

## **E. CURRENT DENGUE SITUATION**

### **Introduction**

1. Dengue, an endemic disease in the Region of the Americas with epidemic cycles, continues to be a significant public health problem. Its persistence is associated with the presence of social and environmental determinants, such as population growth, migration, uncontrolled or unplanned urbanization, and large poverty belts in cities, including many of our capitals.
2. Environmental determinants are the ones most directly related to the persistence of dengue. The lack of basic services is one of the primary problems, especially the chronic deficit in the continuous provision of water service, serious problems with the environmental management of wastewater and appropriate waste collection, as well as inadequate behavior regarding the use and disposal of non-biodegradable materials. In addition to harming the environment, these problems produce conditions that are highly conducive to the proliferation of the dengue vector and other vectors.
3. This report presents an update on the situation of this disease and progress in the activities promoted by the Member States for its prevention and control.

### **Background**

4. During the 27th Pan American Sanitary Conference in 2007, the countries recognized the problems posed by increasingly frequent dengue outbreaks and the complexity of the epidemiological situation for its prevention and control. Considering dengue to be a problem that goes beyond the health sector, the Conference set a course for the identification of public policies to control the social and environmental determinants of its transmission and to strengthen national integrated management strategies for the prevention and control of dengue (IMS-dengue).

### **Situation Analysis**

5. The dengue epidemiological situation in the Americas continues to be highly complex, with all four serotypes of the disease in circulation and conditions that are very propitious for their transmission. The number of reported cases peaked in 2010 at 1.6 million, 50,235 of them severe, and 1,185 deaths. In 2011, morbidity declined by 39% and the number of deaths by 40%, with 1,044,279 cases and 719 deaths. It appears that this trend will continue in 2012. There was also a 39.1% reduction in the percentage of severe cases in 2011 with respect to the preceding four years, which may be related to the application of the new case management guidelines that recommend timely care of warning signs indicating severity at the primary care level.

6. Currently, 23 countries and territories of the Americas have prepared a national IMS-dengue. In addition, four subregional IMS-dengue have been prepared (Andean subregion, Southern Cone, Central America, and the English-speaking Caribbean).

7. The IMS-dengue evaluation process began in Mexico in 2008. Since then, 18 countries and territories have been evaluated. The Dengue International Task Force (GTI-dengue for its Spanish acronym) and the national technical groups carried out all of the evaluations jointly. Since 2003, GTI-dengue has provided technical support during outbreaks and epidemics and has strengthened the capacity of technical personnel in the countries. Today, the Group promotes the use of new tools such as the Larval Index Rapid Assay of *Aedes aegypti*, (known as LIRAA, by its Portuguese acronym), Geographic Information Systems (GIS), new diagnostic tests, and the new dengue classification.

8. During the 2009-2010 biennium, important outbreaks were reported in Argentina, Brazil, Bolivia, Colombia, Dominican Republic, Guadeloupe, Honduras, Martinique, Paraguay, Puerto Rico, and Venezuela. The response to the problem has been tangibly more comprehensive with the participation of municipalities, the private sector, the community, and the media, in addition to the health sector. The outbreaks in Santa Cruz de la Sierra (Bolivia), the Chaco (Argentina), and Honduras are examples of this. It is important to highlight the mutually supportive work among the countries of the region and the role of PAHO/WHO in the coordination of the increasingly greater collaboration among the countries, which includes the wide-ranging and constant exchange of resources, personnel, and equipment.

9. The Dengue Laboratory Network of the Americas (RELDA) was consolidated, comprising the national reference laboratories and the four PAHO/WHO collaborating centers for dengue. The quality control process and the use of molecular diagnostic techniques were strengthened.

10. Training continues to be provided to the countries on methodology for risk communication and health promotion, in order to progress in changing human behavior as part of the community approach to the social and environmental determinants of dengue. In 2011, a publication that systematized the lessons learned in this extremely complex area was prepared and distributed to all the countries.

11. IMS-dengue is influencing the development of public policy, laws, and ordinances to improve the environment and tackle the social and environmental determinants that cause dengue. Greater extrasectoral impetus is needed, however, in addressing these determinants in order to ensure the sustainability of current efforts. In this context, community participation plays a decisive role, about which we must be aware.

12. Dissemination of the new dengue guidelines prepared by PAHO/WHO began in 2010, with their translation, publication, and distribution. Experts from the Region adapted the patient care component during 2010 and training covered all the countries of South America, Central America, and the Caribbean.

13. The introduction of the new guidelines aims at paying particular attention to case monitoring in primary care, especially with regard to the detection of warning signs that indicate the severity of the case. This enables timely intervention for the hydration of patients and reducing the risk that these cases progress to more-serious forms or to death.

14. Entomological surveillance is one of the components where the greatest difficulties have been found, in particular with regard to infrastructure, material and human resources, and the great loss in logistics and quality of work that are needed. At present, the countries are strengthening surveillance and technical vector control in different ways, and PAHO/WHO together with other partners (such as the Centers for Disease Control and Prevention of the United States, different scientific and academic institutions, industry representatives, and experts from the countries) are working to identify lessons learned and to seek new tools, technologies, and methodologies that enable increasing national capabilities for entomological surveillance and integrated vector control.

15. In terms of combating the vector, inappropriate insecticide use compromises the durability of the main active ingredients currently in use and evidences the growing resistance of *Aedes aegypti* to insecticides. At the same time, few countries in the Region are conducting research on susceptibility and resistance. For this reason, PAHO/WHO is working on a regional project to monitor insecticide resistance in collaboration with the Latin American Network for Vector Control (RELCOV) and with the support of the four reference centers.

16. Several dengue vaccines are currently in the clinical development phases and it is possible that at least one safe and effective vaccine will be available in the near future (5 to 10 years). The more advanced of these, a live attenuated vaccine against the four serotypes, is currently in phase III clinical trials, the results of which should be available in 2013. There is an incentive for Member States and PAHO/WHO to prepare for the timely and evidence-based introduction of the dengue vaccine, which will be one more tool for dengue control within an integrated approach. Significantly, ProVac<sup>1</sup> has signaled its intention to include the dengue vaccine in its future activities.

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<sup>1</sup> The ProVac initiative was created by PAHO/WHO's Immunization Project to strengthen national capacity to make evidence-based decisions on new vaccines introduction. It is made up of high-level scientific institutions and organizations.

17. Cooperation from the Spanish and Canadian governments played a critical role in the progress made in the last two bienniums. The Mesoamerica Project for dengue will be a source of support for the countries of that subregion in the coming years.

18. Major challenges remain for dengue prevention and control in the Region. Countries still face serious problems in addressing social and environmental determinants, compounded by other external factors such as climate change that benefit the life cycle of the mosquito transmitter.

19. The Organization is working to identify and preserve all the innovations and initiatives that have had good outcomes with regard to prevention and control, especially in relation to social communication, community participation, and behavior change. A recent noteworthy example is that of Panama, where the increase in the vector is the result of major investments in public works. In response, an agreement was reached with the industry and the construction companies that established new regulatory standards for the responsibility of these companies, to ensure that the works do not produce locations conducive to the appearance of mosquito breeding sites.

20. It is important to look beyond the health sector and citizen responsibility, in order to identify all the opportunities that we have to combat this vector, which is becoming increasingly adapted to domestic life.

### **Proposal**

21. This progress report presents the accomplishments and work of the Pan American Sanitary Bureau for the prevention and control of dengue in the Region. It proposes to continue to support the integrated management response, strengthen national capabilities, and step up efforts by the Member States to implement public policies that influence the social and environmental determinants related to this disease