

2013-04-17-028 Avian influenza, human (48): China H7N9 update

To: (06) Virology, general; (07) Zoonoses, general; (09) Resistance of microorganisms;

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AVIAN INFLUENZA, HUMAN (48): CHINA H7N9 UPDATE

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A ProMED-mail post <<http://www.promedmail.org>

ProMED-mail is a program of the

International Society for Infectious Diseases <<http://www.isid.org>>

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[1] Questions needing answers

Date: Tue 16 Apr 2013

Source: Virology Down Under [abridged & edited]

<[http://www.uq.edu.au/vdu/VDUInfluenza\\_H7N9.htm](http://www.uq.edu.au/vdu/VDUInfluenza_H7N9.htm)>

- Have viral co-infections and bacterial super-infections been sought, or excluded, in the H7N9 fatalities to date? How confidently can we directly associate death in the 14 (as of 15 Apr 2013) H7N9-positive cases with H7N9 infection?

- What role do thousands of dead pigs found in Huangpu river (<[http://en.wikipedia.org/wiki/Huangpu\\_River](http://en.wikipedia.org/wiki/Huangpu_River)>) play in the H7N9 outbreak; 39 of 16 000 (0.2 percent) carcasses were H7N9 negative, but is this a sufficient sample to rule the virus out as a cause of deaths? Was porcine circovirus [PCV] (only 1/39 were positive (<<http://www.digitaljournal.com/article/347040>>) the cause of the illness that reportedly triggered their dumping? If not (the pigs were adults; PCV "usually" kills foetuses and piglets, but not always (<<http://www.flutrackers.com/forum/showpost.php?p=489990&postcount=23>>), what did sicken the pigs?

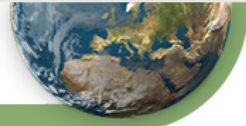
- What was the cause of pneumonia in the 2 H7N9-negative sons of the H7N9-positive 87-year-old male who died of pneumonia? WHO are looking into this.

- The H7N9 sequences are reportedly avian, but there seem to be differences (<<http://www.flutrackers.com/forum/showthread.php?p=489929#post489929>>) between the Shanghai and Anhui [isolates] and an element that shows adaptation to a human host. Does this mean there is more than one outbreak with perhaps differences in host adaptation or just a reminder of the influenza virus's innate instability (<<http://www.todayonline.com/daily-focus/health/too-early-h7n9-virus-vaccine-expert>>)?

- Has any specific serological testing been done yet? Do we know whether mild, or at least non-pneumonia, H7N9 cases occur? We do as of 15 Apr 2013 (<[http://www.bjhb.gov.cn/wsxxw/201304/t20130415\\_59472.htm](http://www.bjhb.gov.cn/wsxxw/201304/t20130415_59472.htm)>).

- If the virus is not transmissible between humans, how did so many disparate cases occur? Is there an active and massive multi-species avian outbreak occurring from which humans are picking up infections and/or are there many mild or subclinical human cases (we now know of one) that do not meet arbitrary clinical scoring criteria to warrant laboratory testing?

- Are the over 600 contacts being screened for viral RNA, or is clinical "abnormality" solely determined by interview and self-reported illness? Is there proof that the patients are H7N9 RNA negative in order to exclude mild or subclinical infections?



[Byline: Ian M Mackay]

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Communicated by: ProMED-mail Rapporteur Mary Marshall

[The original document should be accessed to view the accompanying maps and figures. - Mod.CP]

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[2] Case count at 71

Date: Tue 16 Apr 2013

Source: English News, Xinhua report [edited] <[http://news.xinhuanet.com/english/china/2013-04/16/c\\_132314317.htm](http://news.xinhuanet.com/english/china/2013-04/16/c_132314317.htm)>

East China's Jiangsu and Zhejiang provinces reported 8 new H7N9 infection cases on Tuesday [16 Apr 2013], bringing the total number of H7N9 cases across the country to 71.

According to the health department of Jiangsu Province, H7N9 infections were confirmed in a 56-year-old man, a 21-year-old woman and a 72-year-old man on Tuesday [16 Apr 2013]. All 3 patients are in critical condition. None of the 25 people who have had close contact with them have shown any abnormal symptoms.

Meanwhile, according to test results from the Zhejiang provincial disease control and prevention center, 3 men and 2 women tested positive for the H7N9 virus on Tuesday [16 Apr 2013]. The Health Bureau of Zhejiang Province confirmed 5 new H7N9 cases on Tuesday. The patients include a 56-year-old, a 57-year-old man, a 62-year-old man, a 58-year-old woman and a 72-year-old woman. All 5 are in critical condition. One man was engaged in pigeon cultivation and sales before he was confirmed to be infected with the virus. As of Tuesday [16 Apr 2013], Zhejiang has confirmed 21 H7N9 cases, including 2 that have ended in death.

Hangzhou, provincial capital of Zhejiang, has temporarily closed 2 poultry markets in the downtown district, and poultry trading in another 474 farmers' markets has been banned since Monday [15 Apr 2013].

As of Tuesday [16 Apr 2013], 71 cases of the H7N9 strain of bird flu have been reported across China, including one in Beijing, 24 in Shanghai, 2 in the central province of Henan, 21 in the eastern province of Zhejiang, 20 in the eastern province of Jiangsu and 3 in Anhui Province in the east. 14 of the cases have ended in death.

After treatments were successful, a 4-year-old boy who had tested positive for the H7N9 virus was discharged from a Shanghai hospital on 10 Apr 2013, according to local health authorities. He has been the only confirmed case to make a full recovery.

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Communicated by: Ryan McGinnis <[digicana@gmail.com](mailto:digicana@gmail.com)>

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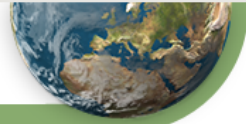
[3] Case count rises to 77

Date: Wed 17 Apr 2013

Source: China.org.cn, Xinhua report [edited] <[http://www.china.org.cn/china/Off\\_the\\_Wire/2013-04/17/content\\_28563185.htm](http://www.china.org.cn/china/Off_the_Wire/2013-04/17/content_28563185.htm)>

During the period from 6 p.m. on Monday to 8 p.m. Tuesday [15-16 Apr 2013], China confirmed 14 new cases of H7N9 avian influenza, with 2 more deaths reported in Shanghai. The National Health and Family Planning Commission said in its daily update on H7N9 cases that a total of 77 H7N9 cases have been reported in China, including 16 cases that have ended in death.

A total of 30 cases, including 11 ending in death, have been reported in Shanghai. 20 cases, including 2 deaths, have been reported in Jiangsu Province, and 21 cases, including 2 deaths, in Zhejiang Province. Anhui Province has reported 3 cases, with one death. Beijing has reported one case, and 2 have been reported in Henan Province.



China officially confirmed the occurrence of humans infected with the H7N9 virus late last month [March 2013].

Those who have had close contact with people infected by H7N9 have been placed under medical observation and have exhibited no abnormal symptoms, the commission said. According to the commission, China's confirmed H7N9 cases are isolated, and there has been no sign of human-to-human transmission.

According to a joint inspection group composed of the commission and the World Health Organization, humans contracted the virus from infected fowl or the contaminated environment. The H7N9 cases may keep increasing until the pollution sources are under effective control.

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Communicated by: ProMED-mail <promed@promedmail.org>

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[4] Spreading across country

Date: Tue 16 Apr 2013

Source: Softpedia [edited]

<<http://news.softpedia.com/news/H7N9-Bird-Flu-Virus-Is-Spreading-Across-China-345693.shtml>>

About 2 weeks ago, the news that a novel strain of bird flu had resulted in 2 victims in China made headlines. Recent information on this topic says that the H7N9 avian flu virus is now spreading across the country. More precisely, it appears that the virus is moving from China's eastern regions towards the country's central and northern ones. These claims that the virus is no longer confined to the eastern parts of China are based on the fact that several new human cases have thus far been pinned down in other parts of the country. Two of these new human cases have been reported in Beijing, whereas 2 others have been reported in China's Henan province. All these 4 new reports concerning human victims of the H7N9 avian flu virus were issued over the course of this past weekend.

Nature reports that since 31 Mar 2013, when the 1st case of H7N9 caught the attention of both local media and health officials, until this past Monday [15 Apr 2013], a total of 63 infections and 14 deaths linked to this avian flu virus were reported in China. For the time being, the specialists investigating this novel strain of avian flu virus have no reasons to believe that the virus can spread from one human to another. Still, several researchers have stressed the fact that the virus is quite prolific in terms of making new human victims.

"This looks very different from H5N1. We never saw this number of presumed avian/animal to human transmissions in such a short space of time," argued Jeremy Farrar, currently working as the director of the Oxford University Clinical Research Unit in Ho Chi Minh City, Viet Nam. What concerns specialists is the fact that neither poultry nor other birds appear to become seriously ill because of this virus.

Therefore, tracking and controlling it is bound to be a rather difficult task.

Commenting on the threats that this virus poses to public health both in China and in other parts of the world, epidemiologist Marc Lipsitch stated as follows: "It's too soon to say how big a threat H7N9 poses because we don't know how many animals of which species have it, how genetically diverse it is, or what the geographic extent is. It looks as though it will be at least as challenging as H5N1."

[Byline: Laura Sinpetru]

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Communicated by: ProMED-mail <promed@promedmail.org>

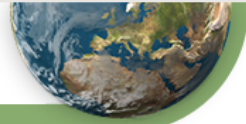
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[5] Retrospective cases in Shanghai

Date: Tue 16 Apr 2013

Source: IFeng [in Chinese, trans. Mod.YMA, edited]

<[http://news.ifeng.com/mainland/special/h7n9/content-3/detail\\_2013\\_04/16/24286967\\_0.shtml](http://news.ifeng.com/mainland/special/h7n9/content-3/detail_2013_04/16/24286967_0.shtml)>



CENTAUR GLOBAL NETWORK

The City's Health and Family Planning Commission reports today [16 Apr 2013] that the city has confirmed one new case and 5 cases retrospectively diagnosed of H7N9 avian influenza human infection. As of 17:00 on 16 Apr 2013, Shanghai has identified 30 cases of H7N9 avian influenza human infection, including 11 deaths, 15 cases under treatment with isolation, and 4 recovered and discharged patients.

The new case of H7N9 avian influenza human infection is a 47-year-old Shanghai man. On 10 Apr 2013, the patient suffered from body pain, fatigue and fever, and he took drugs by himself. On 11 Apr 2013, his symptoms were not relieved, and he received treatment at a hospital.

He was diagnosed with pneumonia on 15 Apr 2013 and admitted to hospital. On 15 Apr 2013, the City's CDC has tested his specimens to be H7N9 avian influenza virus nucleic acid positive. According to the requirements, the City's Health and Family Planning Commission organized the experts and diagnosed this patient as H7N9 avian influenza human infection. The patient is currently under treatment.

The investigation revealed 21 close contacts who are now under medical observation and do not show any symptoms yet.

As for the 5 confirmed cases by retrospective diagnosis, on 15 Apr 2013, the national CDC has informed the City's Health and Family Planning Commission that among the specimens sent from Shanghai 5th People's Hospital to the national CDC in late March 2013, 4 patients were tested to be infected with H7N9 avian influenza virus, of which specimens from 2 patients were isolated for H7N9 avian influenza virus and convalescent serum antibody titres of 2 patients were more than 4 times increased. The experts group from the City's Health and Family Planning Commission discussed these cases and finally confirmed them to be cases of H7N9 avian influenza human infection. Of these 4 cases,

2 were dead, and 2 were recovered and already discharged from hospital. After investigation, these 4 patients have 34 close contacts who are still normal.

On 15 Apr 2013, the City's Planning Commission received information from Hunan Provincial Health Department that one child, who followed the parents from Shanghai to Changsha city, Hunan Province on 16 Mar 2013, developed flu-like symptoms on 17 Mar 2013. The child received treatment at a local hospital, and specimens were sent to the national CDC for testing. The laboratory tests showed that the child has H7N9 avian influenza virus, and the clinical experts from the local health department have confirmed the child to be a case of H7N9 avian influenza human infection. This child returned to Shanghai with the parents on 19 Mar 2013 and is now fully recovered. Upon receiving information from Hunan Province, the experts from the City's Health and Family Planning Commission decided to include this patient as a retrospectively diagnosed case of H7N9 avian influenza human infection. This patient has 9 close contacts and no abnormal symptoms among close contacts up to now.

[Byline: Li Xin]

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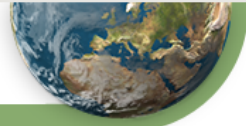
[6] Genome analysis

Date: Tue 16 Apr 2013

Source: Focus Taiwan News channel [edited] <<http://focustaiwan.tw/news/aall/201304160024.aspx>>

The H7N9 avian influenza virus will not necessarily become transmissible among humans, but it does have a mutated gene that makes such a possibility greater, an expert said on Tuesday [16 Apr 2013]. The H7N9 virus, currently transmitted from poultry to humans, has spread widely in China, and health authorities in other countries are worried that the lethal bird flu strain could become transmissible among humans and pose a major challenge to epidemic controls.

Michael M.C. Lai, a distinguished research fellow at Academia Sinica specializing in coronavirus molecular biology, was reported as saying Monday [15 Apr 2013] that the H7N9 virus is evolving and would mutate into a form allowing human-to-human transmission sooner or later. Lai clarified Tuesday



[16 Apr 2013], however, that he did not say the H7N9 virus will definitely become transmissible among humans, but that it has a mutated gene and may be more likely to cause a human pandemic in a short time if it infects more people. Lai said he could not determine how the H7N9 virus will evolve, just as many people were unable to judge avian influenza A(H5N1). Some predicted the H5N1 virus would mutate and spread among humans, only to find that "many years have gone by and what everybody worried about has yet to happen," Lai said.

The H7N9 virus does pose more challenges than the H5N1 flu, Lai said. H5N1-infected fowl die easily from the virus, while H7N9-infected fowl live normally and show no symptoms, which is why H7N9 is not easily detected and China is having a hard time finding its source. The H7N9 bird flu in China has spread to the north, seemingly following the route migratory birds take to their summer breeding grounds, Lai said, yet no migratory bird has died of a flu infection so far. As a result, no conclusions can be drawn on whether migratory birds are H7N9 virus carriers, but if they are, Taiwan will become an H7N9-affected area as migratory birds begin flying south during the fall and winter, Lai said.

Taiwan has yet to get a close look at the H7N9 virus because it has yet to obtain samples of the flu strain, but Lai said that based on its gene sequence, the anti-flu medicine Tamiflu should be effective in combating it. Former Health Minister Yeh Ching-chuan, meanwhile, urged the public not to panic over the H7N9 flu outbreak in China because test reagents for the bird flu virus are available in Taiwan.

The World Health Organization has made it clear that the risk of being infected with the H7N9 virus when traveling to China is very low, Yeh said, and there was, therefore, no reason to impose travel restrictions on Taiwanese citizens at present.

[Byline: Chang Jung-hsiang, Andrew Liu and Y.L. Kao]

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[During the course of a day, the number of cases has risen from 71 to 77 and the number of deaths from 14 to 16. It is unclear to what extent this is a consequence of increased provision of appropriate diagnostic reagents or real events. The pattern remains unchanged; mostly, the middle-aged and the elderly are affected and experience severe disease. Cases in children are rare and milder. Evidence of spread from person to person is still lacking. It is likely that humans contract the virus from infected fowl or the contaminated environment. The H7N9 cases may keep increasing until the pollution sources are under effective control. - Mod.CP

A HealthMap/ProMED-mail map can be accessed at:  
<<http://healthmap.org/r/1zaU>>.]

[see also:

Avian influenza, human (47): China H7N9 update 20130415.1647864 Avian influenza, human (46):

China: H7N9 stealth virus

20130415.1647713

Avian influenza, human (45): China: H7N9, update 20130414.1645270 Avian influenza, human (44):

China (HE), H7N9 20130413.1643923 Avian influenza, human (43): China, H7N9 update

20130413.1643270 Avian influenza, human (42): China (BJ), H7N9 20130413.1642086 Avian

influenza (35): China, LPAI H7N9, update 20130412.1641185 Avian influenza, human (41): China

H7N9 update 20130412.1641464 Avian influenza, human (40): China H7N9 update

20130411.1638767 Avian influenza, human (39): China (SH, JS, ZH) H7N9 update

20130410.1636073

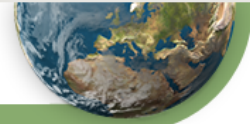
Avian influenza, human (38): China (SH, JS) H7N9 update 20130409.1633860 Avian influenza,

human (35): China (SH, JS) H7N9 update

20130408.1630825

Avian influenza, human (34): China (SH, AH) H7N9, RFI

20130407.1628848



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Avian influenza, human (33): vaccine development 20130407.1628472 Avian influenza, human (32):  
China (SH, AH) H7N9 20130407.1628294 Avian influenza, human (31): China (Shanghai) H7N9  
20130406.1626812 Avian influenza, human (30): China (Hong Kong, Taiwan) H7N9, NOT  
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20130406.16264  
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20130405.1624260 Avian influenza, human (26): China H7N9 case list & map 20130404.1623110  
Avian influenza, human (25): China (SH) H7N9, update 20130404.1622647 Avian influenza (27):  
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20130403.0666 Avian influenza, human (24): China (ZJ) H7N9 update 20130404.1621801 Avian  
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China (JS) H7N9 patient details  
20130403.1617279  
Avian influenza, human (16): China (SH, AH) H7N9 WHO 20130401.1614707]  
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