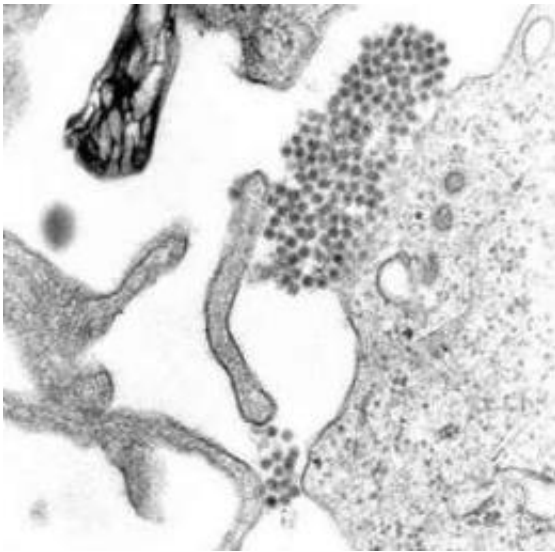


Dengue vaccine estimated to reduce disease burden in dengue-affected areas

November 29 2016



A TEM micrograph showing Dengue virus virions (the cluster of dark dots near the center). Image: CDC

The first available dengue vaccine, CYD-TDV (Dengvaxia), is estimated to reduce the burden of dengue and be potentially cost effective in settings where infections with dengue are common, according to a study published by Stefan Flasche from the London School of Hygiene & Tropical Medicine, UK and an international consortium of dengue experts, in *PLOS Medicine*.

The researchers used dynamical models informed by the results of

efficacy trials combined with assumptions on vaccine mechanisms, to estimate the impact and cost-effectiveness of CYD-TDV over a 30-y post-vaccination period in a variety of epidemiological settings. In settings with moderate to high dengue transmission intensity, i.e. where at least 50% of children get infected with dengue before they are nine years old, they estimated that a routine vaccination policy involving a three-dose schedule in 9-y-old children at 80% coverage would reduce the burden of dengue disease for the population by 6%-25% and that vaccination would be potentially cost-effective if priced competitively. However, in settings where dengue infections are uncommon, they identified a risk of potential increase in hospitalizations for dengue disease.

These findings were an important contribution to the evidence base that led the WHO to recommend countries to consider the use of CYD-TDV only in settings with a high burden of dengue disease.

The authors say: "Our results can guide countries on the general suitability of Dengvaxia introduction; however, local factors related to treatment costs, intensity of dengue transmission and age groups particularly exposed to [dengue](#) will need to be considered."

In a linked Perspective, Jacqueline Deen from the University of the Philippines, Manila, discusses challenges in balancing the individual and population risks and benefits for CYD-TDV.

More information: Flasche S, Jit M, Rodríguez-Barraquer I, Coudeville L, Recker M, Koelle K, et al. (2016) The Long-Term Safety, Public Health Impact, and Cost-Effectiveness of Routine Vaccination with a Recombinant, Live-Attenuated Dengue Vaccine (Dengvaxia): A Model Comparison Study. *PLoS Med* 13(11): e1002181. [DOI: 10.1371/journal.pmed.1002181](https://doi.org/10.1371/journal.pmed.1002181)

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