

# ROTAVIRUS IN ASIA

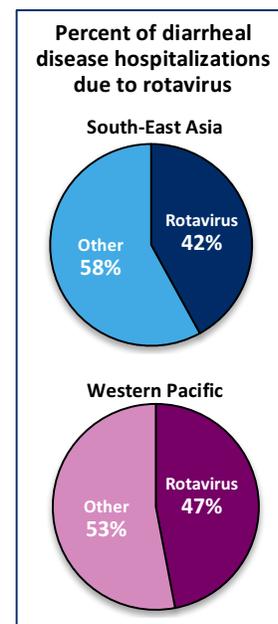
## Rotavirus is a leading cause of deaths and hospitalizations in Asia

Diarrheal disease is a leading killer of children in South-East Asia and the Western Pacific. Poor sanitation, insufficient water treatment systems, lack of access to appropriate medical care, and lack of life-saving vaccines lead to an estimated 180,000 diarrheal deaths in children under five and millions of hospitalizations every year across Asia (1). While different organisms can cause diarrhea, rotavirus is the leading cause of severe and fatal diarrhea in infants and young children.

Even in countries where most children access treatment in time, rotavirus remains a major cause of hospitalization for diarrheal disease. Unfortunately, interventions—such as improvements in hygiene, sanitation, and drinking water—that prevent bacterial and parasitic causes of diarrhea do not adequately prevent the spread of rotavirus.

In South-East Asia and the Western Pacific, rotavirus kills more than 170 children each day and causes a significant proportion of diarrheal disease hospitalizations (1). It also takes an economic toll on families and health systems. In Bangladesh, treating just one episode of rotavirus diarrhea can amount to nearly 85% of the average family's monthly income (2). In Malaysia, rotavirus hospitalization costs more than one quarter of the average monthly income (3).

Rotavirus causes nearly half of all diarrheal disease hospitalizations in children under five in Asia. In South-East Asia and the Western Pacific, 42% and 47% of diarrhea hospitalizations are due to rotavirus, respectively (4).



## Safe and effective rotavirus vaccines are available today

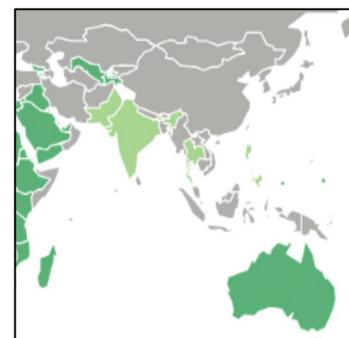
The World Health Organization (WHO) recommends that all countries introduce rotavirus vaccines into their national immunization programs. The two WHO prequalified, orally administered rotavirus vaccines available today are: Rotarix®, manufactured by GlaxoSmithKline, and RotaTeq®, manufactured by Merck & Co., Inc. Both vaccines have been shown to be safe and effective in large-scale clinical studies in Asia, Africa, the Americas and Europe (4-19).

Additionally, there is an expanding pipeline of new rotavirus vaccines. ROTAVAC®, manufactured by Bharat Biotech, is licensed in India and being rolled out in India's Universal Immunization Program. ROTAVAC® as well as Rotasiil®, manufactured by Serum Institutes of India, are under consideration for WHO prequalification. Additional rotavirus products are licensed in Vietnam (Rotavin, POLYVAC) and China (Lanzhou LLR, Lanzhou Institute of Biological Products).

Rotavirus vaccines have been shown to provide broad protection, even against strains not included in the vaccine. They have also been shown to reduce rotavirus-related hospitalizations among children and adults who are too old to be vaccinated, demonstrating herd immunity (4-7, 20).

## Children in Asia have unequal access to rotavirus vaccines

Even though more than 90 countries worldwide use rotavirus vaccines in their national immunization program, most Asian countries have not yet introduced rotavirus vaccines.



1/3 decline  
in all-cause under-  
five diarrhea  
hospitalizations in  
South Africa

50% reduction  
in diarrheal deaths  
among children  
under five in Mexico

## National rotavirus vaccination programs have dramatic public health and economic impacts

National rotavirus vaccination programs have the potential to substantially reduce child illness and deaths due to rotavirus diarrhea, as well as reducing healthcare costs due to rotavirus-related illness.

In the first four years of use in the United States, rotavirus vaccines prevented more than 176,000 hospitalizations, 242,000 emergency department visits, and 1.1 million doctor's visits among children under 5, and saved nearly US \$1 billion. Austria, Belgium, and Finland observed decreases of up to 80% in the annual rate of rotavirus hospitalizations following vaccine introduction (14, 20-28). Herd immunity has been well demonstrated in Australia, Austria, Belgium, Brazil, El Salvador and Finland: following rotavirus vaccine introduction in infants, rotavirus hospitalizations decreased by up to 89% among children too old to receive the vaccine (22, 23, 25, 27, 29, 30).

In the four years following vaccine introduction, Mexico observed sustained reductions in diarrhea deaths among children under five years old—by half (31-33). In South Africa, after rotavirus vaccine introduction, all-cause diarrhea hospitalizations declined by one-third for children under five (34).

In India, estimates have suggested that if rotavirus vaccines were scaled up to current levels of routine immunization, that they could prevent more than 20,000 deaths, hundreds of thousands of hospitalizations, and millions of cases and outpatient visits each year, while averting billions of dollars in treatment costs and lost productivity (35, 36).

Rotavirus vaccines are essential to a comprehensive approach to fighting childhood diarrheal disease, and the ROTA Council strongly endorses the recommendation by WHO that all countries introduce rotavirus vaccines as soon as possible.



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