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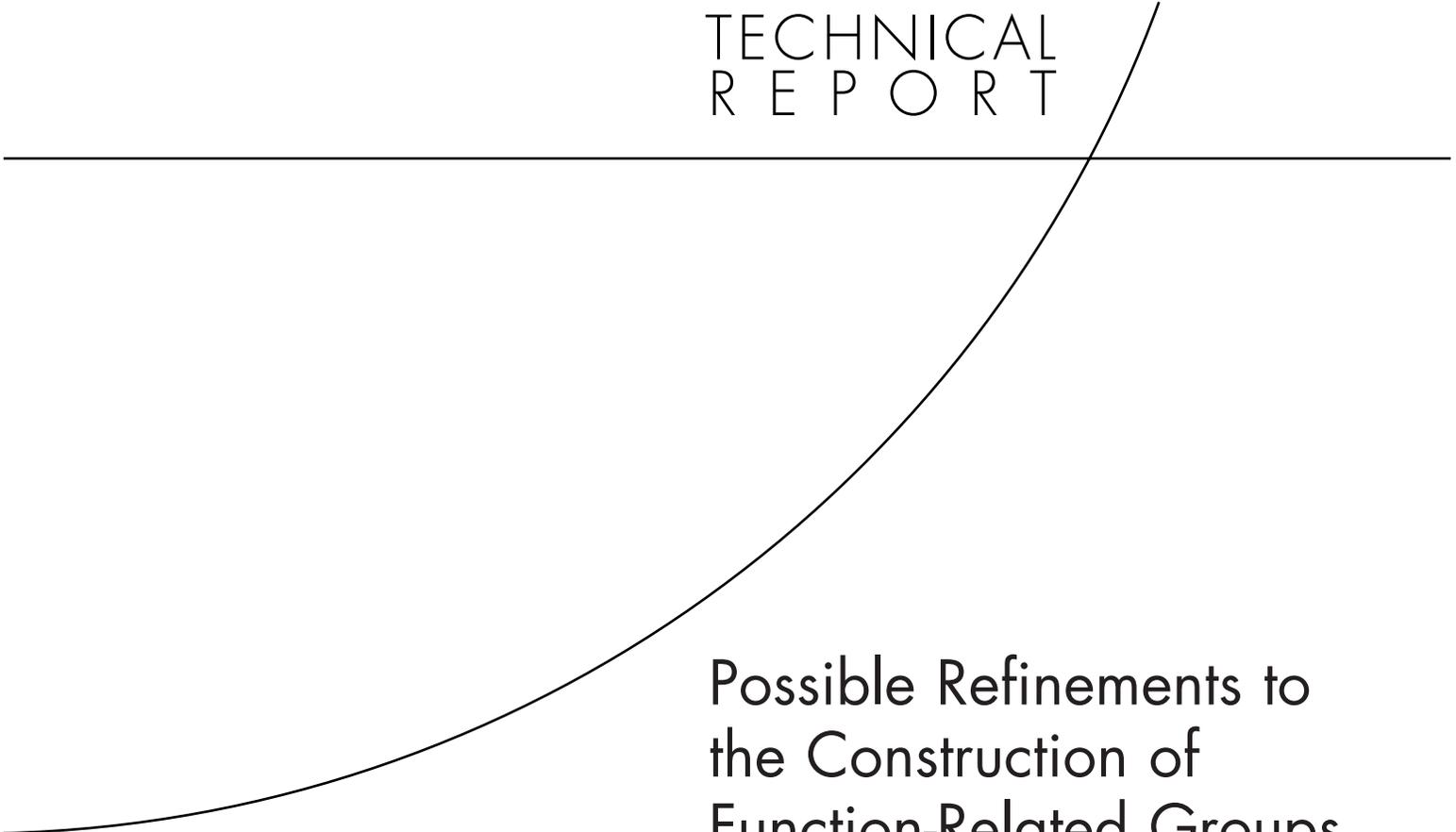
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TECHNICAL  
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Possible Refinements to  
the Construction of  
Function-Related Groups  
for the Inpatient  
Rehabilitation Facility  
Prospective Payment  
System

Daniel A. Relles, Gregory K. Ridgeway,  
Grace M. Carter, Melinda Beeuwkes Buntin

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1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138  
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## Executive Summary

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### Purpose and Approach

In 2002, Medicare implemented a prospective payment system (PPS) for inpatient rehabilitation facilities (IRFs). The PPS works by assigning patients to groups according to how well patients function. These groups, called function-related groups (FRGs), are then used to predict the cost of treating particular Medicare patients according to their ability to function in four general categories: transfers, sphincter control, self-care (e.g., grooming, eating), and locomotion. Patient functioning is measured according to 18 categories of activity—13 motor tasks, such as climbing stairs, and 5 cognitive tasks, such as recall.

As part of a contract to monitor how accurately the IRF PPS is predicting treatment costs, the Center for Medicare and Medicaid Services (CMS) asked RAND to examine possible refinements to the FRGs to identify potential improvements in the alignment between Medicare payments and actual hospital costs. Several developments make it likely that significant refinements can be made.

- When the IRF PPS was implemented in 2002, a new recording instrument was used to collect patient data. Known as the IRF Patient Assessment Instrument (or IRF PAI), the new instrument contained questions that improved the quality of the information available to us.
- We also have more recent data on a larger patient population: Instead of 1999 data on rehabilitation patients from just a sample of hospitals, we now have 2002 data that describe the entire universe of rehabilitation patients.
- We have implemented improvements in the algorithms that produced the initial FRGs, which should improve prediction of treatment costs.
- In addition, two years have passed since the initial FRGs were created, and changes in the cost structure of IRFs have occurred.

Our analysis had two specific objectives: (1) to explore whether the new data enable better prediction of treatment costs and (2) to assess possible refinements to the FRGs based on the new data.

To address the first objective, we performed two tasks to examine the new items from the data set, on IRF patient functioning and costs. Specifically, we reexamined assumptions about whether particular indicators that an activity was not observed, or “missing,” indicated

a lack of functioning or simply absent data. We also looked at the usefulness of some new indicators in the IRF PAI data for predicting costs.

To address the second objective, we also performed two tasks: First, we considered whether alternative indices that included weighting for patient functioning might predict costs more accurately; second, we ran the algorithm used in 1999 to derive FRGs with the new IRF PAI data to see whether the FRGs would look substantially different.

## Key Findings

**Missing indicators.** The earlier data did not make a distinction between patient dependence on others in performing some function and a missing report about that function. In effect, the earlier data assumed that no report about a particular function meant that patients were unable to perform it. The new IRF PAI data allowed us to revisit this assumption. We found that, for most activities, this assumption held true. However, for two particular activities—“transfer to toilet” and “transfer to tub”—it did not. A lack of data on these activities should be interpreted less strongly than for the other missing indicators. We flag this issue for future consideration in payment adjustment.

**Importance of “function modifiers.”** Another set of variables contained in the IRF PAI data are “function modifiers,” which provide more-nuanced information about patient functioning than do the basic measures (the so-called functional independence measurements, or FIM™ items). For example, one such modifier is distance walked, which adds information to the basic FIM™ category “walking.”

We found that this type of additional information was useful in predicting costs for two conditions: bowel or bowel incontinence (proxied by a question eliciting “frequency of accidents,” not further defined). Incontinent patients cost more, although we could not determine the degree to which high-frequency or low-frequency incontinence made an additional difference.

We also found that one of the function modifiers—distance walked—might actually be a better FIM™ category than simply “walking.” We think it is worth considering whether the FIM™ measurement could be improved so that its explanatory power is at least that of distance walked.

**Indices and weighting.** Currently, there are two summary measures that capture the two dimensions of the FIM™ measures: One summarizes motor functioning; the other summarizes cognitive function. In these indices, the different measures are weighted equally. We wanted to explore whether assigning weights to the measures would help improve prediction of treatment costs. Our results suggested that we might expect some improvement in explanatory power by using a motor index that does not equally weight all components.

**Refinements to the FRGs.** We reran the algorithm that produced the 1999 FRGs, but using the 2002 data. We found that the 2002 runs produced many fewer payment groups across the various conditions—83, versus 95 before—so the payment groups look somewhat different. The main differences were in stroke, which had 14 groups before but only 8 now. For most of the conditions, costs are driven simply by motor score. The exceptions are stroke and traumatic spinal cord injury, for which younger people cost more, perhaps because they can take more therapy and the discharge goals are set higher. In

traumatic brain injuries, low cognitive scores translate into higher costs among those with higher motor function.

In summary, our analysis identified several potential areas of refinement for the payment system, assuming the analysis effects we observed hold up on 2003 data.