

## Appendix B

Table B1: Parameter estimates, all-condition

Parameter		Estimate	Standard Error	Wald 95% Confidence Limits		Pr > ChiSq
Intercept		16.277	0.3412	15.6083	16.9457	<.0001
Volume quintile	A: [25 - 173]	-1.5565	0.241	-2.0289	-1.084	<.0001
	B: (173 - 423]	-0.7203	0.225	-1.1613	-0.2793	0.0014
	C: (423 - 1108]	-0.5274	0.2037	-0.9266	-0.1283	0.0096
	D: (1108 - 2595]	0.0584	0.1686	-0.2721	0.3888	0.7292
	E: (2595 - 25002]	REF				
Safety net status	Safety net hospital	0.4894	0.1814	0.1338	0.8449	0.007
	Non-safety net hospital					
Ownership	Not for profit	-0.1441	0.2063	-0.5484	0.2602	0.4848
	Private	0.3964	0.2282	-0.0508	0.8437	0.0823
	Public	REF				
Teaching status	Member of Council of Teaching Hospitals	1.0726	0.2408	0.6005	1.5446	<.0001
	Minor teaching hospital	-0.0323	0.1365	-0.2998	0.2353	0.8132
	Non-teaching	REF				
Cardiac procedure capability	CABG	-0.5367	0.1835	-0.8964	-0.177	0.0035
	Cardiac catheterization only, no CABG	-0.3788	0.1656	-0.7034	-0.0542	0.0222
	Neither CABG nor cardiac catheterization capability	REF				
Metropolitan classification	Large Central Metro	0.2105	0.1943	-0.1703	0.5914	0.2785
	Large Fringe Metro	-0.0798	0.1846	-0.4417	0.2821	0.6655
	Medium Metro	-0.9333	0.1798	-1.2857	-0.5809	<.0001
	Micropolitan	-0.446	0.1589	-0.7574	-0.1346	0.005
	Small Metro	-0.7149	0.1961	-1.0993	-0.3306	0.0003
	Noncore	REF				
Region	EN Central	-0.2613	0.181	-0.616	0.0934	0.1487
	ES Central	0.9926	0.2065	0.5879	1.3973	<.0001

	Mid-Atlantic	0.8434	0.2202	0.4119	1.2749	0.0001
	Mountain	-1.0282	0.2098	-1.4394	-0.6171	<.0001
	New England	-0.0749	0.2817	-0.627	0.4771	0.7902
	Pacific	-0.8269	0.197	-1.2129	-0.4408	<.0001
	South Atlantic	0.179	0.1819	-0.1776	0.5355	0.3253
	WN Central	-1.0951	0.1825	-1.4528	-0.7374	<.0001
	WS Central	REF				
Quartile of RN/bed	Q1	0.605	0.1526	0.3058	0.9041	<.0001
	Q2	0.4964	0.1404	0.2213	0.7715	0.0004
	Q3	0.1432	0.1367	-0.1247	0.4111	0.2949
	Q4	REF				
Scale		3.1793	0.0335	3.1142	3.2456	

Table B2: Parameter estimates, medicine cohort

Parameter		Estimate	Standard Error	Wald 95% Confidence Limits		Pr > ChiSq
Intercept		18.2959	0.4103	17.4917	19.1001	<.0001
Volume quintile	A: [25 - 99]	-1.4082	0.2831	-1.963	-0.8534	<.0001
	B: (99 - 218]	-0.9882	0.2647	-1.507	-0.4695	0.0002
	C: (218 - 534]	-0.6678	0.2346	-1.1276	-0.208	0.0044
	D: (534 - 1124]	-0.2455	0.1989	-0.6353	0.1444	0.2171
	E: (1124 - 11380]	REF				
Safety net status	Safety net hospital	0.3782	0.2185	-0.05	0.8064	0.0834
	Non-safety net hospital	REF				
Ownership	Not for profit	-0.2016	0.2492	-0.6901	0.2868	0.4185
	Private	0.5728	0.278	0.0279	1.1176	0.0394
	Public	REF				
Teaching status	Member of Council of Teaching Hospitals	1.0062	0.2889	0.4399	1.5724	0.0005
	Minor teaching hospital	0.0794	0.1657	-0.2453	0.4042	0.6316
	Non-teaching					
Cardiac procedure capability	CABG	-0.9724	0.2123	-1.3885	-0.5563	<.0001
	Cardiac catheterization only, no CABG	-0.5088	0.1966	-0.8942	-0.1233	0.0097
	Neither CABG nor cardiac catheterization capability	REF				

Metropolitan classification	Large Central Metro	0.3932	0.2421	-0.0813	0.8677	0.1044
	Large Fringe Metro	-0.2083	0.2262	-0.6517	0.2351	0.3572
	Medium Metro	-1.0155	0.2219	-1.4503	-0.5806	<.0001
	Micropolitan	-0.5313	0.194	-0.9116	-0.151	0.0062
	Small Metro	-0.5995	0.242	-1.0739	-0.1252	0.0132
	Noncore	REF				
Region	EN Central	-0.2883	0.2224	-0.7242	0.1475	0.1948
	ES Central	0.7131	0.2522	0.2188	1.2074	0.0047
	Mid-Atlantic	0.7741	0.2685	0.2479	1.3003	0.0039
	Mountain	-1.0829	0.2644	-1.6011	-0.5647	<.0001
	New England	-0.2121	0.3398	-0.878	0.4539	0.5325
	Pacific	-0.8093	0.2457	-1.291	-0.3277	0.001
	South Atlantic	-0.0989	0.2238	-0.5376	0.3397	0.6585
	WN Central	-0.9653	0.228	-1.4122	-0.5184	<.0001
	WS Central	REF				
Quartile of RN/bed	Q1	0.4989	0.1889	0.1286	0.8691	0.0083
	Q2	0.3674	0.1732	0.0279	0.7068	0.0339
	Q3	-0.0512	0.1675	-0.3795	0.2771	0.7597
	Q4	REF				
Scale		3.8034	0.0411	3.7237	3.8847	

Table B3: Parameter estimates, surgery/gynecology cohort

Parameter		Estimate	Standard Error	Wald 95% Confidence Limits		Pr > ChiSq
Intercept		10.1785	0.4463	9.3037	11.0533	<.0001
Volume quintile	A: [25 - 79]	0.6313	0.2733	0.0957	1.1669	0.0209
	B: (79 - 186]	0.6584	0.2555	0.1577	1.1591	0.01
	C: (186 - 389]	0.4912	0.2304	0.0398	0.9427	0.033
	D: (389 - 792]	0.3559	0.2038	-0.0434	0.7553	0.0807
	E: (792 - 6389]	REF				
Safety net status	Safety net hospital	0.2533	0.2092	-0.1568	0.6634	0.226
	Non-safety net hospital	REF				

Ownership	Not for profit	0.0311	0.2553	-0.4692	0.5314	0.903
	Private	0.7686	0.2825	0.215	1.3222	0.0065
	Public	REF				
Teaching status	Member of Council of Teaching Hospitals	1.3138	0.2633	0.7976	1.8299	<.0001
	Minor teaching hospital	0.0129	0.1559	-0.2926	0.3185	0.9339
	Non-teaching					
Cardiac procedure capability	CABG	0.5731	0.1984	0.1843	0.9619	0.0039
	Cardiac catheterization only, no CABG	0.2101	0.1776	-0.138	0.5581	0.2368
	Neither CABG nor cardiac catheterization capability	REF				
Metropolitan classification	Large Central Metro	0.5078	0.2752	-0.0316	1.0472	0.065
	Large Fringe Metro	0.5573	0.2687	0.0305	1.084	0.0381
	Medium Metro	-0.4189	0.2699	-0.948	0.1101	0.1207
	Micropolitan	-0.2311	0.2487	-0.7185	0.2563	0.3527
	Small Metro	-0.2174	0.292	-0.7897	0.3548	0.4564
	Noncore	REF				
Region	EN Central	0.1069	0.2319	-0.3476	0.5615	0.6448
	ES Central	0.984	0.2878	0.4198	1.5481	0.0006
	Mid-Atlantic	0.9848	0.2654	0.4646	1.5049	0.0002
	Mountain	-0.3602	0.2785	-0.906	0.1855	0.1958
	New England	0.2692	0.3317	-0.3808	0.9193	0.4169
	Pacific	-0.7017	0.2481	-1.1879	-0.2155	0.0047
	South Atlantic	0.6828	0.2315	0.229	1.1366	0.0032
	WN Central	-0.4322	0.267	-0.9554	0.0911	0.1055
	WS Central	REF				
Quartile of RN/bed	Q1	0.118	0.2132	-0.2999	0.5359	0.58
	Q2	0.301	0.1674	-0.027	0.629	0.0721
	Q3	-0.0143	0.1551	-0.3183	0.2897	0.9265
	Q4	REF				
Scale		3.3519	0.0421	3.2703	3.4354	

Table B4: Parameter estimates, cardiorespiratory cohort

Parameter		Estimate	Standard Error	Wald 95% Confidence Limits		Pr > ChiSq
Intercept		21.3644	0.5038	20.377	22.3518	<.0001
Volume quintile	A: [25 - 68]	-3.0107	0.3402	-3.6774	-2.344	<.0001
	B: (68 - 133]	-1.8091	0.31	-2.4167	-1.2015	<.0001
	C: (133 - 252]	-0.8416	0.2797	-1.3898	-0.2935	0.0026
	D: (252 - 458]	-0.2066	0.2461	-0.6889	0.2757	0.4012
	E: (458 - 3068]	REF				
Safety net status	Safety net hospital	0.4082	0.2733	-0.1276	0.9439	0.1354
	Non-safety net hospital	REF				
Ownership	Not for profit	0.0485	0.3143	-0.5675	0.6646	0.8773
	Private	0.7783	0.3493	0.0937	1.4628	0.0259
	Public	REF				
Teaching status	Member of Council of Teaching Hospitals	0.8352	0.359	0.1316	1.5389	0.02
	Minor teaching hospital	0.0305	0.209	-0.3792	0.4402	0.884
	Non-teaching	REF				
Cardiac procedure capability	CABG	-1.408	0.2618	-1.9212	-0.8949	<.0001
	Cardiac catheterization only, no CABG	-0.6917	0.2419	-1.1658	-0.2175	0.0042
	Neither CABG nor cardiac catheterization capability	REF				
Metropolitan classification	Large Central Metro	0.7548	0.303	0.1609	1.3487	0.0127
	Large Fringe Metro	0.0494	0.2842	-0.5075	0.6064	0.8619
	Medium Metro	-0.4935	0.2801	-1.0425	0.0555	0.0781
	Micropolitan	-0.4541	0.246	-0.9361	0.028	0.0649
	Small Metro	-0.7935	0.3069	-1.3951	-0.192	0.0097
	Noncore	REF				
Region	EN Central	-0.5556	0.2804	-1.1052	-0.0061	0.0475
	ES Central	0.9087	0.3175	0.2865	1.5309	0.0042

	Mid-Atlantic	0.7953	0.337	0.1348	1.4559	0.0183
	Mountain	-1.7279	0.3475	-2.4089	-1.0469	<.0001
	New England	-0.2552	0.4276	-1.0933	0.5829	0.5507
	Pacific	-0.9519	0.315	-1.5692	-0.3346	0.0025
	South Atlantic	-0.0259	0.2814	-0.5774	0.5256	0.9268
	WN Central	-0.9407	0.2928	-1.5145	-0.3668	0.0013
	WS Central	REF				
Quartile of RN/bed	Q1	0.8793	0.2427	0.4036	1.355	0.0003
	Q2	0.3432	0.2188	-0.0857	0.7721	0.1168
	Q3	0.097	0.2109	-0.3164	0.5103	0.6456
	Q4	REF				
Scale		4.707	0.0522	4.6058	4.8105	

Table B5: Parameter estimates, cardiovascular cohort standardized readmission rate

Parameter		Estimate	Standard Error	Wald 95% Confidence Limits		Pr > ChiSq
Intercept		16.3191	0.5472	15.2466	17.3915	<.0001
Volume quintile	A: [25 - 50]	-0.572	0.327	-1.2129	0.0689	0.0802
	B: (50 - 120]	-0.1282	0.2904	-0.6973	0.4409	0.6588
	C: (120 - 237]	0.0251	0.2609	-0.4862	0.5365	0.9233
	D: (237 - 441]	-0.053	0.2353	-0.5142	0.4082	0.8219
	E: (441 - 3361]	REF				
Safety net status	Safety net hospital	0.6102	0.2478	0.1245	1.0959	0.0138
	Non-safety net hospital	REF				
Ownership	Not for profit	0.0326	0.3067	-0.5686	0.6338	0.9153
	Private	0.8493	0.3341	0.1944	1.5041	0.011
	Public	REF				
Teaching status	Member of Council of Teaching Hospitals	0.7418	0.3027	0.1486	1.335	0.0143
	Minor teaching hospital	-0.0557	0.1859	-0.4201	0.3087	0.7645
	Non-teaching	REF				
Cardiac procedure capability	CABG	-0.6686	0.243	-1.1449	-0.1924	0.0059
	Cardiac catheterization only, no CABG	-0.2294	0.2131	-0.6472	0.1883	0.2817
	Neither CABG nor cardiac catheterization capability	REF				

Metropolitan classification	Large Central Metro	-1.6363	0.334	-2.2908	-0.9817	<.0001
	Large Fringe Metro	-2.0044	0.3255	-2.6424	-1.3664	<.0001
	Medium Metro	-2.5485	0.3276	-3.1905	-1.9064	<.0001
	Micropolitan	-1.9699	0.3026	-2.5629	-1.3768	<.0001
	Small Metro	-2.1811	0.3548	-2.8765	-1.4856	<.0001
	Noncore	REF				
Region	EN Central	-0.3787	0.2764	-0.9204	0.163	0.1707
	ES Central	0.3637	0.324	-0.2713	0.9987	0.2616
	Mid-Atlantic	0.4416	0.3105	-0.167	1.0501	0.155
	Mountain	-1.7343	0.3576	-2.4352	-1.0334	<.0001
	New Enlgand	-0.1663	0.3832	-0.9174	0.5848	0.6643
	Pacific	-1.3452	0.3009	-1.935	-0.7554	<.0001
	South Atlantic	-0.4617	0.2732	-0.9972	0.0738	0.091
	WN Central	-0.5187	0.3325	-1.1703	0.1329	0.1187
	WS Central	REF				
Quartile of RN/bed	Q1	0.4602	0.259	-0.0475	0.968	0.0756
	Q2	0.1415	0.2044	-0.259	0.542	0.4886
	Q3	-0.1389	0.1894	-0.5101	0.2324	0.4634
	Q4	REF				
Scale		3.813	0.0503	3.7156	3.9129	

Table B6: Parameter estimates, neurology cohort standardized readmission rates

Parameter		Estimate	Standard Error	Wald 95% Confidence Limits		Pr > ChiSq
Intercept		13.0444	0.6736	11.7243	14.3646	<.0001
Volume quintile	A: [25 - 44]	-0.8749	0.3642	-1.5888	-0.1611	0.0163
	B: (44 - 84]	-0.348	0.3264	-0.9877	0.2917	0.2863
	C: (84 - 141]	-0.2329	0.2997	-0.8202	0.3545	0.4372
	D: (141 - 249]	-0.1539	0.2772	-0.6972	0.3895	0.5789
	E: (249 - 1429]	REF				
Safety net status	Safety net hospital	0.8651	0.2931	0.2906	1.4396	0.0032

	Non-safety net hospital	REF				
Ownership	Not for profit	0.8706	0.3676	0.15	1.5911	0.0179
	Private	1.471	0.4019	0.6833	2.2586	0.0003
	Public	REF				
Teaching status	Member of Council of Teaching Hospitals	1.0234	0.3508	0.3358	1.7109	0.0035
	Minor teaching hospital	0.1143	0.2146	-0.3064	0.5349	0.5944
	Non-teaching	REF				
Cardiac procedure capability	CABG	-0.8069	0.2661	-1.3284	-0.2855	0.0024
	Cardiac catheterization only, no CABG	-0.9355	0.2447	-1.4152	-0.4558	0.0001
	Neither CABG nor cardiac catheterization capability	REF				
Metropolitan classification	Large Central Metro	1.1667	0.446	0.2925	2.0409	0.0089
	Large Fringe Metro	0.3439	0.4366	-0.5117	1.1996	0.4308
	Medium Metro	-0.2538	0.4369	-1.11	0.6025	0.5613
	Micropolitan	-0.4934	0.4141	-1.3051	0.3182	0.2334
	Small Metro	-0.4214	0.4639	-1.3306	0.4877	0.3636
	Noncore	REF				
Region	EN Central	-1.0591	0.3381	-1.7217	-0.3964	0.0017
	ES Central	1.2949	0.3946	0.5215	2.0683	0.001
	Mid-Atlantic	0.3811	0.3756	-0.3551	1.1173	0.3103
	Mountain	-1.4103	0.4422	-2.2771	-0.5435	0.0014
	New Enlgand	-0.5033	0.4616	-1.4081	0.4015	0.2756
	Pacific	-0.6469	0.3607	-1.3538	0.06	0.0729
	South Atlantic	0.3558	0.3296	-0.2901	1.0017	0.2803
	WN Central	-0.8194	0.411	-1.6249	-0.0139	0.0462
	WS Central	REF				
Quartile of RN/bed	Q1	0.3941	0.3226	-0.2381	1.0264	0.2218
	Q2	0.4326	0.2448	-0.0471	0.9124	0.0771
	Q3	0.252	0.2223	-0.1837	0.6878	0.2569
	Q4	REF				
Scale		4.2651	0.0599	4.1492	4.3842	