



## Emerging and Reemerging Infectious Diseases, Region of the Americas

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*Statistics:* See Figures [1](#) and [2](#)

### Dengue Outbreak in Paraguay, 2006



Map of Asunción

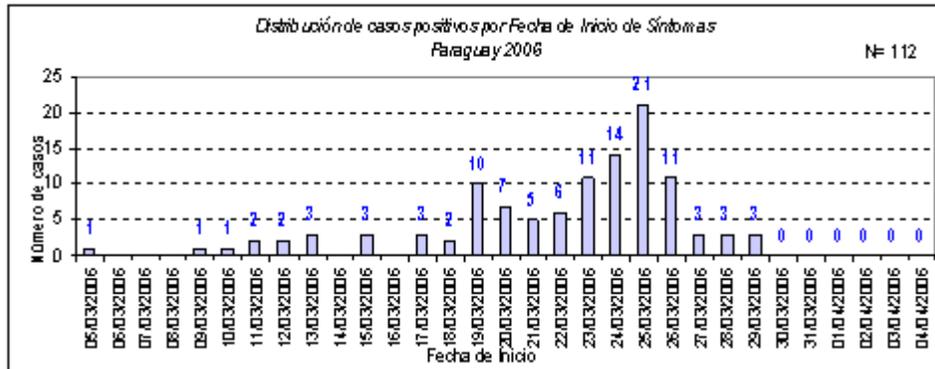
**Asunción, 31 December 2006:** In March 2006, 49 neighborhoods in Asunción, were affected by a dengue outbreak. This comprised of fourteen health districts (*Regiones Sanitarias* or RSs).

As of Tuesday, 4 April 2006, health authorities had recorded 112 laboratory-confirmed and/or clinical cases of dengue (IgM) that were included with epidemiological linked cases (patients with a history of living or traveling La Encarnación, Asunción or in other neighborhoods where dengue virus transmission occurred).

Of all the cases, 88% were from the city of Asunción and, out of these, 64% lived in La Encarnación. Eleven cases (10% of the total) lived in districts of the Central

Department and two cases (2%) lived in other regions of the country. All the cases outside Asunción are epidemiologically linked with others from affected neighborhoods in the city. Out of all the cases, 58% were female; 43% were 20–39 years old, and 20% were 40–49 years old.

Figure 1: Distribution of Positive Cases by Date of Onset of Symptoms (Paraguay, April 2006)



The first case of dengue dates back to 5 March 2006 (Epidemiological Week / EW 9) and the last case dates back to 29 March (Figure 2). The total number of suspected cases reported by that date was 1,326.

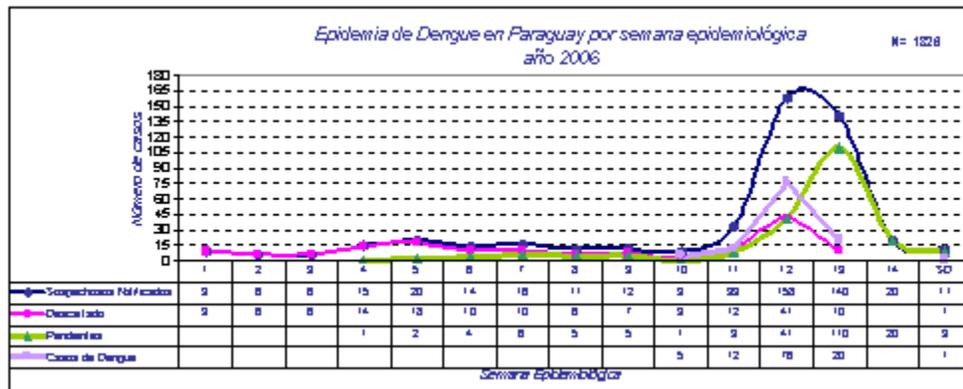
According to estimates and considering the period of viremia, the incubation period, and the registered communicability ( $6 \pm 3$ ), cases could be expected to 15 April 2006, if transmission were to stop by 31 March.

On 24 March 2006 the following interventions were carried out:

1. Task Forces were formed to identify investigation needs, registering febrile patients, identifying and eliminating breeding sites, and fumigating households and then following up with spatial fumigation. These Task Forces consisted of officials from the XVIII Health District (*Región Sanitaria* or RS), the Office of Vulnerable Persons (*Dirección de Vulnerables*), and SENEPA (the National Vector Control Program).
2. A meeting was held with the directors of health facilities in the capital city to call for an epidemiological alert and strengthen the response capacity of health services.

On 27 March, while researching foci, the LCSP reported the identification of the Dengue 3 serotype (DEN-3) as a result of blood samples taken from two patients captured during the viremia phase (with an evolution of less than 72 hours after onset of fever).

Figure 2: Dengue Epidemic in Paraguay by Epidemiological Week, 2006



During the week of 27–31 March 2006, field investigation of foci continued where reports had been made from other Asunción neighborhoods and other health districts.

On the first of April 2006, considering the spread of cases throughout different Asunción neighborhoods and districts of Central department (XI RS), a decision was made to modify the intervention strategy. The technical team from SENEPA formulated a sweeping plan based on the neighborhood structure resulting from the rezoning in Asunción and based on the risk of transmission. The team identified 6 areas and 3 zones, 1 of which showed a high level of disease spread, another possibly acting as a barrier to it, and another one with no reports of febrile patients.

On 3 April 2006, brigades, informed of the epidemiological situation, were called up and given new strategic operations in implementing their intervention. The percentage of coverage had reached 87.8% by the end of the day. This strategy received support from the local press and from a campaign designed by the Department of Health Promotion (*Dirección General de Promoción de la Salud*) of the Ministry of Health and Social Welfare (*Ministerio de Salud y Bienestar Social / MSPBS*), through the mass-media campaign initiated on Sunday, 2 April 2006.

Also on this date, a meeting was held with the District Attorney of the city of Asunción and other municipal authorities to present the strategic plan and request specific support to address the problem of closed uncultivated patios, tire facilities, and the frequency of trash collection.

On 4 April 2006, the directors of health facilities from the capital met with objective of insisting on strengthening institutions so that they might locate and provide care to people suspected of having dengue, fill out epidemiological forms correctly, and provide high-quality, compassionate care to a population whose demand for such services would ultimately increase. At this meeting, emphasis was placed on the imminent risk of emerging cases of dengue hemorrhagic fever.

### Joint Activities in Foz de Iguazú

At the beginning of September 2006, a meeting was held in the city of Foz de Iguazú with epidemiologists from the tri-country border area (Argentina, Brazil, and Paraguay), with a team of epidemiologists from Argentina. The impetus for this meeting was the reported

emergence of dengue cases in Puerto Iguazú (in the province of Misiones, Argentina), the situation of dengue as an endemic disease in Foz de Iguazú, and the striking epidemiological silence of Alto Paraná. Interventions were to take place in public and private services in Alto Paraná to strengthen the surveillance of febrile patients. For this purpose, a team of federal epidemiologists, together with local brigades, was formed to visit the service facilities starting on 5 April 2006.

During Epidemiological Week 31 (30 July to 5 August 2006), 1,224 cumulative cases of dengue had been recorded, of which 822 (67.2%) were laboratory confirmed and 402 (32.8%) via epidemiological link. For 2006 there were a total of 4,271 cases of dengue and no reports of dengue hemorrhagic fever or deaths.

**Source:** Information obtained by the [PAHO Regional Program on Dengue](#) through the PAHO Country Office in Paraguay ([PAHO-Paraguay](#)), based on data from the central database [Centro de Cómputos DiVET](#) run by the Ministry of Public Health and Social Welfare (*Ministerio Salud Pública y Bienestar Social* / [MSPBS](#)) of Paraguay.