

Understanding Case Mix Differences Between Public and Private Hospitals

Ezekiel Anthony^{1,2,3,4,*}, Norshahrizan Nordin^{1,2,3,4}

¹Department of Business, Faculty of Business & Communication, Universiti Malaysia Perlis (UniMAP), UniCITI Alam Campus, Sungai Chuchuh, 02100 Padang Besar, Perlis, Malaysia

²Healthcare Management – Special Interest Group (HEM – SIG)

³Management of Technology and Engineering Management – Special Interest Group (MoTEm – SIG)

⁴Operations Research – Special Interest Group (OR – SIG)

KEYWORDS	ABSTRACT
Case-Mix Public Hospitals Private Hospitals	In this paper, the study highlights case-mix which is currently a field on its own. However, it is also conducive for hospitals to have proper planning in terms of case-mix. To understand more, the paper elaborates case-mix differences between private and public hospitals.

1. INTRODUCTION

Accurately assessing differences in performance, efficiency, and patient outcomes requires an understanding of the case mix variances between public and private institutions. The term "case mix" describes the variety and complexity of patients receiving care in a medical facility, taking into account elements like the severity of the disease, comorbidities, the intensity of the therapy, and the use of resources. Many difficult, high-risk, and emergency situations that are referred from smaller facilities or involve uninsured patients are handled by public hospitals, which often manage a larger case mix. Private hospitals, on the other hand, typically treat a more discerning patient base, emphasising elective treatments and people with less serious illnesses who can afford insurance or cash payments.

Variations provide fair funding, fair comparison, and a better comprehension of the roles played by both sectors in the delivery of healthcare as a whole. These differences have an impact on clinical results, financial arrangements, and resource allocation in addition to hospital operations. Thus, assessing healthcare performance without taking case mix variations into consideration could result in skewed findings that overestimate the effectiveness of private hospitals and underestimate the difficulties experienced by public ones.

2. LITERATURE REVIEW

2.1 Case-Mix

Case mix is a healthcare term for classifying and describing the types of patients, their diagnoses, and the treatments received by a healthcare facility (Ahmed & Almessabi, 2025). Given that different patient groups have distinct needs in terms of care, staffing, and expenses, it is a crucial measure of the hospital's workload and performance efficiency. Hospitals can improve resource

allocation, assess their performance, and guarantee equitable reimbursement under systems such as Diagnosis-Related Groups (DRGs) or Case-Based Groups (CBGs) by evaluating case mix data. Additionally, knowing the case mix aids legislators and healthcare administrators in planning improvements to patient care delivery, assessing operational efficiency, and evaluating service quality.

The case mix notion is essential for the following:

1. Measurement of hospital performance and efficiency.
2. If variations in case mix are not taken into account, hospitals with more complicated or severe cases may appear less efficient. Thus, after accounting for case mix, or "case-mix adjustment," comparisons between hospitals are done.
3. Systems for financial reimbursement.
4. Diagnosis-Related Groups (DRGs) and other systems base a hospital's reimbursement on its case mix.
5. Higher compensations are given to hospitals who treat sicker patients.
6. Assessment of quality and results.

By controlling for case mix, one can make sure that variations in mortality or readmission rates are caused by actual performance differences rather than handling more complicated cases.

*Corresponding author: ezekiel@studentmail.unimap.edu.my

2.2 Case-Mix Index

A Case Mix Index is a numerical score summarizing the average severity or resource intensity of a hospital’s patients.

- Higher CMI → More severe or resource-intensive cases.
- Calculated from the weights of Diagnosis-Related Groups (DRGs) assigned to patient discharges.

Formula (simplified):

$$CMI = \frac{\text{Total DRG Weight}}{\text{Total Number of Discharges}}$$

2.3 Key- Characteristics

1. Hospital performance and efficiency measurement
 - Hospitals with more complex or severe cases might appear less efficient if differences in case mix are not adjusted for.
 - Therefore, comparisons between hospitals are made after adjusting for case mix (“case-mix adjustment”).
2. Financial reimbursement systems
 - Case mix determines how much a hospital is reimbursed under systems like Diagnosis-Related Groups (DRGs).
 - Hospitals treating sicker patients receive higher payments.
3. Quality and outcome evaluation
 - Adjusting for case mix ensures that differences in mortality or readmission rates are not due to treating more complex cases but to true performance differences.

3. CASE-MIX DIFFERENCES PUBLIC AND PRIVATE HOSPITALS

Table 1 Public vs Private Hospitals

Aspect	Public Hospitals	Private Hospitals
Patient Profile	Broader, includes all socioeconomic groups, often high-risk or complex cases	More selective, often lower-risk or insured patients
Admission Type	Many emergency and referral cases	Mostly elective and planned admissions
Case Complexity	Generally higher – more severe illnesses, comorbidities, late presentations	Generally lower – patients often in earlier stages of illness
Length of Stay	Typically longer due to complexity and delayed discharges	Shorter, due to efficiency and selective admissions
Financing Mechanism	Government-funded, often serves uninsured or low-income patients	Insurance-based or out-of-pocket, serving those who can pay
Resource Intensity	Higher (ICU use, diagnostic intensity)	Moderate, focused on cost-effective treatments

The case mix and operational features of public and private hospitals vary greatly. Public hospitals typically treat a wider range of patients, including low-income, high-risk, and uninsured patients. This results in more complicated situations with several emergencies and comorbidities. They handle a greater number of referral and emergency admissions, which leads to prolonged hospital stays because of serious illnesses and postponed releases. Its care necessitates higher resource intensity, including advanced diagnostics and intensive care unit use, and its funding is derived from government grants. Private hospitals, on the other hand, concentrate on elective and planned admissions and serve a more discerning, insured, and lower-risk patient base.

Their patients typically have fewer serious problems when they first arrive, which enables shorter hospital stays and more economical treatment plans. The higher case complexity of public hospitals reflects their crucial role in providing equitable access to comprehensive healthcare for everyone, hence case-mix adjustment is required for fair performance comparison. As a result, private hospitals frequently seem more efficient.

4. CONCLUSION

In conclusion, a fair and relevant assessment of healthcare performance requires an awareness of the disparities in case mix between public and private institutions. A larger and more complicated patient population is cared for by public hospitals, frequently including severely ill, uninsured, or low-income patients who need intense care and extended hospital stays. Private hospitals, on the other hand, usually deal with more elective, predictable, and low-risk situations, which enables them to achieve shorter stays and greater seeming efficiency. These intrinsic distinctions show that discrepancies in performance metrics or outcomes should not be seen as merely managerial variances but rather as a reflection of the unique functions that each sector performs within the healthcare system.

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