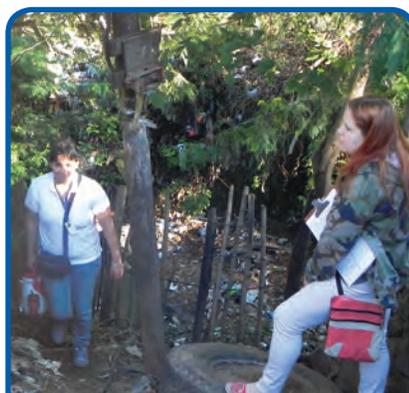


Paraguay



Capital: Asunción

Infant Mortality Rate: 21.48/1,000 live births

Population: 6,623,252 (July 2013 est.)



Overview

Since August 2009, CDC has provided funds to the Paraguay General Direction of Health Surveillance via a cooperative agreement to help the Paraguay Ministry of Health (MOH) strengthen influenza surveillance. Fiscal Year 2012–2013 was the fourth year of the CDC's cooperative agreement with Paraguay. This project focused on strengthening surveillance systems and implementation of the generic protocol PAHO/CDC for influenza surveillance. This year the proposal was aimed at strengthening hospital units. The development of emergency plans and in-service training in order to respond to events of public health importance will improve the ability to respond to an influenza pandemic.

Highlights

- Strengthened SARI surveillance in seven sentinel hospitals.
- Generation of regular information, quality, systematic and timely data.
- Strengthening local capacity of epidemiological surveillance units and regional hospital acquired for the investigation of outbreaks and unusual events.
- Disseminated information to national (Weekly Epidemiological Bulletin) and international (PAHO Influenza Report) partners.
- Incorporated RT-PCR detection of influenza viruses and other respiratory viruses.

Surveillance

Paraguay has been using the PAHO generic protocol for Influenza surveillance. Since 2010 the country implemented the severe acute respiratory illness (SARI) surveillance protocol. Through their 10 sentinel sites, Paraguay collects SARI samples that are sent to their NIC for diagnosis of respiratory viruses by RT-PCR. Strengthening of surveillance at sub-national levels including rural areas was prioritized. The sentinel sites are representative of the country geographically. There are two sentinel laboratories which use the IFA technique for virus diagnosis. They send 100% of negative samples and 100% of Influenza positive samples to the National Influenza Center (NIC) for subtyping.

Surveillance Activities

- PAHO epidemiologists conducted supervisory visits to SARI sentinel sites.
- Local experts and epidemiologists updated ILI and SARI sentinel surveillance standards following WHO requirements and CDC recommendations.
- Developed and integrated software between epidemiology and laboratory for the national influenza team and the sentinel hospitals.
- Calculated baselines and alert thresholds for the influenza season.
- Improved data management capacity at each sentinel site.
- Improved research capacity for outbreaks and unusual events nationwide.

Laboratory

Virologic surveillance has been strengthened with the provision of reagents, supplies and [additional training] human resources. CDC and APHL have provided laboratory assessments and technical assistance as well. This is reflected in the increased number of samples tested for diagnosis of respiratory viruses, as well as an increased percentage of influenza viruses and detected isolates. The virus isolates were sent to CDC, obtaining good agreement with the preliminary results of the NIC, and relevant information about genomic characterization and antiviral resistance of strains. Through the support of experts from CDC, technical difficulties have been overcome both molecular tests such as viral isolates, which is corroborated by the results of quality external evaluations and consistency with the results of CDC. Technicians from Sentinel Centers have received training in the diagnosis of respiratory viruses by IFA, and adequate sampling techniques. They also participated in an External Assessment Program coordinated by the NIC. This allowed for timely virological diagnosis at sentinel centers, with over 1,000 samples processed in a year.

Laboratory Activities

- Analyzed 5,954 samples for diagnosis of influenza and other respiratory viruses last year.
- Provided CDC with 20 isolates.
- Set up of RSV and adenovirus diagnosis by real-time PCR.
- Differential diagnosis in severe cases (hMPV, rhinovirus, bocavirus, coronavirus).
- Set up of Flu A/H7N9 and MERS-CoV detection by real time PCR.
- Participated in WHO's EQAP for molecular detection of influenza virus, obtaining a 100% performance score.
- Completed supervisory visits to the laboratories of the Regional Hospital of Ciudad del Este and the Pediatric Hospital Acosta Ñu.
- Trained sentinel laboratory technicians in the diagnosis of influenza and other respiratory viruses by IFA.
- Completed two external evaluation panels.
- Trained NIC technicians on the proper use of respiratory filters (Fit Test).
- Conducted an assessment of the laboratory by experts from CDC and NHPL.
- Update Workshop on Virological Surveillance of Influenza and other respiratory viruses for Sentinel Laboratories and Laboratories from Private Sector.

Preparedness

The implementation of field epidemiology training resulted in the achievement of considerable advances in outbreak investigation in Paraguay. Notification was promoted via internet in most regions of the country and the process of forming rapid response teams at the local level continues.

Preparedness Activities

- Graduated the first cohort of epidemiologists who successfully completed field training.
- Prepared two sentinel sites to perform IFA technique.
- Strengthened the CNE with training and connectivity.
- Provided rapid response training to CNE's epidemiologists.

Training

PAHO and CDC continue to provide technical assistance and training to ensure the functioning of the sentinel surveillance system, quality of the surveillance data, prompt data analysis, and integration of the information between epidemiology and laboratory.

- Trained staff in 19 health facilities on basic epidemiology.
- Trained sentinel site staff on surveillance procedures in hospitals.
- Trained staff on the software of loading epidemiologic and laboratory data.
- Conducted three workshops where health professionals were trained on the proper collection techniques, storage and transport of influenza samples.

Research Projects

- Multi-centric evaluation of trivalent seasonal influenza vaccine effectiveness to prevent severe acute respiratory infection among high risk groups targeted for vaccination (REVELAC-i)

**see Research Section for additional information*