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Panel on Food Safety and Environmental Hygiene

Background brief prepared by the Legislative Council Secretariat for the meeting on 10 December 2019

Administration's rodent prevention and control work

Purpose

This paper provides background information on the Administration's work in respect of rodent prevention and control, and summarizes major concerns of members of the Panel on Food Safety and Environmental Hygiene ("the Panel") on the subject.

Background

Rodent prevention and control

2. Since 2000, the Food and Environmental Hygiene Department ("FEHD") has been making use of the rodent infestation rate ("RIR")¹ and the trend movement of RIR to gauge the general situation of rodent infestation in individual districts and as the basis for devising anti-rodent measures and assessing the overall efficacy of FEHD's rodent prevention and disinfestation work. A district's RIR is calculated with reference to the ratio of baits bitten in that district.

3. According to information provided by the Administration in June 2019, the Administration has been attaching great importance to anti-rodent work. On 20 May 2019, the Administration launched a three-month territory-wide cleaning campaign², targeting areas such as rear lanes, housing estates, food

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Rodent infestation rate = $\frac{\text{Number of baits bitten by rodents}}{\text{Total number of baits collected from the selected areas}} \times 100\%$

² The three-month territory-wide cleaning campaign commencing on 20 May 2019 was extended for three months to mid-November 2019.

premises and public markets. During the campaign, cleaning work and enhanced enforcement actions were carried out and public education and publicity in this regard were also strengthened. Rodent prevention and control measures carried out by various Government departments included:

- (a) the Highways Department has stepped up its inspection work at rear lanes with serious rodent problems in all districts, carried out instant repairs to damaged road surface or nullahs, improved road conditions and filled rat holes;
- (b) the Housing Department ("HD") has examined whether the rodent-proof devices installed in over 180 public rental housing ("PRH") estates function well, and repaired, reinforced or added devices to eliminate rodents and their harbourage points;
- (c) FEHD has enhanced street cleaning, carried out publicity and public education work on rodent prevention and control, and stepped up enforcement actions against illegal dumping of waste by food premises; and
- (d) all District Offices of the Home Affairs Department and FEHD have strengthened liaison with property management companies, District Councils and local communities in order to raise public awareness of the importance of maintaining personal and environmental hygiene in preventing rodent infestation in private places, including people's homes and housing estates, through carrying out publicity at the district level.

4. In addition, the Pest Control Steering Committee³ has held meetings to discuss strategies on enhanced cleansing and rodent control work and to review the effectiveness of different departments' work.

Cases of human infection of rat Hepatitis E virus and the Administration's response actions

5. Between September 2018 and November 2019, a total of eight cases of human infection of rat Hepatitis E virus ("HEV") have been recorded by the Centre for Health Protection ("CHP") of the Department of Health ("DH"). These eight cases involved six males and two females, aged between 43 and 82.

³ The Pest Control Steering Committee ("PCSC") is chaired by the Under Secretary for Food and Health. PCSC's terms of reference cover pest control issues, including the prevention and control of rodent infestation. PCSC aims to synergize the efforts of various bureaux and departments in pest control work. Government departments attending PCSC meetings include FEHD, HD, Highways Department, Home Affairs Department, etc.

CHP's epidemiological investigations revealed that the patients resided respectively in Wong Tai Sin, Kowloon City, Southern District, Tuen Mun and Kwai Tsing, all having underlying illnesses. Among them, a 74-year-old patient was admitted to Tuen Mun Hospital due to underlying illnesses on 28 April 2019 and passed away on 4 May 2019 due to an unrelated cause. Patients in the remaining seven cases were in stable condition.

6. According to the Administration, it has taken a series of prevention and control measures to follow up on the cases of human infection of rat HEV. In addition to the rodent prevention and control measures carried out by various Government departments mentioned in paragraph 3 above, DH has been:

- (a) disseminating health information, including preventive measures and up-to-date information on HEV, to members of the public and relevant stakeholders through different channels, including the website of CHP of DH;
- (b) producing a variety of health education materials to raise public awareness of the need to maintain good personal, food and environmental hygiene;
- (c) informing the Pest Control Advisory Section of FEHD of cases of human infection of rat HEV for carrying out rodent survey and control measures as appropriate;
- (d) working with the Department of Microbiology of the University of Hong Kong ("HKU") to conduct analyses of samples collected from patients with rat HEV infection; and
- (e) monitoring closely the global situation of human infection of rat HEV.

Members' concerns

7. The Administration's anti-rodent effort has all along been a concern to members. Their major views are summarized below.

Effectiveness of the rodent prevention and control work

8. Members were deeply concerned about the worsening rodent infestation problem in various districts, especially in places bustling with human activities such as public markets and PRH estates. Some members expressed dissatisfaction that relevant departments, including FEHD and HD, had not

been proactive enough in following up complaints about rodent problem from residents of PRH estates. An enquiry was raised as to whether FEHD would coordinate and actively participate in rodent control work in PRH estates.

9. According to the Administration, FEHD had all along adopted multi-pronged strategies to combat the rodent problem, so as to work for a clean and hygienic community. To sustain the effectiveness of rodent prevention and control work at the district level, FEHD had, since May 2017, regularly launched two-month anti-rodent operations in designated target areas in various districts. During the operation, FEHD would deploy additional manpower and resources to prevent and control rodent infestation by eliminating the three survival conditions of rodents, viz. food, harbourage and passages (i.e. the elimination of the food sources and hiding places of rodents, as well as blockage of their dispersal routes). Work assessment for various districts would be conducted upon completion of the operations for enhanced monitoring of the effectiveness of anti-rodent efforts.

10. The Administration also advised that to combat rodent infestation in PRH estates, FEHD and HD had jointly launched a three-month anti-rodent operation targeting areas in two PRH estates on a trial basis in December 2018. The operation aimed at coordinating FEHD's, HD's and the Link Real Estate Investment Trust's anti-rodent efforts and carrying out rodent prevention and control work through the adoption of multi-pronged strategies (including stepping up cleansing work, rodent disinfestation and enforcement action). After examining the effectiveness of the trial scheme and consolidating relevant experience gained, HD might extend this mode of rodent disinfestation to other PRH estates.

11. Members enquired how FEHD would tackle licensed food premises' illegal dumping of food remnants/garbage at rear lanes as well as drainage and sewerage systems, particularly in those districts with a high concentration of restaurants. There was a view that the Administration should take stringent enforcement actions against illegal dumping of refuse at rear lanes. The Administration advised that FEHD had launched a special operation at hygiene black spots at rear lanes in various districts between December 2018 and January 2019, targeting hygiene problems caused by illegal disposal of food waste and refuse by food premises at rear lanes. The operation, featured with a two-week education and publicity programme to enhance food premises' awareness of maintaining street cleanliness, was followed by enhanced enforcement actions and prosecutions against illegal dumping of bagged refuse at rear lanes in the ensuing three weeks.

Reliability of RIR surveys

12. Query was raised about the reliability of RIRs in reflecting the situation of rodent infestation in the surveyed areas. Some members advised that they had received many complaints about rodent problems in areas with low RIRs recorded. There were views that FEHD should review the existing methods for monitoring rodent infestation and consider engaging independent organizations to conduct the surveillance work, so as to enhance the reliability of the survey results.

13. The Administration advised that in addition to RIRs, FEHD frontline staff also took into account the trails left by rodents, complaint figures as well as the feedback from local community and the public, in assessing the overall rodent infestation situation in individual districts. Apart from conducting trial tests on traps and rodenticides, FEHD would continue to study ways to improve the collection and investigation methods of RIRs so that the surveys could reflect more accurately the situation of rodent infestation in different districts. FEHD would also consider tapping outside expertise (e.g. from tertiary institutions) in studying the way forward.

Application of new technologies in rodent control

14. Members took the view that FEHD should review the effectiveness of its rodent control measures and adopt new methods/techniques by making reference to the experience of other countries/places. Enquiries were raised as to whether FEHD would formulate a timetable on enhancing environmental hygiene through the application of new technologies in rodent surveillance/control, with a view to preventing the outbreak of epidemic diseases in the community.

15. The Administration advised that the rodenticides and rodent disinfestation methodologies/techniques currently adopted by FEHD were in line with those promoted in the international arena. FEHD would keep in view the latest advances in rodent control methodologies/techniques. It was noteworthy that FEHD was exploring the application of suitable technologies with the Hong Kong Science and Technology Parks Corporation and other technology companies. If suitable technologies were identified, it would conduct preliminary tests, make adjustments in the light of the actual conditions and then assess their feasibility and effectiveness. Technologies tested to be effective would be applied across the territory. In respect of rodent surveillance, FEHD would consider installing night vision cameras and thermal imaging cameras at locations where rodents were rampant, so as to analyse the extent and severity of the rodent problem (e.g. the density of rodents and their movements) with the use of artificial intelligence. The technology of using

night vision camera to monitor rodent activities was newly developed by a private company. FEHD planned to install these cameras in two locations (a wet market and a rear lane) to monitor rodent activities for trial use. FEHD would evaluate the feasibility of widely adopting the technology in Hong Kong after the trial programme. Besides, FEHD had conducted tests of rodent trapping devices in wet markets. The preliminary findings and observations were not satisfactory. FEHD would conduct further tests to assess the suitability of new rodent trapping devices driven by pressurized gas (including A24 rat traps) for local use.

Threat of human infection of rat HEV

16. Members were concerned about the threat of rat HEV in Hong Kong and the measures adopted by DH for preventing the disease from spreading and becoming an endemic disease.

17. The Administration advised that the cases of human infection of rat HEV were sporadic cases, with no epidemiological linkage identified so far. The patients' home contacts remained asymptomatic. The epidemiological investigations of DH had yet to determine the source and the route of infection. There was also no scientific evidence of direct human-to-human transmission of rat HEV at the moment. Since November 2018, DH had, in collaboration with the Department of Microbiology of HKU, enhanced the surveillance by conducting further testing on rat HEV in the samples collected from HEV patients, in addition to regular testing on human HEV types.

Recent developments

18. The Administration will brief members on the implementation of various rodent prevention and control measures as well as its future work priorities at the Panel meeting on 10 December 2019.

Relevant papers

19. A list of relevant papers on the Legislative Council website is in **Appendix**.

**Relevant papers on
the Administration's rodent prevention and control work**

Committee	Date of meeting	Paper
Panel on Food Safety and Environmental Hygiene	13.11.2018 (Item IV)	<u>Agenda</u> <u>Minutes</u>
	12.2.2019 (Item III)	<u>Agenda</u> <u>Minutes</u>
Legislative Council	5.6.2019	<u>Official Record of Proceedings</u> <u>Pages 11049 to 11059 (Oral question raised by Hon HO Kai-ming on "Rodent infestation and human infection of rat Hepatitis E")</u> <u>Official Record of Proceedings</u> <u>Pages 11205 to 11217 (Written question raised by Dr Hon Priscilla LEUNG on "Pest and rodent control")</u> <u>Official Record of Proceedings</u> <u>Pages 11230 to 11235 (Written question raised by Dr Hon Elizabeth QUAT on "Rodent infestation and environmental hygiene issues")</u>
Panel on Food Safety and Environmental Hygiene	11.6.2019*	Administration's paper entitled "Follow-up Actions on Emerging Cases of Human Infection of Rat Hepatitis E Virus and the Territory-wide Rodent Control Work" (LC Paper No. <u>CB(2)1631/18-19(01)</u>)

* Issue date