



Conference report

Reaching every child with rotavirus vaccine: Report from the 10th African rotavirus symposium held in Bamako, Mali

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ABSTRACT

The Center for Vaccine Development – Mali (CVD – Mali), the World Health Organization's regional office in Africa (WHO/AFRO), and the CVD at the University of Maryland School of Medicine hosted the 10th African Rotavirus Symposium in Bamako, Mali on 1–2 June 2016. The symposium is coordinated by WHO/AFRO, the Regional Rotavirus Reference Laboratories, and the African Rotavirus Network (ARN), with support from the Bill & Melinda Gates Foundation. The event brings together leading rotavirus researchers, scientists, and policy-makers from across Africa and the world. Over 150 participants, from 31 countries, including 27 in Africa, joined forces to address the theme “Reaching Every Child in Africa with Rotavirus Vaccines.” This symposium, the first in francophone Africa, occurred at an unprecedented time when 33 African countries had introduced rotavirus vaccines into their national immunization programs. The symposium concluded with a Call to Action to introduce rotavirus vaccines in the 21 remaining African countries, to increase access in countries with existing vaccination programs, and to continue surveillance and research on rotavirus and other diarrheal diseases.

1. Introduction

Preventing rotavirus infection through vaccination is a critical intervention to reduce morbidity and mortality in young children, particularly in settings without accessible or affordable health care [1]. The African Rotavirus Symposium is a gathering of rotavirus experts that occurs every one to two years and provides a unique venue to discuss the latest research findings and global recommendations, and to share monitoring, surveillance, and vaccine introduction data from across Africa and the globe. This report serves as the proceedings for the symposium.

Due to the accelerated vaccine introduction in Africa and the rapid advances in the field, the 9th African Rotavirus Symposium was held in Maputo, Mozambique in December 2015, one year after the 8th African Rotavirus Symposium [2]. The symposium focused on assessing the role of the regional rotavirus surveillance network in defining rotavirus epidemiology in the pre-vaccine era, and the on-going efforts to assess the impact of vaccines and to monitor adverse events [2].

On 1–2 June 2016, the Center for Vaccine Development (CVD)-Mali and the World Health Organization's regional office in Africa (WHO/AFRO), hosted the 10th African Rotavirus Symposium in collaboration with the Regional Rotavirus Reference Laboratories, and the African Rotavirus Network (ARN).¹ The symposium included participants from African Ministries of Health and government agencies; the Regional Reference Laboratories; and other rotavirus researchers, scientists, and policy-makers.

The symposium was officially opened by His Excellency Ibrahim Boubacar Keita, President of the Republic of Mali and Dr. Marie Madeleine Togo, Minister of Health of Mali (Fig. 1). More than 400 dignitaries, including Prime Minister Modibo Keita and other members of the government of Mali, joined symposium participants at the opening ceremony. President Keita welcomed and thanked the conference attendees for their dedication to advancing rotavirus vaccines and improving child health in Mali and throughout Africa.

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¹ The ARN is a network of global rotavirus researchers, African Ministries of Health, the WHO, and key partners such as GAVI, the Vaccine Alliance, the Bill & Melinda Gates Foundation, the pharmaceutical industry, and other stakeholders. The ARN was established in 1998 to support, collaborate, and advance rotavirus research in Africa.



Fig. 1. His Excellency Ibrahim Boubacar Keita (center in white), President of the Republic of Mali, with conference attendees at the Opening Ceremony of the 10th African Rotavirus Symposium.

Over 150 participants from 31 countries – 27 in Africa – attended the symposium, which included invited lectures, oral presentations, panel discussions, and poster presentations. The objectives of the conference, presented by Dr. Jason Mwenda, WHO/AFRO, were to: Share research and findings on global, regional, and country-specific epidemiological trends on rotavirus diarrheal disease; provide updates on vaccine introductions, progress, challenges, and way forward to accelerate vaccine introduction in Africa; share experiences on vaccine impact and safety; and facilitate networking for research, academic, and career growth among researchers, program managers, and policy-makers.

2. Proceedings of meeting

2.1. Keynote address

Dr. Duncan Steele, Bill & Melinda Gates Foundation, delivered the keynote address entitled “Reaching Every Child with Rotavirus Vaccines.” Diarrhea is the second leading cause of death in children under five [3], with the highest global mortality rates reported from sub-Saharan Africa [4]. Even for children who survive, rotavirus can have detrimental impacts on nutrition, growth, and well-being [5]. Rotavirus vaccines should be part of a comprehensive strategy to control diarrheal diseases, as recommended by WHO, with the scaling up of both prevention (promotion of early and exclusive breastfeeding, hand washing with soap, and improved water and sanitation) and treatment (including low-osmolarity oral rehydration salts and zinc) [1].

In 2009, South Africa was the first African country to include rotavirus vaccines in their Expanded Program on Immunization (EPI). As shown in Fig. 2, as of May 2016, 33 African countries (29 in the African Region and 4 in the Eastern Mediterranean Region) have rotavirus vaccine in their EPI, while 21 have yet to introduce the vaccine. Dr. Steele outlined several potential approaches to achieve the goal of reaching every child with rotavirus vaccines. These included enhancing supply by supporting existing and new suppliers, ensuring new rotavirus vaccines have an acceptable presentation, pursuing next generation rotavirus vaccines to improve efficacy, and strengthening the routine immunization system.

Cost and cost-effectiveness are increasingly important factors in country-level decision-making and will become the single biggest challenge to sustaining programs as countries graduate from Gavi, the Vaccine Alliance (Gavi) financing. Dr. Steele presented several cost-effectiveness studies from different African countries and concluded that every scenario explored shows rotavirus vaccines are

highly cost-effective [6–10]. Finally, Dr. Steele challenged participants to ensure equity of access to guarantee vaccines reach children living in communities with the highest rotavirus mortality.

2.2. Disease Burden in Africa: rotavirus and beyond

This session summarized rotavirus and norovirus disease burden and the importance of surveillance and analysis for vaccine introduction, monitoring, and policy implications.

Dr. Jacqueline Tate, United States Centers for Disease Control and Prevention (CDC), provided the most recent updates on global rotavirus disease burden. While diarrhea deaths continue to decline, diarrhea remains a leading cause of death among children globally [4]. Rotavirus affects children in both developed and developing countries, however, morbidity and mortality are greatest in resource-poor settings [11].

Based on a literature review and data from the global rotavirus surveillance network coordinated by WHO, Dr. Tate reported the proportion of diarrheal deaths due to rotavirus is declining, but there are disparities related to vaccine access. In 2013, 34 percent of the population in developed countries lived in a post-rotavirus vaccine introduction country compared to less than 10 percent of the population in all other countries. An estimated average of 215,000 (range: 197,000 to 233,000) rotavirus deaths occurred among children less than 5 years of age in 2013. Of these remaining rotavirus deaths, 56 percent are estimated to occur in sub-Saharan Africa.

Dr. Karen Kotloff, CVD, provided data from a re-analysis of the landmark Global Enteric Multicenter Study (GEMS), which assessed incidence, etiology, and adverse clinical consequences of severe diarrhea in children under five in low resource settings, three in sub-Saharan Africa [5]. GEMS identified five pathogens, including rotavirus, that account for half the moderate-to-severe diarrhea cases. The introduction of rotavirus vaccines is expected to impact not only rotavirus-specific morbidity and mortality, but also other adverse outcomes associated with diarrhea and potentially the relative contribution of other pathogens as etiologic agents.

Rotavirus surveillance at the regional and country level in children under five is resource-intensive, yet essential to inform policy decisions, support vaccine introduction, and monitor programs.² The re-analysis of GEMS data using TAQMan array technology offers

² The 9th African Rotavirus Symposium concluded the regional rotavirus surveillance network has been critical to documenting burden and epidemiology of rotavirus, assessing seasonal trends, and determining rotavirus genotypes [2].

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