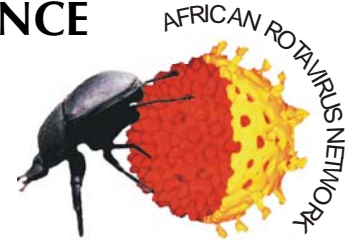




# AFRICAN ROTAVIRUS SURVEILLANCE NEWSLETTER

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## Editors:

Nicola Page, NICD

Mariet De Beer,

MEDUNSA

George Armah,

NMIR

Jason M. Mwenda,

WHO/AFRO

Duncan Steele,

WHO, Geneva

Marc-Alain

Widdowson, CDC

## Links to partners:

[www.rotainfrica.co.za](http://www.rotainfrica.co.za)

[www.who.int/en/](http://www.who.int/en/)

MRC Diarrhoeal

Pathogens Research

Unit

[www.who.int/en/](http://www.who.int/en/)

World Health

Organization

[www.rotavirusvaccine.org](http://www.rotavirusvaccine.org)

[www.cdc.gov](http://www.cdc.gov)

PATH's Rotavirus

Vaccine Program

[www.cdc.gov](http://www.cdc.gov)

Centre for Disease

control & Prevention

## *Up date on the AFR rotavirus surveillance network (AFR RSN)*

Rotavirus disease is estimated to cause death of more than 600,000 young children annually, and approximately 85% of these deaths occur in low resource countries in South Asia and sub-Saharan Africa. Two new rotavirus vaccines have been licensed in several African countries; Rotarix® has been licensed in 19 and RotaTeq® in 7 African countries; *Source: RVP PATH*. No country has yet started routine rotavirus vaccination.

In May 2005, a meeting convened by WHO/AFRO in Accra, Ghana, re-emphasized the critical need for local epidemiologic and strain data to inform country level decision-making on the potential for introduction of new rotavirus vaccines. Moreover, the need to collect these data in a standardised fashion throughout the region using the WHO generic protocol was emphasized. The meeting also recommended the establishment of rotavirus surveillance network in selected African countries as part of the existing Hib-PBM and other regional surveillance networks coordinated by WHO/AFRO.

The countries were selected on a case-by-case basis using agreed criteria including EPI programme quality, national surveillance capacity, experience with other AFRO supported surveillance networks e.g. Measles, paediatric bacterial meningitis (PBM, including Hib), polio, yellow fever, experience in the introduction of new vaccines such as HepB and Hib, and the level of concern about rotavirus disease among the MoH policy makers, paediatricians and other health professionals.

AFR RSN was initiated in July and August 2006, initially in four (4) countries (Ghana, Kenya, Uganda and Zambia) to conduct sentinel-hospital based surveillance of rotavirus disease in children under 5 years using standardized WHO protocol and comparable enzyme-linked immuno assay (EIA) rotavirus diagnostic technique. The surveillance is directed by the respective ministries of Health (MoH) with the support from WHO and partners (CDC, RVP-PATH)

**Ghana:** In June 2006, the Ministry of Health started the surveillance at Korle Bu Teaching Hospital, Accra. During the last 12 months (June 06 –May 07) 653 children under 5 year were hospitalized with acute diarrhea, 158 samples and 93 (58.9%) were confirmed rotavirus positive by EIA..

**Kenya:** In August 2006, the Ministry of Health and the Expanded program on Immunization (KEPI), initiated the rotavirus surveillance at Kenyatta National Hospital (KNH), Nairobi. During the last 10 months (August 2006 - May 2007) of surveillance, 423 out of 895 samples (47%) were confirmed positive for rotavirus by EIA.

**Uganda:** In June 2006 the Ministry of Health and Uganda Expanded Program on Immunization, (UNEPI) started surveillance at Mulago Hospital, Kampala. During the 12 months of surveillance (June 2006 - May 2007) , 1269 suspected cases of rotavirus (RV) severe disease were admitted from which 673 (53%) stool specimens were collected. Of these, 637 (95%) reported to hospital within 7 days of onset of diarrhea the recommended time for specimen collection and 615 (91%) were below 2 years of age. Rotavirus infection was detected in 314 (47%, 207 between June-Dec 2006 and 107 between Jan-May 2007) cases of which 303 (96%) were children below 2 years of age making it the age that is affected most .

Of the rotavirus positive cases majority occurred during the rainy season, 60% (125/207) occurred during the months of September through November 2006 and 77% (82/107) occurred during the months of March - May 2007.

**Zambia**, MoH started surveillance in August 2006 at the University Teaching Hospital, Lusaka. During the 11 months (August 2006 - June 07) of surveillance, 233 samples were collected and 66 (28%) were confirmed rotavirus positive and the mortality rate was 7.5%.

**Zimbabwe**, started surveillance in January 2007; 51 < 5 yr children were hospitalized with acute diarrhea and 7 (14%) were confirmed rotavirus positive by EIA.

Four additional countries (**Ethiopia, Cameroon, Senegal and Tanzania**) have either just begun surveillance or will do by September 2007.

Three national data managers (from Kenya, Uganda and Zambia) were trained during the orientation workshop held in Arusha, Tanzania (4<sup>th</sup> – 10<sup>th</sup> June 2006) for Eastern Block data managers and surveillance officers.

### **Strain typing**

Two regional rotavirus reference laboratories (RRL), funded by RVP-PATH were established to support the AFR RSN. These RRL are based at the Noguchi Memorial Research Institute (NMRI), Accra, Ghana to support the surveillance in West/Central block and Diarrhoeal Pathogens Research Unit (DPRU), University of Limpopo, Medunsa Campus, South Africa to support the South/East Block countries.

The 7<sup>th</sup> rotavirus training workshop was held at the DPRU on 5<sup>th</sup> – 30<sup>th</sup> March 2007 for members of the AFR RSN in the South/East block countries that had started surveillance mid 2006. A further training workshop (for countries in Central/West block) in typing methods is scheduled to be held in Noguchi Memorial Research Institute (NMRI), Accra, Ghana , 27<sup>th</sup> August – 5<sup>th</sup> September 07.

### **Summary of preliminary rotavirus surveillance country data; June 2006- May 07 (source: Report submitted by Dr. Nicola Page, DPRU,SA & country surveillance co-ordinators)**

Sentinel Site/Country	# < 5 yr children hospitalized	# (%) stool samples collected	# (%) EIA Rota +ve	[# Genotyped] & Strains detected <sup>1</sup>
Korle Bu Teaching Hospital, Ghana	653	158 (24)	93 (59)	[30] G1P[8], G2P[6], G2P[4], G2P[?]
Kenyatta National Hospital, Kenya	895	895 (100)	423 (47)	[34];G9, G8 & G2 P[4] & P[6]
Mulago National Referral Hospital , Uganda	1269	673 (53)	314 (47)	[34]; G8, G9,G1 & G2; P[6] & P[4] mixed infections
University Teaching Hospital, Zambia	233	233 (100)	66 (28)	[13],G1,G8 & G2 P[6] and P[4] mixed infections
Institut Pasteur de Dakar, Senegal	N/A <sup>2</sup>	47	15 (32 )	G8,G2 & G9 P[6]mixed infections
Parirenyatwa Hospital, Zimbabwe	51 <sup>3</sup>	51 (100)	7 (14)	ND
Oluranti <sup>4</sup> Oyeneye, MRC Laboratory, Gambia	N/A <sup>2</sup>	57	57 (100)	G9P[6] predominant, G9P[8], G8P[6], G8P[8], G1P[8], G1P[6] and G4P[6]

1. Genotyping during the Rotavirus Training Workshop, MEDUNSA, March 2007
  2. Achieved stool samples from community survey, prior to initiation of sentinel-hospital based rotavirus surveillance
  3. 6 - months data (January – June 2007)
  4. Rotavirus positive samples sent to DPRU, RRL, SA for genotyping
- ND:* Genotyping has not been done

**Malawi:** According to the report submitted by Dr Nigel Cunliffe, rotavirus surveillance has continued in Malawi during the period July 2005 to July 2006 in the following four sites; Kamuzu Central Hospital, (KCH, Lilongwe), Mangochi District Hospital, Karonga District Hospital and the Queen Elizabeth Central Hospital (QECH, Blantyre). Rotavirus has remained an important cause of diarrhoea at QECH, with serotypes P[6],G1 and P[8],G1 the dominant strains during the period 2006/07 and serotype G8 detected at a lower rate than previously. At KCH, approximately 40% of stools tested positive for rotavirus with serotype P[8],G1 being the predominant strain followed by serotypes P[6],G1 and P[6],G8 (*Source: Report submitted by Dr. Nigel Cunliffe*).

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8. Dr. Nigel Cunliffe, University of Liverpool, UK & University of Malawi, Lilongwe & MoH, Malawi
9. Prof. Duncan Steele, WHO Geneva

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### **Report compiled by -**

Dr. Jason M. Mwenda  
Rotavirus Surveillance Co-ordinator  
WHO/AFRO  
Brazzaville