

China



Capital: Beijing
Infant Mortality Rate: 15.2/1,000 live births
Population: 1,349,585,838 (July 2013 est.)



Overview

For more than 20 years, U.S. CDC has supported the Chinese National Influenza Laboratory in monitoring seasonal and novel influenza viruses with pandemic potential. The U.S. CDC, China CDC, and the MOH are combining expertise on pandemic influenza preparedness, influenza surveillance, and rapid response to prevent, identify, and control influenza. Through the collaboration with the CDC, the China National Influenza Center (CNIC) has been designated a World Health Organization Collaborating Center (WHO CC) for Reference and Research on Influenza. The CDC cooperative agreement supported the establishment of environmental surveillance to estimate the rate of infection with highly pathogenic avian influenza viruses among occupationally exposed populations, and to investigate the distribution of influenza strains circulating in all 31 provinces.

Highlights

- Worked with CDC, WHO and other partners in identifying and responding to the first H7N9 outbreak in the world.
- Invited experts from CDC Atlanta to discuss the H7N9 situation in China and to provide guidance on surveillance data analysis, protocol development, and vaccine development.
- Implemented a joint response between CDC Atlanta and China CDC to ensure a better understanding of H7N9 surveillance and outbreak investigation leading to faster identification and implementation of effective control and preventive measures.

H7N9 Update

On March 31st, 2013, Chinese health authorities reported the first human infection with avian influenza A (H7N9) virus to the World Health Organization. During the spring and summer of 2013, H7N9 influenza A virus caused more than 130 human infections and 40 deaths in China. The preliminary epidemiologic and virologic analyses suggest live poultry markets as a likely source of infection, and the number of new cases declined significantly after the closure of live bird markets.

Since October 2013, new H7N9 cases have re-occurred in southern and eastern China. Human cases have been reported at an increasing rate. As of January 14, 2014, a total of 172 human cases of avian influenza A(H7N9) have been confirmed in the Mainland. So far, there is no sign of sustained human-to-human transmission. China remains vigilant on surveillance and situational analysis, has reinforced case management and treatment, as well as continuing efforts aimed at strengthening health education and communication.

U.S. CDC continues to cooperate with the Chinese counterparts on H7N9 prevention and control, including providing technical assistance on risk assessment of H7N9 human infections, improving protocols and questionnaires for case-control studies and assessing the surveillance of pneumonia of unknown etiology.

The second wave of H7N9 infections is well under way amid preparations for the Lunar New Year, January 2014. U.S. CDC will continue liaising with the Chinese counterparts for H7N9 updates, and provide assistance as necessary.

Surveillance

The CDC cooperative agreement supported improvements to the influenza-like illness (ILI) surveillance capacity of China CDC providing support in carrying out nucleic acid detection and egg-based virus isolation in network laboratories, by providing hands-on training, as well as providing intensive laboratory assessments. CDC continues to support antigenic, genetic and drug resistance surveillance, in part, to develop improved vaccine strain selection. In addition, the cooperation continues to support environmental surveillance to estimate the rate of infection with H5N1 and H9N2 avian influenza viruses among occupationally exposed populations, and to investigate the distribution of avian influenza strains circulating in Live Bird Markets (LBM) in all 31 provinces.

Surveillance Activities

- Expanded the genetic and antigenic characterization and determination of drug resistant viruses collected through the ILI surveillance system.
- Shared representative viruses with other WHO CCs in a timely fashion.
- Established environmental surveillance to estimate infection with H5N1 and H9N2 avian influenza virus among occupationally exposed populations and examined the distribution of these strains in LBMs across the country.
- Improved the influenza surveillance information system.

Laboratory

In FY 2012 & 2013, the CNIC and CDC worked closely together to enhance ILI surveillance quality and CNIC's capacity to better support their 409 network laboratories.

At the national level, ten senior staff participated in international meetings and trainings and received training on surveillance data analysis, influenza detection technology, scientific writing and other relevant topics in order to enhance CNIC's capacity to fulfill the requirements and responsibilities as a WHO CC.

Laboratory Activities

- Shipped influenza virus strains to other WHO CCs.
- Continued laboratory quality improvement at both national and provincial levels following the 2009 expansion of the laboratory network.
- Initiated vaccine seed selection and a preparation platform.
- Helped selected network laboratories successfully conduct egg-based virus isolation.
- Developed a reference kit for network laboratories in order to evaluate PCR kits used in surveillance.
- Participated and presented at international meetings, playing a greater role in global influenza control.

Training

- Supported two training workshops on Influenza Laboratory Detection Techniques in Chengdu, Sichuan, July 30–August 3, 2012 and in Hefei, Anhui, August 13–17, 2012 for approximately 160 key technicians from 80 network laboratories.
- Supported a training workshop on influenza and avian influenza laboratory detection techniques in Beijing for 40 key technicians from 20 network laboratories (July–August, 2013).
- Supported hands-on training at CNIC for 12 technical staff members from network laboratories.
- Visited the Centre for Health Protection of Hong Kong where CNIC received ISO 15189 medical laboratories accreditation.
- Instructed CNIC staff on developing the platform for influenza vaccine candidate strain selection (March 2013).
- Invited to visit CDC's Influenza Division to collaborate with the Influenza Sequencing Team on a project to employ Next Generation Sequencing platforms to analyze H7N9 clinical samples (August–September 2013).

Publications

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