Hope for less than 50 cents a dose

A revolutionary model for developing low-cost vaccines

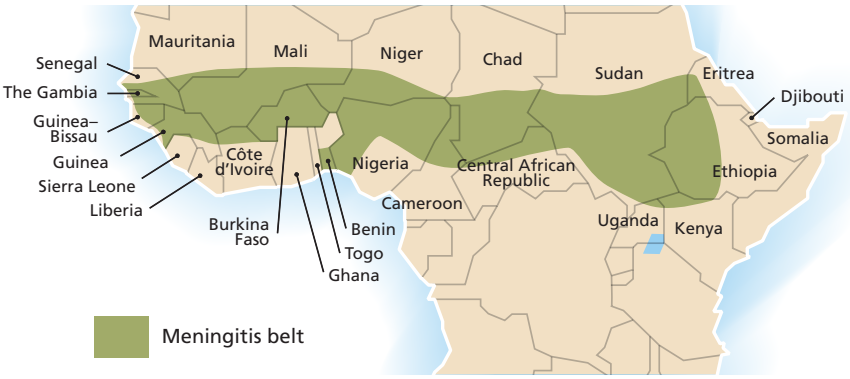
For more than a century, meningococcal meningitis has swept across sub-Saharan Africa, killing thousands and disabling many more in each epidemic wave. But now, there is hope. With the commitment of health officials in key African countries, the Meningitis Vaccine Project (MVP), a groundbreaking partnership between PATH and the World Health Organization, has succeeded in fostering the development of a safe, affordable, and long-lasting vaccine with the potential to end Group A meningococcal epidemics.

The vaccine, called MenAfriVac™, achieves a number of firsts: it is the first vaccine designed specifically for Africa and the first introduced in Africa before any other continent. Most important, the vaccine makes it possible for families to live without fear that a meningitis epidemic will take their children and destroy lives.

The hope of this vaccine is becoming a reality. In December 2010, some 20 million children and young adults in Burkina Faso, Mali, and Niger received MenAfriVac™ in a massive immunization campaign. Initial data show there were no cases of the disease in the more than 11 million people vaccinated in Burkina Faso.

The development of MenAfriVac™ cost less than a tenth of the $500 million usually required to manufacture and bring a new vaccine to market and, thanks to the commitment of a pharmaceutical company in India, is produced at the affordable price of less than US$0.50 a dose. If introduced in all meningitis belt countries (see map below), the vaccine could prevent more than 1 million cases of illness and free up as much as US$300 million over the next ten years—funds that can be applied to other problems of disease and poverty in the region.

The vaccine and immunization campaign were made possible through MVP's partnership model, which brought together public and private entities with expertise in pharmaceutical development, vaccine manufacturing, clinical and laboratory work, and other areas. This innovative model offers hope for the development of more affordable vaccines for the developing world and even more young lives saved.



PATH/Gabe Bienczycki

Africa's meningitis and the "rains of hope"

More than 90 percent of meningitis epidemics in Africa are caused by meningococcal A meningitis, which mainly attacks infants, children, and young adults. Even with timely antibiotics, one in ten infected people die within two days of their first symptoms. One in four survivors is left with disabilities such as hearing loss, mental retardation, seizures, paralysis, or infection that requires limb amputation. Without antibiotic treatment, up to 80 percent of infected people die, often within hours.

The disease spreads during the November to June dry season. It taxes health clinics, shuts down commerce, and confines families to their homes to wait out the epidemic wave. It is not until the first rains come—what the mothers of sub-Saharan Africa call the "rains of hope"—that the epidemics cease and society can return to normal.

CONTRIBUTING PARTNERS

US government partners

National Institutes of Health (NIH) *www.nih.gov*
The NIH licensed the conjugation technology to Serum Institute of India Limited at low cost.

United States Agency for International Development (USAID) *www.usaid.gov*
USAID contributed roughly $1.2 million for project activities. The funding supported a comprehensive analysis of the economic costs of meningitis epidemics. In addition, USAID supported consultants' work to improve meningitis surveillance and address regulatory issues, and provided funding to improve Indian regulatory infrastructure at the Drugs Controller General of India.

United States Centers for Disease Control and Prevention (CDC) *www.cdc.gov*
The CDC has been an active participant in sub-Saharan meningococcal meningitis epidemiologic and vaccine studies for 25 years. The CDC developed and performed serological assays to evaluate immune antibody responses induced by the immunization of participants in the clinical studies of MenAfriVac™.

United States Food and Drug Administration (FDA) *www.fda.gov*
The FDA developed a conjugation method that was successfully transferred to the Serum Institute of India Limited.

Private-sector partners and other donors

Bill & Melinda Gates Foundation *www.gatesfoundation.org*
The Bill & Melinda Gates Foundation was a core funder of this project at $87 million (2001–2013).

Michael & Susan Dell Foundation *www.msdf.org*
The Michael & Susan Dell Foundation provided a $4 million grant to improve vaccine delivery infrastructure in Burkina Faso and purchase 5 million doses of MenAfriVac™.

Serum Institute of India Limited (SIIL) *www.seruminstitute.com*
SIIL is the manufacturer of the vaccine. SIIL's acceptance of technology transfer and willingness to sell the vaccine for less than $0.50 per dose were determining factors in its selection.

Multilateral institutions and nongovernmental organizations

World Health Organization (WHO) *www.who.int*
WHO provided overall project guidance and technical advice, coordinated clinical development of the vaccine, supported enhanced disease surveillance in target countries, and assisted countries in preparatory activities for vaccine introduction.

PATH *www.path.org*
PATH provided overall project management and contributed its expertise in business development, vaccine development, and vaccine testing. PATH identified the commercial partners for vaccine development and manufacturing, negotiated agreements, and led the pharmaceutical, clinical, and regulatory development work that resulted in the licensing and prequalification of MenAfriVac™.

GAVI Alliance *www.gavialliance.org*
The GAVI Alliance provided $29.5 million for the introduction of MenAfriVac™ in Burkina Faso, Mali, and Niger, which covered vaccine purchase, planning, equipment, mass campaigns, training, and evaluation. In early 2011, GAVI committed an additional $100 million for the introduction of MenAfriVac™ in Cameroon, Chad, and Nigeria. The funding represents vaccines and about half of operational costs.

United Nations Children's Fund (UNICEF) *www.unicef.org*
UNICEF is procuring and supplying the new vaccine. In addition, UNICEF has engaged in social mobilization and has conducted advocacy and training for community workers while securing the support of traditional and religious leaders, thereby helping to ensure vaccine acceptance and higher rates of immunization.


World Health Organization

The role of US support

The United States government played a critical role in making MenAfriVac™ a lifesaving reality. While the Meningitis Vaccine Project is funded by the Bill & Melinda Gates Foundation, the vaccine received significant funding from the United States Agency for International Development. MenAfriVac™ also benefitted greatly from the technical expertise of the Food and Drug Administration's Center for Biologics Evaluation & Research, a technology transfer from the National Institutes of Health to the vaccine's manufacturer, and surveillance activities undertaken by the US Centers for Disease Control and Prevention.

PATH
A catalyst for global health

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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