Vietnam

Capital: *Hanoi*
Infant Mortality Rate: *19.61/1,000 live births*
Population: *92,477,857 (July 2013 est.)*

Overview

Since 2006, CDC has supported Vietnam's National Influenza Surveillance System to conduct continuous active and passive surveillance for influenza-like illness and severe acute respiratory illness caused by seasonal, pandemic, and animal-origin strains of influenza. CDC strengthened Vietnam's pandemic preparedness plans and communication strategy to quickly detect influenza viruses and to respond rapidly. Working with the Ministry of Health (MOH), Ministry of Agriculture and Rural Development (MARD) partners, CDC conducts research on influenza and other zoonotic diseases to better define the transmission of viruses between species.

Highlights

- Awarded Vaccine Policy Cooperative Agreement.
- Received supplemental funding for H7N9 activities—MOH, National Institute of Hygiene and Epidemiology (NIHE); MARD, Department of Animal Health (DAH).
- Initiated NIHE CoAg activities: AHI Longitudinal; second Burden of Disease study (BOD)— Initiated DAH CoAg activities: Inception workshop; Trainings; Cross-sectional study.
- Completed NIHE CoAg activities: Animal Human Interface (AHI) Pilot Extension-South; Co-evolution; Household Health Utilization Survey.
- Assisted with the Global Health Security (GHS) Demonstration Project.
- Supported HHS Secretary and CDC Director visits and provided FETP assistance in Vietnam.

Surveillance

In 2005, CDC entered into a five-year cooperative agreement (CoAg) with the Vietnam MOH/NIHE to establish a National Influenza Surveillance System (NISS). Developed primarily as an outpatient surveillance system for influenza-like illness (ILI), the system has supported up to 15 sites that are strategically located throughout the country's four geographic regions. The system also includes nationwide passive surveillance that detects cases of severe viral pneumonia (SVP) in hospitals, including the majority of Vietnam's confirmed human H5N1 cases. A second five-year cooperative agreement in 2010 expanded surveillance to include inpatient severe acute respiratory infection (SARI). Currently there are 10 ILI surveillance sites and four SARI surveillance sites in NISS, of which four ILI and SARI sites (in the same hospitals) are funded by this cooperative agreement. The Vietnam MOH supports sustainability of this initial CDC-supported program by funding the remaining six ILI sites for FY 2012–2013.

Surveillance Activities

- Continued to monitor and provide support for NISS during the primary influenza season in Vietnam, including optimum times for vaccination.
- Incorporated antigenic characterization and antiviral resistance surveillance into the NISS.
- Provided the "Influenza Weekly Update Vietnam" (a report of influenza surveillance activity, including ILI, SARI, and SVP).

Laboratory

Vietnam has two National Influenza Centers (NIC); NIHE/Hanoi and Pasteur Institute of Ho Chi Minh City (PI-HCMC). NIHE and PI-HCMC continue to provide influenza virus samples to the WHO Collaborating Center (CC) in Atlanta.

The AHI Program collaborates with the National Center for Veterinary Diagnosis (NCVD) of DAH/MARD, which provides poultry samples to CDC Atlanta for review and analysis. The human and animal samples provide information on the influenza virus types, characterization, and evolution in Vietnam, and also contribute to the knowledge of influenza viruses and anti-viral resistant strains in Asia.

CDC helps build laboratory capacity at PI-HCMC by supporting the training of a NIC staff member in advanced molecular analyses at CDC Atlanta. Experts from CDC and the Association of Public Health Laboratories (APHL) conducted influenza laboratory assessments at both NICs, DAH's influenza laboratories at NCVD and at the Regional Animal Health Office (RAHO) 6.

Laboratory Activities

- Tested 3,586 ILI samples from NISS outpatient sentinel sites from October 1, 2012–August 18, 2013, with an influenza positivity rate of 19%.
- Tested 901 SARI samples from NISS inpatient sentinel sites from October 1, 2012–August 18, 2013, with an influenza positivity rate of 17%.
- Tested 134 samples from persons with severe unexplained pneumonia from October 1, 2012–August 18, 2013, detecting 29 (22%) cases caused by seasonal influenza strains and 2 (1%) cases of avian influenza A(H5N1).
- Provided 52 influenza virus specimens to the WHO CC in Atlanta from NIHE and PI-HCMC in 2012.
- Conducted formal influenza laboratory capacity reviews at both NICs and at two animal health laboratories (NCVD and RAHO 6, of DAH/MARD) in May–June 2013.
- Conducted four site visits to the influenza laboratory under the regional public health institutes participating in the NISS.

Preparedness

The Influenza and AHI Programs at CDC Vietnam, through their support of CDC's Global Health Security (GHS) Demonstration project, provided leadership and technical expertise to the Laboratory systems and Emergency Operations Lanes of the GHS. This included ensuring that the already established CDC Influenza platform in Vietnam was a part of the considered enhancements to MOH's public health preparedness, including for the International Health Regulations. Specifically, this potentially allows the use of the SARI and SVP surveillance systems in consideration for current and future GHS support as well as for MOH enhancements to respiratory disease surveillance and to response preparedness.

Preparedness Activities

- Supported both GHS Laboratory Systems and Emergency Operations Lanes with IP/AHI staff.
- Enhanced existing systems of GHS Laboratory Systems to include the consideration for multiple respiratory pathogen discoveries, including avian and human influenza viruses.
- Enhanced the GHS Emergency Operations Center to include the monitoring of on-going infectious disease activities, including respiratory disease epidemiology and laboratory reports, in preparation for responding to emergency events.
- Assisted in the development and delivery of emergency operations and management training.

Training

- Supported 12 training sessions with a total of 326 public health and animal health staff at CoAg study sites, in the use of data collection tools, and techniques for human and animal specimen collection, storage and transportation through the MARD/DAH Research CoAg.
- Supported one laboratory staff member from PI-HCMC to attend training on enhanced molecular analyses of the influenza virus in CDC Atlanta.
- Recommended and facilitated four staff members (by IP/AHI Programs) from NIC/NIHE, NIC/PI-HCMC, NCVD and RAHO 6, to attend the Regional Training Workshop on Sequencing and Phylogenetic Analysis of Influenza Viruses in Melbourne, Australia.
- Recommended and assisted two epidemiologists, from NIHE and PI-HCMC, to attend the CDC/WPRO Data Management Training in Phnom Penh, Cambodia.
- Supported the Vietnam FETP, including assisting with the development of training modules, classroom training sessions and mentoring, and providing technical review of abstracts, presentations, and manuscripts presented by the fellows at meetings and conferences.

Publications

Members of the Western Pacific Region Global Influenza Surveillance and Response System. Seasonal influenza vaccine policies, recommendations and use in the World Health Organization's Western Pacific Region. Western Pac Surveill Response J. 2013 Mar 3;4(3):51–9. doi: 10.5365/WPSAR.2013.4.1.009.

Nguyen YT, Graitcer SB, Nguyen TH et al. National surveillance for influenza and influenza-like illness in Vietnam, 2006–2010. Vaccine. 2013 Sep 13;31(40):4368–74. doi: 10.1016/j.vaccine.2013.07.018. Epub 2013 Jul 30.

Samaan G, McPherson M, Partridge J. A Review of the Evidence to Support Influenza Vaccine Introduction in Countries and Areas of WHO's Western Pacific Region. PLoS One. 2013 Jul 16;8(7):e70003. doi: 10.1371/journal.pone.0070003. Print 2013.