

A PILOT STUDY OF COMPARATIVE 30-DAY MORTALITY: A PAN-AFRICAN PAEDIATRIC SURGERY ASSOCIATION RESEARCH PROJECT

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Aim: The Pan-African Paediatric Surgery Association (PAPSA) has reported several international research papers. The aim of this study was to collaborate with low, middle and high income countries (L/M/HIC) and report 30-day in hospital mortality in paediatric surgical units. We present the provisional results from a larger investigation into mortality in 2017.

Methods: PAPSA members were invited to participate in this prospective study. Ethical approval was obtained at institutional level. The primary outcome was mortality, reported from all admissions over a 30-day period (01/12/2016 – 31/12/2016). Secondary outcomes included: demographics; diagnosis; date and details of surgical procedures and cause of death. Data are presented as median (range). $P < 0.05$ was considered statistically significant.

Main results: There were 1,201 admissions to eight paediatric surgical centres over the month study period; 437 patients in two HIC centres and 764 in five LMIC centres. The number of admissions did not differ per country income group: median of 118 (range 28 – 222) in the HIC centres and 55 (range 22 – 595) in LMIC centres (Mann Whitney $U = 3$, $P = 0.25$) (Table 1). Overall mortality was 1.2% (15/1,201). Patients in LMIC were more likely to die: 2% (15/764) cf. 0% (0/437) mortality in HIC, Mann Whitney $U = 0$, $P = 0.0178$). The highest mortality (13.6%, 3/22) was reported in one LMIC centre. Of those who died: age at admission was 18 months (1 day – 11 years); 80% went to theatre 2.5 days (0-12 days) from admission and the most common diagnosis was typhoid perforation. The most common cause of death was sepsis (47%, 7/15) (Table 1).

Conclusion: This study emphasises the worldwide disparity in mortality from paediatric surgery conditions and informs the future study which aims to address access to care and outcome from emergency admissions.

TABLE 1:

Data for all admissions in eight centres over a month period (December 2016)

	All	HIC	LMIC	P value
Overall data				
Centres	8	3	5	-
Total admissions	1,201	437	764	0.25*
Median admissions	-	118	55	
Mortality (%)	15/1,201 (1.2%)	0/437 0%	15/764 (2%)	0.0178*
Mortality data				
Age on admission	-	-	18 months (1 day – 11 years)	-
Diagnosis:				
Oesophageal atresia	-	-	1/15 (7%)	-
Small bowel atresia	-	-	2/15 (13%)	
Hirschsprung's disease	-	-	2/15 (13%)	
	-	-	2/15 (13%)	
Anorectal malformation			1/15 (7%)	
Posterior urethral valves			2/15 (13%)	
Meconium peritonitis			4/15 (27%)	
Intussusception				
Typhoid perforation				
Surgery	-	-	12/15 (80%)	-
Time to surgery	-	-	2.5 days (0 – 12 days)	-
Time to death	-	-	8 days (0 – 30 days)	-
Cause of death:				
Sepsis			7/15 (47%)	-
Multi-organ failure			2/15 (13%)	
Hypovolaemia			2/15 (13%)	
Respiratory failure			2/15 (13%)	
Renal failure			1/15 (7%)	
Transfusion reaction			1/15 (7%)	

*Mann Whitney U