

Methodology

Readmissions		
Rate Year	FY 2015	
Base Revenue	FY 2014	
Readmission Measurement Period	CY 2013	M:\CMI\INPATIENT\NEW CMI FOR 2013\CMI CALCULATION : Create a CY Data using FY13Curr and FY12Base
Exclusions	Categorical Exclusions, Short Stays (0-1 Day Stays)	* The data sets have all one day stays (except for births) excluded
Measurement	System-linked IDs with planned readmission adjustment(CMS Algorithm v2)	
APR-DRG Version	V29	

1: Calculate Statwide Readmissions for the Base

* Using EpisodeID, created a new variable for APR-DRGs and SOI for Readmissions to match the associated Initial Admissions

Example:

EPISODEID	APR_DRG	SEVERITY	ADMTDATE	HOSPID_R	ADMTYPE	EPISODEDRG	EPISODESOI
210002100324RE2	757	2	12/5/2010	210002	IA	757	2
210002100324RE2	140	4	12/13/2010	210002	RA	757	2

The Readmission APR-DRG SOIs were recoded to reflect the Initial Admission because the incentive for reducing readmissions is bundled under the Initial Admission APR-DRG SOI.

* Calculate the Stateside Readmission Rate for each APR-DRG SOI (Readmissions/Total Admissions)

2: Calculate the Hospital Level Readmission Counts for Expected Values

* Use the new Episode-linked APR-DRG and SOI variables to count readmissions for each APR-DRG SOI

3: Determine the Hospital Level Expected Readmissions for the Current

* Multiply each hospital APR-DRG SOI by the Statewide readmission rate for that APR-DRG SOI to determine the expected readmissions

* For each hospital, sum up the expected, observed, and total readmissions

* Compute the Observed rate (readmissions/total admissions)

* Compute the Readmission Ratio (observed readmissions/expected readmissions)

Table 1. Hospital Readmission Rate and Ratio CY 2013

Hospital ID	Hospital Name	CY2013					
		Total Admissions	Expected Readmissions*	Observed Readmissions	Observed Rate	Readmission Ratio	Risk Adjusted Rate
		A	B	C	D = C/A	E=C/B	F = E*Total D
210027	WESTERN MARYLAND HEALTH SYST	11,529	856.78	1,088	9.44%	1.2699	9.35%
210040	NORTHWEST	11,224	1111.8	1,377	12.27%	1.2385	9.12%
210030	CHESTERTOWN	1,674	172.56	204	12.19%	1.1822	8.70%
210009	JOHNS HOPKINS	37,234	3227.1	3,641	9.78%	1.1283	8.30%
210001	MERITUS	15,780	1121.6	1,252	7.93%	1.1163	8.22%
210029	HOPKINS BAYVIEW MED CTR	17,627	1355.5	1,521	8.63%	1.1221	8.26%
210043	BALTIMORE WASHINGTON MEDICAL	15,782	1400	1,570	9.95%	1.1214	8.25%
210028	ST. MARY	6,614	430.07	476	7.20%	1.1068	8.15%
210023	ANNE ARUNDEL	26,652	1462.1	1,578	5.92%	1.0793	7.94%
210012	SINAI	22,764	1787.6	1,919	8.43%	1.0735	7.90%
210015	FRANKLIN SQUARE	20,473	1497.9	1,601	7.82%	1.0688	7.87%
210019	PENINSULA REGIONAL	17,152	1319	1,408	8.21%	1.0675	7.86%
210056	GOOD SAMARITAN	10,307	1015.9	1,084	10.52%	1.0670	7.85%
210032	UNION HOSPITAL OF CECIL COUNT	4,959	387.67	412	8.31%	1.0628	7.82%
210033	CARROLL COUNTY	9,842	736.28	779	7.92%	1.0580	7.79%
210005	FREDERICK MEMORIAL	16,815	1213.2	1,255	7.46%	1.0345	7.61%
210048	HOWARD COUNTY	16,855	1021.4	1,051	6.24%	1.0290	7.57%
210011	ST. AGNES	16,388	1249.4	1,233	7.52%	0.9869	7.26%
210018	MONTGOMERY GENERAL	7,547	580.03	572	7.58%	0.9862	7.26%
210035	CHARLES REGIONAL	7,087	562.52	550	7.76%	0.9777	7.20%
210013	BON SECOURS	4,847	499.67	484	9.99%	0.9686	7.13%
210049	UPPER CHESAPEAKE HEALTH	11,585	862.52	831	7.17%	0.9635	7.09%
210051	DOCTORS COMMUNITY	8,933	906.23	871	9.75%	0.9611	7.07%
210055	LAUREL REGIONAL	5,853	388.33	368	6.29%	0.9476	6.97%
210004	HOLY CROSS	31,613	1544.1	1,448	4.58%	0.9378	6.90%
210034	HARBOR	8,327	549.41	515	6.18%	0.9374	6.90%
210022	SUBURBAN	10,806	924.61	856	7.92%	0.9258	6.81%
210057	SHADY GROVE	21,970	1213.1	1,131	5.15%	0.9323	6.86%
210062	SOUTHERN MARYLAND	12,802	1007.4	932	7.28%	0.9252	6.81%
210002	UNIVERSITY OF MARYLAND	22,419	1886.6	1,722	7.68%	0.9128	6.72%
210024	UNION MEMORIAL	10,899	942.98	858	7.87%	0.9099	6.70%
210008	MERCY	16,357	896.41	798	4.88%	0.8902	6.55%
210010	DORCHESTER	2,047	196.97	173	8.45%	0.8783	6.46%
210060	FT. WASHINGTON	1,881	161.23	142	7.55%	0.8807	6.48%
210016	WASHINGTON ADVENTIST	11,718	846.31	734	6.26%	0.8673	6.38%
210006	HARFORD	3,929	371.46	315	8.02%	0.8480	6.24%
210037	EASTON	7,890	551.47	468	5.93%	0.8486	6.25%
210039	CALVERT	6,059	428.03	362	5.97%	0.8457	6.22%
210061	ATLANTIC GENERAL	2,708	263.24	225	8.31%	0.8547	6.29%
210063	UM ST. JOSEPH	14,301	959.5	814	5.69%	0.8484	6.24%
210044	G.B.M.C.	18,130	1059	876	4.83%	0.8272	6.09%
210038	UMMC MIDTOWN	5,840	557.17	426	7.29%	0.7646	5.63%
210003	PRINCE GEORGE	11,422	750.67	561	4.91%	0.7473	5.50%
210045	MCCREADY	264	29.62	20	7.58%	0.6752	4.97%
210017	GARRETT COUNTY	1,858	114.69	71	3.82%	0.6191	4.56%
210058	REHAB & ORTHO	2,751	172.79	20	0.73%	0.1157	0.85%
TOTAL		551,514	40,592	40,592	7.36%	1.0000	7.36%

* Based on Statewide readmissions by Initial Admission APR-DRG SOI

UPDATED 3/18/13

Data Files Used for this Analysis:

M:\methodology\ARR - Nd\CASEMIX\FY2012\readmissionbase

M:\methodology\ARR - Nd\CASEMIX\FY2012\readmission_current

Table 2: Calculation of Statewide Reduction

Total Approved Revenue FY 2014	A	\$15,208,056,320
Percent Inpatient	B	59.3%
Approved Inpatient Revenue	$C = (A/B)$	\$9,014,965,119
Proposed Required Revenue Reduction %	F	0.40%
Proposed Required Revenue Reduction (\$)	$G=A*F$	\$60,832,225
Total Discharges Included	D	551,514
Average Approved Charge Per Case	$E=C/D$	\$16,346
Readmission as a percent of Total Discharges	H	7.36%
Total Number of Readmissions	$I = D*H$	40,592
Required Reduction in Readmissions to achieve savings	$J=G/E$	(3,722)
Required New Readmission Rate	$K=(I+J)/D$	6.69%
Required Percent Reduction in Readmission Rate	$L=K/H-1$	-9.17%

Proposed

Table 3. Calculation of Shared Savings Based on Statewide Risk Adjusted Readmission Reduction Rate

Hospital ID	Hospital Name	CY13 Risk Adjusted Rate	Inpatient Revenue Reduction	Proportion of Total Revenue from Inpatient CY 2013	Percent Reduction in Total Revenue For RY 2015
A	B	C	D=C*9.17%	E	F=E*D
210027	WESTERN MARYLAND HEALTH	9.35%	-0.86%	57.40%	-0.49%
210040	NORTHWEST	9.12%	-0.84%	57.32%	-0.48%
210030	CHESTERTOWN	8.70%	-0.80%	46.74%	-0.37%
210009	JOHNS HOPKINS	8.30%	-0.76%	62.62%	-0.48%
210029	HOPKINS BAYVIEW MED CTR	8.26%	-0.76%	59.24%	-0.45%
210043	BALTIMORE WASHINGTON MED	8.25%	-0.76%	57.27%	-0.43%
210001	MERITUS	8.22%	-0.75%	62.34%	-0.47%
210028	ST. MARY	8.15%	-0.75%	43.92%	-0.33%
210023	ANNE ARUNDEL	7.94%	-0.73%	56.33%	-0.41%
210012	SINAI	7.90%	-0.72%	61.90%	-0.45%
210015	FRANKLIN SQUARE	7.87%	-0.72%	59.69%	-0.43%
210019	PENINSULA REGIONAL	7.86%	-0.72%	57.28%	-0.41%
210056	GOOD SAMARITAN	7.85%	-0.72%	60.06%	-0.43%
210032	UNION HOSPITAL OF CECIL COU	7.82%	-0.72%	44.30%	-0.32%
210033	CARROLL COUNTY	7.79%	-0.71%	56.43%	-0.40%
210005	FREDERICK MEMORIAL	7.61%	-0.70%	56.85%	-0.40%
210048	HOWARD COUNTY	7.57%	-0.69%	61.57%	-0.43%
210011	ST. AGNES	7.26%	-0.67%	58.27%	-0.39%
210018	MONTGOMERY GENERAL	7.26%	-0.67%	52.51%	-0.35%
210035	CHARLES REGIONAL	7.20%	-0.66%	51.49%	-0.34%
210013	BON SECOURS	7.13%	-0.65%	60.81%	-0.40%
210049	UPPER CHESAPEAKE HEALTH	7.09%	-0.65%	48.21%	-0.31%
210051	DOCTORS COMMUNITY	7.07%	-0.65%	60.72%	-0.39%
210055	LAUREL REGIONAL	6.97%	-0.64%	63.36%	-0.41%
210004	HOLY CROSS	6.90%	-0.63%	69.00%	-0.44%
210034	HARBOR	6.90%	-0.63%	62.23%	-0.39%
210057	SHADY GROVE	6.86%	-0.63%	62.33%	-0.39%
210022	SUBURBAN	6.81%	-0.62%	64.13%	-0.40%
210062	SOUTHERN MARYLAND	6.81%	-0.62%	62.20%	-0.39%
210002	UNIVERSITY OF MARYLAND	6.72%	-0.62%	72.04%	-0.44%
210024	UNION MEMORIAL	6.70%	-0.61%	59.21%	-0.36%
210008	MERCY	6.55%	-0.60%	48.87%	-0.29%
210060	FT. WASHINGTON	6.48%	-0.59%	41.58%	-0.25%
210010	DORCHESTER	6.46%	-0.59%	49.18%	-0.29%
210016	WASHINGTON ADVENTIST	6.38%	-0.59%	63.33%	-0.37%
210061	ATLANTIC GENERAL	6.29%	-0.58%	40.11%	-0.23%
210037	EASTON	6.25%	-0.57%	53.41%	-0.31%
210063	UM ST. JOSEPH	6.24%	-0.57%	60.02%	-0.34%
210006	HARFORD	6.24%	-0.57%	44.99%	-0.26%
210039	CALVERT	6.22%	-0.57%	47.51%	-0.27%
210044	G.B.M.C.	6.09%	-0.56%	48.05%	-0.27%
210038	UMMC MIDTOWN	5.63%	-0.52%	60.59%	-0.31%
210003	PRINCE GEORGE	5.50%	-0.50%	69.60%	-0.35%
210045	MCCREADY	4.97%	-0.46%	23.06%	-0.11%
210017	GARRETT COUNTY	4.56%	-0.42%	41.63%	-0.17%
210058	REHAB & ORTHO	0.85%	-0.08%	60.17%	-0.05%
Total		7.36%	-0.67%	60.00%	-0.40%

Table 4: Average Charge Per Case, Total Inpatient and Outpatient Revenue, and Average Length of Stay, Maryland Acute Hospitals CY 2013

Hospital ID	Hospital Name	Inpatient Revenue	Cases	Charge Per Case (CPC)	Outpatient Revenue	Inpatient/Total Revenue
210001	MERITUS	\$196,275,144	18,246	\$10,757	\$118,571,898	62.34%
210002	UNIVERSITY OF MARYLAND	\$1,058,367,288	34,529	\$31,716	\$410,689,775	72.04%
210003	PRINCE GEORGE	\$178,336,774	13,021	\$13,696	\$77,910,341	69.60%
210004	HOLY CROSS	\$321,352,566	34,872	\$9,215	\$144,360,035	69.00%
210005	FREDERICK MEMORIAL	\$189,917,441	19,243	\$9,869	\$144,162,697	56.85%
210006	HARFORD	\$46,614,039	4,814	\$9,683	\$56,990,094	44.99%
210008	MERCY	\$234,364,229	19,173	\$12,224	\$245,154,839	48.87%
210009	JOHNS HOPKINS	\$1,383,260,377	50,350	\$27,473	\$825,887,490	62.62%
210010	DORCHESTER	\$28,508,463	2,432	\$11,722	\$29,457,551	49.18%
210011	ST. AGNES	\$237,663,794	19,415	\$12,241	\$170,214,422	58.27%
210012	SINAI	\$431,240,442	27,154	\$15,881	\$265,441,784	61.90%
210013	BON SECOURS	\$75,995,998	5,690	\$13,356	\$48,966,640	60.81%
210015	FRANKLIN SQUARE	\$287,055,826	24,093	\$11,914	\$193,868,410	59.69%
210016	WASHINGTON ADVENTIST	\$155,729,362	13,207	\$11,791	\$90,170,999	63.33%
210017	GARRETT COUNTY	\$18,482,064	2,209	\$8,367	\$25,913,487	41.63%
210018	MONTGOMERY GENERAL	\$86,612,390	9,029	\$9,593	\$78,344,561	52.51%
210019	PENINSULA REGIONAL	\$235,616,218	19,697	\$11,962	\$175,707,255	57.28%
210022	SUBURBAN	\$187,295,003	13,153	\$14,240	\$104,744,048	64.13%
210023	ANNE ARUNDEL	\$310,552,499	32,835	\$9,458	\$240,771,205	56.33%
210024	UNION MEMORIAL	\$240,584,211	13,404	\$17,949	\$165,740,887	59.21%
210027	WESTERN MARYLAND HEALTH	\$183,863,234	13,403	\$13,718	\$136,470,763	57.40%
210028	ST. MARY	\$69,808,912	8,332	\$8,378	\$89,119,253	43.92%
210029	HOPKINS BAYVIEW MED CTR	\$357,008,337	21,933	\$16,277	\$245,683,875	59.24%
210030	CHESTERTOWN	\$28,659,668	1,984	\$14,445	\$32,661,922	46.74%
210032	UNION HOSPITAL OF CECIL CO	\$67,854,323	5,865	\$11,569	\$85,315,708	44.30%
210033	CARROLL COUNTY	\$140,178,015	12,383	\$11,320	\$108,233,652	56.43%
210034	HARBOR	\$123,775,055	9,500	\$13,029	\$75,121,100	62.23%
210035	CHARLES REGIONAL	\$74,041,364	8,417	\$8,797	\$69,749,684	51.49%
210037	EASTON	\$102,664,496	9,049	\$11,345	\$89,540,605	53.41%
210038	UMMC MIDTOWN	\$131,778,799	7,093	\$18,579	\$85,731,411	60.59%
210039	CALVERT	\$66,025,076	7,091	\$9,311	\$72,955,297	47.51%
210040	NORTHWEST	\$143,357,745	13,975	\$10,258	\$106,752,681	57.32%
210043	BALTIMORE WASHINGTON MED	\$220,412,973	19,238	\$11,457	\$164,423,953	57.27%
210044	G.B.M.C.	\$201,205,227	20,567	\$9,783	\$217,568,096	48.05%
210045	MCCREADY	\$4,447,566	314	\$14,164	\$14,838,673	23.06%
210048	HOWARD COUNTY	\$174,110,105	18,985	\$9,171	\$108,669,738	61.57%
210049	UPPER CHESAPEAKE HEALTH	\$139,966,564	14,258	\$9,817	\$150,352,794	48.21%
210051	DOCTORS COMMUNITY	\$133,924,491	10,594	\$12,642	\$86,626,291	60.72%
210055	LAUREL REGIONAL	\$77,627,357	6,856	\$11,323	\$44,896,187	63.36%
210056	GOOD SAMARITAN	\$173,208,641	12,508	\$13,848	\$115,202,396	60.06%
210057	SHADY GROVE	\$233,837,605	24,810	\$9,425	\$141,352,188	62.33%
210058	REHAB & ORTHO	\$70,150,532	3,638	\$19,283	\$46,429,940	60.17%
210060	FT. WASHINGTON	\$19,189,479	2,306	\$8,322	\$26,962,557	41.58%
210061	ATLANTIC GENERAL	\$40,965,689	3,346	\$12,243	\$61,176,438	40.11%
210062	SOUTHERN MARYLAND	\$161,153,676	15,705	\$10,261	\$97,930,616	62.20%
210063	UM ST. JOSEPH	\$212,868,469	17,026	\$12,503	\$141,772,156	60.02%
218992	UNIVERSITY OF MD MEIMS	\$183,880,245	6,957	\$26,431	\$15,988,858	92.00%
	Statewide	\$9,255,907,526	665,742	\$13,903	\$6,228,606,392	59.78%

Charge per case = Inpatient revenue divided by number of cases.

Source: HSCRC monthly data from MS, NS, RS schedules.