



### **Appendix 3**

**This appendix was part of the submitted manuscript and has been peer reviewed. It is posted as supplied by the authors.**

Appendix to: Ostrowski JA, MacLaren G, Alexander J, et al. The burden of invasive infections in critically ill Indigenous children in Australia. *Med J Aust* 2017; 206: 78-84. doi: 10.5694/mja16.00595.

**Appendix 3. Uni- and multivariate models for mortality associated with invasive infections in Indigenous (Aboriginal and Torres Strait Islander) children requiring intensive care unit (ICU) admission**

**All invasive infections**

Risk factor		Patients	Deaths	Univariable analysis		Multivariable analysis	
				Odds ratio	<i>P</i>	Odds ratio	<i>P</i>
<b>Total invasive infection cases</b>		726	41 (5.6%)				
<b>Remoteness</b>	Major cities	176 (24.6%)	9 (22%)	Reference			
	Inner regional	121 (16.9%)	7 (17%)	1.14 (0.41–3.15)	0.80		
	Outer regional	214 (29.9%)	12 (29%)	1.10 (0.45–2.68)	0.83		
	Remote	86 (12.0%)	6 (15%)	1.39 (0.48–4.04)	0.54		
	Very remote	119 (16.6%)	7 (17%)	1.16 (0.42–3.20)	0.78		
<b>Age</b>	Neonates < 28 days old	27 (3.7%)	2 (4.9%)	1.79 (0.38–8.53)	0.46		
	Infants (28–364 days old)	257 (35.4%)	11 (27%)	Reference			
	1–4 years old	226 (31.1%)	10 (24%)	1.04 (0.43–2.49)	0.94		
	5–9 years old	102 (14.1%)	11 (27%)	2.70 (1.13–6.45)	0.025		
	10–15 years old	114 (15.7%)	7 (17%)	1.46 (0.55–3.88)	0.44		
<b>Risk category</b>	Immunodeficiency or suppression	33 (4.6%)	6 (15%)	4.18 (1.62–10.78)	0.003	4.94 (1.59–15.4)	0.006
	Oncology (excluding bone marrow transplantation)	25 (3.4%)	2 (4.9%)	1.48 (0.34–6.49)	0.61		
	Bone marrow transplantation	6 (0.8%)	2 (4.9%)	8.73 (1.55–49.1)	0.014		
	Solid organ transplantation (excluding bone marrow transplantation)	1 (0.1%)	0	—			
	Chronic neurological condition	60 (8.3%)	7 (17%)	2.46 (1.04–5.80)	0.041	2.58 (1.05–6.33)	0.039
	Chronic respiratory condition	52 (7.2%)	6 (15%)	2.38 (0.95–5.95)	0.063		
	Congenital heart disease	30 (4.1%)	4 (9.8%)	2.74 (0.91–8.26)	0.073		
	Prematurity	57 (7.9%)	0	—			
	Burns	16 (2.2%)	0	—			
	Chronic renal failure	5 (0.7%)	0	—			
	<b>Any comorbidity</b>	<b>288 (39.7%)</b>	<b>25 (61%)</b>	<b>2.51 (1.31–4.78)</b>	<b>0.005</b>		

Risk factor		Patients	Deaths	Univariable analysis		Multivariable analysis	
				Odds ratio	P	Odds ratio	P
ICU size	< 500 admissions in year	274 (37.7%)	18 (44%)	1.47 (0.71–3.06)	0.30		
	501–1000 admissions in year	285 (39.3%)	13 (32%)	Reference			
	> 1000 admissions in year	167 (23.0%)	10 (24%)	1.33 (0.57–3.11)	0.51		
Category	Direct ICU admission	503 (69.3%)	28 (68%)	0.95 (0.48–1.87)	0.89		
	Inter-hospital transport	320 (44.1%)	22 (54%)	1.50 (0.80–2.83)	0.21		
Time period	2002–2007	295 (40.6%)	14 (34%)	Reference			
	2008–2013	431 (59.4%)	27 (66%)	1.34 (0.69–2.60)	0.38		
Severity	Mechanical ventilation in the first hour	343 (47.2%)	14 (34%)	1.78 (0.92–3.46)	0.087		
	Intubation and mechanical ventilation	471 (64.9%)	40 (98%)	23.6 (3.22–172)	0.002	21.5 (2.88–160)	0.003
	Extracorporeal membrane oxygenation	8 (1.1%)	3 (7.3%)	10.7 (2.47–46.6)	0.002	2.81 (0.45–17.4)	0.27
	Acute respiratory distress syndrome	21 (2.9%)	4 (9.8%)	4.25 (1.36–13.3)	0.013	1.37 (0.34–5.49)	0.66
	Renal replacement therapy	15 (2.1%)	6 (15%)	12.9 (4.34–38.2)	< 0.001	5.32 (1.45–19.5)	0.012

**B. Sepsis/septic shock**

Risk factor		Patients	Deaths	Univariable analysis		Multivariable analysis	
				Odds ratio	P	Odds ratio	P
<b>Total non-elective sepsis and septic shock cases</b>		303	25 (8.3%)				
<b>Remoteness</b>	Major cities	86 (29.2%)	5 (20%)	Reference			
	Inner regional	49 (16.6%)	3 (12%)	1.06 (0.24–4.62)	0.94		
	Outer regional	75 (25.4%)	8 (32%)	1.93 (0.60–6.19)	0.27		
	Remote	37 (12.5%)	5 (20%)	2.53 (0.69–9.34)	0.16		
	Very remote	48 (16.3%)	4 (16%)	1.47 (0.38–5.77)	0.58		
<b>Age</b>	Neonates < 28 days old	19 (6.3%)	1 (4.0%)	0.60 (0.07–5.13)	0.64		
	Infants (28–364 days old)	95 (31.4%)	8 (32%)	Reference			
	1–4 years old	88 (29.0%)	8 (32%)	1.09 (0.39–3.03)	0.87		
	5–9 years old	43 (14.2%)	3 (12%)	0.82 (0.21–3.24)	0.77		
	10–15 years old	58 (19.1%)	5 (20%)	1.03 (0.32–3.30)	0.97		
<b>Risk category</b>	Immunodeficiency or suppression	24 (7.9%)	3 (12%)	1.67 (0.46–6.04)	0.44		
	Oncology (excluding bone marrow transplantation)	19 (6.3%)	1 (4.0%)	0.60 (0.08–4.70)	0.63		
	Bone marrow transplantation	2 (0.7%)	0	—			
	Solid organ transplantation (excluding bone marrow transplantation)	1 (0.3%)	0	—			
	Chronic neurological condition	18 (5.9%)	3 (12%)	2.39 (0.64–8.89)	0.19		
	Chronic respiratory condition	14 (4.6%)	2 (8.0%)	1.93 (0.41–9.14)	0.41		
	Congenital heart disease	17 (5.6%)	4 (16%)	3.88 (1.16–13.0)	0.027	4.39 (1.23–15.64)	0.023
	Prematurity	30 (9.9%)	0	—			
	Burns	10 (3.3%)	0	—			
	Chronic renal failure	1 (0.3%)	0	—			
	<b>Any comorbidity</b>	<b>140 (46.2%)</b>	<b>16 (64%)</b>	<b>2.21 (0.94–5.17)</b>	<b>0.068</b>		

Risk factor		Patients	Deaths	Univariable analysis		Multivariable analysis	
				Odds ratio	P	Odds ratio	P
ICU size	< 500 admissions in year	109 (36.0%)	12 (48%)	1.78 (0.70–4.53)	0.23		
	501–1000 admissions in year	123 (40.6%)	8 (32%)	Reference			
	> 1000 admissions in year	71 (23.4%)	5 (20%)	1.09 (0.34–3.47)	0.88		
Category	Direct ICU admission	219 (72.3%)	16 (64%)	0.66 (0.28–1.55)	0.34		
	Inter-hospital transport	140 (46.2%)	14 (56%)	1.54 (0.67–3.50)	0.31		
Time period	2002–2007	108 (35.6%)	6 (24%)	Reference			
	2008–2013	195 (64.4%)	19 (76%)	1.84 (0.71–4.74)	0.21		
Severity	Mechanical ventilation in the first hour	161 (53.1%)	14 (56%)	1.13 (0.50–2.59)	0.76		
	Intubation and mechanical ventilation	215 (71.0%)	24 (96%)	10.9 (1.46–82.1)	0.020	8.04 (1.05–61.6)	0.045
	Extracorporeal membrane oxygenation	7 (2.3%)	3 (12%)	9.34 (1.97–44.4)	0.005	1.97 (0.31–12.6)	0.48
	Acute respiratory distress syndrome	14 (4.6%)	3 (12%)	3.31 (0.86–12.8)	0.082	1.73 (0.37–8.18)	0.49
	Renal replacement therapy	11 (3.6%)	5 (20%)	11.3 (3.18–40.4)	< 0.001	6.77 (1.52–30.0)	0.012