PARAGUAY

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OVERVIEW

Since August 2009, CDC has provided funds to the Paraguay General Directorate of Health Surveillance through a cooperative agreement to help the Paraguay Ministry of Health (MOH) strengthen influenza surveillance. In 2013, Paraguay entered into a sustainability cooperative agreement having completed the capacity building phase of the first cooperative agreement.

The country has strong sentinel surveillance for severe acute respiratory infections (SARI) and data reporting has been regular and maintained throughout the year. Current data are comparable with data from the region and are regularly incorporated and disseminated through a national epidemiological bulletin and the weekly PAHO influenza report. The country also is member of the network of the vaccine effectiveness study of Latin America and the regional SARI surveillance network.

SURVEILLANCE

In response to lessons learned during the 2009 influenza pandemic, a sentinel surveillance system for SARI was created. It is a hospital-based, systematic surveillance that covers all ages, and is supported by the cooperative agreement with CDC; the focus is on building capacity. There are ten hospitals that perform SARI surveillance and five sites that monitor for influenza-like illness (ILI). The country now has data on circulating respiratory viruses from patients of all age groups, and follow-up procedures are in place to monitor risk factor and severity of the disease.

HIGHLIGHTS

- Developed a sustainability plan for SARI and ILI national surveillance.
- Established ten SARI sentinel hospitals and five ILI sentinel sites that complete our early warning system.
- Implemented epidemiological units in every regional hospital.
- Analyzed 2,993 respiratory samples by RT-PCR assay and 2,715 by immunofluorescence (IFI) assay.

SURVEILLANCE ACTIVITIES

- Developed weekly summaries and weekly reports on SARI and ILI cases.
- Established better interaction between epidemiology and laboratory teams at the national level.
- Improved the computer system and integrated laboratory data.
- Conducted an evaluation of the surveillance system in April 2014.

LABORATORY

The National Influenza Center (NIC) capacity was strengthened in response to year round demand for testing, and this was supported in large part by the cooperative agreement. The implementation of RT-PCR as an exclusive assay performed in the reference laboratory was the next step for the detection of all respiratory viruses under surveillance.

The diagnostic capacity to perform the immunofluorescence (IFI) assay in local laboratories at the sentinel sites and the ability to send samples for RT-PCR to the national reference laboratory was increased. Now one of the sentinel sites is considering introduction of RT-PCR in their local laboratory. Surveillance of other respiratory viruses that may cause SARI (e.g., rhinoviruses, human metapneumovirus) is also needed to better understand the epidemiology and etiology of SARI, and it is important to incorporate techniques to detect these additional viruses. During 2014, some information about metapneumovirus was collected.

LABORATORY ACTIVITIES

- Completed a self-evaluation of the NIC and two sentinel laboratories in collaboration with CDC.
- Participated in CDC's Influenza Molecular Diagnostic Performance Evaluation Panel.
- Submitted 20 influenza virus isolates to CDC for further characterization.
- Implemented RSV and adenovirus detection by real-time RT-PCR in all samples negative for an influenza virus.
- Conducted training on the use of gauge CO_2 for the incubator cell cultures.
- Conducted molecular diagnosis of other respiratory viruses such as bocavirus, coronaviruses, rhinoviruses, and enteroviruses.

PREPAREDNESS

CDC support helped evaluate the ability of the surveillance system and these results were used to update the national pandemic preparedness and response plan. The cooperative agreement strengthened surveillance capabilities, and the country continued the work by committing its own budget, increasing support of the NIC, and incorporating human resources at both the national level and the sentinel sites. It has also expanded and improved the infrastructure of the buildings and equipment. Human resources dedicated to surveillance both centrally and locally have been trained.

PREPAREDNESS ACTIVITIES

- Conducted a desktop simulation exercise with stakeholders to review procedures set forth in the plan for a particular scenario.
- Determined corrective measures based on the outcome of the simulation exercise to adapt evidence-based findings from the 2009 influenza pandemic into the plan.
- Included a protocol for detection of unusual SARI events in the plan with actions to be taken by the rapid response teams.

TRAINING

PAHO and CDC continued to provide training to ensure proper functioning of the sentinel surveillance system, high quality of surveillance data, prompt data analysis, and integration of information between the epidemiology and laboratory teams.

- Conducted training on surveillance procedures in hospitals at sentinel sites.
- Conducted in-service training at two sentinel sites on the SARI and ILI surveillance protocol.
- Conducted training for virologists on influenza virus isolation and identification.
- Conducted training on infection control at all national hospitals emphasizing the proper use of personal protective equipment.
- Conducted computer training at two sentinel sites.

INFLUENZA VACCINE ACTIVITIES

The country introduced influenza vaccine in 2006, targeted to populations at higher risk of severe illness or death. In this context, it is time to assess the impact and effectiveness of the vaccine.

To achieve this the country joined the Network of evaluating the effectiveness of the vaccine in Latin America and the Caribbean (REVELAC-i) and provided surveillance data.