



NEW JERSEY HOSPITAL ASSOCIATION

JUN 29 2007

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June 28, 2007

Leslie Norwalk, Esq.  
Acting Administrator  
Centers for Medicare & Medicaid Services  
Room 445-G  
Hubert H. Humphrey Building  
200 Independence Avenue, S.W.  
Washington, DC 20201

**Re: CMS-1551-P (Medicare Program; Inpatient Rehabilitation Facility Prospective Payment System for Federal Fiscal Year 2008)**

Dear Administrator Norwalk:

On behalf of its 80 hospital members, including all of New Jersey's adult inpatient rehabilitation hospitals, the New Jersey Hospital Association (NJHA) appreciates this opportunity to comment on the Centers for Medicare & Medicaid Services (CMS) fiscal year (FY) 2008 proposed rule regarding inpatient rehabilitation facility (IRF) reimbursement under the Medicare IRF prospective payment system (PPS). NJHA is a not-for-profit trade organization committed to helping New Jersey hospitals and health systems provide quality, accessible and affordable care to their communities.

NJHA has two particular areas of comment on this rule proposal: the pending termination of the comorbidity provision within the 75 percent rule and a specific wage index issue affecting one of our inpatient rehabilitation hospital members, The Rehabilitation Hospital of South Jersey.

***Pending Termination of the Comorbidity Provision in the 75 Percent Rule***

NJHA appreciates CMS' interest in the field's views concerning the termination of the comorbidity provision that is scheduled to occur on July 1, 2008. Termination of this provision would have a significant negative impact on a large number of patients who have medically complex conditions that have caused significant decline in their functional ability and require the intensive rehabilitation treatment that is unique to inpatient rehabilitation hospitals and units.

We strongly recommend that CMS amend the 75 percent rule in the FY08 inpatient rehabilitation facility PPS final rule to make the comorbidity provision a permanent part of the regulation. This is necessary, we believe, because there are inherent limitations in a diagnosis driven system like the 75 percent rule. Such a system cannot identify the special needs of individual patients. Therefore, the rule needs a way to recognize the relevance of comorbidities to the medical necessity for inpatient rehabilitation hospital services.

In addition, NJHA believes that the policy should remain in place while research that is currently being conducted is completed and will help inform the discussion surrounding both the comorbidity provision and the 75 percent rule as a whole.

***Unique Wage Index Concern for Rehabilitation Hospital of South Jersey***

Under the current wage index methodology for inpatient rehabilitation hospitals, one of NJHA's member IRFs, The Rehabilitation Hospital of South Jersey (RHSJ), is facing a situation in which its wage index currently and going forward for FY08 is markedly lower than the wage index under IPPS for the one acute care hospital in its CBSA, as well as being much lower than the wage index for other IRFs and acute care hospitals in its region of New Jersey. This has led to RHSJ being at a significant disadvantage with regard to recruiting and retaining professional staff, especially nurses and rehabilitation therapists.

NJHA is concerned that this somewhat unique circumstance could lead to diminished access to inpatient rehabilitation hospital services for the residents in RHSJ's community. It is NJHA's understanding that representatives of RHSJ have met with staff from the Center for Medicare Management to discuss this situation, and that RHSJ has made a proposal to make a limited change to the current IRF wage index methodology to remedy it. We also understand that RHSJ's proposal is substantially similar to the methodology CMS has used under the home health prospective payment system when there is no acute care hospital in a rural home health agency's area on which to base a wage index for the agency. Therefore, we recommend that CMS give serious consideration to RHSJ's proposal for inclusion in the FY 2008 inpatient rehabilitation facility PPS final rule.

Please feel free to contact Theresa Edelstein, NJHA's vice president of continuing care services, at 609-275-4102, or me with any questions you may have concerning our comments on the FY 2008 inpatient rehabilitation facility PPS proposed rule.

Sincerely,

  
Gary S. Carter, FACHE  
President & CEO



JUN 29 2007

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## TEXAS HEALTH RESOURCES

June 28, 2007

Leslie Norwalk  
Acting Administrator  
Centers for Medicare & Medicaid Services  
Hubert H. Humphrey Building  
200 Independence Avenue, S.W., Room 445-G  
Washington, DC 20201

*RE: (CMS-1551-P) Medicare Program; Inpatient Rehabilitation Facility Prospective Payment System for Fiscal 2008; Proposed Rule (Vol. 72, No. 88), May 8, 2007*

Dear Ms. Norwalk:

On behalf of Texas Health Resources (THR) and its 13 faith-based, nonprofit community hospitals throughout north Texas, including Harris Methodist Hospitals, Arlington Memorial Hospital and Presbyterian Healthcare System, we appreciate the opportunity to comment on the Centers for Medicare & Medicaid Services' (CMS) proposed rule for the fiscal year (FY) 2008 inpatient rehabilitation facility prospective payment system. In particular, we join the American Hospital Association and other health care systems, hospitals and providers in urging regulatory action on the so-called "75% Rule."

THR believes CMS should identify the clinical characteristics of patients who currently fall outside of the qualifying conditions and are appropriate for hospital-level inpatient rehabilitation, as recommended by the Medicare Payment and Advisory Commission (MedPAC). We share MedPAC's view that **the 75% Rule's current diagnosis-based structure is inadequate to "identify all patients who need, can tolerate, and benefit from intensive rehabilitation."** CMS should expand the qualifying conditions based on key clinical indicators of medical necessity for inpatient rehabilitation patients who today are inappropriately diverted to a less-intensive setting due to the 75% Rule's constraints. Doing so would reduce inappropriately denied admissions for medically necessary patients seeking care in inpatient rehabilitation hospitals and units. Systematic, timely review and modernization of the qualifying conditions should be conducted by CMS in collaboration with independent researchers; inpatient rehabilitation providers; and, clinical experts including referring physicians, physiatrists, rehabilitation nurses and therapists.

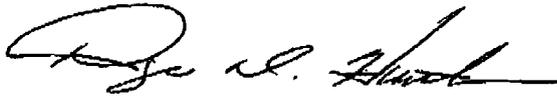
We also are concerned about the pending termination of the 75% Rule's comorbidities provision, which enables inpatient rehabilitation patients to count under the rule based on selected, secondary medical characteristics. The comorbidities provision is set to expire on July 1, 2008, when the 75% Rule is fully phased-in. Under this temporary provision, a

that falls within one of the 13 qualifying conditions and causes a significant decline in the patient's functional ability. CMS' analysis found that seven percent of cases from July 2005 through June 2006 – approximately 31,000 patients – qualified under the 75% Rule through the comorbidities provision.

Termination of the comorbidities provision would have a significant negative impact on this large group of patients with complicating medical conditions that require medical oversight by a physician and the specialized, advanced nursing care and therapy services found in inpatient rehabilitation hospitals and units. Given the compromised health status and functional level of this population, it would be inappropriate to deny them access to the inpatient rehabilitation setting. **We urge CMS to amend the 75% Rule in the FY 2008 inpatient rehabilitation facility prospective payment system final rule to include comorbidities among qualifying cases permanently.**

Thank you for the opportunity to share our comments. If we can provide you or your staff with additional information, please do not hesitate to contact Joel Ballew, Director of Government Affairs, at 817-462-6794 or by e-mail at [JoelBallew@TexasHealth.org](mailto:JoelBallew@TexasHealth.org).

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas D. Hawthorne". The signature is fluid and cursive, with a large initial "D" and "H".

Douglas D. Hawthorne, FACHE  
President and CEO  
Texas Health Resources

6/28/2007

BY EXPRESS MAIL

Leslie Norwalk, Administrator (Acting)  
Centers for Medicare & Medicaid Services  
Department of Health and Human Services  
Attention: CMS-1551-P  
Mail Stop C4-26-05  
7500 Security Boulevard  
Baltimore, MD 21244-8012.

June 28, 2007

**re: 75 Percent Rule Policy**

Dear Administrator Norwalk,

Thank you for this opportunity to comment on the 2008 Proposed Rule for the Inpatient Rehabilitation Facility Prospective Patient System (the Proposed Rule). Jewish Hospital & St. Mary's HealthCare (JHSMH) appreciates CMS's efforts to ensure beneficiary access to appropriate and effective rehabilitation services. In this light, we encourage CMS to continue to include all appropriate patients when applying the 75 percent rule to a facility's patient population.

JHSMH is a major regional health network headquartered in Louisville, Kentucky that includes 71 health care facilities with more than 1,900 licensed beds, over 42,000 discharges and almost 100,000 emergency room visits annually. JHSMH employs more than 8,100 people, who provide a complete array of health care services in Kentucky and southern Indiana including: hospitals, behavioral health, assisted living, home health care, outpatient care, nursing home care, occupational health and rehab medicine.

Frazier Rehab and Neurological Institute is a 135 bed Inpatient Rehabilitation Facility on the campus of Jewish Hospital in downtown Louisville. It is one of six sites participating in a comparative effectiveness study on cardio-pulmonary rehabilitation. The study is intended to compare outcomes for similar patients receiving cardio-pulmonary care as an IRF inpatient with outcomes for patients receiving cardio-pulmonary care in a Skilled Nursing Facility. This study is part of the industry's effort to refine the list of 13 conditions eligible for intensive rehab care through rigorous data collection examining real life clinical situations.

In addition, JHSMH shares ownership in Southern Indiana Rehab Hospital (SIRH) with two county owned facilities in southern Indiana, Clark Memorial Hospital and Floyd Memorial Hospital. SIRH, a 60 bed facility, is the only hospital providing acute rehab services for the residents of Southern Indiana.

JHSMH appreciates CMS's continuing efforts to ensure that Medicare beneficiaries have access to high quality care in the most appropriate setting. We believe that the services offered at Frazier Rehab are unsurpassed with respect to quality and effectiveness, and support continuing CMS efforts to recognize the value of intensive inpatient rehabilitation services.

As described in the Proposed Rule, Inpatient Rehabilitation Facilities are paid on a fee schedule that is distinct from the Inpatient Prospective Payment System. Eligibility for the IRF fee schedule is based on the so-called "75 percent rule" that requires a particular case mix at the facility (the actual percentage requirement may not be 75 percent, and is referred to as the "compliance threshold"). Thirteen conditions that typically require intensive services (e.g. stroke, traumatic brain injury) form the core of the 75 percent rule determination. Since July 1, 2004, CMS has also included patients with certain comorbidities towards the required case mix.

In November 2005, September 2006, and June 2007, CMS issued reports about the policy objectives for the 75% rule, the results of its initial implementation, and an analysis of the need for post acute care reform. These documents are part of an effort to infuse Medicare's post-acute reimbursement and policy systems with the policy and analytic rigor that has long characterized Medicare's acute care systems. The latest report confirms that the current implementation of the 75% rule has effectively served the goal of encouraging patient care in the most appropriate setting.

As a comprehensive regional network offering all covered services to Medicare beneficiaries, Jewish Hospital and St. Mary's Healthcare is in a unique position to understand the complexities and shortcomings of care coordination, appropriate reimbursement, and quality outcomes following acute hospitalization discharge. From this perspective, we make the following comments.

**CMS should permanently include comorbidities that meet the current criteria when applying the 75 percent rule to identify inpatient rehabilitation facilities.**

In order for a patient with a primary diagnosis that would not count towards the compliance threshold to be included based on a comorbidity, a number of conditions must be met:

- the comorbidity must fall in one of the rule's thirteen conditions.
- the comorbidity must have caused significant decline in functional ability in the individual such that, *even in the absence of the admitting condition*, the individual would require the intensive rehabilitation treatment that is unique to IRFs and *cannot be appropriately performed in another care setting*.

Under current regulations, the inclusion of these select comorbidities for the purposes of establishing IRF status under the 75 percent rule will end for cost reporting periods on or after July 1, 2008.

The purpose of the 75 percent rule is to distinguish between IRFs and hospitals paid under the IPPS, in order to match appropriate care with appropriate reimbursement. We believe that the current criteria for the 75 percent rule serve the goals of encouraging care in appropriate settings,

and matching payment to patient needs, rather than site of services. The June 2007 CMS report supports this perspective, stating,

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.

This positive development would be threatened if comorbidities are excluded from determination of the compliance threshold. The comorbidity criteria are narrowly drawn in order to reach a limited set of secondary diagnoses that have significantly limited the patient's functional abilities. By definition, these patients "require the intensive rehabilitation treatment that is unique to IRFs and cannot be appropriately performed in another care setting." Treatment in less appropriate facilities is likely to negatively impact patient outcomes.

If the 75 percent rule is modified by excluding consideration of comorbidities, these *higher* acuity cases are more likely to be discharged to less intensive settings despite their actual care needs. The beneficiaries with these comorbidities would see a new barrier to access to the facilities best suited to treat their condition. Jewish Hospital & St. Mary's HealthCare strongly encourages CMS to permanently include comorbidities that meet the current criteria when applying the 75 percent rule to identify inpatient rehabilitation facilities.

**CMS Should Suspend Further Changes to the 75% Rule Until More Coordinated Post-Acute Care Reform is Implemented.**

Regrettably, CMS (formerly HCFA) developed the multiple payment systems for post-acute care without a beneficiary-centered vision or a notion of coordination or integration. For more than two decades it has used separate, uncoordinated organizational entities to design and manage contracts with different vendors to develop these systems. Each post-acute care setting is characterized by separate assessment systems, payment categories, service terminologies, outcome measures, and coding procedures. CMS's Policy Council recognized these issues in its Post-Acute Care Reform Plan, published September 28, 2006, and presented a path for rationalization of post-acute payment.

The Reform Plan sets out a series of steps, that include a demonstration program, industry and expert input, and a gradual implementation of various technology tools to facilitate the improvements. A central piece of the Plan is the implementation of a single post-acute assessment instrument in order to facilitate a patient-centered payment system.

JHSMH supports these reforms, but recognizes that they will result in dramatic changes to the reimbursement landscape for post-acute care. Recognizing this risk of volatility, and in light of the June 2007 report describing the success of the 75 percent rule as currently implemented, we recommend that CMS suspend further implementation of the 75 percent rule until the single post-acute assessment instrument is implemented.

We believe there is insufficient cause to raise the compliance threshold above the current 60% level, especially in light of the absence of outcome, access, or quality data. This is the prudent

course for CMS due to the anticipated financial volatility associated with payment reform, as well as the enrollment of the first wave of baby boomers.

Finally, as CMS develops the FY 2008 Final Rule and other payment system reforms, we hope they will consider carefully the complex impact payment changes can have on other provider segments. For instance, while changes in admissions and discharges to IRFs under the 75% rule appear to have reduced aggregate payments to IRFs, these reductions may be cancelled out by increased admission of rehab patients to LTCHs, with much higher standard payment rates. Also, many private payers follow Medicare policy with respect to payment, amplifying the potential impact of CMS decisions. These complex dynamics make rational payment reform even more urgent, as the volatility can only harm beneficiaries' care needs and outcomes.

### **Conclusion**

In conclusion, JHSMH encourages CMS to continue to permanently include the specific comorbidities listed in the Proposed Rule under the 75 percent rule compliance threshold, and to postpone further changes to the 75 percent rule until post-acute payment reform moves forward. We appreciate this opportunity to comment on the 2008 Proposed Rule. Please don't hesitate to contact us if you have any questions, or if we can provide any further information about the impact of this rule on our patients.

Sincerely,



Robert L. Shircliff  
President and CEO  
Jewish Hospital and St. Mary's Healthcare

cc: Ronald Abrams, Chairman  
Jewish Hospital and St. Mary's Healthcare  
Board of Trustees



**HEALTHSOUTH**

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July 2, 2007

Ms. Leslie V. Norwalk  
Acting Administrator  
Centers for Medicare & Medicaid Services  
Department of Health & Human Services  
Room 445-G Hubert H. Humphrey Building  
200 Independence Avenue, S.W.  
Washington, D.C. 20201

**Re: CMS Proposed Rule with Comment Period, Medicare Program;  
Inpatient Rehabilitation Facility Prospective Payment System for  
Federal Fiscal Year 2008; Proposed Rule; CMS-1551-P; Federal  
Register (May 8, 2007)**

Dear Administrator Norwalk:

HealthSouth Corporation is one of the nation's leading providers of inpatient rehabilitative healthcare services, operating 92 inpatient rehabilitation facilities (IRFs) in 27 states. We are pleased to present the following comments on the May 8, 2007 Notice of Proposed Rulemaking ("NPRM") relating to "*Proposed Changes to the Inpatient Rehabilitation Facility Prospective Payment System for FY 2008*," (72 Federal Register 26230).

In addition to the submission of this comment letter, HealthSouth supports the comments made by the American Hospital Association, American Medical Rehabilitation Providers Association, and the Federation of American Hospitals.

## **SPECIFIC COMMENTS ON THE PROPOSED RULE**

### **I. 75 Percent Rule Policy-Retention of Comorbidities**

The 75% Rule's comorbidity policy should be maintained in order to permit patients who satisfy the policy to have access to inpatient rehabilitation care and services. The 75% Rule is comprised of 13 medical conditions that must comprise a specified threshold percentage of all patients treated by the rehabilitation hospital or unit. The comorbidity policy allows patients whose primary diagnosis does not fit within the 13 conditions covered by the Rule to qualify if a secondary condition (i.e., a comorbid condition) is on the Rule's list of 13 and is serious enough to require an inpatient level of

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rehabilitation care. Patients with potentially qualifying comorbidities have been estimated to represent approximately 5-6% (see chart, below) of 75% Rule-compliant admissions among all inpatient rehabilitation hospitals and units.<sup>1</sup> We appreciate CMS's recognition of the significance of the Rule's comorbidity policy and the solicitation of comments on whether it should be continued or modified. As CMS considers our comments, several observations should be made at the outset.

First, the 75% Rule is a facility classification tool and is not per se a determiner of medical necessity for inpatient rehabilitation under the Medicare program. All inpatient rehabilitation patients must meet basic medical necessity requirements. However, because inpatient rehabilitation hospitals are strictly limited in the number of otherwise medically appropriate patients who do not fit within one of the 13 conditions listed in the Rule, elimination of the comorbidity policy will make access to inpatient rehabilitation more difficult for thousands of patients whose cases otherwise would have complied with the Rule through that policy.

Second, since the comorbidities policy is currently limited to secondary conditions that would otherwise qualify for 75% Rule compliance if listed as a primary diagnosis, it is currently affording access to inpatient rehabilitative care only to the types of patients deemed by CMS to be appropriately treated in inpatient rehabilitation hospitals and units.<sup>2</sup> The elimination of the comorbidity policy from the Rule would, therefore, reduce access to care for the very patients that should have access to inpatient rehabilitative care.

Third, many inpatient rehabilitation patients have multiple medical and clinical complexities affecting their functional, physiological, cognitive and/or psychological capacities. While physical medicine specialists obviously play a central role in providing and supervising care to our patients, they are not the only specialists available and practicing in the rehabilitation hospital setting. Internal medicine specialists, neurologists, pulmonologists, urologists, infectious disease, and psychiatric medicine practitioners -- to name a few -- all play important roles in meeting the many medical and related needs of patients.

This array of sub-specialty medicine is a reflection of medical comorbidity and severity levels among patients who require inpatient rehabilitation, and it is medically difficult to disentangle their multiple diagnoses as if one is primary and all others are inconsequential. The IRF PPS explicitly recognizes that, even among particular diagnostic types (i.e., case mix groups, or "CMGs"), there are varying degrees of medical

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<sup>1</sup> See also, letter dated April \_\_, 2007 to Acting Administrator Leslie Norwalk signed by representatives of the American Hospital Association, American Medical Rehabilitation Providers Association, and Federation of American Hospitals requesting CMS to maintain the 75% Rule comorbidities policy (Attached herewith at Appendix A.

<sup>2</sup> We do not necessarily agree that the 75% Rule's list of diagnoses accurately reflects the full range of medical cases and conditions that are optimally treated in rehabilitation hospitals, and believe its list of diagnoses should be expanded. We discuss our views on this point more fully in subsequent portions of our comments.

severity and function within those diagnoses. This is reflected by the tiers within the CMGs, which recognize not only the existence of inpatient rehabilitation patients' comorbidities but also the extent to which those comorbidities impact the cost of care for those patients. Although the IRF PPS differentiates the clinical severity of comorbid conditions, it recognizes the inter-relationship of those conditions relative to the overall condition of patients and their need for inpatient rehabilitation.

In sum, we believe that continuation of the current comorbidity policy is necessary to address the connection between a patient's total medical condition and his or her need for inpatient rehabilitation.

#### **A. Elimination of Comorbidities as Compliant Cases Will Further Erode Access to Inpatient Rehabilitative Care**

We continue to have serious concerns with the 75% Rule's impact on patients and the outcomes of their rehabilitative care. Its effects on patient caseload within rehabilitation hospitals and units are quite clear. As CMS noted in a memorandum dated June 8, 2007,<sup>3</sup> the number of Medicare discharges from the nation's rehabilitation hospitals and units declined by approximately 20 percent between 2004 and 2006, contemporaneous with the Rule's initial and ongoing implementation and enforcement. We are aware of no other Medicare Part A inpatient level of care that has experienced a decline of 1/5 of its Medicare beneficiary population in such a short period of time.

The 75% Rule has already drastically reduced the number of patients who have accessed the services of rehabilitation hospitals and units, and discontinuing its comorbidities provision will make accessing those services even more difficult. Patients with comorbidities are arguably among the most vulnerable among our population because they have already sustained a functional loss from one disabling condition which is further compromised by the presence of a secondary condition included on the CMS 13 list.

The comorbidity policy serves as an important safety net for access to inpatient rehabilitative care for this medically complex patient population. The discontinuance of the policy will only exacerbate the difficulties faced by patients whose primary medical diagnoses happen to fall outside the Rule's list of 13 conditions but who are affected by secondary conditions that require inpatient rehabilitation care.

The following chart and accompanying 2006 IRF data depicts the distribution of cases having qualifying comorbidities among 6 RICs representing approximately 45% of total IRF volume (Medicare and non-Medicare) within the UDS<sub>MR</sub> database (Chart 1).<sup>4</sup> **Collectively, these 6 RICs (LEJR, other orthopedic conditions, cardiac, non-traumatic spinal cord, neurological conditions, and miscellaneous) represent more than 80% of the total IRF cases within the UDS<sub>MR</sub> database that have at least 1**

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<sup>3</sup> Attached herewith at Appendix B.

<sup>4</sup> This summary information is being provided by UDS<sub>MR</sub> for the benefit of the rehabilitation field and is used with prior written permission of UDS<sub>MR</sub>. © 2007 Uniform Data System for Medical Rehabilitation, a division of UB Foundation Activities, Inc.

**comorbid condition associated with them as defined by the 75% Rule.** Since the Rule can apply to rehabilitation hospitals or unit's Medicare and non-Medicare cases, "All Payer" and "Medicare Only" data are presented.

**Chart 1**

RICs Comprising the Majority of IRF* Rehab Cases with Qualifying Comorbid Conditions in 2006								
CMS Rehab Impairment Category	All Payers				Medicare Only**			
	Total cases by RIC	Cases with qualifying comorbid conditions (cc)	% of cases with cc in the RIC	% of total cases with cc in the 2006 dataset***	Total cases by RIC	Cases with qualifying comorbid conditions (cc)	% of cases with cc in the RIC	% of total cases with cc in the 2006 dataset****
Lower extremity joint replacement	69099	4135	6.0	17.5	48137	3023	6.3	17.2
Other Orthopedic Conditions	21112	3482	16.5	14.8	15394	2618	17.0	14.9
Cardiac Conditions	13265	2289	17.3	9.7	11231	1895	16.9	10.8
Non-traumatic Spinal Cord	17449	1200	6.9	5.1	10471	843	8.1	4.8
Neurological Conditions	27357	1178	4.3	5.0	19766	797	4.0	4.5
Miscellaneous	35863	7105	19.8	30.1	27847	5417	19.5	30.8
Total for Six RICS	184145	19389	10.5	82.2	132846	14593	11.0	83.0
Total across all RICs	412263	23601	5.7	100.0	276816	17608	6.4	100.0

**Chart Notes:**

\* Based on a total of 866 IRFs contributing data to the UDS<sub>MR</sub> database in 2006; Maryland IRFs excluded

\*\* Based on primary payer Code 02

\*\*\* Based on 23,601 all-payer cases with comorbidities

\*\*\*\* Based on 17,608 Medicare cases with comorbidities

Source: UDS<sub>MR</sub>.

**a. Which Types of Cases Likely Rely Most Heavily Upon The 75% Rule's Current Treatment of Comorbidities for Access to Inpatient Rehabilitation Care?**

Chart 1 depicts the volume of cases within the 6 RICs (LEJR, other orthopedic conditions, cardiac, non-traumatic spinal cord, neurological, and misc.) having an accompanying comorbidity that is compliant with the 75% Rule.

Examining the “Medicare Only” data in Chart 1 gives interesting information about the likelihood of the comorbidity policy being used to qualify an admission under the 75% Rule among the 6 RICs listed (which account for over 82% of the cases which qualify by virtue of comorbidities). In fact, comorbidities are used more commonly to qualify the cases of patients with non-traumatic spinal cord, neurological, and miscellaneous RICs as complying with the 75% Rule than they are to qualify the cases of patients with joint replacement or other orthopedic conditions. Interestingly, while comorbidities are used to qualify 16.9% of the cardiac patients, they are only used to qualify 6.3% of patients who have experienced a lower extremity joint replacement.

Among all 75% Rule non-compliant (by primary diagnosis) Medicare cases associated with a qualifying comorbidity (17,608 in all), LEJR and other orthopedic cases comprise only 32% of such cases, while the other RICs comprise the remaining 68%, with the “Miscellaneous” RIC comprising 31% overall. Clearly, then, the 75% Rule’s current comorbidities policy is permitting access to inpatient rehabilitation care to a broad range of patients, many of whom will not otherwise qualify under the Rule in the absence of that policy. If the 75% Rule remains on its current trajectory toward 75% and providers have no ability to count comorbid conditions (as defined by the 75% Rule) as compliant cases, many of these patients will not have access to inpatient rehabilitative care.

Attached as Appendix C are a number of case studies for patients admitted to a rehabilitation hospital pursuant to the 75 Percent Rule’s comorbidity policy. We hope these examples provide a clearer understanding of how the comorbidities policy is working and the types of patients who are able to receive care in inpatient rehabilitation hospitals as a result of its existence.

#### **b. How Loss of the Comorbidities Policy Can Impact Access to Inpatient Rehabilitative Care:**

If the 75% Rule’s current treatment of comorbidities is eliminated, none of the cases depicted in Chart 1 under the column heading “Cases with Qualifying Comorbid Conditions (cc)” would be deemed compliant with the Rule. As such, their removal from a rehabilitation hospital’s or unit’s “numerator” for 75% Rule compliance purposes would significantly limit the hospital’s ability to accept both these and other medically-appropriate patients whose primary diagnosis does not fall within the scope of the 13 conditions established by the Rule.

The following hypothetical example of a hospital with an annual patient caseload of 1,000 cases illustrates the point that hospitals will be placed in the position of making extraordinarily tough admissions decisions that will reduce access to inpatient rehabilitative care for many patients.

Assume a compliance threshold percentage requirement of 75%; further assume that the number of cases in the hospital’s “numerator” (i.e., the number of 75% Rule compliant cases) is 750 (the hospital is, therefore, achieving a 75% compliance rate --  $750/1,000 = 75\%$ ). Further assume that among the hospital’s 750 compliant cases, 60 of

them are “comorbidity” cases as defined by the Rule (6% of its total patient population --  $.06 \times 1000 = 60$ ). If the hospital is no longer permitted to count the 60 comorbidity cases as compliant, it falls from a 75% compliance rate to a 70.5% compliance rate ( $750 - 60 = 690$  and  $690/1000 = 69\%$ ). In order to remain in compliance with the 75% Rule (and retain its classification as a rehabilitation hospital), the hospital must either 1) admit additional compliant cases or, more likely, 2) reduce its overall caseload by 80 patients: from 1000 to 920 ( $690/.75 = 920$ ).

The above example identifies the “multiplier effect” in limiting access that occurs if the comorbidities provision is eliminated. For a hospital operating close to the threshold, 60 actual patients would not have complied with the Rule and could have been denied access to care due to the “direct effect” of eliminating the provision; but another 20 patients also could have been denied access, due to the multiplier factor that is used in calculating the hospital’s compliance threshold percentage.

## **B. Research Is Being Conducted To Evaluate Comorbidities**

A study is currently being jointly funded by the American Hospital Association, American Medical Rehabilitation Providers Association, the Federation of American Hospitals, and other organizations seeking to examine the clinical, functional, and medical outcomes associated with post-surgical joint replacement rehabilitation provided in the skilled nursing facility and inpatient rehabilitation hospital/unit setting. This study is known as the “JOINTS” Study. The study is examining differences in patient characteristics and clinical outcomes for more than 2,500 patients receiving post-acute care following lower extremity joint replacement either in an IRF or a skilled nursing facility. The study includes a 6-month clinical follow-up as well as an analysis of the total cost of health care items and services received by study participants over the same period. The study is not designed to reach general conclusions about the relative efficacy of IRF versus SNF care for all patients. Rather, the study is designed to compare the clinical outcomes and costs of post-acute care among classes of post-surgical joint replacement patients who need rehabilitative care (identified on the basis of demographics, diagnosis group, or other characteristics) to determine which may be best suited for one setting or the other.

The “JOINTS” Study is also examining those cases treated in the rehabilitation hospital/unit setting that have 75% Rule compliant comorbidities associated with them. Preliminary details and discussion of this research are contained in the comments submitted by the American Medical Rehabilitation Providers Association.

Other complex but useful research is also underway. The American Medical Rehabilitation Providers Association’s ARA Research Institute has funded a number of important, ongoing projects (*see*, Appendix D for a list of several of these studies). Preliminary reports from these research endeavors were shared with clinicians and researchers at the “*State of the Science Symposium on Post-Acute Rehabilitation: Setting a Research Agenda and Developing an Evidence Base for Practice and Public Policy*” which was held on February 12-13, 2007. Reports from this very significant conclave of national experts on rehabilitation are being shared through professional

organizations and are expected to be available in peer-reviewed journals later this year. Representatives of CMS participated in many of the sessions and received conference materials.

While the Symposium focused on works-in-progress, recent publications of findings of completed work also are adding to the knowledge base about rehabilitation. For example, the March 22, 2007 issue of *Topics in Geriatric Rehabilitation* (Vol. 23, No. 2, pp. 137-147) included an article by Georg Raj, MD, et al: "An Inpatient Rehabilitation Service for Deconditioned Older Adults". This study shows that inpatient rehabilitation for geriatric patients with complicated medical situations can produce significant functional improvements and allow the patients to be discharged to their homes. Overall, the 75% Rule works against rehabilitation hospital admission of patients in this category; but the comorbidities provision might make it possible for at least a limited number of them to be served. It seems likely that barriers to entry for these geriatric patients would undercut efforts to return people to their own homes and avoid long-term institutionalization.

Another example of current peer-reviewed literature that sheds light on rehabilitation issues is an article in the *Journal of Surgical Oncology* (2007; 95: 370-385) by Hewitt, Maxwell and Vargo entitled "Policy Issues Related to the Rehabilitation of the Surgical Cancer Patient." This article states:

For rehabilitation inpatients with cancer, the biggest concern is for those that lack one of the 13 diagnoses facilitating access to an IRF, such as individuals with deconditioning or some types of orthopedic complications. Another concern is that the IRF admission criteria of medical complexity (e.g. need for daily physician visits and 24 hr nursing) and the ability to tolerate intensive (i.e., several hours a day) rehabilitation therapies can be incompatible in many individual cases. Both of these considerations (allowed diagnoses and tolerance/medical complexity) while not in an absolute sense prohibitive, may in practice affect admission decisions away from acute rehabilitation and towards less intensive settings.

This article also cites the 2006 report from the Institute of Medicine: "*From Cancer Patient to Cancer Survivor: Lost in Transition*". This report recommends that cancer survivors should receive a comprehensive care plan that addresses rehabilitation needs.

An extremely encouraging sign in the field of rehabilitation research is that there were hundreds of poster presentations of research at the most recent annual meeting of the American Academy of Physical Medicine and Rehabilitation. Topics covered in posters generally indicate what is in the research pipeline, and this year's array offers useful information for policymakers. (see, Appendix E for description of a dozen poster synopses). For example, Andrew Cole's work indicates that rehabilitation is equally successful at treating functional impairments whether the etiology of the impairment is related to cancer or a neurological condition. Khan and James's work indicates that rehabilitation can be successful in cardiac patients previously thought to require a more

conservative approach, while Hariman had encouraging findings about the role of cardiac rehabilitation in patients with metabolic syndrome.

The work presented in a poster by Drs. Chen and DeVivo has perhaps the most important implications for policymakers. They noted that persons with spinal cord injuries often experience a change in coverage status and third-party payors over time, and that these changes have a significant impact on their rehabilitation outcomes. At the micro level, this research leads to one conclusion:

- While spinal cord injuries are on the CMS-13 list, some patients qualify on the basis of their primary diagnosis and some qualify due to a secondary diagnosis of SCI. Elimination of the comorbidities provision would represent another barrier to care for persons who previously experienced a spinal cord injury but whose related functional impairments now complicate another, newer diagnosis.

But at the macro level, the research leads to a more important conclusion:

- Health outcomes are seriously affected by access to care, which is driven by the specific rules of insurance coverage. Diminishing access to inpatient rehabilitation for individuals with serious comorbidities will inevitably affect the health status of vulnerable people. Because the 75% Rule and its comorbidity provision is applied to all patients, its potential for restricting access to care goes beyond Medicare beneficiaries and affects all patients.

In light of all the promising ongoing research, we believe it would be premature and untimely to allow the 75% Rule's current treatment of comorbid conditions to be removed. Until such research can be completed and evaluated, the consequences associated with eliminating the Rule's current treatment of comorbid conditions are, we believe, too grave to risk. CMS has repeatedly emphasized its desire to base refinements of the Rule's diagnostic-based parameters upon research, data, and evidence. We believe that discontinuing the treatment of comorbid conditions as compliant cases would be premature pending the results of these studies.

### **C. A Critically Important Safety Net For Patients Would Be Removed**

The comorbidities provision of the 75% Rule forms a safety net for a small number of patients with secondary diagnoses instead of primary diagnoses of conditions like stroke and spinal cord injury. If this safety net were to be lost, rehabilitation hospitals would inevitably become reluctant to admit such patients if their admission could jeopardize the hospital's classification as a rehabilitation hospital.

By contrast, private payer plans, often require preauthorization before a patient can be admitted to a rehabilitation hospital. While providers often feel that preauthorization criteria are inappropriate and block some patients from receiving needed services, this process at least offers the protection that (1) a review of the patient's full

medical condition is completed at the time of admission; (2) denials are issued only by doctors, often with experience in a relevant medical specialty; and (3) patients have appeal rights, usually including the right for a review by a physician of the appropriate medical specialty. If the comorbidities provision were allowed to expire, more patients would find themselves in the vulnerable position of requiring inpatient rehabilitation but not having a compliant diagnosis, thereby finding it all the more difficult to access the care they need.

#### **D. Elimination of The Comorbidities Policy Is Inconsistent with MedPAC's Recommendations to Refine the 75% Rule**

Eliminating comorbid conditions as compliant cases is inconsistent with the recommended approach put forth by the Medicare Payment Advisory Commission ("MedPAC") in its recent comments on the Fiscal Year 2008 IRF PPS Proposed Rule. Explicit in MedPAC's comments is that the Rule's current diagnoses should be re-defined with specific clinical and medical criteria to more accurately reflect the types of patients most effectively treated in rehabilitation hospitals and units.

Implicit in MedPAC's comments is that the Rule's current treatment of comorbid cases is, at least in part, helping to achieve the goal of refining the Rule's list of medical diagnoses. Clearly, MedPAC believes that the Rule should focus on patient criteria and clinical characteristics of patients most likely to require treatment in rehabilitation hospitals and units. The 75% Rule's current treatment of comorbidities is permitting at least part of this to occur, by allowing certain cases with "non-CMS 13" primary diagnoses to be effectively deemed "CMS 13" compliant cases and thus admitted for treatment.

We agree with MedPAC that the scope of the 75% Rule should be redefined and that research aimed at refining the clinical, patient-specific characteristics within diagnostic case groups should be pursued. However, as the Rule's threshold percentage continues approaching 75 percent, providers obviously will have fewer opportunities to admit patients whose diagnoses are non-compliant but whose medical and rehabilitative care needs still require inpatient rehabilitation.

With fewer patients having non-compliant diagnoses being admitted into the inpatient rehabilitation system, refining the Rule along the lines of the MedPAC recommendations will become increasingly difficult. This makes retaining the Rule's current treatment of comorbidities all the more relevant and necessary. Not only is it the right thing to do for individual patients, but maintaining access to IRF care for these types of patients will better enable CMS and the inpatient rehabilitation sector to pursue research initiatives aimed at refining the Rule and will provide a broader database on which to conduct important analyses for policymaking.

#### **Recommendation**

**Comorbid conditions or diagnoses should continue to be used when determining compliance with the 75% Rule.**

## **II. Proposed FY 2008 IRF PPS Federal Prospective Payment Rates**

### **A. Proposed FY 2008 IRF PPS Market Basket Increase Factor and Labor-Related Share**

CMS proposes to update the IRF PPS Federal Prospective Payment Rate by the full market basket of 3.3 percent. This update is required by Section 1886(j)(3)(C) of the Act and is based on the rehabilitation, psychiatric and long-term care hospital (RPL) market basket. The RPL market basket relies upon Bureau of Labor Statistics (BLS) data reported through the first quarter of 2007 with historical data through the fourth quarter of 2006, the most recent data available.

HealthSouth supports a full market basket update adjustment for FY 2008. This full inflationary update is necessary to allow IRFs to keep pace with the rising cost of furnishing high quality care including the cost of attracting and retaining qualified rehabilitation therapists and nurses. Salaries and benefits at our hospitals grew from 46.6% of net operating revenues in 2005 to 48.3% of net operating revenues in 2006. Shortages of therapists and nurses in a number of markets have caused us to raise salaries to attract and retain experienced employees and to increase our utilization of higher-priced contract labor to properly care for our patients. This trend will likely be exacerbated as IRFs treat higher acuity mix of patients as a result of increasing 75% Rule compliance thresholds.

CMS also proposes to increase the labor-related share of the market basket from 75.612 to 75.846 percent in FY 2008. We support this increase, but note that this adjustment is based on 2002 data, in contrast to the much more recent data used by the BLS. We are concerned that the time lag in updating the labor-related share is distorting actual labor cost trends being experienced by IRFs, especially in light of tightening labor markets and the effects of the 75% Rule. We believe the labor-related share calculation should be based on data that more closely reflects current trends in IRF operating costs. It is our understanding that a complete data set is available for the FY 2004 period and a significant amount of data is complete for FY 2005. Although we recognize that there is insufficient time to re-base the FY 2008 labor-related share on more recent data, we recommend CMS begin updating the labor-related share on an annual basis using the most recent available data beginning in FY 2009.

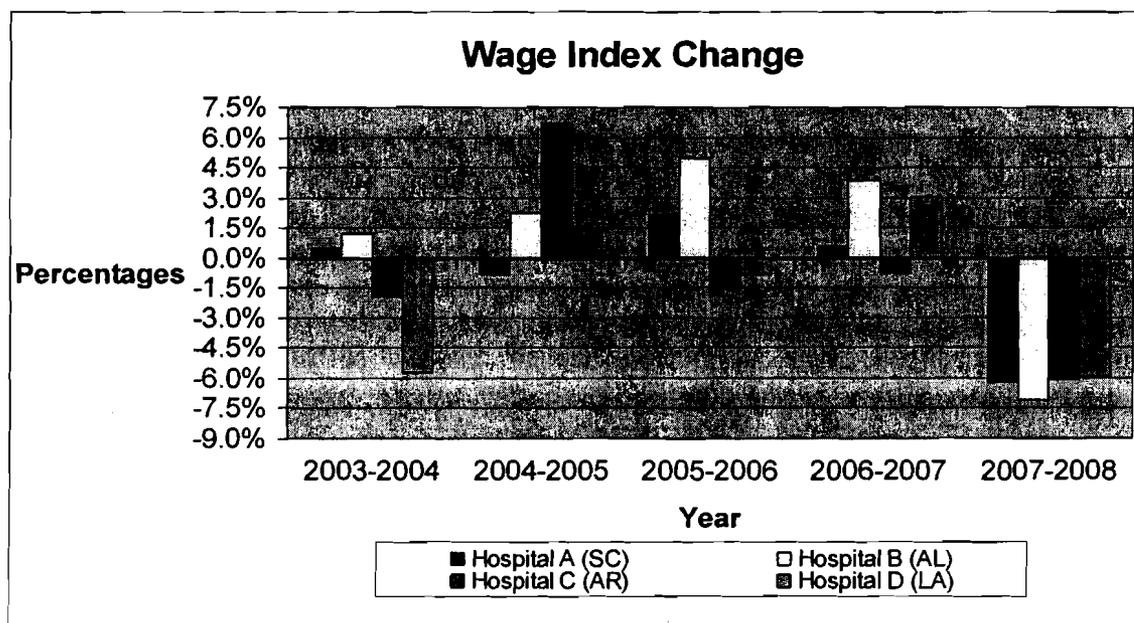
#### **Recommendation:**

**We support a full IRF PPS market basket update for FY 2008 and recommend that CMS begin updating the labor-related share on an annual basis in FY 2009 using the most recent available data.**

## B. Proposed Area Wage Index

All IRF hospital and unit wage indices will be based entirely on the Core-Based Statistical Areas (CBSA) labor market area designations in FY 2008. The phase-in to CBSAs and the 3-year hold harmless policy for hospitals and units that changed from a rural to an urban area designation were completed in FY 2007. The Proposed Rule maintains the policies and methodologies in the FY 2007 IRF PPS Final Rule relating to the labor market area definitions and the wage index methodology for areas with wage data. It continues to use the pre-classification and pre-floor hospital wage index based on 2003 cost report data. The proposed FY 2008 wage index values have been published as Tables 1 and 2 of the Proposed Rule.

An effective wage index methodology should provide reasonable stability to provider payments from one year to the next. We have conducted extensive analyses of the wage indices for our hospitals since the inception of the IRF PPS. We have noted significant unexplained fluctuations in wage index updates (both upward and downward) from year-to-year. The following chart shows the movement of the wage index change for four HealthSouth hospitals in four different states.



Data obtained from published IRF PPS final rule wage index tables.

Because annual changes to the wage index must be budget neutral, there will always be “winners and losers,” that is, some IRFs experience payment increases while others experience payment decreases. Nevertheless, the current formula produces unreasonable volatility, with individual hospitals experiencing annual fluctuations of 5 percent or more. Many of our hospitals with large decreases are located in market areas where we have seen the actual cost of rehabilitation therapist and nurse salaries increase in the past year. Unpredictable annual revenue swings of this magnitude pose significant challenges for budgeting resources to ensure consistently high levels of patient quality of care.

This may be explained, in part, by the use of non-current data that does not accurately reflect current labor market conditions. However, others factors may also be responsible. Failure to align data to actual labor trends may result in the redistribution of payments to the wrong IRF market areas. We therefore respectfully urge CMS to undertake a thorough review of the entire IRF wage index methodology over the next year. The objective should be a formula that:

- relies on the most recent available data to reflect the current market developments;
- directionally aligns wage index adjustments to actual IRF labor costs in each market area; and
- avoids significant year-over-year fluctuations and promotes predictability of IRF PPS payment amounts.

While this review is underway, we recommend that CMS cap the year-over-year wage index change for any single hospital or unit at 2 percent for FY 2008. That is, no wage index update will be greater than or less than the previous year's amount, plus or minus 2 percentage points. This will dampen the effect of funding swings and provide some modest improvements in stability in payments to IRF hospitals and units until a review of the current wage index methodology can be completed.

We are further concerned that the volatility of the wage index values may also be affecting the calculations of the other IRF payment adjustments. When CMS updates the rural adjustment, teaching status adjustment or low income patient adjustment, it is our understanding that the hospital wage index value is used to standardize costs in the regression analysis. As these values materially change period-over-period, one may arrive at different payment adjustment amounts or conclusions depending on the size of the hospital and effect of the wage index change on standardized costs. We recommend that CMS take this into account prior to proposing any future update to these payment adjustments.

IRFs routinely compete with acute care hospitals, LTCHs, SNFs, and other health care entities for the same rehabilitation therapists and nurses. Current wage index methodologies, however, are not uniform across all prospective payment systems. For instance, acute care hospitals have the ability to seek geographic reclassification or avail themselves to the rural wage index in the state if the hospital's wage index will be lower than the rural wage index. To create a level playing field in the recruitment of healthcare personnel, we believe that all payment systems should have a standardized wage index update methodology. MedPAC made a similar recommendation in its "Report to the Congress: Promoting Greater Efficiency in Medicare, June 2007." While the MedPAC wage index recommendations are targeted specifically to acute care hospitals, SNFs and home health locations, we believe the same principles should be applied to IRFs. We recommend that CMS develop a standardized wage index methodology that would allow all provider-types to compete on an equal footing for healthcare personnel in the same labor market.

**Recommendation:**

**We recommend that CMS conduct further research and refinement to the wage index update methodology to provide more stability to IRF payments. Pending completion of this analysis, we recommend that wage index values be capped in FY 2008 at no more or less than 2 percentage points of the prior year CBSA value.**

**We also recommend that CMS develop a standardized wage index methodology to be used by all healthcare providers to update each prospective payment system.**

**C. Low Income Patient/Rural/Teaching Adjustment Analysis**

The Lewin Group was commissioned by HealthSouth Corporation to examine facility specific adjustments (urban or rural designation, the volume of low-income patient (LIP) Medicaid eligible days and cost associated with approved medical teaching programs) within the IRF PPS. CMS had commissioned the RAND Corporation to examine these issues in 2005. An April 2007 Lewin Group Report titled "*Proposed Refinements to Facility Specific Adjustments for the Inpatient Rehabilitation Facility Prospective Payment System*" (Appendix F) updated RAND's analysis using the same methodology but with more current data.

Using 2004 cost report and claims information, Lewin's regression analysis indicated that the rural adjustment fell from .21 to .19; the LIP coefficient fell from .6164 to .3752; and the teaching adjustment coefficient was essentially the same at .9632 to .9538.

The above findings were interpreted by Lewin as follows:

- Rural IRFs show a 6.91 percent higher overall cost-per-case than urban IRFs.
- The teaching adjustment coefficient was not found to be significant in a first stage fully specified regression analysis. A strict interpretation of the RAND methodology would conclude that the continuation of the teaching adjustment could be questioned.
- Teaching IRFs also reported higher costs compared to non-teaching IRFs, particularly the ones with IRADC 0.2 and above.
- The average cost per case declines for the teaching IRFs with an IRADC between 0.1 and 0.2 and then subsequently increases for higher IRADCs.
- The total cost per case standardized by wage index and case mix index is only 6.5 higher for teaching hospitals.
- Most of the explanatory variables in the regression were significantly related to log of the cost per case except teaching.
- The low income patient measure and urban/rural location are significant and positively associated with the log of standardized cost per case.

As a result of the study, the following recommendations were made by Lewin:

- The rural adjustment should be lowered to 1.19.
- The LIP coefficient should be lowered to .3752.
- CMS should consider further refining the payment regression model by accounting for outlier payments.
- A three year moving average of each payment variable's coefficient could be used to establish the facility specific adjustments starting from FY 2009. This would make IRF PPS payments less variable one year to the next and hence, more predictable to the industry.

The Lewin report concludes that any degree of overestimation of the facility specific adjustments related to Medicare revenues has a distributional impact on inpatient rehabilitation hospitals and units. Failure to allocate payments accurately in relation to costs undermines the integrity of PPS incentives and significantly decreases the efficiency of the overall system.

**Recommendation:**

**We recommend that CMS further refine the IRF PPS payment adjustments, taking into account the findings of the Lewin Report based on more recent data.**

**D. Effect of the 75% Rule on the Case Mix Index**

We also asked the Lewin Group to examine how changes in the IRF CMI are linked to changes in the distribution of IRF cases. A March 2007 Lewin Report titled "*An Analysis on IRF PPS Coding Adjustments,*" (Appendix G) indicated that 95 percent of the increase in CMI from 2002 to 2006 was related to underlying patient severity increases. This conclusion was based on the following findings.

- 95 percent of the increase in CMI during this period can be attributed to the changes in RIC distribution. This is particularly evident with changes in the 75% Rule that took effect in 2004.
- The CMI of the short term acute care hospital discharges to IRFs rose by 5 percent between 2002 and 2005.
- The proportion of short term acute care discharges to IRFs with complications and comorbidities increased by 4 percent between 2002 and 2005.

Based on these findings, The Lewin Group recommended the creation of an analytical framework based on the above concepts that would help policymakers in differentiating between "code creep" and appropriate changes to CMI.

More recently, we asked The Lewin Group to examine the relationship of changes in IRF patient mix attributable to implementation of increasing compliance thresholds under the 75% Rule to observed changes in the IRF CMI. A June 2007, Lewin report entitled, "*Implications of the 75% Rule on IRF Volume Trends on Case Mix,*" (attached at Appendix H) made the following conclusions:

- The decline in IRF discharges from 2004 to 2006 is significantly affecting the distribution of cases by RIC.
- The number of qualifying neurological rehabilitation cases is declining.
- This decline in the number of qualifying neurological cases is having a “ripple” effect on the residual musculoskeletal cases. As the 75% Rule compliance threshold increases, the volume of non-qualifying musculoskeletal cases will, by necessity, continue to be restrained by the volume of qualifying neurological cases.
- Recent increases in the IRF CMI can be largely attributed to the change in RIC/CMG distribution of cases as a result of changes to the 75% Rule compliance thresholds.
- If the 75% Rule is fully implemented in accordance with the current statutory schedule, the continued redistribution of cases across RICs is expected to increase the IRF CMI by at least 6 percentage points, from 1.06 to 1.12, between 2007 and 2012.

These findings further underscore the importance of carefully monitoring future increases in the IRF CMI to determine how much of the observed increases are associated with real changes in patient acuity (as evidenced by redistribution of cases by RIC) before pursuing additional “code creep” payment rate adjustments of the type implemented as part of the FY 2006 and FY 2007 IRF PPS.

**Recommendation:**

**CMS should carefully monitor future increases in the IRF CMI to determine how much of the observed increases are associated with real changes in patient acuity (as evidenced by redistribution of cases by RIC) prior to recommending additional payment rate adjustments based on coding and/or CMI trends.**

**III. High-Cost Outliers Under the IRF PPS**

**A. Proposed Update to the Outlier Threshold Amount for FY 2008**

The Proposed Rule would increase the outlier threshold from \$5,534 in FY 2007 to \$7,522 in FY 2008. CMS has stated that this material increase is necessary to maintain outlier spending at 3 percent of total Medicare IRF payments. The Proposed Rule indicates that current projections indicate that CMS will pay out 3.8 percent of total IRF payments for outlier claims during FY 2007.

The August 1, 2003 final IRF PPS rule provided that IRF outlier payments could be subjected to reconciliation when IRF’s cost reports are settled, consistent with the policy adopted for IPPS hospitals in the June 9, 2003 Federal Register (CMS-1243-F). This methodology would provide for retroactive adjustments to IRF outlier payments to account for differences between the cost-to-charge (CCR) ratio from the latest settled cost report and the actual CCR computed at the time the cost report that coincides with the date of discharge is settled using the cost and charge data for that cost report. The Proposed Rule indicates that CMS will soon be issuing specific guidance to fiscal

intermediaries or Medicare Administrative Contractors on the procedures to be followed on conducting IRF CCR reconciliations.

We support the initiative to implement the reconciliation process for IRFs to address situations where IRF outlier payments may seem excessive or abusive in nature. However, if this reconciliation is adopted for every IRF provider it defeats the purpose and nature of a prospective payment system. We have noted a disparity in the distribution of outlier payments in the FY 2007 and FY 2008 CMS rate setting files. Outlier payments presented in the FY 2008 rate setting file indicate that approximately 47 percent of total industry outlier payments will be paid to 15 percent of IRF providers. The reconciliation process should therefore be used to address specific provider issues. We believe that focusing the reconciliation process in this manner will be more cost-effective for Medicare contractors as well as less burdensome to the provider community.

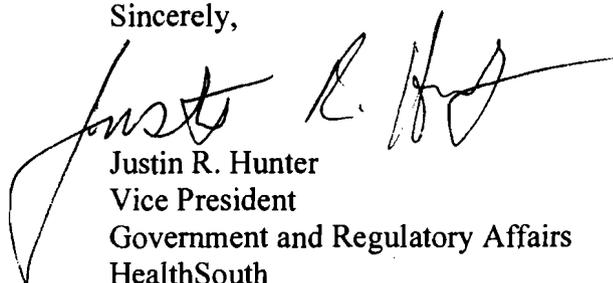
We recommend that CMS closely mirror the IRF outlier process to that currently being used under the acute care IPPS and LTCH PPS. The policies adopted in response to outlier concerns in the acute care hospital industry seem to be working well. The current limitation of outlier payments exceeding \$500,000 and an overall cost-to-charge ratio change exceeding 10 percent should be maintained.

**Recommendation:**

**We recommend that the Secretary mirror the cost report outlier reconciliation instruction after the process implemented under the acute care IPPS.**

We thank you for the opportunity to comment on this Proposed Rule, and look forward to working with CMS to make further improvements in the IRF PPS.

Sincerely,



Justin R. Hunter  
Vice President  
Government and Regulatory Affairs  
HealthSouth

Appendices Attached

April 20, 2007

Ms. Leslie V. Norwalk  
Acting Administrator  
Centers for Medicare and Medicaid Services  
Room 314G  
Department of Health and Human Services  
Hubert H Humphrey Building  
200 Pennsylvania Ave. S. W.  
Washington, D. C. 20201

RE: Comorbidities provision of the inpatient rehabilitation hospital and unit's 75% Rule

Dear Ms. Norwalk:

On behalf of the American Hospital Association, the American Medical Rehabilitation Providers Association, and the Federation of American Hospitals, we write regarding our concerns about the pending deletion of comorbidities under the inpatient rehabilitation hospitals and units criterion known as the 75% rule. We believe elimination of the comorbidities provision would impede Medicare beneficiaries' access to inpatient medical rehabilitation services.

Under the current rule, a case may be included in the inpatient population that counts toward the applicable percentage of the 75% Rule if the patient is admitted for services for a condition that is one of the thirteen (13) conditions listed or a comorbidity that falls within one of the conditions and that causes a significant decline in functional ability in the patient. However, this provision incorporating comorbid cases expires beginning July 1, 2008.

Starting with cost reporting periods beginning on or after July 1, 2007, the applicable 75% Rule percentage will increase from 60% to 65%. Starting with cost reporting periods beginning on or after July 1, 2008, the applicable percentage will move to 75% *and comorbidities will no longer be included in the calculation of cases that qualify for the applicable percentage.* In reality, the increase will certainly be greater than 10 percentage points because most facilities have likely been admitting patients that qualify under the definition of comorbidity.

The total change in the applicable percentage in 2008 would not be just 10 percentage points (a move from the 65% to 75% threshold), but on average 17 percentage points for most hospitals and units using the presumptive methodology for patients with qualifying comorbidities. We understand that CMS has examined the number of cases that are considered to qualify under the 75% Rule threshold and that 7% of cases in the second program year (July 2005-July 2006) qualified under the comorbidity provision. Data analysis of eRehabData® and UDS data also show about a 7% impact. MedPAC's

March 2007 report showed that there were 449,321 inpatient rehabilitation cases in 2005. Seven percent of the cases represent 31,452 cases that qualified for inclusion in the 75% Rule based on the patient's comorbidity.

Hence, we urge CMS to amend the current 75% Rule in the forthcoming proposed rule for inpatient rehabilitation hospitals and units for FY 2008 in order to continue the inclusion of comorbidities in qualifying cases for meeting the applicable percentage in 2008 and thereafter.

Retaining the comorbid conditions will permit special cases to continue to be included within the scope of the rule and continue their access to inpatient rehabilitation services. Comorbidity considerations represent a significant component of patient access to medically necessary inpatient rehabilitation. Simply shifting percentages does not change the clinical characteristics of the patients being admitted to a rehabilitation hospital or unit. Many patients have comorbid conditions that satisfy the 75% Rule's criteria, and they have significant functional impairments. These are usually severely compromised patients for whom treatment is not appropriate in other less intensive settings of care. These patients have significant functional deficits, by definition, due to the comorbidity or other complication. Consequently, they generally constitute both medically and functionally complex patients.

We are extremely concerned about the drop in the number of hospitals and units able to meet the higher threshold of 75% even with the retention of comorbidities as a qualifying condition. Dropping comorbidities altogether is dangerous and exacerbates an already difficult situation. Yet the most serious issue is that it will result in care being denied to an even larger number of people who clearly need, and benefit from inpatient hospital rehabilitation services.

Therefore we request that CMS exercise its administrative authority this year to amend its policy and retain the use of comorbidities under the 75% criterion permanently. This action will help preserve access to IRF care for this subset of patients who clearly need the intensive level of high-quality rehabilitation care that only IRFs can deliver.

We would be pleased to discuss this issue and our concerns with you further. If you have any questions, please contact Carolyn Zollar at AMRPA at 202 223 1920.

Sincerely,



Rick Pollack  
President, American Hospital Association



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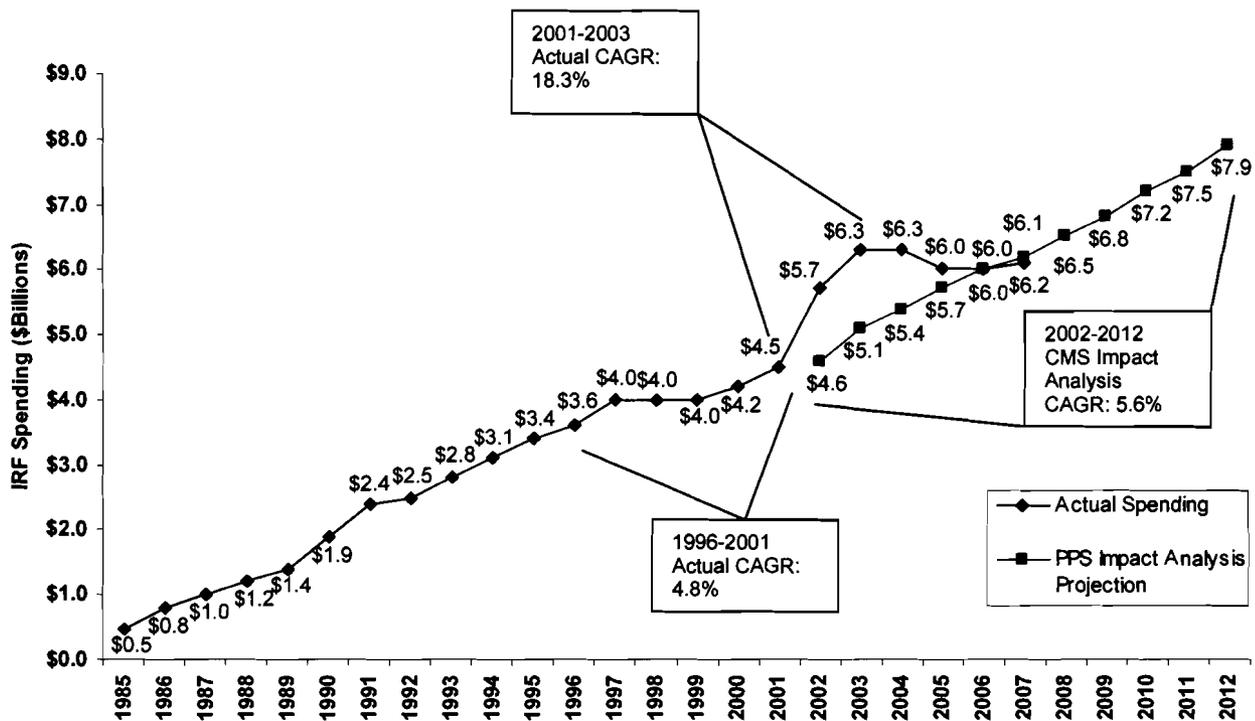
<sup>3</sup> Carter, G.M., O.Hayden, S.M. Paddock, B.O. Wynn (2003). Case Mix Certification Rule for Inpatient Rehabilitation Facilities. Santa Monica, CA: RAND, DRU-2981-CMS.

<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.

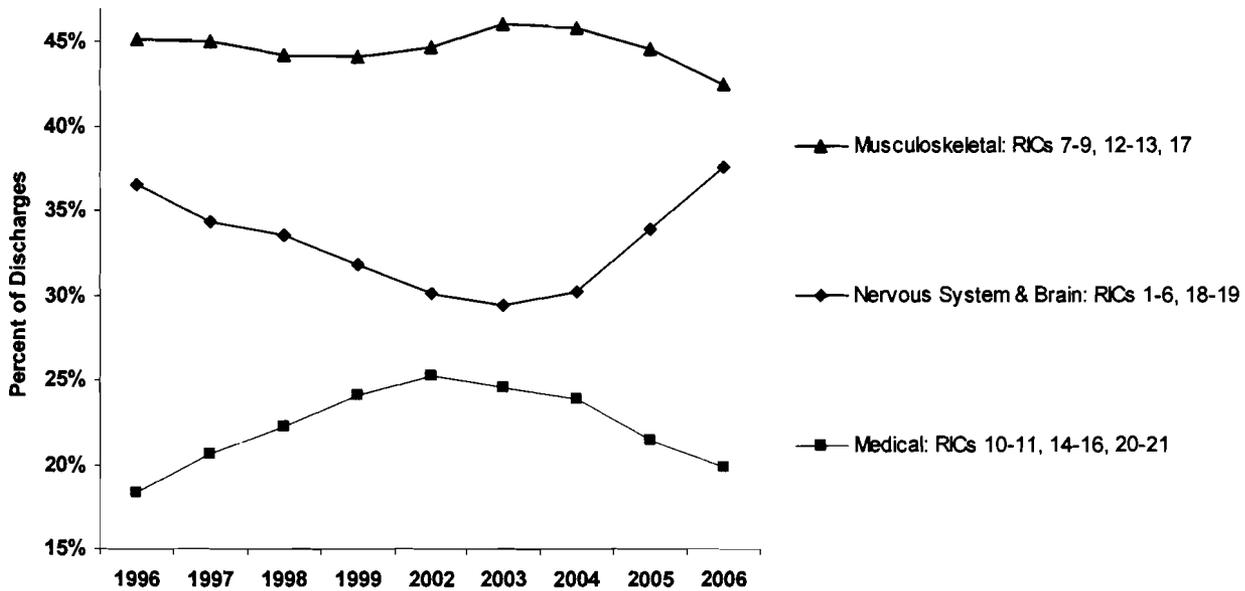
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<sup>5</sup> The Summary Report for the February 14-15, 2005 panel meeting is available at [www.nichd.nih.gov/publications/pubs/upload/rehab\\_settings\\_2005.pdf](http://www.nichd.nih.gov/publications/pubs/upload/rehab_settings_2005.pdf).

<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**

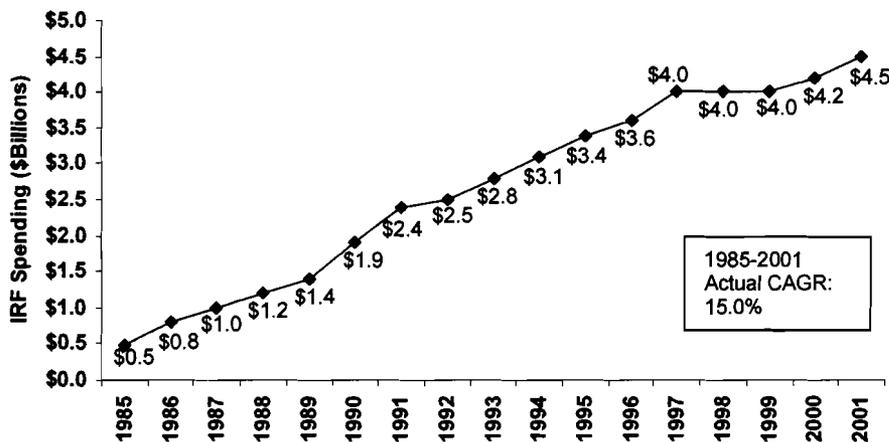


Note: underlying data shown in Appendix C. 1996-1999 from RAND Sample, 2002-2006 from CMS Medicare claims, 2000 and 2001 claims not available.

### 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.

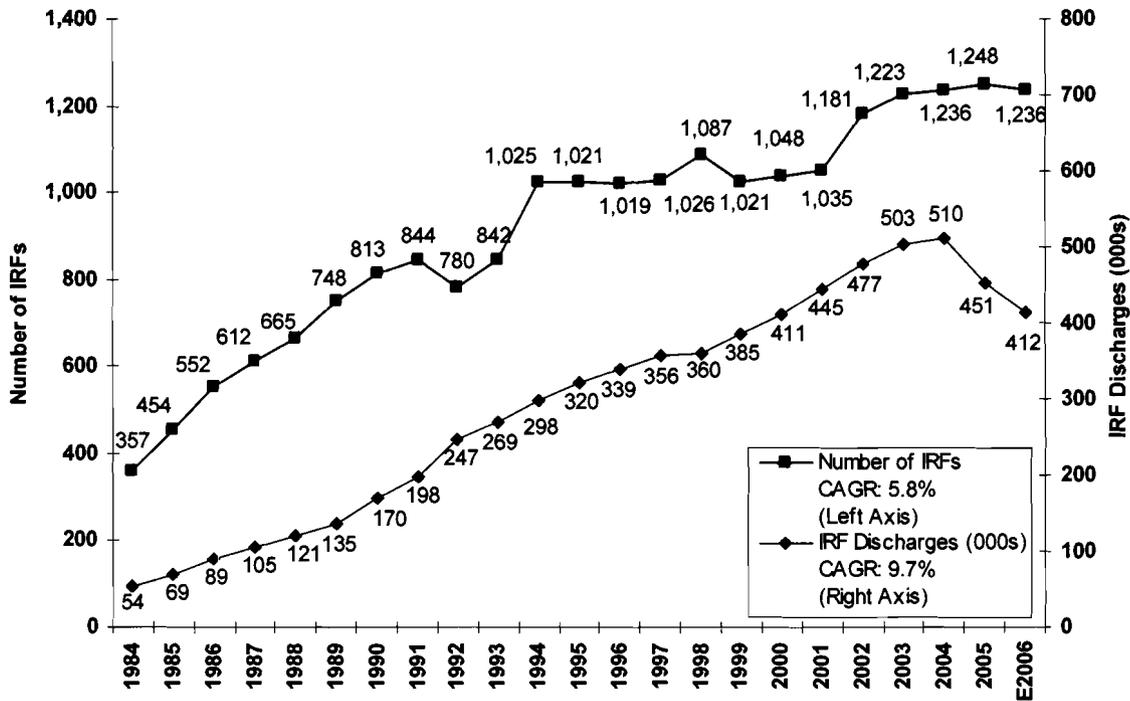
**Figure 3: IRF Pre-PPS Spending 1985 - 2001**



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.

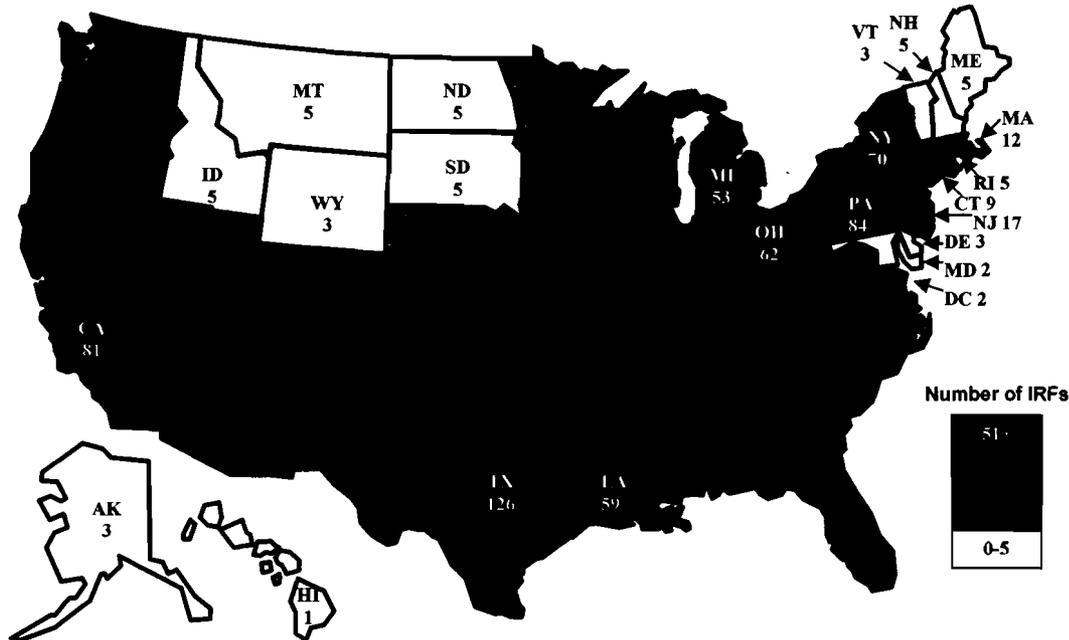
**Figure 4: Growth in number of IRFs and IRF Discharges, 1984 – 2006\***



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

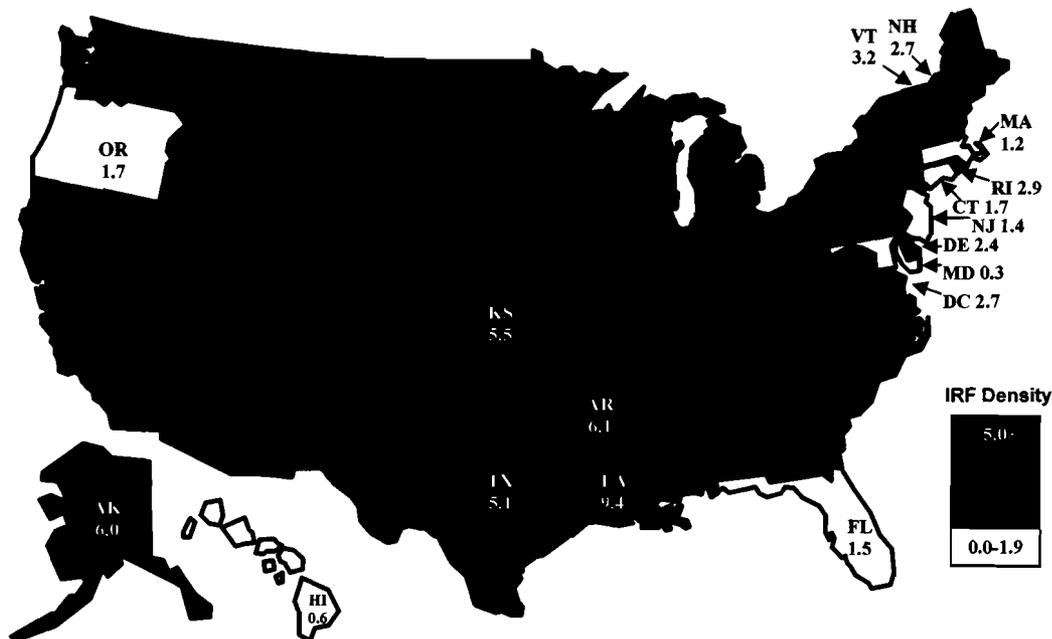
In addition, as shown in Figures 5 and 6, CMS data indicate that there are significant state and regional differences in the distribution of IRFs. Figure 5 shows distribution of IRFs by state and Figure 6 illustrates the density of IRFs in each state per 100,000 Medicare beneficiaries. More research 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.

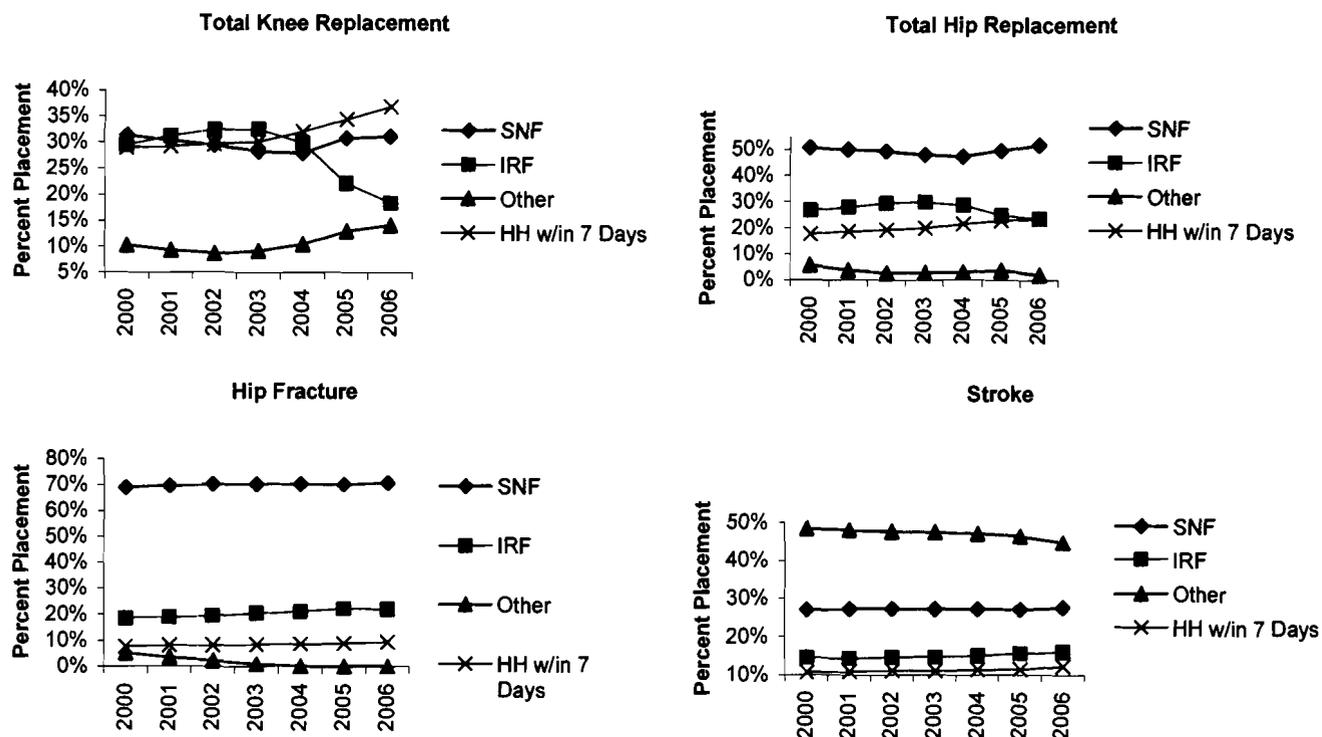
## **MEDICARE BENEFICIARY ACCESS TO REHABILITATION CARE**

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**

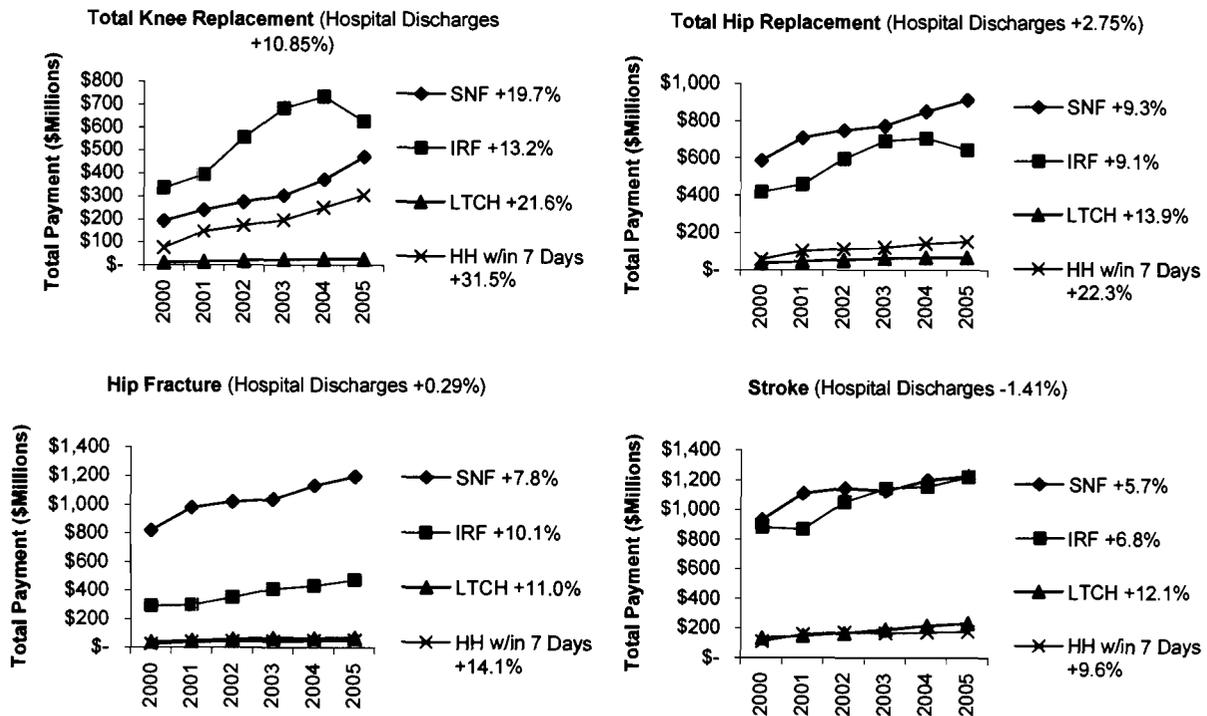


Note: Data for 2006 includes claims in the system for only the first half of calendar year 2006. Other includes home self-care, home health in more than seven days of acute care hospital discharge, outpatient therapy, expiration, LTCH, and other facilities. Also, a small percentage of cases may be counted 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.

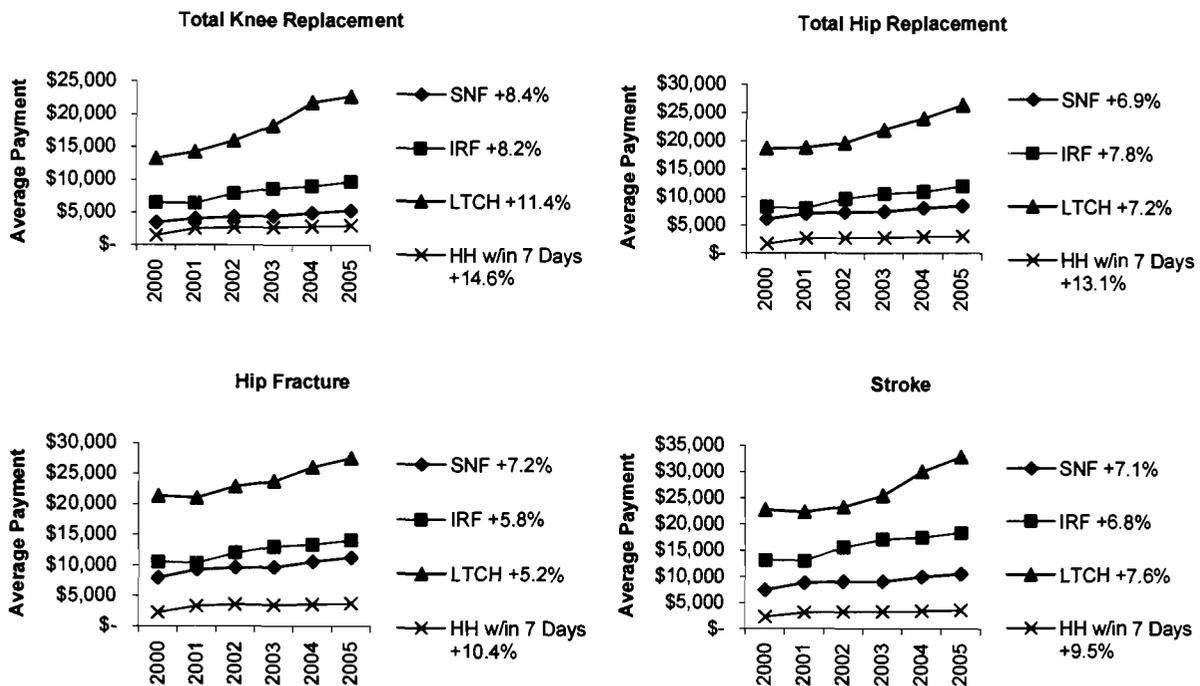
It is also worth noting that, while the enforcement of the 75 percent rule is helping to ensure that Medicare beneficiaries are getting rehabilitation care in more appropriate settings, average spending per case continues to rise for IRFs and most other post acute care settings. (See Figure 9, below.)

- 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.



Mark J. Tarr  
PPS Task Force Chairman, American Medical Rehabilitation Providers Association



Charles N. Kahn, III  
President, Federation of American Hospitals

## APPENDIX B

### REHABILITATION IMPAIRMENT CATEGORIES (RICS) AND ASSOCIATED IMPAIRMENT GROUPS

Rehabilitation Impairment Category	Associated Impairment Groups
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	Guillain 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>								

## 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.

**Case Example #1**  
**(South Central United States)**

Patient was a 65 year old female with multiple sclerosis (MS). She was able to function independently at home with a cane on good days and required a walker or scooter on bad days. A fall at home resulted in an acute hospital admission with a diagnosis of a non-displaced fracture of the right inferior pubic ramus. Despite the fact that surgery was not required, her hip pain did not go away and she could not walk as well as she had before the fall. In addition, she had a previously fractured her right shoulder that was limiting but not disabling.

Once the patient was medically stable rehabilitation was ordered. A non-displaced inferior pubic ramus fracture primary diagnosis alone would not normally meet the criteria for inpatient rehabilitation, but superimpose the secondary diagnosis of multiple sclerosis over the primary diagnosis and the situation changes.

Admission to an Inpatient Rehabilitation Hospital lead to a complete assessment by a Multi-disciplinary Treatment Team including a physician who is Board Certified in Rehabilitation Medicine, Speech Pathologist, Physical Therapist, Occupational Therapist, Dietitian and Rehabilitation Nurse. Care was coordinated by a Case Manager and assessments were coordinated to reveal a compliment of additional problems related more to the pre-existing secondary diagnosis of Multiple Sclerosis than to the new primary diagnosis of Ramus Fracture. These included gait instability, problems with bladder and bowel functioning, infections, memory, bathing, dressing and walking, and poor safety awareness. Complications such as these were less evident in her brief acute hospital visit and would have potentially been missed altogether without the expertise provided by trained rehabilitation nurses or in a less thorough setting. If left untreated they would have resulted in not only more costly care but also serious medical complications and a longer recovery time period. In following doctors' orders, the nursing team took steps immediately to address constipation related to pain medication and bladder problems with medication and catheterization. Difficulty urinating was evident and did not improve. This prompted a bladder scan and the consultation of an Urologist and Internal Medicine doctors within 24 hours of admission. Antibiotics were introduced, related fever and nausea were managed and as the patient stabilized, initial assessment by therapists moved to daily participation in therapy. Given the fact that she was seen by doctors daily, making the necessary adjustments in her medication and responding to lab work was very efficient and much more immediate than would have been the case in a different setting.

For this patient, a nursing home setting would likely not have furnished the intensive therapy and medical attention required for recovery. The patient needed frequent physician follow-up and accessibility to specialists that are standard in an Inpatient Rehabilitation Hospital and not present in a nursing home setting. Similarly, a home health discharge immediately following acute care would have assumed a level of independence that both the patient and her husband would have been unable to sustain. The lack of immediate nursing care, infrequency of physician follow-up and inaccessibility to specialists would have resulted in regression and possible re-admission to the acute care hospital to address acute bowel, bladder and infection issues.

Therapists worked with her on memory, bathing, dressing, walking and safety almost simultaneously at a minimum of three hours daily with nursing instruction on how to carryover new skills in the evening. They were able to pace her therapy and provide the necessary challenge that would progress her along rather than allow her to get worse or plateau. The Speech Pathologist set goals and developed strategies to address intermittent short term memory deficits and safety awareness issues which enhanced her ability to participate, remember and safely follow direction given in Occupational and Physical therapy. These same strategies were provided in a discharge packet to aid the patient's husband in providing the necessary care and cognitive support to sustain the patient's progress.

Physical and Occupational therapists addressed bathing, transferring, dressing and walking with the patient. With the assistance of nursing services, the in house occupational therapist was able to work around the patient's medical complications related to medication changes and infection that would have forced a home health Occupational therapist to reschedule the therapy session. The patient was able to bathe, transfer, dress and toilet herself with supervision by her husband for safety. She was able to meet established Plan of Care occupational therapy functional goals by discharge. Physical therapy was able to progress the patient. walking from 5 feet when admitted to 150 feet by discharge with a rolling walker, following 50% partial weight bearing precautions on her right an with the supervision of her husband.

Case Management was able to effectively coordinate the patient's care, manage the patient's resources and kept the husband involved and updated in both the rehabilitation process and discharge planning. All follow-up appointments and follow-up care was scheduled for better continuity and to ease the patient's transition home with her husband.

**Summary:** This patient's rehabilitation needs resulted from a combination of medical conditions: a new pelvic fracture complicated by the chronic, progressive but variable functional impairments caused by multiple sclerosis with significant recent functional decline. The balance, strength and gait impairments associated with MS created a situation requiring the inpatient rehabilitation hospital's level of service.

Inpatient rehabilitation was determined by the referring and attending doctors not only to be beneficial but absolutely essential. She qualified for inpatient rehabilitation as result of the multiple sclerosis. She would not have met the 75% Rule's criteria if not for the inclusion of the secondary (comorbid) diagnosis.

## **Case Example #2 (Western United States)**

The patient is a 70 year old female admitted to the inpatient rehabilitation hospital on May 7, 2007 following a revision of a knee surgery on May 2, 2007. This woman originally had a knee replacement in mid-2006. Subsequent to her knee replacement she developed an infection in that knee joint and in February of 2007 she had the surgical hardware removed. While recovering from that surgery she fell, hit her head and developed a hematoma on her brain. This was surgically evacuated, but the woman continued to have some cognitive difficulties.

Because of the hematoma, the patient could not receive anticoagulant therapy after her knee revision. This put her at risk of developing a blood clot either in her leg, or an embolus that could have lodged in lungs, heart, or brain. The patient required rehabilitation in an environment providing close medical supervision by a physician and staff trained to quickly identify the development of a blood clot.

In the inpatient rehabilitation hospital, the patient was placed in Sequential Compression Devices while in bed to assist in prevention of blood clots. She was consistently assisted to don the elastic stockings that she needed to wear when out of bed, but could not don herself.

The patient was seen and examined daily by a physician who monitored for signs of a blood clot, signs of recurring infection, changes in cognitive status, hypertension control, pain management, and her rehabilitation progress. The physician prescribed and adjusted medications to manage pain and hypertension.

From a rehabilitation nursing perspective the patient utilized a continuous passive motion machine to assist with regaining range of motion. This machine was utilized at night and during the day when not in therapy. Because of her history of falls and a significant amount of pain medication she was determined to be a high risk for fall and fall risk protocols were put into place. Her pain was throbbing and at an intensity of 4/10 to 7/10. Nurses provided medication and reassessment around the clock to optimize the patient's pain control and ability to participate in therapy.

Because of the complicated course this patient experienced in the acute hospital post-operatively, she arrived at the rehabilitation hospital with a new incision, healing burr holes in her head and the first stage of a pressure ulcer. The incision required monitoring for infection and dressing changes, the burr holes necessitated topical wound care and pain management, and the pressure ulcer was closely monitored and treated with ointment and pressure relief to prevent worsening and promote healing.

In physical therapy, the patient worked on strengthening, gait, safety and transfers from bed to chair, on/off of the toilet, in/out of the tub and in/out of a car. She worked on regaining the painfree mobility of her knee. She learned how to use first a walker and then a cane safely on level surfaces, uneven terrain and on stairs. Because she had spent months without a knee joint, the patient required skilled attention on her gait pattern to eliminate the "hip hiking" that she had developed as a compensatory strategy instead of bending her knee. Without eliminating the "hip hiking", the patient would have been at risk for back or hip pain over time and at increased risk for future falls.

In occupational therapy, the patient worked on upper body strengthening for use of the walker. She worked on regaining her independence with bathing, dressing and light housekeeping and the use of adaptive equipment to reach her feet until range of motion could be re-established. Most importantly, she worked on safety with her walker and cane while distracted by functional tasks such as meal preparation or laundry.

The patient progressed well, attended more than 3 hours of therapy daily and was discharged to home and outpatient therapy after one week.

Without rehabilitation at the intensity of an acute rehabilitation facility, it is doubtful that progress could have been made so quickly. The patient had a history of falls, high pain medications and a new history of cognitive deficits. Without the close monitoring of the Red Fall Risk protocol, and the reinforcing education throughout the 24 hour span, she might have fallen. She would not have retained the safety instruction or achieved increased strength without the intensity of 3 hours of therapy. Additionally close medical supervision for blood clots or recurrence of infection were needed. Any of those events --- fall, blood clot, or infection ---would have caused increased pain and suffering, and another costly inpatient hospitalization.

**Summary:** This case presents a number of interesting factors. Although her primary diagnosis was lower extremity joint replacement, she hardly represented the routine case. The surgery was, in fact, a revision surgery necessitated by prior infection that required her to be without a knee joint completely for months. Revision surgeries are known to place a patient at 5-15 times the risk of dislocation compared to an original joint replacement surgery and risks for blood loss and infection are also significantly elevated. Even with this level of complexity, the joint replacement surgery did not qualify this patient under the 75% Rule because she was not 85, only had a unilateral procedure, and had a body mass index under 50.

The comorbidity of subdural hematoma determined her requirement for inpatient rehabilitation because of its resultant cognitive, wound care and pain management (related to burr holes in her skull) issues. If the comorbidity of subdural hematoma had not counted toward CMS-13 eligibility for admission to an IRF, this woman would have experienced a barrier to receiving the type of rehabilitation her condition required.

### **Case Example #3 (Southeastern United States)**

An 83 year old female was referred for inpatient rehabilitation by the patient's primary care physician. The patient had fallen at home – 911 was called and transported her to a local acute care hospital ER – where she was examined and found to have a left inferior pubic ramus fracture. She was not admitted and sent home. The patient lived with her son who worked requiring that she have part time caregivers to insure her safety due to confusion – described by the primary care physician as “questionable mild dementia.” The patient was experiencing extreme pain, difficulty transferring, inability to ambulate and to assist with activities of daily living. She was having increased short term memory deficits and confusion which the primary care physician felt was related to the stress of the fall and the discomfort which she was experiencing.

The patient made and kept an appointment with her primary care physician after three difficult days at home. Her primary care physician initially thought, prior to seeing the patient, that home health care services would best suit this patient. However, upon evaluating her and speaking with her son – the physician found her to be deteriorating functionally and in an environment which was neither safe for her nor conducive for her to improve. Having treated her for years, the physician also knew that, with the patient's complicated medical history, she needed more intensive care for her to return to her pre-injury functional status. He then referred the patient for inpatient rehabilitation.

She was evaluated and accepted for admission to the IRF with an admission diagnosis of: pelvis fracture (inferior pubic ramus fracture – left sided) – a non-CMS 13 diagnosis. Upon evaluation by the attending physiatrist (an MD who is Board-certified in the specialty of Physical Medicine and Rehabilitation) and by her consulting internal medicine physician, the patient was found to have a history of:

- Parkinson's disease
- Degenerative joint disease and osteoarthritis
- Laminectomy with spinal stenosis
- Hypertension
- Diet controlled Diabetes
- Cardiac disease with TIA
- Peptic Ulcer disease
- Hyperlipidemia
- Villous adenocarcinoma which required surgical colon resection
- Chronic bronchitis
- Mild renal insufficiency
- History of DVT
- Esophageal stricture
- Gall bladder removal
- Hiatal hernia

At the IRF, both physicians --- through their physical evaluations of the patient and interviews with the patient and her son --- determined and documented that the patient's fall was directly related to an exacerbation of her Parkinson's disease. The patient was noted on exam to have facial rigidity, increased rigidity in the bilateral upper extremities greater than in the lower extremities, pathologically-increased muscle tone, decreased muscle strength, slightly diminished reflexes, mild tremors (of both familial and intentional\* types). She required a mechanical soft diet due to evident swallowing difficulties, and nutritional supplements to insure proper nutrition/prevent dehydration. She was not experiencing any cardiac symptoms nor was there evidence of bronchial distress – both would be monitored along with her blood pressure.

The patient was evaluated by Rehab Nursing, Physical Therapy, Occupational Therapy and Speech Therapy Departments. Results of the evaluations identified and supported the physicians' documented exacerbation of Parkinson's disease as the reason for the pelvic fracture. She was found to have: decreased upper and lower extremity strength and coordination with rigidity (greater in the upper extremities than the lower extremities), kyphotic posture, swallowing difficulties, mild tremors upon initiation of functional tasks and during inactivity, decreased ambulation skills which required moderate assistance, and self care skills requiring minimal to maximum assist, limited bed mobility, and accidents with voiding and bowel movements. Her confusion was mild to moderate upon admission.

Based upon her complicated medical history, combined with her decreased functional skills which were compounded by her confusion, this lady would not have benefited from home health or nursing home services. The intensity of medical and rehab medical interventions, the therapy and nursing/rehab nursing care were too complicated, too demanding and too staffing-intense to be provided effectively by home health or a nursing home.

Through the course of her rehab stay at the IRF, this patient made significant improvement to go back home with her son and with part time caregivers.

- Prior to her fall and pelvic fracture, the patient was modified independent with a rolling walker, independent with toileting and toilet transfers and able to independently take care of her dressing, grooming and eating skills; she was supervised with bathing due to mild confusion.
- After her fall and fracture, upon admission to the IRF, the patient was minimal assist with eating with noted swallowing difficulties, minimal assist with basic grooming, moderate to maximum assistance with dressing upper and lower body, transfers bed to chair and toilet; required assistance for bed mobility, maximum assist with ambulation with device, and moderate assist with bowel/bladder.
- By discharge, the patient was modified independent with ambulation for a distance of 200 feet with a rolling walker; supervised with bath and toilet transfers (due to fracture continuing to heal) and bathing; independent upper extremity dressing, independent in eating and basic grooming, modified independent with lower extremity dressing (uses equipment to complete). She demonstrated improved strength in upper and lower extremities to Good, with improved orientation to safety

and improved impulse control. Patient still required part time caregivers after discharge due to mild confusion. She was discharged home with her son to resume her life.

## **Summary**

Fracture of the pelvis (inferior pubic ramus– left sided) does not fall into one of the CMS -13 diagnosis categories. Her secondary diagnosis of Parkinson's Disease does appear on the CMS-13 list, however. In fact, the symptoms of the uncontrolled Parkinson's actually precipitated her fall and original injury and required an inpatient level of rehabilitation hospital care to be successfully managed. In this instance, the insights of the primary physician who knew her complicated clinical history well were useful in leading to his medical decision that inpatient rehabilitation was required and that her needs could not be successfully met by a lower level of care.

Without the qualifying CMS-13 comorbidity, however, access to an inpatient rehabilitation hospital could be limited.

\* Intentional tremor is a medical term referring to the fact that the tremor increases with attempted volitional (intentional) movement. This type of tremor interferes with function. It does not mean, in any way, that the patient intends to have a tremor or contributes to it voluntarily.

## **Case Study #4**

### **(Northeast United States)**

Patient taken to local emergency room with complaint of four days of fever, chills and increasing generalized weakness. His weakness was so pronounced that he fell at home and his wife found him laying on the floor unable to get up on his own. He denied any loss of consciousness when this occurred. Patient was also noted to have a right foot ulcer which he stated he has had for more than 7 months. Patient stated that he was treated by his primary care physician for this ulcer with antibiotics and dressing changes. An x-ray indicated moderate amount of gas collection in the right foot.

Based on a number of factors, it was determined that the patient was appropriate for admission to an acute rehabilitation hospital. His acceptance for admission was based on a determination by the admitting physician that he required a hospital level intensity of care in regard to his functional capabilities, and his potential complications. He was admitted with discharge to home follow a 2-week stay. Prior to his most recent hospitalization, patient underwent a left below knee amputation in 2004. This information, combined with a history of insulin dependent diabetes, chronic kidney disease, hypertension, chronic right foot ulcer, coronary artery disease, diabetic retinopathy, diabetic nephropathy, diabetic neuropathy, peptic ulcer disease, history of Parkinson's disease, peripheral vascular disease, hypothyroidism, history of a kidney transplant in 1993, and coronary artery bypass graft in 2001 prompted the admission to the inpatient rehabilitation hospital for intense and comprehensive treatment and monitoring. Patient required close monitoring of his condition under physical exertion. In addition, the presence of the chronic foot ulcer warranted daily observation not only by rehabilitation nursing staff, but also by the physiatrist to ensure that other complications did not develop.

On admission patient required minimum to moderate assistance with transfers, moderate assist with lower extremity dressing, minimal assistance with grooming and upper extremity dressing, moderate assistance with toileting.

There was a significant amount of rehabilitation nursing intervention provided to this patient. The physicians depend on the rehabilitation nursing staff to assess the patients at a minimum of once

every shift in order to manage any medical issues, as indicated. This level of assessment by a licensed nurse specializing in rehabilitation, and coordination of care with the physician on a daily basis through rounds, would not occur in a less intensive setting.

The specialized rehabilitation nursing care provided throughout the course of his hospital stay included, monitoring patient's blood sugar levels – patient experienced 7 hypoglycemic episodes requiring treatment, IV antibiotics via PICC line, respiratory care for new BIPAP machine, monitoring status of foot ulcer with measurements and changes to the wound vac system applied, and strictly monitoring patients fluid intake and output. Nursing helped to evaluate his progress with activities of daily living (“ADLs”) when he was not in therapy. Nursing also assessed his vital signs and wound and skin status every eight hours. Patient's occupational therapy training during the late afternoon and evening hours to increase his own safety awareness and independence in self-care. Nursing also provided patient education in subjects including fall prevention, medication side effects, diet adjustments related to diabetes, care of insulin pump, use of bipap, and use and changing of wound vac system.

Patient's recovery, his progress in self-care, and mobility could not have been sufficiently managed without the 24-hour availability, rehabilitation assessment, and treatment planning of registered nurses with specialized training in rehabilitation that coordinated such care through daily communication with the physical and/or occupational therapists, as well as the rehabilitation physician. The patient both required and received 24-hour rehabilitation nursing.

The patient required and received a “relatively intense” level of rehabilitation services. He required an intense level of therapy because, on the admission evaluation, he was unable to attend to his personal needs and activities of daily living without 50% assistance from a therapist. Mobility also required the same amount of hands-on assistance. The patient was unable to ambulate at the time of admission due to non weight bearing status on the right foot and a poor fitting prosthesis on the left leg. Appropriate monitoring by rehabilitation nursing, coordinated with aggressive therapy, was necessary to improve skin and wound care issues, pain management and physical functional status.

The patient was an inpatient for 14 days, which included 4 weekend days. It is reasonable to expect that he would not receive a full course of therapy on weekend days, so one might wonder about the overall intensity of the therapy. In fact, weekend therapy occurred in addition to weekday therapy and the patient more than met the requirements of the three-hour guideline.

The multi-disciplinary team treating the patient included the attending physician, rehabilitation nursing, physical and occupational therapy, case management and nutritional therapy. In addition, consultation by pulmonary, internal medicine, infectious disease, and vascular surgery specialists were utilized as part of the extended rehabilitation team to meet the complex medical need of the patient. This team coordinated the care during the length of stay and discussed in formal team conferences the patient's goals, progress, discharge planning and the impact of the current medical condition and impact of the pre-existing amputation on his overall functional status.

Improvements during the length of stay in physical function included transfer status using wheeled walker vs. transfer board, personal care areas with assistance and education for safety and mobility. His continued medical status limited ambulation training, but issues surrounding the prosthesis were addressed with the outcome being his ability to use the leg for limited physical skills including transfers.

The patient was able to return home with improved wound care management program and other medical issues addressed through close physician monitoring. The prosthesis was in use for transfers with power wheelchair used for long distances. He showed increased independence for personal care skills. The length of stay was appropriate to provide the necessary medical management; addressing the prosthesis issues and improving self care skills.

**Summary:** While the immediate clinical event precipitating admission to the rehabilitation hospital was related to infection and gas gangrene in the patient's right foot, the rehabilitation issues were created and magnified by the patient's prior left below-the-knee amputation which was not yet consistently functional with a prosthesis. It is this secondary diagnosis (comorbidity) of amputation that qualifies this case under the 75% Rule's comorbidities provision. The combination of bilateral limitations on weight-bearing status and multiple medical issues for a patient with a permanent physical disability make this individual the very type of patient that inpatient rehabilitation hospitals specialize in treating. No lower level of care could be expected to successfully rehabilitate this

patient, but in the absence of the comorbidities provision of the 75% Rule, it is far from certain that inpatient rehabilitation hospital services would have been accessible.

**Case Example # 5**  
**(Southwest United States)**

This patient was an 88 year-old female transferred to an Inpatient Rehabilitation Hospital from the emergency room of the local acute hospital for continued care and inpatient rehabilitation. She needed to work on increasing mobility and strength, decreasing pain, regaining balance and improving her performance of her activities of daily living. She had fallen in the assisted living facility where she lived and fractured her right clavicle and second rib. She had a history of Parkinson's and arthritis.

The occupational and physical therapy evaluations identified resting tremors and stated the patient was rigid and bradykinetic. Gross motor coordination and balance were impaired limiting the patient's mobility and performance in self care activities. She required minimal assistance to feed herself, maximum assistance to dress her upper body, and was dependent in all other activities.

Close physician oversight was key to this patient's improvement since medication adjustments were necessary to control the recent exacerbation of her Parkinson's disease. In addition, this patient participated in three hours of therapy with a lot of motivation and encouragement from the therapists as well as coordinated, multidisciplinary efforts to manage her pain. The team met to discuss her progress twice during her stay. The patient's burden of care improved from a total FIM score of 38 on admission to 60 at discharge. She was able to return to the assisted living facility at a minimal to moderate assistance level in self-care activities, ambulating with a rolling walker 150 feet. Home health care services were recommended for follow-up care.

**Summary:** This patient improved dramatically due to the level and intensity of care inpatient provided in an inpatient rehabilitation hospital. Her case is representative of many older persons who already require some assistance in managing their activities of daily living (e.g. hygiene, toileting, mobility) but are still able to avoid long-term institutional care. Successful rehabilitation for these individuals allows them to continue living in the least restrictive environment possible. While her Parkinson's disease was central to her need for rehabilitation, its role would not be recognized under the 75% Rule without the comorbidities provision.

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## American Medical Rehabilitation Providers Association

Research Project	Description	Principal Investigator
<p>Burke Rehabilitation Hospital—“Rehabilitation Following total Knee Replacement, total Hip Replacement and Hip Fracture: A Case controlled Comparison of Cost and Outcomes”</p>	<p>The objective of this study was to determine whether outcomes differed between patients with single knee or hip joint replacement surgery undergoing rehabilitation in an inpatient rehabilitation facility (IRF) vs. skilled nursing facilities (SNFs)</p>	<p>Mary Beth Walsh, MD</p>
<p>National Rehabilitation Hospital—“JOINTS Study-Post Acute Rehabilitation of Patients with Joint Replacements in IRFs and SNFs”</p>	<p>This study will follow up on the initial JOINTS study of hip and knee replacement rehabilitation in 11 skilled nursing facilities (SNFs_ and 11 inpatient rehabilitation facilities (IRFs) located throughout the nation. It will expand to study expenditures, particularly the assignment of expenditures to the initial rehab episode and downstream health care utilization such as hospitalizations</p>	<p>Jackie Lichtenstein HS-01004 Julie Barth HS-01005</p> <p><b>Gerben DeJong, PhD</b> <b>Research Plan</b> <b>Principal Contact</b></p>
<p>National Rehabilitation Hospital—“How Comorbidities can be Taken into Account to Determine Rehabilitation Admission to an SNF or IRF”</p>	<p>This study will determine how severity and/or various comorbidities at admission are associated with discharge severity and function</p>	<p>Susan Horn, PhD</p>
<p>Fleming-AOD— “eSNFdata.com</p>	<p>This project will create a data repository and automated analytic system similar to eRehabData® for the capture, storage and analysis of functional outcome SNF data as well as several reimbursement measures</p>	<p>Sam Fleming</p>
<p>Fleming-AOD— “Rehabilitation Placement Factors Data Collection Instrument”</p>	<p>This project will design and construct a data collection instrument to include the factors that may impact post-acute rehabilitation placement</p>	<p>Sam Fleming</p>

<b>Research Project</b>	<b>Description</b>	<b>Principal Investigator</b>
<p>Frazier Rehabilitation Hospital—"Outcomes of Patients with Cardiac or Pulmonary Conditions in an Inpatient Rehabilitation Facility or a Skilled Nursing Facility"</p>	<p>This study will determine the differences in outcome by site (IRF/SNF); determine predictors of outcomes within an IRF or SNF; and identify characteristics that differentiate patients' success in an IRF versus an SNF</p>	<p>Judah Skolnick</p>
<p>UVA Inpatient Rehabilitation Hospital—"Inpatient Rehabilitation Populations"</p>	<p>This study, among other things, will determine the frequencies of various cardiopulmonary population types referred to the IRF and SNF; characterize the clinical outcomes and outcome differences of available cardiopulmonary populations in the IRF and SNF; and compare outcomes of additive pulmonary or cardiac comorbidities (secondary diagnoses to primary cardiac diagnoses) with outcomes of pulmonary or cardiac diagnoses alone</p>	<p>Heather Vincent, PhD HS-01009</p>
<p>Washington University School of Medicine—"Rehabilitation Outcomes for Older Adults with Acute Deconditioning: Acute Rehabilitation vs. Skilled Nursing Facility Treatments"</p>	<p>This study looks at 400 patients admitted to The Rehabilitation Institute of St. Louis or Barnes-Jewish Extended Care between February 2005 and February 2006, and will determine functional status and hospital readmission rates at six months' post-discharge from the rehabilitation setting, and collect information about utilization of health services (hospitalization, home care, SNF care) in the year prior to the incident hospitalization that is not available in the medical record</p>	<p>Ellen F. Binder HS-01008</p>

**Poster Presentation at Annual Meetin gof the American Academy of Physical Medicine and Rehabilitation (November, 2006) Promise Growth in Evidence Basis for Rehabilitation Practice and Public Policy**

<b>Article</b>	<b>Author</b>	<b>Key words</b>	<b>Objective</b>	<b>Outcome</b>
<b>Total Femur Replacement Following Multiple Periprosthetic Fractures in Chronic Rheumatoid Arthritis: A Case Report</b>	Bhatt, Archana P, MD and Boodin, Natalie, MD	arthroplasty, fracture, rehab, rheumatoid arthritis	This study reports a patient with limited surgical options who was able to obtain functional recovery after surgery with rehab.	Significant functional gains are possible in pts undergoing a total femur replacement despite a nonambulatory status for 2 yrs.
<b>Comparison of Brain Injury Rehabilitation Outcomes Using a Traditional Versus functionally Based Program: A Preliminary Analysis</b>	Ryu, Won Hyung, BSc and Cullen, Nora, MD, MSc	brain injury, rehab, outcome	To compare outcomes of a rehab program where brain injury pts are treated by functional need rather than diagnosis.	Streamling pts with acquired brain injury into specialized neurocognitive and neurophysical rehab programs based on their functional need results in improved rehab outcome.
<b>Outcomes in Rehabilitation of Cancer Survivors From Different Ethnic Groups</b>	Cole, Andrew M, MBS, FAFRM and Estell, John J, MBBS, FAFRM	ethnic, neoplasms, rehab, cancer, outcomes	To compare funcnional outcomes of rehab programs in cancer survivors from multiple ethnic groups with outcomes in pts with noncancer diagnoses.	Cancer survivors from varying ethnic settings complete rehab programs with outcomes as good as those with noncancer diagnoses.
<b>Does Cardiac Rehabilitation Improve the Cardiac Profile of Patients With Metabolic Syndrome?</b>	Hariman, Listianingsih M, MD, Stachowiak, Aaron, MD, et al	metabolic syndrome X, rehab, cardiac	To evaluate the effects of phase 2 cardiac rehab on functional capacity, BMI and plasma lipid levels of cardiac disease pts with and without metabolic syndrome.	Cardiac rehab improves functional capacity, HDL, LDL and triglyceride levels, but not BMI.
<b>Rehabilitation Engagement Predicts Level of Handicap at 3-Month Follow-Up</b>	Page, Sarah E, MD, Kortte, Kathleen B, PhD, et al	outcome assessment, health care, rehab	To determine whether level of engagement in rehab predicts acute rehab FIM efficiency and level of handicap at 3 mo post rehab.	Provides preliminary evidence of the importance of engagement in the rehab process in terms of long-term outcomes.
<b>Is Rehabilitation Cost Efficient for Patients With Complex Rehabilitation Needs Following Acquired Brain Injury?</b>	Turner-Stokes, Lynne, DM, FRCP, Paul, Simon, et al	cost effectiveness, brain injury, rehab, outcome	To examine funcnional outcomes from an IP rehab program and to compare 2 methods for evaluating cost efficiency of rehab in pts with complex rehab needs.	The NPDS detected changes in dependency potentially associated with substantial savings.
<b>Influence of Obesity on Inpatient Rehabilitation Outcomes Following Total Hip Arthroplasty</b>	Vincent, Heather K, PhD, Vincent, Kevin R, MD, PhD, et al	arthroplasty, hip replacement, obesity, outcome, THA	To examine whether obesity affects IP rehab outcomes following THA.	Elevated BMI does not prevent FIM gains in THA pts during IP rehab. Overall, morbidly obese pts can achieve physical improvements, but at a lower efficiency and greater cost.
<b>Critical Aortic Stenosis and Right Femoral Neck Fracture: A Case Report</b>	Khan, Qamar, DO and Young, James, MD	aortic stenosis, femoral neck fracture, rehab	Although guidelines for cardiac rehab recommend that people with valvular stenosis be managed conservatively, rehab in this pt was necessary.	Comprehensive rehab is beneficial to those that have complicated histories and may be attempted with appropriate cardiac supervision.
<b>The functional Status of Cancer-Related Myelopathy Survivors is Similar to the functional Status of Traumatic Myelopathy Survivors</b>	Goihl, Marie T, PT, Reeves, Ronald K, MD, et al	QOL, cancer, rehab, spinal cord diseases	To describe the long-term functional status of survivors with cancer-related myelopathy compared with pts with traumatic SCI.	Cancer-related SCI pts who survived 3 yrs after IP rehab have a functional status and satisfaction with life similar to that of pts with traumatic SCI.
<b>Longitudinal Outcomes and Third-Party Payers in Spinal Cord Injury</b>	Chen, Yuying, MD, PhD, DeVivo, Michael J, DrPH, et al	outcome, healthcare, rehab, SCI	To examine payers over the course of care for SCI persons an and its impact on rehab outcomes.	Third-party payers change over the course of care for SCI persons and have significant impact on rehab outcomes.
<b>Rehabilitation Outcomes After Infection-Related Spinal Cord Injury</b>	Merrell, Christopher A, MD, McKinley, William O, MD, et al	infection, rehab, SCI, outcome	To compare injury characteristics, demographics and functional outcomes of infection-related and traumatic SCI pts.	Despite less severe injury characteristics, infection related SCI pts experienced less functional improvement, in part explained by increased age and comorbidities.
<b>Poststroke Rehabilittant of Patients With Left Ventricular Thrombus: A Case Series</b>	Chia, Min-Wee, MBBS and Young, Sherry H, MD	rehab, stroke, thrombosis	To study effect of rehab in stroke pts with left ventricular thrombus.	Rehab improves function and mobility in stoke pts with left ventricular thrombus.



*The* LEWIN GROUP

# **Proposed Refinements to Facility Specific Adjustments for the Inpatient Rehabilitation Facility Prospective Payment System**

*Prepared for:*

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*April 10, 2007*

## EXECUTIVE SUMMARY

The Lewin Group was commissioned by HealthSouth Corporation to perform research on Medicare payment policy for inpatient rehabilitation facilities (IRFs). The purpose of this task is to examine the facility specific adjustment system in the IRF prospective payment system (PPS). As part of an effort to monitor how well the IRF PPS is performing, Centers for Medicare and Medicaid Services (CMS) asked RAND to examine facility specific adjustments in Phase I<sup>1</sup> and then subsequently in 2005 as part of potential refinements.<sup>2</sup> This report updates the RAND Corporation 2005<sup>3</sup> report using the RAND methodology with more current data. The RAND studies were conducted under contract with CMS to identify and derive facility specific adjustments to IRF PPS payment rates. These analyses use multivariate regression analysis to explore possible facility level adjustments based on:

- urban or rural designation,
- the volume of low-income patient (LIP) Medicaid eligible days; and
- costs associated with approved medical teaching programs.

Using cost report and claims data from 2004 and 2002 respectively, the second RAND study recommended a facility level payment adjustment of 21.2 percent for rural hospitals and a low-income patient adjustment of  $(1+LIP)^{0.616}$ , as compared to a prior 19.1 percent adjustment for rural hospitals and a LIP adjustment of  $(1+LIP)^{0.4838}$ . RAND also recommended for the first time the inclusion of an indirect teaching adjustment of  $(1 + \text{ratio of interns and residents to average daily census (IRADC)})^{0.963}$ .

Our findings are summarized below.

### Summary of Findings

Using 2004 cost report and claims information, our regression analyses indicate that the LIP coefficient falls from .6164 to  $.3752[(1+LIP)^{0.6164 \text{ to } 0.3752}]$ , the teaching adjustment coefficient is essentially the same at .9632 to .9538  $[(1+IRADC)^{.9632 \text{ to } .9538}]$  and the rural adjustment coefficient falls from .21 to .19 (see *Table ES-1*). Although the coefficient for the teaching adjustment is very similar to the RAND results, we did not find the coefficient for teaching adjustment to be significant in a fully specified regression. A strict interpretation of the RAND methodology would conclude that the continuation

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<sup>1</sup> Carter, GM, et.al., "Analyses for the initial implementation of the inpatient rehabilitation facility prospective payment system," RAND, 2002, MR-1500-CMS.

<sup>2</sup> RAND Corporation, "Possible Refinements to the Facility-Level Payment Adjustments for the Inpatient Rehabilitation Facility Prospective Payment System," Prepared for the Centers for Medicare and Medicaid Services.

<sup>3</sup> RAND Corporation, "Possible Refinements to the Facility-Level Payment Adjustments for the Inpatient Rehabilitation Facility Prospective Payment System," Prepared for the Centers for Medicare and Medicaid Services.

of the teaching adjustment could be questioned. Hence, we would recommend that the LIP coefficient be dropped from 0.6164 to 0.3752 and the rural adjustment be lowered to 0.19 for FY 2008. Any change in funds made available as a result of these revisions should be used to increase or decrease the standard payment amount on a budget neutral basis.

**Table ES-1: Comparison of Lewin and RAND results for the Payment Regression**

Variable	Coefficient	
	Lewin	RAND
Intercept	9.3269	9.2202
log10(acute care measure)	0.3752	0.6164
log10(enteric & respiratory care)	0.9538	0.9632
Rural (yes/no)	0.1933	0.2053

Source: The Lewin Group analysis. RAND: RAND Corporation, "Possible Refinements to the Facility-Level Payment Adjustments for the Inpatient Rehabilitation Facility Prospective Payment System," Prepared for the Centers for Medicare and Medicaid Services.

For FY 2009, we would recommend the following.

- Given the changes in coefficients between the two RAND studies and the Lewin study, we recommend that a three year moving average of each payment variable's coefficients be used to establish the facility level payment adjustments starting from FY 2009. This recommendation would make IRF PPS payments less variable one year to the next and hence, more predictable to the industry. A three year moving average is also more likely to be reflective of the underlying structural relationships as more data are used to support the payment rates.
- The RAND calculation of the teaching adjustment does not account for outlier payments as does the IPPS system. CMS may consider further refining the payment regression model by accounting for outlier payments. One possibility is to standardize the dependent variable by an outlier index as Medicare Payment Advisory Commission (MedPAC) did when it derived the IME payment adjustment for IPPS - this outlier standardization would also affect the LIP and rural adjustments.

## I. INTRODUCTION

The Lewin Group was commissioned by HealthSouth Corporation to perform research on Medicare payment policy for inpatient rehabilitation facilities (IRFs). One task of the research effort is to replicate and update the regression analyses used by the RAND Corporation to estimate facility specific adjustments.<sup>4</sup> As part of an effort to monitor how well the IRF PPS is performing, Centers for Medicare and Medicaid Services (CMS) asked RAND to examine facility specific adjustments in Phase I<sup>5</sup> and then again in 2005 as part of potential refinements.<sup>6</sup> This report updates the RAND Corporation 2005<sup>7</sup> report using the RAND methodology with more current data. The purpose of this task is to examine the facility specific adjustments in the IRF prospective payment system. This report describes the model specification, methodology and results of our analysis in comparison with RAND results. We conclude the report with a recommendations section.

IRF PPS payment is a product of the national standard payment amount, weights assigned to the patient's case mix group and a set of facility adjustments to compensate IRFs for factors associated with increased costs that are beyond the control of the IRFs. Under the IRF PPS, IRFs are compensated for the geographical wage differences, rural location, and for serving low income patients. For discharges occurring on or after October 1, 2005, the IRF PPS payment also reflects the new teaching status adjustment that became effective as of FY 2006. The IRF PPS payment is also adjusted for outlier cases and short stay transfer cases.

In 2005, as part of the IRF PPS refinement process, CMS commissioned RAND to improve the methods for deriving case weights and adjusting facility payments. As with the Phase I study, RAND used multivariate regression analysis to identify and refine facility payment adjustments. Researchers at RAND used CY 2002 claims data and FY 2004 Medicare Cost Report data to derive cost per case in the 2005 RAND report. Other variables in the 2005 RAND report were based on data from 1998 to 2001. The key findings and recommendations of the 2005 RAND study were as follows:

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<sup>4</sup> Paddock, S., Carter, G., Wynn, B., and Zhou, A. (2005) "Possible Refinements to the Facility-Level Payments Adjustments for the Inpatient Rehabilitation Payment System"

<sup>5</sup> Carter, GM, et.al., "Analyses for the initial implementation of the inpatient rehabilitation facility prospective payment system," RAND, 2002, MR-1500-CMS.

<sup>6</sup> RAND Corporation, "Possible Refinements to the Facility-Level Payment Adjustments for the Inpatient Rehabilitation Facility Prospective Payment System," Prepared for the Centers for Medicare and Medicaid Services.

<sup>7</sup> RAND Corporation, "Possible Refinements to the Facility-Level Payment Adjustments for the Inpatient Rehabilitation Facility Prospective Payment System," Prepared for the Centers for Medicare and Medicaid Services.

- to increase the payment adjustment for rural hospitals to 21.2 from 19.1 percent;
- to increase the LIP adjustment to  $(1+LIP)^{0.616}$  from  $(1+LIP)^{0.484}$ ; and
- to establish a new indirect teaching adjustment calculated as  $(1 + IRADC)^{0.963}$ .

RAND recommended that their analysis be repeated using FY 2003 data. In CY 2002, the provider responses to the IRF PPS were not complete as many hospitals were not on PPS throughout the entire calendar year. RAND also indicated that other changes such as reductions in length of stay, other cost containment measures, post-PPS provider coding practices could influence the facility regressions as well.

## II. METHODOLOGY

### A. Data Sources

We have built a facility-level database using CY 2004 IRF claims data and FY 2004 cost reports that includes a list of variables by facility level as shown in *Table 1*.

**Table 1. List of Variables and Definitions**

Variables	Data Sources	Definitions
Provider Number		Medicare provider identification number.
Cost per Case	Using charges per case from CY 2004 IRF claims file and ratio of cost to charges from FY 2004 Medicare Cost Report	
Number of Discharges	CY 2004 claims file	Number of equivalent transfer adjusted Medicare beneficiary discharges
Wage Index	Fiscal Year 2007 final rate setting file	
Rural	Fiscal Year 2007 final rate setting file	A facility is either classified as a rural facility or not rural.
Case Mix Index	Calculated using CY 2004 claims file and 2006 Grouper	Weight per discharge
Type of Control	Fiscal Year 2007 final rate setting file	The control of a facility is classified as "Profit", "Nonprofit" or "Government".

<sup>8</sup> No data is available on whether the facility was located in a large urban area or a small urban area.

<sup>9</sup> We have made some technical revisions to this variable for this file. We recently discovered that some providers that were designated as "GOVERNMENT" in the rate setting file for the proposed rule were actually "FOR PROFIT" facilities. Thus, we have corrected the designation of these facilities in this rate setting file.

Variables	Data Sources	Definitions
Teaching Status	Fiscal Year 2007 final rate setting file.	Number of interns and residents divided by average daily census.
Freestanding Facility	Obtained from the Medicare provider number (a 3 in the third position of the provider number indicates a freestanding facility).	A facility is classified as either a freestanding facility or as a distinct part unit of a hospital.

Following the RAND approach, we perform a two-step multivariate regression analysis based on this database. The first step is to fit a fully specified regression model to examine factors that explain variation in costs per case. The second step is to fit a payment regression model in which factors that were significant predictors of cost in the fully specified model and are deemed to be beyond the control of IRFs. These factors were included as independent (explanatory) variables and were used by RAND to predict average cost per case at the facility level for IRFs.

## B. Dependent Variable: Cost Per Case

The facility average cost per case is the sum of the facility's costs for all cases divided by the facility's number of equivalent full cases. We use the cost per case calculated from the claims file rather than the cost per discharge from the cost report file as this is the approach used by RAND. The cost for each case from the claims file was estimated as the sum of the estimated costs incurred by the patient in each revenue center as determined by applying a departmental specific ratio of cost to charge from the cost report to the patient's charges in the department as reported in the claims file. The facility's average cost per case is the sum of the costs for all cases divided by the number of equivalent full cases. Calculating the cost per case from the claims file rather than the cost per discharge from the cost report allows one to account for transfer cases and interrupted stays.

It is worth mentioning that RAND did not adjust for the outlier cases. Given the notion that teaching hospitals tend to have a higher proportion of outlier cases, the cost per cases could be substantially different for teaching hospitals after adjustment for outlier cases. The payment regression for the inpatient prospective payment system (IPPS) as conducted by MedPAC adjusts for outlier payments using an outlier index as the facility specific adjustments theoretically should not be applied to costs which are otherwise paid for with outlier payments.

As we apply a double log function in our regressions, the facility specific cost per case is logged. For the payment regression, the log of the cost per case was standardized (adjusted for) by the wage index and the case mix index.

### **C. Step One: Model Specification of the Fully Specified Regression**

In the fully specified regression, we define our dependent variable as the logarithm of the facility specific average cost per case. In this step we use the logarithm of the CMI (average CMG weight per case), logarithm (.75865\*wage index + .24135), logarithm (1+IRADC), and (1+Low Income Patient Adjustment) as independent variables. We also add dummy variables to indicate freestanding units, type of ownership (proprietary versus not) and geographic location (Urban or Rural).

### **D. Step Two: Model Specification of the Payment Regression**

In the payment regression, we drop variables that are not significantly related to cost in the fully specified regression and include only those variables that are found to be significant and that are potential payment variables – that is, variables that are deemed by CMS to be beyond the control of IRFs. The dependent variable in these regressions is the logarithm of cost per case standardized by the wage index and case mix index. The independent variables are logarithm (1+IRADC), (1+Low Income Patient Adjustment) and dummy variable to indicate urban or rural status. As teaching adjustment was found to be significant in the 2005 RAND report, we also included teaching adjustment as an explanatory variable in the payment regression.

## **III. RESULTS**

### **1. Descriptive Statistics**

*Table 2* shows the average cost per case by IRF type. Our average cost per case across all IRFs (2004 claims data) is about 0.4 percent higher than the average cost per case derived by RAND (2002 claims data).

Rural IRFs show a 6.91 percent higher overall average cost per case than urban IRFs (\$11,820 versus \$11,056) but also have a much lower wage index (0.974 versus 1.005). Teaching IRFs also report higher costs compared to non-teaching IRFs. This differential is greatest when the IRADC is 0.2 and above. Although RAND found that the average cost per case increases with the IRADC, our results indicate that the average cost per case declines for the teaching IRFs with IRADC between 0.1 and 0.2 and then subsequently increases.

**Table 2. Facility Characteristics (Teaching, Geographic Location and Ownership) from Lewin and RAND**

Case/Category	Number of Cases		Discharges		Cost per case			UP		CAP		Ratio of ADC Ratio		W	
	Lewin	RAND	Lewin	Lewin (CY 2004)	RAND (CY 2002)	Difference	Lewin	RAND	Lewin	RAND	Lewin	RAND	Lewin	RAND	
Average	1,109	1,143	742	\$11,125	\$11,081	0.4%	0.114		1.002		0.010		0.973		
Teaching Status															
No Teaching	1,001	1,018	693	\$10,902	\$10,923	-0.2%	0.106	0.105	1.002	1.000	0.000	0.000	0.958	0.956	
Teaching hospital (by resident to ADC Ratio)															
<.1	59	72	1,281	\$12,780	\$12,063	5.9%	0.145	0.117	0.997	1.007	0.997	0.032	1.079	1.057	
.1-.2 (including)	33	35	895	\$12,433	\$14,209	-12.5%	0.220	0.173	1.019	0.975	1.019	0.148	1.099	1.127	
>=.2	16	18	390	\$14,707	\$15,743	-6.6%	0.201	0.249	0.964	1.039	0.964	0.300	1.098	1.175	
Type of Ownership															
Voluntary	703	699	636	\$11,556	\$11,593	-0.3%	0.111	0.105	0.982	0.976	0.014	0.014	0.981	0.990	
Proprietary	351	333	941	\$10,331	\$10,218	1.1%	0.11892	0.111	1.035	1.038	0.005	0.002	0.964	0.950	
Government	55	111	470	\$12,144	\$12,741	-4.7%	0.1066	0.139	1.009	0.995	0.008	0.023	0.925	0.957	
Geographic Location															
Urban	930	960	780	\$11,056	\$11,143	-0.8%	0.11445	0.109	1.005	1.001	0.011	0.011	0.988	0.989	
Rural	179	183	360	\$11,820	\$11,534	2.5%	0.10687	0.109	0.974	0.987	0.001	0.000	0.813	0.827	

Source: The Lewin Group analysis of 2004 Medicare Cost Report and Claims for IRFs and FY 2007 IRF Final Rule Rate Setting File.

RAND: RAND Corporation, "Possible Refinements to the Facility-Level Payment Adjustments for the Inpatient Rehabilitation Facility Prospective Payment System," Prepared for the Centers for Medicare and Medicaid Services.

**Table 3** compares the total cost at different geographic areas and teaching status when standardized by wage index and case mix index. When standardized by case mix index multiplied by  $(0.24135+0.75865*\text{wage index})$ , total cost per case at rural areas is 27.50 percent higher than that of urban areas. Average cost per case in facilities with teaching is 17.52 percent higher than those without teaching.

**Table 3. Average Cost per Case by Geographic Area and Teaching Status, CY 2004**

	Geographic Area			Teaching Status		
	Urban	Rural	Difference	No teaching	Teaching	Difference
Cost per case	\$11,056	\$11,820	6.91%	\$10,902	\$12,812	17.52%
Cost per case/case mix index	\$11,040	\$12,176	10.29%	\$10,928	\$12,760	16.76%
Cost per case $(0.24135+0.75865*\text{wage index})$	\$11,168	\$13,804	23.60%	\$11,306	\$12,163	7.58%
Cost per case/case mix index $(0.24135+0.75865*\text{wage index})$	\$11,150	\$14,216	27.50%	\$11,340	\$12,081	6.53%

Source: The Lewin Group analysis of 2004 Medicare Cost Report and Claims for IRFs and FY 2007 IRF Final Rule Rate Setting File.

## 2. Fully Specified Regression

**Table 4** shows the results of the fully specified regression. Most of the explanatory variables in the regression were significantly related to the logarithm of cost per case except teaching. Case mix index, wage index, the low-income patient measure, indirect teaching levels and rural location are significantly and positively associated with the logarithm of cost per case.

Our coefficients for the wage index and the case mix index are lower than RAND's. Most importantly, the indirect teaching measure was not significantly associated with higher cost per case. This is a very interesting finding as the indirect teaching measure was not found to be significant during the Phase I RAND findings but was subsequently found to be significantly associated with higher cost per case in RAND's second report.

**Table 4: Fully Specified Regression Model**

Variable	Coefficient		Standard Error	t Value	P	
	Lewin	RAND	Lewin	Lewin	Lewin	RAND
Intercept	9.28005	9.2743	0.01603	579.05	<.0001	<0.0001
log(gsc mix index)	0.79496	1.0693	0.07639	10.41	<.0001	<0.0001
log(0.24135*(0.75865/wage index))	0.63594	1.1895	0.08623	7.37	<.0001	<0.0001
log(1 flow rate (me measure))	0.63692	0.5930	0.10490	6.07	<.0001	<0.0001
log(1 teaching residents/ADC)	0.35662	0.5658	0.23659	1.51	0.132	<0.0026
Rural (yes/no)	-0.10199	-0.1045	0.01921	-5.31	<.0001	<0.0001
Rural (yes/no)	0.16119	0.1203	0.02975	5.42	<.0001	<0.0001
Proprietary IRF (yes/no)	-0.09634	-0.0999	0.01811	-5.32	<.0001	<0.0001
R-squared	0.2397					

Source: The Lewin Group analysis of 2004 Medicare Cost Report and Claims for IRFs and FY 2007 IRF Final Rule Rate Setting File.

RAND: RAND Corporation, "Possible Refinements to the Facility-Level Payment Adjustments for the Inpatient Rehabilitation Facility Prospective Payment System," Prepared for the Centers for Medicare and Medicaid Services.

### 3. Payment Regression

We used the results of *Table 4* to build the payment regression model by first selecting predictor variables for the payment regression model that were significant predictors of high cost per case and then selecting variables that would be appropriate for payment under the IRF PPS. To determine the appropriateness for payment of each of these variables, we considered whether CMS treated it as a potential payment variable.<sup>10</sup> The primary criterion used is whether the variable is beyond the control of the IRFs; for example, rural location is considered to be beyond the IRF's control. Although the indirect teaching is not a significant predictor in the Step 1 regression, we still include it in the payment regression model given RAND's 2005 report results. The other two predictors in the model, rural IRF location and LIP, are currently being paid for under the IRF PPS. The dependent variable in this regression is the logarithm of cost per case standardized by the wage index and case mix index. *Table 5* shows that all three predictors are significantly related to cost in this payment regression.

*Table 5* shows the results of our payment regression model. Similar to the results of the fully specified regression, the rural IRF location and the LIP is significantly related to cost in this regression. The parameter estimates for the teaching and LIP adjustment are smaller in magnitude to that of RAND's results. Hence, instead of applying a teaching exponent of 0.96, our results indicate that an exponent of 0.95 could be applied and LIP

<sup>10</sup> Paddock, S., Carter, G., Wynn, B., and Zhou, A. (2005) "Possible Refinements to the Facility-Level Payments Adjustments for the Inpatient Rehabilitation Payment System"

adjustment of 0.37 instead of current payment exponent of 0.61. In addition, the coefficient for rural status at 0.19 is lower than the current rural adjustment of 0.21.

**Table 5: Comparison of Payment Regression Results Between The Lewin Group (using CY 2004 claims data) and RAND (using CY 2002 claims data)**

Variable	Coefficient		Standard Error	t-Statistic	p-Value	
	Lewin	RAND			Lewin	RAND
Intercept	9.3269	9.2202	0.0118	788.7	<.0001	<.0001
log(LS) (log of the measure)	0.3752	0.6164	0.0902	4.22	<.0001	<.0001
log(Teaching & residents/ADG)	0.9538	0.9632	0.2087	4.7	<.0001	<.0001
Rural adjustment	0.1933	0.2053	0.0238	8.12	<.0001	<.0001
R squared	0.0843					

Source: The Lewin Group analysis of 2004 Medicare Cost Report and Claims for IRFs and FY 2007 IRF Final Rule Rate Setting File.

RAND: RAND Corporation, "Possible Refinements to the Facility-Level Payment Adjustments for the Inpatient Rehabilitation Facility Prospective Payment System," Prepared for the Centers for Medicare and Medicaid Services.

#### IV. RECOMMENDATIONS

Based on the finding of our analyses, we would recommend that CMS revisit the issue of facility specific adjustments. The findings of our regression indicate that the LIP coefficient falls from 0.6164 to 0.3752, the teaching adjustment is essentially the same from 0.9632 to 0.9538 and the rural adjustment falls from 21.3 percent to 19 percent.

Although the coefficient for the teaching adjustment is very similar to the RAND results, we did not find the coefficient for teaching adjustment to be significant in fully specified regression. A strict interpretation of the RAND methodology would conclude that the continuation of the teaching adjustment could be questioned. Given the variability of these coefficients over time, CMS could revise the facility specific adjustments for FY 2008 as follows:

- Lower the rural adjustment to 1.19 and LIP coefficient to 0.3752. In doing so, the residual payment amount could be used to increase the standard payment amount.

For FY 2009, we would recommend the following.

- Given the changes in coefficients between the two RAND studies and the Lewin study, we recommend that a three year moving average of each payment variable's coefficients be used to establish the facility level payment adjustments starting from FY 2009. This recommendation would make IRF PPS payments less variable one year to the next and hence, more predictable to the industry. A three year moving average is also more likely to be reflective of the underlying structural relationships as more data are used to support the payment rates.
- The RAND calculation of the teaching adjustment does not account for outlier payments as does the IPPS system. CMS may consider further refining the payment regression model by accounting for outlier payments. One possibility is to standardize the dependent variable by an outlier index as Medicare Payment Advisory Commission (MedPAC) did when it derived the IME payment adjustment for IPPS - this outlier standardization would also affect the LIP and rural adjustments.



*The* LEWIN GROUP

# An Analysis on IRF PPS Coding Adjustments

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*March 16, 2007*

## I. PURPOSE

The Lewin Group was commissioned by HealthSouth Corporation to examine the basis for Centers for Medicare and Medicaid Services (CMS's) 1.9 percent and 2.6 percent coding adjustments to the Medicare inpatient rehabilitation payment (IRF) standard payment amounts for Federal Fiscal Year (FFY) 2006 and FFY 2007 respectively. We discuss a series of technical issues that are related to the appropriateness of these "takebacks" and to offer some suggestions for a more transparent analytical framework for assessing future trends in patient acuity.

The first section of the report provides a summary of the findings of the report. The second section of the report provides the background and context for the issues related to CMS coding adjustments. The next section briefly outlines the key findings from our earlier study related to this topic. In the remaining sections, we set out the definition of the RAND CMI (CMI), the WPD and the CMI for other Medicare prospective payment systems. The subsequent sections discuss the following topics.

- CMS interpretation of RAND research
- Effect of the changes in Rehabilitation Impairment Categories (RIC) distribution on CMI
- Change in acute care CMI from 2002 to 2005 for cases discharged to IRFs
- Framework for assessing future trends in patient acuity.

## II. SUMMARY OF FINDINGS

CMS has collectively taken back 6.7 percent from IRF payments due to case mix considerations. The composition of this 6.7 percent take-back is shown below.

FFY 2006	1.9 percent coding adjustment based on RAND's lower bound estimate
FFY 2006	2.2 percent decrease in CMI due to IRF PPS Refinement
FFY 2007	2.6 percent additional coding adjustment based on CMS analysis on tier distribution but tied to RAND analysis of real case mix growth

This 6.7 percent reduction compares to an increase in CMI (based on the methodology used by RAND for its original IRF payment system analyses) of 13 percent over the time period (2002 to 2006).

Lewin analysis indicates that 95 percent of the observed increase in CMI from 2002 to 2006 was related to underlying patient severity increases. We provide the following evidence in support of the contention that IRF real patient severity rose over the 2002 to 2006 timeframe.

- 95 percent of the increase in CMI during this period can be attributed to the changes RIC distribution. This is particularly evident with changes to the 75 percent rule that took effect in July 2004
- CMI of the short term acute care hospital discharges to IRFs rose by 5 percent between 2002 and 2005

- The proportion of short term acute care discharges to IRFs with complications and comorbidities increased by 4 percentage points between 2002 and 2005

As the determination of "code creep" is highly contentious, we would recommend the creation of an analytical framework that would help the policymakers in differentiating between "code creep" and appropriate changes to CMI.

### **III. BACKGROUND**

#### **A. Inpatient Rehabilitation Facility Prospective Payment System (PPS) Implementation**

The pre-PPS cost-based reimbursement system for inpatient rehabilitation hospitals did not rely on records of patients' clinical assessment to determine payment. The Balanced Budget Act of 1997 (BBA) directed CMS to develop and implement prospective payment system for IRFs. Based on research conducted by RAND Corporation, CMS implemented the IRF PPS on January 1, 2002. Because the new IRF PPS system expressly tied payments to impairment and diagnostic codes, providers have been required to pay much closer attention to ensuring that such codes are fully and accurately reported for each patient discharge.

Medicare IRF PPS payments are case-based. To determine the IRF PPS payment for a particular patient, the patient is first classified into a major group, called a RIC, based on the patient's primary reason for receiving inpatient rehabilitation. Thereafter, the patient is assigned to a case mix group (CMG) based on functional status, cognitive status, and age. Each of the CMGs are further classified into tiers (Tier 1 being the most severe, Tier 3 being the least severe, and Tier 0 having no comorbidities) based on comorbidities.<sup>1</sup> Data for these characteristics are recorded in the IRF patient assessment instrument (IRF PAI).

There are also a number of facility level adjustments to the payment rate. These include adjustments for the geographic wage index, rural location, a low income percentage and teaching status. IRFs also receive additional payments for patients that are high cost outliers. Finally, Medicare pays IRFs special low rates for patients who have very short stays (i.e., transfers). We discuss facility specific adjustments in other documents. This paper is directed to analysis of case mix related issues.

#### **B. Coding Adjustment Issues Related to IRF PPS Implementation**

Section 1886(j)(2)(C)(ii) of the Balanced Budget Act of 1997 requires the Secretary to adjust the IRF standardized payment amount to eliminate the effect of coding or classification changes that do not reflect "real changes in case mix," to the extent that such changes affect aggregate payments under the classification system. This section's intent is to remove the payment effects of coding changes that affect payment but are not related to changes in patient severity (i.e. not "real"). We recognize that improved coding practices that increase CMI do not imply a "real"

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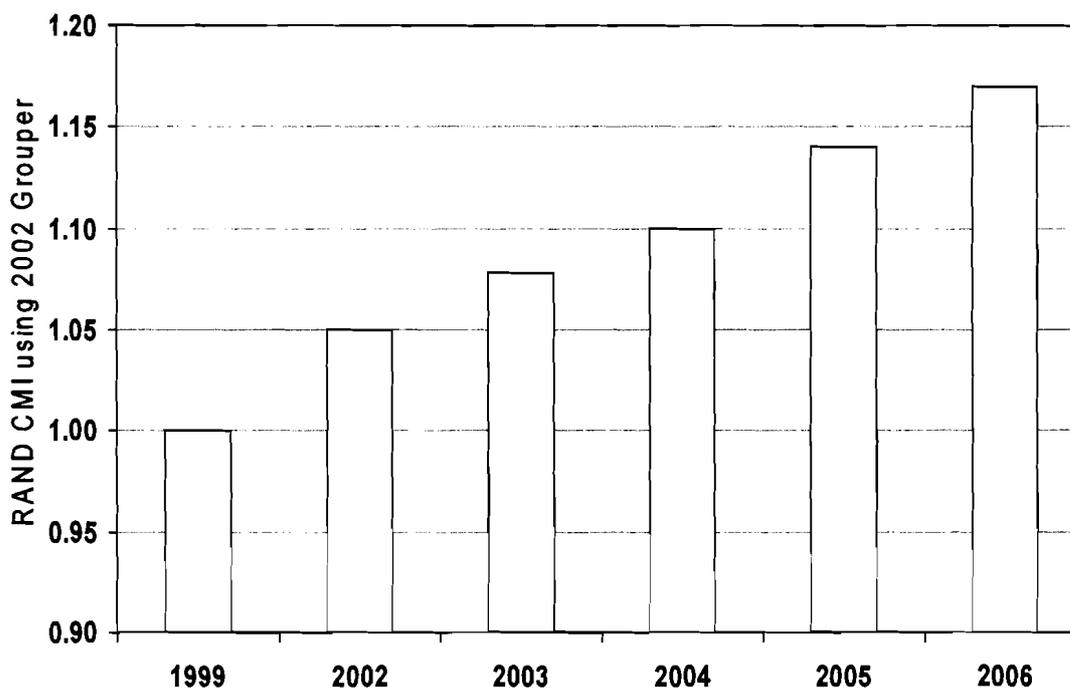
<sup>1</sup> A comorbidity is a specific patient condition (ICD - 9 diagnoses) that is secondary to the patient's principal diagnosis or impairment. IRF Patient Assessment Form allows one to include up to 10 comorbidities.

change in CMI and the patient population. Based on this section of the Act, CMS applied two consecutive adjustments of 1.9 percent and 2.6 percent to the standard payment amount for FY 2006 and FY 2007 to account for changes in provider coding practices. The rationale for the coding adjustments was based on research conducted by RAND. The 1.9 percent coding adjustment to the standard payment amount in FY 2006 reflected the lower bound estimate provided by RAND in their report.<sup>2</sup> Subsequently, CMS applied a 2.6 percent coding adjustment for FY 2007. This coding adjustment of 2.6 percent was justified by CMS on the following grounds:

- IRF provider margins increased after the IRF PPS implementation
- Providers appear to be very sensitive to changes in coding rules
- Cases have shifted to higher payment tiers within CMGs over time.

Exhibit 1 shows the changes in the RAND CMI from 2002 to 2006 using the 2002 Grouper.

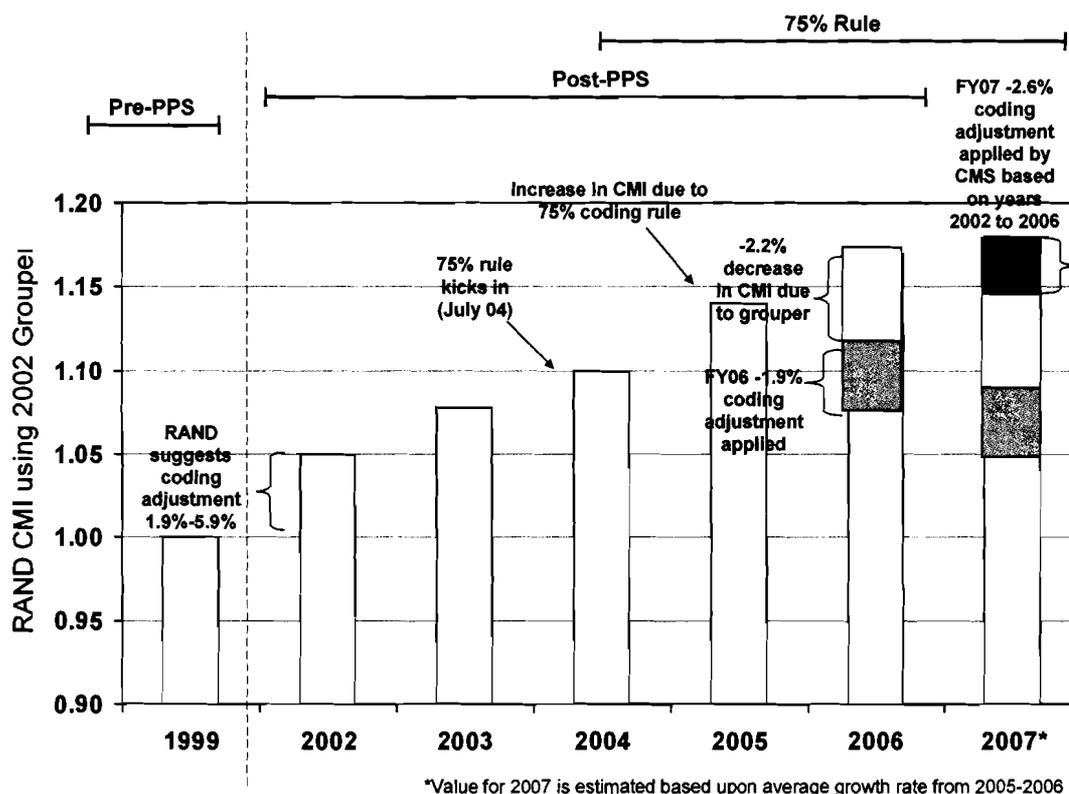
**Exhibit 1: Changes to the IRF PPS CMI from 2002 to 2007**



As noted in Exhibit 2, the grounds for the justification of the 2.6 percent coding adjustment were not directly linked to the original RAND rationale for payment reductions primarily because the arguments rely on a timeframe beyond that of the original RAND study. That is, CMS presents arguments pertaining to CMI increase over the 2002 to 2006 timeframe while the RAND report is limited to pre-PPS (1999) to post PPS (2002) timeframe. We note below why we believe that most of the IRF CMI increase between 2002 and 2006 is "real."

<sup>2</sup> Grace M. Carter and Susan M. Paddock, "Preliminary Analyses of Changes in Coding and Case Mix Under the Inpatient Rehabilitation Facility Prospective Payment System," RAND Corporation, 2004.

## Exhibit 2: Changes to the IRF PPS CMI and the Coding Adjustments Applied, 2002 2007



### IV. KEY FINDINGS FROM PRIOR LEWIN REPORT

As part of the response to the FY 2007 NPRM, HealthSouth Corporation commissioned The Lewin Group to evaluate the proposed coding adjustment.<sup>3</sup> Based on several original analyses, we found that:

- The change from the 2002 to the 2006 Grouper reduces CMI (CMI as calculated in the RAND study) by 2.2 percent. This suggests that CMS has in effect taken three coding adjustments with a cumulative effect of 6.7 percent – once with the 1.9 percent reduction and again with the 2.2 percent reduction achieved with the change from the 2002 Grouper to the 2006 Grouper, and finally with the 2.6 percent reduction for FY 2007 (see Exhibit 1 above).
- Over the 2002 to 2006 timeframe, approximately 95 percent of the observed case mix change is due to change in RIC distribution of cases and is unrelated to coding changes reflecting patient severity. The change in RIC/CMG distribution of cases in the recent years can be attributed to the implementation of changes to the 75% Rule.

<sup>3</sup> The Lewin Group, "Evaluation of the Proposed Coding Adjustment to the Standardized Payment Amount for FY 2007," Prepared for HealthSouth Corporation, July 6, 2006.

- The remaining 5 percent of observed case mix change may simply reflect changes in the acute care hospital DRG case mix for patients subsequently admitted to IRFs and by the increase in complications and co-morbidities for those patients.

These findings in our view are not supportive of the CMS FY 2007 2.6 percent payment reduction. After the submission of our report to CMS as part of NPRM response, we had the opportunity to engage in several discussions with CMS on this topic. We comment on our most recent findings below.

## V. DEFINITION OF WEIGHT PER DISCHARGE AND RAND CMI

As noted below, RAND used both the weight per discharge (WPD) and the CMI in their report on coding adjustment. Also, our discussions with CMS have led us to believe that CMS uses both WPD and CMI in its deliberations. In order to facilitate discussions we provide descriptions of these two different measures of patient severity WPD and the CMI

**RAND CMI:** The RAND CMI per discharge is calculated as the CMG specific relative weight of the non-transfer cases divided by the number of discharges for the non-transfer cases. The RAND CMI is calculated in the following manner.

1. Assign CMGs, tiers and special CMGs via Grouper.
2. Assign Relative Weight and Average LOS to cases from Final Rule tables.
3. Define Early Transfers - Discharge Setting = (04,05,06,07,08,09,12,13) and LOS < CMG Average LOS
4. Compute "Adjusted Relative Weight".
  - For Early Transfers, Adjusted Relative Weight = ((Actual LOS + .5)/CMG Average LOS) \* CMG Relative Weight.
  - For all other cases, Adjusted Relative Weight = CMG Relative Weight.
5. Compute "Adjusted Count"
  - For Early Transfers, Adjusted Count = (Actual LOS + .5)/CMG Average LOS.
  - For all other cases, Adjusted Count = 1.
6. Compute CMI = SUM (Adjusted Relative Weights) / SUM (Adjusted Counts).

Algebraically the RAND CMI is illustrated below:

$$\frac{\sum_{non-transfers} RW + \sum_{transfers} RW \times \left[ \frac{ALOS + 0.5}{CMG LOS} \right]}{\sum_{Non-transfers} 1 + \sum_{transfers} \frac{ALOS + 0.5}{CMG LOS}}$$

**Weight per Discharge:** The weight per discharge (WPD) is calculated in the following manner.

1. Assign CMGs, tiers and special CMGs via Grouper.

2. Assign Relative Weight and Average LOS to cases from Final Rule tables.
3. Define Early Transfers - Discharge Setting = (04,05,06,07,08,09,12,13) and LOS < CMG Average LOS
4. Compute "Adjusted Relative Weight".
5. For Early Transfers, Adjusted Relative Weight = ((Actual LOS + .5)/CMG Average LOS) \* CMG Relative Weight.
6. For all other cases, Adjusted Relative Weight = CMG Relative Weight.
7. Compute "Count"
8. For Transfers and non-Transfers, Count = 1
9. Compute WPD = SUM (Adjusted Relative Weights) / SUM(Counts).

Algebraically, the WPD is computed in this fashion.

$$\frac{\sum_{non-transfers} RW + \sum_{transfers} RW \times \left[ \frac{ALOS + 0.5}{CMG LOS} \right]}{\sum Cases}$$

The calculation of RAND CMI is different from that of WPD as the WPD does not account for equivalent cases in the denominator. There is no adjustment for transfer cases in the denominator of the WPD. With the increase in the number of transfer cases and decrease in average length of stay, the gap between the WPD and the RAND CMI is likely to increase over time. As the RAND CMI adjusts for transfers in the numerator and the denominator, it is more likely to isolate the pure effect of case severity without being confounded by changes in length of stay or transfer cases.

The RAND CMI construction approximates that of the IPPS CMI. The IPPS also accounts for short stay transfer cases and the formula for IPPS CMI is algebraically similar to the RAND CMI.

$$\frac{\sum_{non-transfers} RW + \sum_{transfers} RW \times \left[ \frac{ALOS + 1}{GMLOS} \right]}{\sum Non-transfers + \sum_{transfers} \frac{ALOS + 1}{GMLOS}}$$

Our analysis of the trends in CMI and WPD over time shows that the RAND CMI declined by 2.2 percent in FY 2006 with the implementation of the IRF PPS grouper refinement. Based on these results, CMS should have recommended a 2.2 percent upward budget neutrality adjustment to account for the decline in the nominal - as opposed to "real" - CMI. Instead, the FY 2006 budget neutrality adjustments for tiers and CMG was 0.9995 (see Exhibit 3). Based on our discussion with CMS, we understand that CMS based the 0.9995 adjustment on changes in WPD rather than RAND CMI. This further adds to the 6.7 percent (2.2 percent grouper change + 1.9 percent coding adjustment + 2.6 coding adjustment) and increases it to 6.8 percent. Our CMI analyses and recommendations correspond directly to the RAND analyses.

### Exhibit 3: Calculation of Budget Neutrality Adjustments for FY 2006

<b>FY2005 Standardized payment conversion factor</b>		<b>12,958</b>
<b>Market basket increase</b>	1.036	13,424
<b>Coding changes, per RAND report</b>	0.981	13,169
<b>Wages</b>	0.9995	13,163
<b>Tiers &amp; CMGs</b>	0.9995	13,156
<b>Rural</b>	0.9961	13,105
<b>Low-income patients</b>	0.9851	12,910
<b>Teaching</b>	0.9889	12,766
<b>FY2006 Standardized payment conversion factor</b>		<b>12,766</b>
<b>Total adjustment</b>	<b>0.9852</b>	
<b>Total adjustment w/o market basket</b>	<b>0.9510</b>	

Source: Final Rule, Aug. 15, 2005, pp. 47938-39

## VI. CMS INTERPRETATION OF RAND'S RESEARCH

Based on two separate approaches, RAND estimated 1.9 percent to 5.9 percent of the increase in IRF CMI change could be due to provider coding practices and not due to actual changes in patient acuity.<sup>4</sup> The RAND report includes that two measures of patient severity change were used -- the WPD and the CMI. Based on their analysis, they found that the CMI increased by 4.55 percent between 1999 and 2002 whereas the WPD increased by 3.4 percent over the given timeframe. RAND researchers state that the difference between these two rates of increase is due to an increase in short stay transfer cases and a decrease in the average length of stay for short stay transfer cases within the CMG.

This is an important point of difference as with the increase in the number of transfers and decrease in length of stay, the gap between the RAND CMI and WPD is expected to widen.

Thus, by its own terms, the RAND report does not furnish an adequate basis for the additional coding adjustment of 2.6 percent in FY 2007. The RAND report offers two estimates of the increase in measured CMI that can be attributed to coding changes. One estimate is considered to be an upper bound (5.9 percent) and the other, a lower bound (1.9 percent). The upper-bound estimate itself is subject to estimation error. RAND researchers keep switching between the terminologies of WPD and CMI throughout the document and it is not clear to the reader if the upper and lower bound estimate applies to WPD or CMI. As the WPD and the CMI are

<sup>4</sup>The FY 2006 NPRM reports the upper-bound estimate to be 5.9 percent (p. 28123), whereas the RAND report reports it as 5.8 percent (e.g., p. 58).

constructed differently and behave in a different fashion, it seems implausible that the upper and lower bound estimate could apply to both WPD and CMI.

CMS overstates the central RAND conclusions in its rule making process. The FY2006 Final Rule (p. 47906) states, "RAND recommended decreasing the standard per discharge payment amount by between 1.9 and 5.9 percent to adjust for the coding changes," implying that RAND has equal confidence in its upper- and lower-bound estimates. In fact, the RAND report "recommends" reducing "the conversion factor by at least 1.9 percent" (p. 58), suggesting its authors had greater confidence in its lower-bound estimate.

During our discussion with CMS in September 2006, we were told that CMS did not find any decrease in CMI due to the IRF PPS refinement in 2006 as they were monitoring the WPD. However, the Notice for Proposed Rulemaking mentions the increase in CMI, not WPD, due to provider coding practices. During our meeting with CMS on February 9, 2007, CMS staff indicated they have used the WPD and CMI to monitor IRF PPS related issues. This approach could provide a considerable degree of uncertainty in terms of the monitoring of the changes in case mix severity of cases across time as such an approach provides a different result.

## VII. THE EFFECT OF CHANGES IN RIC DISTRIBUTION ON CMI

Due to the changes to the 75% Rule, there has been a substantial increase in proportion of cases in select RICs. The patients categorized in these RICs are more resource intensive and have a greater relative weight.

In order to ascertain the cause of increase in CMI, we decomposed the CMI into two components:

- Changes in the distribution of cases across tiers (within each CMG), and
- Changes in the distribution of cases across CMGs (and RICs)

We directly calculated what the CMI would have been in 2006 if the distribution of cases across tiers had not changed since 2002. That is, we calculated the CMI with the 2006 distribution of cases *across* CMI but the 2002 distribution of cases *within* each CMI. As shown in Exhibit 4, the results for each year in the 2002-06 time period are as follows:<sup>5</sup>

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<sup>5</sup> The CMG effect is calculated as the ratio of increase in two indices: index without tier and the actual index.

#### Exhibit 4: Change in CMI Without the Effect of the Comorbidities

<b>Actual index</b>	1.079	1.102	1.117	1.165	1.221	13.2%
<b>Index w/o any effect of tier</b>	1.079	1.097	1.111	1.156	1.214	12.5%
<b>CMG effect on CMI (proportion)</b>	NA	0.783	0.842	0.895	0.951	0.951

Source: The Lewin Group Analysis of IRF PAI data provided by CMS. IRF case mix is calculated using the admission relative weight. Represents federal fiscal years.

Note: FY 2002 includes 9 months of data from January 1, 2002 to September 30, 2002. FY 2006 includes 6 months of data from October 1, 2005 to March 30, 2006.

The CMG effect is calculated as the ratio of increase in two indices: index without tier and the actual index.

Over this time period, at least 95 percent of the increase in CMI reflects the impact of the redistribution of cases at CMG level and less than 5 percent reflects the impact of tier changes. This finding is hardly consistent with the imagery in CMS' language of "patient severity was not increasing substantially over this time period." The implementation of the 75-percent rule in 2004 limited the opportunity of IRFs to admit patients in RICs that generally had lower-than-average weights, and thus, is hypothesized to increase the CMI. Even without the effect of the increase in tier comorbidities, we observe a sharp increase in CMI from 2004 to 2005 and 2006. This implies that the recent increase in CMI can be largely attributed to the change in RIC/CMG distribution of cases as a result of changes to the 75% Rule.

Given CMS' belief that upcoding is more plausible at the tier level than in the RIC distribution of cases, it is unlikely that upcoding has had a major impact on the increase in the CMI after 2002 (the last year analyzed in the RAND report). Put differently, the vast majority of the CMI increase apparent between 2002 to 2006 represents real change in case mix. Upcoding is more of an issue in the initial implementation period than later.

#### VIII.CHANGE IN ACUTE CARE CMI FROM 2002 TO 2005 FOR CASES DISCHARGED TO IRF

The acute care (inpatient prospective payment system (IPPS)) CMI for cases discharged to IRFs reflects the patient severity of the patients as measured by the acute hospital. Because this assessment of patient severity is measured independently, it should represent a useful proxy for measuring "real" changes in the RAND CMI. Based on our analyses of the 2002 and 2005 MedPAR data (Medicare discharges from short term acute care hospitals, we found that the CMI (DRG-based CMI) of cases discharged to IRFs increased by 5 percent from 1.95 in 2002 to 2.05 in 2005. The overall increase in CMI for all the cases increased by 2.6 percent only. By contrast, the CMI of the short term acute care hospital cases discharged to skilled nursing facility and home health have declined almost 2 percent from 2002 to 2005.

Furthermore, we also found that of the acute care cases discharged to IRFs, the proportion of cases categorized as DRGs with complications and comorbidities increased by 4 percentage

points from 25 percent in 2002 to 29 percent in 2005. This implies that the real CMI due to comorbidities most likely increased for the cases discharged to IRFs. Similar to the results of the case mix analysis, we also found a decline in percent of cases with comorbidities for skilled nursing facility and home health.

The issues of increase in CMI for short term acute care discharged to IRFs is intricately tied to the 75 percent rule. Our analysis indicates that not only has there been an increase in the proportion of stroke cases discharged to IRFs but also a higher proportion of those stroke cases are classified as DRG 14 (stroke with complication and comorbidities) instead of DRG 15 (stroke without complications and comorbidities). The proportion of stroke cases discharged to IRF that are categorized as DRG 14 has increased by 6 percentage points from 92 percent in 2002 to 98 percent in 2006.

Even if there is a close association between acute-care comorbidities and IRF comorbidities, one cannot presume that a given percentage increase in acute-care comorbidities translates into the same percentage increase in IRF comorbidities and hence tier weights. The RAND project estimates this relationship, using diagnoses and selected procedure codes to predict tier (p. 9). With those results, one could calculate the impact on IRF CMI from the increase in acute-care comorbidities. However, the results are unavailable either on RAND website or in Appendix B, which we obtained directly from RAND. Any subsequent work on IRF coding changes should include an analysis of this relationship.

## **IX. CONCLUSION:**

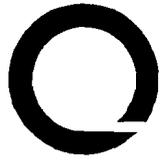
In the final rule for FY 2007, CMS applied a 2.6 percent coding adjustment to the IRF standardized payment amount, in addition to the FY 2006 reduction of 1.9 percent, to account for case mix up-coding that occurred between 1999 and 2002. The rationale for the additional coding adjustment of 2.6 percent was based on a number of reasons, such as a higher proportion of IRF cases in the higher tiers. Our analyses refutes CMS viewpoint based on the following results.

- The change from the 2002 to the 2006 Grouper reduces CMI (CMI as calculated in the RAND study) by 2.2 percent. This suggests that CMS has in effect taken two coding adjustments with a cumulative effect of 4.1 percent - once with the 1.9 percent reduction and again with the 2.2 percent reduction achieved with the change from the 2002 Grouper to the 2006 Grouper.
- Over the 2002 to 2006 time frame, approximately 95 percent of the observed increase in case mix is due to change in RIC distribution of cases and is unrelated to coding changes reflecting patient severity. The increase in patient severity associated with the change in RIC/CMG distribution of cases in the recent years can be attributed to the implementation of changes to the 75% Rule.
- The remaining 5 percent of observed case mix change may simply reflect changes in the acute care hospital DRG case mix for patients subsequently admitted to IRFs and by the increase in complications and co-morbidities for those patients.

Our analyses have shown that the rationale for the 2.6 percent coding adjustment was based on flawed reasoning. We would recommend a “give back” of 2.6 percent of IRF payments for the IRF providers.

Given the controversy surrounding the coding adjustments, we would recommend the creation of a framework for determination of provider coding practices by policymakers. The creation of such a framework will allow the policymakers to differentiate between “code creep” and appropriate coding practices. Similar to the analysis conducted by Lewin, the analytical framework could potentially examine the following factors.

- Using a sample of prior hospitalization day (MedPAR) linked to IRF-PAI data, examine the differences in coding of impairment group and comorbidities between prior hospital stay and IRF stay.
- Analyze the DRG based CMI of cases discharged to short term acute care hospital cases discharged to IRFs over time.
- Consistently use the same case mix measurement of RAND CMI.
- Account for differences in case mix due to compliance with changes to the 75 percent rule. Our analyses indicate that the 75 percent rule has led to redistribution of cases at the RIC level. Each of the RICs have their inherent level of CMI. Changes to the CMI should be examined in the context of legislative compliance of 75 percent rule and patient severity of cases discharged from acute care hospital.



*The* LEWIN GROUP

# Implications of the 75% rule on IRF Volume Trends on Case Mix

*Prepared for:*

**HealthSouth Corporation**

*Prepared by:*

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Allen Dobson, Ph.D.**

*July 2, 2007*

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## I. PURPOSE

The Lewin Group was commissioned by HealthSouth Corporation to examine the issues related to the changes in the case mix index (CMI)<sup>1</sup> for inpatient rehabilitation facilities (IRFs) over time. Previously, The Lewin Group has authored two reports addressing the appropriateness of Centers for Medicare and Medicaid Services (CMS') 1.9 and 2.6 percent coding adjustment to the Medicare IRF standard payment amount for Federal Fiscal Years (FFY) 2006 and 2007 respectively. In the March 2007 Lewin report, we discussed a series of technical issues that are related to the appropriateness of these two "takebacks" and also offered suggestions for a more transparent analytical framework for assessing future trends in patient acuity as to "real" changes in IRF CMI.

In this report, we analyze how changes in the IRF CMI are linked to changes in the distribution of IRF cases across Rehabilitation Impairment Categories (RICs). Recent trends have shown substantial changes in the distribution of cases across RIC categories as a consequence of the 75 percent rule. Changes in the distribution of Medicare IRF cases associated with the 75 percent rule phase-in could potentially impact the CMI now and in the future. With the phase-in of higher compliance thresholds associated with the 75 percent rule, the IRF CMI could change even more. This would imply that future CMI changes as related to the 75 percent rule reflect real changes in patients' medical characteristics and should not be subjected to various "take back" policies. At minimum, CMS will need to determine how much of a given contemporaneous CMI change is associated with the changes in the patient population related to the 75 percent rule.

After presenting a summary of recent developments, the third section of the report provides a summary of the findings of the March 2007 Lewin report. The next section examines the trends in the distribution of IRF cases across RIC categories. In the fifth section, we examine the effect of the changes in the distribution of cases on CMI. In the concluding sections, we examine the changes in the real CMI relative to changes in the observed CMI and changes in the CMS IRF PPS payment.

## II. SUMMARY OF FINDINGS

- The estimated volume for 2006 at 412,000 discharges is approximately 19 percent less than the actual number of discharges for 2004 (510,000 IRF discharge). This decline in total IRF discharge volume is driven by industry responses to the 75 percent rule reflected in changes in IRF patient mix by type of service. In addition, the estimate of 412,000 discharges is 14 percent lower than the number of discharges in 2002 (477,000).
- The proportion of neurological rehabilitation cases increased since 2004 whereas the proportion of musculoskeletal rehabilitation cases has declined substantially. Despite the increased proportion of neurological cases, the absolute number of neurological rehabilitation cases has declined by more than 5 percent.
- Due to the high correlation between the RIC proportions and the changes to the 75 percent, the decline in the number of neurological cases has a "ripple" effect on the

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<sup>1</sup> The case mix index ( or the weight per discharge) is calculated as the CMG specific relative weight of the non- transfer cases divided by the number of discharges for the non-transfer cases. For the transfer cases, the relative weight is adjusted by the ratio of actual length of stay divided by the geometric mean length of stay.

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residual musculoskeletal cases. As IRFs comply with phase-in to the 75 percent rule, the volume of non-qualifying musculoskeletal cases will, by necessity, continue to be restrained by the volume of qualifying neurological cases.

- The recent increase in CMI can be largely attributed to the change in RIC/CMG distribution of cases as a result of changes to the 75 percent rule.
- Based on the redistribution of cases across RICs the overall CMI is expected to increase by at least 6 percentage points from 1.06 to 1.12 between 2007 and 2012.

### III. RECENT DEVELOPMENTS

Recently, CMS issued an information update<sup>2</sup> regarding the Medicare IRF PPS and changes to the 75 percent rule based on the most recent data available on the topic. Regarding the effect of the changes to the 75 percent rule on IRF utilization, the report indicates that IRF utilization declined by about 19 percent from 2004 to 2006. It notes that preliminary analyses of the 2007 data suggest that this decrease may be temporarily leveling off in 2007 as the result of a provision in the Deficit Reduction Act of 2005 maintaining the compliance threshold at 60 percent for an additional year. Should the compliance threshold increase to 65 percent in FFY 2008 and to 75 percent in FFY 2009 marked declines in the volume of IRF cases are expected to resume.

The CMS report asserts that since 2004, the number of stroke, brain injury, and nervous system patients increased while the volume of claims for lower extremity joint replacement, miscellaneous, cardiac, osteoarthritis and pain syndrome declined. In fact, data presented in Figures 2 and 4 of the report actually show the number of stroke, brain injury and nervous system IRF cases have remained relatively constant or might have even declined. A review of the Figures 2 and 4 in the CMS report indicates that the number of nervous system and brain RICs for 2004 was approximately 158,000 [31% (Figure 2) \* 510,000 (Figure 4) = 158,000] and for 2006 was approximately 156,000 [38% (Figure 2) \* 412,000 (Figure 4) = 156,000]. Data presented in Figure 8 of the CMS report also show that the number of ACH hospital discharges related to stroke has declined by 1.41 percent from 2000 to 2005.

The changes to the 75 percent rule mandate a decline in the lower extremity joint replacement cases. With no resultant increase in the nervous system and brain RIC cases, the overall volume of the IRF cases have declined substantially.

In the context of these changes to the IRF volume and distribution of cases, it is necessary to examine the changes to the CMI. The most recent CMS data on IRF volume are in line with previous Lewin projections; however, our interpretation of the data is that stroke and brain injury are on the decline generally, and this is reflected in the IRF population.

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<sup>2</sup> Centers for Medicare and Medicaid Services, "Inpatient Rehabilitation Facility PPS and the 75 Percent Rule," June 8, 2007.

#### IV. SUMMARY OF MARCH 2007 LEWIN REPORT

Previous Lewin analyses<sup>3</sup> indicate that 95 percent of the observed increase in CMI from 2002 to 2006 was related to underlying patient severity increases. We provided the following evidence in support of the contention that IRF real patient severity rose over the 2002 to 2006 timeframe.

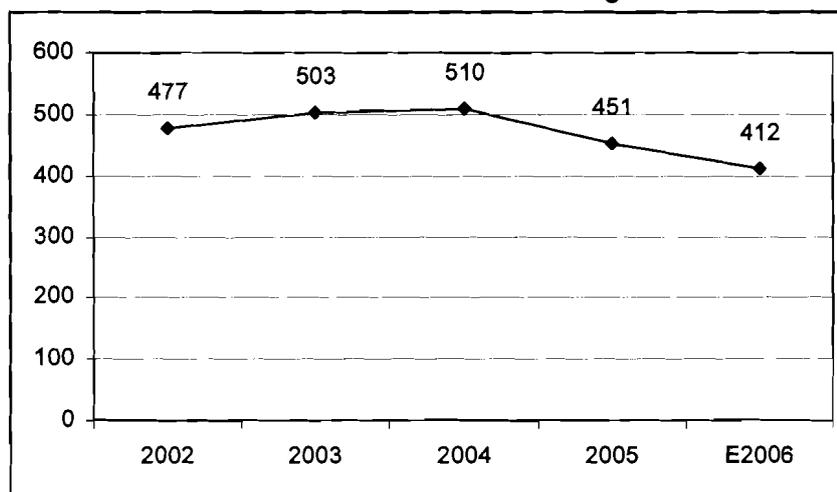
- 95 percent of the increase in CMI during this period can be attributed to the changes RIC distribution. This is particularly evident with changes to the 75 percent rule that took effect in July 2004.
- The CMI of the short term acute care hospital discharges to IRFs rose by 5 percent between 2002 and 2005.
- The proportion of short term acute care discharges to IRFs with complications and comorbidities increased by 4 percentage points between 2002 and 2005.

As the determination of “code creep” is highly complex, we had recommended the creation of an analytical framework based on the above concepts that would help the policymakers in differentiating between “code creep” and changes to CMI caused by changes in patient acuity.

#### III. TRENDS IN RIC DISTRIBUTION OF MEDICARE IRF CASES

Exhibit 1 presents the most recent CMS projections of IRF discharges. The expected volume for 2006 at 412,000 discharges is less than the actual number of discharges for 2002. This decline in total IRF discharge volume is driven by industry responses to the 75 percent rule reflected in changes in IRF patient mix by type of service.

Exhibit 1: Trends in IRF Discharges



Source: Figure 4, Centers for Medicare and Medicaid Services, “Inpatient Rehabilitation Facility PPS and the 75 Percent Rule,” June 8, 2007.

<sup>3</sup> Site reports.

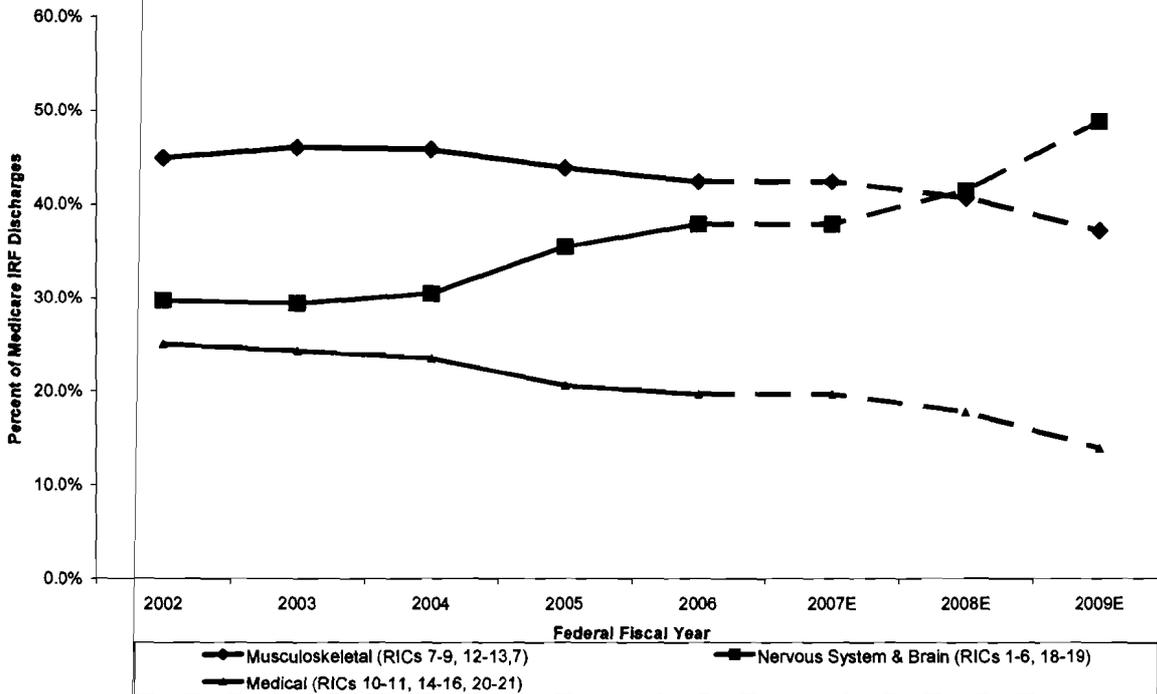
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In Exhibit 2, we provide historical and projected changes in IRF patient mix by type of service. Using the 2002 to 2005 IRF-PAI data merged with the IRF claims data for the corresponding years, we analyzed the distribution of IRF cases across all RIC categories. As evident from Exhibit 2, the phase-in of the 75 percent rule has had a substantial impact on the distribution of IRF cases across the RIC categories. The proportion of neurological rehabilitation cases increased since 2004 whereas the proportion of musculoskeletal rehabilitation cases has declined substantially. Despite the increased proportion of neurological cases, the absolute number of neurological rehabilitation cases has declined by more than 5 percent. Due to the high correlation between the RIC proportions and the changes to the 75 percent, the decline in the number of neurological cases has a "ripple" effect on the residual musculoskeletal cases. As IRFs comply with phase-in to the 75 percent rule, the volume of non-qualifying musculoskeletal cases will, by necessity, continue to be restrained by the volume of qualifying neurological cases.

Using these trends and assumptions regarding volume changes attributed to the 75 percent rule, we projected the number of IRF cases by RICs for 2007 through 2009. As shown in Exhibit 2, the proportion of stroke cases is expected to continue to increase whereas the proportion of musculoskeletal cases is expected to continue to decline. It is worth noting that between 2006 and 2007, the RIC distribution of cases does not change substantially due to the effect of the Deficit Reduction Act of 2005 which froze compliance threshold at 60 percent for 2006 and 2007. In order to comply with the changes with the higher compliance thresholds at 65 percent and 75 percent in 2008 and 2009 respectively, however, the relative proportion of non-qualifying musculoskeletal cases necessarily decline.

If, as recent trends of IRF volumes indicate, the absolute number of IRF cases with neurological conditions continue to be flat or even to decline, this will cause a further decline in the overall volume of IRF cases.

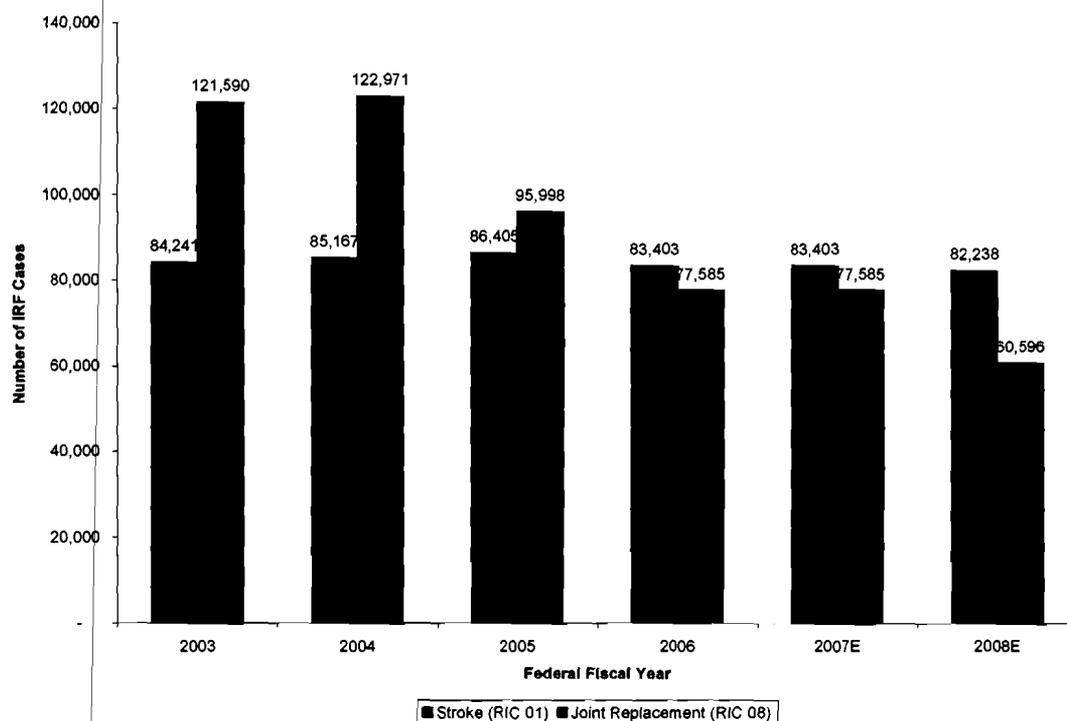
**Exhibit 2: Historical and Projected Changes in IRF Patient Mix by Type of Service**



Source: The Lewin Group analyses of 2002 to 2005 IRF PAI and IRF claims.

It is also important to note that as the proportion of cases assigned to each RIC vary their absolute number may not vary by the same degree or even in the same direction. As noted above, the number of qualifying neurological cases has been declining despite even as the proportion of neurological cases has increased. Exhibit 3 shows our estimates of case counts by RICs for stroke and joint replacements corresponding to the estimates of RIC distribution presented in Exhibit 2. Within this context, it is important to analyze the changes to the IRF CMI and the impact of the declining volume on cost per case. This analysis follows.

**Exhibit 3: Actual and Projected IRF cases for Stroke and Joint Replacement from 2002 to 2008**



Source: The Lewin Group analyses of 2002 to 2005 IRF PAI and IRF claims.

**IV. EFFECTS OF CHANGES IN THE RIC DISTRIBUTION OF CASES ON CASE MIX INDEX**

Section 1886(j)(2)(C)(ii) of the Balanced Budget Act of 1997 requires the Secretary to adjust the IRF standardized payment amount to eliminate the effect of coding or classification changes that do not reflect "real changes in case mix," to the extent that such changes affect aggregate payments under the classification system. This section's intent is to remove the payment effects of coding changes that affect payment but are not related to changes in patient severity (i.e. not "real"). Based on this section of the Act, CMS applied two consecutive adjustments of 1.9 percent and 2.6 percent to the standard payment amount for FY 2006 and FY 2007, respectively to account for changes in provider coding practices that could not be correlated to measurable changes in patient acuity.. The rationale for the coding adjustments was based on research conducted by RAND. The 1.9 percent coding adjustment to the standard payment amount in FY 2006 reflected the lower bound estimate provided by RAND in a 2004 report.<sup>4</sup> Subsequently, CMS applied a 2.6 percent coding adjustment for FY 2007. We have discussed the latter change in particular in our earlier reports.

<sup>4</sup> Grace M. Carter and Susan M. Paddock, "Preliminary Analyses of Changes in Coding and Case Mix Under the Inpatient Rehabilitation Facility Prospective Payment System," RAND Corporation., 2004.

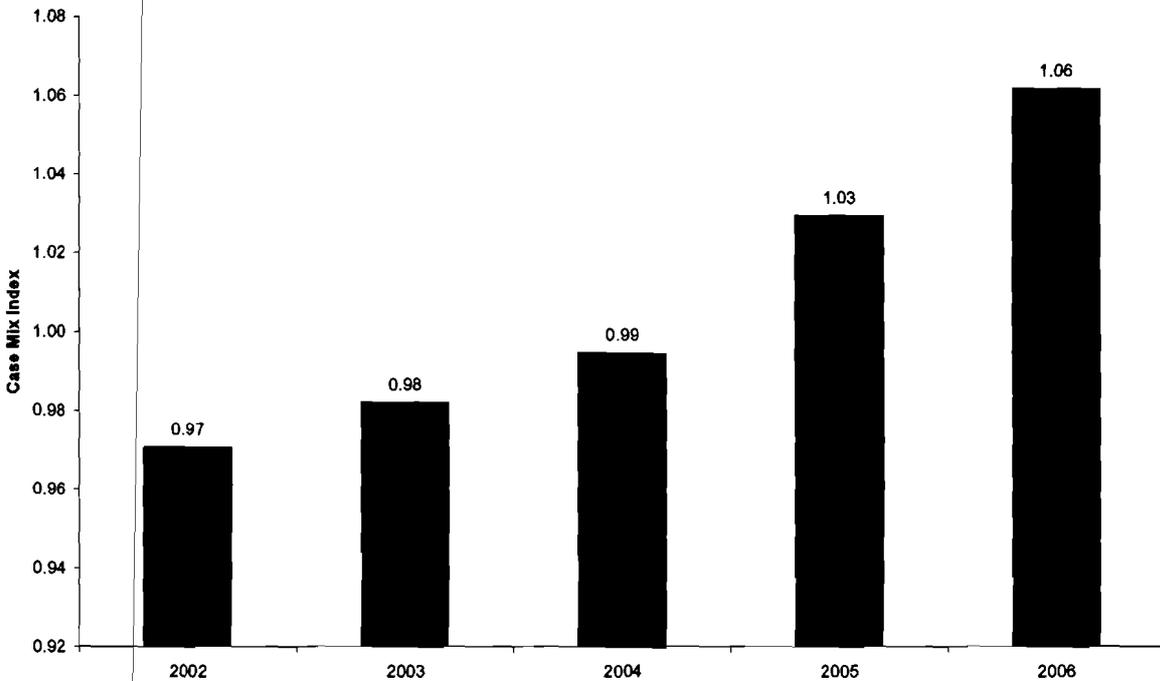
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Exhibit 4 shows the changes in the weight per discharge (WPD) from 2002 to 2006 using the 2006 Grouper. Using the 2005 IRF claims data, we calculated a WPD at the RIC level. The WPD increased substantially from one year to the next after enforcement of the 75 percent rule resumed in 2004. The increase in WPD is a consequence of the increase in the proportion of the neurological conditions. The patients categorized in these RICs are more resource intensive and have a greater relative weight. In the March 2007 Lewin report, we directly calculated what the CMI would have been in 2006 if the distribution of cases across tiers had not changed since 2002. That is, we calculated the CMI with the 2006 distribution of cases *across* CMGs but the 2002 distribution of cases *within* each CMG.

Using a linked file of IRF PAI data merged with IRF claims, we analyzed the trends in the distribution of IRF cases across RICs from 2002 to 2006. We also analyzed the RIC case distributions using the February 2007 Moran report. In addition to the historical trends, we have also modeled the changes in the RIC distribution due to the phase in to the 75 percent compliance threshold.

Our March 2007 report indicated that between 2002 and 2006, at least 95 percent of the increase in CMI reflects the impact of the redistribution of cases at the CMG level and less than 5 percent reflects the impact of tier changes. The enforcement of the 75 percent rule in 2004 limited the opportunity of IRFs to admit patients in RICs that generally had lower-than-average weights, and thus, IRF CMI increased. Even without the effect of the increase in tier comorbidities, we observe a sharp increase in CMI from 2004 to 2005 and 2006. This implies that the recent increase in CMI can be largely attributed to the change in RIC/CMG distribution of cases as a result of changes to the 75 percent rule.

**Exhibit 4: Changes to the Case Mix Index from 2002 to 2006**



Source: The Lewin Group analyses of 2002 to 2005 IRF PAI and IRF claims.

In this study, we also wanted to estimate the impact of the changes to the 75 percent rule on IRF CMI. Using the merged file of 2005 IRF claims and IRF PAI data, we calculated a CMI at the RIC level. The CMI at the RIC level reflects the resource intensity for patients in each RIC category. For instance, the patients categorized in RIC 01 (Stroke) reflect higher resource intensity with a CMI of 1.373 compared to patients in RIC 08 (lower extremity joint replacement) with CMI of 0.726. Based on the redistribution of cases across RICs the overall CMI (see bottom line) is expected to increase by at least 6 percentage points from 1.06 to 1.12 between 2007 and 2012. (See Exhibit 5 below).

**Exhibit 5: RIC Level CMI Trends, RIC Distributions and Projected Changes in Overall CMI from 2006 to 2009**

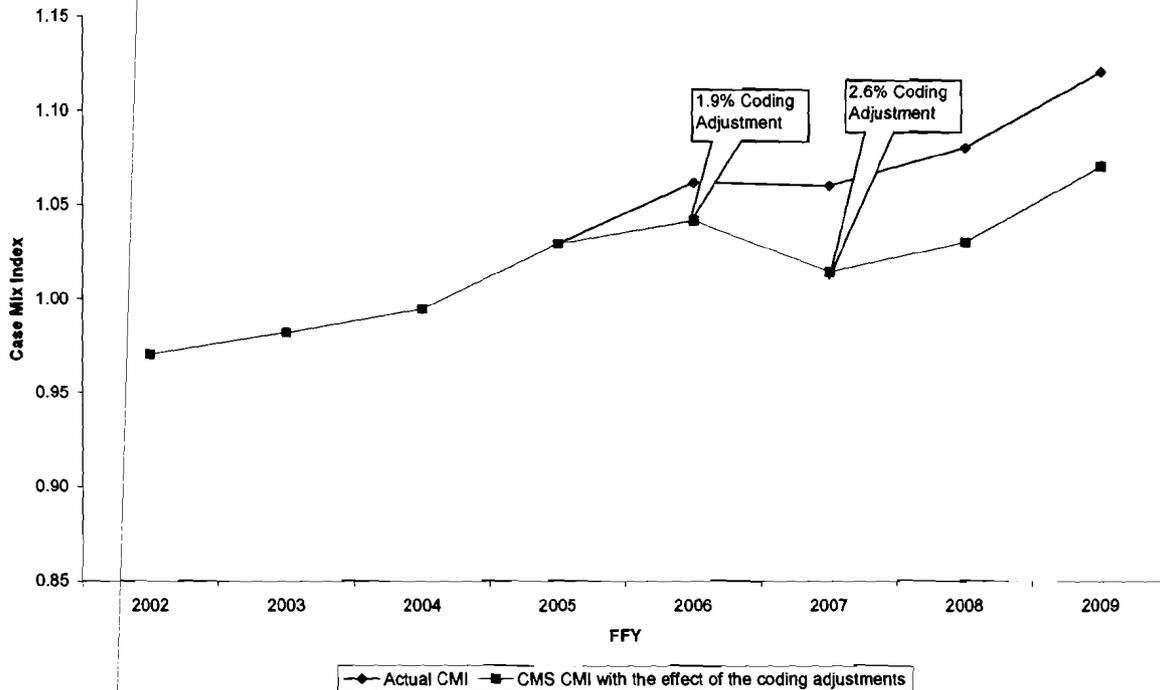
1	Stroke	1.373	20.2%	20.2%	22.2%	26.1%
2	Brain Dysfunction, Traumatic	1.375	2.4%	2.4%	2.6%	3.1%
3	Brain Dysfunction, Non-Traumatic	1.121	3.6%	3.6%	3.9%	4.6%
4	Spinal Cord Dysfunction, Traumatic	1.537	0.7%	0.7%	0.8%	0.9%
5	Spinal Cord Dysfunction, Non-Traumatic	1.214	3.9%	3.9%	4.3%	5.0%
6	Neurological Conditions	1.048	6.6%	6.6%	7.2%	8.5%
7	Lower Extremity Fracture	1.050	15.6%	15.6%	17.1%	20.2%
8	Lower Extremity Joint Replacement	0.726	18.8%	18.8%	16.3%	11.3%
9	Other Orthopedic	0.941	5.2%	5.2%	4.5%	3.1%
10	Amputation, Lower Extremity	1.189	3.0%	3.0%	3.2%	3.8%
11	Amputation, Non-Lower Extremity	1.064	0.1%	0.1%	0.2%	0.2%
12	Osteoarthritis	0.946	0.8%	0.8%	0.7%	0.5%
13	Rheumatoid and other arthritis	0.978	0.7%	0.7%	0.6%	0.4%
14	Cardiac	0.905	3.9%	3.9%	3.4%	2.3%
15	Pulmonary	1.015	1.4%	1.4%	1.2%	0.8%
16	Pain Syndrome	0.852	1.4%	1.4%	1.2%	0.8%
17	MMT without Brain/Spinal Cord Injury	1.196	1.3%	1.3%	1.5%	1.7%
18	MMT with Brain/Spinal Cord Injury	1.648	0.3%	0.3%	0.3%	0.4%
19	Guillan-Barre	1.706	0.2%	0.2%	0.2%	0.2%
20	Miscellaneous	0.988	9.9%	9.9%	8.6%	5.9%
21	Burns	1.475	0.1%	0.1%	0.1%	0.1%

Source: The Lewin Group analysis of 2002 to 2005 IRF PAI and IRF Claims.

**V. DIFFERENCES IN ACTUAL CMI AND PAYMENT CMI**

As mentioned before, CMS applied a 1.9 percent and 2.6 percent coding adjustment for FY 2006 and FY 2007, respectively. Although the rationale for 1.9 percent coding adjustment was to retrospectively adjust for improved coding practices of the providers after the implementation of IRF PPS in 2002, the rationale for the 2.6 percent coding adjustment in FY 2007 was based on current provider coding practices. The implementation of the 1.9 percent and 2.6 coding adjustments reduced the payment for the providers by a cumulative 4.5 percent. Exhibit 6 shows that the widening gap between the actual CMI and the CMI based upon which CMS pays as a consequence of coding adjustments. By FY 2009, the gap between the actual CMI and the payment CMI widens to almost 5 percentage points. The movement of the adjusted CMI between 2005 and 2007 is particularly instructive as the adjusted 2007 CMI is less than the actual 2005 CMI; suggesting an absolute decrease in CMI over this time period which is implausible given the 75 percent rule phase-in.

**Exhibit 6: Comparison of Actual CMI with CMI after Coding Adjustments**



**VI. EFFECT OF MEDICARE CMI ON THE COST PER CASE**

In its March 2007 Report to the Congress, Medicare Payment Advisory Commission (MedPAC) presents its findings on the impact of the revised 75 percent rule on the financial performance of IRFs. MedPAC expects the cost per case to rise in 2008 as IRFs spread total costs (fixed costs in particular) over fewer patients. MedPAC assumes that the volume of cases will drop by an additional 20 percent and that IRFs will be able to eliminate some additional patient care costs for these cases but will be unable to eliminate all overhead costs for them. In other words, MedPAC projects that costs per case will rise as IRFs spread total costs over fewer patients. It estimated that this will cause Medicare margins to drop from 13 percent in 2005 to 2.7 percent in 2007.

It is reasonable to assume that Medicare margins will continue to decline in FY 2008 and 2009 as higher compliance thresholds are phased-in for the 75% Rule.

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## VII. CONCLUSIONS

In this study, we have discussed a number of technical issues related to changes in the IRF CMI associated with the phase-in of the 75 percent rule. The recent CMS memo provides new information regarding decreases in IRF utilization between 2004 and 2005. These decreases are more reflective of previous Lewin work and Moran industry reports that indicate that IRF utilization has fallen dramatically in light of changes to the 75 percent rule. Although the neurological RICs have increased proportionally, utilization of these cases has fallen in absolute terms. In addition, the overall distribution of IRF discharges among RICs has changed significantly. These observations have profound implications on the future of IRF CMI and the cost per case. While maintaining the 60 percent threshold for an additional year pursuant to the Deficit Reduction Act is slowing these trends for IRF SMI and cost per case, both of these trends can be expected to resume if compliance thresholds under the 75 percent rule increased to 65 percent and 75 percent and will drive further increases in the IRF CMI.