

PEST CONTROL SERVICES

Executive Summary

1. The Food and Environmental Hygiene Department (FEHD) provides pest control services in public places, targeted at the control of rodents, mosquitoes and other arthropod pests which pose a threat to human health. In 2013-14, the FEHD had some 2,400 pest control and related staff, and its expenditure on pest control services totalled \$437 million. Like other places in the world, Hong Kong people are concerned about the control of rodents, mosquitoes and other pests. Every year, thousands of complaints about pest infestation are lodged with the FEHD. From time to time, there have been public concerns about pest infestation and the risk of outbreak of vector-borne diseases such as the mosquito-borne dengue fever and Japanese encephalitis (JE). The Audit Commission (Audit) has recently conducted a review to examine the FEHD's efforts on the provision of pest control services.

Pest surveillance programmes

2. The FEHD has a number of regular programmes for pest surveillance, covering rodents and mosquitoes. The surveillance information generated from the programmes includes two key indicators, the rodent infestation rate (RIR) and the ovitrap index (OI). The RIR reflects the general situation of rodent infestation in individual districts whereas the OI indicates the extensiveness of the distribution of Aedine mosquitoes (vectors of dengue fever) in the surveyed area (paras. 1.4, 2.2 and 2.3).

3. *Coverage of areas for rodent surveillance.* For compiling the RIR, the FEHD places monitoring baits at selected areas to detect the presence of rodents. The RIR of a district is the percentage of baits bitten at the selected areas of the district. As at June 2014, there were 41 selected areas distributed over different districts. Audit noted that the FEHD had been using the same 41 areas for rodent surveillance in the past 10 years. No new areas had been selected for surveillance since 2004. The insufficient geographical coverage of the rodent surveillance programme might undermine the representativeness of the RIR for a district. Audit considers that there is room for widening the network of areas for the rodent surveillance programme (paras. 2.5 to 2.11).

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4. ***Factors affecting the rodent surveillance.*** The rodent surveillance could be affected by environmental or human factors (e.g. food remains around a monitoring bait could reduce the attractiveness of the bait). Audit reviewed the records of a rodent surveillance exercise conducted in 2014, and found that of the 2,240 monitoring baits placed, only 1,272 (57%) were free from environmental or human distractions. Notwithstanding that 43% of monitoring baits might be affected by various factors (e.g. application of rodenticides or scattering of food remains nearby), in most cases, no adjustments were made to exclude them in the compilation of RIR (paras. 2.16 to 2.18).

5. ***Coverage of areas for dengue vector surveillance.*** Ovitrap are small plastic containers designed for attracting Aedine mosquitoes (dengue vectors) to lay eggs. For vector surveillance, the FEHD places ovitraps at selected areas. The OI is the percentage of ovitraps found to have positive larval breeding results. Audit noted that the selected areas were not subject to regular review. Many popular places (e.g. Causeway Bay and Stanley) had not been selected as areas for dengue vector surveillance (paras. 2.28 to 2.31).

6. ***Problematic ovitraps.*** Suspected tampering of ovitraps happened from time to time. Since 2013, there had been an increase in the number of problematic ovitraps (e.g. fallen on ground or dried up). In a site visit to Tai Po in May 2014, Audit noted that five of the 55 ovitraps placed in the area were problematic. However, the FEHD frontline staff did not report the problematic ovitraps to the supervisor. The results of the five problematic ovitraps were not excluded from the OI calculation (paras. 2.36 to 2.39).

7. ***Coverage of areas for JE vector surveillance.*** In September 2013, the FEHD set up the JE vector surveillance programme to collect samples of mosquitoes in the summer months (from April to October) to detect the presence of Culex mosquitoes (JE vectors). As at June 2014, the JE vector surveillance programme covered only six areas in Yuen Long, which were considered by the FEHD as high-risk areas. Audit noted that places outside Yuen Long might also be affected by the risk factors of JE. For example, a local JE case occurred in Tuen Mun in August 2014 (paras. 2.45 to 2.52).

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8. ***Effectiveness of infestation indicators.*** The RIR and the OI are key infestation indicators (see para. 2). Audit however found that the RIR and the OI did not always fully reflect the actual situation of pest infestation and cases were noted when the two indicators might not be in line with the level of infestation as perceived by the general public (paras. 2.63 and 2.64).

Pest control operations

9. ***Planning of pest control work.*** Through its 19 District Environmental Hygiene Offices (District Offices), the FEHD carries out pest control operations in public places over the territory. District Offices are responsible for formulating inspection programmes for their own pest control teams. Although the FEHD requires such programmes to be worked out on a weekly basis, Audit found in four District Offices visited that their current set of inspection programmes had generally been used for several years. Audit further noted certain inadequacies in their planning of pest control work, such as uneven workloads among different pest control teams, and construction sites (which were potential mosquito breeding sites) not always covered by inspection programmes (paras. 3.2 to 3.16).

10. ***Supervision and performance of pest control work.*** Audit observed the pest control work of the four District Offices visited and noted various improper work practices in the performance of the pest control work. These included: (a) failing to remove potential mosquito breeding sources; (b) improper handling of rodenticides; (c) improper handling of trapped rodents; and (d) failing to set rodent traps properly. Audit also noted cases in which supervisors did not adequately supervise their pest control teams (paras. 3.30 and 3.31).

11. ***Monitoring the performance of contractors.*** As at June 2014, 1,644 contractor staff were involved in the day-to-day pest control work over the territory. It is the intention of the FEHD to manage the pest control contracts by results. However, performance standards have not been clearly set, against which results of the pest control contracts can be measured (paras. 3.37 to 3.42).

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12. *Provision of pest surveillance information to stakeholders.* It is the responsibilities of relevant government bureaux/departments to keep their own venues hygienic and prevent pest infestation. To enable them to better respond to the infestation situations at places under their purview, the FEHD proactively provides details of the RIR and the OI to 20 government bureaux/departments (user departments). However, many venues of the user departments were not covered by the FEHD's bait points for rodent surveillance. Moreover, many venues did not have an ovitrap set up by the FEHD for dengue vector surveillance. The RIR and the OI could only provide limited pest surveillance information relating to venues of user departments (paras. 4.4 to 4.7).

Way forward

13. The FEHD has all along been focusing its pest control services on pests which pose a threat to human health (such as rodents and mosquitoes). Its routine inspection programmes generally do not cover cockroaches, flies, stinging insects and ticks, which can also pose significant health threats to humans. Over the years, the pattern of vector-borne diseases has been changing. More recently, the risks of outbreak of dengue fever and JE have caused increasing public concerns. The FEHD needs to keep its strategy on pest control under constant review (paras. 5.2 to 5.8).

Audit recommendations

14. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Director of Food and Environmental Hygiene should:**

Pest surveillance programmes

- (a) **consider widening the network of surveyed areas selected for the rodent surveillance programme (para. 2.26(a));**

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- (b) **prevent recurrence of incidents in which the rodent surveillance was affected by various environmental or human factors, and make necessary adjustments to the compilation of the RIR (para. 2.26(d) and (e));**
- (c) **keep the geographical coverage of surveyed areas for dengue vector surveillance under regular review (para. 2.42(a));**
- (d) **step up actions to tackle the increasing number of problematic ovitraps identified and remind all FEHD staff concerned of the need to properly deal with problematic ovitraps (para. 2.42(c));**
- (e) **review the coverage of geographical areas for JE vector surveillance (para. 2.53);**
- (f) **review the effectiveness of the RIR and the OI in providing surveillance information for planning and evaluation of pest control work (para. 2.68(a));**

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- (g) **provide adequate guidelines to help District Offices regularly update their inspection programmes (para. 3.27(a));**
- (h) **ensure more efficient and cost-effective deployment of staff resources for pest control work (para. 3.27(b));**
- (i) **review the adequacy of the supervisory practices of pest control teams, with a view to improving the performance of pest control staff (para. 3.33(a));**
- (j) **provide guidelines to help District Offices set performance standards against which the results of contractors' pest control work can be measured (para. 3.45(b));**

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- (k) in consultation with the relevant user departments, review the adequacy of the pest surveillance information currently provided to them for assessing the pest infestation situations of venues under their purview (para. 4.11(a));

Way forward

- (l) critically review the FEHD's pest control strategy, taking on board Audit's observations and recommendations (para. 5.9(a)); and
- (m) continue to keep abreast of the latest trends of vector-borne diseases locally and in places outside Hong Kong (para. 5.9(b)).

Response from the Administration

15. The Director of Food and Environmental Hygiene agrees with the audit recommendations.