Preventive Measures against Avian Influenza In Hong Kong

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Hong Kong
19-20 December 2013
Operation of poultry farms

- Routine inspection of local chicken farms at least once a week to check on hygiene and bird/herd health conditions. Blood and faecal samples from chickens.

- All chickens are required to vaccinate with H5N1 Re-6 AI vaccine before marketing. (First vaccine injection - 8 to 10 days, and the second one - at the age of 36 to 40 days.)

- Antibodies in chickens at the standard level (reach the titre of 1:16 or above) before the chickens are allowed to be transported to the wholesale market.
Operation of poultry farms

- From January 2013 to October 2013, 64,444 blood samples and 37,410 swabs have been tested by the Veterinary Laboratory.
- All poultry farms are required to implement individual biosecurity measures, including bird protection nets, disinfection pool, hand washing facilities, separation of production area and maintenance of entry and exit records.
- Written reminders sent to farmers in view of the latest development of AI.
- Dead chicken(s) are collected from wholesale markets every day to test for AI.
- Violation of any licensing conditions, the farmer will be prosecuted, max. penalty is HK$50,000.
AI Vaccination

- All poultry must come from registered farms.
- The imported poultry must be vaccinated against H5 and accompanied by an animal health certificate issued by the respective inspection and quarantine bureau in the Mainland.
- All birds will be tested for Antibody titre and H-gene of A.I. using PCR.
Challenge Studies on (Re6) Re5, Intervet H5N2, H5N3

- Vaccination-challenge experiments
  - Variables determined are
    - HI antibody titers after vaccination and challenge
    - Virus excretion in trachea and cloaca
    - Clinical signs and mortality
Wholesale Market

- All live poultry must be sent to the only one wholesale market for hold and test and better traceability.
- Cheung Sha Wan Temporary Poultry Wholesale Market
- Cleansed and disinfected every day after the morning trade.
No overnight poultry in retail market

- All retail markets (132 retail poultry stalls) must be licensed.
- Prohibit keeping of live poultry overnight in retail premises
- Slaughtered by 8 pm every day
Backyard poultry keeping

- To ban the keeping of backyard poultry, including chickens, ducks, geese, pigeons and quails. A penalty of HK$50,000 to HK$100,000 was introduced for non-compliance.
- The Department regularly carries out blitz operation to villages for the detection of illegal keeping of backyard poultry.
Racing pigeons, pet poultry and birds for release

- Permits are issued to owners who have already kept a small number of pet poultry before the ban. The environment and health conditions of the pet birds are monitored through this licensing system.

- Racing pigeons have been put under control through the exhibition licence issued to owners. 81 exhibition licences (47 licences are still valid) issued by November 2013.
Feral Pigeon

- The main reason for the congregation of feral pigeons is feeding by the public. Therefore, the ultimate solution to the problem is to stop the food supply by site management.

- The safest, most effective, economical and humane way is to eliminate nesting and roosting sites. For instance, it will be useful to install spikes on the roof to prevent feral pigeons from staying and taking rest.
House Crow

- House Crow is an exotic species which could affect the local ecology. To control/reduce their number, the AFCD has implemented measures which suit local conditions such as baiting (all year round) and removal of eggs and chicks during breeding periods (from April to August).

- From 2004 to 2013, a total of 1,247 chicks and 1,185 eggs were removed during their breeding seasons.
Import Surveillance

- There are mainly 9 registered mainland farms currently supply day-old chicks to Hong Kong. A total of 1.38 M day-old chicks were imported from these farms from Jan to Oct 2013. All these chicks were accompanied by animal health certificates indicating that the farms had not had any outbreak of avian influenza in the past 180 days before the chicks were imported into Hong Kong.
Import Surveillance

- Pet birds to be imported into Hong Kong have to undergo a period of isolation before exporting from their place of origin and will be inspected within 5 days before shipment. The birds must be accompanied by an animal health certificate detailing the inspection results before they can be imported. Tests will be carried out by AFCD staff for the birds on their arrival in Hong Kong. Of the more than 465 pooled swabs collected from imported pet birds from Jan to Oct 2013, all were tested negative to the AI virus.
From Jan to Oct 2013, 1 case (2 birds) of illegal import of pet birds was handled by Boundary Control Unit and 1 case (3 birds) of illegal import of pet birds was handled by Airport Unit. The AFCD has worked with the Customs and Excise Department to step up intelligence exchange and border inspection.
Monitoring of Pet Bird Shops and Bird Garden

- The birds for sale are only allowed to be kept in 38 licensed premises. The facilities for keeping the birds must also be kept clean.
- Traders are required to keep the health certificates of imported birds. Any death of bird should also be reported to the AFCD for investigation.
- Officers will check the origin and no. of birds should be all accountable.
Monitoring of Pet Bird Shops and Bird Garden

- Inspections are conducted on the shops in the Bird Garden once a week. The department collects about 320 faecal samples from local bird shops to test for AI every month. From Jan to Oct 2013, 3,183 faecal samples were collected and all test results were negative.
Monitoring of AI at places where wild birds congregate

- AFCD staff conduct daily surveillance of wild birds in Mai Po Nature Reserve and the Hong Kong Wetland Park to observe any abnormality. Any dead or sick bird found will be promptly sent to the veterinary officers of the department for follow-up and tests to confirm whether the cause of death or illness is related to AI.
Monitoring of AI at places where wild birds congregate

- In Mai Po Nature Reserve, faecal samples are collected daily for H5 virus tests at places where wild birds congregate. About 10 samples will be collected daily (or 200-300 per month) in summer (from April to September), while about 20 (or 500-600 per month) will be collected in winter (i.e. the peak arrival season of migratory birds from October to March). For the Wetland Park, about 10 faecal samples will be collected from wild birds once every week for H5 virus tests.
Monitoring of aviaries and bird parks

- The aviaries and bird parks being monitored include the Ocean Park, Kadoorie Farm, and the Hong Kong Park, Kowloon Park, Penfold Park and Yuen Long Park (Aviary Pagoda) under the management of the LCSD.

- Faecal samples are regularly collected from the cage bottom and floor of all bird parks in Hong Kong for H5 virus testing in the Veterinary Laboratory.

- All sick or dead birds or their faecal samples are sent to the Veterinary Laboratory for H5 virus testing.
Handling procedures and follow-up for infected wild birds

- The Mai Po Nature Reserve or the Wetland Park will be closed for at least 21 days if 3 or more infected birds within 10 days are found within 3 km in radius area. Work on collection of samples and disease investigation will also be stepped up.
Collection of sick or dead birds

About 15,486 and 14,098 wild birds were collected and tested for A.I. viruses in 2012 and 2013 (Jan to Nov) respectively.

So far, only 21 and 1 birds have been tested and positive for H5 in 2012 and 2013 (Jan to Nov) respectively.

Throat swab and faecal samples will be taken from sick birds for H5 virus testing. Treatment or euthanasia will be given to the bird based on its condition.

Dead birds will be screened according to the condition of the carcass, risk assessment and the seasonal quota.
Handling procedures and follow-up for infected wild birds

- Information about the locations and other details about the infected wild birds found are uploaded to the AFCD website. Press release is issued on the same day.

- The Department of Health will be informed for epidemiological investigation to persons who have had contact with the infected birds. Surveillance will be stepped up at the location in question for 21 days. Any other wild birds found dead will be sent immediately for testing, and the surveillance period may be extended according to the test results.
Test Methods

- BSL level 3 laboratory
- Necropsy & histopathology examination
- Immunoperoxidase test on frozen tissue sections
- Virus isolation
- AI specific genome detection by PCR methods
- Anti-H5 antibody detection (i.e. Haemagglutination Inhibition test- HI test)
Wild bird surveillance in Hong Kong SAR

H5-HA gene tree
A total of 42 HPAI cases were detected amongst 32,200 bird carcass submission. Prevalence = 0.13%. Monthly prevalence did not exceed 0.8%. The highest prevalence of cases occurred in the Jan-Feb periods of both 2006 and 2007.
Educational measures

- A leaflet “Prevention of Avian Influenza – Management of Birds” and a poster “To Protect Yourself From Avian Influenza – Stop Keeping Backyard Poultry” have been published to provide information to the public on bird management and the ban of backyard poultry keeping. Copies of the leaflet and poster have been distributed to various organizations, government departments and rural committee offices.

- Staff will disseminate AI prevention information among villagers when they carry out inspection duties in villages.

- APIs have been produced to advise the public on AI prevention, stopping the practice of bird release and the ban on backyard poultry.
In preparation for Highly Pathogenic Avian Influenza (HPAI) outbreak in the peak season, the Animal Health Division offers poultry culling operation training to various divisions as part of the contingency plan.
Internal training and AI Drill

“Train the Trainer Course” is conducted every year. Content of the “Train the Trainer Course” includes workflow of the culling operation and proper use of personal protective equipment (PPE). As the course is run on train-the-trainer basis, participants attending this course shall be responsible for training colleagues of his/her section/division on culling operation afterwards.

AI drill will be conducted annually since 2004. An AI drill code-named “Dandelion” was conducted on 8 October 2013.
## Active/Passive surveillance program in Hong Kong

### AI Testing Statistics 2009-2013

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th></th>
<th>2011</th>
<th></th>
<th>2012</th>
<th></th>
<th>2013 (up to Oct 13)</th>
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<tbody>
<tr>
<td></td>
<td>Number of samples</td>
<td>Percentage</td>
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<td>Number of samples</td>
<td>Percentage</td>
<td>Number of samples</td>
<td>Percentage</td>
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<tr>
<td>Local Poultry Farms</td>
<td>8068</td>
<td>18.71%</td>
<td>10807</td>
<td>23.89%</td>
<td>6840</td>
<td>14.27%</td>
<td>6943</td>
<td>16.13%</td>
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<tr>
<td>Import Poultry</td>
<td>12039</td>
<td>27.93%</td>
<td>10849</td>
<td>23.98%</td>
<td>11239</td>
<td>23.44%</td>
<td>12617</td>
<td>29.32%</td>
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<tr>
<td>Poultry Markets</td>
<td>4060</td>
<td>9.42%</td>
<td>3692</td>
<td>8.16%</td>
<td>3087</td>
<td>6.44%</td>
<td>2918</td>
<td>6.78%</td>
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<tr>
<td>Other locations</td>
<td>740</td>
<td>1.72%</td>
<td>1101</td>
<td>2.43%</td>
<td>972</td>
<td>2.03%</td>
<td>770</td>
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<td>Pet birds</td>
<td>3810</td>
<td>8.84%</td>
<td>4043</td>
<td>8.94%</td>
<td>4767</td>
<td>9.94%</td>
<td>3690</td>
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<td>Park birds</td>
<td>2579</td>
<td>5.98%</td>
<td>2993</td>
<td>6.62%</td>
<td>3732</td>
<td>7.78%</td>
<td>3137</td>
<td>7.29%</td>
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<tr>
<td>Wild birds</td>
<td>11815</td>
<td>27.41%</td>
<td>11760</td>
<td>25.99%</td>
<td>17308</td>
<td>36.10%</td>
<td>12957</td>
<td>30.11%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43111</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>45245</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>47945</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>43032</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>
Thank you