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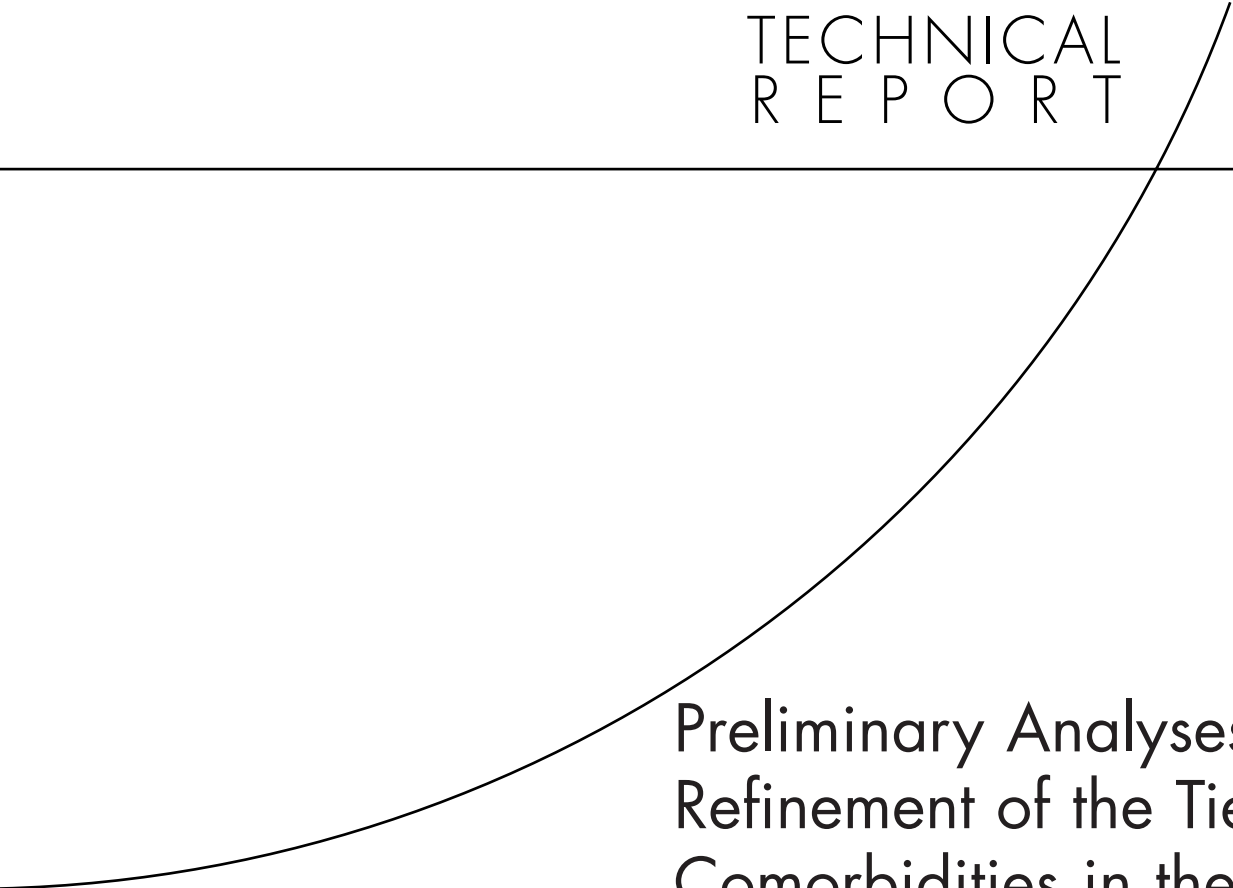
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TECHNICAL REPORT



Preliminary Analyses for Refinement of the Tier Comorbidities in the Inpatient Rehabilitation Facility Prospective Payment System

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Supported by the Centers for Medicare and Medicaid Services

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Summary

In 2002, Medicare phased in the implementation of a prospective payment system (PPS) for inpatient rehabilitation facilities (IRFs). This PPS included a way of addressing the added costs of treating patients with certain comorbidities. These comorbidity costs were included using a grouping, or tier, system that ranked comorbidities in three tiers—the first tier is the most expensive to treat and the third the least expensive—while a fourth grouping included conditions that did not affect cost.

These tiers and the conditions assigned to them were based on analyses conducted by RAND with clinical input from our Technical Expert Panel (TEP) and policy decisions by CMS. The tiers consist only of conditions that were correlated with higher costs in the 1998–1999 data used to design the IRF PPS and that our clinical consultants believed actually cause increased costs. The TEP is composed of medical practitioners and administrators

Along with our TEP, we have reviewed the tier conditions and the assignment of specific conditions to tiers. The purpose of the review is to develop refinements to better align payment schedules for comorbidities with treatment costs.

Our analysis had two specific objectives:

1. to determine what changes in the definitions of tiers and the conditions assigned to each would better predict treatment costs
2. to understand changes in the frequency of occurrence of coded conditions and assess how well the tier system functions as part of the PPS.

We examined the relationship between comorbidities and marginal cost and the frequency with which individual comorbidities were assigned to IRF patients. We used data from the first year when almost all hospitals were fully paid under the PPS (FY 2003). This data should be more representative of future IRF PPS cases than the 1998–1999 data.

Tier Refinement

With respect to the first study objective, the analysis found problems with some of the tier comorbidities. We found that five conditions containing a total of 11 diagnoses (miscellaneous throat conditions, esophageal conditions, ventilator status, cachexia, and amputation) and seven individual codes within other conditions (including two of the four malnutrition codes) were no longer positively related to treatment cost after controlling for Case Mix Group (CMG). Altogether, 1.6 percent of FY 2003 cases received a tier payment that was not justified by a higher cost for its diagnoses.

Another problem with the existing tiers is that costs for several conditions would be more accurately predicted if their tier assignments were changed. Dialysis patients cost substantially more than they are currently paid and should be moved into the highest paid tiers. A full 4 percent of FY 2003 cases should be moved down to tiers with lower payment.

We also explored the effect of frequently found diagnoses that are not currently part of the tiers but that might be suitable for a tier. We found three diagnoses that we believe should be added to the tier list.

In the body of the report we provide specific recommendations for each of these changes including diagnoses codes and tier assignments.

In addition to the changes to the tier that we are able to recommend, we found that a few other conditions are correlated with higher costs. One set of conditions contains depression and other affective disorders. We agree with our TEP that it would be inappropriate to include the ICD-9-CM codes for depression or other affective disorders in the tier system. We urge CMS to include a valid, reliable scale that identifies patients with depression and is suitable for use in an inpatient rehabilitation setting into the next revision of the IRF PAI and to provide additional payments for the care of depressed patients as soon as practical.

In developing the PPS, patients with osteomyelitis, thrombophlebitis, skin ulcers, and urinary tract infections were found to have higher costs. These were not added to the tier system because at least some of these cases might be preventable and CMS (and many of our TEP) did not want to reward bad care. We show here that cases with these conditions remain more costly in 2003. Further we were able to use the IRF PAI data to show that those patients who are said to have the condition at admission are also more costly. These differences are large enough to raise access concerns. Consequently, we urge CMS to consider providing additional payments for these patients. However, there are some problems with the current IRF PAI collection of this data. It would be best if the next revision of the IRF PAI simplified the collection of complication and comorbidity data in a way that improved the reliability of information on whether the conditions were present during the admission assessment.

Tier Assessment

There was a substantial increase (52 percent) in the frequency of tier comorbidity codes between the 1998–1999 data and the 2002 data. The increase was greatest in Tier 1.

The explanation for the changes in the estimated marginal effects of the tier conditions from 1999 to 2003 probably is a mixture of three factors: (1) problems with the data in 1999, (2) poor choices for some of the diagnosis codes included in the tiers, and (3) coding problems in FY 2003.

A few of the codes in the tier list describe conditions that turned out to be too nonspecific to be appropriate for a tier. The original tier diagnoses lists were examined carefully to eliminate such codes. Although many were deleted, a few managed to get through. A case in point may be nutritional marasmus, which we heard anecdotally was applied to any nonspecific indication of malnutrition in the medical record. Cachexia and some of the not otherwise specified codes are possibly other such codes (see Chapter Three).

The increase in the frequency of condition codes along with the decline in the marginal cost of some conditions causes concern that overcoding may be diminishing the effect of

these conditions in our analyses. We examined the extent of concentration of diagnoses and conditions that substantially decreased in marginal cost between 1999 and 2003. Only the malnutrition codes are highly concentrated within providers. These diagnoses may indeed have been affected by upcoding.

None of the other diagnoses were concentrated or occurred more than a handful of times at any individual provider. Thus, the decline in the marginal cost of these cases is not influenced by upcoding at a small number of hospitals and is not influenced by consistent upcoding anywhere.

Despite possible remaining and undetected problems with coding, the tier system remains an important means for matching payments to costs. The percent by which the cost of a case with a tier diagnosis exceeds the cost of a case in the same CMG with no tier condition is substantial. Tier 1 is typically 42 percent; Tier 2, 21 percent; and Tier 3, 9 percent. Because the tier system continues to play an important role in matching payments to costs, it helps insure access to IRF care and provide fair payments to hospitals.

The tier system requires a reasonable amount of revision in response to coding changes found during FY 2003. On balance, however, we judge the performance of the tier system to be acceptably stable, especially in the face of the large change in coding (or case mix). We expect that the rate of change in the coding of tiers will greatly decline over time. If not, it will require a reexamination of the costs and benefits of the tier system.