

Armed Forces Health Surveillance Branch H7N9 Surveillance Summary (16 FEB 2017)



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DEPARTMENT OF DEFENSE (AFHSB)

Avian Influenza A (H7N9) Surveillance Summary #69

16 FEB 2017 (next Summary 1 MAR 2017)



CASE REPORT: As of 16 FEB, according to WHO, FAO, China's National Health and Family Planning Commission (NHFP), and provincial governments within China, the total influenza A (H7N9) human case count since the fifth seasonal epidemic or "wave" of H7N9 beginning 1 OCT 2016 is 399 (+194) cases with 78 deaths. This is more than five times the number of H7N9 cases reported for the same time period during the fourth wave of H7N9 beginning OCT 2015. The total case count since the disease was first identified in APR 2013 is 1,263 cases with 379 deaths, in China, Hong Kong Special Administrative Region (SAR), Macao SAR, Taiwan, Malaysia, and Canada. The cases in Taiwan (5 (+1)), Hong Kong SAR (20), Macao SAR (2), Malaysia (1), and Canada (2) are thought to have been imported from Mainland China. The overall case-fatality proportion among known cases is 32%; the average age of those affected is 54 years; and at least 298 (+22) of the cases reported have been female. The most recent known date of onset was 5 FEB. Cases have been reported in 17 (+2) provinces of China: Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shandong, Sichuan, Yunnan, Zhejiang, and Xinjiang; and three municipalities: Beijing, Shanghai, and Tianjin. In the fifth wave, Jiangsu Province has reported the most cases of any single province, 86 (25%) of 339 cases.

On 15 FEB, WHO reported that while increases in the number of human cases identified have been reported in previous years, the number of cases reported during this season is exceeding previous seasons. According to WHO, the number of human cases with onset since 1 OCT 2016 "accounts for nearly one-third of all the human cases of H7N9 virus infection reported since 2013." Human infections with H7N9, however, "remain unusual" and "close observation of the epidemiological situation and further characterization of the most recent human viruses are critical to assess associated risk and to adjust risk management measures."

Since AFHSB's last update on 1 FEB, Taiwan reported its fifth imported case of H7N9 (and the first this season) in a businessman with recent travel to Guangdong Province. Beijing Municipality reported its first two cases this season; the cases were imported from Hebei Province on 11 FEB and Liaoning Province on 15 FEB. Sichuan Province reported its first human cases of H7N9 in Suing City; two cases were reported on 3 FEB and two additional cases were reported on 14 FEB. Yunnan Province reported its first two cases of H7N9 in a three-year-old girl, who developed symptoms on 29 JAN and died on 7 FEB, and her mother, who was diagnosed on 8 FEB and died on 14 FEB. Both cases are believed to be imported, and had recent travel to the Jiangxi Spring Festival as well as a history of live poultry contact. This season, cases have been reported from 16 different provinces, two special administrative regions, and two municipalities in China, as well as in Taiwan.

TRANSMISSION: In a CDC [study](#) published in APR 2015, H7N9 antibodies were found among 6.7% of case contacts identified between MAR 2013 and MAY 2014 in China, suggesting that human-to-human transmission does occur and could cause mild or asymptomatic infections. Since much of the reporting out of China occurs in monthly batches, with limited information on age, gender, and location, it is possible that only the most severe cases and fatalities are being reported by China. It is unknown how many mild or asymptomatic cases have occurred and how many cases have occurred without laboratory testing. This lack of information coupled with the infrequent reporting makes spatial and temporal cluster analysis difficult. CDC reports that at the conclusion of the fourth wave of H7N9, there have been 26 known disease clusters since the beginning of the outbreak in 2013, and that cluster-associated cases account for 7% of the total reported cases. Of these 26 clusters, 23 (88%) were associated with family members only, and three involved nosocomial transmission.

BACKGROUND: On 1 APR 2013, WHO reported three human cases of infection with a novel influenza A (H7N9) virus in China. This was the first time human infection with H7N9 had been detected. CDC believes the H7N9 virus is likely a reassortant of H7N3 viruses from domestic ducks and H9N2 viruses from other domestic poultry. Seasonality has been observed since the beginning of this outbreak with a consistent pattern of declining incidence through the summer months followed by a spike in cases in the winter months. A recent [MMWR](#) study compared the "fourth wave" of H7N9 (SEP 2015-AUG 2016) with the previous three waves and reported that the most recent wave "demonstrated a greater proportion of infected persons living in rural areas, a continued spread of the virus to new areas, and a longer epidemic period." Confirmed avian H7N9 has been rare and subclinical but has been previously identified. H7N9 is usually asymptomatic in birds and many bird owners are likely unaware of infections and the risk of transmission. Detection in birds requires routine active surveillance, which FAO reports has resulted in over 2,000 virus-positives samples from the environment and chickens, pigeons, ducks, and wild birds since the beginning of the outbreak in 2013.

(+xx) represents the change in number from the previous AFHSB Summary of 1 FEB 2017.

All information has been verified unless noted otherwise.

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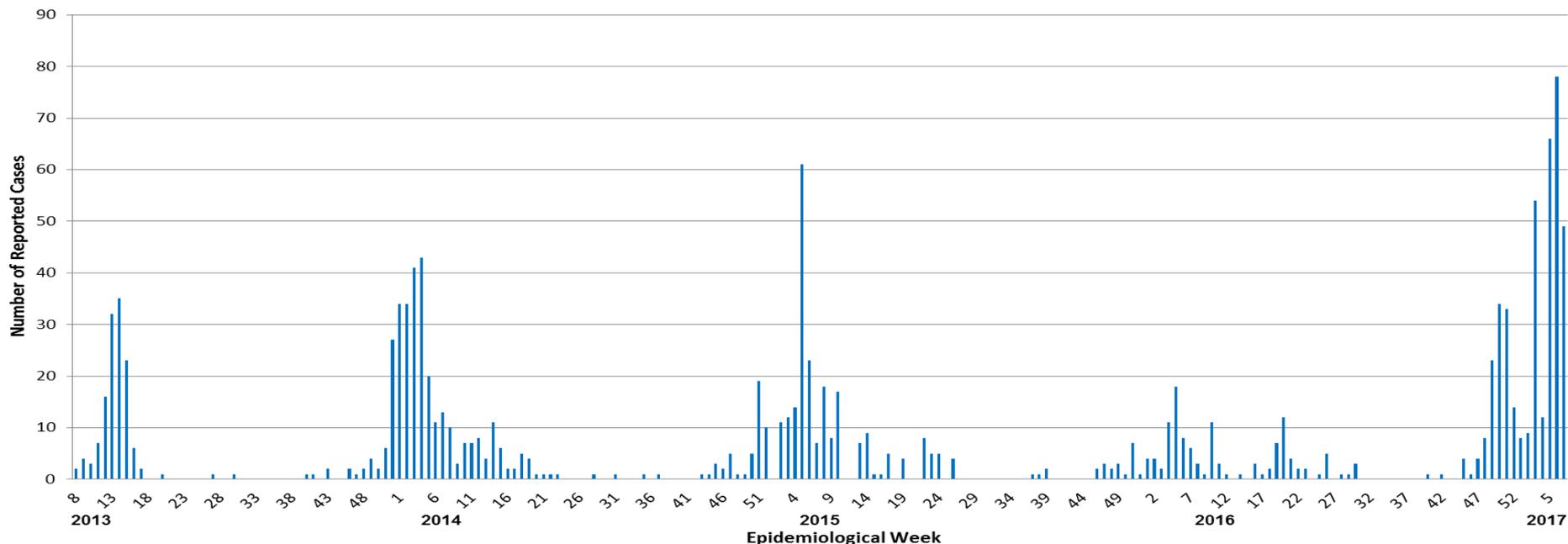


INTERAGENCY/GLOBAL ACTIONS: On 26 JAN, the U.S. CDC [announced](#) a Level 1: Practice Usual Precautions travel advisory for China. U.S. CDC and WHO advise no special screenings at points of entry, and no trade or travel restrictions at this time. On 15 OCT 2015, FAO released guidelines for [biosecurity improvements in live bird markets](#) and [risk communication](#) regarding H7N9. On 20 APR 2016, the Hong Kong CHP released updated criteria for H7N9 case classification to now include contact with a live bird market as possible exposure criteria.

DIAGNOSTICS AND TREATMENT: The H7N9 testing and reporting guidelines and a list of DoD laboratory POCs can be obtained [here](#). On 19 APR 2013, FDA issued an [Emergency Use Authorization](#) for the CDC Human Influenza Virus Real-Time RT-PCR diagnostic panel – Influenza A/H7 assay; this was made available on 26 APR 2013. WHO confirms oseltamivir (Tamiflu) and zanamivir (Relenza) are recommended treatments for H7N9.

SURVEILLANCE: Reagents for surveillance testing purposes are available via the [CDC website](#). NMRC has produced amplicon H7N9 positive testing control material using the published WHO primers/probes. Kits were sent to AFRIMS, NAMRU-3, NAMRU-6, NAMRU-2 Phnom Penh, NMRC-A, and NHRC for surveillance. Nineteen DoD laboratories were sent diagnostic kits, as have all 50 states, the District of Columbia, Puerto Rico, and more than 60 international labs.

Avian Influenza A (H7N9) Human Cases by Estimated Week of Onset
As of 16 FEB 2017 (N = 1,263)



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Source: [FAO H7N9 Situation Update 8 FEB 2017](#)

This map illustrates the geographic distribution of human H7N9 cases and H7N9-positive samples in birds or the environment in China since OCT 2015. Human cases are depicted in the geographic location where they were reported; for some cases, exposure may have occurred in a different geographic location. Precise location of 62 human cases in Fujian (28), Jiangsu (13), Zhejiang (13), Guangdong (1), Hunan (5), Hubei (1), Hebei (1) and Xinjiang (1) are currently not known, these cases are therefore not shown on the map.

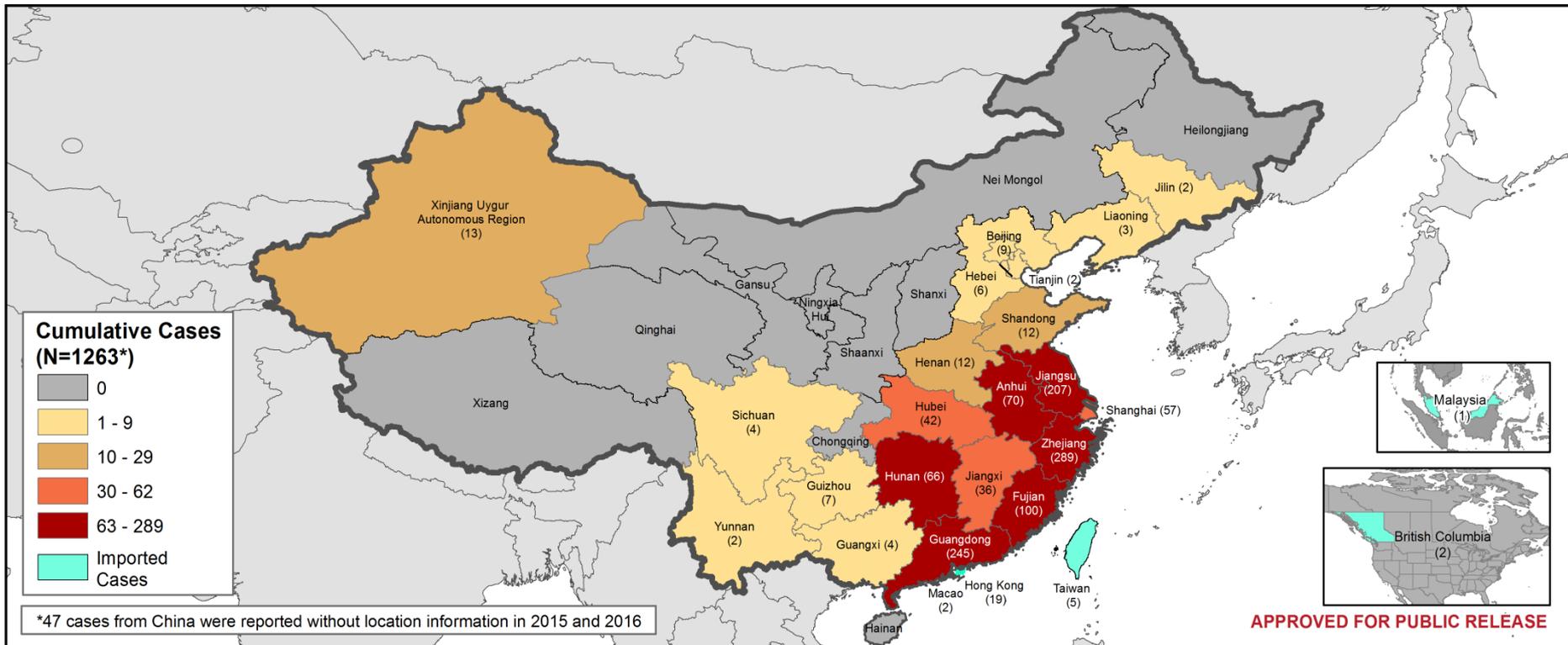
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Cumulative Human Cases of Avian Influenza A (H7N9)

1 APR 2013 - 16 FEB 2017



Since the beginning of the avian influenza A (H7N9) outbreak, spikes in cases have been associated with seasonality. These "waves" of cases typically span 1 OCT to 30 SEP of the following year, see the above maps. These "wave" maps only illustrate autochthonous cases in China, not imported cases.

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