Chinese Notifiable Infectious Diseases Surveillance Report

Human infection with H7N9 virus

November 2023

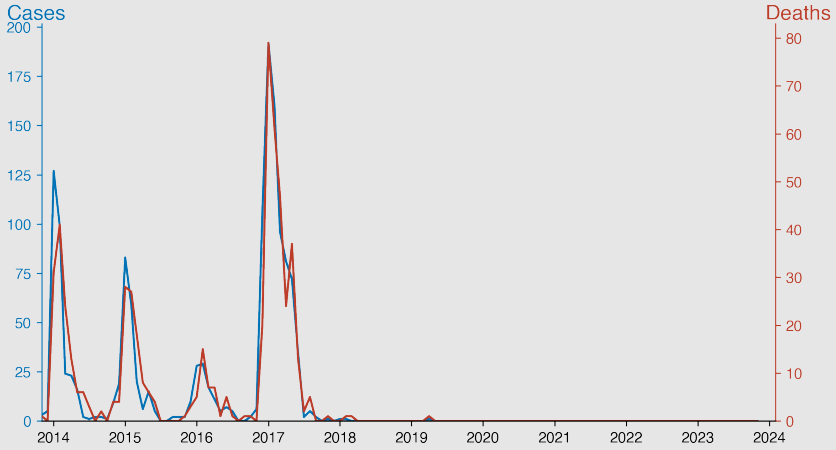
Introduction

H7N9 is a subtype of influenza virus that has been detected primarily in humans in Eastern China. First identified in 2013, it circulates in poultry markets and can occasionally infect humans in close contact with infected birds. Human infection with H7N9 viruses exhibits severe respiratory illness symptoms, with a high risk of death. Despite its potency in humans, H7N9 has not been shown to transmit easily from person to person. However, the continuous evolution of the virus raises concerns about a potential pandemic if it gains the ability for efficient human-to-human transmission.

Highlights

- No new H7N9 virus cases or deaths in Chinese mainland from January 2019 to November 2023, indicating potential interruption of human transmission.
- A significant outbreak occurred in early 2017, peaking at 192 cases and 79 deaths in January alone.
- After the peak, cases dramatically declined to a single case in April 2019, followed by sustained absence.
- Ongoing zero-case trend suggests successful control efforts, yet vigilance in surveillance is crucial to prevent resurgence.

Temporal Trend



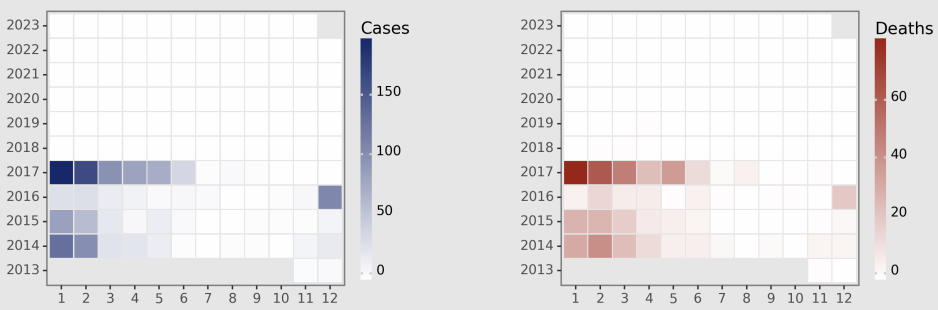
Cases Analysis

The H7N9 virus in Mainland China showed significant activity from 2013 to 2017, with notable outbreaks in early 2014 and 2017. Peak case numbers were reported in January (127 in 2014, 83 in 2015, 192 in 2017) and February (99 in 2014, 59 in 2015, 160 in 2017). Cases subsided from mid-2014 to 2016, then surged in late 2016, continuing into 2017. From July 2017 onward, cases dropped sharply, with sporadic occurrences and no cases from 2018 to 2023, indicating effective control or a shift in viral circulation.

Deaths Analysis

Deaths followed a similar trend as cases, peaking in January and February during the outbreaks in 2014 (31 and 41 deaths, respectively) and 2017 (79 and 61 deaths, respectively), suggesting high winter seasonality. The case fatality rate (CFR) was variable but notably high in March 2014 (100%), showing periods of increased virulence or possible underreporting of non-fatal cases. Since the significant decline in cases after mid-2017, only one death was reported (in April 2019), and no deaths occurred from 2020 to 2023, echoing the cessation of cases.

Distribution



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