

Japanese Encephalitis Vaccine Introduction in Cambodia

Japanese encephalitis (JE) is a severe disease that causes encephalitis, or infection of the brain. Up to 30 percent of people infected with JE die as a result of the infection, while another 40 percent are left with permanent disability including paralysis, mental retardation, recurrent seizures, or personality changes. The disease is endemic in parts of the Western Pacific and Asia, including Cambodia, where research confirmed JE accounted for 30 percent of identified Meningoencephalitis between 1994 and 2005.

Hosted by pigs and wading birds, the virus is transmitted by mosquitoes and most commonly affects children under 15 years of age living in poor, rural communities. There is no specific treatment for JE, so the only way to effectively control the disease is through vaccination.

Tracking the disease and its impact

Strong and reliable surveillance systems are crucial to understanding the burden of JE disease and informing immunization strategies. The World Health Organization (WHO) recommends the introduction of JE sentinel surveillance systems to document the epidemiology of JE, assess disease burden, and monitor disease impact.



Photo: PATH

Since a child with acute encephalitis usually requires immediate hospitalization, the Communicable Disease Control Department (CDC), in collaboration with the National Institute of Public Health (NIPH), National Immunization Program (NIP), Pasteur Institute, WHO, and PATH, identified six hospital sites where laboratory capacity was developed for launching sentinel surveillance. The surveillance, conducted from June 2006 to May 2008, revealed that almost all JE cases (95 percent) were children up to 12 years of age, with about half (48 percent) being 5 years of age and under. Furthermore, the findings indicated that JE is a year-round disease risk that exists nationwide.

In 2007, PATH also collaborated with CDC and Cambodian Ministry of Health to conduct a disability assessment of children with JE who were identified through the first year of sentinel surveillance. The assessment found that almost one in four infected individuals had either died or had sequelae severe enough to affect their ability to lead normal, independent lives.

A preventable disease

PATH is working toward a world where innovation ensures that health, is within reach for everyone. As part of its global Japanese encephalitis (JE) project funded by the Bill & Melinda Gates Foundation, PATH began collaborating with the National Immunization Program at the Cambodian Ministry of Health in 2000 to acquire the needed information and resources for building a JE immunization program that covers even the most remote villages in the country.

PATH supported sentinel surveillance and a disability assessment of JE disease burden in Cambodia, as well as a cost-effectiveness analysis of launching the vaccine, to determine the need for an immunization program in the country. The results of this research revealed JE as a prevalent health risk and led to the introduction of a JE immunization program in 2009.

As the Ministry of Health continues to advance its strategy for JE disease control, PATH remains committed to assisting the Cambodian government in identifying and implementing additional lifesaving immunization programs throughout the country.

These two studies confirmed JE as endemic and serious in Cambodia, and opened policy discussions around improving quality of care, educating the public, and introducing a vaccine to ensure protection for Cambodian children at greatest risk.

Choosing a vaccine

A live, attenuated JE vaccine made in China was identified by NIP for its potential immunization strategy. Known as the SA 14-14-2 vaccine, it only requires one dose, has few side effects, is affordable, and has a 20-year proven record of safety and efficacy.

CDC, in collaboration with NIPH, NIP and PATH, conducted a cost-effectiveness analysis, which compared the cost and health consequences of introducing the JE vaccine with those of not introducing the vaccine. The results indicated that immunization with the SA 14-14-2 vaccine would be a highly cost-effective intervention in Cambodia.



Photo: PATH

Vaccine introduction

Findings from the cost-effectiveness analysis, the sentinel surveillance, and the disability assessment prompted NIP to develop, with PATH support, a JE vaccine introduction strategy and plan. A one-day training course was outlined in the plan to provide crucial information to medical staff. Information includes key facts

about JE, operational guidelines for proper administration of JE vaccine, and steps for responding to, and reporting, adverse events.

On October 9, 2009, following the roll-out of the training, the government of Cambodia initiated routine immunization against JE for children aged 10 months to 25 months in three provinces—Kampong Cham, Svay Rieng, and Takeo. Preliminary reports also indicate that a byproduct of the introduction of JE vaccine has been a corresponding increase in measles vaccination rates, as children are required to have received measles vaccine before they are given JE vaccine.

By September of 2010, more than 50,000 children from the three provinces had received protection against the JE virus, with many more planned to receive protection in coming years.



Photo: PATH

Up to 30 percent of people infected with JE die as a result of the infection, while another 40 percent are left with permanent disability including paralysis, mental retardation, recurrent seizures, or personality change. JE vaccination is the only way to prevent more unnecessary deaths and disability.

PATH is an international nonprofit organization that creates sustainable, culturally relevant solutions, enabling communities worldwide to break longstanding cycles of poor health. By collaborating with diverse public- and private-sector partners, PATH helps provide appropriate health technologies and vital strategies that change the way people think and act. PATH's work improves global health and well-being.



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