

Increasing access to a Japanese encephalitis vaccine

Japanese encephalitis (JE) is a neglected disease of the rural poor, and efforts to control its vector, the *Culex* mosquito, have been ineffective. An inactivated JE vaccine has been widely produced and used in several countries, but millions of children have remained at risk because the cost has been out of reach for public-sector programs.

Established in 2003, PATH's JE project took on the problem from several angles, establishing partnerships with public and private organizations at local and international levels to enhance disease surveillance, negotiate affordable vaccine pricing, and assist with the planning and implementation of immunization programs. Ensuring equitable access to a safe and efficacious vaccine was a primary objective.

Collaboration between PATH and Chengdu Institute of Biological Products

The answer lay in China, where an improved vaccine had protected more than 200 million children over 20 years yet had never been exported for use in public-sector programs. PATH initiated negotiations with the Chengdu Institute of Biological Products (CDIBP), and together the partners drew up an innovative strategy for increasing access to the live, attenuated SA 14-14-2 JE vaccine. The partners established a maximum public-sector price for the vaccine, eligible until 2026 for countries with less than US\$1,000 gross national income per capita.

This unique pricing mechanism has allowed for vaccine introduction in countries with meager public health resources, while CDIBP still makes a modest market return. Since 2006, India's publicly funded program has vaccinated more than 50 million children. Sri Lanka, Cambodia, and other countries are either considering or launching new JE immunization programs.



PATH/Tan Thi Huong Lien

Unique drivers of partnership diversity

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More certain

Factor

Less certain

Science is known, minimal risk of technical barrier to development

State of science

Science is speculative or not yet at proof of concept

Market is clearly defined and procurement funded

Clarity of market

Need may be clear but actual paying market may not yet exist

Single partner, simple product components and supply, single product focus

Partnership complexity

Multiple partners, complex product components and supply, product one of many in complex portfolio

The PATH–CDIBP collaboration is supporting construction of a new facility to ensure a sufficient, sustainable, and affordable vaccine supply to meet growing regional demand. Trainings at CDIBP and continued technical assistance from PATH will confirm that equipment, installation, and production meet global standards.



Drivers of a unique partnership

Several key drivers have made this partnership unique:

- **State of science:** CDIBP understood the science for making the JE vaccine because they were already manufacturing it for the domestic Chinese market. PATH helped to build the evidence base for wider use by collecting data needed for country-by-country licensure and eventually for the World Health Organization prequalification of the vaccine that many countries require.
- **Clarity of market:** The market for a low-cost JE vaccine was clear. Once the vaccine became affordable, countries in the affected region—especially India—were eager and willing to make purchase commitments.
- **Partnership complexity:** PATH and CDIBP work directly with each other, each bringing critical expertise. CDIBP is a state-owned, commercial entity, and this partnership has allowed it to meet the region's need for JE vaccines and expand its international market.



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