PRIMARY EXPENDITURE DRIVERS AND FUTURE CHALLENGES FROM EMERGING TECHNOLOGIES IN BRAZILIAN PRIVATE MARKET: REAL WORLD DATA ANALYSIS FROM AN BRAZILIAN EMPLOYERSPONSORED SELF-INSURED HEALTH PLAN

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INTRODUCTION

Brazil's private healthcare sector, which serves around 25% of the population, has experienced growing financial pressure due to rising healthcare costs and rapid incorporation of high-cost medical technologies. Employer-sponsored self-insured health plans, increasingly adopted by large companies, are particularly exposed to these pressures, as they bear full responsibility for their beneficiaries' medical expenses without risk pooling mechanisms.

Technological innovations such as targeted therapies, advanced diagnostics, and high-cost oncology treatments have driven up expenditures across care settings. Unlike in some high-income countries, Brazil's regulatory framework often allows new technologies to be incorporated into mandatory coverage lists with limited cost-effectiveness assessment. This, combined with a fee-for-service payment model, has accelerated spending growth.

Oncology stands out as a high-complexity area with sharp inflation in recent years, reflecting the broader challenge of balancing innovation and financial sustainability. These trends raise urgent questions about the viability of current reimbursement models and the need for value-based strategies.

This study analyzes real-world data from a Brazilian self-insured health plan covering over 60,000 beneficiaries from 2019 to 2024. By identifying key cost drivers and trends—particularly in high-cost areas such as oncology—this research aims to support policy discussions around cost control and the improvement of health technology assessment (HTA) in Brazil's private sector.

METHODS

This study employed a retrospective, observational design to analyze healthcare utilization and expenditure patterns within a large Brazilian employer-sponsored self-insured health plan. The analysis was based on real-world claims data collected between January 1, 2019, and December 31, 2024. The study was conducted from the payer's perspective, focusing on identifying major cost drivers and evaluating temporal trends in healthcare spending.

Study Population and Setting: The study population consisted of 60,147 beneficiaries enrolled in a corporate self-insured health plan operating in Brazil. This type of plan is fully funded by the employer, which assumes all financial risk associated with healthcare expenses. Beneficiaries included employees, dependents, and retirees with active coverage during the observation period.

Data Sources: Administrative claims data were extracted from the health plan's database. These records included detailed information on medical services, procedures, hospitalizations, outpatient visits, diagnostic tests, therapies, and prescribed medications. Demographic variables such as age and sex were also collected to characterize the beneficiary population.

Cost Analysis: All costs were analyzed from the payer's perspective and adjusted to U.S. dollars using annual average exchange rates published by Brazil's Central Bank. Total and per capita healthcare expenditures were calculated annually and stratified by type of service (inpatient vs. outpatient), cost category (e.g., medications, diagnostics, physician fees), and medical specialty. Particular attention was given to oncology-related expenditures due to their increasing share of overall costs.

Cost components were further disaggregated to identify the contribution of specific items such as room and board, implants, therapies, emergency services, and chemotherapy. Inflation rates were calculated to evaluate the annual increase in per capita expenditures over the study period.

Statistical Analysis: Descriptive statistics were used to summarize demographic characteristics and cost distributions. Time-trend analyses were conducted to assess changes in expenditure patterns over the six-year period. The data were analyzed using Microsoft Excel and statistical software tools appropriate for large administrative datasets. No imputation was performed for missing values; only complete and valid claims were included in the analysis.

As the study used anonymized secondary data from administrative records, no ethics committee approval was required in accordance with Brazilian regulations on research involving human subjects.

DISCUSSION

This study highlights a concerning escalation in healthcare costs within a Brazilian self-insured health plan, with per capita expenditures more than doubling between 2019 and 2024. The trend reflects systemic inefficiencies, the rising demand for complex care, and the rapid, often unregulated adoption of high-cost technologies.

The predominance of inpatient spending suggests limited effectiveness in outpatient and preventive care strategies, potentially leading to avoidable hospitalizations. Meanwhile, oncology emerged as the fastest-growing cost component, rising from 22.2% to 31.4% of total expenditures—driven by costly therapies like immunotherapy and targeted drugs, frequently adopted with insufficient cost-effectiveness evaluation.

Brazil's fee-for-service payment model continues to incentivize volume over value, while regulatory mechanisms for technology incorporation remain weak. Unlike countries with robust health technology assessment (HTA) systems, Brazil's private sector faces escalating costs without adequate pricing controls or outcome-based reimbursement.

The findings underline an urgent need for value-based care models, improved HTA integration, and payment reforms to protect the financial sustainability of employer-sponsored health plans.
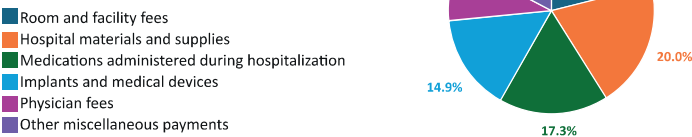
RESULTS

Total Expenditures and Cost Growth: Between 2019 and 2024, total healthcare expenditures for the 60,147 beneficiaries reached **USD$ 384.7 million**. The average **annual per capita cost** increased significantly, rising from **USD$ 1,423 in 2019 to USD$ 3,543 in 2024**, representing an average annual inflation rate of **20.6%**. This steep increase underscores the mounting financial pressure on self-insured health plans operating under current reimbursement and coverage models.

Per Capita Cost Growth

USD$ 3,543

USD$ 1,423

2019 2020 2021 2022 2023 2024
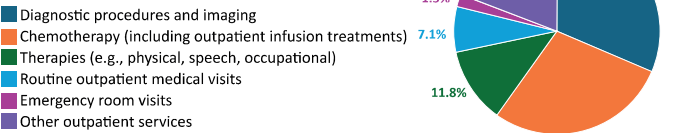
Average annual inflation rate of 20.6%
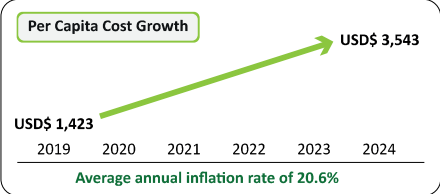
Inpatient vs. Outpatient Expenditures:
Inpatient care accounted for **56.7%** of total expenditures, while outpatient services represented the remaining **43.3%**. The distribution of inpatient costs was as follows:

- ■ Room and facility fees
- ■ Hospital materials and supplies
- ■ Medications administered during hospitalization
- ■ Implants and medical devices
- ■ Physician fees
- ■ Other miscellaneous payments

17.5% 21.1% 20.0% 9.2% 14.9% 17.3%

Outpatient expenditures were mainly distributed across the following categories:

- ■ Diagnostic procedures and imaging
- ■ Chemotherapy (including outpatient infusion treatments)
- ■ Therapies (e.g., physical, speech, occupational)
- ■ Routine outpatient medical visits
- ■ Emergency room visits
- ■ Other outpatient services

19.6% 31.7% 1.5% 7.1% 11.8% 28.3%

Oncology-Related Expenditures: Oncology emerged as a major cost driver, with a sharp upward trend over the six-year period. In 2019, oncology-related services accounted for **22.2%** of total healthcare expenditures. By 2024, this share had grown to **31.4%**, corresponding to an **average annual inflation rate of 28.9%** in oncology spending alone. This increase reflects both the higher utilization of advanced cancer therapies and the incorporation of new, high-cost treatment modalities such as immunotherapies and targeted biologics.

Oncology-Related Expenditures Growth

31.4%

22.2%

2019 2020 2021 2022 2023 2024

Average annual inflation rate of 28.9%
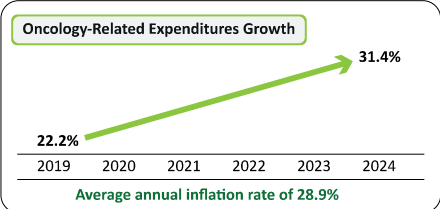
Demographic Profile: The beneficiary population had a stable demographic distribution over the observation period. Most individuals were adults of working age (25–59 years), with a balanced sex distribution (approximately 51% female, 49% male). While demographic changes were not the primary focus of this analysis, no significant shifts in age or sex composition were observed that could independently explain the magnitude of cost inflation.

CONCLUSION

The findings of this study demonstrate a sharp and sustained increase in healthcare expenditures within a Brazilian employer-sponsored self-insured health plan, driven primarily by inpatient care and high-cost specialties such as oncology. The average per capita cost more than doubled over the six-year period, reflecting the financial strain posed by systemic inefficiencies, fee-for-service reimbursement models, and the rapid adoption of costly technologies without sufficient cost-effectiveness evaluation.

Oncology expenditures showed alarming inflation, underscoring the urgent need for more robust health technology assessment (HTA) processes and evidence-based decision-making frameworks. Without regulatory and structural reforms, self-insured health plans may face long-term sustainability challenges, potentially impacting access, equity, and the quality of care.

To ensure financial viability and improve patient outcomes, Brazil's private healthcare sector must prioritize the transition to value-based care, implement rigorous HTA mechanisms, and explore alternative reimbursement models that align cost with clinical benefit.

REFERENCES

1 - Agência Nacional de Saúde Suplementar (ANS). (2023). Caderno de Informação da Saúde Suplementar. Retrieved from https://www.gov.br/ans

2 - Bahia, L., & Scheffer, M. (2020). Private health plans and the financialization of health care in Brazil. Cadernos de Saúde Pública, 36(4), e00046019. https://doi.org/10.1590/0102-311X00046019

3 - Mendes, É. V. (2018). Health care in Brazil: structure and challenges. Ciência & Saúde Coletiva, 23(6), 1819–1828. https://doi.org/10.1590/1413-81232018236.04822018

4 - Barros, R. D., Piola, S. F., & Vianna, S. M. (2011). Health Financing in Brazil: An Analysis by Sources and Applications. IPEA. Retrieved from https://www.ipea.gov.br

5 - World Health Organization (WHO). (2021). Global spending on health: Weathering the storm. Retrieved from https://www.who.int/publications/i/item/9789240040496

6 - Drummond, M., Schwartz, J. S., Jönsson, B., Luce, B. R., Neumann, P. J., Siebert, U., & Sullivan, S. D. (2008). Key principles for the improved conduct of health technology assessments for resource allocation decisions. International Journal of Technology Assessment in Health Care, 24(3), 244–258. https://doi.org/10.1017/S0266462308080343

7 - Instituto de Estudos de Saúde Suplementar (IESS). (2023). Custos da saúde suplementar no Brasil. Retrieved from https://www.iess.org.br

8 - Kaló, Z., Gheorghe, A., Huic, M., Csanádi, M., & Kristensen, F. B. (2016). HTA implementation roadmap in Central and Eastern European countries. Health Economics, 25(S1), 179–192. https://doi.org/10.1002/hec.3291

9 - Ferraz, M. B. (2022). Value-based health care: What is it and why is it important? Clinics, 77, 100117. https://doi.org/10.1016/j.clinsp.2021.100117

10 - Global Oncology Trends Report. (2023). IQVIA Institute for Human Data Science. Retrieved from https://www.iqvia.com