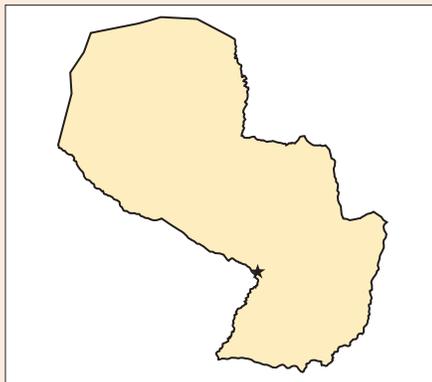


Paraguay



- **Capital:** Asunción
- **Area:** 406,752 sq km
- **Population:** 6,541,591 (July 2012 est.)
- **Age Structure:** 0-14 years: 28.5% (male 936,298/female 905,285); 15-64 years: 65.4% (male 2,121,632/female 2,100,740); 65 years and over: 6.1% (male 183,440/female 211,663) (2011 est.)
- **Life Expectancy at Birth:** Total population: 76.4 years; male: 73.78 years; female: 79.14 years (2012 est.)
- **Infant Mortality Rate:** Total: 22.24 deaths/1,000 live births; male: 26.06 deaths/1,000 live births; female: 18.23 deaths/1,000 live births (2012 est.)
- **Literacy Rate:** Total population: 94%; male: 94.9%; female: 93% (2003 est.)
- **GDP:** \$36.21 billion (2011 est.)
- **GDP per Capita:** \$5,500 (2011 est.)

Highlights

The Paraguay Ministry of Health (MOH):

- Developed exercises for rapid response teams for outbreaks response in two national and four subnational areas.
- Enhanced epidemiologic information and data management at each sentinel site.
- Developed a computer system for reporting online data for severe acute respiratory infections (SARI) surveillance.
- Decentralized the National Influenza Center (NIC) and three laboratories have been established for indirect immunofluorescence (IIF) technique at three sentinel sites.
- Developed a national influenza bulletin that reports counts and trends of influenza-like illness (ILI), SARI, deaths, and confirmed influenza cases. The bulletin is published weekly.

U.S. CDC Direct Country Support

Since August 2009, the U.S. Centers for Disease Control and Prevention (CDC) has provided funds to the Paraguay Directorate General of Health Surveillance via a cooperative agreement to help the Paraguay MOH strengthen influenza surveillance. These funds are intended to support subnational influenza preparedness and national communication strategies.

Paraguay has 12 sentinel sites, five of which include rural populations, 60% of these hospitals have an epidemiological unit, thereby improving the quality of information and sampling. In the remaining sentinel sites, the MOH directly works with a person in charge of surveillance.

The NIC has been decentralized and three laboratories have been established for IIF technique at three sentinel sites.

The major developments that took place in the surveillance system include the following:

- Strengthening SARI surveillance in six hospitals, implementing the hospital epidemiology units.
- Improving information and data management capacity at each sentinel site.
- Reporting online data for SARI surveillance.
- Improving information and characterization of the epidemiology of seasonal influenza and outbreaks in Paraguay.
- Enhancing epidemiology and communication capacity at local and national levels.
- Reporting counts and trends of ILI, SARI, deaths, and confirmed influenza cases via a national influenza bulletin.

Surveillance

Paraguay has been using the PAHO generic protocol surveillance standards and is adopting a new SARI surveillance protocol. Through their 12 sentinel sites, Paraguay collects influenza samples that are sent to their NIC. They continue to prioritize the strengthening of their surveillance at subnational levels including rural areas.

Surveillance Activities

- Increased the number of reporting sentinel sites for ILI and SARI; there are currently five sentinel sites for ILI and 12 sentinel hospitals for SARI.
- Improved information and data management capacity at each sentinel site.
- Developed national guidelines for ILI and SARI surveillance.
- Improved the information and characterization of the epidemiology of seasonal influenza in Paraguay.
- Enhanced the epidemiology and communication capacity at the local and national level via the provision of internet connections and cellular phones at each sentinel site.
- Visited each sentinel site to oversee the development of their surveillance activities.
- Provided weekly updates on influenza surveillance in Paraguay to the World Health Organization (WHO).

Laboratory

In 1998, the Central Public Health Laboratory (LCSP) initiated viral isolation in cell culture and became Paraguay's NIC. The laboratory collects samples from each of their 12 sentinel hospital laboratories. With CDC funding and technical assistance, Paraguay has been increasing the capacity of local laboratories to collect and send samples to the NIC. The NIC is capable of performing influenza diagnostics including virus isolation, hemagglutination inhibition assays and real-time RT-PCR for seasonal, 2009 H1N1, and H5N1 viruses. Paraguay has been working on improving their ability to send samples out of the country.

Laboratory Activities

- Sent representative isolates of influenza virus strains to the WHO Collaborating Center in Atlanta for characterization, the selection of vaccine strains for the Southern Hemisphere, and monitoring antiviral drug sensitivity.
- Provided weekly updates on influenza activity in Paraguay to WHO's FluNet.
- Participated in WHO's External Quality Assessment Project (EQAP) that demonstrated the competence of the NIC to identify seasonal, 2009 H1N1, and avian influenza in accordance with WHO global standards.
- Developed and enhanced the integrated laboratory surveillance network for influenza. This included improving laboratory infrastructure, training staff, and providing resources for sentinel sites laboratories.
- Provided technical support and confirmatory testing for other influenza laboratories in the country.

Preparedness

Paraguay has rapid response teams (RRTs) at the national level and has been continuing their process of developing RRT at the local area. Allocating staff and equipment to increase their regional area preparedness is a high priority area.

Preparedness Activities

- Strengthened the communication network at subnational level.
- Assessed the regional epidemiological units.
- Formed RRTs for outbreaks: two national and four subnational.
- Established a multidisciplinary team of people from national and subnational levels to work in to new operational plans for pandemics.

Training

- Media spokespersons and national and regional communicators were trained in risk communication.
- Mitigation strategies workshops were conducted with family health units.
- Two biochemists from sentinel sites were trained in the technique of indirect immunofluorescence assays (IFA) for the detection of respiratory viruses.
- Training was provided for RRT at the national and subnational level.
- Workshops with simulation exercises were provided for six regions, including two at the national level and four at the subnational level.
- Hospital surveillance training was provided to sentinel site staff members.



Paraguay's national monument, 'Panteon Nacional de los Heroes' (the National Pantheon of Heroes), Asunción.

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