

Supplemental table 1: Presence of chronic complex condition by race/ethnicity n=9,816 (excluding any patients missing information on race/ethnicity, insurance status or transferred out)

		White		Black		Hispanic		Other		Total		P value
		N.	%	N.	%	N.	%	N.	%	N.	%	
Neuromuscular CCC	No	3,803	81.5	1,344	81.1	2,032	81.2	820	83.2	7,999	81.5	0.53
	Yes	865	18.5	314	18.9	472	18.9	166	16.8	1,817	18.5	
Cardiovascular CCC	No	3,865	82.8	1,315	79.3	2,044	81.6	801	81.2	8,025	81.8	0.017
	Yes	803	17.2	343	20.7	460	18.4	185	18.8	1,791	18.3	
Respiratory CCC	No	4,228	90.6	1,489	89.8	2,273	90.8	893	90.6	8,883	90.5	0.76
	Yes	440	9.4	169	10.2	231	9.2	93	9.4	933	9.5	
Renal CCC	No	4,142	88.7	1,454	87.7	2,205	88.1	897	91.0	8,698	88.6	0.054
	Yes	526	11.3	204	12.3	299	11.9	89	9.0	1,118	11.4	
Gastrointestinal CCC	No	3,553	76.1	1,240	74.8	1,847	73.8	755	76.6	7,395	75.3	0.12
	Yes	1,115	23.9	418	25.2	657	26.2	231	23.4	2,421	24.7	
Heme/immuno CCC	No	4,043	86.6	1,300	78.4	2,026	80.9	814	82.6	8,183	83.4	<0.001
	Yes	625	13.4	358	21.6	478	19.1	172	17.4	1,633	16.6	
Metabolic CCC	No	3,537	75.8	1,221	73.6	1,853	74.0	738	74.9	7,349	74.9	0.23
	Yes	1,131	24.2	437	26.4	651	26.0	248	25.2	2,467	25.1	
Congenital genetic CCC	No	4,218	90.4	1,519	91.6	2,273	90.8	905	91.8	8,915	90.8	0.31
	Yes	450	9.6	139	8.4	231	9.2	81	8.2	901	9.2	
Malignancy CCC	No	4,031	86.4	1,492	90.0	1,994	79.6	834	84.6	8,351	85.1	<0.001
	Yes	637	13.7	166	10.0	510	20.4	152	15.4	1,465	14.9	
Neonatal CCC	No	4,304	92.2	1,431	86.3	2,327	92.9	883	89.6	8,945	91.1	<0.001
	Yes	364	7.8	227	13.7	177	7.1	103	10.5	871	8.9	
Technology dependent CCC	No	3,333	71.4	1,132	68.3	1,744	69.7	723	73.3	6,932	70.6	0.016
	Yes	1,335	28.6	526	31.7	760	30.4	263	26.7	2,884	29.4	
Transplant CCC	No	4,562	97.7	1,620	97.7	2,428	97.0	957	97.1	9,567	97.5	0.18
	Yes	106	2.3	38	2.3	76	3.0	29	2.9	249	2.5	
Number of complex chronic conditions	1	1,351	28.9	366	22.1	631	25.2	261	26.5	2,609	26.6	<0.001
	2	1,301	27.9	490	29.6	643	25.7	272	27.6	2,706	27.6	
	3	975	20.9	371	22.4	544	21.7	234	23.7	2,124	21.6	
	4	628	13.5	255	15.4	406	16.2	130	13.2	1,419	14.5	
	5	272	5.8	119	7.2	198	7.9	61	6.2	650	6.6	
	6	116	2.5	44	2.7	70	2.8	24	2.4	254	2.6	
	7	22	0.5	10	0.6	9	0.4	3	0.3	44	0.5	
	8	3	0.1	2	0.1	3	0.1	0	0.0	8	0.1	
	9	0	0.0	1	0.1	0	0.0	1	0.1	2	0.0	

Supplemental table 2: Univariable (crude) odds ratios of death in children (aged 0-20) from severe sepsis in 2016 (n=9,816)

		OR	95% CI	P value <sup>a</sup>
Age	0	5.20	(4.45-6.06)	
	1-5	1.77	(1.47-2.13)	
	6-12	1.46	(1.22-1.76)	
	13-17	1.14	(0.95-1.38)	
	18-20	1	ref <sup>b</sup>	<0.0001
Sex	Male	1.28	(1.16-1.42)	
	Female	1	ref	<0.0001
Race	White	1	ref	
	Black	1.37	(1.19-1.58)	
	Hispanic	0.97	(0.85-1.12)	
	Other	1.17	(0.98-1.40)	<0.0001
Payer	Public insurance	1	ref	
	Private insurance	0.94	(0.84-1.05)	
	Other	1.1	(0.90-1.34)	0.26
Median Household Income for zip code	\$0 - \$42,999	1	ref	
	\$43,000 - \$53,999	1.09	(0.95-1.24)	
	\$54,000 - \$70,999	0.95	(0.83-1.10)	
	\$71,000+	0.90	(0.77-1.05)	0.11
Hospital region	Northeast	0.84	(0.66-1.08)	
	Midwest	0.68	(0.54-0.86)	
	South	1	Ref	
	West	0.71	(0.57-0.87)	0.0013
Bed size	Small	0.57	(0.43-0.75)	
	Medium	0.74	(0.60-0.92)	
	Large	1	ref	0.0001
Hospital location	Rural	0.51	(0.29-0.89)	
	Urban nonteaching	0.47	(0.36-0.61)	
	Urban teaching	1	ref	<0.0001
Hospital control	Government, nonfederal	1.29	(1.01-1.64)	
	Private, not-profit	1	ref	
	Private, invest-own	0.97	(0.75-1.26)	0.10
Complex chronic condition	No	1	ref	
	Yes	7.21	(5.92-8.80)	<0.0001

<sup>a</sup> LR test p-value

<sup>b</sup> Largest group chosen for reference

Supplemental table 3: Mortality. Median length of stay, crude and adjusted odds ratios of mortality for cohort n=9,816 (excluding any patients missing information on race/ethnicity, insurance status, or transferred out)

	n	%	mortality %	LOS (IQR)	OR	95% CI	P value <sup>a</sup>	aOR <sup>b</sup>	95% CI	P value <sup>c</sup>
Public	5,385	54.7	15.0	10 (5-22)	1			1		
Payer										
Private insurance	3,670	37.4	13.8	8 (4-18)	0.93	(0.82-1.05)		1.09	(0.96-1.23)	0.19
Self-Pay	339	3.0	14.4	5 (3-13)	0.98	(0.70-1.38)		1.37	(0.97-1.94)	0.076
No Charge	21	0.2	9.5	3 (2-7)	0.59	(0.13-2.61)		1.43	(0.36-5.72)	0.61
Other	442	4.5	17	12 (5-24)	1.16	(0.87-1.55)	0.49	1.24	(0.95-1.64)	0.11

<sup>a</sup> LR test p-value

<sup>b</sup> Adjusted for other variables in the table and sex, age, median household income for patient's zip code, elective admission, admitted from emergency department, transferred in, admitted at weekend, admission quarter, hospital bed size, hospital region, hospital control, hospital teaching status, presence of complex chronic condition

<sup>c</sup> Wald test-p-value

Supplemental table 4: Crude and adjusted odds ratios of death and length of stay (hazard ratios for discharge alive by 30 days)<sup>a</sup> in children with severe sepsis in 2016 by race/ethnicity and insurance status, clustered by hospital stratified by neonatal vs non neonate

		Unadjusted odds of death			Adjusted <sup>b</sup> odds of death			Adjusted <sup>b</sup> hazard for discharge alive by 30 days			
		OR	95% CI	P value <sup>c</sup>	aOR	95% CI	P value <sup>d</sup>	aHR	95% CI	P value <sup>d</sup>	
Neonates (n=1,031)	Race	White	1	Ref		1		1			
		Black	1.52	(1.09-2.11)		1.21	(0.85-1.74)	0.29	0.53	(0.36-0.77)	0.001
		Hispanic	0.97	(0.68-1.38)		0.87	(0.60-1.27)	0.48	0.74	(0.51-1.06)	0.10
		Other	1.29	(0.85-1.95)	0.054	1.22	(0.79-1.89)	0.36	0.88	(0.60-1.29)	0.52
	Payer	Public insurance	1	Ref		1			1		
		Private insurance	0.99	(0.76-1.31)		1.12	(0.82-1.53)	0.47	1.01	(0.76-1.35)	0.94
		Other	0.72	(0.41-1.28)	0.53	0.83	(0.46-1.51)	0.54	1.10	(0.63-1.90)	0.74
0-20 excluding neonates (n=8,785)	Race	White	1			1		1			
		Black	1.21	(1.03-1.43)		1.15	(0.96-1.38)	0.12	0.90	(0.84-0.96)	0.003
		Hispanic	1.02	(0.87-1.19)		1.01	(0.86-1.20)	0.87	0.94	(0.88-1.00)	0.039
		Other	1.04	(0.85-1.29)	0.14	1.00	(0.80-1.25)	0.98	0.96	(0.89-1.05)	0.37
	Payer	Public insurance	1			1			1		
		Private insurance	0.93	(0.82-1.06)		1.03	(0.89-1.19)	0.68	1.06	(1.01-1.12)	0.017
		Other	1.29	(1.03-1.61)	0.018	1.40	(1.10-1.78)	0.006	1.00	(0.92-1.10)	0.93

<sup>a</sup> A hazard ratio less than one is indicative of a lower probability of discharge by 30 days ie a longer length of stay.

<sup>b</sup> Adjusted for other variables in the table and sex, age, median household income for patient's zip code, elective admission, admitted from emergency department, transferred in, admitted at weekend, admission quarter, hospital bed size, hospital region, hospital control, hospital teaching status, presence of complex chronic condition

<sup>c</sup> LR test p-value

<sup>d</sup> Wald test-p-value

\* intra-class correlation: neonates – 0.229, non neonates 0.071

Supplemental table 5: Crude and adjusted odds ratios of death and length of stay (hazard ratios for discharge alive by 30 days)<sup>a</sup> in children (aged 0-20) with severe sepsis in 2016 by race/ethnicity and proportion of patients treated at hospital who were Black

			Odds of death				Hazard for discharge alive by 30 days				
			(n=9,816)		P value <sup>b</sup>	(n=9,594)		(n=9,581)			
		OR	95% CI			aOR <sup>c</sup>	95% CI	P value <sup>d</sup>	aHR <sup>c</sup>	95% CI	P value <sup>d</sup>
Within Hospital	Race	White	1	ref		1			1		
		Black	1.37	(1.19-1.58)		1.18	(1.01-1.38)	0.037	0.88	(0.82-0.94)	<0.001
		Hispanic	0.97	(0.85-1.12)		0.95	(0.82-1.11)	0.51	0.94	(0.88-1.00)	0.065
		Other	1.17	(0.98-1.40)	<0.0001	1.04	(0.86-1.26)	0.68	0.97	(0.89-1.04)	0.39
Between Hospital	Proportion patients treated at hospital who are Black	1 (0-1.5%)	1			1			1		
		2 (1.6-4.7%)	1.16	(0.74-1.80)		0.94	(0.59-1.52)	0.81	0.99	(0.82-1.12)	0.92
		3 (4.8-10.8%)	1.50	(1.00-2.27)		0.97	(0.62-1.52)	0.90	0.88	(0.73-1.07)	0.19
		4 (10.9-22.9%)	1.53	(1.03-2.29)		1.02	(0.65-1.58)	0.95	0.96	(0.79-1.16)	0.66
		5 (>23%)	1.97	(1.31-3.00)	0.0006	1.08	(0.69-1.71)	0.73	0.88	(0.72-1.08)	0.21

<sup>a</sup> A hazard ratio less than one is indicative of a lower probability of discharge by 30 days ie a longer length of stay.

<sup>b</sup> LR test p-value

<sup>c</sup> Adjusted for other variables in the table and sex, age, median household income for patient's zip code, elective admission, admitted from emergency department, transferred in, admitted at weekend, admission quarter, hospital bed size, hospital region, hospital control, hospital teaching status, presence of complex chronic condition.

<sup>d</sup> Wald test-p-value

\* intraclass correlation 0.075