

Supplemental Table 1: Adjusted Analysis of Length of Stay (Negative Binomial Regression)

Variable	Univariate Model			Multivariable Model			
	Beta	Estimate	p-value	Included in Model	Beta	Estimate	p-value
Intervention (SIBR) vs Control	0.0062	1.0063	0.89	Yes	0.022	1.022	0.58
Age	-0.0081	0.99	<0.0001	Yes	-0.0047	1.00	0.0010
Sex= Female vs Male	-0.21	0.81	<0.0001	Yes	-0.16	0.85	<0.0001
Race=White vs all others	-0.12	0.88	0.0053	Yes	-0.17	0.85	<0.0001
Ethnicity=Hispanic vs not Hispanic	0.15	1.16	0.21	No			
Payer=Managed Care vs Self-pay	-0.39	0.67	<0.0001	Yes	-0.19	0.83	<0.0001
Payer=Medicaid vs Self-pay	0.23	1.26			0.21	1.24	
Payer=Medicare vs Self-pay	-0.15	0.86			0.14	1.15	
Payer=Other vs Self-pay	-0.034	0.97			0.0030	1.003	
Admission Source= Clinic/Physician's Office vs Transfer	0.12	0.12	<0.0001	Yes	0.32	1.37	<0.0001
Admission Source= Non-Healthcare Facility vs Transfer	0.068	0.067			0.092	1.10	
Admission Source= Outside Hospital vs Transfer	0.46	0.46			0.36	1.43	
CHF	-0.17	0.85	0.0017	Yes	-0.059	0.94	0.26
COPD	-0.12	0.89	0.012	Yes	-0.092	0.91	0.033
Diabetes (With Complications)	0.034	1.035	0.52	No			
Diabetes (No Complications)	-0.16	0.85	0.0009	Yes	-0.11	0.89	0.012
Hypertension	-0.10	0.91	0.015	Yes	-0.015	0.98	0.71
Liver Disease	0.32	1.37	<0.0001	Yes	0.12	1.13	0.044
Neurological	0.15	1.16	0.017	Yes	0.15	1.16	0.0060
Pulmonary Circulation	0.0069	1.0069	0.93	No			
Renal Failure	0.10	1.11	0.055	Yes	0.12	1.13	0.020
Valvular	0.053	1.054	0.55	No			
CCI	0.0025	1.0025	0.67	No			
ICU	0.91	2.49	<0.0001	Yes	0.82	2.28	<0.0001

Beta: coefficient in Negative Binomial Model; estimate: rate ratio for estimated length of stay

Multivariable Model: Included all significant ($p < 0.1$) variables from univariate analysis. Negative Binomial regression was used (instead of Poisson) because the outcomes were counts, but there was overdispersion in the Poisson model.

Supplemental Table 2: Adjusted Analysis of Readmission within 30 days (Logistic Regression)

Variable	Univariate Model			Multivariable Model			
	Beta	Estimate	p-value	Included in Model	Beta	Estimate	p-value
Intervention (SIBR) vs Control	-0.24	0.78	0.034	Yes	-0.21	0.81	0.074
Age	-0.0033	1.00	0.29	No			
Sex= Female vs Male	-0.093	0.91	0.40	No			
Race=White vs all others	0.064	1.07	0.59	No			
Ethnicity=Hispanic vs not Hispanic	-2.00	0.14	0.0055	Yes	-1.86	0.16	0.011
Payer=Managed Care vs Self-pay	0.18	1.20	0.0003	Yes	-0.053	0.95	0.0088
Payer=Medicaid vs Self-pay	0.88	2.41			0.50	1.64	
Payer=Medicare vs Self-pay	0.50	1.66			-0.0034	1.00	
Payer=Other vs Self-pay	-0.0034	1.00			-0.41	0.66	
Admission Source= Clinic/Physician's Office vs Transfer	-0.38	0.69	0.077	Yes	-0.39	0.67	0.25
Admission Source= Non-Healthcare Facility vs Transfer	-0.19	0.83			-0.29	0.74	
Admission Source= Outside Hospital vs Transfer	-0.50	0.61			-0.48	0.62	
CHF	0.51	1.67	<0.0001	Yes	0.13	1.14	0.37
COPD	0.31	1.36	0.011	Yes	0.070	1.072	0.59
Diabetes (With Complications)	0.54	1.71	<0.0001	Yes	0.18	1.20	0.22
Diabetes (No Complications)	0.038	1.038	0.77	No			
Hypertension	0.41	1.50	0.0003	Yes	0.14	1.15	0.27
Liver Disease	0.56	1.74	0.0008	Yes	0.38	1.46	0.031
Neurological	-0.043	0.96	0.80	No			
Pulmonary Circulation	0.45	1.56	0.014	Yes	0.20	1.23	0.29
Renal Failure	0.77	2.17	<0.0001	Yes	0.37	1.44	0.015
Valvular	0.25	1.29	0.26	No			
CCI	0.11	1.11	<0.0001	Yes	0.062	1.064	0.0008
ICU	0.42	1.52	0.0005	Yes	0.35	1.45	0.0042

Beta: coefficient in Negative Binomial Model; estimate: odds ratio for readmission

Multivariable Model: Included all significant ($p < 0.1$) variables from univariate analysis.

*Could not include discharge disposition due to violations of model assumptions (i.e. not enough data in each group by the outcome variable readmission at 30 days)

Supplemental Table 3: Adjusted Analysis of Readmission within 7 days (Logistic Regression)

Variable	Univariate Model			Multivariable Model			
	Beta	Estimate	p-value	Included in Model	Beta	Estimate	p-value
Intervention (SIBR) vs Control	-0.39	0.68	0.020	Yes	-0.36	0.70	0.034
Age	-0.0024	1.00	0.61	No			
Sex= Female vs Male	-0.11	0.90	0.51	No			
Race=White vs all others	-0.13	0.88	0.47	No			
Ethnicity=Hispanic vs not Hispanic	-0.96	0.38	0.19	No			
Payer=Managed Care vs Self-pay	-0.60	0.55	0.15	No			
Payer=Medicaid vs Self-pay	0.21	1.24					
Payer=Medicare vs Self-pay	-0.13	0.88					
Payer=Other vs Self-pay	-0.12	0.89					
Admission Source= Clinic/Physician's Office vs Transfer	-1.13	0.32	0.14	No			
Admission Source= Non-Healthcare Facility vs Transfer	-0.34	0.71					
Admission Source= Outside Hospital vs Transfer	-0.54	0.58					
CHF	0.62	1.87	0.0006	Yes	0.36	1.43	0.075
COPD	0.25	1.29	0.15	No			
Diabetes (With Complications)	0.68	1.97	0.0002	Yes	0.49	1.63	0.015
Diabetes (No Complications)	0.0084	1.0085	0.96	No			
Hypertension	0.16	1.17	0.33	No			
Liver Disease	0.56	7.75	0.017	Yes	0.39	1.48	0.11
Neurological	-0.13	0.88	0.63	No			
Pulmonary Circulation	0.57	1.77	0.021	Yes	0.40	1.49	0.13
Renal Failure	0.50	1.65	0.0081	Yes	0.11	1.12	0.62
Valvular	0.52	1.68	0.078	Yes	0.17	1.12	0.59
CCI	0.072	1.075	0.0005	Yes	0.026	1.026	0.32
ICU	0.50	1.65	0.0039	Yes	0.45	1.57	0.011

Beta: coefficient in Negative Binomial Model; estimate: odds ratio for readmission

Multivariable Model: Included all significant ($p < 0.1$) variables from univariate analysis.

*Could not include discharge disposition due to violations of model assumptions (i.e. not enough data in each group by the outcome variable readmission at 7 days)

Supplemental Table 4: Subgroup Analysis- Testing for differential effect of intervention vs control by subgroups

Variable	Length of Stay		30-day Readmission		7-day Readmission	
	Beta	p-value	Beta	p-value	Beta	p-value
ICU transfer to floor	-0.64	0.39	-0.59	0.73	1.0018	0.58
Floor to discharge	-0.092	0.30	0.093	0.71	-0.019	0.96
Age>65	0.048	0.58	-0.26	0.27	-0.49	0.15
Female vs Male	-0.10	0.23	-0.29	0.21	-0.80	0.019*
White vs Nonwhite	0.033	0.72	-0.071	0.78	0.062	0.86
CCI: 0-3 vs 7+	-0.19	0.11	0.022	0.94	0.38	0.37
CCI: 3-7 vs 7+	-0.24	0.059	-0.069	0.82	0.11	0.80

Beta: beta estimate for interaction between intervention vs control and variable

p-value: p-value for the interaction between intervention vs control and variable

Interpretation: For p-values>0.05, there is no differential effect of intervention vs control by levels of the variable. I.e. Outcomes are similar across levels of the variable comparing intervention vs control.

p-value <0.05 means that there is a differential effect of intervention vs control by levels of the variable.