

**New Estimates of the  
Impact of  
Enforcement of the  
“75% Rule” on  
Inpatient  
Rehabilitation  
Services Volume**

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**THE MORAN COMPANY**

# **New Estimates of the Impact of Enforcement of the “75% Rule” on Inpatient Rehabilitation Services Volume**

## **EXECUTIVE SUMMARY**

The Moran Company was engaged by the Federation of American Hospitals and the American Hospital Association to update and expand a prior analysis 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 CY 2005.
- Expanded the scope of our analysis by acquiring data from both of the largest data benchmarking services used by IRFs (UDS<sub>MR</sub> and eRehabData®), which together represent data on more than 75% of all Medicare IRF discharges.
- Expanded our analysis to look more closely at patterns across the boundary between Medicare and Medicaid patients.

The findings of this expanded analysis confirm, and shed new light on, the findings of our prior analysis. Specifically, we found that:

- Immediately following implementation of the new enforcement regime in the Final Rule of May, 2004, the prior growth trend in IRF discharges ended, and volume has declined steadily over the ensuing four quarters.
- From January to June 2005, the downtrend, which affects all payers, is equivalent to a -15.3% annualized decline.
- Medicare discharges by IRFs are down 7.7% in program year 2005 (July 2004 through June 2005) relative to PY 2004 – a reduction of nearly 30,000 patients.
- The total number of patients affected in program year 2005 is likely closer to 40,000 since the data analyzed only accounts for approximately 77% of the IRF field.
- This decline is not uniform across all diagnostic categories; five diagnostic categories out of 22 explain more than the entire decline in caseload from Q II 04 to Q II 05.<sup>1</sup>

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<sup>1</sup> Some of the other categories show increases that offset a portion of the volume reduction experienced by these particular categories.

- These diagnostic categories are those that CMS has indicated, in the preambles to the proposed and final rules, to be likely to be subject to the most scrutiny under the new enforcement policy.
- 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 is obviously the direct consequence of the 75% Rule policy.

## **New Estimates of the Impact of Enforcement of the “75% Rule” on Inpatient Rehabilitation Services Volume**

In May 2004, the Centers for Medicare & 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 (IRF).<sup>2</sup> 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. The three-year phase-in of the 75% Rule was initiated July 1, 2004. 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.

The controversy over this policy, in part, results from disparities in estimates of its impact. In its 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 might drop by as much as 25,000-40,000 annually.

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 UDS<sub>MR</sub> data service.<sup>3</sup> The sections of that report presenting our methodology evaluation of the prior studies are contained in Appendix A of this report.

In August, 2005, we were jointly engaged by the Federation and the American Hospital Association to perform further analysis based on more recent data, collected from data services representing a larger share of the universe of inpatient rehabilitation providers. The new data set includes discharge data for the second calendar quarter of 2005, and

<sup>2</sup> *Federal Register*, Vol. 69, No. 89/Friday, May 7, 2004, pp. 25752-25776.

<sup>3</sup> The Moran Company, *Estimating the Impact of Enforcement of the “75% Rule” on Inpatient Rehabilitation Services Volume*. (Arlington, VA, June 2005).

hence provides information for the full July-to-June IRF PPS program year for the 75% Rule.<sup>4</sup> In addition to updated data from UDS<sub>MR</sub>, we were given access to comparable data from eRehabData®, the other major repository of rehabilitation hospital data.

This report presents the findings of that analysis.

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<sup>4</sup> The actual “program year” is determined on the basis of individual hospital fiscal years overlapping with this period.

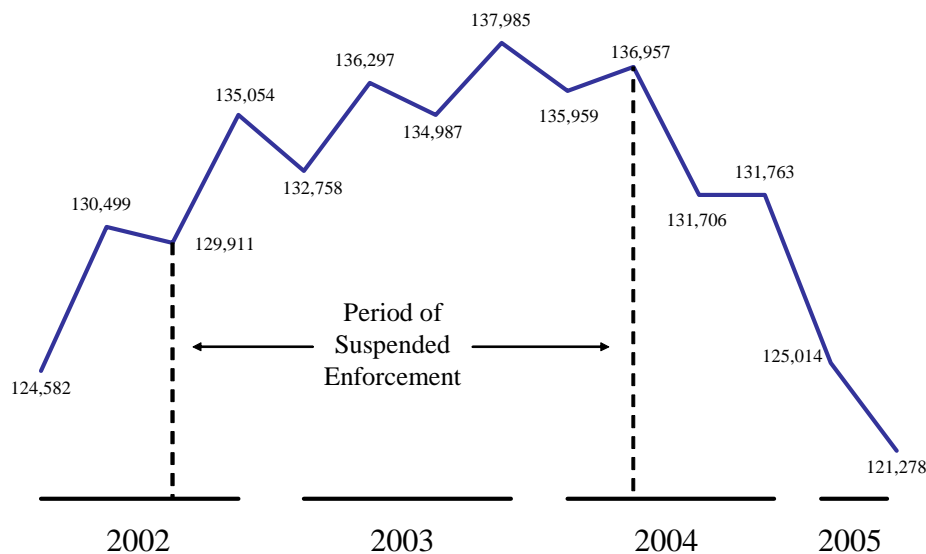
## Data Employed in the Analysis

We requested and received confidential data for fourteen quarters covering the time span of July 2002 through June 2005. These data are charted below in Figure One. Both data services sent us data on only those providers who had participated continuously in the respective services for each of the fourteen quarters ending with the second quarter of 2005 – 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 unduplicated counts of discharges. In the last four quarters reported (ending Q II 2005), these two sources reported “same store” discharges of 354,977 Medicare beneficiaries, and 509,761 cases from all payers. Collectively, this cohort represents approximately 77% of the 459,682 total IRF discharges predicted for 2005 in the Impact Analysis accompanying the 2004 Final Rule.

### Overall Volume Trends

Figure One summarizes the volume trend data, for all discharges, over the most recent four quarter period for which data are available.

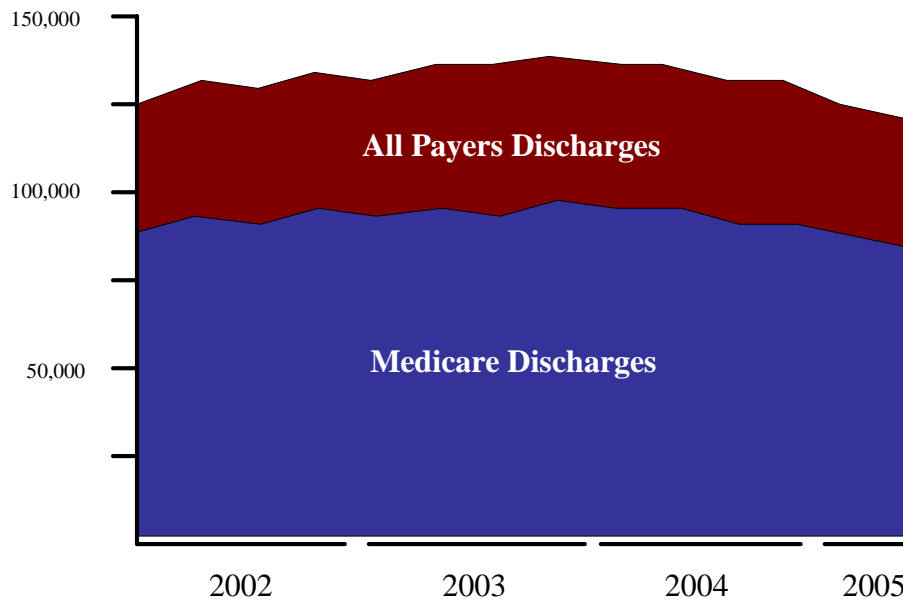
**Figure One: All Payers Rehab Discharges by Quarter**



As the Figure shows, IRF caseload was rising steadily throughout 2002 and into 2003, at an annualized growth rate of approximately 4%. Within a few months of publication of the May, 2003 Proposed Rule, however, the volume trend flattened; between Q II 2003 and Q II 2004, annual growth in caseload fell below 0.5%, and then began to decline sharply after the Final Rule was published in May of 2004. The trend in the last two quarters observed (Q I and QII CY 2005) annualizes to a 15.3% decline in discharge

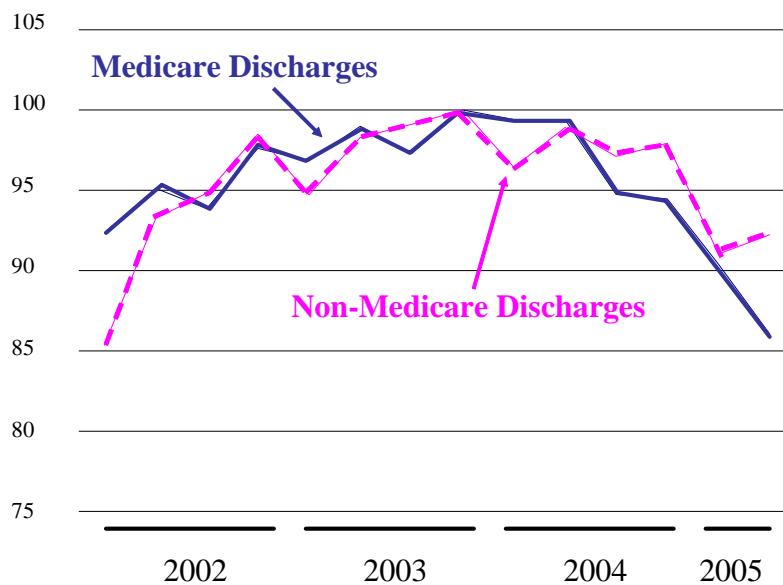
volume. As demonstrated in Figure Two, this caseload trend is consistent across payer types.

**Figure Two Inpatient Rehabilitation Discharges by Quarter**



As shown in this Figure, Medicare discharge volumes have been moving in tandem with the total discharge volume trend. This is hardly surprising, since the Medicare discharge volumes comprise 69.6% of the total caseload volume for the last four quarters for which we have data.

**Figure Three: Medicare vs. Non-Medicare Discharges  
(Q4:2003 = 100 Basis)**



In Figure Three, we present our analysis of trends in non-Medicare caseload volume, observed separately from the Medicare cases.

In this Figure, we have separately tabulated Medicare and non-Medicare discharges, and then scaled the respective discharge time series to their respective peak values in the fourth quarter of 2003. Based on this analysis, we do not see a meaningful difference in discharge volume trends across payer type. There is some suggestion that non-Medicare volumes were rising more rapidly than Medicare in 2002-2003, and have not declined as far from their 2003 peak, since the volume decline began in 2004. Absent a longer time series (in both directions), however, it is not possible to confirm such a trend definitively.

Figure Four: Annualized Medicare Impact, 4 Trailing Quarters

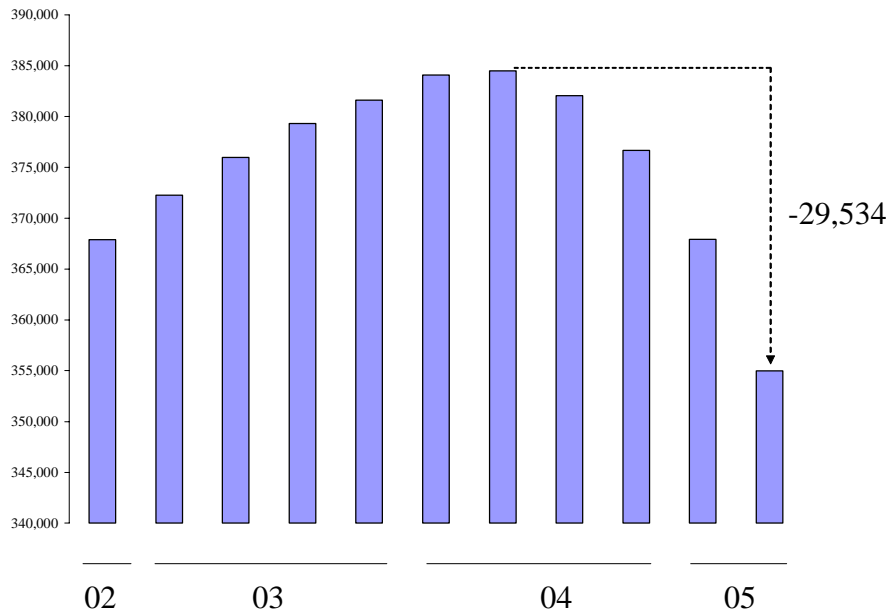


Figure Four shows the impact of these trends on annualized program volume in Medicare. For each quarter, the bar value represents the sum of Medicare discharges in that quarter plus the three preceding quarters, in order to present a picture of the trend on an annualized basis. Viewed on this basis, the observed run rate in program year 2005 (Q III 04 – Q II-05) represents a decline of nearly 30,000 discharges – or by 7.7% – relative to program year 2005.

#### Trends by Diagnostic Type

The UDS<sub>MR</sub> and eRehabData® data we requested and received provides subsidiary volume detail by patient diagnosis. These data are presented by Rehabilitation Impairment Category codes, which are standard across the industry and hence uniform across these data sources.

Table One presents our analysis of the shift in volume by Rehabilitation Impairment Code (RIC). The table shows a comparison of the quarterly volume in the second quarter of 2003, when the CMS Proposed Rule detailing its intentions was published, and the second quarter of 2005, the last quarter for which we have data.



**Table One Discharge Changes by RIC Category**

RIC	Descriptor	Q II: 03	Q II : 05	Difference
08	Lower Extremity Joint Replacement	33,150	26,037	-7,113
20	Miscellaneous	14,975	10,974	-4,001
14	Cardiac	6,656	4,364	-2,292
12	Osteoarthritis	2,035	740	-1,295
16	Pain Syndrome	2,916	1,831	-1,085
09	Other Orthopedic	6,788	5,855	-933
15	Pulmonary	2,639	1,748	-891
13	Rheumatoid and Other Arthritis	1,126	702	-424
17	MMT without Brain/Spinal Cord Injury	2,828	2,468	-360
11	Amputation, Non-Lower Extremity	372	223	-149
05	Spinal Cord Dysfunction, Non-Traumatic	5,324	5,218	-106
21	Burns	232	263	31
19	Guillain-Barre	384	453	69
10	Amputation, Lower Extremity	3,626	3,698	72
04	Spinal Cord Dysfunction, Traumatic	1,674	1,768	94
18	MMT with Brain/Spinal Cord Injury	1,535	1,637	102
01	Stroke	23,515	23,784	269
07	Lower Extremity Fracture	13,701	14,108	407
02	Brain Dysfunction, Traumatic	3,411	4,013	602
06	Neurological Conditions	5,478	6,356	878
03	Brain Dysfunction, Non-Traumatic	3,932	5,038	1,106
Total		136,297	121,278	-15,019

Overall, volume declined by 15,019 cases, or 11.0%, during this period. More than 100% of this decline, however, is concentrated in the first five categories listed in Table One.<sup>5</sup> Four of these represent diagnostic categories singled out by CMS, in the preambles to both the proposed and final rules, as being most likely to be subject to scrutiny under the Rule. The fifth category, “Miscellaneous,” is by nature comprised of cases that are difficult to categorize by diagnostic category, and hence likely to be affected under the enforcement regime implemented in the Final Rule. In the balance of other diagnostic categories, caseload volume continues, on average, to rise.

Our analysis of the period over period change in case volume by RIC would not change materially if we looked separately at Medicare versus non-Medicare patients. In Appendix A, we present more complete detail on this comparison.

This correlation between CMS’s announced intention to scrutinize certain types of cases, and the subsequent drop in IRF caseloads for just these cases, is highly unlikely, in our judgment, to be a coincidence. It is, in our judgment, highly likely that the IRF caseload drops observed in the UDS<sub>MR</sub> and eRehabData® data are directly attributable to changes

<sup>5</sup> As shown in Table One, some of the other categories show increases that offset a portion of the volume reduction experienced by these particular categories.

in admission policies by IRF providers in response to the policies implemented in the Final Rule.

From the evidence available, we do not believe it is possible to judge whether these caseload declines represent achievement of a new equilibrium, or whether further declines in caseload can be expected throughout calendar year 2005. Both of the Federation estimates we evaluated implicitly assume that a new equilibrium had, in fact, been reached at the 50% compliance level. Our analysis, moreover, makes no predictions about the effect of increasing the compliance threshold to 60% as scheduled on July 1, 2005, though it is plausible to assume that this will have an additional effect on IRF discharges.

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

- Immediately following implementation of the new enforcement regime in the Final Rule of May, 2004, the prior growth trend in IRF discharges ended, and volume has declined steadily over the ensuing four quarters.
- From January to June 2005, the downtrend, which affects all payers, is equivalent to a -15.3% annualized decline.
- On an annualized basis, Medicare discharges for this sample of providers are down 7.7% (nearly 30,000 patients) in program year 2005 relative to PY 2004.
- The total number of patients affected in program year 2005 is likely closer to 40,000 since the data analyzed only accounts for approximately 75% of the IRF field.
- This decline is not uniform across all diagnostic categories; five diagnostic categories out of 22 explain the decline in caseload from July 2004 through June 2005.
- These diagnostic categories are those which CMS has indicated, in the preambles to the proposed and final rules, to be likely to be subject to the most scrutiny under the new enforcement policy.
- Given the correlation between the stated 75% Rule policy and the concentrated impact of the caseload decline, it is difficult to reach the conclusion that this is a coincidence.

The time series data on which we based these conclusions is presented in Appendices B1 and B2.

## Appendix A

### Assessment of Prior Estimates

In the Impact Analysis accompanying the May, 2004 Final Rule, CMS estimated that the effect of the new 75% rule enforcement scheme implemented rule would have only a negligible impact on Medicare caseloads in inpatient rehabilitation facilities (IRFs). Recent estimates by the affected industry, by contrast, project a caseload decline approaching or exceeding 40,000 cases, due to implementation of this policy, in 2005.

The Moran Company was engaged by the Federation of American Hospitals to evaluate these estimates, and provide our assessment of what it is possible to know about the likely impact of this policy on caseloads in IRFs. This report presents our assessment of the strengths and limitations of the estimates presently available.

#### Policy Background

The so-called “75% Rule” has been part of the Medicare policy landscape since 1983. It was originally implemented as a test for exclusion of IRFs from payment under the Inpatient Prospective Payment System, permitting such facilities to be paid under the cost-based principles of reimbursement established by the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA). When the new Inpatient Rehabilitation Facility Prospective Payment System (IRF PPS) was implemented in 2002, the rule was retained as a qualification for payment under that system.

Under this rule, in order to be eligible for payment under the IRF PPS, at least 75 percent of the admissions to a qualifying facility in a cost reporting period must be for intensive rehabilitation of impairments associated with a specified list of qualifying conditions.<sup>6</sup> By the time the IRF PPS was implemented, CMS was concerned that a substantial share of the hospitals deemed eligible for payment were not literally compliant with the rule.<sup>7</sup> A 2002 study of certification practices by Fiscal Intermediaries suggested that perhaps fewer than 14% of all IRFs met the literal requirements of the rule. CMS found substantial variations across contractors in their interpretations of such issues as whether “intensive rehabilitation” was medically necessary for specific conditions, and whether specific cases did or did not exhibit the qualifying diagnoses, either as primary diagnoses or as comorbidities. One important area of variation was in the treatment of rehabilitation cases after hip and knee replacement, a significant source of admissions to IRFs. While patients receiving hip and knee replacements were admitted to the short term acute care hospital in which the procedure was performed with a diagnosis of Polyarthrititis – one of the ten qualifying conditions for IRF care – intermediaries differed in whether they required confirmation of that diagnoses after surgery, and hence before admission to the IRF. Ultimately, CMS temporarily suspended the rule in June 2002, and it remained suspended for two years thereafter.

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<sup>6</sup> 42 CFR 412 Part B.

<sup>7</sup> May 7, 2004 Final Rule at 25755ff.

In its Final Rule, CMS replaced the Polyarthrititis diagnosis with three, separate conditions. CMS subsequently issued more detailed guidance to intermediaries to implement nationally uniform interpretations of the qualifying criteria. Under the IRF PPS, application of the qualifying rules is a retrospective test, since the universe of admissions subject to the test can only be known once a compliance measurement period is completed. If a hospital is determined, upon application of the test, not to be in compliance with the Rule, it is subject to reclassification as an acute hospital as of the start of the succeeding cost report year. If a substantial number of hospitals were determined to be non-compliant, there would be a material savings to the Medicare program.<sup>8</sup>

There would also be savings if hospitals, in order to avoid the risk of retrospective denials, prospectively changed their admissions practices to avoid cases that might cause them to be deemed ineligible in the future. To the extent that such cases were diverted to less costly settings of care, such as skilled nursing facilities, total Medicare payments would be reduced. To facilitate such a transition, the CMS Final Rule indicated that the first cost reporting period subject to test under the new criteria would be hospital fiscal years beginning on or after July 1, 2004.

### The Final Rule Impact Analysis

In the Final Rule (pp. 25770 ff.), CMS presented its estimates of the impact of these changes on IRF providers, both in the aggregate,<sup>9</sup> and by provider type.<sup>10</sup> They estimated only a modest reduction in IRF caseload in 2005: nationally, a decline of 1,170 cases, comprising 0.2% of their estimate of 459,682 cases in 2005. They estimated an average savings of \$5,709 per case for each case diverted to a lower-cost setting of care. These assumptions produced an estimated reduction in payments of \$10 million in 2005, rising to \$190 million in FY 2008 after the policy was fully implemented.

Apart from the assumptions used to estimate the per case savings, the core of the CMS estimate rests on its assumptions about changes in provider behavior in order to attempt compliance with the policy. They assumed that 10% of cases now estimated to be non-compliant would become compliant due to provider coding improvements, and that an additional 10% of non-compliant cases estimated from claims data would, upon more detailed medical records review, be determined to be eligible. They further assumed that 50% of the arthritis-related joint replacement therapy cases would be determined to be compliant. Together, these assumptions brought most facilities into compliance with the transitional “50% Rule” implemented for FY 2005; the 1,170 cases estimated to be

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<sup>8</sup> In this discussion, we use the term “savings” , as does CMS in the Impact Analysis accompanying the May, 2004 Final Rule, to mean the static effect of moving patients from settings with higher average payment rates to settings with lower rates. A more complete account of the budgetary impact of this policy would require evaluation of whether such patient movements might be accompanied by offsetting costs, e.g., higher readmission rates to short term acute hospitals.

<sup>9</sup> Chart 2, p. 25772

<sup>10</sup> Chart 3, *ibid.*.

diverted to other settings thus represents their estimate of the additional caseload reductions required to bring the remaining hospitals into compliance.

Given the information available to CMS at the time, this sort of estimating method was the only means CMS had of projecting changes in provider behavior, which is the key to understanding the impact of the policy. Of necessity, each assumption used was conjectural, although CMS had a rational basis, grounded in either research or its own administrative experience, for gauging the magnitude of the expected effect. Yet this sort of estimating approach faces some important limitations. First, it is impossible, in this sort of analysis, to judge whether interactions between the various forces driving the estimate, e.g., the potential for overlap between medical records evidence and coding policy, will amplify or dampen the assumed effects. Second, it is impossible to gauge the uncertainty of the estimate, because the errors associated with the components of the methodology are unknown in advance, and the analysis cannot control for the effects of factors not explicitly accounted for in building the estimate.

### Estimates by the Federation of American Hospitals

The first estimate we were asked to evaluate was an estimate prepared by the Federation employing data from the Uniform Data System for Medical Rehabilitation, a subsidiary of UB Foundation Activities, Inc. UDS<sub>MR</sub>, which we understand to be a data benchmarking service used by a substantial share of the IRFs in the United States, furnished the data for this analysis, but was not otherwise involved in the preparation of the estimates. In this analysis, the Federation derived its estimate of 2005 impact based on analysis of discharge data collected by UDS<sub>MR</sub> from only those participating hospitals that reported discharge data to UDS<sub>MR</sub> for twelve consecutive quarters beginning with the first quarter of 2002 (“same store” analysis). This 2005 estimate was based on data through the fourth quarter of calendar year 2004, which embraces the first quarter of IRF PPS program year 2005.

Employing UDS<sub>MR</sub> data on Medicare stays in IRFs, the initial Federation analysis observed that, in comparison to the fourth calendar quarter of 2003, IRF Medicare volume fell by more than 4,000 cases, or by 5.39%.<sup>11</sup> This empirical finding was used to “reprice” the CMS Final Rule methodology. Working from the CMS estimates of 460,000 cases and \$5,710 in savings per case, Federation analysts imputed the observed Q4/Q4 caseload drop to the full fiscal year. As a result, they estimated a full-year caseload decline of 24,750. When priced using the CMS FY 2005 per case savings estimate, this yields an estimate of \$141.5 million in FY 05 impact – an impact over 14 times that presented in the CMS Final Rule.

In comparison to the CMS methodology, the strength of this approach is that it is grounded in observable data, and hence can be said to capture the net interaction of various factors influencing provider behavioral response to the policy. Since it holds all the other important elements of the CMS estimating methodology constant, it provides a

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<sup>11</sup> The data set reflects about 300,000 Medicare cases in 2004, or about two thirds of the national total.

direct comparison of CMS projected volume change to the volume change that actually occurred. Because the observed Medicare trend is replicated in the “all payers” data presented in the detail of the estimate, it also captures the effect of Medicare policy on non-Medicare cases, which may also count in determining compliance with the 50% rule applicable in 2005.<sup>12</sup>

This sort of analysis, however, itself faces a number of potential limitations. First, of course, it is based on only a one-quarter comparison, and hence makes the potentially strong assumption that the effect measured is continuous throughout the fiscal year. Second, it imputes the entire quarter-over-quarter trend to effects of the policy, without controlling for other factors that might influence the trend. Third, the methodology cannot control for the possibility that the trend observed in the UDS data may not be representative of that for IRFs not included in the UDS database.

### The Updated Federation Estimate

Based on later UDS<sub>MR</sub> “same store” data, the Federation estimate was updated on May 9, 2005. This analysis picks up an additional quarter of data from Q1:05.<sup>13</sup>

In comparison to the year-earlier quarter, the IRF Medicare volume in this quarter declines from 73,016 to 65,893, or by 9.8%. This is translated into a projected FY 05 decline of 39,600, translating into a reimbursement drop of \$226 million.<sup>14</sup>

This estimate has the advantage of bringing later data into play – data which confirm the decline in IRF caseload, and show that it continued to accelerate after Q4: 04.

In understanding the meaning of the disparities between these estimates, it is important to observe that the Federation estimates are not, strictly speaking, directly comparable to the CMS estimate, despite the best efforts of the Federation analysts to make them strictly comparable. This is because the CMS estimate is an *ex ante* projection of the effects attributable solely to the policy, holding everything else in the world constant. The later estimates, by contrast, are based on empirical data, which embed everything that might influence IRF caseload, of which the policy is only one (although a potentially strong) contributor.

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<sup>12</sup> CMS, in preparing its estimates, used evidence from a recent RAND report to make an upward adjustment to its compliance estimates to take account of higher observed compliance in non-Medicare cases. See Final Rule, p.25771.

<sup>13</sup> The UDS<sub>MR</sub> data used for the twelve quarters ending Q1:05 include data from 37 fewer facilities than for the twelve months ending Q1:04. This reflects the deletion of facilities from the “same store” data base that did not report IRF discharges to UDS<sub>MR</sub> for Q1:05. It is possible that these facilities closed or elected to stop reporting data through the UDS<sub>MR</sub> system. We do not believe this difference to be material

<sup>14</sup> The methodology differs slightly from that employed in the first estimate, in that it indicates that it uses actual data from the first two quarters of FY 2005, and then estimates quarter over quarter reductions for the 3<sup>rd</sup> and 4<sup>th</sup> quarters using the 9.8% reduction rate observed during the 2<sup>nd</sup> quarter

**Appendix B 1****RIC Detail by Payer Category**

RIC	Label	Q 2 03			Q2 05			Change Count		
		Medicare	Non-Medicare	Total	Medicare	Non-Medicare	Total	Medicare	Non-Medicare	Total
08	Lower Extremity Joint Replacement	23,294	9,856	33,150	18,585	7,452	26,037	-4,709	-2,404	-7,113
20	Miscellaneous	11,930	3,045	14,975	8,548	2,426	10,974	-3,382	-619	-4,001
14	Cardiac	5,826	830	6,656	3,777	587	4,364	-2,049	-243	-2,292
12	Osteoarthritis	1,752	283	2,035	650	90	740	-1,102	-193	-1,295
16	Pain Syndrome	2,187	729	2,916	1,421	410	1,831	-766	-319	-1,085
09	Other Orthopedic	5,110	1,678	6,788	4,318	1,537	5,855	-792	-141	-933
15	Pulmonary	2,189	450	2,639	1,423	325	1,748	-766	-125	-891
13	Rheumatoid and Other Arthritis	922	204	1,126	538	164	702	-384	-40	-424
17	MMT without Brain/Spinal Cord Injury	1,048	1,780	2,828	769	1,699	2,468	-279	-81	-360
11	Amputation, Non-Lower Extremity	272	100	372	151	72	223	-121	-28	-149
05	Spinal Cord Dysfuction, Non-Traumatic	3,358	1,966	5,324	3,278	1,940	5,218	-80	-26	-106
21	Burns	61	171	232	68	195	263	7	24	31
19	Guillain-Barre	127	257	384	141	312	453	14	55	69
10	Amputation, Lower Extremity	2,524	1,102	3,626	2,474	1,224	3,698	-50	122	72
04	Spinal Cord Dysfuction, Traumatic	540	1,134	1,674	556	1,212	1,768	16	78	94
18	MMT with Brain/Spinal Cord Injury	236	1,299	1,535	208	1,429	1,637	-28	130	102
01	Stroke	15,921	7,594	23,515	15,889	7,895	23,784	-32	301	269
07	Lower Extremity Fracture	11,444	2,257	13,701	11,716	2,392	14,108	272	135	407
02	Brain Dysfuction, Traumatic	1,330	2,081	3,411	1,756	2,257	4,013	426	176	602
06	Neurological Conditions	3,942	1,536	5,478	4,595	1,761	6,356	653	225	878
03	Brain Dysfuction, Non-Traumatic	2,074	1,858	3,932	2,679	2,359	5,038	605	501	1,106
Total		96,087	40,210	136,297	83,540	37,738	121,278	-12,547	-2,472	-15,019

## Appendix B 2

Rehabilitation Impairment Categories  
By Quarter from 2002 to 2005

Total Sample, All Payers

	2002				2003				2004				2005	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
01 Stroke	23,061	23,863	23,230	23,270	23,123	23,515	23,030	23,076	23,272	22,928	22,855	23,022	23,666	23,784
02 Brain Dysfunction, Traumatic	3,070	3,281	3,389	3,535	3,162	3,411	3,711	3,687	3,391	3,708	4,116	4,165	3,883	4,013
03 Brain Dysfunction, Non-Traumatic	3,512	3,771	3,713	3,811	3,823	3,932	3,883	4,014	4,180	4,268	4,398	4,399	4,681	5,038
04 Spinal Cord Dysfunction, Traumatic	1,504	1,663	1,874	1,826	1,592	1,674	1,883	1,844	1,610	1,700	1,949	1,984	1,668	1,768
05 Spinal Cord Dysfunction, Non-Traumatic	4,762	5,122	4,987	5,249	5,046	5,324	5,454	5,588	5,069	5,436	5,554	5,472	5,126	5,218
06 Neurological Conditions	5,203	5,282	5,240	5,280	5,206	5,478	5,698	5,642	5,814	6,018	6,052	6,128	6,441	6,356
07 Lower Extremity Fracture	12,688	12,761	13,091	13,389	13,971	13,701	13,713	14,452	14,448	13,919	13,855	14,565	14,340	14,108
08 Lower Extremity Joint Replacement	28,205	30,662	30,584	32,940	30,656	33,150	32,369	34,471	31,512	33,714	31,019	31,651	27,377	26,037
09 Other Orthopedic	5,577	5,981	6,176	6,799	6,689	6,788	6,805	6,930	6,963	7,060	6,704	6,886	6,424	5,855
10 Amputation, Lower Extremity	3,484	3,678	3,689	3,399	3,512	3,626	3,699	3,482	3,595	3,767	3,666	3,597	3,528	3,698
11 Amputation, Non-Lower Extremity	331	434	367	298	349	372	407	366	361	335	270	249	227	223
12 Osteoarthritis	2,120	1,955	1,936	1,921	1,915	2,035	1,915	1,641	1,492	1,617	1,190	876	751	740
13 Rheumatoid and Other Arthritis	1,018	1,075	1,015	1,101	1,042	1,126	1,126	1,158	1,112	1,029	884	826	758	702
14 Cardiac	6,294	6,561	6,135	6,610	6,660	6,656	6,239	6,433	6,530	6,376	5,653	5,538	4,979	4,364
15 Pulmonary	3,541	2,934	2,185	2,334	2,776	2,639	2,031	2,285	3,173	2,422	1,739	1,646	2,395	1,748
16 Pain Syndrome	2,540	2,815	2,776	3,021	2,817	2,916	2,757	2,622	2,548	2,519	2,509	2,350	1,861	1,831
17 MMT without Brain/Spinal Cord Injury	2,312	2,675	3,015	2,984	2,766	2,828	3,114	2,994	2,714	2,873	2,825	2,771	2,354	2,468
18 MMT with Brain/Spinal Cord Injury	1,218	1,449	1,691	1,745	1,383	1,535	1,834	1,745	1,514	1,638	1,883	1,885	1,358	1,637
19 Guillain-Barre	420	401	396	382	447	384	410	421	431	398	364	339	414	453
20 Miscellaneous	13,525	13,900	14,213	14,938	15,599	14,975	14,694	14,899	15,990	14,968	13,963	13,198	12,576	10,974
21 Burns	197	236	209	222	224	232	215	235	240	264	258	216	207	263
Total	124,582	130,499	129,911	135,054	132,758	136,297	134,987	137,985	135,959	136,957	131,706	131,763	125,014	121,278

Total Sample, Medicare Only

01 Stroke	15,998	16,385	15,956	15,785	15,760	15,921	15,545	15,518	15,659	15,304	15,189	15,237	15,593	15,889
02 Brain Dysfunction, Traumatic	1,206	1,281	1,212	1,324	1,295	1,330	1,391	1,439	1,476	1,546	1,528	1,743	1,692	1,756
03 Brain Dysfunction, Non-Traumatic	1,840	1,930	1,972	1,984	1,962	2,074	1,992	2,100	2,194	2,233	2,321	2,330	2,592	2,679
04 Spinal Cord Dysfunction, Traumatic	503	559	565	519	474	540	546	512	517	560	585	579	511	556
05 Spinal Cord Dysfunction, Non-Traumatic	2,949	3,279	3,169	3,295	3,211	3,358	3,562	3,596	3,195	3,502	3,517	3,467	3,231	3,278
06 Neurological Conditions	3,769	3,820	3,703	3,822	3,683	3,942	4,023	4,005	4,153	4,309	4,390	4,542	4,726	4,595
07 Lower Extremity Fracture	10,702	10,704	10,855	11,232	11,609	11,444	11,404	12,097	12,065	11,576	11,507	12,063	11,949	11,716
08 Lower Extremity Joint Replacement	20,243	21,669	21,714	23,114	21,616	23,294	22,922	24,475	22,331	24,046	22,536	22,756	19,745	18,585
09 Other Orthopedic	4,244	4,446	4,584	5,105	5,024	5,110	5,097	5,255	5,248	5,364	5,088	5,162	4,782	4,318
10 Amputation, Lower Extremity	2,526	2,527	2,581	2,335	2,392	2,524	2,510	2,346	2,435	2,634	2,548	2,335	2,416	2,474
11 Amputation, Non-Lower Extremity	246	308	275	213	249	272	296	258	245	247	190	178	169	151
12 Osteoarthritis	1,875	1,720	1,687	1,666	1,677	1,752	1,690	1,427	1,320	1,407	1,045	796	674	650
13 Rheumatoid and Other Arthritis	843	898	820	903	850	922	899	946	910	804	688	643	591	538
14 Cardiac	5,477	5,766	5,335	5,784	5,794	5,826	5,460	5,648	5,744	5,594	4,907	4,829	4,362	3,777
15 Pulmonary	3,010	2,435	1,814	1,925	2,313	2,189	1,710	1,923	2,684	2,023	1,473	1,366	2,004	1,423
16 Pain Syndrome	1,938	2,117	2,067	2,267	2,106	2,187	2,081	1,978	1,952	1,901	1,883	1,801	1,445	1,421
17 MMT without Brain/Spinal Cord Injury	949	1,054	1,023	1,125	1,041	1,048	1,059	1,049	1,009	965	921	905	797	769
18 MMT with Brain/Spinal Cord Injury	204	192	217	253	214	236	217	249	235	229	228	273	219	208
19 Guillain-Barre	138	151	127	105	159	127	138	145	143	127	125	118	129	141
20 Miscellaneous	10,932	11,039	11,396	11,953	12,509	11,930	11,853	12,050	12,913	12,054	11,252	10,527	10,070	8,548
21 Burns	64	72	46	53	70	61	47	59	74	67	53	47	69	68
Total	89,656	92,352	91,118	94,762	94,008	96,087	94,442	97,075	96,502	96,492	91,974	91,697	87,766	83,540