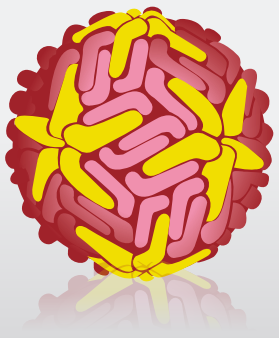
DENGUE VACCINE:
Protection from pre-adolescence to adulthood

Public health authorities recommend vaccines for a given population based on many factors including age, sex, geography, access to health care, and more. Two major factors that influence the decision on who should be vaccinated are:

THE DISEASE BURDEN IN A GIVEN AGE POPULATION:
not all age groups are at the same level of risk for a given disease;



and

THE STRENGTH OF THE POPULATION'S IMMUNE RESPONSE TO THE VACCINE:
not all age groups have the same level of immunity following vaccination

WHO GETS DENGUE?:

While dengue affects all ages, the greatest number of dengue cases are reported in the pre-adolescent to adult populations in endemic countries globally.(1)
Reasons for this are not well-understood but likely include:

- They represent a large proportion of the population in dengue endemic countries
- They are highly mobile in the community (for school, work, and social reasons)

WHAT COULD THE DENGUE VACCINE OFFER?: (2)

Vaccine efficacy: In clinical trials, in the at-risk populations of 9 to 16 years old, over a 25 month period:

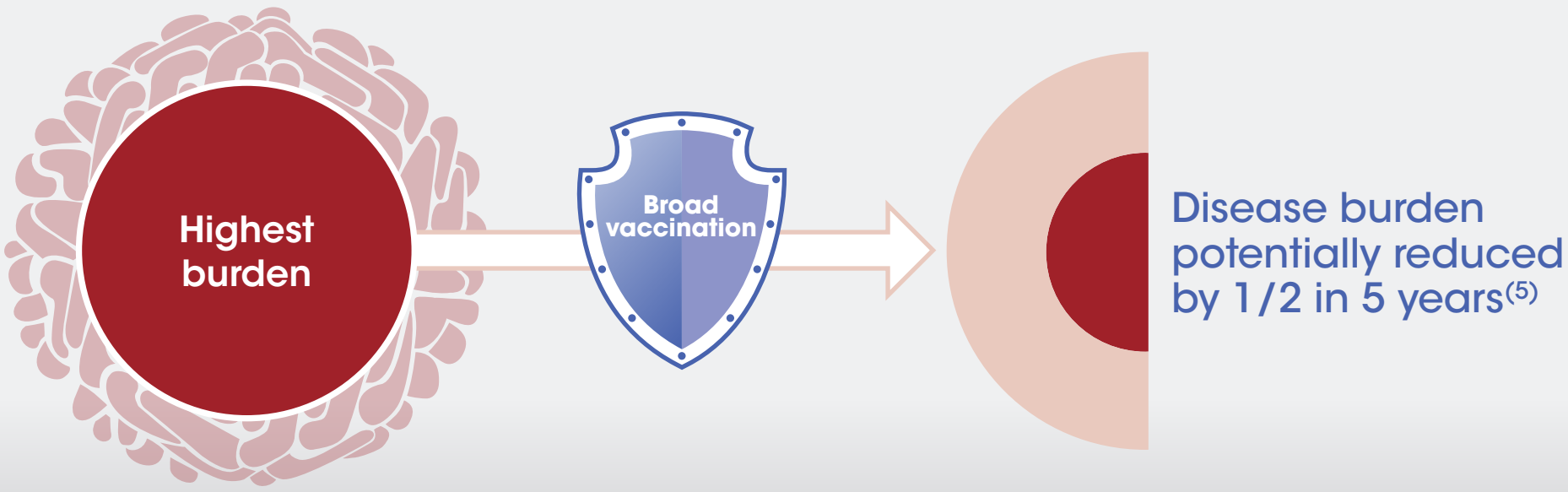
2/3 cases of dengue caused by any of the four types of the dengue virus were prevented

8/10 hospitalizations were prevented

9/10 severe forms of dengue were prevented

Estimated global human + economic burden of dengue:
96 million(3) people each year suffer from dengue, also known as «break-bone fever» due to its symptoms, including joint and muscle pain.
Up to **$9 billion in annual** direct medical and indirect costs including lost productivity and absenteeism.(4)

Disease modelling shows that broad vaccination amongst ages 9 and older in dengue endemic countries* has the potential to reduce the disease burden by **50% over 5 years**(5). In 2015 the vaccine received regulatory approval in Mexico, the Philippines and Brazil.



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

1. Jackson N. et al « Recent scientific and clinical advances in Sanofi Pasteur's Dengue Vaccine Program » presentation at ASTMH 64th Annual Meeting October 25-29, 2015. Philadelphia, Pennsylvania, USA, and abstract number 1223.
2. Hadinegoro, Sri Rezeki S., et al. « Integrated Analysis of Efficacy and Interim Long-Term Safety Data for a Dengue Vaccine in Endemic Regions.» New England Journal of Medicine, 2015; 373:1195-1206September 24, 2015DOI: 10.1056/NEJMoa1506223.
3. WHO - dengue and severe dengue, fact sheet n°117, updated february 2015. Available at: http://www.who.int/mediacentre/factsheets/fs117/en. Accessed July 2015.
4. Shepard DS, Halasa YA, Undurraga EA, Stanaway J. Global economic cost of dengue illness. Poster presented at: American Society of Tropical Medicine and Hygiene Annual Meeting; Oct. 25-29, 2015, Philadelphia, PA, Poster 781.
5. Coudeville L, Baurin N. Potential impact of dengue vaccination: insights from the first large-scale efficacy trials. Poster presented at 64th ASTMH Annual Meeting - October 25-29, 2015, Philadelphia, Pennsylvania, USA. Poster #3234

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