

NEPAL

OVERVIEW

Nepal's Patan Academy of Health Sciences (PAHS), a public health science university at Patan Hospital, was awarded Nepal's first influenza cooperative agreement in September 2009. The cooperative agreement has strengthened influenza surveillance in Nepal and has supported building capacity in the National Public Health Laboratory (NPHL) which is the National Influenza center (NIC), the Patan laboratory and the sentinel hospital sites. Routine influenza-like illness (ILI) and severe acute respiratory infection (SARI) surveillance at Patan Hospital provides consistently reliable and detailed epidemiologic and virologic influenza data. In September 2014, PAHS began a five-year sustainability grant.

SURVEILLANCE

Under the leadership of the NIC/NPHL, a network of partners including Walter Reed Research Unit Nepal (WARUN) and PAHS oversee influenza sentinel sites that cover key geographic areas around the country. PAHS oversees three hospital sites each with a peripheral health facility that monitors for ILI. WARUN oversees two sites and NPHL, with the assistance of the MOPH Epidemiology and Disease Control Division's (EDCD), five sites. There is a strong collaborative relationship between the three surveillance partners who regularly share data, organize trainings together and support each other through technical assistance and other resources when needed. The larger Network, Nepal National Influenza Surveillance Network (NISN), includes animal health and meets quarterly and on an as-needed basis.

SURVEILLANCE ACTIVITIES

- Collected key data including the total number of out-patients and in-patients and the number of patients meeting the ILI and SARI case definitions at Patan Hospital.
- Maintained a database and analyzed data by week, age, gender, percent of overall cases, clinical presentation, and influenza virus type and subtype.
- Revised protocol for collecting ILI and SARI specimens and data.

HIGHLIGHTS

- Conducted routine SARI surveillance in three hospitals, one in Kathmandu, and one each in East and West Nepal.
- Maintained continuity of SARI surveillance in Patan Hospital including daily sample collection, transport, storage, and reporting.
- Established a molecular diagnostic laboratory at Patan Hospital and testing for influenza viruses.
- Participated in several outbreak responses in coordination with the EDCD.

LABORATORY

The NIC and PAHS operate as a unit sharing the influenza testing workload. NPHL, designated a NIC in April 2010, has molecular and virology laboratories with four staff responsible for specimen extraction, real time RT-PCR detection for influenza viruses, cell culture and virus isolation.

In addition they have capacity to sequence and characterize by serological and real time assays. A recently established molecular laboratory at PAHS Patan Hospital uses real-time RT-PCR to test for influenza viruses in SARI and ILI patient samples.

LABORATORY ACTIVITIES

- Collected and tested 376 SARI samples from September 2014 to April 2015.
- Collected and tested approximately 3,000 ILI samples from April 2011 through April 2015.
- Established that among hospitalized influenza cases, 26% were in persons >65 years of age and 48% <5 years of age.
- Submitted 38 isolates and 50 clinical samples to the WHO Collaborating Center (CC) at NIID, Japan (January 2014–April 2015).
- Established a BSL-3 laboratory at the NIC in July 2014 with financial support from World Bank.

PREPAREDNESS

Rapid response teams (RRT) are in place at the central level under the MOH EDCCD and in all 75 districts under the District Health/Public offices. In the last few years, the Influenza Project has participated in several EDCCD trainings and meetings and the EDCCD response team during several outbreaks, including during outbreaks in the 2015 influenza season.

PREPAREDNESS ACTIVITIES

- Supported EDCCD and the Animal Health Division in responding to avian influenza (AI) poultry outbreaks; no human cases of AI were found.
- Established a joint rapid response team at the national level for immediate mobilization during outbreaks.
- Provided support to Nepal Police Hospital for infection control as part of Ebola preparedness.
- Prepared the NIC to test for suspect avian influenza A (H7N9) virus and MERS-CoV infections.
- Reviewed the National Pandemic Preparedness Plan with the support of WHO. It will be revised to include all emerging and reemerging infectious diseases.

TRAINING

- Conducted surveillance training for staff at all sentinel sites.
- Designated Influenza Pandemic Preparedness and Response Project (IPPRP) staff to participate in a workshop on inclusion of zoonosis in the medical curriculum.
- Conducted infection control training for all sentinel site hospital staff.
- Organized an infection control train-the-trainers meeting for staff from Mechi Zonal Hospital and Nepalgunj Medical College.

INFLUENZA VACCINE ACTIVITIES

WHO SEARO, in collaboration with Nepal, is conducting a cost-effectiveness analysis on the burden of influenza. The findings will be used to demonstrate the value of establishing an influenza vaccination program for high-risk populations.

