

SDC 1: Clinical and epidemiologic characteristics of HIV-infected and -uninfected children <5 years hospitalized with acute lower respiratory infection (LRTI) at four sentinel surveillance sites, South Africa, 2009-2011

Characteristics		All patients n/N (%)	HIV- infected n/N (%)	HIV-uninfected n/N (%)	Univariate analysis~		Multivariable analysis****	
					OR(95% CI)	p	OR (95% CI)	p
Demographic characteristics								
Age group (months)	<12	5603/8723 (64)	412/705 (58)	3443/5259 (65)	Reference	<0.001	Reference	<0.001
	12-23	1747/8723 (20)	125/705 (18)	1076/5259 (20)	1.0 (0.8-1.2)		1.1 (0.9-1.4)	
	24-59	1373/8723 (16)	168/705 (24)	740/5259 (14)	1.9 (1.6-2.3)		2.1 (1.7-2.7)	
Female (vs male)		3708/8723 (43)	334/705 (47)	2189/5259 (42)	1.3 (1.1-1.5)	0.004	1.3 (1.1-1.5)	0.010
Black African race (vs other)		8551/8709 (98)	693/704 (98)	5167/5253 (98)	1.0 (0.6-2.0)	0.883		
Year	2009	2191/8723 (25)	180/705 (26)	869/5259 (17)	Reference	<0.001	Reference	<0.001
	2010	2004/8723 (23)	204/705 (29)	1190/5259 (23)	0.8 (0.7-1.0)		0.8 (0.6-1.0)	
	2011	2350/8723 (27)	153/705 (22)	1697/5259 (32)	0.4 (0.3-0.5)		0.4 (0.3-0.6)	
	2012	2178/8723 (25)	168/705 (24)	1503/5259 (29)	0.5 (0.4-0.7)		0.5 (0.4-0.6)	
Site	CHBAH	6024/8723 (69)	322/705 (46)	3571/5259 (68)	Reference	<0.001	Reference	<0.001
	Matikwana and Mapulaneng	1190/8723 (14)	206/705 (29)	700/5259 (13)	3.2 (2.7-4.0)		2.8 (2.2-3.6)	
	Edendale	1071/8723 (12)	118/705 (17)	732/5259 (14)	1.8 (1.4-2.2)		1.7 (1.3-2.2)	
	Klerksdorp	438/8723 (5)	59/705 (8)	256/5259 (5)	2.6 (1.9-3.5)		2.4 (1.7-3.4)	
Underlying medical conditions								
Underlying medical condition excluding HIV* (vs none)		198/8713 (2)	15/704 (2)	133/5259 (3)	0.8 (0.5-1.4)	0.524		
2 or more doses of PCV (eligible children <5 years) (vs <2 doses)		1745/3765 (46)	131/321 (41)	1269/2643 (48)	0.7 (0.6-0.9)	0.015		
Infectious agents identified								
Invasive bacterial infection on culture†		75/3196††† (2)	12/311 (4)	51/2092 (2)	1.6 (0.8-3.0)	0.164		
Pneumococcal infection**		253/6612 (4)	44/642 (7)	180/4786 (4)	1.9 (1.3-2.6)	<0.001		

Any virus identified	6517/8393 (78)	466/688 (68)	4098/5160 (79)	0.5 (0.4-0.6)	<0.001		
>1 virus identified	2760/8393 (33)	190/688 (28)	1733/5160 (34)	0.8 (0.6-0.9)	0.002		
Influenza (any type)	613/8394 (7)	49/688 (7)	362/5161 (7)	1.0 (0.7-1.4)	0.917		
Influenza A	434/8394 (5)	32/688 (5)	243/5161 (5)	1.0 (0.7-1.4)	0.947		
Influenza B	171/8394 (2)	17/688 (2)	112/5161 (2)	1.1 (0.7-1.9)	0.614		
Adenovirus	2061/7799 (26)	198/628 (32)	1298/4837 (27)	1.3 (1.0-1.5)	0.013		
Enterovirus	877/8393 (10)	56/688 (8)	513/5160 (10)	0.8 (0.6-1.1)	0.135		
Rhinovirus	3115/8393 (37)	245/688 (36)	1952/5160 (39)	0.9 (0.8-1.1)	0.259		
Human metapneumovirus	504/8393 (5)	26/688 (4)	357/5160 (7)	0.5 (0.4-0.8)	0.002	0.5 (0.3-0.7)	<0.001
Parainfluenzavirus 1	161/8392 (2)	12/688 (2)	93/5160 (2)	1.0 (0.5-1.8)	0.914		
Parainfluenzavirus 2	116/8392 (1)	11/688 (2)	64/5159 (1)	1.3 (0.7-2.5)	0.434		
Parainfluenzavirus 3	535/8392 (6)	39/688 (6)	344/5159 (7)	0.8 (0.6-1.2)	0.320		
Parainfluenzavirus 1,2 or 3	789/8393 (9)	62/688 (9)	486/5160 (9)	1.0 (0.7-1.3)	0.731		
Respiratory syncytial virus	2216/8393 (26)	88/688 (13)	1412 /5160 (27)	0.4 (0.3-0.5)	<0.001	0.5 (0.4-0.6)	<0.001
Any etiology identified (76%)	6635/8723	486/705 (69)	4164/5259 (79)	0.6 (0.5-0.7)	<0.001		
Clinical presentation and course							
Symptoms ≥ 2 days prior to admission (vs <2 days)	4754/8620 (55)	425/693 (61)	2841/5196 (55)	1.3 (1.1-1.5)	0.001	1.4 (1.2-1.7)	<0.001
Admission to intensive care†† (vs none)	109/8634 (1)	14/697 (2)	67/5228 (1)	1.6 (0.9-2.8)	0.120		
Mechanical ventilation †† (vs none)	95/8635 (1)	14/698 (2)	49/5228 (1)	2.2 (1.2-3.9)	0.010		
Supplementary oxygen required (vs none)	3042/8637 (35)	328/698 (47)	1796/5229 (34)	1.7 (1.4-2.0)	<0.001	1.3 (1.1-1.7)	0.006
Antibiotics prescribed on admission (vs none)	7893/8471 (93)	675/690 (98)	4758/5120 (93)	3.4 (2.0-5.8)	<0.001		
Duration of hospitalization (days)	<2	3239/8616 (38)	116/692 (17)	1983 (5213 (38)	Reference	<0.001	Reference
	2-7	4011/8616 (47)	245/692 (50)	2525/5213 (48)	2.3 (1.9-2.9)		1.4 (1.1-1.8)
	>7	1366/8616 (16)	231/692 (33)	705/5213 (14)	5.6 (4.4-7.1)		3.8 (2.8-5.0)
Duration of hospitalization	3 (1-15)	6 (1-23)	3 (1-13)		<0.001		

(days) (median, interquartile range)

Case-fatality ratio	150/8512 (2)	47/695 (7)	46/5240 (1)	8.2 (5.4-12.4)	<0.001	4.2 (2.6-6.8)	<0.001
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OR – Odds ratio, CI – confidence interval, HIV – human immunodeficiency virus, PCV-pneumococcal conjugate vaccine

* Asthma, other chronic lung disease, chronic heart disease (valvular heart disease, coronary artery disease, or heart failure excluding hypertension), liver disease (cirrhosis or liver failure), renal disease (nephrotic syndrome, chronic renal failure), diabetes mellitus, immunocompromizing conditions excluding HIV infection (organ transplant, immunosuppressive therapy, immunoglobulin deficiency, malignancy) or neurological disease (cerebrovascular accident, spinal cord injury, seizures, neuromuscular conditions). Comorbidities were considered absent in cases for which the medical records stated that the patient had no underlying medical condition or when there was no direct reference to that condition.

**Detected on *lytA* PCR or blood culture

~Comparing HIV-infected vs HIV-uninfected

**** Odds ratios and p values shown for all variables included in the multivariable model. Hosmer-Lemeshow goodness of fit test for the final multivariable model p=0.611.

† Pathogen isolated within 72 hours of hospitalization from blood or pleural fluid; organisms viewed as likely contaminants were excluded. Not evaluated on multivariable analysis due to a large proportion of missing data

††62 of 109 patients admitted to ICU received mechanical ventilation, an additional 33 patients were ventilated outside of the ICU

††† Invasive isolates were defined as a bacterial pathogen isolated from blood or pleural fluid from a specimen taken within 48 hours of hospitalization; organisms viewed as likely contaminants were excluded. Four percent (12/311) of HIV-infected patients had a positive blood culture (six *Staphylococcus aureus*, four *Streptococcus pneumoniae*, one *Klebsiella pneumoniae* and one *Haemophilus influenzae*). Two percent (51/2092) of HIV-uninfected patients had a positive blood culture (25 *S. aureus*, 13 *S. pneumoniae*, five *K. pneumoniae*, three *Neisseria meningitidis*, one *H. influenzae*, two *Streptococcus agalactiae* and two *Escherichia coli*). Two percent (12/793) of HIV-unknown patients had a positive blood culture (seven *S. aureus*, two *Salmonella* species, one *S. pneumoniae*, one *K. pneumoniae* and one *H. influenzae*).