

Supplemental Table: Multilevel Logistic Regression models of Readmission using
 Charlson Index using Hospital Level random intercept (age 18 and older)

Model Info	Model 1		Model 2		Model 3	
N	1,682,629		1,679,169		1,677,941	
LL	-1,720,155.5		-1,710,735.8		-1,700,884.0	
df	3		22		41	
AIC	3,440,317.0		3,421,515.5		3,401,850.0	
BIC	3,440,354.0		3,421,786.8		3,402,355.8	
Predictors	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
Charlson Index (per 1)	1.15 (1.15, 1.15)	<.001	1.14 (1.13, 1.14)	<.001	1.12 (1.12, 1.12)	<.001
Year (ref=2010)						
2011			1.00 (0.97, 1.02)	0.658	0.99 (0.97, 1.02)	0.611
2012			0.96 (0.94, 0.98)	<.001	0.96 (0.94, 0.98)	<.001
2013			0.93 (0.91, 0.95)	<.001	0.93 (0.91, 0.95)	<.001
2014			0.92 (0.90, 0.94)	<.001	0.92 (0.90, 0.94)	<.001
2015			0.89 (0.87, 0.90)	<.001	0.88 (0.86, 0.90)	<.001
2016			0.88 (0.86, 0.90)	<.001	0.87 (0.85, 0.89)	<.001
Quarter (ref=1st)						
2 nd Quarter			0.97 (0.95, 0.98)	<.001	0.97 (0.96, 0.98)	<.001
3 rd Quarter			1.00 (0.99, 1.02)	0.523	1.01 (0.99, 1.02)	0.232
4 th Quarter			0.98 (0.97, 1.00)	0.017	0.99 (0.98, 1.00)	0.162
Sex (ref=male)						
Female			0.94 (0.93, 0.95)	<.001	0.92 (0.91, 0.93)	<.001
Age (per 10 year)			1.00 (1.00, 1.01)	0.101	0.98 (0.97, 0.98)	<.001
Income Quartile (ref=1st)						
2 nd Quartile			0.98 (0.97, 1.00)	0.017	0.98 (0.97, 0.99)	0.002
3 rd Quartile			0.98 (0.97, 1.00)	0.010	0.97 (0.95, 0.98)	<.001
4 th Quartile			0.97 (0.95, 0.98)	<.001	0.94 (0.93, 0.96)	<.001
Missing			0.97 (0.93, 1.01)	0.086	0.97 (0.93, 1.01)	0.098
Payer (ref=Medicare)						
Medicaid			1.07 (1.05, 1.09)	<.001	1.08 (1.06, 1.09)	<.001
Private			0.67 (0.66, 0.68)	<.001	0.69 (0.68, 0.70)	<.001
Self-Pay			0.59 (0.57, 0.61)	<.001	0.62 (0.60, 0.64)	<.001
Other/No Charge			0.77 (0.75, 0.80)	<.001	0.79 (0.77, 0.82)	<.001
Disposition (ref=Routine to home)						
Post-acute care					1.29 (1.27, 1.32)	<.001
Other					1.13 (1.06, 1.20)	<.001
Home Health					1.35 (1.33, 1.37)	<.001
Length of Stay (per day)					1.02 (1.02, 1.02)	<.001
Care intensity (ref=No)						
Non-invasive ventilation					1.16 (1.14, 1.18)	<.001
Mechanical ventilation					0.95 (0.92, 0.97)	<.001
Tracheostomy					1.03 (0.97, 1.09)	0.387
Cardiac arrest					0.82 (0.74, 0.91)	<.001
CPR					1.08 (0.94, 1.23)	0.262
Hospital ownership (ref=government)						
Private, non-profit					0.99 (0.97, 1.01)	0.394
Private, for-profit					1.04 (1.02, 1.06)	<.001
Hospital teaching status (ref=Non-teaching)						
Teaching Hospital					1.01 (0.99, 1.02)	0.307
Hospital location (ref=Large metro area)						

<i>Small metro area</i>	0.94 (0.92, 0.95)	<.001
<i>Metropolitan area</i>	0.89 (0.87, 0.91)	<.001
<i>Rural</i>	0.87 (0.84, 0.90)	<.001
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Hospital Bed Size (ref=Small)		
<i>Medium</i>	1.01 (0.99, 1.03)	0.207
<i>Large</i>	1.02 (1.00, 1.04)	0.049
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Annual Discharge (per 10k)	1.01 (1.00, 1.02)	0.098
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Proportion of Medicaid per 10%	1.00 (1.00, 1.01)	0.548