

# FINANCIAL IMPACT ASSOCIATED WITH BLADDER CANCER TREATMENT IN THE BRAZILIAN PUBLIC HEALTH SYSTEM

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## INTRODUCTION

Bladder cancer is the seventh most common malignant neoplasm in men in Brazil. Data from the National Cancer Institute (INCA) estimate 11,370 new cases in 2024.<sup>1</sup> Considering that the majority of Brazilians depend exclusively on SUS for medical assistance, bladder cancer treatment significantly increases government costs for oncological diseases. The objective of this study is to estimate the cost of bladder cancer for the public health system, detailing expenses by stage in Brazil, in the State of São Paulo, in the City of São Paulo, and in Greater ABC Region.

## METHODS

Data were collected from DATASUS, Radar do Câncer, INCA, and GLOBOCAN databases regarding the number of cases, their distribution, and values allocated for bladder cancer treatment. Based on estimates from available studies on PUBMED and previous studies from our group<sup>2</sup>, we divided the total number of cases into stages I, II, III, and IV and were able to calculate the costs associated with each of these groups. A spreadsheet was constructed with simple mathematical formulas relating the quantities of cases to the individual costs in order to obtain the total costs of bladder cancer treatment in each location: Brazil, State of São Paulo, City of São Paulo, and Greater ABC Region.

## RESULTS AND DISCUSSION

Annually, 11,370 new cases of bladder cancer arise in Brazil, with 4,775 cases in stage I, 2,047 in stage II, 2,501 in stage III and 2,047 in stage IV. The state of São Paulo has 3,640 cases annually, of which 1,529 are stage I, 655 stage II, 801 stage III, and 655 stage IV. The city of São Paulo has 1,220 cases, of which 512 are stage I, 220 stage II, 268 stage III, and 220 stage IV. The Greater ABC Region has 179 cases per year, with 75 in stage I, 32 in stage II, 39 in stage III, and 32 in stage IV. This distribution of cases generates an annual cost in Brazil of R\$ 561,399,204.62, a cost in the State of São Paulo of R\$ 179,722,694.18, and R\$ 8,788,279.39 in the Greater ABC Region. In Brazil, approximately R\$ 225 million is spent on patients in stage I. In the state of São Paulo, stage I represents a cost of approximately R\$ 72 million. In the Greater ABC Region, approximately R\$ 3.5 million. The following tables describe the expenses per stage according to the analyzed region.

STAGE I	REGION	NUMBER OF CASES	COST PER PATIENT	TOTAL COST
	Brazil	4775	R\$ 47,182.56	R\$225,296,724.00
STAGE II	State of São Paulo	1529	R\$ 47,182.56	R\$72,142,134.24
	City of São Paulo	512	R\$ 47,182.56	R\$24,157,470.72
	ABC	75	R\$ 47,182.56	R\$3,538,692.00
	STAGE III	REGION	NUMBER OF CASES	COST PER PATIENT
STAGE II	Brazil	2047	R\$ 47,105.49	R\$ 96,424,938.03
	State of São Paulo	655	R\$ 47,105.49	R\$30,854,095.95
	City of São Paulo	220	R\$ 47,105.49	R\$10,363,207.80
	ABC	32	R\$ 47,105.49	R\$1,507,375.68
STAGE III	REGION	NUMBER OF CASES	COST PER PATIENT	TOTAL COST
	Brazil	2501	R\$ 47,105.49	R\$ 117,810,830.49
	State of São Paulo	801	R\$ 47,105.49	R\$37,731,497.49
	City of São Paulo	268	R\$ 47,105.49	R\$12,624,271.32
STAGE IV	ABC	39	R\$ 47,105.49	R\$1,837,114.11
	REGION	NUMBER OF CASES	COST PER PATIENT	TOTAL COST
	Brazil	2047	R\$ 59,534.30	R\$ 121,866,712.10
	State of São Paulo	655	R\$ 59,534.30	R\$38,994,966.50
City of São Paulo	220	R\$ 59,534.30	R\$13,097,546.00	
ABC	32	R\$ 59,534.30	R\$1,905,097.60	

In 2022, the Observatório do Câncer estimated that about 4 billion reais from the SUS budget are allocated for the treatment of oncological diseases. When we compare these data, it is possible to notice that just the treatment of bladder cancer alone generates a cost exceeding 10% of the total amount spent on the treatment of malignant neoplasms.

## CONCLUSION

Bladder cancer is a disease that has a significant impact on the budget of the Public Health System. Patients with stage I disease, although costing less for the system, represent a larger number of cases, which consumes a significant portion of public spending on medical treatments.

## REFERENCES

1. Instituto Nacional de Câncer (Brasil). Estimativa 2023 : incidência de câncer no Brasil / Instituto Nacional de Câncer. – Rio de Janeiro : INCA, 2022.
2. KORKES, F. et al. Stage-Related Cost of Treatment of Bladder Cancer in Brazil. *Pharmaco Economics - Open*, v. 6, n. 3, p. 461–468, 1 maio 2022.

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