengthen their cleaning and anti-rodent work. Among these, the FEHD, HAD and Highways Department have, through intelligence exchanges, carried out improvement works and enhanced cleaning at back alleys where there are hygiene problems. The Hong Kong Housing Authority, with FEHD's technical support, has installed rodent-proofing structures in public housing estates. The Buildings Department and the Architectural Services Department have also promulgated guidelines on incorporating rodent-proofing design in new buildings for building professionals' reference. These guidelines will also serve as reference for renovation of old buildings. In addition, the FEHD has stepped up enforcement against irregularities of food premises such as food preparation at rear lanes. The FEHD will continue to provide technical support and professional training to various government departments.