



# Update:

## Dengue Situation in the Americas

(5 March 2009)

### 1. Background

Dengue is endemic to almost all the countries of the Region, and over the past 25 years, there have been cyclic outbreaks every 3 to 5 years, with the peculiarity that every epidemic year has been greater than the one that preceded it. In 2002, a high incidence was recorded, with more than a million reported cases, most remarkably those reported by Brazil. The years 2007 and 2008 have again been epidemic, notably in 2008 with the great outbreak of Rio de Janeiro (Brazil), a megacity where the dynamic of disease transmission has become much more complicated.

In the period from 2001 to 2007, more than 30 countries of the Americas have reported a total of 4,332,731 dengue cases (PAHO, 2008). During the same period, the number of cases of dengue hemorrhagic fever (DHF) was 106,037, with 1,299 deaths and a case-fatality rate of 1.2%. All four dengue serotypes circulated in the Region (DEN-1, 2, 3 and 4).

In 2008, a total of 1,050,590 clinical cases of dengue were reported, including 38,066 cases of DHF and 554 deaths, surpassing what was reported in 2002. Thus far in 2009, the countries of the Americas have reported to PAHO/WHO 79,281 dengue cases, including 742 cases of DHF and 26 deaths, with the most relevant current outbreak occurring in the tropical region of Bolivia.

Data are presented below for those countries where the magnitude of the outbreak has taken on special importance in recent months.

### 2. Dengue Outbreaks by Subregion

Up to Epidemiological Week (EW) 8, dengue outbreaks have been reported in different countries of the Andean, Southern Cone, and Caribbean subregions.

#### a. Andean and Southern Cone Subregions

<b>Table 1: Description of Dengue Outbreaks in Countries of the Andean and Southern Cone Subregions, Epidemiological Week 8, 2009</b>			
	<b>Bolivia</b>	<b>Brazil</b>	<b>Paraguay</b>
Number of clinical cases of dengue	36,758	30,008	679
National incidence rate*	377	17	12
Number of cases of dengue hemorrhagic fever and complicated dengue	108	71	0
Number of deaths from dengue	20	3	0
Fatality rate	18,5%	4,2%	0%
Identified serotypes in circulation	DEN-1, 2, 3	DEN-1, 2, 3	DEN-1, 3

\*Rates per 100,000 inhabitants.

The first few months of the year in the Andean subregion have been the most complex regarding the rise in dengue cases as well as their appearance. Noteworthy are:

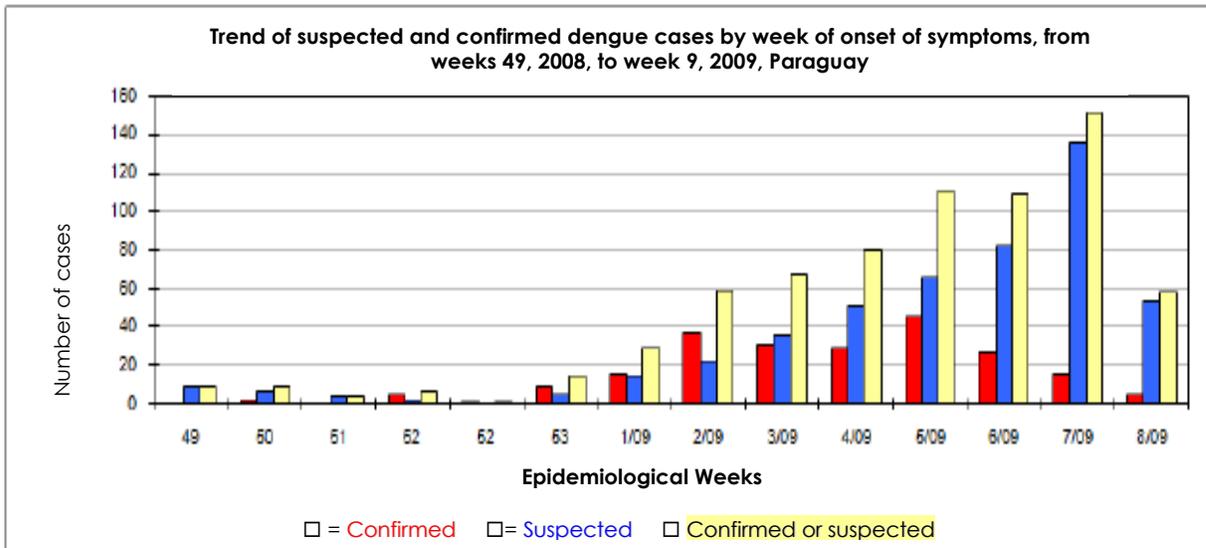
- **Bolivia**

- Up to EW 8, 2009, the greatest incidence rates for clinical dengue cases per 100,000 inhabitants were reported in the departments of Pando (1,285), Santa Cruz de la Sierra (1,105), Tarija (600), Beni (393), and Cochabamba (214). In Bolivia, the outbreak continues to show an upward trend, with a predominance of new cases in the department of Santa Cruz de la Sierra, although over the past three weeks the growth trend has been less than those preceding it. This outbreak is occurring in a geographic area with a sizeable susceptible population. In Santa Cruz, nearly two million people are concentrated, such that the outbreak could spread even more if all necessary efforts are not made to stop its increase.
- For more details on the epidemiological situation, see the website of the Bolivian government at <http://www.sns.gov.bo/snis/default.aspx>.

- **Paraguay**

- Up to EW 8, 2009, the greatest incidence rates for clinical dengue cases per 100,000 inhabitants were seen in the departments of Concepción (61.0), Amambay (24.1), Boquerón (3.6), Caaguazú (3.3), Central (1.6), and Asunción (1.5). DEN-1 and 3 are the serotypes predominantly in circulation.

**Figure 1: Trend of Dengue Cases at the National Level in Paraguay, by epidemiological week, 2009**



Source: Ministry of Public Health of Paraguay.

- During the first seven weeks, the number of confirmed cases has tended to increase; however, in EW 8, there has been a significant decrease in the number of cases (see Figure 1). Paraguay faced a serious outbreak in 2007, one that resulted in the country increasing its preparedness based on the lessons learned so as to better face future outbreaks. Thus, this country was able to detect the current outbreak in a timely manner and has responded intensively.

### ▪ Brazil

- Despite a low national incidence rate for dengue in Brazil (17.3 per 100,000 inhabitants), the rates in the states reflect another reality. Acre reports an incidence rate of 514.4; Roraima, 322.0; Espírito Santo, 129.0; Amapá, 73.0; Bahia, 47.7; and Minas Gerais, 22.9. Some 71% of the cases are concentrated in these six states.
- The occurrence of cases in the state of Roraima is of epidemiological importance, in that it shares a border with Venezuela, where the serotype DEN-4 is in circulation—a serotype that to date has not yet appeared in Brazil.
- For 2009, there have been 45 confirmed cases of DHF with 1 subsequent death, and 26 cases of complicated dengue with 2 deaths. During the same period in 2008, there were 420 reported cases of DHF and 1,526 cases of complicated dengue, which when compared show an important decrease in the number of acute cases this year.

## b. Caribbean Subregion

	<b>Saint Bartholomew</b>	<b>French Guiana</b>	<b>Saint Martin</b>	<b>Guyana</b>	<b>Suriname</b>
Number of clinical cases of dengue	46	807	68	665	103
National incidence rate*	575.0	474.7	161.9	87.1	24.5
Number of cases of dengue hemorrhagic fever and complicated dengue	0	1	0	1	0
Number of deaths from dengue	0	1	0	1	0
Fatality rate	0%	1%	0%	1%	0%
Identified serotypes in circulation	DEN-1, 2	DEN-1, 2, 4	DEN-1, 2, 4	DEN**	DEN**

\* Rates per 100,000 inhabitants.

\*\* Still no reports on serotype in circulation.

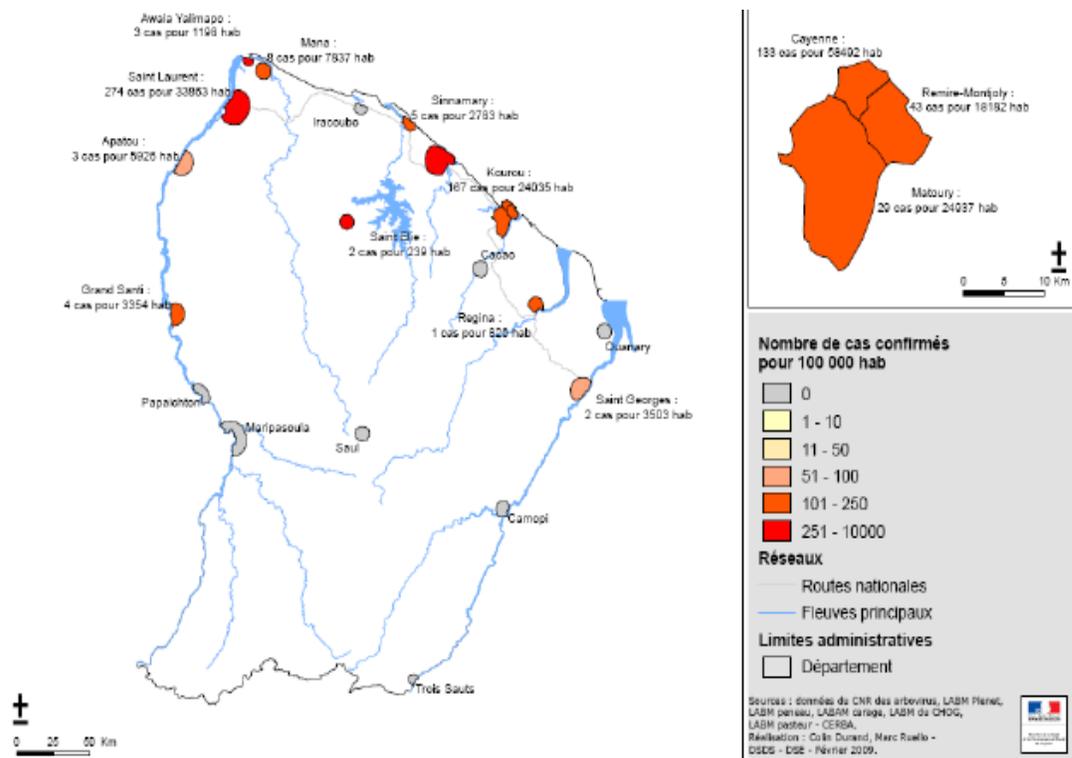
### ▪ French Guiana

- The epidemic in French Guiana began in Week 1, 2009. Nearly all the municipalities of Guiana have been affected: Sur l'île de Cayenne, Korou, and Saint Laurent (see Figure 1). Up to EW 6, 2009, 807 cases have been reported, compared to a total of 704 cases in 2008.

### ▪ St. Martin and St. Bartholomew

- In St. Martin, the dengue epidemic started in September 2008 (EW 39), while in St. Bartholomew it began in EW 43 of the same year. Since then, an important increase in dengue cases has been verified, with a high viral circulation.
- Since EW 7, 2009, the estimated number of cases has significantly decreased on both islands, with sporadic transmission of dengue being observed and consequently, an end to the epidemic.

**Figure 1: Distribution of Dengue Cases in French Guiana**



▪ **Guyana**

- According to the Ministry of Health of Guyana, in 2009 807 cases have been reported, which constitutes a significant increase compared to the 665 cases reported for all of 2008. In Guyana, support is being coordinated for the structured organization of the entomology and vector control components.

▪ **Suriname**

- In Suriname, since the beginning of the year, the number of reported cases is on the increase in relation to previous years (103 suspected cases since January 2009, 405 for all of 2008, and 303 in 2007). Information on the serotype in circulation is still not available. The last epidemic in Suriname occurred in 2005 (with 1,571 suspected cases).

**3. PAHO/WHO Cooperation to Deal with the Situation**

- PAHO/WHO is offering technical support for the current dengue outbreak in Bolivia, with a group of experts from the areas of epidemiological surveillance, vector control, patient care, and risk communication.
- In addition, with the support of the International Task Force on Dengue (GT-Dengue, from *Grupo Técnico Dengue* in Spanish), work has been done to formulate the Strategy of Integrated Management for the Prevention and Control of Dengue (EGI-Dengue, from *Estrategia de Gestión Integrada para la prevención y control del dengue* in Spanish) in more than 16 countries of the Region, following the PAHO/WHO parameters.

- Together with EGI-Dengue, the countries have timely prepared EGI-Dengue contingency plans to respond to outbreaks and dengue epidemics, which have served as basis for actions to take into account: for example, during the current dengue outbreaks in Bolivia and Paraguay, as well as in other countries that timely are implementing the strategy in a timely matter, putting in practice the comprehensive EGI-Dengue model. The components of the EGI-Dengue are: epidemiological surveillance, vector control, laboratory, clinical practice, mass communication, and environment. Nevertheless, there are still work areas being visualized with scant response capacity to control the current outbreaks; thus, PAHO/WHO emphasizes the need for a global response to the problem—and not only from the health sector. Furthermore, PAHO/WHO is doing its utmost to promote the need to improve coordination within countries in order to strengthen to maximum extent their ability to control the situation by fully involving communities.
- In April 2009, the countries of the Caribbean subregion will review their program guidelines for dengue prevention and control, so that they can adopt the Integrated Management Strategy for Dengue Prevention and Control in the Americas, including Integrated Vector Management within EGI-dengue to cover the entomology and environmental management component.

## 4. Recommendations

- **Epidemiological Surveillance:** Activate and maintain the Situation Room, and update and analyze data on a daily and weekly basis. Determine the situation by integrating epidemiological data (endemic channels, *Aedes* infestation indexes, proportion of acute forms, fatality rate, etc.), with basic indicators on other determining factors in transmission, such as trash collection and water supply as constants.
- **Care for Patients with Dengue:** Organize services for patient care, adaptation of patient care services according to response capacity, agreement on a flow chart for patient care. Redistribute human resources to support care for cases in emergency areas. Maintain intensive monitoring of patients admitted to hospital and reported as in serious condition using multidisciplinary teams.
- **Laboratory:** Use the criteria established for timely laboratory diagnosis and communication of results: 100% of hospitalized cases, 100% of cases with acute forms of the disease, 100% of suspected cases at the beginning and end of the outbreak; at least 10% of suspected cases during the rest of the outbreak, to monitor the circulation of new serotypes. The monitoring of laboratory resources should be in sync with the epidemiological surveillance strategies at the time of each outbreak.
- **Entomology:** Intensify the control of breeding sites using physical, biological, and chemical methods in the area of suspected dengue cases, with an epidemiological criterion. Apply spatial insecticides to eliminate adult mosquitoes in areas of high transmission. Strengthen working teams with the necessary supplies and equipment to assure an immediate response to the outbreak.
- **Social Communication:** Disseminate information on the epidemiological and entomological situation, involving social and community Networks. Strengthen messages on measures to control breeding sites, alarm signs for case management, warning people not to self-medicate and to consult health services at an early stage. Promote community participation in control measures, as well as those to eliminate breeding sites. Establish partnerships with the mass media to assure objective and timely information. Set up an appropriate risk communication strategy for times of crisis.