

For information

LegCo Panel on Food Safety and Environmental Hygiene

**Progress of the Work on Tackling the Threat of
Antimicrobial Resistance in Food Animals**

INTRODUCTION

This paper briefs Members on the progress of the work on tackling the threat of antimicrobial resistance (AMR) in food animals in Hong Kong by the Agriculture, Fisheries and Conservation Department (AFCD).

BACKGROUND

2. In recognition of the major threat posed by AMR to global public health, the Government announced in 2016 the setting up of a High Level Steering Committee on AMR (HLSC), chaired by the Secretary for Food and Health, to formulate strategies and action plans on AMR. An Expert Committee has been set up under the HLSC to provide science-based advice to assist in the formulation of an action plan under the “One Health” framework which brings together human, animal and environmental health. The Hong Kong Strategy and Action Plan on AMR (Action Plan) was launched on 10 July 2017 (LC Paper No. CB(2)1842/17-18(01)).

3. The goals of the Action Plan include, among others, the following:

- a) developing territory-wide network across different sectors to

strengthen surveillance on AMR and antimicrobial usage (AMU);

- b) promoting appropriate therapeutic use of antimicrobials in humans and animals under the oversight of health and veterinary professionals and discouraging misuse and overuse; and
- c) encouraging collaboration among different stakeholders to enhance awareness of AMR.

4. To achieve these goals, key areas have been identified to slow down the emergence, and prevent the spread, of AMR, under which AFCD has been implementing various measures to contain the threat of AMR arising from livestock and fish farms in Hong Kong. Progress of AFCD's work on these areas under the Action Plan is set out below.

PROGRESS OF IMPLEMENTATION

Key Area: Surveillance and research

5. Currently there are a total of 72 livestock (pig and poultry) farms, 324 pond fish farms and 938 mariculture farms supplying live food animals to the local market. In accordance with section 6(2) of the Antibiotics Ordinance (Cap. 137), a written permit issued by the Director of Agriculture, Fisheries and Conservation (DAFC) to local livestock farmers enables them to purchase and possess 20 types of antimicrobials listed in the permit for the treatment of diseases of farm animals. With the permit, farmers can purchase antimicrobials locally, or through a middleman to purchase from abroad. While currently farmers can acquire antimicrobials under the permit system and administer antimicrobials to animals themselves, there is thus far no evidence found in AFCD's farm inspections that antimicrobials are being misused or abused in local livestock and aquaculture farms. Nonetheless, as AMU has not been systematically monitored in local farms, there is limited quantitative data available on AMU on food animals.

6. To put in place a surveillance programme to monitor AMU as well as microorganisms with AMR in locally produced food animals, a consultancy study has been commissioned by AFCD to devise such a programme. In addition, the consultancy study will devise sampling and testing methodologies to ascertain if imported day-old chicks, breeding pigs and fish broodstocks/fry/fingerlings serve as significant carriers of microorganisms with AMR. Such information will serve as a basis for devising a plan for tracing microorganisms with AMR in pig, poultry and fish in future.

7. The monitoring of AMR in livestock will cover three types of bacteria – zoonotic pathogens such as *Salmonella* and *Campylobacter*, commensal organisms such as non-pathogenic strains of *E. coli* and *Enterococci*, and pathogens such as pathogenic *E. coli*. For AMR in fish, as AMR surveillance in aquaculture is a relatively new area, the Consultant will identify a suitable laboratory protocol for testing AMR in aquaculture farms. The range of antimicrobials to be covered in the surveillance programme will be determined by drawing reference from overseas, such as the European Union (EU), and having regard to the antimicrobials critically important in human medicine.

8. The Consultant's preliminary findings and advice were deliberated at the meeting of the Working Group on AMR One Health Surveillance¹ (Working Group) in November 2017. Discussions were centred on the overall work plan of the consultancy study as well as the methodology and approach in devising the surveillance system for AMR and AMU at local food animal farms. Comments of the Working Group on the testing of AMR bacteria had been fed back to the Consultant for consideration of adjustments to the testing arrangement.

¹ The Working Group is established under the Action Plan to advise on the matters related to the operation of surveillance of AMR and AMU. The Working Group is chaired by the Department of Health, and comprises members from relevant government departments (including Hospital Authority, AFCD and the Food and Environmental Hygiene Department), healthcare organisations, academia and professional bodies.

9. Pending the launching of the surveillance programme, in order to collect information on AMU in local farms (such as the types of antimicrobials in stock, the purpose of usage and the manner in which antimicrobials are administered), AFCD has to date conducted inspections on 33 pig farms, 28 poultry farms and 159 pond fish and mariculture farms. An AMU record form has been devised and distributed to farmers for reporting relevant AMU data to AFCD at regular intervals. The AMU records submitted would be audited by AFCD. The quantities of AMU will be measured against the total amount of meat produced by animal species and by class of drug in line with systems in overseas countries, such as the EU. During the inspection visits, AFCD has impressed on livestock and fish farmers the importance of prudent and responsible use of antimicrobials.

10. Pig urine is also being sampled from weaner and grower pigs during spot checks of local pig farms to ascertain the presence of antimicrobial residues that may indicate recent AMU. Two rounds of pig urine testing have been conducted since November 2017. The first round found antimicrobial residues in five samples, out of 35 samples analysed. It was found that those pigs tested positive were treated by farmers with antimicrobials for animal disease treatment or prevention. AFCD has given advice to farmers on proper farm animal disease management and guidance on use of antimicrobials, with a view to minimising AMU. Laboratory analysis of the second round is currently being conducted. In addition, laboratory testing is being arranged for determining the presence of antimicrobials in livestock feed and Chinese medicinal products used by some farmers on their food animals. Such testing will involve a wide range of antimicrobials, including those used as growth promoter and banned in the EU, and heavy metals that are associated with AMR.

11. Fish samples are collected regularly from pond fish and mariculture farms for analysing antimicrobial residues. From January to June 2018, over 170 fish samples were tested and no antimicrobial residue was detected in any of the samples. Since 2017, 68 fish feed

samples were collected for antimicrobial screening and no antimicrobial was found. Findings thus far show that antimicrobial is not commonly used in local fish farms.

12. In future, AFCD will implement the “veterinary prescription-only medication supply” policy, whereby antimicrobials could not be administered to food animals by farmers unless under the prescription of registered veterinary surgeons, as and when proper support and veterinary services are available to the local food animal production sector in respect of disease prevention and treatment. The interim voluntary AMU reporting system mentioned in paragraph 9 above will remain in place until such a policy is implemented. The AMU surveillance programme, once in place, will monitor the use of antimicrobials based on the veterinary prescription data according to international standards. Comparison will be made with the data currently being collected by the voluntary AMU reporting system for monitoring the trend of AMU over time.

Key Area: Optimise Antimicrobial Use

13. To prepare for the implementation of the “veterinary prescription-only medication supply” policy, nine local universities and the Hong Kong Veterinary Association have been invited to provide support in facilitating the provision of veterinary services to local food animal farms. Funding has been approved under the Sustainable Fisheries Development Fund for the College of Veterinary Medicine and Life Sciences, City University of Hong Kong for providing veterinary services to fish farms and conducting practical studies on fish disease management. Separately, there are applications under consideration for funding support under the Sustainable Agricultural Development Fund for provision of veterinary services to local livestock farms.

14. AFCD will stop issuing antibiotic permits when the “veterinary prescription-only medication supply” policy mentioned in paragraph 12 above is implemented to ensure prudent and responsible use of

antimicrobials in local livestock and fish farms.

15. AFCD will also develop domestic guidelines on the proper use of antimicrobials for food animal producers, taking into consideration the local situation as well as standards adopted by international organisations, including the World Organisation for Animal Health (OIE) and the World Health Organisation (WHO). In this connection, AFCD has sought the views of OIE and the Food and Agriculture Organisation of the United Nations on the application of the new “WHO’s Guidelines on Use of Medically Important Antimicrobials in Food-Producing Animals”, with a view to adapting the guidelines for application in the local farms. In addition, AFCD organised the “International Conference on One Health: Connect and Proact” in September 2017 and exchanged views with international experts on how to tackle AMR and promote prudent use of antimicrobials.

Key Area: Infection prevention and control

16. AFCD has been visiting local food animal farms to collect AMU information and educate livestock and fish farmers on the concept of minimising AMU through disease prevention. To date thirty-five AMR education seminars for local livestock and fish farms have been organised (see paragraph 20 below for details). In the long run, AFCD will devise tailor-made farm management plans to help farms address AMR issues.

17. In addition, representatives of AFCD attended various local and overseas conferences relating to AMR in order to keep abreast of the updated scientific knowledge and latest developments on AMR control.

Key Area: Improve awareness

18. AFCD has launched a publicity campaign to impress on the public the challenge of AMR, under the theme “Let’s take action against AMR (共同一起應對抗菌素耐藥性)”. Specific actions undertaken

include :

- (a) mascot characters have been designed for featuring in the publicity materials;
- (b) education materials including posters, pamphlets and souvenirs have been produced and distributed to local farmers and veterinarians as well as disseminated through community halls/centres; and
- (c) advertisements have been placed at MTR stations, MTR trains and minibuses, with the key message 「**A**cknowledge the Fact, **M**itigate the Threat, **R**apidly We Act / 掌握現況、防患未然、迅速行動」, echoing the indispensability of grasping the latest knowledge on the causes and development of the AMR problem through surveillance, research and acknowledgement and taking appropriate action to tackle it and contain its threat.

19. A practical AMU/AMR guidance booklet was produced in February 2018 for distribution to fish farmers. One promotional video and one animation to impress on the public that the Action Plan for tackling AMR has gained the support of local livestock farms have been produced for access on the Internet.

20. To date, four education seminars conducted by various overseas and Mainland experts on AMR have been organised for local food animal farmers, educating them on the current global situation of AMR and its relevance to food animal farms, the importance of imposing control measures to contain the threat of AMR at the level of food animal farms and exercising prudent use of antimicrobials. Another 31 seminars have been conducted for fish farmers to educate them on the basic concept of AMR and the importance of prudent use of antimicrobials.

21. A survey for assessing the knowledge, attitude and practices (KAP) of local food animal farmers has been conducted. The survey results show that there are gaps in the KAP towards AMR and AMU in

the local livestock sector. In the light of the survey results, topics for enhancing farmers' KAP and areas for assisting farmers in combating AMR have been identified. Topics for enhancing farmers' KAP include the adverse effects of AMR at the livestock farm level and measures to effectively reduce AMU. Assistance required by farmers at this stage mainly concerns how to properly record AMU. Additional surveys will be carried out regularly in future to keep monitoring and assessing the gaps in farmers' KAP.

ADVICE SOUGHT

22. Members are invited to note the progress of the work on antimicrobial resistance AMR set out above.

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