FAQ: Case-Mix Index Report

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What is the difference between relative weight and CMI?

Answers:
What cases are included in the Case-Mix Index Report?
The Case-Mix Index Report includes all cases.

What exactly does the Case-Mix Index Report tell me?
The Case-Mix Index Report compares your facility’s CMI and ARW to those of the nation and the region or state (when available) for all cases, broken down by RIC.

How should I utilize the Case-Mix Index Report?
Use the Case-Mix Index Report to compare your facility’s ARW and CMI to those of the region and the nation or state (when available). This comparison can reveal whether your facility admits a more severe patient than the comparison entities. If your facility’s CMI/ARW is much higher than the comparison group’s values, you are better off using CMG-adjusted comparisons when comparing your outcomes to the region or nation.
FAQ: Case-Mix Index Report

What is the CMI?

For the IRF PPS, case-mix index can best be described as the presumed resources used by your patients upon discharge from your facility. Like the ARW calculation, the IRF-CMI starts with the relative weights based on CMGs. The IRF-CMI then adjusts the relative weights depending on a few discharge outcomes:

1. **Short stays**: The relative weights of short stays are reduced to the standard short-stay weight (CMG 5001).
2. **Expired cases**: Patients who die are assigned a relative weight based on their expired CMG (5101–5104). Depending on the actual length of stay, this could be a reduction or an increase. Shorter stays typically see a reduction. For longer stays, it depends on the admission CMG.
3. **Early transfers**: The relative weight of the patient is reduced in a per diem manner. This is the same calculation used to reduce the payment for early transfers.

For additional information on short stays and early transfers, see [How are short stays and early transfers defined?](#).

In addition to reducing the relative weight of early transfers, the IRF-CMI calculation also reduces the effect they have on the count used to calculate a facility’s average CMI. A typical patient counts once in the calculation of a facility’s CMI; for early transfers, however, the count is adjusted based on the actual LOS versus the CMG-expected LOS. For additional information, see these questions:

- **What is a relative weight?**
- **What is a CMG? How are CMGs defined?**
- **What is the difference between relative weight and CMI?**
- **What is the CMG-expected LOS?**

What is a relative weight?

Each CMG is assigned a relative weight, which accounts for the variance of resources (i.e., funds) needed to rehabilitate and provide care to a patient during a rehabilitation stay. The relative weight accounts for the comparative difference in resource use across CMGs. Each CMG (for a typical patient) has up to four different relative weights on admission, with a different weight for each of the four tiers within a CMG. (For more information on tiers, see [What are comorbidity tiers?](#))

Within a CMG, relative weights will differ across tiers, which take into account comorbid conditions that may affect the resource utilization during the rehab stay. (For more information on comorbid conditions, see [What are comorbidities?](#))

What is the admission relative weight?

Under the IRF PPS, the admission relative weight (ARW) can reflect the reimbursement rate a facility will receive. The relative weight represents the average cost of the CMG in relation to the average cost of the other CMGs. (Comorbidities are also incorporated.) CMGs with weights greater than 1.0 demand more resources, and CMGs with weights less than 1.0 demand fewer resources.
The ARW (also called *relative weight* on our reports) is the average relative weight of your cases based on the CMG assigned at admission. **It represents the expected resource demands of your patients during their time in the rehabilitation setting.** This is the calculation that best resembles the case-mix index calculations in the acute hospital PPS.  

CMS defines ARWs by CMG and tier each year in the final rule. For more information, download the most recent final rule from CMS’s website.  

For more information, see these questions:  
- **What is a relative weight?**  
- **What are comorbidities?**  
- **What is a CMG? How are CMGs defined?**

### What is a RIC?  

The *rehabilitation impairment category* (RIC) classification system groups patients based on similar impairments. There are twenty-one RICs for inpatient rehabilitation facilities (IRFs). For information about how RICs are defined, download the latest edition of *The IRF-PAI Training Manual* from CMS’s website or the UDSPRO Central™ website.  

### What is a CMG? How are CMGs defined?  

The *case-mix group* (CMG) classification system groups similarly impaired patients based on functional status at admission or patient severity. Patients within the same CMG are expected to have similar resource utilization needs and similar outcomes. There are three steps to classifying a patient into a CMG at admission:  

1. Identify the patient’s impairment group code (IGC).  
2. Calculate the patient’s weighted motor index score. (See **What is the weighted motor index?**)  
3. Calculate the cognitive FIM® rating and the age at admission. (This step is not required for all CMGs.)  

For information on converting RICs to CMGs, download the RIC-to-CMG Conversion Sheet for the most recent fiscal year from the UDSPRO Central™ website.  

CMGs allow for comparisons across facilities and to the nation while accounting for patient severity. If your facility’s impairment mix is comparable to that of the nation, but your patients within an impairment group are more severe than those in the national aggregate, your expectations will be different.  

Each CMG has an associated relative weight. Within each CMG, the weighting factors are “tiered” based on the estimated effects that certain comorbidities have on resource use. For more information, see these questions:  
- **What is a relative weight?**  
- **What are comorbidities?**  
- **What are comorbidity tiers?**
What are special CMGs?

CMS created five special CMGs to account for very short stays and for patients who expire in the IRF. To understand how they are defined, download the RIC-to-CMG Conversion Sheet from the most recent fiscal year from the UDSPRO Central™ website.

These special CMGs have their own relative weights, which are used in the CMI calculation. For more information, see these questions:

- What is a relative weight?
- What is the CMI?
- How is CMI calculated?

What is the weighted motor index?

CMS created this weighting methodology as a way of accounting for the effect of each FIM® motor item on the cost of providing care to a patient in an IRF. The patient’s weighted admission FIM® motor rating is the sum of the weighted admission ratings for twelve of the thirteen FIM® motor items. The following weights are used for each item:

- Eating: 0.6
- Grooming: 0.2
- Bathing: 0.9
- Dressing – Upper Body: 0.2
- Dressing – Lower Body: 1.4
- Toileting: 1.2
- Bladder Management: 0.5
- Bowel Management: 0.2
- Transfers: Bed, Chair, Wheelchair: 2.2
- Transfers: Toilet: 1.4
- Locomotion: Walk, Wheelchair: 1.6
- Locomotion: Stairs: 1.6

CMS chose not to include the item Transfers: Tub, Shower in the weighted motor score because analysis performed by the RAND Corporation for CMS found that this particular motor item does not predict the costs of a patient like the other twelve items do.

When calculating the weighted admission FIM® motor rating, a score of 0 for Transfers: Toilet is converted to a score of 2; a score of 0 for any other item is converted to a score of 1.

Is the weighted motor index used for related FIM® outcomes in my on-demand reports?

No, it is not—the weights are only used when placing a patient into a CMG. The weights are not applied to any FIM® ratings presented in the on-demand reports. This includes admission FIM® rating, discharge FIM® rating, and FIM® change, as well as any instance where FIM® ratings are presented by item, such as in the Scoring Report and the Frequency of FIM® Items Report.
What is the CMG-expected LOS?

Each year in the final rule, CMS defines the expected LOS for a case, for each tiered CMG. The expected length of stay determines when a transfer is classified as an early transfer and is used to calculate the per diem payment. The expected length of stay equals the average length of stay of typical patients in the tiered CMG (i.e., patients discharged to the community with an LOS greater than three days).

CMS publishes the average length of stay of all cases in the group for the special CMGs (5001, 5105, 5102, 5103, and 5104), but these values never affect payments because none of the cases in these CMGs are transfers. (They are short stays or expired cases.) CMS also updates the expected LOS for each special CMG each year in the final rule. For more information, download the most recent final rule from CMS’s website.

What are comorbidities?

*Comorbidities* are medical conditions that are present during course of rehabilitation that are associated with a decrease in functional status and therefore add to the burden of care throughout the rehabilitation process.

What are comorbidity tiers?

*Comorbidity tiers* represent groups of comorbid conditions. They are surrogate indicators of case severity, based upon medical conditions present during the course of rehabilitation that add to the burden of care.

The tiers are ordered by level of severity. The patients with the most severe comorbidities are listed as tier B, followed by tier C, then tier D, and finally tier A patients (i.e., patients with no comorbidities that affect resource demands).

How are short stays and early transfers defined?

A case is classified as a *short stay* if the actual length of stay is less than or equal to three days and the patient expired or was discharged to one of the following settings:

- 01, Home (private home/apt., board/care, assisted living, group home, transitional living)
- 04, Intermediate care
- 06, Home under care of organized home health service organization
- 50, Hospice (home)
- 51, Hospice (institutional facility)
- 65, Inpatient psychiatric facility
- 99, Not listed

A case is classified as an *early transfer* if the patient’s actual LOS is less than the CMG-expected LOS and the patient was discharged to one of the following settings:

- 02, Short-term general hospital
- 03, Skilled nursing facility
- 61, Swing bed
• 62, Another inpatient rehabilitation facility
• 63, Long-term care hospital
• 64, Medicaid nursing facility

**How is CMI calculated?**

Grace Carter’s method for calculating CMI is as follows:

1. Calculate the relative weight for all cases, making sure to use the special CMG weights when appropriate (for short stays and expired cases), adjusting the relative weight for early transfers by multiplying their relative weight by \(((\text{actual LOS} + 0.5)/\text{expected LOS})\).

2. Calculate the count for all cases, adjusting early transfers to count as \(((\text{actual LOS} + 0.5)/\text{CMG-expected LOS})\). All other cases should have a count of 1.

3. Sum the calculated relative weights and counts, and then divide the sum of the relative weights by the sum of the counts.

For additional information on short stays and early transfers, see [How are short stays and early transfers defined?](#)

For other additional information, see these questions:

- [What is the CMI?](#)
- [What is a relative weight?](#)
- [What are special CMGs?](#)

**What is the difference between relative weight and CMI?**

The ARW (also called *relative weight* on our reports) is the average relative weight of your facility’s cases, based on the CMG assigned at admission. It represents the expected resource demands of your patients **during their time in the rehabilitation setting**. This is the calculation that best resembles the case-mix index calculations in the acute hospital PPS.

The IRF PPS CMI can best be described as the presumed resources used by each patient **by the end of the patient’s stay**. Like the ARW calculation, the IRF-CMI calculation starts with the relative weights based on CMGs. The IRF-CMI then adjusts the relative weights depending on a few discharge outcomes:

1. Short stays
2. Expired cases
3. Early transfers

For additional information on the CMI, see [What is the CMI?](#) and [How is CMI calculated?](#) For additional information on short stays and early transfers, see [How are short stays and early transfers defined?](#) For other additional information, see [What is a relative weight?](#) and [What is the admission relative weight?](#)