

Definition of Case Mix for hospitals

Case Mix Index (CMI) is a relative value assigned to a **diagnosis-related group (DRG/MSDRG)** of patients in a medical care environment. The CMI value is used in determining the allocation of resources to care for and/or treat the patients in the group.

Patients are classified into groups having the same condition (**based on Principal and Secondary Diagnoses, Procedures, Age**), complexity (**comorbidity**) and needs. These groups are known as Diagnosis Related Groups (DRGs), or Medicare Severity-Diagnosis Related Groups (MS-DRGs).

Each DRG/MS-DRG has a relative average value assigned to it that indicates the amount of resources required to treat patients in the group, as compared to all the other diagnosis-related groups within the system.

Hospital Case Mix Index (CMI)

The CMI of a hospital reflects the diversity, clinical complexity and the needs for resources in the population of all the patients in the hospital.

- The CMI value of a hospital can be used to adjust the average cost per patient (or per day) for a given hospital relative to the adjusted average cost for other hospitals by dividing the average cost per patient (or day) by the hospital's calculated CMI.
- The adjusted average cost per patient would reflect the charges reported for the types of cases treated in that year.
- If a hospital has a CMI greater than 1.00, their adjusted cost per patient or per day will be lower and conversely if a hospital has a CMI less than 1.00, their adjusted cost will be higher.

For example, if Hospital A has an average cost per patient of \$1,000 and a CMI of 0.80 for a given year, their adjusted cost per patient is $\$1,000 / 0.80 = \$1,250$. Likewise, if Hospital B has an average cost per patient of \$1,500 and a CMI of 1.25, their adjusted cost per patient is $\$1,500 / 1.25 = \$1,200$.

Therefore, if a hospital has a CMI greater than 1.00, their adjusted cost per patient or per day will be lowered and conversely if a hospital has a CMI less than 1.00, their adjusted cost will be higher.

To calculate the CMI, use Medicare Severity-Diagnosis Related Groups (MS-DRGs) weights assigned by the Centers for Medicare & Medicaid Services (CMS).

Patients are assigned to one of over 700 MS-DRGs (based on the principal and secondary diagnoses, age, procedures performed, the presence of co-morbidity and/or complications, discharge status, and gender).

Each MS-DRG has a numeric weight* reflecting the national “average hospital resource consumption” by patients for that MS-DRG, relative to the national “average hospital resource consumption” of all patients.

Although the MS-DRG weights are based on resource consumption by Medicare patients, it is applied to all patient discharge data reported by hospitals in Florida during the course of a calendar year.

The case mix index is then calculated by averaging the MS-DRG weight of patients discharged within the calendar year, i.e., the sum of the MS-DRG weights divided by the number of patients.