

Armed Forces Health Surveillance Center H7N9 Surveillance Summary (26 FEB 2015)



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usarmy.ncr.medcom-afhsc.list.dib.alert-response@mail.mil



DEPARTMENT OF DEFENSE (AFHSC)

Avian Influenza A (H7N9) Surveillance Summary #48

26 FEB 2015



CASE REPORT: As of 26 FEB 2015, 646 (+29) human cases of avian influenza A (H7N9) including 209 (+4) deaths have been reported in China, Hong Kong (+1), Taiwan, Malaysia, and Canada. Due to inconsistent and sometimes duplicative reporting from China CDC, Taiwan CDC, Hong Kong CHP, and WHO, some of these cases may be the result of double counting.

On 23 FEB, the Philippine DOH (DOH PHL) reported a suspected fatal case from avian influenza in an individual with recent travel history to China. Due to rapid progression of symptoms and subsequent death, samples were unavailable for sequencing, though both H7N9 and H5N1 strains were suspected. AFHSC is not considering this individual a confirmed case at this time.

TRANSMISSION: A recent study by the CDC, to be published in the APR edition of the Journal of Emerging Infectious Diseases, showed that although human-to-human transmission H7N9 virus is uncommon, evidence has been reported of probable transmission among several small clusters.

DIAGNOSTICS: As of 7 JAN 2015, updated H7N9 testing and reporting guidelines and a list of DoD laboratories can be found at the AFHSC website. 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.

SURVEILLANCE: Reagents to be used 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 have been sent to AFRIMS, NAMRU-3, NAMRU-6, NAMRU-2 Phnom Penh, NMRC-A and NHRC for surveillance purposes. Nineteen DoD laboratories have been sent diagnostic kits, as have all 50 states, DC, Puerto Rico, and more than 60 international labs.

TREATMENT: WHO confirms oseltamivir (Tamiflu) and zanamivir (Relenza) are recommended treatments for H7N9.

INTERAGENCY/GLOBAL ACTIONS: CDC posted interim guidance for H7N9 case definitions in the U.S. and also updated FAQs for H7N9 on 9 SEP 2014. On 6 FEB 2015, CDC issued a travel notice advising travelers to China to avoid contact with poultry (including poultry markets and farms), birds, and their droppings.

CDC and WHO advise no special screenings at points of entry, and no trade or travel restrictions. On 11 FEB, the Taiwan CDC issued a travel alert for Guizhou Province after the province reported its first case of H7N9 since JAN 2014.

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. 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. Page 5 illustrates these ongoing seasonal trends for H7N9 cases.

The overall case-fatality proportion among known cases is 32%, the average age of those affected is 53 years, and at least 142 of the cases reported have been female. The most recent known date of onset was 5 FEB 2015, although most cases have been reported without such detailed information.

Cases have been reported in 14 provinces of China: Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hunan, Jiangsu, Jiangxi, Jilin, Shandong, Zhejiang, and Xinjiang; and two municipalities, Beijing and Shanghai. Four cases identified in Taiwan are presumed to have become infected while traveling in Jiangsu. Additionally, cases in Hong Kong (13), Malaysia (1), and Canada (2) are thought to have been imported, most likely from Guangdong, China.

At least 15 small clusters of confirmed illness have been identified since APR 2013, although the majority of human cases have reported exposure to poultry, often via live bird markets. In early FEB 2015, media reported that Urumqi live bird market operations in Xinjiang province have been suspended until further notice, Shanghai bird markets are scheduled to close through 30 APR, and Guangdong bird markets are scheduled to close intermittently for cleaning in the upcoming months. Confirmed avian H7N9 has been rare and subclinical but has been identified in chickens, ducks, pigeons, and a wild tree sparrow.

According to a study published in the Journal of Infection in Developing Countries (JIDC), the ongoing H7N9 outbreak can be characterized by three major waves of transmission. The first wave (spring 2013) resulted in a concentration of cases in the Eastern Chinese Provinces (Shanghai, Zhejiang, and Jiangsu), which led to widespread poultry market closures. According to health officials, this type of closure will continue in Shanghai annually for the next five years, pending evaluation of future need. Shanghai did not report cases of H7N9 during the 2013 closures.

The second wave of cases (fall 2013 to spring 2014) emerged in two locations, Guangdong and Zhejiang Provinces. This wave can be characterized by increased hospitalization fatality rates, the detection of novel H7N9 variants closely associated with H9N2, H7, and N9 strains in the avian reservoir in Guangdong Province, and a peak in cases that coincided with the Chinese Lunar New Year. This JIDC study suggests that, "ongoing H7N9 evolution in the avian reservoir may have contributed to changes in the H7N9 epidemiology during the second wave."

The ongoing third wave of transmission (winter 2014 to present) underscores a significant shift in geographical distribution of cases and in genotypic diversity in the H7N9 virus. The largest number of cases reported in this ongoing wave have occurred in Guangdong Province, which the study's authors consider to be an "epicenter" for genetic reassortment.

Legend: Text updated from the previous report will be printed in red; items in (+xx) represent the change in number from the previous Summary (11 FEB 2015).

All information has been verified unless noted otherwise. Sources include the U.S. CDC, HHS, WHO, CHP, China CDC, Taiwan CDC, DOH PHL, NPAS, and JIDC.

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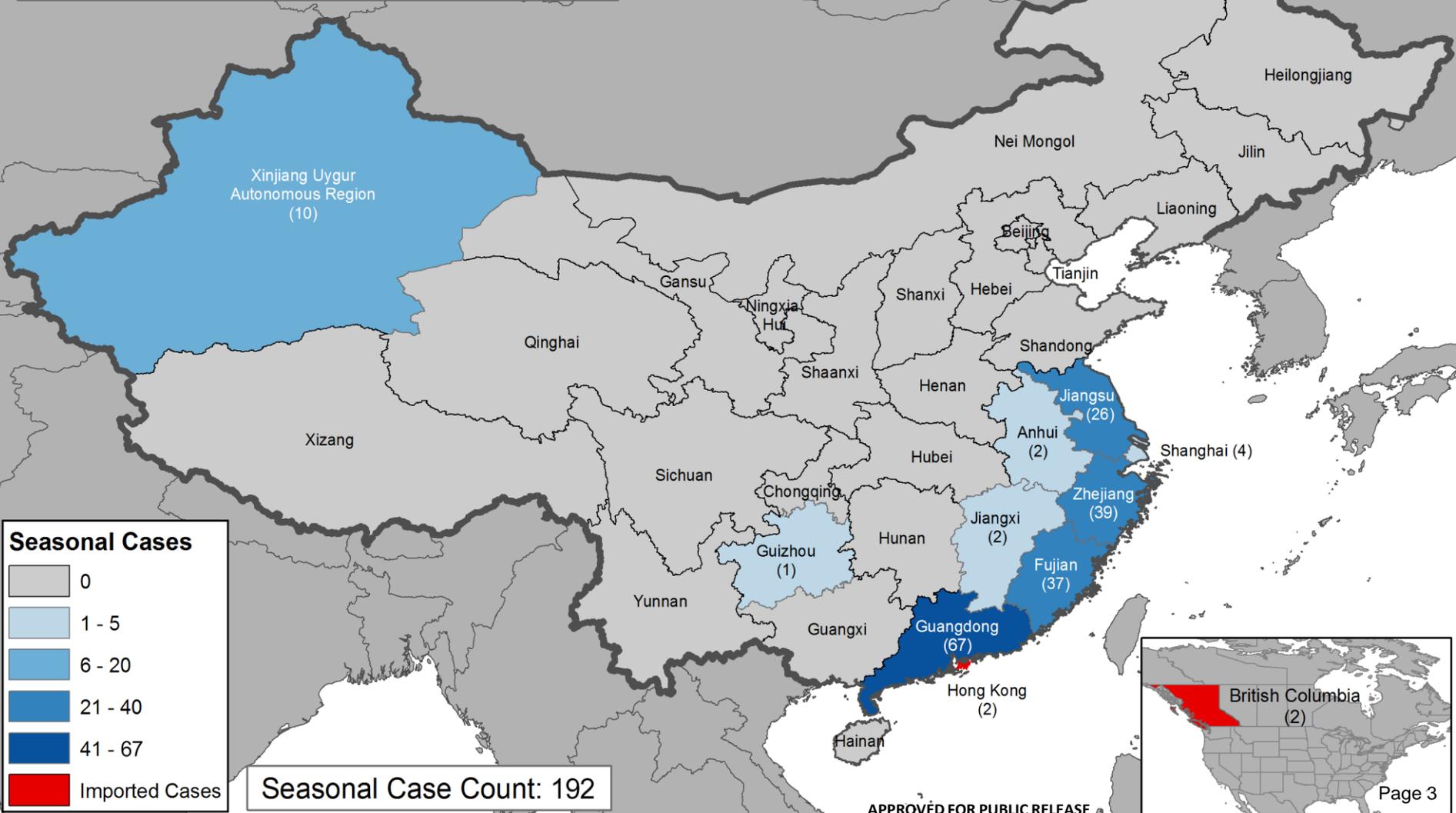
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Seasonal Cases of Avian Influenza A (H7N9)
1 OCT 2014 - 26 FEB 2015



Seasonal Cases

- 0
- 1 - 5
- 6 - 20
- 21 - 40
- 41 - 67
- Imported Cases

Seasonal Case Count: 192

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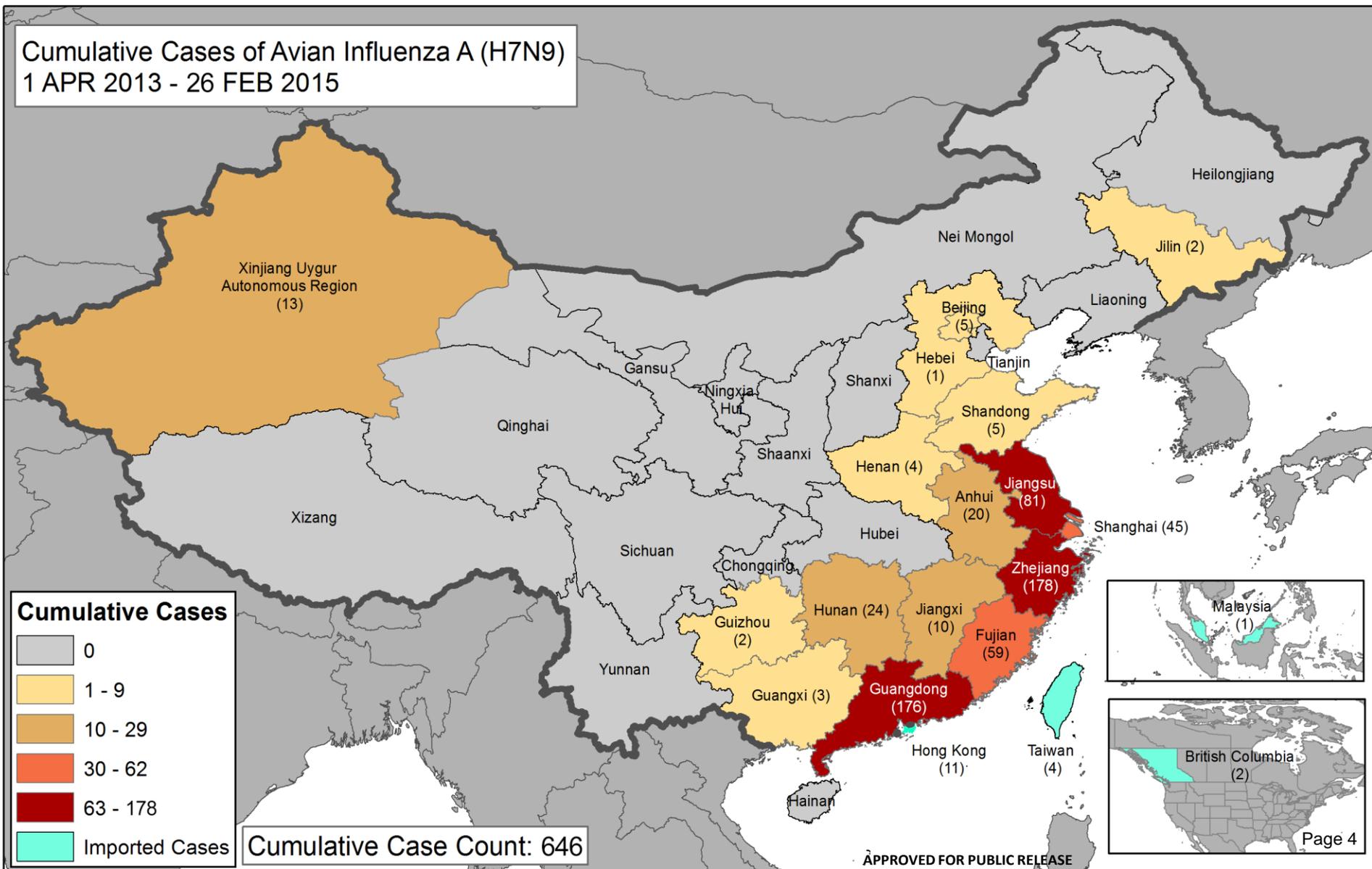
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Cumulative Cases of Avian Influenza A (H7N9)
1 APR 2013 - 26 FEB 2015



Cumulative Case Count: 646

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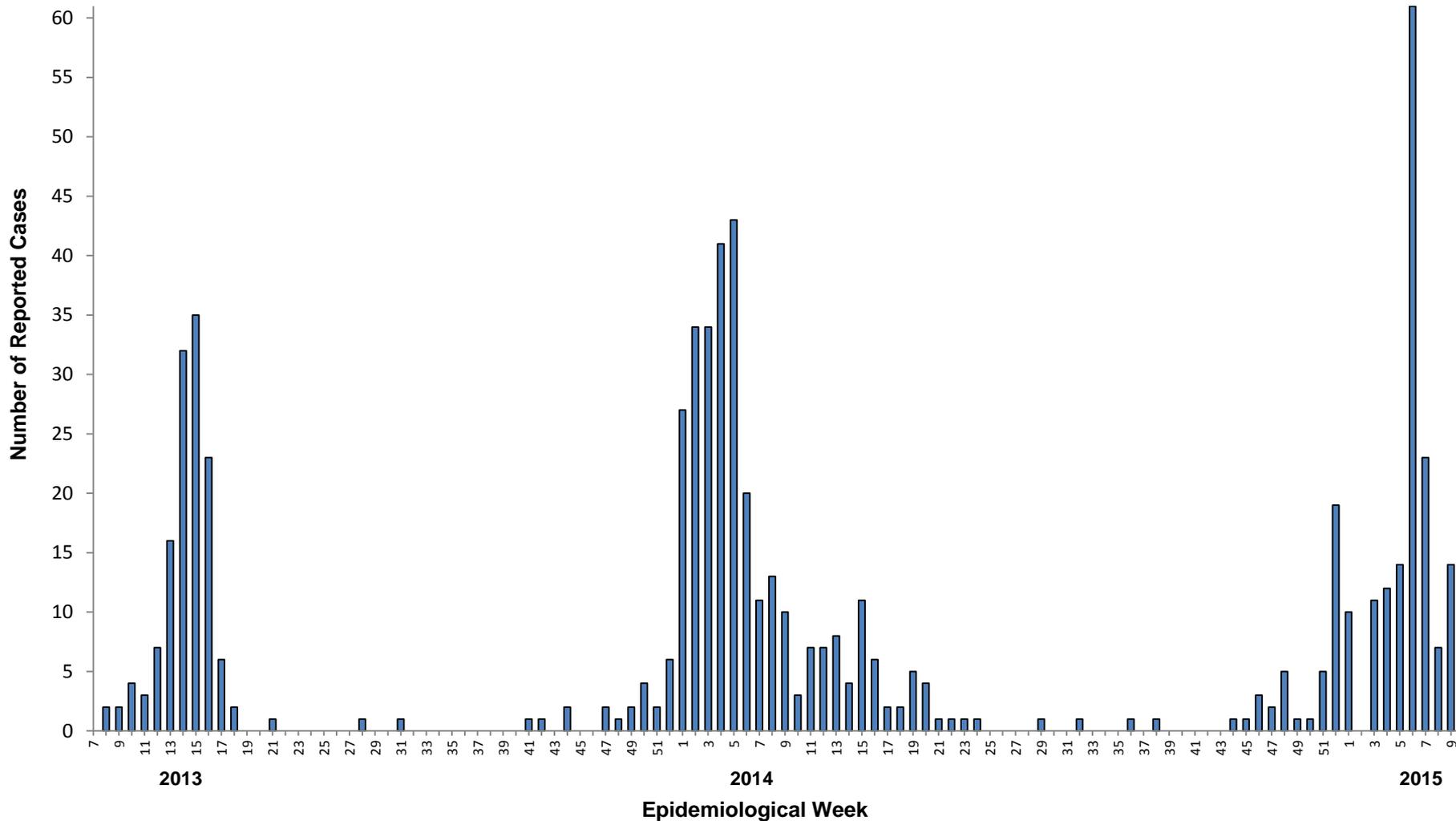
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Avian Influenza A (H7N9) Cases by Estimated Week of Onset As of 26 FEB 2015 (N=646)



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Additional Resources and Media Reports

H7N9 Web Sites

- [AFHSC Detecting and Reporting DOD Cases of Avian Influenza A \(H7N9\)](#)
- [WHO H7N9 Overview](#)
- [WHO Guidelines for H7N9 Post-Exposure Chemoprophylaxis of Close Contacts](#)
- [WHO Risk Assessment for Human Infection of H7N9](#)
- [CDC H7N9 Overview](#)
- [CDC H7N9 Case Definitions](#)
- [CDC H7N9 FAQs](#)
- [CDC H7N9 Risk Assessment](#)
- [CDC Travel Notice](#)
- [HHS EUA Declaration](#)

Information and News

- [DOH Statement on Suspect Bird Flu in PHL](#) (DOH PHL, 23 FEB 2015)
- [Patient with Respiratory Symptoms and Travel History under CHP Investigation](#) (CHP, 22 FEB 2015)
- [The Third Wave: H7N9 Endemic Reassortment Viruses and Patient Clusters](#) (JIDC, 17 FEB 2015)
- [Chicken breeder confirmed as Shanghai's 4th H7N9 bird flu case](#) (Shanghai Daily, 13 FEB 2015)
- [Travel Alert for Guizhou Raised on H7N9 Report](#) (Focus Taiwan, 11 FEB 2015)
- [Latest WHO DON on H7N9](#) (WHO, 8 FEB 2015)
- [Urumqi Live Bird Market Operations Have Been Closed](#) (FluTrackers, 1 FEB 2015)
- [Public Health Notice Update: H7N9 avian flu](#) (PHAC, 26 JAN 2015)
- [Hong Kong reports 12th imported H7N9 avian influenza case](#) (Outbreak News Today, 23 JAN 2015)
- [Avian Influenza A \(H7N9\) Virus Antibodies in Close Contacts of Infected Persons, China](#) (CDC, JAN 2015 – to be released 1 APR 2015)
- [Mapping chicken flu virus offers clues about deadly H7N9 bird flu](#) (Medical News Today, 30 DEC 2014)
- [Unraveling H7N9's History](#) (Scientist, 30 DEC 2014)
- [Article on Origins of H7N9](#) (PNAS, 26 NOV 2014)