Accelerating new vaccine development against pneumonia and other pneumococcal diseases

Advancing vaccines against the leading cause of childhood deaths

Pneumonia is the leading cause of death in children less than five years old worldwide. Each year, more than 1.3 million children die from pneumonia, mostly in the developing world. *Streptococcus pneumoniae* (pneumococcus), the bacterium that is the most common cause of severe pneumonia, kills approximately half a million of these children annually. Pneumococcus also causes sepsis (blood infection) and meningitis (brain infection), which kill and disable children worldwide, and is one of the leading causes of bacterial otitis media (middle ear infection). Vaccines are a critical strategy for protecting children from these debilitating and deadly diseases.

Pneumococcus has more than 90 serotypes, which vary by region. Current pneumococcal conjugate vaccines are effective against the specific serotypes included in the vaccines, but do not protect against all pneumococcal serotypes. Furthermore, they are complicated and relatively expensive to produce, which makes affording them without assistance difficult for poorer countries in urgent need. With the help of the GAVI Alliance, the Advance Market Commitment funding mechanism, and other international donors, current pneumococcal vaccines are in the process of being rolled out in low-income countries. However, new vaccines are also needed that are inherently more affordable and that provide either focused protection for children against serotypes prevalent in the developing world or broad protection across all types of pneumococcus.

WORKING TO PROVIDE WIDESPREAD PROTECTION

PATH is pursuing a number of approaches to develop pneumococcal vaccines that will be effective and affordable in the countries that most urgently need them. The pneumococcal vaccine project at PATH partners with scientists and manufacturers to advance research and development toward preventing this childhood disease.

PATH/Siri Wood

We are working from initial discovery through clinical trials to shorten the timeline for developing vaccines to serve the world's most vulnerable children.

One approach that holds particular promise is the development of "common protein" vaccines. Vaccines containing proteins that are common to all pneumococcus serotypes could provide broad protection to children worldwide. PATH is also partnering to develop an inactivated whole cell vaccine against pneumococcus that could provide affordable and broad protection for children. Other collaborations include exploring the potential of new conjugate technologies that would more efficiently attach the antigen—the protective component—to "carrier proteins" in order to target coverage of strains that are most prevalent in low-resource countries and to reduce the cost compared with the currently available vaccines. Finally, PATH is supporting the advancement of innovative pneumococcal vaccines that combine protein and conjugate technologies.

PATH collaborates with partners such as vaccine manufacturers, academic and research institutions, the World Health Organization, the GAVI Alliance, the Pneumococcal Awareness Council of Experts, the Global Coalition Against Child Pneumonia, and the US Centers for Disease Control and Prevention. Through public-private partnerships, PATH is accelerating the development of safe, effective, and affordable pneumococcal vaccines to protect children worldwide.

PATH/Willow Gerber

PATH
A catalyst for global health

PATH is an international nonprofit organization that transforms global health through innovation. We take an entrepreneurial approach to developing and delivering high-impact, low-cost solutions, from lifesaving vaccines and devices to collaborative programs with communities. Through our work in more than 70 countries, PATH and our partners empower people to achieve their full potential.

MAILING ADDRESS
PO Box 900922
Seattle, WA 98109 USA

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

info@path.org
www.path.org
sites.path.org/vaccinedevelopment

August 2013