

**TRENDS IN SEIZURE HOSPITALISATIONS PRE AND POST ROTAVIRUS VACCINE
INTRODUCTION AMONG CHILDREN IN SOWETO, SOUTH AFRICA**



by

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ABSTRACT

Introduction

Reductions in childhood seizure hospitalisations following rotavirus vaccine introduction have been reported in some countries. This study evaluated the trends in seizure hospitalisation pre- and post-rotavirus vaccine introduction among children in Soweto, South Africa.

Methods

This secondary data analysis used an existing Paediatric Discharge Summary database including hospitalised children aged 6-59-months at Chris Hani Baragwanath Academic and Bheki Mlangeni District Hospitals from 1 January 2006 to 31 December 2018. International Classification of Diseases (ICD)-10 code definitions for febrile seizures (FSs), epilepsy, and unspecified seizures (collectively referred to as all-cause seizures [ACS]), acute gastroenteritis (AGE), and acute respiratory tract infections (ARI) were used. Monthly counts and incidence of ACS and FS hospitalisations pre- (2006-2008) and post-rotavirus (2010-2018) vaccine introduction in 2009 were analysed by age-group (6–11-, 12–23-, 24-35-, 36-47-, and 48-59-months).

Results

Of 74,160 hospitalisation-episodes among 57,161 children, 14,135 (19.0%) ACS hospitalisations (epilepsy, 2,993 [21.0%]; FS, 9,475 [67.0%]; unspecified seizures, 1,679 [11.9%]) occurred in children aged 6-59-months. The overall annual incidence of FS hospitalisations among children aged 6-59-months decreased by 34.2% from 4.79/1,000 (median 2006–2008) to 3.15/1,000 in 2013 but increased subsequently from 5.97/1,000 in 2015 to 7.72/1,000 in 2018. The highest incidence of FS hospitalisations of 11.29/1,000 occurred in 2018 compared to 7.59/1000 (the pre-vaccine years) among the 12-23 months age group. FS hospitalisation occurred in 8.3%, 4.9%, and 1.5% of children hospitalised with ARI, AGE, and HIV infection, respectively; and more than 50%, 60%, and 80% of the children were aged 24-59 months.

Conclusions

An un-sustained decline in ACS/FS hospitalisation was observed after rotavirus vaccine introduction but any observed changes in FS epidemiology could not be attributed to the impact