



---

Chapter Title: INTRODUCTION

Book Title: Analyses for the Initial Implementation of the Inpatient Rehabilitation Facility Prospective Payment System

Book Author(s): Grace M. Carter, Melinda Beeuwkes Buntin, Orla Hayden, Jennifer Kawata, Susan M. Paddock, Daniel A. Relles, Gregory K. Ridgeway, Mark E. Totten and Barbara O. Wynn

Published by: RAND Corporation

Stable URL: <http://www.jstor.com/stable/10.7249/mr1500cms.9>

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



This content is licensed under a RAND Corporation License. To view a copy of this license, visit <https://www.rand.org/pubs/permissions.html>.



JSTOR

RAND Corporation is collaborating with JSTOR to digitize, preserve and extend access to *Analyses for the Initial Implementation of the Inpatient Rehabilitation Facility Prospective Payment System*

## 1. INTRODUCTION

### BACKGROUND

In the Balanced Budget Act of 1997, Congress mandated that the Health Care Financing Administration (HCFA) implement a Prospective Payment System (PPS) for inpatient rehabilitation under Medicare. This new PPS was implemented beginning on January 1, 2002. The Centers for Medicare and Medicaid Services (CMS, the successor agency to HCFA) issued the final rule governing the PPS on August 7, 2001. This report describes the research that RAND performed to support HCFA's efforts to design, develop, and implement this PPS. It presents recommendations concerning the payment system and discusses our plans for further research on the monitoring and refinement of the PPS.

The initial design of the system was first presented in a Notice of Proposed Rule Making (NPRM) (HCFA, 2000). Our interim report, Carter et al. (2000), presented analyses that HCFA used to help make its decisions in the NPRM. In this report, we update these analyses using later data. We also improve the analysis and our recommendations to HCFA by taking into account comments made by our Technical Expert Panel in its review of our interim report. This is a report of research. The final decisions made by CMS and the rationale for those decisions may be found in the rule governing the IRF PPS (CMS, 2001).

The new PPS applies to rehabilitation hospitals and to distinct rehabilitation units of acute care hospitals, which are excluded from the acute care PPS. To qualify for such exclusion, rehabilitation facilities must meet two conditions. First, Medicare patients must receive intensive therapy (generally at least three hours per day). Second, 75 percent of each facility's patients must have one of 10 specified problems related to neurological or musculoskeletal disorders or burns. We call this PPS the Inpatient Rehabilitation Facility PPS, or IRF PPS.

### Need to Improve Payment

Payment for inpatient care of Medicare beneficiaries in a rehabilitation facility was--and for many facilities still is, in whole

or in part--made under the Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982. The payment amount depends on a per-case target amount that is calculated from historical costs at the facility trended forward and on the hospital's actual cost per case. Under TEFRA, there is no adjustment for changes in a hospital's case mix, and new hospitals were able to obtain larger payments than existing hospitals by spending more on care during their base years. The Balanced Budget Act of 1997 (BBA) introduced interim changes to the payment system designed to reduce HCFA's costs and to mitigate the advantage that new hospitals had under the TEFRA payment system. In particular, limits were set on the payment rate for new hospitals, separate maximum payment limits for all hospitals were created, and future update rates were greater for hospitals whose costs exceeded payments. In addition, hospitals that were receiving Medicare payments prior to FY 1990 were allowed to request rebasing of their target amounts.

Technological changes in the process of care, greater availability of post-acute care, and financial incentives for acute care hospitals to release patients quickly combined to cause rapid growth in Medicare payments for all forms of post-acute care, including rehabilitation. The number of Medicare beneficiaries served by skilled nursing facilities (SNFs) grew by 94 percent from 1990 to 1995, the number served by home health agencies (HHAs) grew by 78 percent, and the number of Medicare discharges from rehabilitation facilities grew by 67 percent (MedPAC, 1998, Charts 4-3, 4-8, and 4-17). Acute care hospitals, paid under the acute PPS, found it advantageous to transfer patients to a different setting as soon as possible. Probably affected by both PPS and TEFRA incentives, the number of rehabilitation hospitals and units increased 4.1 percent annually from 1990 to 1997 (MedPAC, 1998). By FY 1997, 25.3 percent of acute care PPS discharges used post-acute care within one day of discharge and 2.9 percent went to a rehabilitation facility (MedPAC, 2001).

Although rehabilitation facility payments from Medicare were substantially less than costs in the early 1990s, the ratio of aggregate Medicare payments to cost increased rapidly during the decade. By 1995, payments exceeded costs by 7 percent in freestanding rehabilitation hospitals and by 4 percent in rehabilitation units (MedPAC, 1998, Chart

4.17). This improved position was driven, at least in part, by reduced costs associated with a decline in length of stay (LOS) for rehabilitation patients.

In addition to TEFRA's inability to control Medicare expenditures, it also may hinder access to care. The lack of a case mix adjustment in TEFRA creates incentives for providers to specialize in relatively less-expensive cases, which could conceivably limit beneficiary access. Further, TEFRA lacks outlier payments, which help to mitigate the acute PPS's incentives to underserve the most expensive patients and that provide substantial protection to providers against financial risk (Keeler, Carter, and Trude, 1988). Additional distortion of case-level payments occurs when TEFRA counts discharges that do not include a full course of rehabilitation (e.g., short stays for evaluation, transfer cases) as full cases. These distortions may have both quality and cost control implications.

TEFRA was widely perceived to be unfair to older hospitals. Until the Balanced Budget Act of 1997, newer hospitals were not subject to the same incentives for efficiency, and indeed were rewarded for incurring higher costs in their base year(s).

#### **Research Enabling an IRF PPS**

One of the reasons for the initial exclusion of rehabilitation hospitals from the PPS was that Diagnosis-Related Groups (DRGs) could not predict resource use at these facilities very well. Functional status, measured by activities of daily living and mobility, is more correlated with patient charges than are diagnoses (Hosek et al., 1986). Because restoring functional status is the goal of rehabilitation, functional status at admission is one of the primary determinants of resource use.

In the early 1990s, Margaret Stineman and colleagues developed Function Related Groups (FRGs) based on the Functional Independence Measure (FIM) and on a clinically derived set of rehabilitation impairment categories (RICs). The FIM is an 18-item measure covering six domains: self-care, sphincter control, mobility, locomotion, communication, and social cognition (Stineman, Hamilton, et al., 1994).

The response to each item on the FIM ranges from 1 (least independent) to 7 (most independent).

Carter, Relles, and Buchanan (1997) evaluated the FIM-FRGs and found that they use the correct organizing concepts for a rehabilitation patient classification system: impairment groups subdivided by functional status and age. The study found further that FIM-FRGs are good predictors of resource use. The analysis suggested that the FIM-FRGs could be a suitable basis for a rehabilitation PPS, but that certain modifications would produce even better groups for payment purposes. In particular, the authors advised using a multiplicative factor to account for the extra costs associated with patients who have at least one of a selected set of comorbidities. They also expanded the FRG set to 82 FRGs. In expanding the number of FRGs, they changed the algorithm to reduce the number of categories that it would produce. Carter, Buchanan, et al. (1997) described the construction of a model of a rehabilitation PPS based on these expanded FRGs and comorbidity weights. They examined the major elements of such a system: case weights, payment arrangements for unusual cases such as transfers and outliers, hospital-level payment adjustments, and a monitoring system. They examined alternative forms of several of these payment elements in payment simulations. They concluded that a PPS based on the FIM-FRGs is feasible and could achieve several goals. They judged that it would

- provide hospitals with incentives for efficiency because they can keep payments in excess of costs;
- promote access for all Medicare beneficiaries to high-quality and appropriate care because the system pays appropriately for clinical or demographic sub-groups;
- be fair to hospitals because it
  - distributes Medicare payments according to patient characteristics modified by input prices and
  - covers costs at all groups of hospitals except those that probably had high costs because their payments were especially high under the payment system in use at that time.

#### **ASSESSMENT INSTRUMENT FOR THE IRF PPS**

The assessment instrument used to determine case classification for payment under the IRF PPS is called the Inpatient Rehabilitation

Facility Patient Assessment Instrument (IRF PAI). It includes the 18 functional items that are part of the FIM instrument. Each item is an assessment of how independently the patient can accomplish 18 simple activities: six self-care items (eating, grooming, bathing, dressing upper body, dressing lower body, and toileting), two sphincter control items (bowel and bladder), five items on transfer and locomotion (transfers to and from bed/chair/wheelchair, toilet, tub/shower, locomotion by walking or wheelchair, and stairs), and five items on communication and cognition (comprehension, expression, social interaction, problem solving, and memory). The IRF PAI also asks for the primary reason for admission to the rehabilitation program.

In the NPRM, HCFA had proposed using a new instrument called the Minimum Data Set--Post-Acute Care, or MDS-PAC. This instrument was developed with the intent that it be used for all post-acute settings, although it differed substantially from any instrument actually in use in other settings. The decision to create a new assessment instrument that would include the FIM was made after a study by Buchanan et al. (forthcoming) showed that the MDS-PAC could not be used to reliably assign the case mix groups (CMGs) defined in the NPRM. The study also showed that the administrative burden of the MDS-PAC was significantly greater than that for the FIM. It took an average of 147 minutes for the hospital staff to fill out the MDS-PAC compared to only 25 minutes for the FIM.<sup>1</sup>

The Buchanan et al. study also showed that many individual FIM items were less reliable than one would want in a payment instrument. The FIM itself is more complex than the 18 items appear to be from the survey instrument. For example, to answer the bladder control item, one must first answer two related questions; the minimum of the two responses is then used. In order to improve the reliability of the FIM items, the new IRF PAI asks hospitals to record each of the FIM sub-items. Another way that the IRF PAI questions differ from the FIM is that they ascertain whether or not the activity being rated was actually

---

<sup>1</sup> Since all hospital teams routinely use the FIM, some of the discrepancy in time is likely due to start-up effects. Nevertheless, it is almost certain that the MDS-PAC would take much longer than the FIM to fill out even after familiarity has been achieved.

observed. The FIM instructions are to record "least independent" when an item's activity is not observed. The new format should improve the comparability of information across hospitals.

#### **PAYMENT UNDER THE IRF PPS**

The unit of payment in the IRF PPS is a Medicare-covered hospital stay, beginning with admission to the rehabilitation hospital or unit and ending with discharge from that facility. Inpatient rehabilitation is inherently episodic: Episodes typically begin with a clinical event leading to acute care, and the majority end with a return to independent living in the community. Indeed, return to the community is the stated goal of the inpatient rehabilitation process. The Balanced Budget Refinement Act of 1999 (BBRA) mandated that discharges be the unit of payment.

The IRF PPS is used for payment of discharges that occur after the start of the facility's cost reporting period that begins on or after January 1, 2002. The hospital's payment rate is a blend of two-thirds of the national IRF PPS payment and one-third of its TEFRA payment, although each facility can opt to be paid at 100 percent of the PPS rate instead of the blend. A fully national prospective payment will be used for all cost report periods beginning in FY 2003. The following formula describes the calculation of the IRF PPS payment for each case.

Each case is classified into a case mix group. Almost all CMGs are based on impairment, functional status as measured by items from the FIM, and comorbidities. Additional groups were constructed for deaths and atypical short-stay cases whose resource use is not well described by these characteristics. The CMGs are assigned based on information in the IRF PAI.

The IRF PPS payment for a discharge in hospital  $i$  in CMG  $k$  is given by

$$F = R * A_i * W_k ,$$

where  $R$  is the national conversion factor,  $A_i$  is the facility payment adjustment, and  $W_k$  is the CMG relative weight. In FY 2002,  $R$  was chosen to meet the statutory budget neutrality constraint that payment under the new PPS equal what payment would have been under TEFRA, as estimated by CMS's Office of the Actuary (OACT).

This payment may be increased by outlier payments. Also, short-stay transfer cases receive a payment for each day in the hospital plus a case-level payment equal to one-half of one day's payment.

## OVERVIEW OF THE REPORT

### Approach

We examined a variety of options for the elements of the IRF PPS, such as the classification system and the facility payment adjustment, and we analyzed the distribution of funds under each payment option. The criteria for the design and development of the IRF PPS are similar to those used in Carter, Buchanan, et al. (1997). To insure access to quality care for all Medicare patients, the system must identify groups of patients who need different levels of resources and then pay for each group in proportion to cost. The system should be fair to hospitals by paying for costs that are outside the control of hospital administrators, such as area wage levels or a population that is disproportionately poor. The payment system must also allow CMS to control its budget for post-acute care. It must provide incentives for hospitals to provide quality care and limit incentives for "gaming the system."

In order to meet these criteria, all major system parameters are based on data on rehabilitation facilities' case mix and cost. We began our work using only 1996 and 1997 data and made recommendations to HCFA for its use in developing the NPRM. These analyses and recommendations are recorded in our interim report (Carter et al., 2000). That report was reviewed by a Technical Expert Panel (TEP), which made several very helpful suggestions for improving the research. In response to suggestions from CMS based in part on public comment on the NPRM and from our TEP, we extended our research and updated it to include data from CY 1998 and CY 1999.

The research leading to the implementation of the system in FY 2002 is the first phase of our work. CMS is committed to developing a system to monitor the IRF PPS, update parameters, and refine the IRF PPS to better meet its goals. The second phase of our work will be to help CMS with these steps.



The design and development of the IRF PPS reported here were based on a merged file of discharge abstracts from HCFA (the Medicare Provider Analysis and Review [MEDPAR] file) and abstracts containing FIM data from the Uniform Data System for medical rehabilitation (UDSmr), Caredata.com, and HealthSouth. The data describe discharges in calendar years 1996 through 1999 and are further discussed in Section 2. That section also describes our major derived variables, the completeness and representativeness of the data files, and the methods used in our payment simulations.

### **Payment System Elements**

We considered options for the IRF PPS that were based on varying each of the elements of the payment system. Options for the major divisions of the classification system for typical cases are discussed in Section 3. Section 4 discusses subdividing case classes by comorbidities. Section 5 discusses the unusual cases that were not used in developing the main classification system. It examines their costs and discusses options for appropriate payments.

The PPS payment accounts for patient-level variation in need for rehabilitation resources as measured by weights assigned to each CMG. Options for the method used to calculate these weights are discussed in Section 6. Payments are further adjusted based on hospital characteristics that affect costs. Options for hospital adjustment factors are discussed in Section 7.

We used simulations to examine how the payment system elements fit together in a single payment system and to evaluate the likely outcome of the integrated payment system. Simulations were also used to evaluate options for hospital adjustment factors; these simulations are discussed in Section 7. Section 8 describes simulations that update our interim report findings on outlier policy. Section 9 discusses the statistical estimates of hospital case mix used to help calculate the national conversion factor. That section also describes the data used for the impact analyses published in the final rule (CMS, 2001).

Section 10 discusses our future work on monitoring. Future work on refinement of individual payment elements is discussed within Sections 3 through 7.