sKenyatta National Hospital, Nairobi, Kenya after vaccine introduction and the
Rotavirus strains that have been detected in Kenya for over the last two
decades

Nyangao J2, Seheri L.M4, Kituyi A1, Mwinyi B1, Mmbatha D1, Nduhiu J1, Sang C2, Mphahlele M.J4, Sergon K5,
Borus P5 Mwenda J6 Steele D7
1. Kenyatta National Hospital, 2. Centre for Virus Research, Kenya Medical Research Institute, 3. Ministry
of Health, 4. Sefako Makgatho Health Sciences University, South Africa 5. World Health Organization,
Bill and Melinda Gates Foundation

Background
Rotavirus is the most common cause of severe diarrhea worldwide. Children <1 year of age account for
majority of all rotavirus hospitalizations. Approximately 453,000 global deaths occur due to rotavirus
diarrhea in children <5 years of age, and more than half of these (230,000) deaths occur in African
children. Rotavirus vaccine was introduced in the routine Immunization program of Kenya in July 2014.

Methodology
The WHO supported Rotavirus Surveillance was started in August 2006 in Kenya. Stool samples were
collected from young children under five years of age admitted due to acute gastroenteritis at Kenyatta
National Hospital, Nairobi, Kenya. The stool samples were processed and tested for Group A Rotavirus
using Prospect™ ELISA kits. Rotavirus positive samples collected over the last two decades were also
tested by reverse transcription PCR for G and P typing.

Results
Before vaccine introduction, there was very high burden of rotavirus infection. In 2013, hospitalization
due to rotavirus was 43%. After vaccine introduction in the immunization program, hospitalizations due
to rotavirus started going down. 34% in 2015, 15% in 2016, 17% in 2017 and 12% in 2018. Looking at
rotavirus genotypes that have been detected in Kenya over the last two decades, we have detected strains
G1P[8], G1P[6], G2P[4], G3P[8], G3P[6], G4P[8], G8P[4], G9P[8], G12P[8] and G12P[6]. A few animal strains
have also been detected, G8P[1], G8P[14] and G3P[2]. Rotavirus genotypes G1P[8] have predominated
over the years.

Conclusion
The study highlights the high reduction in hospitalizations due to rotavirus gastroenteritis after vaccine
introduction in Kenya. Rotavirus G1P[8] genotype was found to be the most predominant strain
circulating over the years. There is need to continue monitoring impact of new rotavirus vaccines and
monitor disease burden post rotavirus vaccine introduction.