

Inpatient Rehabilitation Facility (IRF) Prospective Payment System (PPS) Facility-Level Payment Adjustments Methodology

Data Variables, Sources and Construction

1. Number of equivalent cases
The number of equivalent cases at each facility (“eqcase”) is the sum of the “casewt” variables per facility. “Casewt” is equal to 1 for all cases except for the short-stay transfers, which are counted as a fraction of a case. This fraction equals the length of stay (LOS) of the transfer case plus 0.5 days divided by the average LOS for the CMG/tier.
2. Average cost per case
“Costpc”=total costs per hospital (“totcst”) divided by number of equivalent cases per hospital (“eqcase”).
3. Case mix index
The case mix index (“cmi”) is the sum of the weight per discharge across all discharges at the hospital divided by the number of equivalent cases.
4. Wage index
The IRF wage index (“wi”) for a given fiscal year is the prior year’s pre-reclassified and pre-floor hospital wage index. We download this file from the Skilled Nursing Facility (SNF) website since the SNF wage index from last year is typically the same as the current year’s IRF wage index (e.g., the FY 2012 IRF wage index is the same as the FY 2011 SNF wage index). The SNF wage index is available at: http://www.cms.gov/SNFPSPS/04_WageIndex.asp#TopOfPage. We merged CBSAs to providers using a crosswalk containing both the CBSA and SSA state and county codes in order to assign a wage index to IRFs.
5. Disproportionate Share Hospital (DSH) patient percentage
This measure (‘dshr’) is calculated by summing the SSI and Medicaid fractions from the provider specific file located at: http://www.cms.gov/ProspMedicareFeeSvcPmtGen/03_psf_text.asp.
6. Rural / urban variable
We identify rural versus non-rural facilities based on the IRF’s CBSA. This variable is called “rural” in the SAS code below.
7. Indirect teaching
This measure (“teach”) is the ratio of full-time equivalent interns and residents to the IRF’s average daily census. This is obtained from the provider specific file located at: http://www.cms.gov/ProspMedicareFeeSvcPmtGen/03_psf_text.asp.

8. Freestanding versus unit

IRF units of acute care hospitals have a “T” in the third digit of the Medicare provider number, and IRF units of critical access hospitals have an “R” in the third digit of the Medicare provider number. Thus, a facility is classified as freestanding (“freestand”=1) if the third digit of the provider number is not a “T” or an “R.”

9. IRF size

This measure (“irfsize”) is the IRF’s average daily census (ADC) from its most recent cost report. We then assign size by the following rules:

- i. Small: $ADC < 25$ (freestanding); < 10 (unit)
- ii. Medium: $ADC \geq 25$ and < 50 (freestanding) ; $ADC \geq 10$ and < 25 (unit)
- iii. Large: $ADC \geq 50$ (freestanding); $ADC \geq 25$ (unit)
- iv. If the ADC is missing, we designate the IRF as a medium-sized.

10. Proprietary ownership

This measure (“propown”) is obtained from the IRF’s most recent cost report (variable s2_c1_18). If the value in the cost report variable is equal to 3, 4, 5, or 6 then “propown”=1.

Regression Models to Estimate the Facility-Level Payment Adjustments

First, a fully-specified regression model was used to understand the relationship between IRF characteristics and cost per case.

Note on variable derivation:

- $\text{logcostM} = \log(\text{costpc})$
- $\text{logcostpayM} = \log(\text{costpc}/(\text{cmi} * (\text{non-labor share} + \text{labor share} * \text{wi})))$
- $\text{logcmi} = \log(\text{cmi})$
- $\text{log wi} = \log(\text{non-labor share} + \text{labor share} * \text{wi})$
- $\text{logdsh} = \log(1 + \text{dshr})$
- $\text{logtch} = \log(1 + \text{teach})$

SAS Code:

```
proc glm data=Facility_Adj;
weight eqcase;
model logcostM=logcmi logwi logdsh logtch freestand sizeL sizeM sizeS
rural propown / solution;
run;
```

Second, we used a payment regression model after identifying characteristics that were both significantly related to cost per case and that are included in the IRF PPS.

```
proc glm data=Facility_Adj;  
weight eqcase;  
model logcostpayM=logdsh rural logtch / solution; run;
```