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Common enteric viruses among fatal paediatric diarrheal admissions in coastal Kenya, post-rotavirus vaccine introduction: 2016-2025

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15th International Rotavirus Symposium - September 30 to October 2, 2025 - Cape Town, South Africa: Advancements in rotavirus research and vaccination

In 2021, diarrhoeal diseases caused an estimated 1·17 million (95% uncertainty interval 0·793–1·62) deaths globally,

This translates to ~4657 deaths daily, ~194 deaths every hour, ~3 deaths every minute

Background - diarrhoea

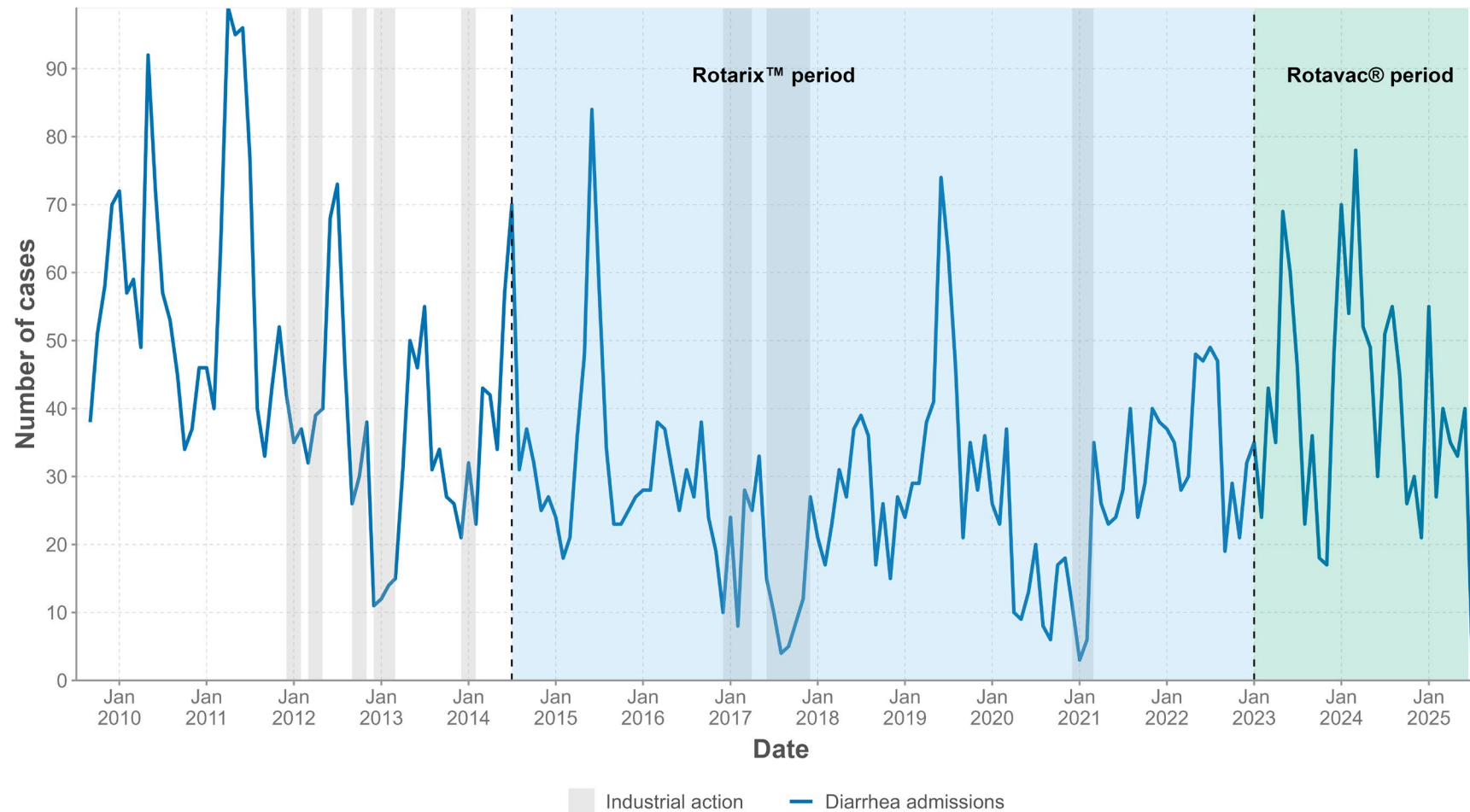
- Caused by over 30 enteric pathogens, many of which are rarely investigated in clinical cases.
- Causes can vary based on: (i) Geography, (ii) Season, (iii) Socioeconomics, and (iv) Ongoing health interventions.
- Limited data exists from Kenya on diarrhea causes post-rotavirus vaccination, introduced in July 2014.

Diarrhoea surveillance on Kenyan Coast



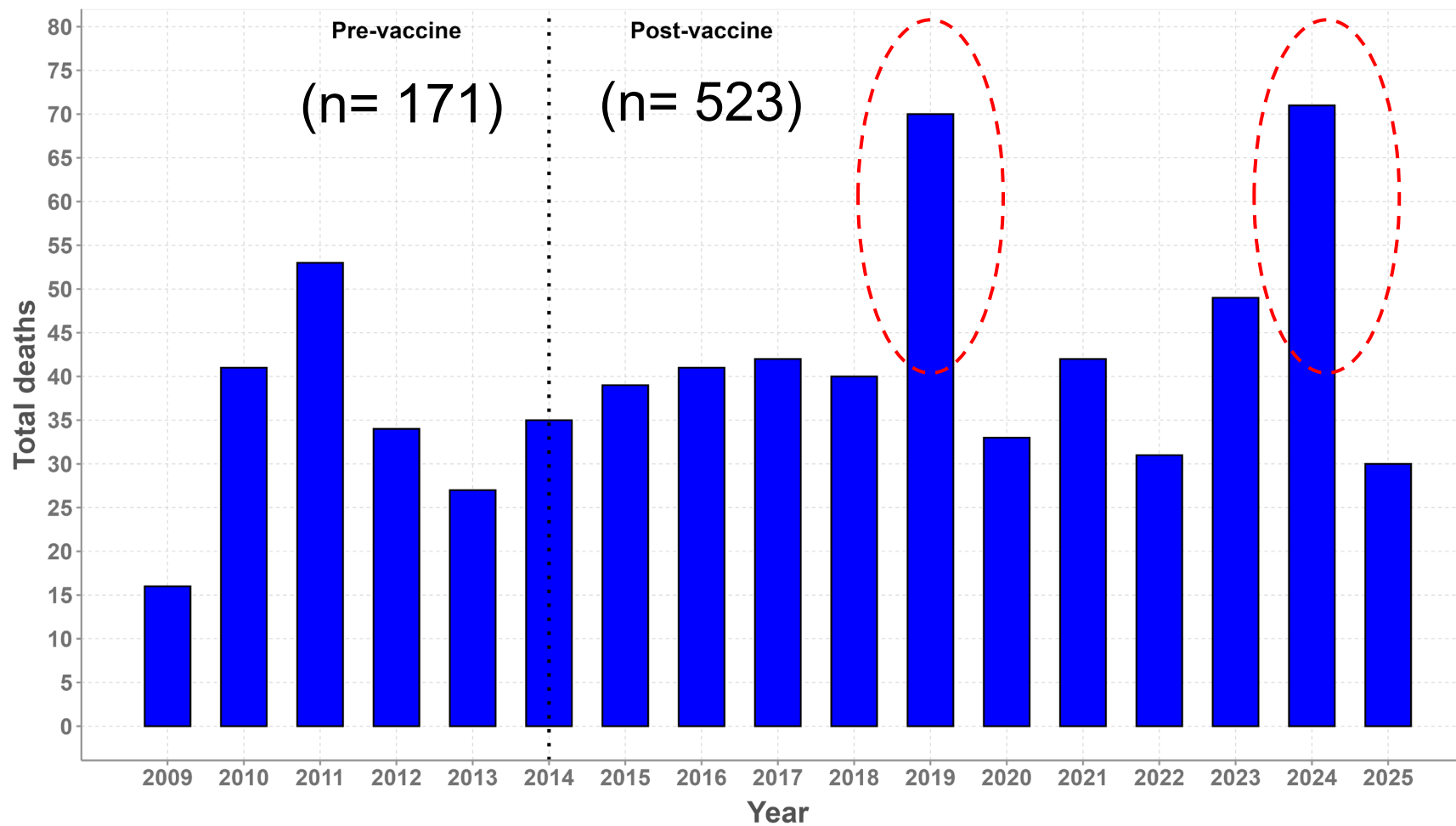
Nokes DJ, et al.. PLoS Med. 2008 Jul 22;5(7):e153. doi: 10.1371/journal.pmed.0050153.
Otieno GP et al.. Clin Infect Dis. 2020 May 23;70(11):2306-2313. doi: 10.1093/cid/ciz912..

Diarrhoea trends over time



Nokes DJ, et al.. PLoS Med. 2008 Jul 22;5(7):e153. doi: 10.1371/journal.pmed.0050153.
Otieno GP et al.. Clin Infect Dis. 2020 May 23;70(11):2306-2313. doi: 10.1093/cid/ciz912.
Agoti Cnet al,. Gut Pathog. 2022 Aug 1;14(1):32. doi: 10.1186/s13099-022-00506-z.

Diarrhea deaths trend over time



Methods – qPCR for six enteric viruses



Lambisia AW et al, Gut Pathog. 2024 Jan 4;16(1):2. doi: 10.1186/s13099-023-00595-4.
Lambisia AW et al, Pathogens. 2020 Aug 15;9(8):660. doi: 10.3390/pathogens9080660.

Adenovirus F40/41

Non-adenovirus F40/41

Group A rotavirus

Norovirus GII

Sapovirus

Astrovirus

	Survived	Died	All
Total samples	2,241	145	2,392
Rotavirus	369 (16.5%)	7 (4.8%)	376 (15.7%)
Norovirus GII	213 (9.5%)	12 (8.3%)	225 (9.4%)
Non- Adv F40/41	211 (9.4%)	8 (5.5%)	221 (9.2%)
Adv_F40/41	99 (4.4%)	5 (3.4%)	104 (4.3%)
Sapovirus	66 (2.9%)	2 (1.4%)	68 (2.8%)
Astrovirus	33 (1.5%)	1 (0.7%)	34 (1.4%)
No. of Pathogens (%)			
0	1,403 (58.7%)	114 (74.8%)	1,521 (63.6%)
1	694 (29.0%)	27 (18.6%)	723 (30.2%)
2	136 (5.7%)	4 (2.8%)	140 (5.9%)
3	7 (0.3%)	-	7 (0.3%)
4	1(0.0%)	-	1 (0%)



Discussion

Rotavirus leads in hospital admissions but does not appear to be a major cause of in-hospital deaths post-vaccine introduction.

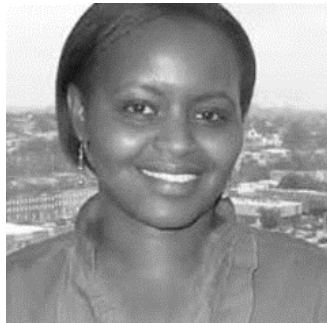
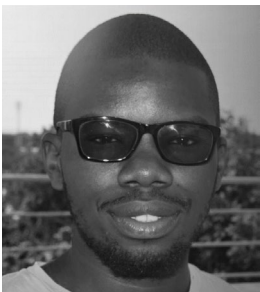
Investigation required into the roles of non-adenovirus-F40/41 and norovirus GII in fatal diarrhea

Expand surveillance beyond the viral diarrhoea causes & also make it multisite

Acknowledgements



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+Robinson Cheruiyot
+Hillary Wafula

