

PAKISTAN

OVERVIEW

Pakistan has had a cooperative agreement with the U.S. Centers for Disease Control and Prevention (CDC) since 2006 that supports development of state-of-the-art laboratories at designated sentinel sites in Pakistan for rapid confirmation of human and novel influenza viruses. Significant progress has been made despite continuing social and political challenges.

A total of eight sentinel sites are located in the outpatient departments of major provincial tertiary care hospitals, as well as one hospital in the federal capital, Islamabad. Sites were selected on the basis of representative geographic distribution, high population density, and patient turnover rate.

SURVEILLANCE

There was no sentinel site, laboratory-confirmed influenza surveillance prior to the cooperative agreement. Currently, eight sentinel sites are reporting influenza-like illness (ILI)/severe acute respiratory infection (SARI) cases to the National Institute of Health (NIH) with reporting of data to the Ministry of National Health Services, Regulation and Coordination on a regular basis.

SURVEILLANCE ACTIVITIES

- Modified case definitions, standard operating procedures (SOP) for sampling, storage, and sample transportation.
- Supported provincial health departments and high-risk districts for influenza and other respiratory pathogen surveillance including MERS-CoV.
- Designated some NIH staff members to work as resource personnel in practical trainings focused on infection control, use of personal protective equipment, sample collection, and packing and transport for the Pakistan Field Epidemiology & Laboratory Training Program (FELTP) in response to the recent Ebola epidemic in West Africa.

HIGHLIGHTS

- Developed SOPs and protocols for laboratory techniques.
- Strengthened laboratory capacity by completing biosafety enhancements, installing laboratory equipment and training personnel.
- Designated NIH as the national laboratory for viral diagnostics; authorized NIH as the testing laboratory for avian influenza A (H7N9) virus and MERS-CoV.

LABORATORY

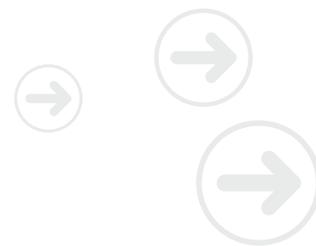
LABORATORY ACTIVITIES

- Processed and reported over 14,100 samples with 2,332 (16.5%) positive for an influenza virus since 2007.
- Provided logistical and technical support to all sentinel site influenza laboratories.
- Shared seasonal and pandemic virologic data through online submission to FluNet on a regular basis.
- Initiated indigenous sequencing of isolated influenza viruses with technical support from CDC.
- Submitted influenza virus samples regularly through WHO's Global Influenza Surveillance and Response System (GISRS) to CDC to be included for consideration in annual Northern Hemisphere vaccine recommendations.

TRAINING

Physicians, public health professionals and laboratory personnel have been trained through a program that was conducted throughout Pakistan.

Trainings included Rapid Response Training for Public Health Professionals; Workshop on Biostatistics and Statistical Software (Epi Info and SPSS) for laboratorians, hospital and university researchers; practical training on real-time RT-PCR for surveillance site laboratory personnel and FELTP laboratory staff; bio-risk management course for laboratorians, hospitals and university researchers, and veterinarians; and infectious substances shipping training.



SUSTAINABILITY

The sentinel network established under the cooperative agreement will serve as a model for the development of a Public Health Laboratories Network in the country under the Global Health Security (GHS) Initiative and for International Health Regulations (IHR) implementation.

Infrastructure, trained personnel, and experience from the laboratory-based influenza surveillance initiative will be sustained by expanding the preparedness and detection capacity for other infectious diseases of public health importance such as MERS-CoV, Ebola, Dengue fever, and Crimean-Congo hemorrhagic fever (CCHF).

