

The relevance of Fast Track Diagnostic Gastroenteritis kits as first point of care diagnostic tool in Africa

F Mokoena¹, B Moore¹, C Klooper¹, P Govindsamy¹ and GK Chaiffini¹

¹ANATECH INSTRUMENTS, Meadowbrook business estate, Randburg, Johannesburg

Background

Following successful implementation of rotavirus vaccines in 34 World Health Organization (WHO) regions of Africa, rotavirus infection associated deaths in children under ≤ 5 years reduced, substantially, from 215 000 to approximately 130 000, annually. However, acute gastroenteritis (AGE) remains one of the leading cause of childhood morbidity and mortality in Africa. The persistence of AGE incidences in lower-income setting, has been attributed to a greater diversity of rotavirus strains, mixed and untypeable strains, lower vaccine efficacy, as well as broad range of other enteropathogens. It remains, thus, critical to deploy molecular diagnostic techniques, such as Fast Track Diagnostics (FTD) for improved attribution of diarrhoea to a broad range of other enteropathogens. We propose the implementation of FTD gastroenteritis kits in the surveillance program of diarrhoea in Africa.

AGE detection solutions: Fast Track Diagnostics a Siemens Healthineers Company, is one of the leading global suppliers of real-time PCR multiplexing kits, covering all the major infectious disease groups based on the syndromic approach. The gastroenteritis kit is available in lyophilized format enabling easy reaction setup and no loss of reagents from pipetting error. The most common gastroenteritis kits are for syndromic detection of bacterial (*Campylobacter coli/jejuni/lari*, *Clostridium difficile*, enterohemorrhagic *E. coli* vtx+, *Salmonella* spp., *Shigella* spp., enteroinvasive *Escherichia coli*, *Yersinia enterocolitica*), viral (noroviruses GI and GII; human astrovirus; rotavirus; human adenovirus and sapovirus) and parasitic (*Entamoeba histolytica*, *Cryptosporidium* spp. and *Giardia lamblia*) pathogens. To date kits are compatible with up to 35 real-time cyclers, extraction methods and sample-to-result platforms.

Results

When tested against 3043 clinical samples, FTD viral gastroenteritis kits which detects rotavirus, norovirus, sapovirus, astrovirus and adenovirus demonstrated 99.9% accuracy. Since its implementation in 2011, FTD viral gastroenteritis has been widely cited, including the detection of rare rotavirus strain G8P[14].

Conclusion

Use of the Fast Track kits should result in increased detection of causative agents of AGE. The implementation of the use of these kits will probably not require the use of additional resources.