Chinese Notifiable Infectious Diseases Surveillance Project

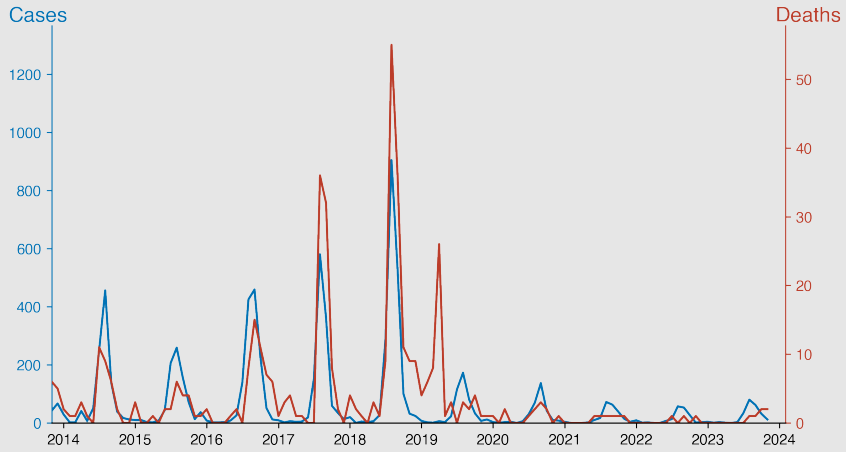
Japanese encephalitis

November 2023

Introduction

Japanese encephalitis (JE) is a serious infection caused by the Japanese encephalitis virus. The virus, found mainly in Asia, is transmitted by mosquitoes, especially in rural rice-growing regions. Most people infected by the virus exhibit mild symptoms or none at all. However, a small percentage may develop severe clinical illness, leading to inflammation of the brain (encephalitis). In severe cases, JE can cause high fever, headache, neck stiffness, disorientation, coma, seizures, spastic paralysis, and eventual death. Vaccination is the most effective prevention strategy for JE.

Temporal Trend



Highlights

- Seasonal trend with peaks in summer months, particularly in July and August, consistently demonstrating higher case counts and deaths across the recorded years.
- Overall decline in cases and deaths from Japanese encephalitis since the peak year of 2010, indicating improved public health measures or reporting accuracy.
- Notable spikes in mortality disproportionate to case counts in some years, such as February and April 2019, suggest potential outbreaks or increased virulence.
- The current situation as of November 2023 shows a low number of cases (12) and deaths (2), continuing the general downward trend in the incidence of Japanese encephalitis on the Chinese mainland.

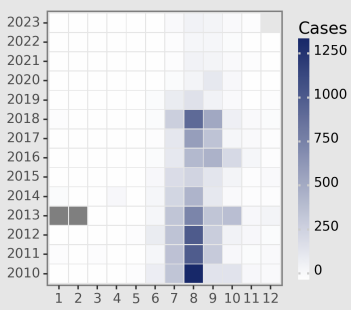
Cases Analysis

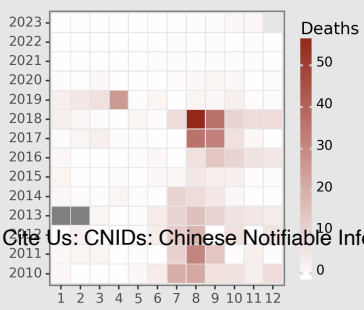
Japanese encephalitis cases in Chinese mainland exhibit a clear seasonal pattern, peaking annually between July and September. The data indicates sporadic cases in early months, with a substantial rise in the summer, indicative of vector activity, likely due to mosquitoes. High variability is shown year-on-year with notable surges, such as 1,301 cases in August 2010 and 986 cases in August 2012. Cases declined in 2021-2023, with only 80 cases at the 2023 peak. The temporal distribution and regular peaks suggest climatic and ecological factors significantly influence transmission dynamics.

Deaths Analysis

Deaths due to Japanese encephalitis demonstrate seasonal correlations paralleling case numbers, with a marked spike in mortality also observed during peak transmission months. Mortality counts fluctuate, with particularly severe outcomes in August of certain years, such as 55 deaths in August 2018. While the absolute death numbers appear to correlate with case incidence, the case-fatality ratio varies, indicating potential improvements in clinical care, public health interventions, or reporting practices. Recent years, especially from 2021 onwards, exhibit reduced mortality, echoing the decline in cases and possibly reflecting the impact of mitigation

Distribution





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