



June 8, 2007

In late 2005, CMS issued a memorandum regarding the Medicare Inpatient Rehabilitation Facility (IRF) Prospective Payment System (PPS) and recent changes to the so-called “75 percent rule.”

Attached is an update to the 2005 memo, prepared by CMS staff. It contains the most recent data available on the topic. It highlights the IRF payment system, Medicare’s rationale for treating inpatient rehabilitation facilities differently from standard acute care inpatient hospitals, the assumptions CMS uses to estimate the economic impact of regulatory changes, and the implication of these estimates. It also presents data on Medicare spending for IRFs over time, and illustrates how IRF admission and discharge practices have changed with the introduction of the prospective payment system in 2002, and during the two-year suspension on enforcement of the 75 percent rule.

This memo is intended to help improve understanding of Medicare’s policies for IRFs and CMS’s responsibilities in evaluating and managing these policies. There are two key points in this regard. First, Medicare pays IRFs at a higher rate than other hospitals because IRFs are designed to offer specialized rehabilitation care to patients with the most intensive needs. CMS maintains criteria, such as the 75 percent rule, in order to distinguish between IRFs and acute inpatient hospitals that are paid under the inpatient hospital PPS (IPPS). Second, CMS’s primary concerns in managing the IRF payment system are ensuring that Medicare’s payments are accurate and that beneficiaries have access to high quality care in the most appropriate setting.

The new data in this update illustrate that the ongoing implementation of the 75 percent rule continues to have the desired effect of ensuring that the most appropriate Medicare beneficiaries have access to care in IRFs, while those with lower acuity cases are increasingly being served in settings that are both less intensive and less costly.

# **INPATIENT REHABILITATION FACILITY PPS AND THE 75 PERCENT RULE**

## **EXECUTIVE SUMMARY**

This memorandum updates a report entitled “The Inpatient Rehabilitation Facility PPS and the 75 percent Rule” that CMS issued to the public on November 30, 2005.<sup>1</sup> It provides an overview of our updated analysis of Medicare Inpatient Rehabilitation Facility (IRF) spending over time and how IRF admission and discharge behavior changed with the introduction of the IRF prospective payment system (PPS) in 2002 and the suspension of the 75 percent rule.

## ***Background***

- Medicare pays IRFs at a higher rate than other hospitals because IRFs are designed to offer specialized rehabilitation care to patients with the most intensive needs.
- The “75 percent rule” has been part of the criteria for defining IRFs since the implementation of the hospital inpatient prospective payment system (IPPS) in 1983. The purpose of the criteria is to ensure that IRFs, which are exempt from the hospital inpatient PPS, are primarily involved in providing intensive rehabilitation services to patients that cannot be served in other, less intensive rehabilitation settings.
- In order for an IRF to be paid under the IRF PPS instead of the acute care hospital inpatient PPS, the 75 percent rule previously required that a certain percentage of the facility’s patients require intensive multidisciplinary inpatient rehabilitation and have one or more of 10 medical conditions. In 2004, CMS updated the 75 percent rule by further defining one of the qualifying conditions, “polyarthritis,” which resulted in a final list of 13 qualifying medical conditions.
- For more detail on the history and development of the IRF PPS and the 75 percent rule, please see the November 30, 2005 memorandum posted at:  
[www.cms.hhs.gov/InpatientRehabFacPPS/Downloads/IRFPPS\\_75pcRuleOLmemo.pdf](http://www.cms.hhs.gov/InpatientRehabFacPPS/Downloads/IRFPPS_75pcRuleOLmemo.pdf)

## ***IRF Margins, Expenditures, and Access***

- Estimates by the Medicare Payment Advisory Commission (MedPAC) show that industry margins comparing payments to costs for all IRFs have been in the low-to-mid teens since the implementation of the IRF PPS (11.0 percent for 2002, 17.8 percent for 2003, 16.2 percent for 2004, and 13.0 percent for 2005).<sup>2</sup>
- MedPAC estimated relatively modest cost increases for 2003 and 2004, at only 2.4 percent and 3.6 percent, respectively.
- IRF payments grew at an annual average rate of over 18 percent in the first 2 years of the new IRF PPS (2002 and 2003).
- There are significant state and regional differences in the distribution of IRFs. More than one-third of IRFs are located in just a handful of states, including Texas, Pennsylvania, California, New York, and Ohio. Further, IRFs are distributed unevenly across the Medicare population with

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<sup>1</sup> Posted at: [www.cms.hhs.gov/InpatientRehabFacPPS/Downloads/IRFPPS\\_75pcRuleOLmemo.pdf](http://www.cms.hhs.gov/InpatientRehabFacPPS/Downloads/IRFPPS_75pcRuleOLmemo.pdf)

<sup>2</sup> Medicare Payment Advisory Commission, Report to the Congress: Medicare Payment Policy, March 2007, p. 211-212. It is important to note that MedPAC projects the aggregate Medicare margin to drop from 13.0 percent in 2005 to 2.7 percent in 2007. This analysis assumes that the decline in the volume of IRF patients caused by the phase in of the 75 percent rule will continue at a steady rate. CMS data suggests that these volume declines might be leveling off.

densities that vary from less than one IRF per 100,000 Medicare beneficiaries (in Hawaii and Maryland) to over nine per 100,000 Medicare beneficiaries (in Louisiana).

- Despite this variation in IRF distribution, patients requiring post-acute rehabilitation who reside in areas where there are no IRFs are receiving care in other post-acute care settings, including skilled nursing facilities, long-term care hospitals, outpatient rehabilitation facilities, and in the home via home health care.
- Industry data analysis shows that the five categories of IRF diagnoses experiencing the greatest decrease in claims volume between 2003 and 2005 are: lower extremity joint replacement, cardiac, osteoarthritis, pain syndrome, and miscellaneous. These five categories are associated with conditions that are not generally considered to require the intensive rehabilitation provided by IRFs and can often be more appropriately cared for in other less intensive settings.
- Medicare admissions for musculoskeletal conditions (e.g., single joint replacements) and medical conditions (e.g., pain, pulmonary, miscellaneous, etc.) increased rapidly prior to and during the period of IRF PPS implementation and suspension of the 75 percent rule. Once monitoring procedures were reinstated using the updated 75 percent rule, Medicare admissions for these conditions have decreased.
- Admissions for nervous system and brain conditions, which are generally assumed to require intensive rehabilitation, decreased prior to and during the period of IRF PPS implementation and suspension of the 75 percent rule. Admissions for these complex conditions are now increasing.
- Some of the recent changes in the utilization of IRF services may be due not only to the 75 percent rule but to the influence that local coverage determinations and other increased monitoring have had on provider awareness of the Medicare admissions criteria for IRF services.

### ***Impact Analysis of the 75 Percent Rule***

- IRF industry stakeholders have used differences between the regulatory impact analysis included in the IRF classification criteria final rule (published on May 7, 2004) and actual provider experience since July 2004 to question the validity of the updated IRF classification criteria. It appears that some of the assumptions made by industry stakeholders are based on a misunderstanding of the purpose and scope of a regulatory impact analysis.
- CMS does not use impact analyses as expenditure targets and does not manage Medicare programs to meet the estimates set forth in regulatory impact analyses. Instead, CMS regularly conducts reviews and analyses of program data *after* the policy implementation in order to evaluate the actual impact and effectiveness of the policy change.
- The reality of the situation is that very few IRFs (17 out of over 1,200 facilities) have been reclassified since enforcement of the criteria was reintroduced in 2004.

## IRF EXPENDITURES

IRFs were designed to meet the needs of the segment of the inpatient hospital population who required intensive rehabilitation therapy as the result of a major illness or injury. The intent of the policy was to guarantee care for this atypical subset of patients while, at the same time, minimizing incentives to “game” the IPPS by transferring other types of hospital patients to this cost-based unit. Similarly, treatment in an IRF was not expected to replace the traditional post-acute services used by the majority of beneficiaries such as outpatient rehabilitation, skilled nursing facilities, and home health care.

Since the mix of services is different, the payment rates for IRFs are substantially higher for providing rehabilitation services than the IPPS rates for similar services. The base IRF PPS payment amount (prior to adjustments) was \$12,981 per discharge in FY 2007 compared with \$5,302 for IPPS. Thus, the purpose of the 75 percent rule is to ensure that the appropriate payment is made to each type of provider.

IRFs experienced strong financial performance under the new PPS as evidenced by a compounded annual average growth rate in expenditures of 18.3 percent in each of the first two years (2002 and 2003) and positive Medicare margins for hospital-based IRF units of between 6 and 15 percent (an expanded discussion of these results follows). Of note, Medicare accounts for an average of 70 percent of IRFs’ patient population.<sup>3</sup> In addition, subsequent studies aimed at determining the impact of the IRF PPS on patient utilization and access found no problems with access to care as a result of the introduction of the IRF PPS.<sup>4</sup>

As shown in Figure 1, while CMS predicted a moderate increase in IRF expenditures based on historical growth rates, actual spending was significantly higher. Actual payments in the first five years of the IRF PPS, 2002-2006, were much higher than projected, beginning with an increase of \$1.2 billion (26.1 percent), between 2001 and 2002. Estimates of spending (which are based on partial claims data for 2006) show some leveling off of IRF expenditures for 2006, at about \$6 billion. This is primarily due to the following factors:

- CMS implemented a number of refinements to the IRF PPS for FYs 2006 and 2007. Two of these refinements, an across the board reduction in payments of 1.9 percent for FY 2006 and an across the board reduction in payments of 2.6 percent for FY 2007 (for a total reduction of 4.5 percent), were implemented to fulfill the statutory mandate to adjust payments to account for changes in coding that do not reflect real changes in case mix. Our contractor, the RAND Corporation, showed that such changes accounted for between 1.9 percent and 5.9 percent of the growth in payments during the initial implementation of the IRF PPS.
- Both of these refinements offset at least half of the market basket increases for FYs 2006 and 2007, which contributed to the leveling off of aggregate payments. CMS has proposed a full market basket increase to IRF payment rates of 3.3 percent for FY 2008 (the market basket estimate may change somewhat when it is updated for the final rule).

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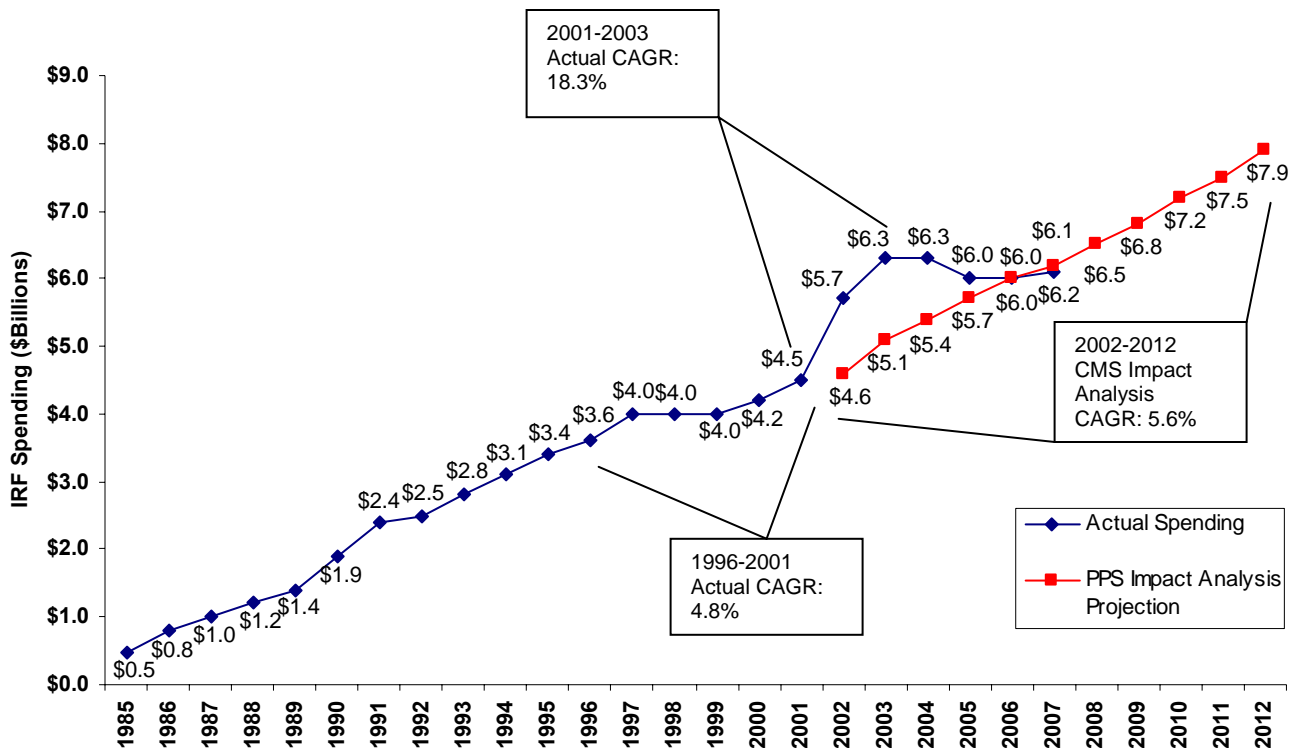
<sup>3</sup> Carter, G.M., O.Hayden, S.M. Paddock, B.O. Wynn (2003). Case Mix Certification Rule for Inpatient Rehabilitation Facilities. Santa Monica, CA: RAND, DRU-2981-CMS.

<sup>4</sup> Beeuwkes Buntin, M., G.M. Carter, O. Hayden, C. Hoverman, S. Paddock, B.O. Wynn. (2005). IRF Care Use Before and After Implementation of the IRF PPS. Santa Monica, CA: RAND, DRR-3325-CMS.

Beeuwkes Buntin, M., J. Escarce, C. Hoverman, S. Paddock, M. Totten, B.O. Wynn. (2005). Effects of Payment Changes on Trends in Access to Post-Acute Care. Santa Monica, CA: RAND, DRR-3324-CMS.  
[www.rand.org/publications/TR/TR259/](http://www.rand.org/publications/TR/TR259/)

- As illustrated later in Figure 4, IRFs experienced a rapid growth in utilization prior to 2004. From 2000 until 2004, when CMS reinstated enforcement of the 75 percent rule, IRF utilization increased by 24 percent. After CMS began the phase-in of the 75 percent rule in 2004, Figure 4 shows that utilization declined by about 19 percent by 2006, returning utilization to approximately the same level that it was in 2000. This decline in utilization also contributes to a leveling off of aggregate payments since 2004.
- Part of the decline in IRF utilization since 2004 may be due to the development of local coverage determinations and other increased monitoring activities on the part of fiscal intermediaries and other CMS contractors. This increased focus on the claims review process is likely increasing IRFs' awareness of the Medicare admissions criteria for IRF services and leading them to be more selective in admitting patients with lower-extremity joint replacement and other orthopedic conditions.
- While Figure 1 shows a leveling off of aggregate payments, average payments per case for IRFs will continue to increase (as shown later in Figure 9), particularly if the proposed 3.3 percent market basket increase for FY 2008 is implemented.

**Figure 1: IRF Spending 1985–2007 and PPS Estimate 2002–2012**



Note: 2007 spending estimate is extrapolated based on data for only part of 2007.  
 Source: MedPAC: 1985–1996, CMS/OACT 1997–2007 and projections 2002–2012

It should be noted that CMS impact analyses cannot reflect unanticipated changes that occur after the analyses are completed. CMS's impact analysis for the May 7, 2004 final rule that re-established enforcement of the 75 percent rule underestimated the extent to which IRFs increased the numbers of patients that did not meet the 75 percent rule criteria and, therefore, the degree to which IRFs would later need to adjust their operating procedures to meet the provider classification criteria. However, the difference between projections and actual experience does not invalidate the policy.

Due to the methodology used to develop a Medicare economic impact analysis, CMS does not use impact analyses as expenditure targets and does not manage Medicare programs to meet the estimates set forth in impact analyses. Instead, CMS regularly conducts reviews and analyses of program data *after* the policy implementation in order to evaluate the actual impact and effectiveness of the policy change. The remainder of this memorandum presents the results of recent CMS analyses and examines actual changes in IRF utilization and provider activity over time.

## **IRF UTILIZATION**

Recent analyses have shown changes in the mix of IRF patients since the implementation of the IRF PPS in 2002 and the renewed enforcement of the 75 percent rule in 2004. As shown in Figure 2, from the mid-1990s to the introduction of the IRF PPS, the volume of cases admitted to IRFs for nervous system and brain disorders was decreasing as providers admitted a greater number of patients with other types of medical conditions. This pattern became even more evident from 2002 to 2004 when the moratorium on the enforcement of the 75 percent rule was in effect. In 2004, however, the pattern started reversing with IRFs increasing the number of stroke, brain injury, and nervous system patients while decreasing the number of lower extremity joint replacements.

As the industry has noted, the decreased claims volume identified since 2004 is almost totally attributable to cases in one of five condition categories: lower extremity joint replacement, miscellaneous, cardiac, osteoarthritis, and pain syndrome. These are precisely the conditions that the 75 percent rule was designed to impact because they are not generally thought to require the intensive rehabilitation services provided by IRFs. The clinical experts that CMS consulted in revising the 75 percent rule criteria indicated that patients with these conditions could typically be appropriately cared for in other less intensive settings.

Since 2004, CMS has actively encouraged research that could help refine the clinical criteria established in the 75 percent rule. As part of this effort to identify the types of patients whose treatment needs require an IRF setting, CMS has collaborated with several crucial stakeholders to create a framework for future research. Some of these efforts are described below.

- At CMS's request, the National Center for Medical Rehabilitation Research at the National Institute of Child Health and Human Development (NICHD/NIH) convened a panel in February 2005 to develop a research agenda on appropriate settings for rehabilitation.<sup>5</sup>
- Recently, NICHD/NIH also issued a notice on the National Institutes of Health (NIH) website recognizing the need to enhance the evidence base for clinical practice, and pledging to work with providers and research groups to encourage the design of clinical studies that meet NIH standards.<sup>6</sup> CMS has also pledged to work with researchers conducting NIH-approved studies so that they can meet their study objectives within the overall framework of the Medicare program benefit.
- Over the past year, CMS has been actively participating in various NIH panel discussions to foster research in the area of medical rehabilitation. In the course of attending these meetings, CMS has established connections with many of the researchers conducting the research in this area and have been helping them to identify the appropriate resources within CMS.

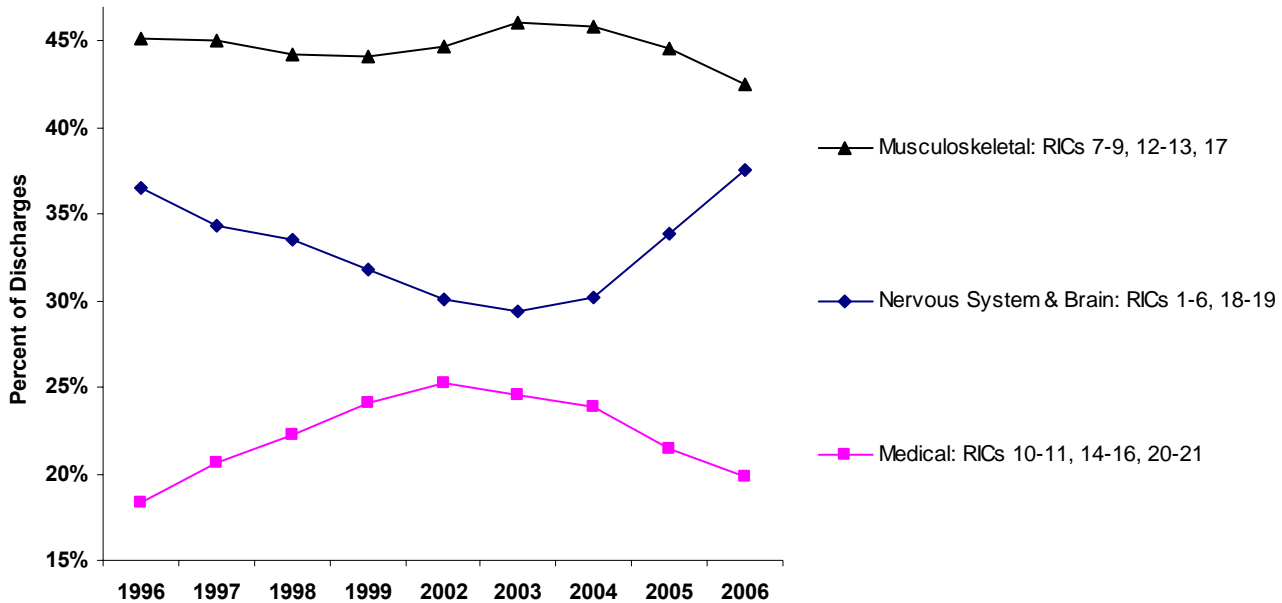
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<sup>5</sup> The Summary Report for the February 14-15, 2005 panel meeting is available at [www.nichd.nih.gov/publications/pubs/upload/rehab\\_settings\\_2005.pdf](http://www.nichd.nih.gov/publications/pubs/upload/rehab_settings_2005.pdf).

<sup>6</sup> The notice is available at <http://grants.nih.gov/grants/guide/notice-files/NOT-HD-07-005.html>.

- CMS staff strongly support industry research efforts by serving on project advisory boards and by participating in industry-sponsored meetings and research conferences.

**Figure 2: Changes in IRF Patient Mix by Type of Service**

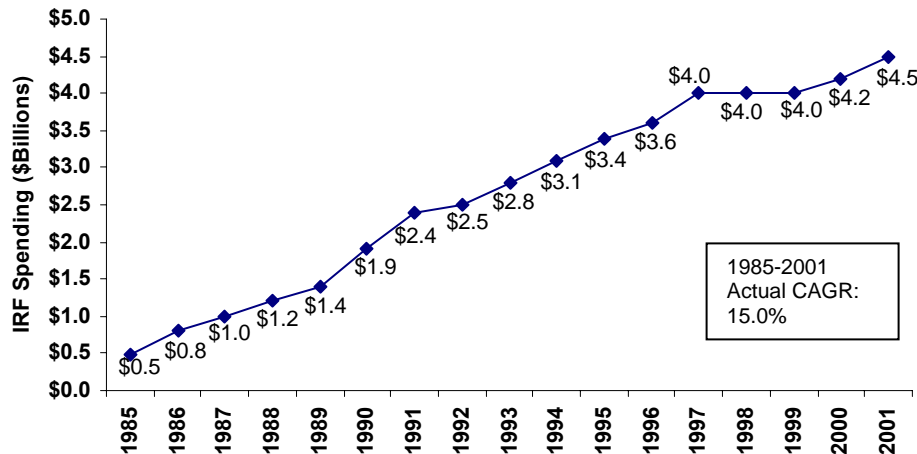


Note: underlying data shown in Appendix C. 1996-1999 from RAND Sample, 2002-2006 from CMS Medicare claims, 2000 and 2001 claims not available.

### CMS ANALYSIS OF IRF UTILIZATION AND PROVIDER PRACTICES

CMS started monitoring IRF expenditure levels in 1985. At that time, total Medicare payment for IRF services was only \$0.48 billion, indicating that the services were being furnished to a small beneficiary population, presumably the targeted population with atypical rehabilitation needs. From 1985 through 2001, IRF payments increased at an annual average rate of 15.0 percent, as shown below in Figure 3.

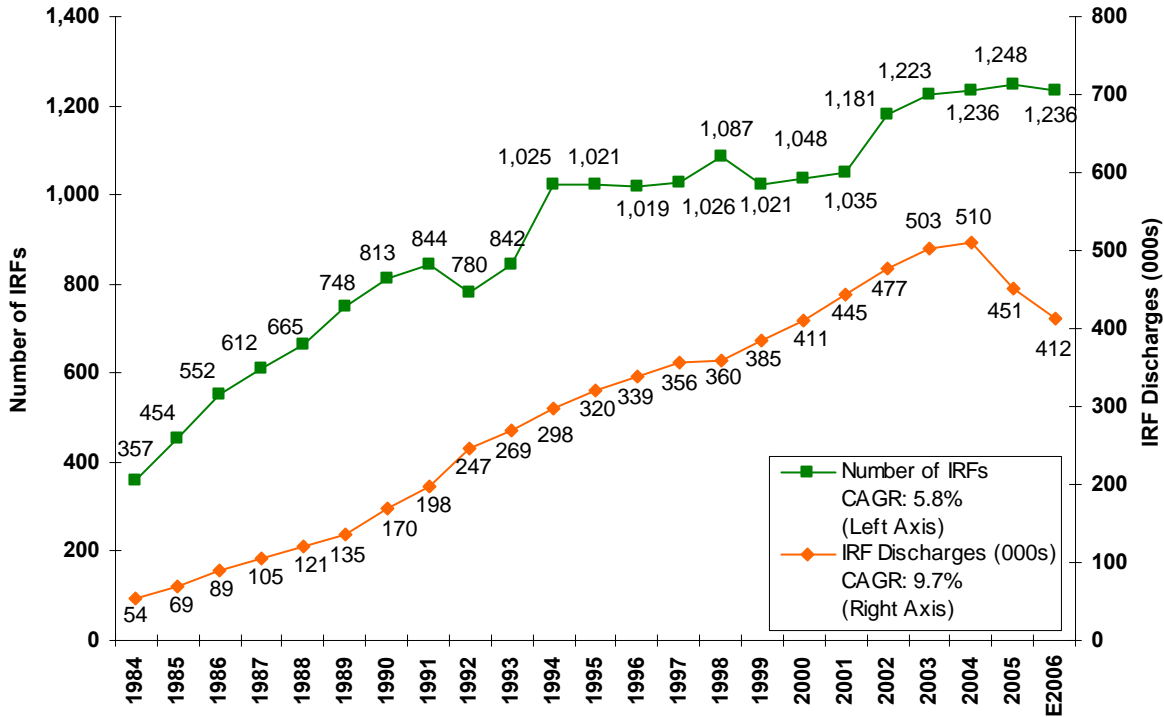
**Figure 3: IRF Pre-PPS Spending 1985 - 2001**



Source: MedPAC: 1985-1996, CMS OACT 1997-2001

As one might expect, the increases in Medicare expenditures correlate with significant increases in both the number of IRFs and the volume of IRF claims. As Figure 4 shows, the number of IRFs has stayed relatively constant since the implementation of the IRF PPS, and the volume of IRF discharges continued to grow steadily until 2004, when CMS re-established enforcement of the 75 percent rule. As expected, one can see a decrease in the volume of IRF discharges since 2004. However, preliminary analyses of the 2007 data suggest that this decrease may be starting to level off in 2007.

**Figure 4: Growth in number of IRFs and IRF Discharges, 1984 – 2006\***

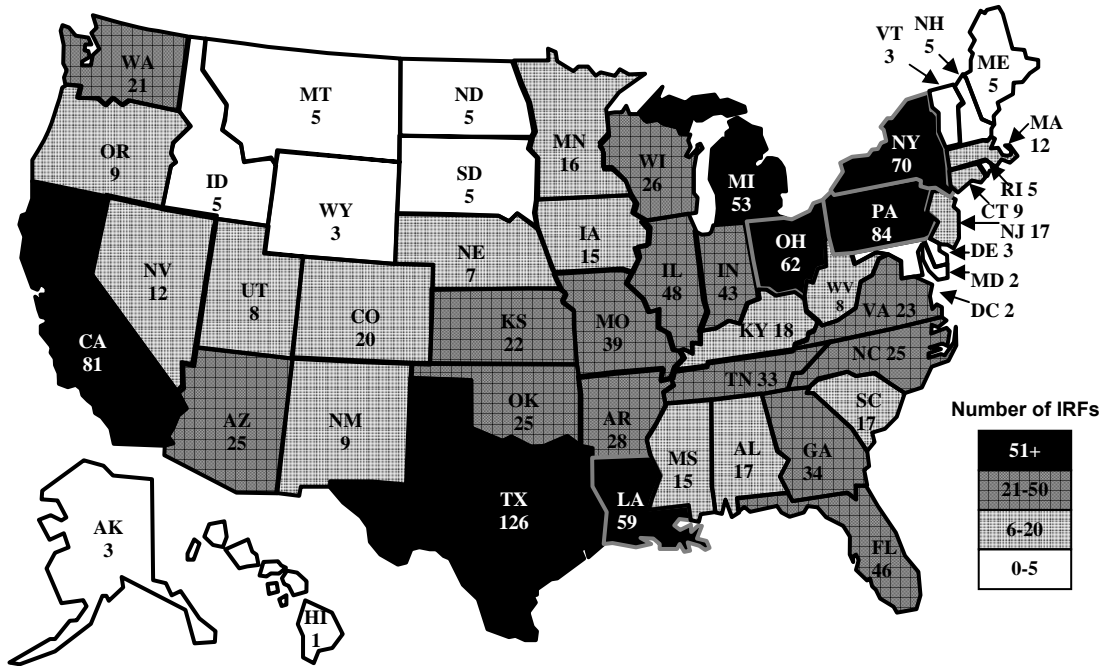


Source: CMS/CMM and the Iowa Foundation for Medical Care (IFMC).



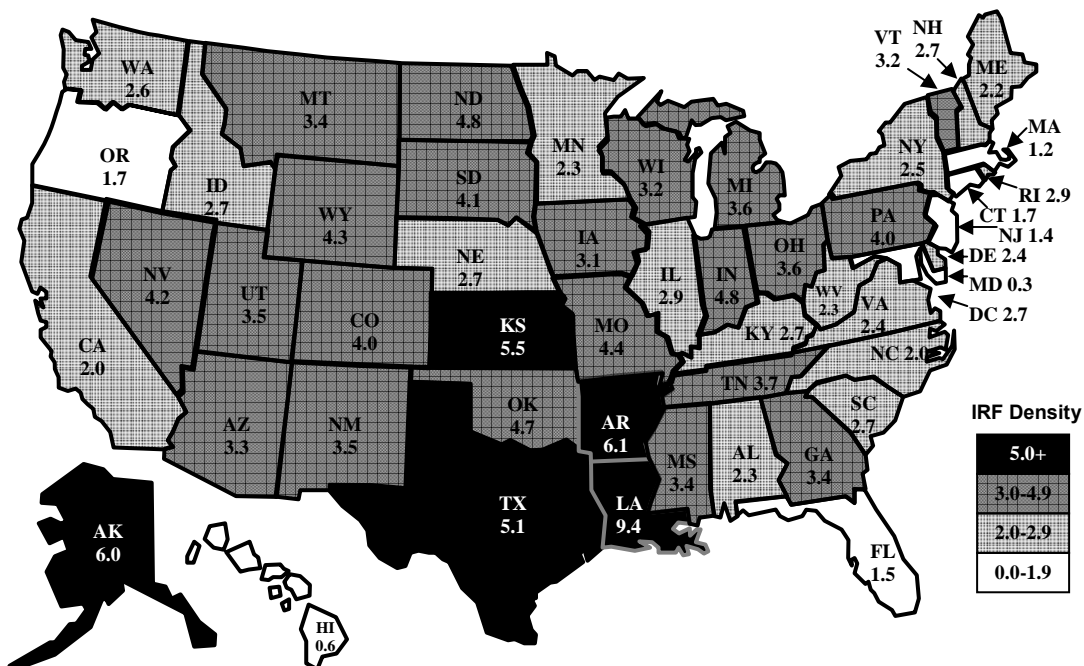
In addition, as shown in Figures 5 and 6, CMS data indicate that there are significant state and regional differences in the distribution of IRFs. Figure 5 shows distribution of IRFs by state and Figure 6 illustrates the density of IRFs in each state per 100,000 Medicare beneficiaries. More research will be needed to determine whether there are state and/or regional competitive pressures that are having an impact on admission decisions and the mix of services.

**Figure 5: National IRF Distribution, 2006**



Source: CMS/CMM, see Appendix D for underlying data.

**Figure 6: IRF Density: Number of IRFs per 100,000 Medicare Beneficiaries, 2006**



Source: CMS/CMM, see Appendix D for underlying data.

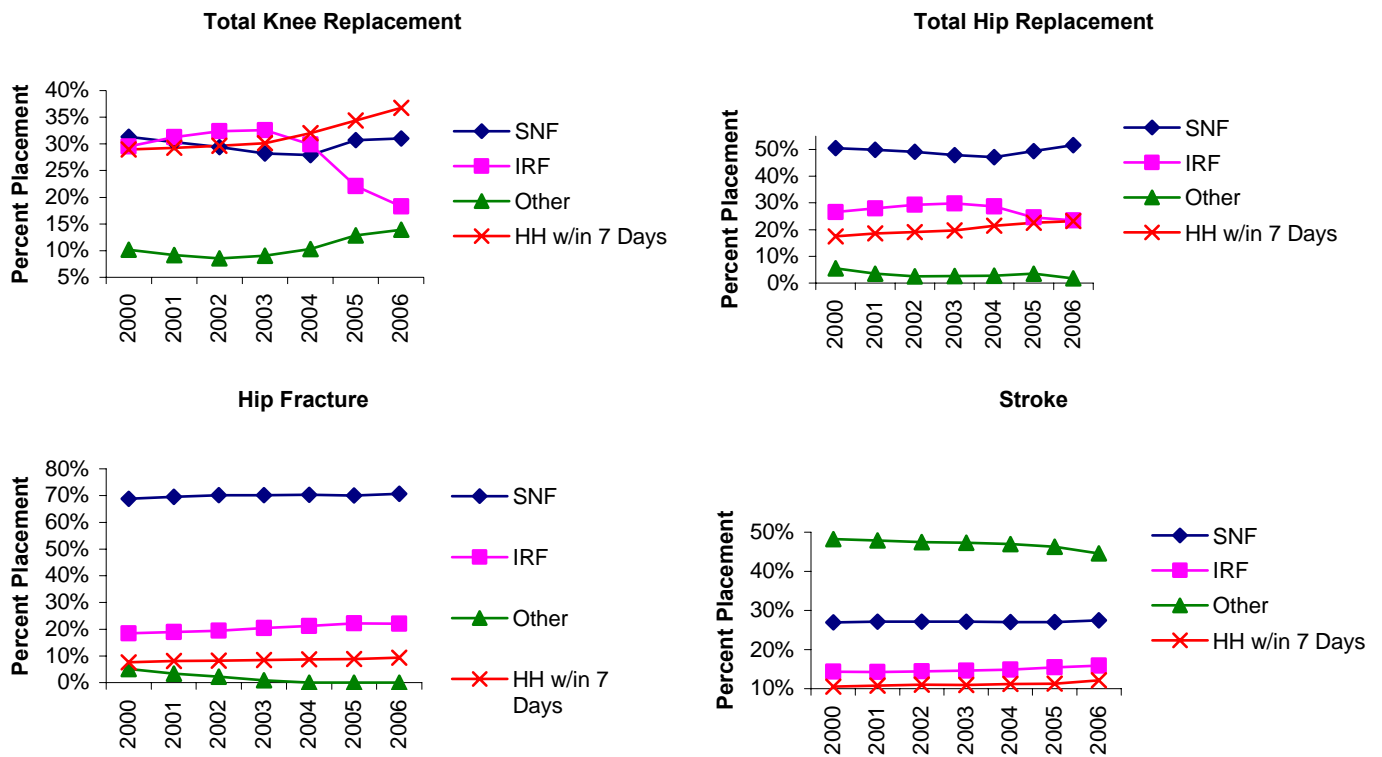
## **MEDICARE BENEFICIARY ACCESS TO REHABILITATION CARE**

CMS is committed to maintaining access to rehabilitation care for all Medicare beneficiaries. As indicated in Figure 7 below, patients requiring post acute rehabilitation care for four common conditions (total knee replacement, total hip replacement, hip fracture, and stroke) have access to and are receiving services in different settings. It is also important, however, to make sure that beneficiaries are receiving the appropriate level of care at an appropriate cost. The IRF classification criteria are a tool used to identify those patients who have a need for a more intensive level of therapy than is generally required.

Recent industry reports emphasize a subset of the CMS data, starting with the highest level of utilization (2003 and 2004) and subsequent decreases. It is important to note that the highest level of utilization is not necessarily the appropriate level of utilization, and that patients who need rehabilitation services have continued access to these services in other settings, as shown in Figure 7 below. For example:

- Although the proportion of total knee replacement and total hip replacement patients receiving care in IRFs has dropped significantly since 2004, Figure 7 shows the proportions of these patients receiving care in the other post-acute care settings increasing.
- Skilled Nursing Facilities (SNFs), particularly, are in a better position than ever before to manage patients with musculoskeletal conditions with the introduction of 9 new resource utilization group (RUG) payment categories beginning in FY 2006. These new payment categories compensate providers more fully for patients with both rehabilitation and medical needs—precisely the patients who may need some level of medical monitoring but do not require the intense level of services provided in an IRF setting.
- In fact, CMS is hearing reports from the SNF industry that some SNFs are reconfiguring themselves to care for these types of patients more effectively.

**Figure 7: Access to Rehabilitation Care 2000-2006**

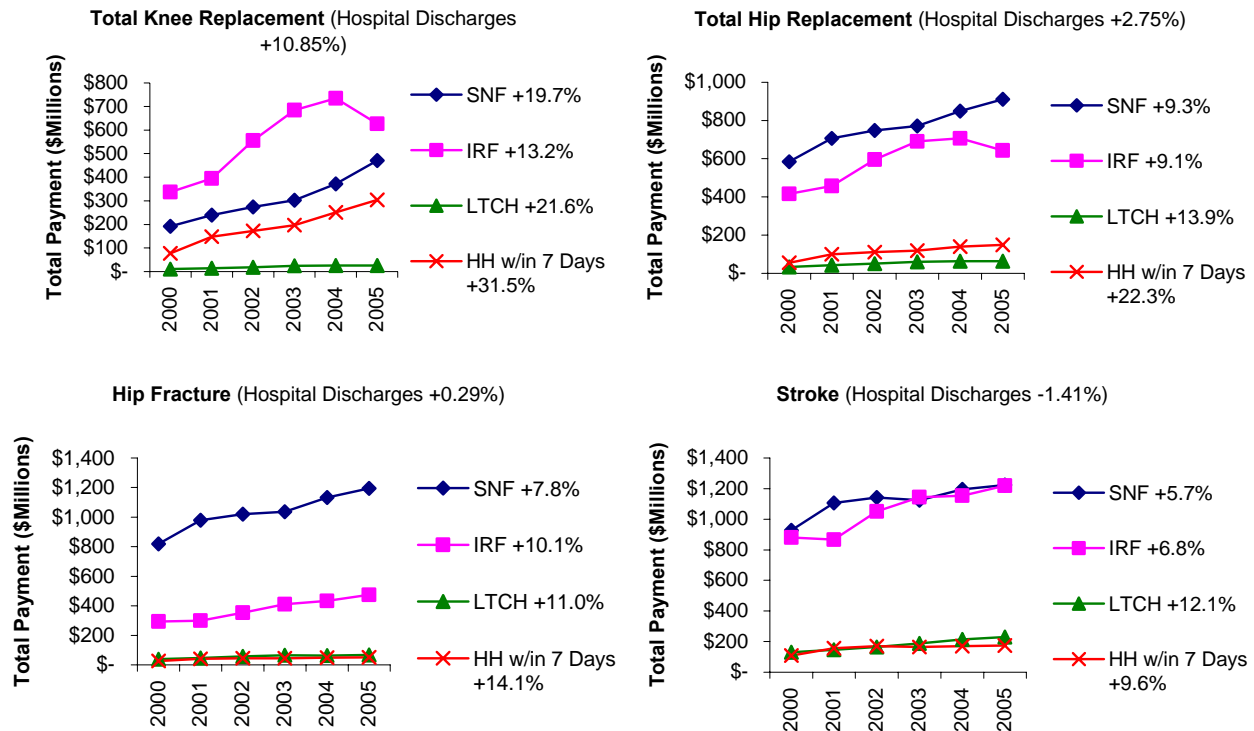


Note: Data for 2006 includes claims in the system for only the first half of calendar year 2006. Other includes home self-care, home health in more than seven days of acute care hospital discharge, outpatient therapy, expiration, LTCH, and other facilities. Also, a small percentage of cases may be counted in multiple settings if they received multiple sources of care within the narrow time window examined. For this reason, totals may not always add to 100 percent. Source, CMS claims data.

It is also worth noting that, while the enforcement of the 75 percent rule is helping to ensure that Medicare beneficiaries are getting rehabilitation care in more appropriate settings, average spending per case continues to rise for IRFs and most other post acute care settings. (See Figure 9, below.)

- Aggregate payments to IRFs for total knee and hip replacement patients declined in 2005 because of substantial declines in the volume of these patients being treated in IRFs, not from any decline in the average payment per case for these cases, which showed a slight increase in 2005. (See Figures 8 and 9 below.)
- In addition, although aggregate payments to IRFs for total knee replacement patients declined for the first time in 2005, they have almost doubled since 2000.

**Figure 8: Total Medicare Payments to Rehabilitation Providers by Provider Type, Annual Growth Rate of Condition Incidence and Medicare Payments, 2000-2005**



**Figure 9: Average Medicare Payment to Rehabilitation Providers per Case and Annual Growth Rates, 2000-2005**



Note: Growth rates in Figures 8 and 9 shown are compounded annual growth rates (CAGRs). This is the average compound rate at which 2000 levels grow to reach 2005 levels. The growth rate listed by each medical condition in Figure 8 is the 2000–2005 CAGR for all Medicare inpatient hospital discharges for that condition. The CAGRs listed by site of service in Figure 8 are growth rates for spending in each site. The CAGRs listed by site of service in Figure 9 are growth rates for average payment per case for each site. Source, CMS claims data.

## **FUTURE REFINEMENTS UNDER DEVELOPMENT**

To ensure continued access to care for all patients needing rehabilitation services, CMS has developed a budget proposal to reimburse IRFs for treating three (3) selected conditions (unilateral knee replacement, unilateral hip replacement, and unilateral hip fracture) at reduced rates that are based on the average skilled nursing facility payments for these conditions plus an allowance for certain higher overhead and patient care costs unique to IRFs. The creation of a base rate that more accurately reflects the needs of the “typical” patient with these conditions provides some flexibility in administering CMS’s medical review programs, and in determining compliance under the 75 percent rule. This proposal is intended to focus payment more on patient needs, rather than on the setting of services.

## **INDUSTRY PERFORMANCE**

Two analyses of margin data performed using Medicare cost report data provide some helpful information.

### CMS Analysis:

An internal analysis by the CMS Office of the Actuary of Medicare hospital cost report data from the first quarter of FY 2007 shows the aggregate margins for hospital-based inpatient rehabilitation units (about 80% of all inpatient rehabilitation facilities) to be 6.3% in FY 2002, 15.0% in FY 2003, 12.0% in FY 2004, and 8.8% in FY 2005. The same analysis shows the aggregate inpatient Medicare margins for freestanding rehabilitation hospitals to be 21.7% in FY 2002, 25.4% in FY 2003, 24.4% in FY 2004, and 21.5% in FY 2005. These are preliminary estimates.<sup>7</sup>

### MedPAC Analysis:

MedPAC’s analysis of aggregate margins shows similar trends. For hospital-based inpatient rehabilitation units, MedPAC’s analysis finds Medicare margins to be 6.1% in 2002, 14.9% in 2003, 12.0% in 2004, and 8.5% in 2005. For freestanding rehabilitation hospitals, MedPAC estimates 18.5% for 2002, 23% for 2003, 24.3% for 2004, and 20.9% for 2005. Blended, industry margins comparing payments to costs for all IRFs have been in the low-to-mid teens since the implementation of the IRF PPS (11.0 percent for 2002, 17.8 percent for 2003, 16.2 percent for 2004, and 13.0 percent for 2005).<sup>8</sup>

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<sup>7</sup> Note that CMS calculates margins using the following formula: (total payments – total costs)/total payments.

<sup>8</sup> Medicare Payment Advisory Commission, Report to the Congress: Medicare Payment Policy, March 2007, p. 211-212. It is important to note that MedPAC projects the aggregate Medicare margin to drop from 13.0 percent in 2005 to 2.7 percent in 2007. This analysis assumes that the decline in the volume of IRF patients caused by the phase in of the 75 percent rule will continue at a steady rate. CMS data suggests that these volume declines might be leveling off.

## APPENDIX A

### “CMS-13”

#### MEDICAL CONDITIONS TO DETERMINE THE CLASSIFICATION PERCENTAGE:

1. Stroke
2. Spinal cord injury
3. Congenital deformity
4. Amputation
5. Major multiple trauma
6. Fracture of femur (hip fracture)
7. Brain injury
8. Neurological disorders, including multiple sclerosis, motor neuron diseases, polyneuropathy, muscular dystrophy, and Parkinson’s disease
9. Burns
10. Active, polyarticular rheumatoid arthritis, psoriatic arthritis, and seronegative arthropathies resulting in significant functional impairment of ambulation and other activities of daily living that have not improved after an appropriate, aggressive, and sustained course of outpatient therapy services or services in other less intensive rehabilitation settings immediately preceding the inpatient rehabilitation admission or that result from a systemic disease activation immediately before admission, but have the potential to improve with more intensive rehabilitation.
11. Systemic vasculidities with joint inflammation, resulting in significant functional impairment of ambulation and other activities of daily living that have not improved after an appropriate, aggressive, and sustained course of outpatient therapy services or services in other less intensive rehabilitation settings immediately preceding the inpatient rehabilitation admission or that result from a systemic disease activation immediately before admission, but have the potential to improve with more intensive rehabilitation.
12. Severe or advanced osteoarthritis (osteoarthrosis or degenerative joint disease) involving two or more major weight bearing joints (elbow, shoulders, hips, or knees, but not counting a joint with a prosthesis) with joint deformity and substantial loss of range of motion, atrophy of muscles surrounding the joint, significant functional impairment of ambulation and other activities of daily living that have not improved after the patient has participated in an appropriate, aggressive, and sustained course of outpatient therapy services or services in other less intensive rehabilitation settings immediately preceding the inpatient rehabilitation admission or that result from a systemic disease activation immediately before admission, but have the potential to improve with more intensive rehabilitation. (A joint replaced by a prosthesis no longer is considered to have osteoarthritis, or other arthritis, even though this condition was the reason for the joint replacement.)
13. Knee or hip joint replacement, or both, during an acute hospitalization immediately preceding the inpatient rehabilitation stay and also meets one or more of the following specific criteria:
  - I. The patient underwent bilateral knee or bilateral hip joint replacement surgery during the acute hospital admission immediately preceding the IRF admission.
  - II. The patient is extremely obese with a Body Mass Index of at least 50 at the time of admission to the IRF.
  - III. The patient is age 85 or older at the time of admission to the IRF.

**APPENDIX B**

**REHABILITATION IMPAIRMENT CATEGORIES (RICs) AND ASSOCIATED IMPAIRMENT GROUPS**

<b>Rehabilitation Impairment Category</b>	<b>Associated Impairment Groups</b>
01 Stroke	Left body involvement (right brain) Right body involvement (left brain) Bilateral involvement No Paresis Other Stroke
02 Traumatic brain injury	Open injury Closed injury
03 Nontraumatic brain injury	Non-traumatic Other brain injury
04 Traumatic spinal cord injury	Paraplegia, unspecified Paraplegia, incomplete Paraplegia, complete Quadriplegia, unspecified Quadriplegia, incomplete c1-4 Quadriplegia, incomplete c5-8 Quadriplegia, complete c1-4 Quadriplegia, complete c5-8 Other traumatic spinal cord dysfunction
05 Nontraumatic spinal cord injury	Paraplegia, unspecified Paraplegia, incomplete Paraplegia, complete Quadriplegia, unspecified Quadriplegia, incomplete c1-4 Quadriplegia, incomplete c5-8 Quadriplegia, complete c1-4 Quadriplegia, complete c5-8 Other non-traumatic spinal cord dysfunction
06 Neurological	Multiple Sclerosis Parkinsonism Polyneuropathy Cerebral Palsy Neuromuscular Disorders Other Neurologic
07 Fracture of lower extremity	Status post unilateral hip fracture Status post bilateral hip fracture Status post femur (shaft) fracture Status post pelvic fracture
08 Replacement of lower extremity joint	Status post unilateral hip replacement Status post bilateral hip replacements Status post unilateral knee replacement Status post bilateral knee replacements Status post knee and hip replacements (same side) Status post knee and hip replacements (different sides)
09 Other orthopedic	Other orthopedic

**APPENDIX B (cont.)**

**REHABILITATION IMPAIRMENT CATEGORIES (RICs) AND ASSOCIATED IMPAIRMENT GROUPS**

<b>Rehabilitation Impairment Category</b>	<b>Associated Impairment Groups</b>
10 Amputation, lower extremity	Unilateral lower extremity above the knee Unilateral lower extremity below the knee Bilateral lower extremity above the knee Bilateral lower extremity above/below the knee Bilateral lower extremity below the knee
11 Amputation, other	Unilateral upper extremity above the elbow Unilateral upper extremity below the elbow Other amputation
12 Osteoarthritis	Osteoarthritis
13 Rheumatoid, other arthritis	Rheumatoid arthritis Other arthritis
14 Cardiac	Cardiac
15 Pulmonary	Chronic Obstructive Pulmonary Disease Other pulmonary
16 Pain syndrome	Neck pain Back pain Extremity pain Other pain
17 Major multiple trauma, no brain injury or spinal cord injury	Status post major multiple fractures Other multiple trauma
18 Major multiple trauma, with brain or spinal cord injury	Brain and spinal cord injury Brain and multiple fractures/amputation Spinal cord and multiple fractures/amputation
19 Guillian Barre	Guillian Barre
20 Miscellaneous	Spina Bifida Other congenital Other disabling impairments Developmental disability Debility Infection Neoplasms Nutrition (endocrine/metabolic) with intubation/parenteral nutrition Nutrition (endocrine/metabolic) without intubation/parenteral nutrition Circulatory disorders Respiratory disorders-Ventilator dependent Respiratory disorders-non-ventilator dependent Terminal care Skin disorders Medical/surgical complications Other medically complex conditions
21 Burns	Burns



## APPENDIX C

### DISTRIBUTION OF DISCHARGES BY IRF IMPAIRMENT CATEGORY

RIC	Descriptor	1996	1997	1998	1999	2002	2003	2004	2005	2006
01	Stroke	25.8%	23.6%	21.8%	20.0%	17.8%	16.7%	16.6%	18.3%	20.0%
02	Brain Dysfunction, Traumatic	1.1%	1.1%	1.1%	1.1%	1.3%	1.4%	1.6%	2.0%	2.3%
03	Brain Dysfunction, Non-Traumatic	2.0%	1.9%	2.0%	2.0%	2.1%	2.1%	2.3%	2.9%	3.5%
04	Spinal Cord Dysfunction, Traumatic	0.6%	0.5%	0.5%	0.5%	0.6%	0.5%	0.6%	0.6%	0.7%
05	Spinal Cord Dysfunction, Non-Traumatic	3.0%	2.9%	3.1%	3.1%	3.5%	3.7%	3.7%	3.8%	3.9%
06	Neurological Conditions	3.7%	3.9%	4.6%	4.8%	4.4%	4.6%	5.1%	5.8%	6.6%
18	MMT With Brain/Spinal	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.3%
19	Guillain-Barre	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%
	<b>Nervous System &amp; Brain</b>	<b>36.5%</b>	<b>34.3%</b>	<b>33.5%</b>	<b>31.8%</b>	<b>30.1%</b>	<b>29.3%</b>	<b>30.2%</b>	<b>33.9%</b>	<b>37.6%</b>
07	Lower Extremity Fracture	12.7%	11.6%	11.1%	11.0%	12.0%	12.5%	13.0%	14.4%	15.9%
08	Lower Extremity Joint Replacement	24.6%	25.2%	24.1%	23.3%	23.3%	24.2%	24.1%	22.4%	18.8%
09	Other Orthopedic	4.2%	4.4%	4.7%	5.0%	4.8%	5.0%	5.1%	5.1%	5.2%
12	Osteoarthritis	1.8%	1.9%	2.3%	2.7%	2.3%	2.2%	1.6%	0.9%	0.7%
13	Rheumatoid And Other Arthritis	0.9%	1.0%	1.1%	1.3%	1.0%	1.1%	0.9%	0.8%	0.7%
17	MMT Without Brain/Spinal Cord Injury	0.9%	0.9%	0.9%	0.9%	1.1%	1.2%	1.1%	1.0%	1.2%
	<b>Musculoskeletal</b>	<b>45.2%</b>	<b>45.1%</b>	<b>44.3%</b>	<b>44.1%</b>	<b>44.6%</b>	<b>46.1%</b>	<b>45.9%</b>	<b>44.6%</b>	<b>42.5%</b>
10	Amputation, Lower Extremity	3.8%	3.7%	3.5%	3.3%	2.7%	2.5%	2.6%	2.8%	2.9%
11	Amputation, Non-Lower Extremity	0.3%	0.3%	0.3%	0.4%	0.3%	0.3%	0.2%	0.2%	0.2%
14	Cardiac	3.2%	3.8%	4.1%	4.3%	5.6%	5.5%	5.2%	4.5%	3.9%
15	Pulmonary	1.9%	2.4%	2.6%	2.9%	2.3%	2.0%	1.9%	1.6%	1.4%
16	Pain Syndrome	1.0%	1.3%	1.5%	1.6%	2.2%	2.1%	1.9%	1.6%	1.4%
20	Miscellaneous	8.0%	9.0%	10.3%	11.5%	12.2%	12.2%	12.0%	10.8%	10.0%
21	Burns	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
	<b>Medical</b>	<b>18.3%</b>	<b>20.6%</b>	<b>22.2%</b>	<b>24.1%</b>	<b>25.3%</b>	<b>24.6%</b>	<b>23.9%</b>	<b>21.5%</b>	<b>19.9%</b>
<b>Total</b>		<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

## APPENDIX D

### IRF DENSITY: IRFs PER 100,000 MEDICARE BENEFICIARIES

State	IRFs	IRFs/ 100,000 Beneficiaries	State	IRFs	IRFs/ 100,000 Beneficiaries	State	IRFs	IRFs/ 100,000 Beneficiaries
LA	59	9.4	UT	8	3.5	WA	21	2.6
AR	28	6.1	NM	9	3.5	NY	70	2.5
AK	3	6.0	MT	5	3.4	DE	3	2.4
KS	22	5.5	GA	34	3.4	VA	23	2.4
TX	126	5.1	MS	15	3.4	MN	16	2.3
IN	43	4.8	AZ	25	3.3	AL	17	2.3
ND	5	4.8	WI	26	3.2	WV	8	2.3
OK	25	4.7	VT	3	3.2	ME	5	2.2
MO	39	4.4	IA	15	3.1	NC	25	2.0
WY	3	4.3	RI	5	2.9	CA	81	2.0
NV	12	4.2	IL	48	2.9	OR	9	1.7
SD	5	4.1	KY	18	2.7	CT	9	1.7
PA	84	4.0	SC	17	2.7	FL	46	1.5
CO	20	4.0	ID	5	2.7	NJ	17	1.4
TN	33	3.7	DC	2	2.7	MA	12	1.2
MI	53	3.6	NE	7	2.7	HI	1	0.6
OH	62	3.6	NH	5	2.7	MD	2	0.3

Source: IFMC report IRFs that submitted IRF-PAIs between January 1, 2006 and December 31, 2006.