MedicalXpress

Accelerating access to lifesaving rotavirus vaccines will save more than 2.4 million lives

April 24 2012

Rotavirus vaccines offer the best hope for preventing severe rotavirus disease and the deadly dehydrating diarrhea that it causes, particularly in low-resource settings where treatment for rotavirus infection is limited or unavailable, according to studies published in the April 2012 special supplement to the journal *Vaccine*. The special supplement, "Rotavirus Vaccines for Children in Developing Countries," summarizes data on the performance of rotavirus vaccines to help maximize their impact in developing countries and adds to the growing body of evidence demonstrating that rotavirus vaccines are a safe, proven, cost-effective intervention that save children's lives.

Diarrhea is one of the top two killers of children under five years of age worldwide, and rotavirus is the leading cause of severe and fatal diarrhea in infants and young children. Each year, rotavirus causes more than 450,000 deaths in children under five and is responsible for millions of hospitalizations and clinic visits. Ninety-five percent of rotavirus deaths occur in developing countries in Africa and Asia, which are eligible for GAVI Alliance support to introduce rotavirus vaccines.

"Swift and significant declines in hospitalization and deaths due to rotavirus and all causes of diarrhea have been observed in many of the 30 countries that have introduced rotavirus vaccines into their national immunization programs to date," said Dr. Umesh Parashar, co-editor of the supplement and Lead, Viral Gastroenteritis Epidemiology Team, National Center for Immunization and Respiratory Diseases, US Centers for Disease Control and Prevention CDC. "These important studies

provide critical insights on factors that contribute to varying efficacy of rotavirus vaccines in different populations and will help guide future research and vaccine development efforts."

Highlights of the findings in "Rotavirus Vaccines for Children in Developing Countries" include:

- Rotavirus vaccines are highly cost-effective and are projected to substantially reduce child deaths. In GAVI-eligible countries, where 95 percent of deaths due to rotavirus occur, more than 2.4 million child deaths can be prevented by 2030 by accelerating access to lifesaving rotavirus vaccines.
- Each year, in GAVI-eligible countries, use of rotavirus vaccines could prevent an estimated 180,000 deaths and avert 6 million clinical and hospital visits, thereby saving US$68 million annually in treatment costs.
- Rotavirus vaccines significantly reduce serious rotavirus disease and save lives in rural settings, where children often die from rotavirus infection because access to lifesaving rehydration treatment for severe rotavirus-related diarrhea is limited or unavailable.
- Although during the clinical trials, rotavirus vaccine efficacy was lower in developing countries than in the US and Europe, developing country populations stand to experience the greatest overall public health benefit from the introduction of rotavirus vaccines due to their extremely high rates of severe rotavirus disease and death.

"The death toll from rotavirus infections in the developing world is enormous, and this is where these vaccines will make the most significant impact, not only in lives saved, but also in terms of healthy lives lived," said Dr. Seth Berkley, Chief Executive Officer at the GAVI

Alliance. "This data highlights that rotavirus vaccines are a cost-effective, public health investment. Working with our industry partners, GAVI recently secured a new low price of US$2.50 a dose for rotavirus vaccines, which allows the Alliance to respond to developing-country demand for this lifesaving intervention. GAVI plans to roll out the vaccines in more than 40 of the world's poorest countries, immunizing more than 70 million children by 2016."

"A better understanding of the science and performance of rotavirus vaccines allows developing countries, which shoulder 95 percent of the global death toll from rotavirus, a vital opportunity to save more lives," said Dr. Kathy Neuzil, co-editor of supplement and incoming Director of the Vaccine Access and Delivery Global Program at PATH. "In addition to saving the lives of children, accelerating access to rotavirus vaccines by GAVI and its partners will also lessen the tremendous economic and health burden of rotavirus disease."

This week, two more GAVI-eligible countries, Yemen and Ghana, will introduce rotavirus vaccines into their national immunization programs, bringing to seven the total number of countries that have introduced rotavirus vaccines with GAVI support. Several more GAVI-eligible countries are planning to introduce rotavirus vaccines in 2012 and 2013.

In 2009, the World Health Organization recommended that all countries include rotavirus vaccines in their national immunization programs. Rotavirus vaccines play an essential and lifesaving role in comprehensive diarrhea control strategies. A coordinated approach that combines rotavirus vaccines with other prevention and treatment methods, including oral rehydration therapy, zinc supplements, breastfeeding, improvements in water, sanitation, and hygiene as well as proper nutrition, will achieve the greatest impact on diarrhea-related illnesses and death. Adding rotavirus vaccines to national immunization programs and integrating them with appropriate diarrheal disease control

interventions as part of a package of treatment and prevention strategies would be critical to achieving Millennium Development Goal 4.

In addition to providing critical insights on rotavirus vaccine performance, the special supplement looks at rotavirus strain diversity, reviews operational and policy considerations for effective rotavirus vaccination in low-resource settings, and provides guidance on interpreting and monitoring risk of intussusception.

More information: "Rotavirus Vaccines for Children In Developing Countries," edited by A. Duncan Steele, Kathleen M. Neuzil and Umesh D. Parashar Vaccine, Volume 30, Supplement 1, Pages A1-A196 (27 April 2012) published by Elsevier.

For background information on rotavirus and diarrheal disease, please see www.cdc.gov/rotavirus/index.html and www.defeatDD.org

Provided by International Vaccine Access Center