

Utilization Trends in Inpatient Rehabilitation: Update Through Q2: 2011

November 2011

THE MORAN COMPANY

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EXECUTIVE SUMMARY

The Moran Company was engaged by the Federation of American Hospitals, the American Hospital Association, and the American Medical Rehabilitation Providers Association to update prior analyses we had performed evaluating the impact of changes in provider qualification rules for inpatient rehabilitation facilities (IRFs) under Medicare. In this follow-on study, we have:

- Acquired data on discharges of IRF patients (from Medicare and other payers) through the end of the second quarter of 2011.
- Extended our prior analysis by acquiring data from both of the largest data benchmarking services used by IRFs (UDSMR® and AMRPA/eRehabData®), which in 2009 were estimated to comprise more than 77% of all Medicare discharges.

The findings of this analysis confirm the results of our prior analyses. Specifically, we find that:

- Immediately following implementation of the IRF Prospective Payment System Final Rule of May, 2004, the prior growth trend in IRF discharges ended, and volume declined steadily until the third quarter of calendar year 2007.
- In subsequent quarters, Medicare caseload fluctuated from a low of 66,514 in the first quarter of calendar year 2010 to a high of 71,351 in the second quarter of calendar year 2011.
- In the four quarters ending Q2: 2011, Medicare volume totaled 281,059, down 26.4% from the 381,844 discharges observed in the comparable period ending Q2: 2004.
- As has been the case since 2004, this caseload decline is concentrated in about one-third of the Rehabilitation Impairment Code (RIC) categories, particularly those areas that the Centers for Medicare and Medicaid Services (CMS) has indicated will be subject to the greatest degree of scrutiny in determining compliance with the “75% Rule.” However, we are also now seeing declining case loads in 13 of the 21 diagnostic categories, including some categories not targeted by CMS, such as strokes and spinal cord injuries. The remaining categories show modest growth, such as for some neurological cases, or no change in volume.

- Given the correlation between the stated goal of the 75% Rule policy (and subsequently the 60% Rule policy) and the concentrated and sustained impact of the caseload decline, it is difficult to reach the conclusion that this is a coincidence; the observed caseload decline in targeted cases is obviously the direct consequence of the policy. The volume decreases for the non-targeted cases, such as strokes and spinal cord injuries, appear to be an unintended consequence of the policy.
- Lastly, we found that the two RICs (RICs 7 and 8) with the greatest declines in overall volume from CY2006 and 2010—20% and 43%, respectively—also saw shifts in their case mix. During the same period, the number of less heavily weighted CMGs within these two RICs, expressed as an overall percentage of the RIC, also declined. The result of this decline was that there was a greater volume of higher acuity patients (more medically complex, functionally impaired) within these RICs.

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In May 2004, the Centers for Medicare and Medicaid Services (CMS) published a Final Rule implementing changes in its policies regarding the criteria used to determine which facilities are eligible to receive reimbursement as Inpatient Rehabilitation Facilities (IRFs).¹ In that rule, CMS implemented a three-year transition to full enforcement of the so-called “75 % Rule,” under which qualifying facilities would have to demonstrate that, by 2007, 75% of their admissions were for cases requiring intensive rehabilitation of impairments caused by one or more of thirteen qualifying conditions. Concerns about the potential impact of this policy induced Congress to stay reclassification of facilities based on the rule pending submission of a Government Accountability Office (GAO) study. Within sixty days after submission of that study, which occurred on April 22, 2005, CMS was required to determine whether to modify the Rule or to leave it in place without change.

After the report, CMS finalized its policy to require IRFs to meet the 75% rule test by July 1, 2007 (with a transition to that percentage during intervening years). In §5005 of the Deficit Reduction Act of 2005 (DRA), the Congress enacted a revised timeline for full implementation. Under the DRA policy, the 60% compliance threshold temporarily adopted by CMS in its Final Rule was extended for an additional year, effective July 1, 2006, followed by a 65% threshold beginning July 1, 2007. Under the DRA, the threshold would be fully phased-in to 75% on July 1, 2008.²

However, the Medicare, Medicaid, and SCHIP Extension Act of 2007 (MMSEA)³ replaced the 75% rule with the 60% rule, capping the compliance threshold at 60 percent, retroactive to cost reporting periods beginning on or after July 1, 2007. The MMSEA also finalized a policy allowing secondary medical conditions to meet the thirteen medical conditions that qualify towards the threshold.

The controversy over the 75% policy, in part, results from disparities in early estimates of its impact. In its 2004 Final Rule, CMS projected a caseload change of only 1,170 admissions in FY 2005—or roughly 0.2% of projected Medicare case volume. In early 2005, the Federation of American Hospitals prepared a series of estimates, based on time series data on actual experience during early FY 2005, suggesting that overall Medicare caseloads in rehabilitation hospitals and units might drop by as much as 25,000-40,000 annually.

At the beginning of 2010, CMS implemented a comprehensive set of revised patient criteria and admission policies that IRFs must satisfy. Medicare contractors apply these

¹ *Federal Register*, Vol. 69, No. 89 (Friday, May 7, 2004), pp. 25752-25776.

² The conference report accompanying the DRA notes that “The conferees encourage CMS to conduct additional research and study on this issue.” See House Report 109-362 at 212 (December 18, 2005).

³³ Medicare, Medicaid, and SCHIP Extension Act of 2007 (MMSEA), Pub. L. 110-173, Sec. 115.

criteria and admission policies on a claim-specific level as part of the general coverage process to determine whether reimbursement should be provided. These revised criteria and policies are generally more stringent and restrictive than criteria and policies previously used for patient admission and coverage decisions in the IRF setting. It is reasonably plausible that implementation of these revised patient criteria and coverage policies have affected the number of patients admitted to IRFs as well as overall case-mix, with fewer less functionally impaired, less medically complex cases admitted compared to the pre-2010 period.

In a prior study, The Moran Company was engaged to assess those estimates, and present findings of our own analysis of the data then available, through the first calendar quarter of 2005, from the UDSMR® data service.⁴ In subsequent reports, we expanded the analysis to include additional data from AMRPA/eRehabData®, and updated the analysis employing data through the second quarter of 2007.⁵

In October, 2011, we were engaged jointly by the Federation, the American Hospital Association, and the American Medical Rehabilitation Providers Association to update our analysis employing data on utilization through the second calendar quarter of 2011.

This report presents the findings of that analysis.

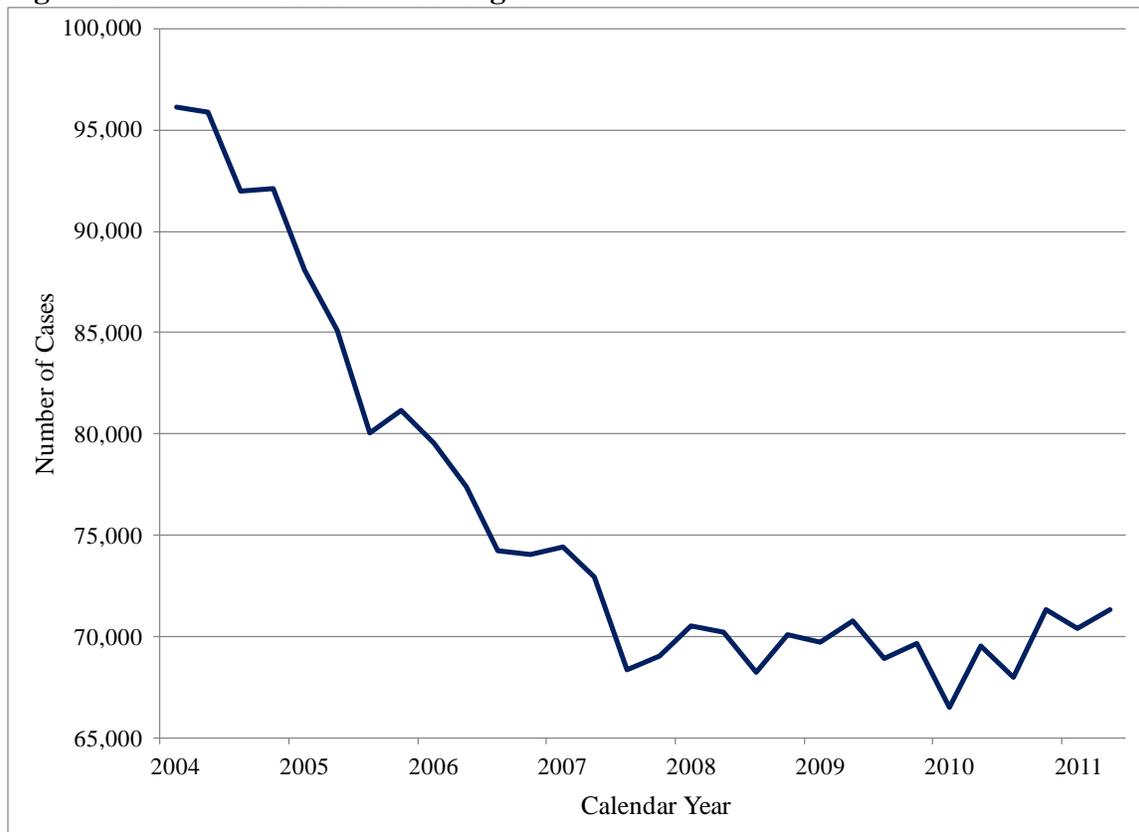
Data Employed in the Analysis

We requested and received 34 quarters of confidential data. Both data services sent us data on only those providers who had participated continuously in the respective services for each of the thirty-four quarters ending with the second quarter of 2011—i.e., so-called “same store” tabulations. Because rehabilitation hospitals use only one data service at a time, the provider lists underlying these samples represent almost fully unduplicated counts of discharges.⁶ In 2009, the Medicare totals we are reporting based on these data sources comprised more than 77% of all Medicare discharges.

⁴ The Moran Company, *Estimating the Impact of Enforcement of the “75% Rule” on Inpatient Rehabilitation Services Volume*. (Arlington, VA, June 2005).

⁵ The Moran Company, *New Estimates of the Impact of Enforcement of the “75% Rule” on Inpatient Rehabilitation Services Volume* (Arlington, VA, September 2005); *Utilization Trends In Inpatient Rehabilitation: Update Through Q 3: 2005*. (Arlington, VA, November 2005); *Utilization Trends in Inpatient Rehabilitation: Update Through Q 4: 2005* (Arlington, VA, April 2006); *Utilization Trends in Inpatient Rehabilitation: Update Through Q 1: 2006* (Arlington, VA, June 2006); *Utilization Trends in Inpatient Rehabilitation: Update Through Q 2: 2006* (Arlington, VA, August 2006); *Utilization Trends in Inpatient Rehabilitation: Update Through Q 4: 2006* (Arlington, VA, February 2007); *Utilization Trends in Inpatient Rehabilitation: Update Through Q 1: 2007* (Arlington, VA, May 2007); *Utilization Trends in Inpatient Rehabilitation: Update Through Q 2: 2007* (Arlington, VA, September 2007).

⁶ Providers who changed data services during this period are, in general, eliminated from this analysis. One data service, however, includes data on newly enrolled providers if they have reported data on all 34 quarters. Comparing the “same store” provider lists showed that one provider was present in both lists, however, we found that this one provider had low discharge volume and should not bias results.

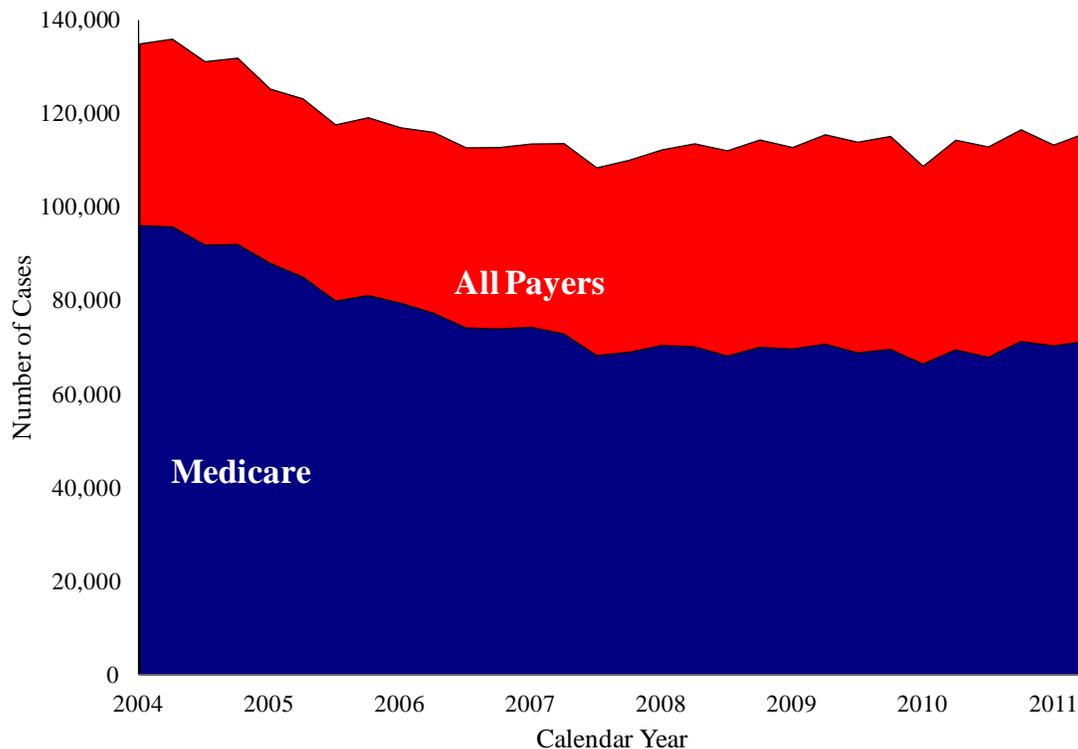
Figure One. IRF Medicare Discharges

Overall Volume Trends

Figure One depicts a steady downward trend of IRF caseloads in Medicare since enforcement of the 75%/60% Rule began. As the figure shows, immediately following implementation of the Final Rule of May, 2004, the prior growth trend in IRF discharges ended, and volume declined steadily until after the third quarter of calendar year 2007.

In that quarter, Medicare discharges in our sample fell to 68,338. Over the following quarters, the number of Medicare discharges fluctuated from a low of 66,514 in the first quarter of calendar year 2010 to a high of 71,351 in the second quarter of calendar year 2011.

As shown in Figure Two, Medicare discharge volumes have been moving in tandem with the total discharge volume trend. This is hardly surprising, since the Medicare discharge volumes comprise nearly 61% of the total caseload volume in the data we analyzed for the four quarters ending with Q2: 2011.

Figure Two. IRF Medicare and Total Discharge Volume

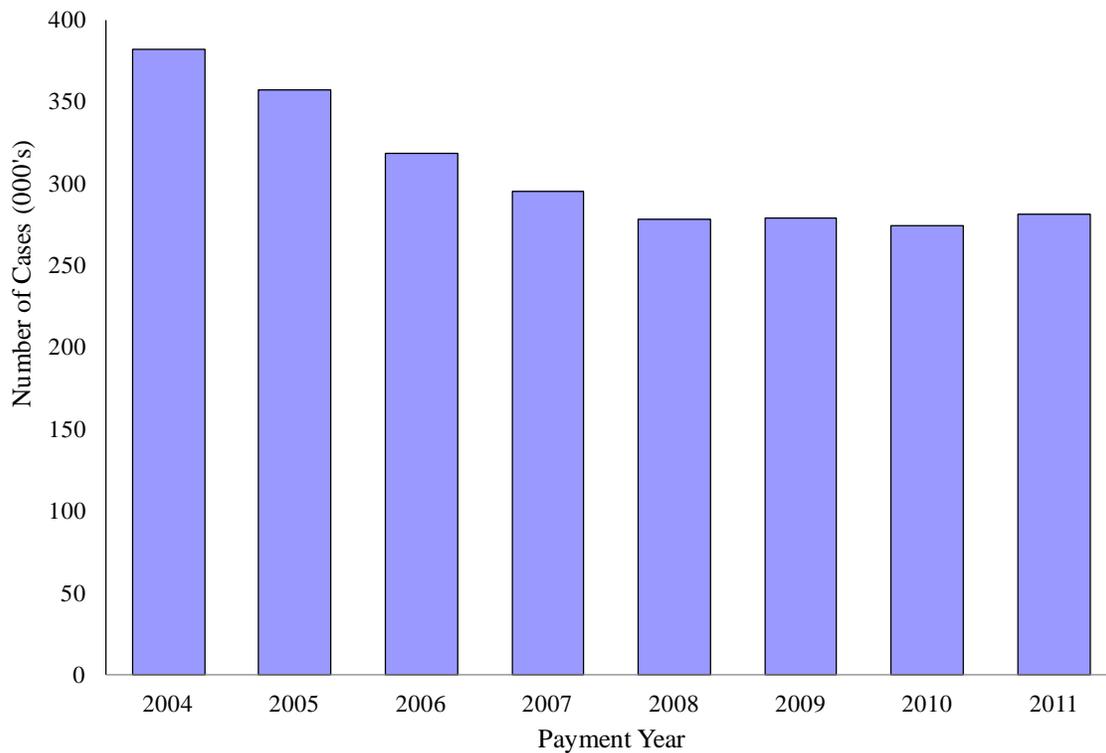
The recent uptick in volume seen in Figure Two is also not surprising considering that between CY2007 and CY2010, the number of beneficiaries with Medicare Part A coverage increased an average of 2.3% per year or approximately one million beneficiaries per year.⁷ The annual change in volume in the Medicare Part A program is, however, much higher than that observed in our sample. During the same period, the average change in IRF volume remained negative (approximately -1.1%). We also saw that the relative share of the Medicare population represented by IRFs continued to decline from 1.1% in CY2004 to 0.8% in CY2009.⁸

Figure Three presents a comparison of Medicare IRF discharges on a program year basis. PY 2008 discharges are 27.2% lower than the level observed in these data for PY 2004, the first program year. The following three years were nearly flat with a slight uptick in PY 2011.

⁷ Calculated mean using data from Table III.A3, 2011 Annual Report of the Board of Trustees of the Federal Hospital Insurance and Federal Supplemental Medical Insurance Trust Funds (accessible at: <http://www.cms.gov/ReportsTrustFunds/downloads/tr2011.pdf>), pg. 51.

⁸ Calculated using the most recent MedPAC data on IRF volume from Chart 8-13, MedPAC, A Data Book: Health care spending and Medicare program, June 2011, Ch 8, pg. 133.

Figure Three. IRF Medicare Discharges, By Program Year



Trends by Diagnostic Type

The UDSMR® and AMRPA/eRehabData® data we requested and received provide subsidiary volume detail by patient diagnosis. These data are presented by Rehabilitation Impairment Category (RIC) codes, which are standard across the industry and are therefore uniform across these data sources.

Table One presents an updated analysis of the shift in volume by RIC. The table shows a comparison of the volume in calendar year 2010 to calendar year 2006. Calendar year 2010 is the most recent full-year period available and calendar year 2006 was chosen because it is the year prior to the passage of MMSEA, as well as the first full calendar year to use the refined definitions and categorization of Case Mix Groups (CMGs), thus providing a benchmark for the change in volume.

Table One

**Volume Change by Rehabilitation Impairment Category
CY2010 versus CY2006**

RIC	CY		Change	
	2006	2010		
8	Replacement of Lower Extremity joint	55,000	31,425	-23,575
7	Fracture of Lower Extremity	47,481	37,751	-9,730
1	Stroke	61,927	55,332	-6,595
5	Nontraumatic spinal cord	11,882	10,022	-1,860
10	Amputation, lower extremity	9,171	7,554	-1,617
16	Pain Syndrome	4,140	2,746	-1,394
12	Osteoarthritis	1,933	1,190	-743
4	Traumatic spinal cord	2,270	1,980	-290
13	Rheumatoid, other arthritis	1,857	1,626	-231
11	Amputation, other	464	329	-135
21	Burn	237	227	-10
19	Guillain Barre	543	542	-1
	Major Multiple Trauma with Central Nervous			
18	System damage	816	1,025	209
15	Pulmonary	4,431	4,653	222
	Major Multiple Trauma without Central Nervous			
17	System damage	3,498	3,920	422
2	Traumatic brain injury	7,517	8,136	619
14	Cardiac	13,030	14,077	1,047
3	Nontraumatic brain injury	11,398	12,586	1,188
9	Other orthopedic	16,646	18,959	2,313
20	Miscellaneous	30,880	34,766	3,886
6	Neurological	20,105	26,517	6,412
	Total	305,226	275,363	-29,863

*Moran Company Analysis of Data Furnished by UDSMR® and
AMRPA/eRehabData®*

Overall, volume declined by 29,863 cases, or by 9.8%, over this period. As has been the case since 2004, this caseload decline is concentrated in about one-third of the RIC categories, particularly those areas that CMS has indicated will be subject to the greatest degree of scrutiny in determining compliance with the “75%/60% Rule.” As depicted in the last column of Table One, the five categories with the largest declines accounted for more than 94% of the total decline in caseload in CY2010, relative to CY2006. In other areas, such as neurological cases, that meet the diagnostic criteria CMS has established, caseload is growing.

Trends By Case-Mix Group

Each RIC is comprised of sub-sets of diagnoses, called case-mix groups, or “CMGs.” Each CMG is weighted in accordance with a patient’s medical severity and functional impairment, with the more heavily weighted CMGs representing a more medically complex and functionally impaired mix of patients.

Table One shows that RICs 7 and 8 were the two RICs with the greatest change between CY2006 and CY2010. For RICs 7 and 8 (lower extremity hip fracture and lower extremity joint replacement, respectively), the volume of these types of cases declined by 20% and 43%, respectively, between 2006 and 2010.

In Table Two, we also see a reduction in volume over time for the less medically complex, functionally impaired CMGs within RIC 7 (i.e., 0701, 0702) and RIC 8 (i.e., 0801, 0802, 0803). The less medically complex, less functionally impaired CMGs within RIC 7 comprised almost 24% of the overall mix of RIC 7 cases in CY2006 versus 20% of the overall mix in CY2010.

The downward shift in volume was also evident in RIC 8 cases where the less medically complex, less functionally impaired CMGs comprised 47% of the overall mix of RIC 8 cases in CY2006 versus 39% in CY2010. While the overall number of RIC 7 and RIC 8 cases declined between 2006 and 2010, the lower weighted CMGs represented a smaller percentage of each RIC’s overall volume in 2010 as compared to 2006. It is reasonably plausible that these trends can be attributed, in part, to the effects of revised patient criteria and admission policies implemented by CMS at the beginning of 2010.

Table Two**Volume Change by Case Mix Group****CY2010 versus CY2006**

CMG		CY		Change
		2006	2010	
0701	Fracture of lower extremity M>42.15	2,392	1,456	-936
0702	Fracture of lower extremity M>34.15 and M<42.15	8,809	5,943	-2,866
0703	Fracture of lower extremity M>28.15 and M<34.15	10,776	7,781	-2,995
0704	Fracture of lower extremity M<28.15	25,148	22,339	-2,809
0801	Replacement of lower extremity joint M>49.55	2,138	761	-1,377
0802	Replacement of lower extremity joint M>37.05 and M<49.55	20,633	9,598	-11,035
0803	Replacement of lower extremity joint M>28.65 and M<37.05 and A>83.5	2,614	1,676	-938
0804	Replacement of lower extremity joint M>28.65 and M<37.05 and A<83.5	16,351	9,714	-6,637
0805	Replacement of lower extremity joint M>22.05 and M<28.65	8,021	5,720	-2,301
0806	Replacement of lower extremity joint M<22.05	4,173	3,532	-641
Total RIC 7		47,125	37,519	-9,606
Total RIC 8		53,930	31,001	-22,929

Moran Company Analysis of Data Furnished by UDSMR® and AMRPA/eRehabData®

Conclusion

Summing up, the conclusions we draw from this analysis are as follows:

- Immediately following implementation of the Final Rule of May, 2004, the prior growth trend in IRF discharges ended, and volume declined steadily until the third quarter of calendar year 2007.
- In subsequent quarters, Medicare caseload fluctuated from a low of 66,514 in the first quarter of calendar year 2010 to a high of 71,351 in the second quarter of calendar year 2011.
- In the four quarters ending Q2: 2011, Medicare volume totaled 281,059, down 26.4% from the 381,844 discharges observed in the comparable period ending Q2: 2004.
- As has been the case since 2004, this caseload decline is concentrated in about one-third of the Rehabilitation Impairment Code (RIC) categories, particularly those areas that the Centers for Medicare and Medicaid Services (CMS) has indicated will be subject to the greatest degree of scrutiny in determining compliance with the “75% Rule.” However, we are also now seeing declining case loads in 13 of the 21 diagnostic categories, including some categories not targeted by CMS, such as strokes and spinal cord injuries. The remaining categories show modest growth, such as for some neurological cases, or no change in volume.
- Given the correlation between the stated policy and the concentrated impact of the caseload decline, it is difficult to reach the conclusion that this is a coincidence; the observed caseload decline in targeted cases is obviously the direct consequence of the policy. The volume decreases for the non-targeted cases, such as strokes and spinal cord injuries, appear to be an unintended consequence of the policy.
- Lastly, we found that the two RICs (RICs 7 ((i.e., fracture of lower extremity) and 8 (i.e., replacement of lower extremity joint)) with the greatest declines in overall volume from CY2006 and 2010 – 20% and 43%, respectively – also saw shifts in their case mix. During the same period, the number of less heavily weighted CMGs within these two RICs, expressed as an overall percentage of the RIC, also declined. As a result, IRFs are now treating a reduced volume, but a higher level of severity (more medically complex, functionally impaired), of patients within these two RICs.

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Inpatient Rehabilitation Discharges by Rehabilitation Impairment Category (RIC)

Discharges, All Payers

RIC	2003				2004				2005				2006				2007				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1	Stroke	22,824	23,225	22,804	22,990	23,314	23,097	23,085	23,354	24,297	24,436	23,497	23,889	24,778	24,583	23,760	24,069	24,845	24,678	23,537	24,112
2	Traumatic brain injury	3,115	3,376	3,714	3,677	3,399	3,720	4,100	4,203	3,937	4,102	4,517	4,594	4,388	4,390	4,701	4,547	4,239	4,615	4,905	4,795
3	Nontraumatic brain injury	3,671	3,927	3,840	3,947	4,243	4,215	4,431	4,361	4,647	5,179	4,941	5,028	5,218	5,334	5,303	5,341	5,629	5,607	5,565	5,794
4	Traumatic spinal cord	1,558	1,661	1,873	1,835	1,651	1,717	1,965	1,996	1,719	1,842	2,057	2,064	1,929	1,885	2,118	2,111	1,820	1,843	2,053	2,113
5	Nontraumatic spinal cord	4,819	5,310	5,552	5,551	5,153	5,457	5,610	5,477	5,168	5,254	5,174	5,167	5,008	5,032	4,897	4,939	4,760	4,949	4,790	4,713
6	Neurological	5,248	5,607	5,777	5,708	5,921	6,058	6,185	6,274	6,602	6,705	6,722	6,518	6,955	7,195	6,982	6,977	7,256	7,532	7,402	7,627
7	Fracture of Lower Extremity	13,636	13,692	13,723	14,360	14,514	14,013	14,050	14,878	14,586	14,390	14,197	15,181	14,957	14,344	13,965	14,593	14,904	14,085	13,416	14,178
8	Replacement of Lower Extremity joint	30,104	32,713	32,190	33,872	31,195	33,399	30,533	31,518	26,945	25,917	23,273	23,429	21,045	20,660	19,049	18,213	16,926	17,365	15,799	15,678
9	Other orthopedic	6,390	6,570	6,592	6,782	6,775	6,853	6,570	6,833	6,394	6,006	5,709	6,128	5,633	5,738	5,847	5,952	5,907	5,927	5,751	5,925
10	Amputation, lower extremity	3,420	3,671	3,732	3,527	3,545	3,728	3,628	3,567	3,481	3,770	3,899	3,454	3,513	3,727	3,652	3,425	3,531	3,681	3,481	3,195
11	Amputation, other	330	369	395	354	340	332	273	235	229	221	177	148	189	189	192	127	159	171	156	127
12	Osteoarthritis	1,936	1,973	1,821	1,649	1,522	1,610	1,139	894	807	794	626	568	612	547	550	440	437	417	407	419
13	Rheumatoid, other arthritis	950	1,061	1,043	1,069	1,092	980	833	790	740	712	706	654	642	613	618	575	540	605	508	557
14	Cardiac	6,489	6,511	6,197	6,438	6,567	6,424	5,730	5,641	5,040	4,495	3,943	3,954	3,986	3,939	3,569	3,871	4,048	3,998	3,563	3,734
15	Pulmonary	2,600	2,480	1,921	2,170	3,025	2,384	1,648	1,559	2,256	1,744	1,156	1,217	1,760	1,324	1,099	1,181	1,569	1,404	1,058	1,086
16	Pain Syndrome	2,633	2,661	2,557	2,431	2,356	2,408	2,379	2,246	1,708	1,735	1,597	1,558	1,340	1,453	1,455	1,256	1,278	1,251	1,061	1,086
17	Major Multiple Trauma without Central Nervous System damage	2,767	2,872	3,188	3,063	2,799	2,969	2,914	2,841	2,448	2,548	2,914	3,004	2,559	2,726	2,831	2,842	2,625	2,791	2,934	3,001
18	Major Multiple Trauma with Central Nervous System damage	1,320	1,483	1,759	1,671	1,472	1,614	1,804	1,820	1,352	1,607	1,788	1,745	1,562	1,680	1,709	1,715	1,507	1,688	1,870	1,800
19	Guillain Barre	407	386	394	412	404	402	356	341	415	448	422	414	424	437	427	465	487	441	433	442
20	Miscellaneous	14,679	14,137	14,005	14,411	15,455	14,374	13,680	12,866	12,288	11,044	10,100	10,209	10,303	9,989	9,763	9,924	10,850	10,346	9,523	9,445
21	Burn	151	168	171	166	162	163	181	157	171	196	169	185	151	196	186	155	174	174	161	192
Total		129,047	133,853	133,248	136,083	134,904	135,917	131,094	131,851	125,230	123,145	117,584	119,108	116,952	115,981	112,673	112,718	113,491	113,568	108,373	110,019

Moran Company Analysis of Data Furnished by UDSMR® and AMRPA/eRehabData®

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Inpatient Rehabilitation Discharges by Rehabilitation Impairment Category (RIC)

Discharges, All Payers

RIC	2008				2009				2010				2011		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
1	Stroke	25,049	24,465	23,783	24,910	25,473	25,295	24,712	25,408	24,983	25,624	24,934	25,034	25,293	25,720
2	Traumatic brain injury	4,273	4,527	4,851	4,771	4,486	4,530	4,880	4,662	4,101	4,601	4,760	4,878	4,468	4,486
3	Nontraumatic brain injury	5,859	6,039	5,891	5,875	6,049	6,343	6,237	6,341	5,964	6,258	6,333	6,446	6,427	6,597
4	Traumatic spinal cord	1,791	1,852	1,965	1,910	1,737	1,751	1,902	1,834	1,602	1,740	1,910	1,847	1,675	1,783
5	Nontraumatic spinal cord	4,594	4,828	4,744	4,634	4,544	5,128	4,906	4,848	4,516	4,862	4,887	4,994	4,681	5,147
6	Neurological	7,684	7,953	7,901	8,275	8,722	9,385	9,061	9,007	9,048	9,753	9,431	9,764	10,113	10,275
7	Fracture of Lower Extremity	14,606	13,821	13,440	14,171	14,200	13,258	13,048	12,985	12,480	12,304	12,219	12,856	12,774	12,178
8	Replacement of Lower Extremity joint	14,643	15,413	14,804	14,613	12,668	13,967	13,805	14,255	12,083	13,419	13,013	13,780	11,812	12,570
9	Other orthopedic	6,164	6,234	6,589	6,849	6,757	6,779	6,787	6,893	6,372	6,934	6,883	7,508	6,927	7,376
10	Amputation, lower extremity	3,265	3,520	3,532	3,413	3,375	3,588	3,447	3,387	3,279	3,512	3,468	3,221	3,350	3,433
11	Amputation, other	156	162	159	135	157	128	147	141	115	158	130	121	153	167
12	Osteoarthritis	356	420	368	368	358	363	359	338	350	324	338	339	342	361
13	Rheumatoid, other arthritis	532	558	571	544	583	548	563	510	550	596	524	520	502	566
14	Cardiac	4,165	4,401	4,193	4,375	4,463	4,672	4,474	4,646	4,336	4,585	4,325	4,700	4,648	4,865
15	Pulmonary	1,746	1,603	1,267	1,428	1,760	1,643	1,325	1,499	1,665	1,608	1,270	1,476	1,878	1,715
16	Pain Syndrome	1,098	1,090	1,166	1,191	1,018	1,076	1,039	1,064	946	974	969	974	892	835
17	Major Multiple Trauma without Central Nervous System damage	2,703	2,878	3,032	2,999	2,720	2,889	3,171	3,060	2,557	2,922	3,045	3,154	2,642	2,956
17	Major Multiple Trauma with Central Nervous System damage	1,606	1,548	1,906	1,755	1,452	1,629	1,774	1,667	1,343	1,624	1,798	1,745	1,373	1,555
19	Guillain Barre	475	475	443	426	506	488	409	479	519	459	471	508	473	481
20	Miscellaneous	11,291	11,570	11,253	11,507	11,506	11,828	11,634	11,936	11,715	11,860	11,955	12,478	12,636	12,627
21	Burn	168	174	178	198	205	179	195	152	177	183	204	188	195	171
Total		112,224	113,531	112,036	114,347	112,739	115,467	113,875	115,112	108,701	114,300	112,867	116,531	113,254	115,864

Moran Company Analysis of Data Furnished by UDSMR® and AMRPA/eRehabData®

THE MORAN COMPANY

Inpatient Rehabilitation Discharges by Rehabilitation Impairment Category (RIC)

Discharges, Medicare

RIC	2003				2004				2005				2006				2007				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1	Stroke	15,626	15,830	15,446	15,582	15,874	15,462	15,406	15,442	16,120	16,376	15,428	15,568	16,146	15,725	14,953	15,103	15,348	14,988	14,148	14,375
2	Traumatic brain injury	1,268	1,306	1,395	1,441	1,463	1,529	1,510	1,731	1,719	1,763	1,701	1,883	1,888	1,831	1,915	1,883	1,901	1,942	1,905	1,971
3	Nontraumatic brain injury	1,884	2,082	1,973	2,085	2,241	2,220	2,349	2,305	2,569	2,777	2,704	2,772	2,821	2,891	2,839	2,847	3,000	2,976	2,871	2,998
4	Traumatic spinal cord	458	522	549	496	530	550	566	597	533	572	579	615	585	541	555	589	535	522	557	574
5	Nontraumatic spinal cord	3,094	3,393	3,705	3,607	3,279	3,545	3,616	3,485	3,282	3,275	3,192	3,170	3,024	3,018	2,961	2,879	2,794	2,818	2,702	2,615
6	Neurological	3,723	4,090	4,110	4,082	4,234	4,341	4,558	4,706	4,885	4,893	4,897	4,764	4,978	5,137	4,973	5,017	5,124	5,292	5,252	5,409
7	Fracture of Lower Extremity	11,342	11,482	11,434	12,061	12,136	11,658	11,672	12,381	12,147	11,972	11,745	12,609	12,420	11,747	11,467	11,847	11,940	11,275	10,584	11,135
8	Replacement of Lower Extremity joint	21,225	23,095	23,009	24,255	22,297	23,892	22,305	22,765	19,476	18,584	16,944	16,780	14,872	14,409	13,233	12,486	11,284	11,381	10,505	10,121
9	Other orthopedic	4,821	4,950	4,947	5,156	5,105	5,159	5,014	5,137	4,729	4,429	4,180	4,520	4,132	4,102	4,170	4,242	4,183	4,197	3,993	4,027
10	Amputation, lower extremity	2,332	2,569	2,568	2,400	2,420	2,610	2,500	2,348	2,358	2,559	2,641	2,316	2,297	2,366	2,332	2,176	2,236	2,313	2,109	1,893
11	Amputation, other	235	270	283	246	240	241	196	169	174	149	112	91	127	126	122	89	112	107	94	69
12	Osteoarthritis	1,705	1,736	1,642	1,467	1,354	1,425	1,018	809	728	699	559	512	555	494	504	380	387	373	370	369
13	Rheumatoid, other arthritis	792	889	836	884	896	775	641	609	578	537	532	527	504	454	468	431	397	453	365	420
14	Cardiac	5,627	5,706	5,408	5,664	5,760	5,632	4,997	4,933	4,407	3,886	3,410	3,400	3,418	3,364	3,009	3,239	3,396	3,235	2,890	3,058
15	Pulmonary	2,183	2,045	1,619	1,831	2,562	2,001	1,389	1,309	1,903	1,443	941	1,035	1,466	1,092	896	977	1,251	1,111	841	868
16	Pain Syndrome	1,933	1,989	1,926	1,808	1,783	1,817	1,773	1,711	1,319	1,354	1,237	1,222	1,004	1,099	1,093	944	974	900	778	777
17	Major Multiple Trauma without Central Nervous System damage	1,051	1,096	1,156	1,103	1,056	1,002	975	957	845	801	886	982	830	893	860	915	835	878	866	943
18	Major Multiple Trauma with Central Nervous System damage	214	242	231	245	229	222	227	254	222	210	214	251	204	203	188	221	209	238	246	246
19	Guillain Barre	154	134	127	142	132	139	133	109	133	135	144	114	132	134	150	127	148	129	134	129
20	Miscellaneous	11,828	11,320	11,297	11,609	12,493	11,601	11,079	10,321	9,868	8,643	7,939	7,977	8,081	7,713	7,496	7,590	8,272	7,749	7,080	6,998
21	Burn	56	51	39	52	66	57	57	41	70	76	45	70	63	66	60	48	68	63	48	53
Total		91,551	94,797	93,700	96,216	96,150	95,878	91,981	92,119	88,065	85,133	80,030	81,178	79,547	77,405	74,244	74,030	74,394	72,940	68,338	69,048

Moran Company Analysis of Data Furnished by UDSMR® and AMRPA/eRehabData®

THE MORAN COMPANY

Inpatient Rehabilitation Discharges by Rehabilitation Impairment Category (RIC)

Discharges, Medicare

RIC	2008				2009				2010				2011		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
1	Stroke	14,539	14,000	13,559	14,159	14,536	14,346	13,928	14,107	13,862	14,092	13,564	13,814	13,969	14,189
2	Traumatic brain injury	1,921	1,933	1,997	2,072	2,020	2,059	2,109	2,080	1,906	2,032	2,038	2,160	2,187	2,105
3	Nontraumatic brain injury	3,009	3,054	2,969	3,025	3,091	3,220	3,018	3,182	3,006	3,147	3,175	3,258	3,368	3,340
4	Traumatic spinal cord	509	563	524	488	504	540	509	535	471	517	476	516	512	506
5	Nontraumatic spinal cord	2,509	2,592	2,469	2,464	2,467	2,672	2,599	2,530	2,369	2,507	2,518	2,628	2,452	2,672
6	Neurological	5,347	5,434	5,288	5,661	5,975	6,368	6,199	6,025	6,237	6,830	6,439	7,011	7,194	7,276
7	Fracture of Lower Extremity	11,380	10,617	10,189	10,806	10,788	10,155	9,908	9,926	9,452	9,280	9,230	9,789	9,699	9,307
8	Replacement of Lower Extremity joint	9,222	9,660	9,372	8,872	7,734	8,455	8,389	8,429	7,230	8,022	7,936	8,237	7,134	7,468
9	Other orthopedic	4,171	4,251	4,418	4,632	4,548	4,615	4,573	4,772	4,341	4,770	4,680	5,168	4,875	5,266
10	Amputation, lower extremity	1,974	2,071	2,019	1,964	1,965	2,011	1,970	1,940	1,807	2,036	1,944	1,767	1,868	1,954
11	Amputation, other	88	95	87	70	102	72	80	93	73	104	79	73	94	93
12	Osteoarthritis	315	365	321	322	310	318	316	285	313	275	294	308	304	323
13	Rheumatoid, other arthritis	382	391	419	385	424	407	418	382	405	436	391	394	365	433
14	Cardiac	3,370	3,495	3,328	3,497	3,533	3,638	3,510	3,677	3,418	3,590	3,357	3,712	3,631	3,825
15	Pulmonary	1,359	1,238	971	1,105	1,347	1,256	985	1,085	1,269	1,234	991	1,159	1,453	1,324
16	Pain Syndrome	778	754	814	849	715	749	718	770	652	694	691	709	647	585
	Major Multiple Trauma without Central														
17	Nervous System damage	874	918	875	951	941	954	983	991	925	991	943	1,061	969	1,026
	Major Multiple Trauma with Central														
18	Nervous System damage	220	206	245	243	221	247	247	249	228	251	256	290	214	250
19	Guillain Barre	145	136	134	128	148	153	113	124	118	132	129	163	128	144
20	Miscellaneous	8,332	8,386	8,168	8,354	8,289	8,491	8,278	8,442	8,368	8,556	8,776	9,066	9,261	9,200
21	Burn	59	47	50	51	74	60	44	43	64	57	54	52	88	65
Total		70,503	70,206	68,216	70,098	69,732	70,786	68,894	69,667	66,514	69,553	67,961	71,335	70,412	71,351

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