

# THE VALUE OF THE DENGUE VACCINE

THE POTENTIAL TO BRING A HIGH DISEASE BURDEN UNDER CONTROL IN BRAZIL

**ESTIMATED DENGUE IMPACT OVER 1 YEAR**  
(SEPTEMBER 2012 - AUGUST 2013):



It is estimated that about 2/3 of all dengue cases in Latin America occur in Brazil.<sup>(2)</sup>

**\$1.2 BILLION**

ESTIMATED TOTAL ANNUAL COSTS OF DENGUE DISEASE IN BRAZIL<sup>(1)</sup>,

INCLUDING:

**\$144 MILLION**

ESTIMATED TOTAL ANNUAL COSTS DUE TO HOSPITALIZATIONS<sup>(1)</sup>

ESTIMATED COSTS PER CASE:



**\$448**

AND ≥ 6 DAYS LOST AT WORK/SCHOOL PER HOSPITALIZED CASE<sup>(1,4)</sup>



**\$173**

AND ≥ 4 DAYS LOST AT WORK/SCHOOL PER AMBULATORY CASE<sup>(1,4)</sup>

**\$6.5 BILLION USD**  
ESTIMATED SAVINGS OVER 10 YEARS WITH BROAD VACCINATION PROGRAMS<sup>(6)</sup>

DENGUE

**2,013,274**  
REPORTED CASES OF DENGUE<sup>(1)</sup>

**201,000** HOSPITALIZED CASES<sup>(1)</sup>  
**7,664** SEVERE CASES<sup>(1)</sup>

AVERAGE ANNUAL NUMBER OF CASES ARE ESTIMATED AT ABOUT **2 X MORE<sup>(1)\*</sup>** DUE TO UNDER-REPORTING

WHO ARE THE MOST AFFECTED ?



PRE-ADOLESCENTS TO ADULTS<sup>(3)</sup>

Sanofi Pasteur modeling based on clinical trial results shows that through broad vaccination programs in ages 9 and older, dengue-endemic countries can achieve a ~50% reduction of their disease burden in 5 years.<sup>(7)\*\*</sup>

POTENTIAL OF A HIGH IMPACT VACCINATION PROGRAM FOR DENGUE PREVENTION...<sup>(5)</sup>

In clinical trials, vaccine efficacy among at-risk populations of 9 to 16 years old, over a 25-month period, following the first dose of the vaccine:

Severe cases



Hospitalized cases



Symptomatic cases



Pooled efficacy analysis in 9-16 year olds over a 25-month period, following the first dose of the vaccine. Efficacy is extrapolated to individuals over 16 based on similar immune responses

Sources:

<sup>(1)</sup> Martelli CMT, Siqueira JB Junior, Parente MPPD, Zera ALda, Oliveira CS, Braga C, et al. (2015) Economic Impact of Dengue: Multicenter Study across Four Brazilian Regions. PLoS Negl Trop Dis 9(9): e0004042. doi:10.1371/journal.pntd.0004042

<sup>(2)</sup> Pan-American Health Organization dengue statistics by country. [http://www.paho.org/hq/index.php?option=com\\_topics&view=article&id=1&Itemid=40734](http://www.paho.org/hq/index.php?option=com_topics&view=article&id=1&Itemid=40734). Acesso em 01\_12\_2015

<sup>(3)</sup> Jackson N, et al. Recent scientific and clinical advances in Sanofi Pasteur's Dengue Vaccine Program • ASTM 64th Annual Meeting October 25-29, 2015, Philadelphia US from Secretaria de Vigilancia em Saude - Ministerio da Saude. Dengue no Brasil: tendencias e mudancas na epidemiologia, com enfase nas epidemias de 2008 e 2010. In: Saude Brasil 2010: Uma analise da situacao de saude e de evidencias. Brasilia: MS; 2010. And Secretaria de Vigilancia em Saude - Ministerio da Saude. SINAN. Courtesy of Prof. Dr. Joao Bosco.

<sup>(4)</sup> Suaya, Jose A, et al. Am. J. Trop. Med. Hyg., 80(5), 2009, pp. 846-855

<sup>(5)</sup> Hadinegoro, Sri Rezeki S, et al. Efficacy and Long-Term Safety of a Dengue Vaccine in Regions of Endemic Disease Integrated Analysis of Efficacy and Interim Long-Term Safety Data for a Dengue Vaccine in Endemic Regions. July 27, 2015 DOI: 10.1056/NEJMoa1506223

<sup>(6)</sup> Sanofi Pasteur modelling estimation based on available data assuming routine vaccination for 9 year olds plus 16 catch-up cohorts

<sup>(7)</sup> Coudeville L, Bourin N. Potential impact of dengue vaccination: insights from the first large-scale efficacy trials. Poster presented at 64th ASTM Annual Meeting - October 25-29, 2015, Philadelphia, Pennsylvania, USA. Poster #3234.

\* 1.6x for hospitalized cases and 3.2x for ambulatory cases

\*\* Combination of routine vaccination and mass immunization (catch up with more than 8 cohorts), together with a high vaccination coverage rate