



# Consumption of Hospital Resources in Intensive Care Units in Brazil: A Challenge for Health Financing

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## INTRODUCTION

This study compares the total costs of hospital admissions in Brazil's healthcare system with the costs reported by the hospital provider for the intensive care unit alone[1,3], in order to discuss the difficulty of financing healthcare in underdeveloped countries and the consumption of resources in intensive care units. The management of hospital costs points to the sustainability of the Brazilian public system, which is currently based on government funding from the three spheres (federal, state and municipal) and a discussion on the difference between the cost passed on and the real cost is of great importance to society[2].

## OBJECTIVES

To compare the costs of patients admitted to an intensive care unit of a tertiary hospital in Brazil's public health system in the state of Minas Gerais, with the amount paid by the federal government to the hospital unit and to evaluate the difference between the values.

## METHODS

Comparison of data collected through the hospital cost system with data on federal transfers to the health establishment for patients admitted to the intensive care unit in 2020, with the aim of evaluating the costs generated in the hospital and the federal transfer to the establishment.

Hospital costs were calculated according to the accounting month of posting and federal transfers according to data was sent to the ministry of health.

Epidemiologic data and patient-level costs were collected from 10 ICUs in Brazil between January 2020 and December 2021. This study used data reported by a hospital in the state of Minas Gerais, with 42,046 hospitalization records during the study period.

Data were extracted from Impacto-MR, a collaborative research platform coordinated by six Brazilian hospitals, including Hospital Israelita Albert Einstein, in partnership with the Ministry of Health and the National Health Surveillance Agency (ANVISA).

From the hospital's perspective, a standard absorption methodology was developed to measure the cost of ICU admissions.

Cost components measured included ICU staff, depreciation, electricity, water, telephone, internet, medical gases, overhead, drugs, office and medical supplies, hemodialysis, blood transfusions, and laboratory and imaging tests.

## Difference between real cost and amounts passed on by the federal government

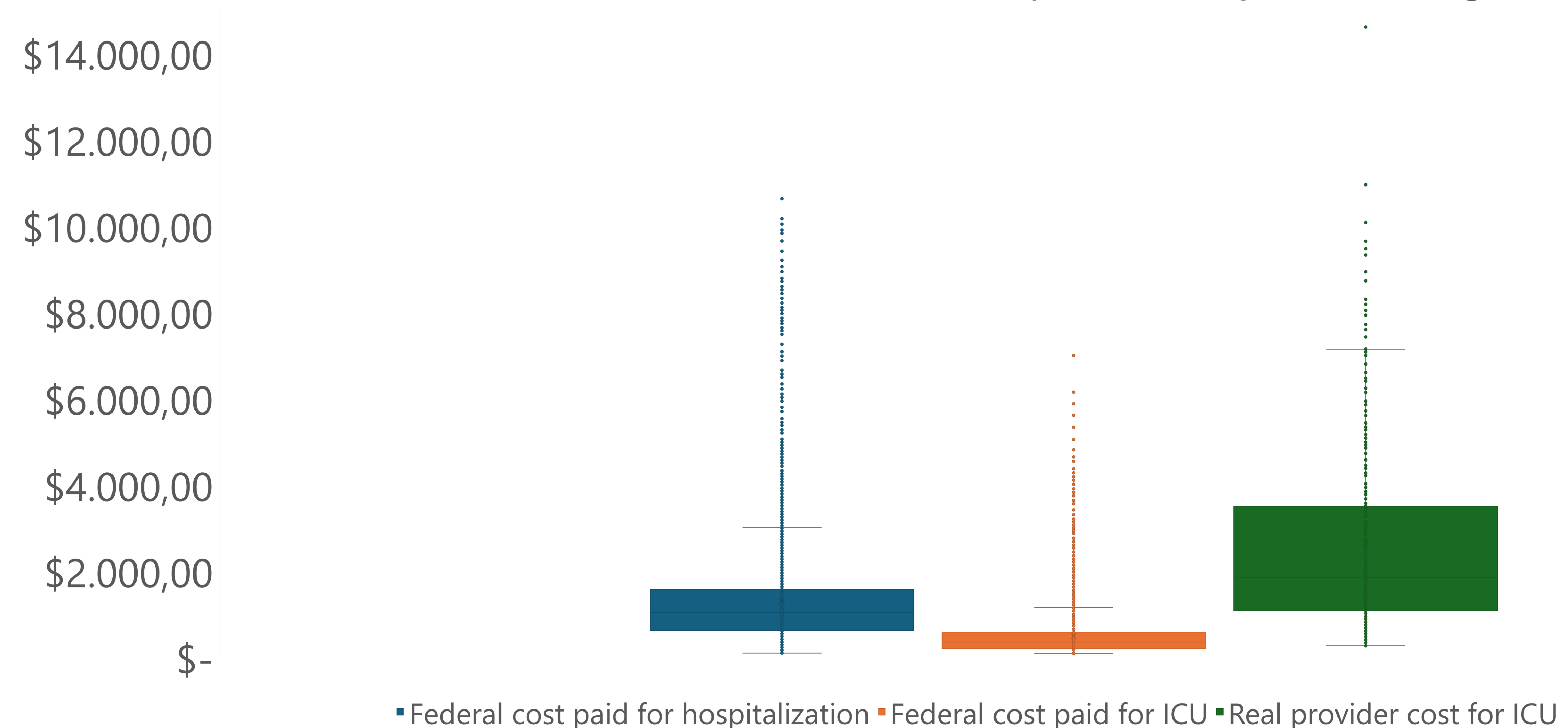


Figure 1 - Box-plot comparing the amounts paid by the federal government and the real cost of hospital admissions

## RESULTS

Considering the hospital admissions reported by the hospital unit to the ministry of health, 77% of the admissions did not use the intensive care resource and in 23% there was a need for ICU, with the cost of ICU admissions being US\$ 15,703,719.74 (62%) and the cost of admissions that did not use ICU being US\$ 9,544,970.38 (38%).

According to the federal transfer data, the average transfer per hospitalization is U\$ 1,642.48, of which U\$ 729.65 refers to ICU stays and the median is U\$ 1,278.84, of which U\$ 418.94 refers to the ICU.

Compared with the cost data calculated by the hospital using the absorption costing methodology, the average cost of patients during their stay in the ICU was U\$ 2,732.94 and the median was U\$ 1,912.54, surpassing the total value of hospitalizations.

## CONCLUSION

The amount paid by the federal government, considering the median amount paid for ICU admissions, represents 22% of the real cost of the institution's ICU and considering the total amount paid, this represents only 67% of the real cost of the patient's ICU, considering only the federal transfer.

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