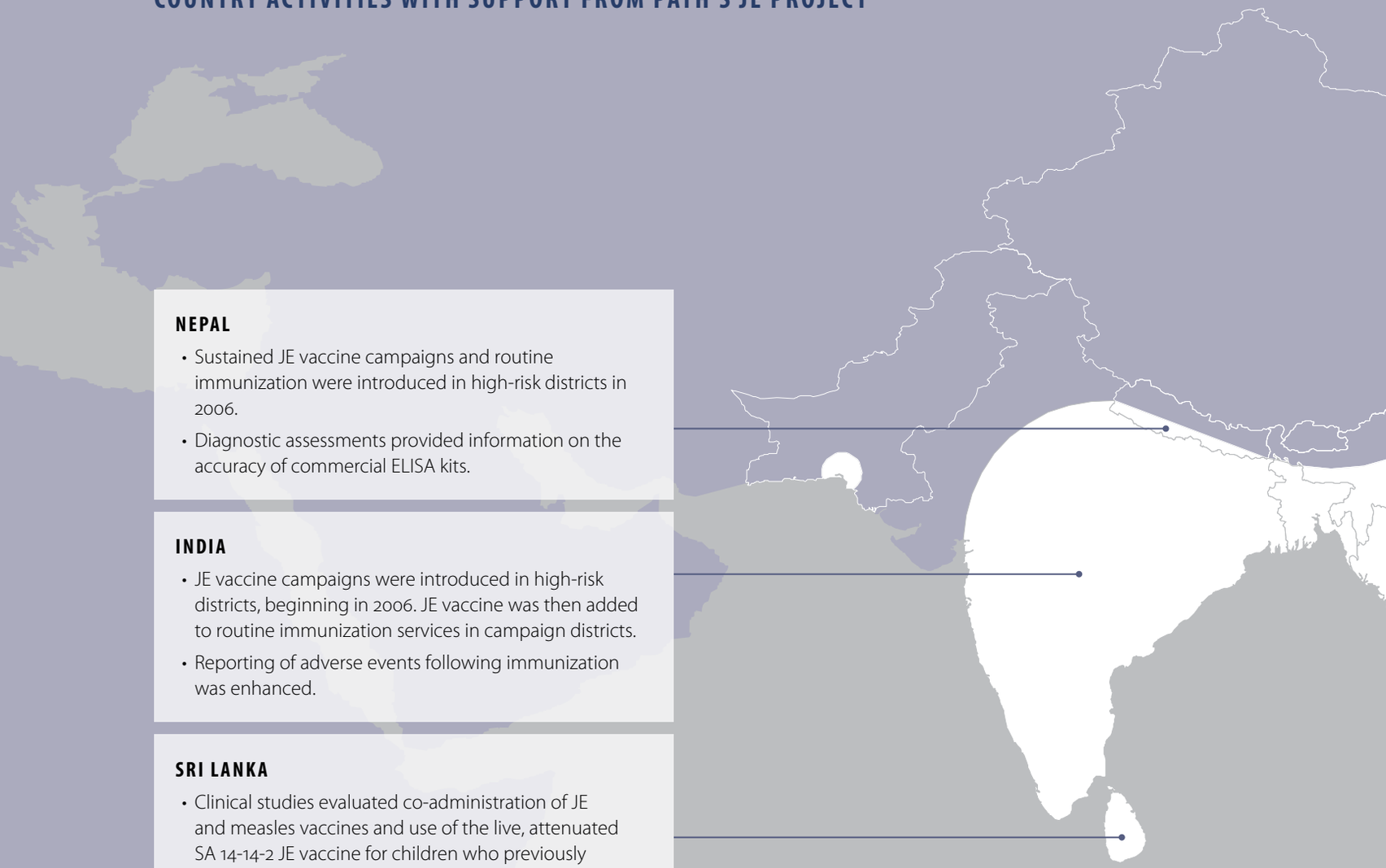
COUNTRY ACTIVITIES WITH SUPPORT FROM PATH'S JE PROJECT



NEPAL

- Sustained JE vaccine campaigns and routine immunization were introduced in high-risk districts in 2006.
- Diagnostic assessments provided information on the accuracy of commercial ELISA kits.

INDIA

- JE vaccine campaigns were introduced in high-risk districts, beginning in 2006. JE vaccine was then added to routine immunization services in campaign districts.
- Reporting of adverse events following immunization was enhanced.

SRI LANKA

- Clinical studies evaluated co-administration of JE and measles vaccines and use of the live, attenuated SA 14-14-2 JE vaccine for children who previously received doses of the inactivated vaccine.
- After reviewing preliminary study results, the Government of Sri Lanka transitioned from the inactivated vaccine to the SA 14-14-2 vaccine in 2009.

COUNTRY PARTNERS

Cambodia: Department of Communicable Disease Control, National Institute of Public Health, National Immunization Program

China: Center for Disease Control, Chengdu Institute of Biological Products, China National Biotec Group

India: Indian Council on Medical Research, Ministry of Health & Family Welfare, National Vector-borne Disease Control Programme, National Institute of Virology

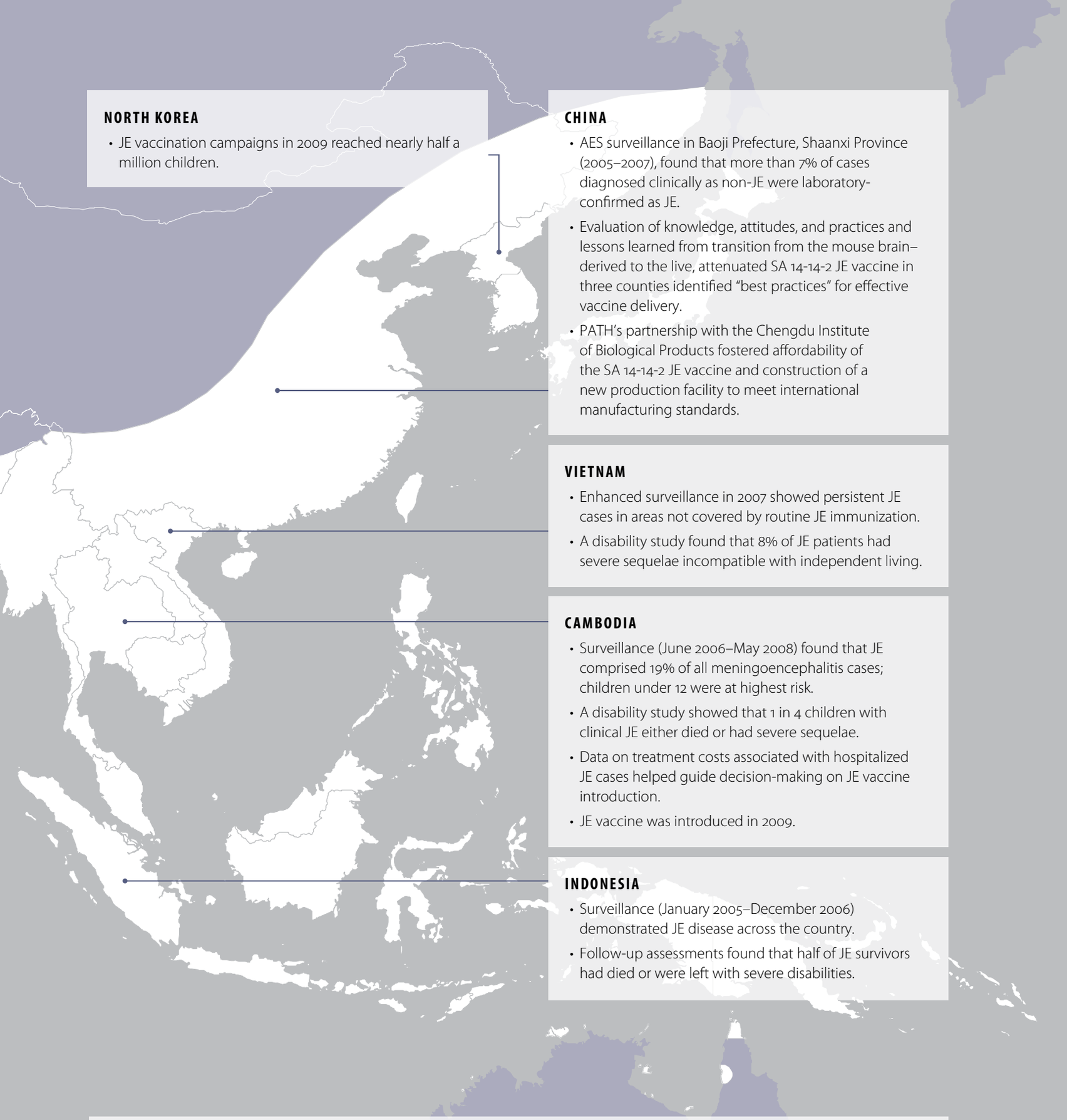
Indonesia: Center of Biomedical and Pharmaceutical Research and Development, National Institute of Health Research and Development

Nepal: Ministry of Health and Population

North Korea: Democratic People's Republic of Korea Ministry of Health, Academy of Medical Sciences

Sri Lanka: Ministry of Healthcare & Nutrition, Epidemiology Unit

Vietnam: National Institute of Hygiene and Epidemiology, National Expanded Programme on Immunization



NORTH KOREA

- JE vaccination campaigns in 2009 reached nearly half a million children.

CHINA

- AES surveillance in Baoji Prefecture, Shaanxi Province (2005–2007), found that more than 7% of cases diagnosed clinically as non-JE were laboratory-confirmed as JE.
- Evaluation of knowledge, attitudes, and practices and lessons learned from transition from the mouse brain–derived to the live, attenuated SA 14-14-2 JE vaccine in three counties identified "best practices" for effective vaccine delivery.
- PATH's partnership with the Chengdu Institute of Biological Products fostered affordability of the SA 14-14-2 JE vaccine and construction of a new production facility to meet international manufacturing standards.

VIETNAM

- Enhanced surveillance in 2007 showed persistent JE cases in areas not covered by routine JE immunization.
- A disability study found that 8% of JE patients had severe sequelae incompatible with independent living.

CAMBODIA

- Surveillance (June 2006–May 2008) found that JE comprised 19% of all meningoencephalitis cases; children under 12 were at highest risk.
- A disability study showed that 1 in 4 children with clinical JE either died or had severe sequelae.
- Data on treatment costs associated with hospitalized JE cases helped guide decision-making on JE vaccine introduction.
- JE vaccine was introduced in 2009.

INDONESIA

- Surveillance (January 2005–December 2006) demonstrated JE disease across the country.
- Follow-up assessments found that half of JE survivors had died or were left with severe disabilities.

The JE project also supported WHO regional offices for JE surveillance in the following countries:

- Bangladesh
- Bhutan
- Cambodia
- China
- India
- Laos
- Nepal
- Papua New Guinea
- Philippines
- Timor L'este
- Vietnam

Source: US Centers for Disease Control and Prevention

REFERENCES

1 World Health Organization (WHO). Japanese encephalitis vaccines. *Weekly Epidemiological Record*. 2006;81(34/35):331–340.

2 Halstead SB, Jacobson J. In: Chambers T, Monath T, eds. *The Flaviviruses: Detection, Diagnosis and Vaccine Development*, San Diego: Elsevier Academic Press; 2003:103–131.

3 Maha MS, Moniaga VA, Hills SL, et al. Outcome and extent of disability following Japanese encephalitis in Indonesian children. *International Journal of Infectious Diseases*. 2009;13(6):e389–93.

4 Cuong N. Japanese encephalitis surveillance in Vietnam. Presented at: 4th Biregional Meeting on the Control of Japanese Encephalitis, 8–9 June 2009; Bangkok, Thailand.

5 Sarath S. JE vaccine introduction plan in Cambodia. Presented at: 4th Biregional Meeting on the Control of Japanese Encephalitis, 8–9 June 2009; Bangkok, Thailand.

6 WHO. *WHO-Recommended Standards for Surveillance of Selected Vaccine-Preventable Diseases*. WHO/V&B/03.01. Geneva: WHO; 2008. Available at: http://www.path.org/vaccineresources/files/WHO_JE_surveillancestandards.pdf.

7 Jacobson JA, Hills SL, Winkler JL, et al. Evaluation of three immunoglobulin M antibody capture enzyme-linked immunosorbent assays for diagnosis of Japanese encephalitis. *American Journal of Tropical Medicine & Hygiene*. 2007;77(1):164–168.

8 WHO. *Meeting Report: Third Biregional Meeting on Control of Japanese Encephalitis.* RS/2007/GE/06(VTN). Manila; WHO Regional Office for the Western Pacific: 2006. Available at: http://www.wpro.who.int/NR/rdonlyres/50129D1D-E9B3-4707-A62E-0A541DBC3032/0/MTGRPT_JEBireg3.pdf.

9 University of Liverpool Brain Infections Group. *Liverpool outcome score for assessing children at follow-up.* Liverpool, UK: University of Liverpool Brain Infections Group; 2006. Available at: http://www.path.org/vaccineresources/details.php?i=677.

10 Cambodia Ministry of Health, PATH. *Report on the Japanese encephalitis disability assessment.* Phnom Penh, Cambodia: Ministry of Health; 2008.

11 Suraratdecha C, Jacobson J, Sivalenka S, Nahrahari D. A cost-effectiveness analysis of strategies for controlling Japanese encephalitis in Andhra Pradesh, India. *Journal of Pharmaceutical Finance, Economics & Policy*. 2006;15(1):21–40.

12 Benli Z, Min Z, Pinquan C, et al. An 11 year follow-up of epidemiological effect Japanese encephalitis vaccine, live (SA14-14-2). *Chinese Journal of Biologicals*. 2001;14(3).

13 WHO. Global Advisory Committee on Vaccine Safety, 12–13 December 2007. *Weekly Epidemiological Record*. 2008;83(4):37–44.

14 Yaïch M. Results from recent clinical studies. Presented at: 4th Biregional Meeting on the Control of Japanese Encephalitis, 8–9 June 2009; Bangkok, Thailand.

15 Yaïch M. Japanese encephalitis vaccines. Presented at: International Center for Diarrhoeal Disease Research 12th Annual Scientific Congress, February 10–12, 2009; Dhaka, Bangladesh.

16 Wijesinghe PR. Transition from mouse-brain derived vaccine to SA 14-14-2. Presented at: 4th Biregional Meeting on the Control of Japanese Encephalitis, 8–9 June 2009; Bangkok, Thailand.

17 New vaccine strategy prioritises deadly diseases. [press release]. Geneva: GAVI Alliance; June 25, 2008. Available at: http://www.gavialliance.org/media_centre/press_releases/2008_06_25_en_pr_NVI_strategy_7_diseases.php.

18 PATH, AFRIMS, Biken, et al. *Japanese encephalitis morbidity, mortality, and disability: reduction and control by 2015*. Seattle: PATH; 2009. Available at: http://www.path.org/vaccineresources/details.php?i=816.

About PATH

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.

For more information, please visit www.path.org.

Suggested citation: PATH. *PATH's Japanese Encephalitis Project: Collaboration and Commitment to Protect Asia's Children.* Seattle: PATH; 2009.

December 2009

STREET ADDRESS
2201 Westlake Avenue, Suite 200
Seattle, WA 98121, USA

MAILING ADDRESS
PO Box 900922
Seattle, WA 98109, USA

www.path.org
Tel: 206.285.3500
Fax: 206.285.6619