A Position Statement from the
PHILIPPINE PEDIATRIC SOCIETY and PEDIATRIC INFECTIOUS DISEASE SOCIETY OF THE PHILIPPINES
on the Dengue Vaccine

In July 15, 2019, the Philippine Department of Health (DOH) has declared a National Dengue Alert with a total of 106,630 dengue cases nationwide from January 1 to June 29, 2019, which is 85% higher compared to the same period in 2018. To date, a total of 491 deaths due to dengue has been reported by DOH.

The WHO has set objectives to reduce the burden of dengue by 2020. These objectives include reducing dengue mortality by >50% by 2020, reducing dengue morbidity by ≥25% by 2020, and estimating the true burden of disease by 2015. In order to achieve these objectives, there are five (5) technical elements that focus on diagnosis and case management, surveillance and outbreak preparedness, sustainable vector control, future vaccine implementation, and basic operational and implementational research.

There is no specific antiviral treatment for dengue and clinical management is mainly based on supportive therapy. Prompt diagnosis and early detection plays a vital role in its management. Prior to the licensure of the first dengue vaccine, the only approach to control and prevention was intervention through vector control.

The first licensed live attenuated recombinant dengue vaccine was approved for use in the Philippines by the FDA on December 22, 2015; following the approval in Mexico on December 08, 2015. It was subsequently licensed in Brazil on December 28, 2015. However, the Philippine Food and Drug Authority (FDA), for reasons not related to safety issues, decided to revoke the vaccine's license through a legal order signed by Director General Puno on December 21, 2018.

Results of two large scale Phase III studies (CYD 14 and 15) consisting of more than 30,000 participants showed that the vaccine reduced symptomatic dengue disease by 65.6%, reduced hospitalization by 80.8 % and a 93.2% reduction in cases of severe dengue during the first 25 months in participants 9-16 years old. WHO, in 2018, stated that overall, the number of severe* cases prevented in those who had evidence of prior dengue infection or tested positive with dengue antibody, was substantially greater than the additional cases that occurred in those who tested negative.

Only one out of 4 patients who get dengue will be symptomatic. Majority of cases are asymptomatic.

In its September 2018 Position Paper on the Dengue vaccine, the WHO has acknowledged the public health role of the dengue vaccine and its protective benefit in seropositive individuals (those who tested positive for dengue antibody) against subsequent dengue infection, but that it carries an increased risk of severe dengue in those who experience their first natural dengue infection after vaccination for individuals who have not had dengue infection or tested negative for dengue antibody.

In order to maximize the public health impact and minimize risk with dengue vaccination, the WHO has recommended two main approaches for countries considering vaccination as part of dengue control programme:

1. Preferred Approach: Pre-vaccination Screening
    - Do serological screening prior to vaccination
    - Dengue IgG ELISA could potentially be used for screening
    - Currently available Rapid Diagnostic Tests could be considered in high transmission settings.

    With this strategy, only persons with evidence of a past dengue infection would be vaccinated (based on an antibody test, or on a documented laboratory confirmed dengue infection in the past).

2. Alternative Approach: Population Seroprevalence without Pre-vaccination Screening
    - Subnational or national mass vaccination strategy in areas of high transmission intensity (seroprevalence ≥ 80% in individuals from 9 years of age)
    - Population surveys to identify areas with high seroprevalence where public impact is maximized and harm minimized
    - Mass vaccination in identified high seroprevalence areas without serological screening

According to the study by L'Azou et al, dengue seroprevalence in the Philippines was at 89% by the age of 9 years old. Furthermore, a systematic review done by Agrupis et al. in 2019 showed that current incidence and seroprevalence data confirm the high endemicity of dengue infections in the country resulting to a heavy socio-economic burden.

As of June 2019, the dengue vaccine has been approved in 20 countries (including the US) plus Europe. The vaccine has also been added into the WHO List of Essential Medicine** in July 2019, which further attests to the benefit and value of the vaccine.

The vaccine however, is not used nor indicated for outbreak response. The vaccine has been shown to be efficacious for those who had dengue and tested positive for dengue antibody. However, the availability of the vaccine will help individuals who had previous dengue infection from getting severe disease. The vaccine can be made available to those who are interested and are known to have had the infection or are documented to be positive for dengue antibody. Physicians and caregivers must inform recipients about the benefits and possible risks of the vaccine so that informed decisions can be made.

The vaccine will be of benefit to the Filipino population when used appropriately.

* “Severe dengue” in the clinical trials and in the WHO position paper refers to Virologically Confirmed Dengue Fever PLUS any of the following:

1. Low platelet count (less than 100,00))
2. Shock (pulse pressure ≤20mmHg in child; low BP with increased Heart rate, weak pulse)
3. Bleeding that requires blood transfusion
4. Organ impairment (neurologic, renal, hepatic or cardiac)

** The core list presents a list of minimum medicine needs for a basic health-care system, listing the most efficacious, safe and cost–effective medicines for priority conditions. Priority conditions are selected on the basis of current and estimated future public health relevance, and potential for safe and cost-effective treatment.

REFERENCES

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