Overview

Situation: Influenza A (H7N9) virus with pandemic potential

Country: People’s Republic of China, human case originating from Guangdong (China) detected in Malaysia

Number of human cases: 450 confirmed; 162 deaths

Provinces/municipalities*: Beijing and Shanghai; Anhui; Fujian; Guangdong; Hebei; Henan; Hunan; Jiangsu; Jiangxi; Shandong; Zhejiang; Guangxi; Guizhou; Jilin; Hong Kong SAR; Macao SAR, Ningxia Hui Autonomous Region, and Taiwan Province of China; Sabah State of Malaysia.

Findings in animals: H7N9 confirmed in chickens, pigeons, ducks, a tree sparrow and environmental samples: positive virological samples mainly from live bird markets and vendors; one farm tested positive.

FAO actions: liaise with China and partners, monitor situation, explore and assess virus characteristics, conduct market chain analysis, risk assessment, surveillance guidance and communication.

Situation update

Animals

- 1 July: Zhejiang Province imposed a total ban of live bird trade in main districts of its 11 major cities. From 1 July, the cities only allow centralized slaughter and marketing of chilled poultry meat [reference].
- 1 July: Shenzhen City (Guangdong Province) started centralized poultry slaughter and chilled poultry meat marketing in Futian District as a pilot. Seles/slaughter of live birds in public places including markets, supermarkets and restaurant are now prohibited in the district. The second phase will include Luohu, Yantian and Nanshan Districts, then after fully implemented in all districts [reference].
- 1 July: Foshan City (Guangdong Province) started centralized poultry slaughter and chilled poultry meat marketing in Chancheng District as a pilot [reference].
- 26 June: MoA released the new “National poultry H7N9 influenza elimination plan”, which classifies provinces as ‘Key’ and ‘General’ surveillance provinces according to their virus detection status, sampling frequency by target facility types and revised laboratory responsibilities on testing [reference].
- 26 June: MoA published its national H7N9 monitoring results from 1 to 20 of June: 11,512 serum samples and 11,947 virological samples were collected in 890 locations in 10 provinces. A total of 39 chicken serum samples tested positive for H7 (1 from a wholesale market of Huizhou City [Guangdong Province]; 29 from live bird markets and 9 from free-ranging households in Shanghai). Two swabs collected from chickens in two markets of Puyang City (Henan Province) tested positive for H7N9 (1, 2).

Positive virological samples from birds or the environment, by province* and time period

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*Human cases are depicted in the geographic location of their report. For some cases, exposure may have occurred in a different geographic area.
Positive virological samples of known origin, from birds or the environment

Sample origin could not be determined for 64 additional samples (35 in wave 1, 29 in wave 2); 218 additional positive virological samples were reported in peer-reviewed articles (1, 2, 3, 4, 5, 7, 8) and 346 were mentioned in press releases (1).

Humans:
Since Tuesday 17 June, 1 new case was reported in Zhejiang. For detailed information on human cases please refer to WHO's Disease Outbreak News.

Graphs: Information sources for human cases are WHO, National and Provincial Government websites.

Officially reported human cases, by province and time period

Peer-reviewed findings:
- A recombinant H7N9/PR8 vaccine containing HA and NA genes from a wild-type H7N9 virus was synthesized to prepare a monovalent H7N9 vaccine. This vaccine showed to be immunogenic in both mice and ferrets and could be a potential candidate for further clinical evaluation and human use. When given intramuscularly to mice (two doses), it conferred full protection from a normally lethal H7N9 virus challenge (reference).
- Researchers from US and Chinese CDC performed a retrospective case-control study on 89 laboratory-confirmed human H7N9 cases and 339 matched controls. Main risk factors identified were direct or indirect contact with poultry, contact with poultry prior or during slaughtering and processing and LBM visits, with or without exposure to poultry. Concurrent diseases such as obesity, chronic obstructive pulmonary disease and the use of immunosuppressive medication were also identified as risk factors. Poultry consumption did not result as a risk-factor, same as the level of education and/or annual income. It was shown that men were no more likely to visit LBMs than women (reference).
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- A statistical model was developed to predict risk of H7N9 market infection in Asian countries. Data sets of the locations of 8,943 LBMs in China were assembled and combined with environmental data and anthropogenic variables to identify areas in Asia with high suitability for H7N9 infection which could be priority targets for surveillance and control measures (reference).

**FAO’s global actions**

- FAO continues supporting at-risk countries with surveillance and preparedness for H7N9 incursion.
- FAO is providing surveillance and sampling guidance for South and Southeast Asia.
- FAO guidance is online: www.fao.org/h7n9.
- Funding to date: US$6.9 million mobilized (US$ 5 million USAID, US$1.9 million TCPs), which is less than 15 percent of total appeal (i.e. US$ 35 million for FAO global framework on H7N9 for a 12 month comprehensive response/rehabilitation effort).

**Important links**

- OFFLU updated laboratory protocols: http://www.offlu.net/index.php?id=267
- FAO EMPRES-I Global Animal Disease Information System: empres-i.fao.org
- Centers for Disease Control and Prevention: http://www.cdc.gov/flu/avianflu/h7n9-virus.htm

**Human cases* and positive findings in birds and from market or restaurant environments**

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