



PCP Breaking News

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PSMID OFFICIAL STATEMENT ON JAPANESE ENCEPHALITIS VACCINATION

Japanese encephalitis (JE) is a vector-borne viral disease. JEV is the leading cause of viral encephalitis in Asia. It is estimated that 67,900 severe clinical cases of JE occur annually despite widespread availability of vaccine, causing about 13K-20K deaths. Most JEV infections are asymptomatic, and severe disease is estimated to occur in about 1 per 250 JEV infections. It can occur at all ages.¹

Existing epidemiological data from the Philippines indicate that JE is endemic with a year-round transmission with peak season from July to September.² The Department of Health, Epidemiology Bureau recorded a decrease of 61% confirmed JE cases from January 1-August 12, 2017 compared to the same period in 2016 (85 cases vs 218 cases) respectively.³

1. What is the role of vaccination against Japanese encephalitis?

- JEV is the most common vaccine-preventable cause of encephalitis in Asia and vaccination is the most effective strategy to prevent and control JE.¹
- According to WHO, JE vaccination should be integrated into national immunization schedules in all areas where JE is recognized as a public health priority. Even if the number of JE-confirmed cases is low, vaccination should be considered where there is a suitable environment for Japanese Encephalitis virus (JEV) transmission such as the presence of animal reservoirs, ecological conditions supportive of virus transmission, and proximity to other countries or regions with known JEV transmission.¹
- JEV is responsible for 7.4% to 40% of acute meningitis-encephalitis syndrome (AMES) and it affects predominantly children < 15 years old. Fifteen percent (15%) of cases in adults had a case fatality ratio 8.1% to 15.3%.
- Aside from vector control, surveillance and clinical management, vaccination is recommended as part of a comprehensive JEV prevention and control strategy.

2. What are the recommended vaccines to prevent JE?

- Four broad classes of JE vaccines are currently in use, namely, inactivated Vero cell-derived vaccines, live attenuated vaccine, live recombinant vaccines and inactivated mouse brain-derived vaccines.¹
- In the Philippines, the only vaccine available and approved by the FDA against JE is the Japanese encephalitis live attenuated recombinant, chimeric vaccine (JE-CV).
- The age indications are children 9 months and above, including adults, to be given through the subcutaneous route.



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3. How effective is the JE vaccine?
- In a randomized controlled phase 3 immunogenicity study, seroconversion after a single JE-CV vaccination was **99.1%** and induced a rapid immune response with **93.6%** of the participants developing protective neutralizing antibodies to JEV as early as 14 days post-vaccination, underlining the potent immunogenicity of this live attenuated flaviviral vaccine.⁴
 - In a randomized, double-blind, five-year phase II study in healthy adults, live attenuated JE-CV provides **84% of sero-protection** 5 years after injection with just a single dose.⁵
 - In a modeling data analysis, one dose of the live attenuated Japanese encephalitis chimeric virus vaccine confers to most adults a high level of protection for at least 10 years.⁶
4. How safe is the JE vaccine in adults?
- The vaccine is safe with an acceptable safety profile and tolerability.
 - Treatment related AEs in a randomized controlled trial of JE-CV (n = 1601) 52% versus placebo 50% (n=403). The most common adverse events were injection site reaction (12.4%), fatigue (22.8%), headache (26%), myalgia (16.6%), respiratory and gastrointestinal. There was no significant difference in the incidence of injection site reactions between live attenuated JE-CV and placebo groups in this study.³
5. Who should be considered for vaccination against JE?
- JE-CV is recommended **for individuals aged 9 months and older, to be given subcutaneously as a single dose.**
 - For travelers going to areas endemic with JE, as specified below, the vaccine is recommended.
 - Bangladesh, Bhutan, Brunei, Burma, Cambodia, China, India, Indonesia, Japan, Korea, Laos, Malaysia, Nepal, Papua New Guinea, Singapore, Taiwan, Thailand, Timor Leste, Vietnam⁶
 - The vaccine is recommended in the following schedule and dose:
 - Children 9 months up to 17 years old, as a single primary dose then followed by a booster dose at 12-24 months after the primary dose
 - For immunocompetent adults, as single primary dose with no booster dose needed
 - For those who wish to be protected, vaccine can be given at any time if without contraindications
6. Is the JEV vaccine recommended during outbreaks?
- The *vaccine is not an effective strategy in reducing cases during an outbreak* because the primary prevention strategy is vector control.
 - According to WHO, the **value of reactive vaccination campaigns** during outbreaks of JE has not been studied in countries where JE vaccination has not been introduced, thus an assessment needs to be made of whether it is appropriate to implement an immediate vaccine response, including considerations such as size of the outbreak, timeliness of the response, population affected, and programmatic capacity.¹

References:

1. Japanese Encephalitis Vaccines: WHO position paper, February 2015. Weekly Epidemiol Rec 2015;90(9):69-88.
2. Lopez AL. et.al. Epidemiology of Japanese Encephalitis in the Philippines: A Systematic Review. PLOS Neglected Tropical Diseases. DOI: 10.1371/journal.pntd.0003630. March 20, 2015
3. Department of Health, Epidemiology Bureau Weekly Surveillance Report. Retrieved from <http://www.doh.gov.ph/statistics>
4. Torresi et al. Immunogenicity, safety and tolerability in adults of a new single-dose, live-attenuated vaccine against Japanese encephalitis: randomized controlled phase 3 trials. Vaccine. 2010; 28:7993–8000
5. Nasveld P. Long-term immunity's to live attenuated Japanese encephalitis chimeric virus vaccine Randomized, double-blind, five-year phase II study in healthy adults. Human Vaccines. December 2010; 6 (12): 1038-1046
6. Desai K et al. Modelling the long-term persistence of neutralizing antibody in adults after one dose of live attenuated Japanese encephalitis chimeric virus vaccine. Vaccine. 2012; 30:2510– 2515
7. Heffelfinger JD, Li X, Batmunkh N, et al. Japanese Encephalitis Surveillance and Immunization – Asia and Western Pacific Regions 2016. MMWR Morb Mortal Weekly Rep 2017; 66(22):579-583.



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