Armed Forces Health Surveillance Branch
H7N9 Surveillance Summary
(18 JAN 2017)

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APPROVED FOR PUBLIC RELEASE

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DEPARTMENT OF DEFENSE (AFHSB)

Avian Influenza A (H7N9) Surveillance Summary #67

18 JAN 2017 (next Summary 1 FEB 2017)

CASE REPORT: As of 18 JAN 2017, according to WHO, FAO, China's National Health and Family Planning Commission (NHFPC), and provincial governments within China, there have been 1,015 (+114) human cases of avian influenza A (H7N9), including 355 deaths, in China, Hong Kong Special Administrative Region (SAR), Macao SAR, Taiwan, Malaysia, and Canada. The cases in Taiwan (4), Hong Kong SAR (19 (+2)), Macao SAR (2 (+1)), Malaysia (1), and Canada (2) are thought to have been imported from mainland China. The overall case-fatality proportion among known cases is 35%; the average age of those affected is 54 years; and at least 268 (+43) of the cases reported have been female. The most recent known date of onset was 8 JAN 2017. As of 9 JAN, the Hong Kong Center for Health Protection (CHP) had reported 125 cases in China during the last three months, which is more than 12 times the number reported during this period in 2015. Cases have been reported in 15 provinces of China: Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shandong, Zhejiang, and Xinjiang; and three municipalities: Beijing, Shanghai, and Tianjin.

INTERAGENCY/GLOBAL ACTIONS: U.S. CDC removed their Level 1: Practice Usual Precautions travel advisory for China in APR 2016. U.S. CDC and WHO advise no special screenings at points of entry, and no trade or travel restrictions. 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. On 6 JAN, CDC released a travel notice regarding the upcoming Lunar New Year celebrations beginning on 27 JAN in China in which it advised travelers to avoid contact with birds, pigs, and other animals, and to avoid farms and poultry markets.

In response to the recent increased incidence of H7N9 cases, FAO reports Changzhou, Wuxi, and Jiangyin cities in Jiangsu Province as well as Wuhu City in Anhui Province have suspended all live poultry trade until further notice. Shanghai has announced it will implement its seasonal suspension of live poultry trade from 28 JAN to 30 APR. Wencheng County in Zhejiang Province suspended all live poultry trade from 3 JAN through 2 FEB, and Zhongshan City in Guangdong Province closed all live poultry markets from 8 JAN to 21 JAN.

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 seasonal epidemic or “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.

Two additional clusters were reported by WHO on 17 JAN in Jiangsu and Anhui provinces. The index case of the cluster in Jiangsu was a 66-year-old male who had exposure to live poultry, developed symptoms on 25 NOV, and died on 12 DEC; his daughter, a 39-year-old from the same province, had no exposure to live poultry and developed symptoms on 8 DEC. The index case of the cluster in Anhui was a 66-year-old-male who had exposure to live poultry, developed symptoms on 16 DEC, and died on 20 DEC; a 62-year-old male with no exposure to live poultry who was admitted to the same hospital ward as the index case in the same time period had symptom onset on 22 DEC. WHO reports human-to-human transmission “cannot be ruled out” in both instances.

DIAGNOSTICS AND TREATMENT: The H7N9 testing and reporting guidelines and a list of DoD laboratories can be found 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.

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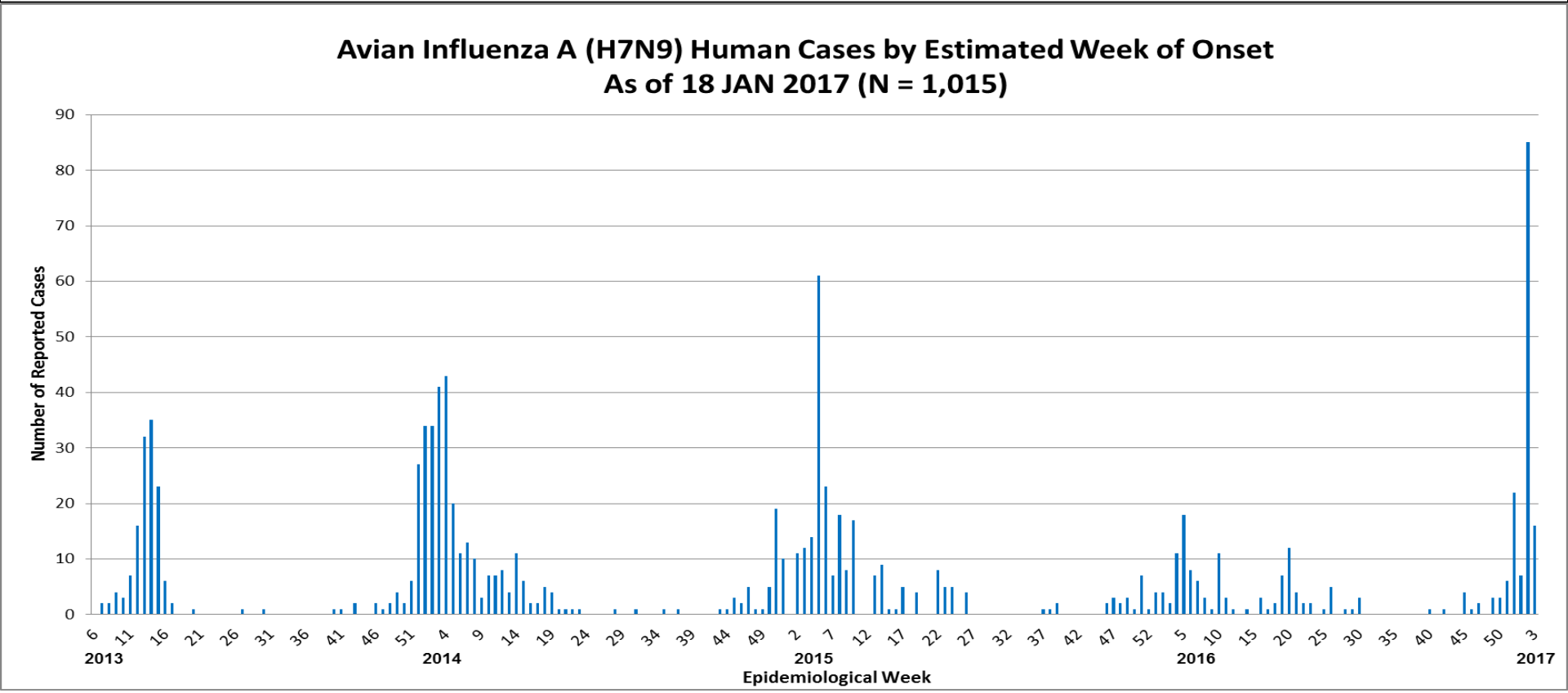
BACKGROUND: On 1 APR 2013, WHO reported three human cases of infection with a novel influenza A (H7N9) virus in China. This was the first time human infection with H7N9 had been detected. CDC believes the H7N9 virus is likely a reassortant of H7N3 viruses from domestic ducks and H9N2 viruses from other 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 5 JAN 2017.

All information has been verified unless noted otherwise.

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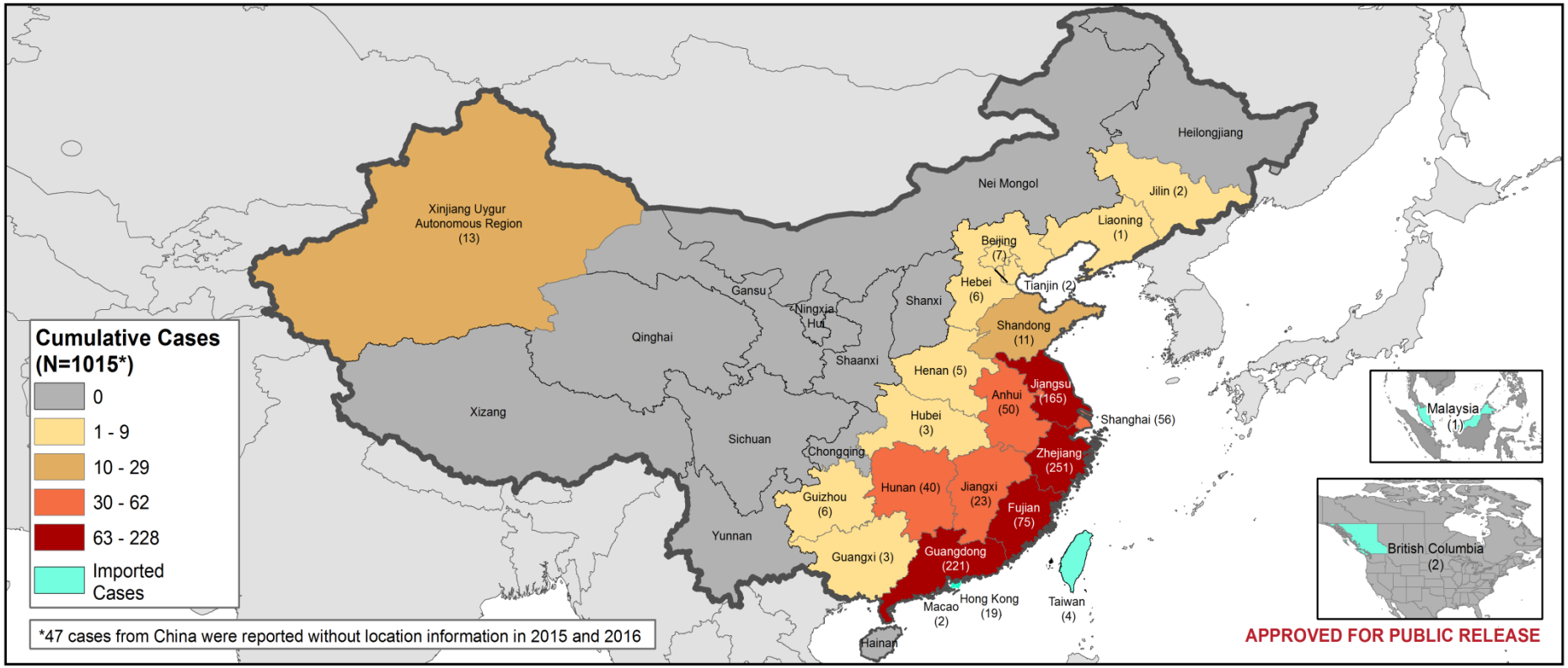
Source: [FAO H7N9 Situation Update 10 JAN 2017]

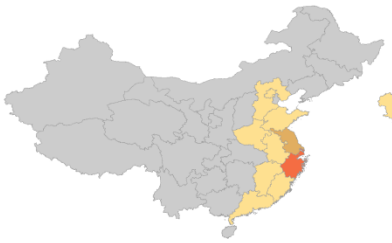
This map illustrates the geographic distribution of human H7N9 cases and H7N9-positive samples in birds or the environment in China since OCT 2015. Human cases are depicted in the geographic location where they were reported; for some cases, exposure may have occurred in a different geographic location. Precise location of 58 human cases in Fujian (28), Jiangsu (13), Zhejiang (13), Guangdong (1), Hunan (1), Hubei (1), Hebei (1) and Xinjiang (1) are currently not known. These cases are therefore not shown on the map. Imported cases in Canada (2) and Malaysia (1) are also not represented.

Cumulative Human Cases of Avian Influenza A (H7N9)

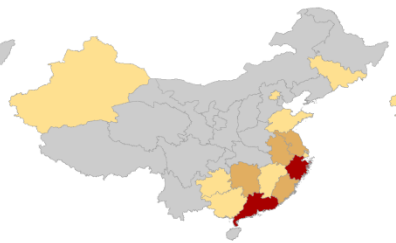
1 APR 2013 - 18 JAN 2017



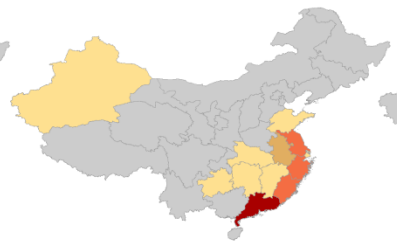
Wave 1
APR 2013-SEP 2013



Wave 2
OCT 2013-SEP 2014



Wave 3
OCT 2014-SEP 2015



Wave 4
OCT 2015-SEP 2016

Wave 5
OCT 2016-JAN 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.