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Introduction

Stroke is among the three main causes of years of life lost in Brazil. It is a public health problem with socioeconomic impact both for the health system and for the society. Despite the importance of stroke in Brazilian public health, data on the cost of the disease in Brazil are scarce.

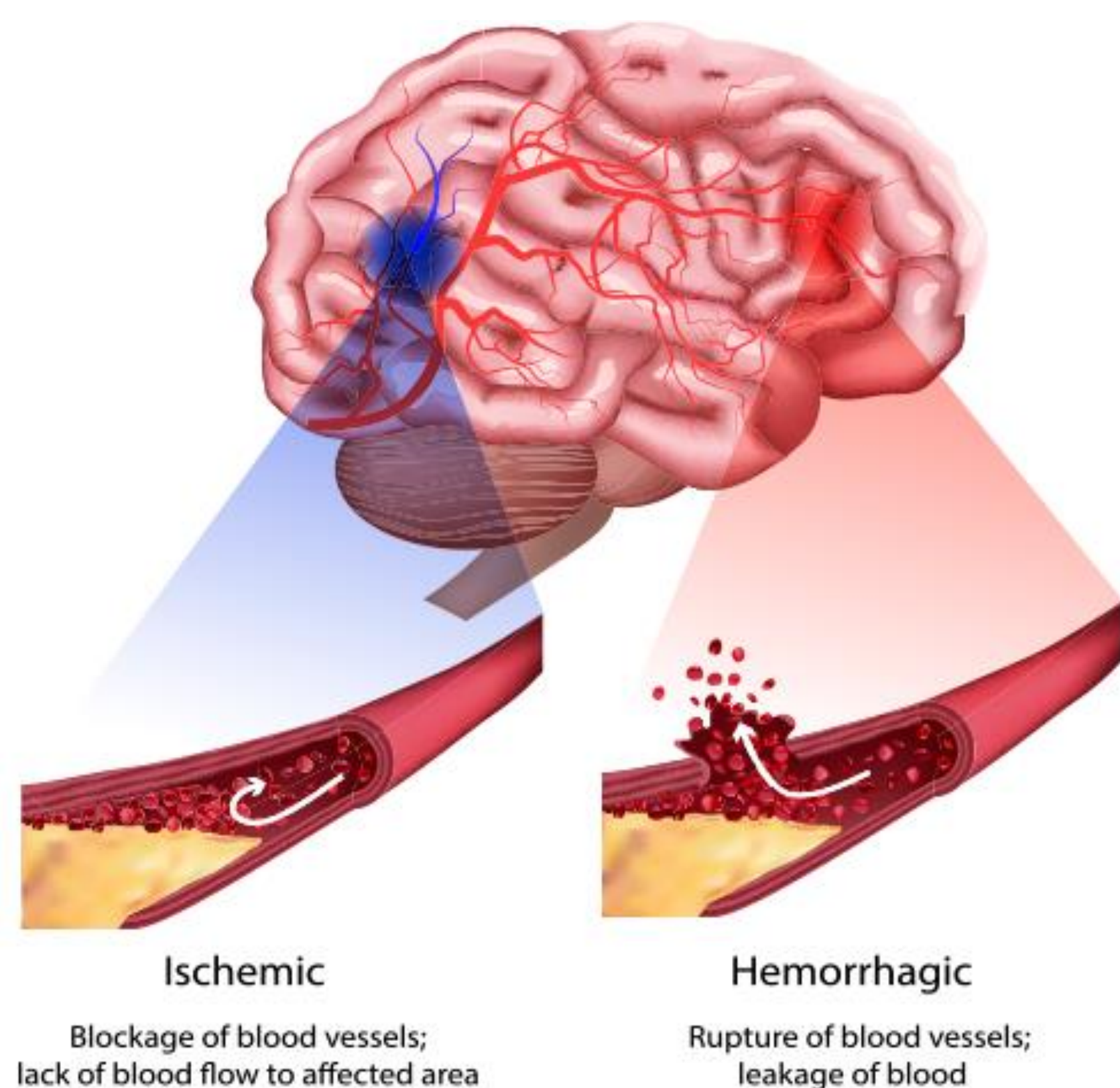


Figure 1: Types of Stroke

Aim

To estimate, from the perspective of the society, the direct and indirect costs related to the stroke on the length of stay in one hospital in Brazil.

Methods

A literature review was performed in Medline (via Pubmed), CRD Database, Embase, Tripdatabase, LILACS, Scielo, BVS and Capes Thesis and Dissertations Bank to identify previously available data about direct costs of stroke in Brazil. The data were extracted, and then the costs were updated according to the IPCA and the VCMH, inflation indexes. Indirect costs related to the disease on the length of stay in hospital were also estimated.

Acknowledgements

Department of Health Economics, Investments and Development of The Brazilian Ministry of Health – DESID/MS
Pan American Health Organization – PAHO

Results

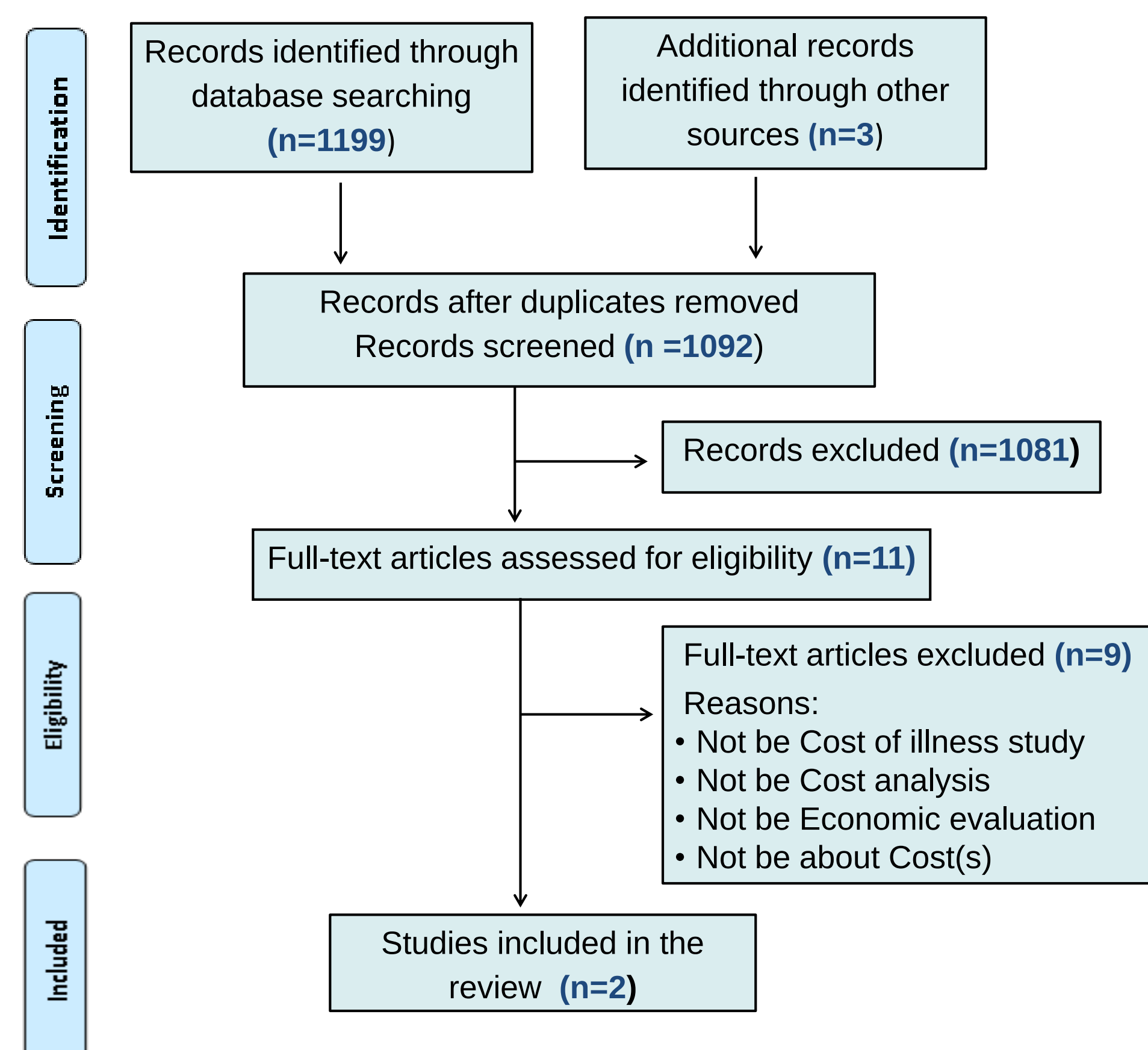


Figure 2: Flowchart of the study selection process

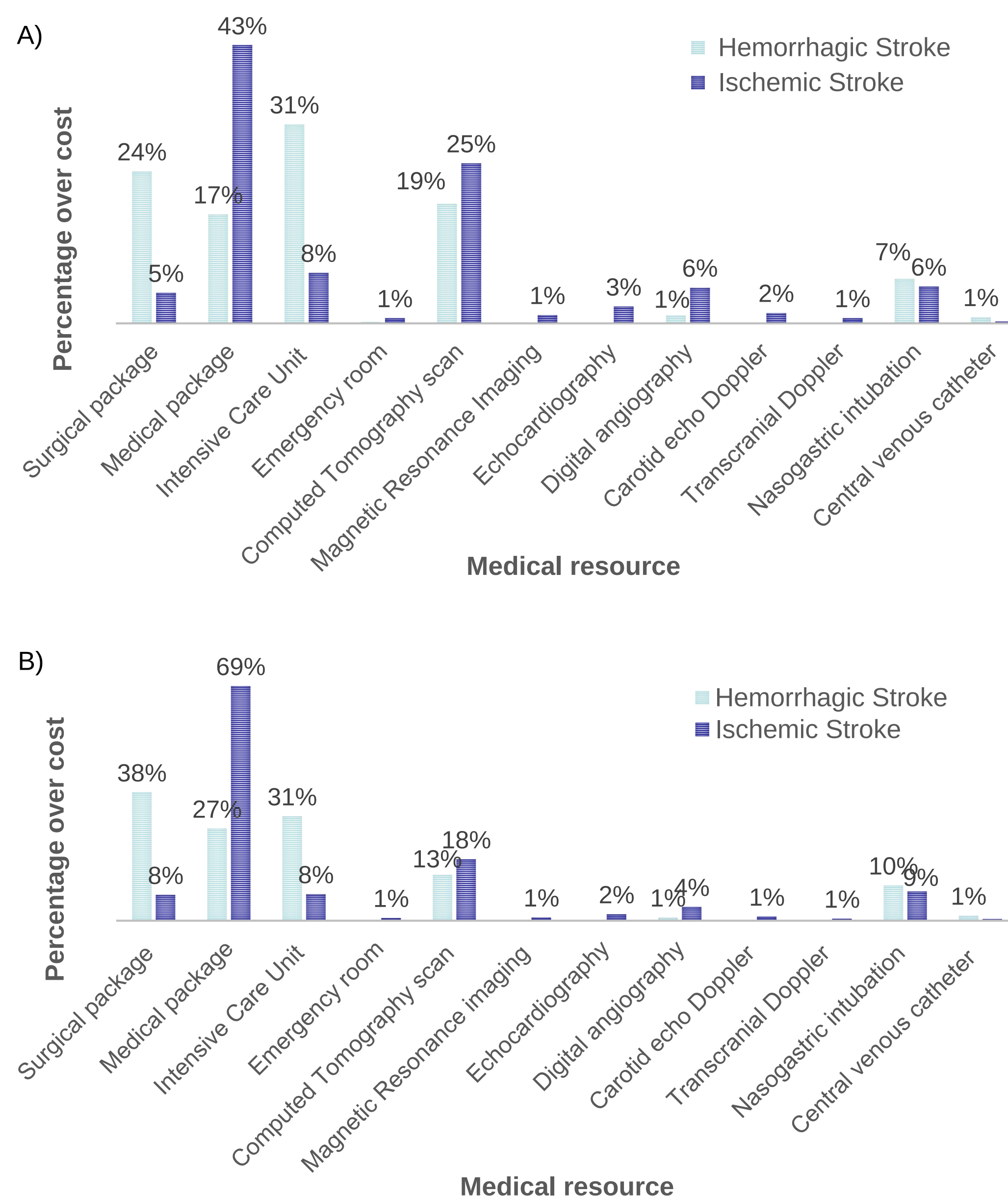


Figure 3: Percentage of medical resource costs for stroke treatment after correction: A) IPCA health services index ; B) VCMH index

The national average of hospital care costs for hemorrhagic stroke was around R\$ 415 million (USD 108.6 million) and for ischemic stroke around R\$ 1.1 billion (USD 288 million), considering indexation by IPCA.

When considering indexation by VCMH, these costs would reach R\$ 608 million (USD 159 million) and R\$ 1.6 billion (USD 419 million), respectively - which represents a 32% increase.

The daily cost with loss of productivity for the Brazilian population during hospitalization was estimated at R\$ 861 thousand (USD 225 thousand) for the hemorrhagic stroke and R\$ 6,6 million (USD 1.7 million) for the ischemic stroke.

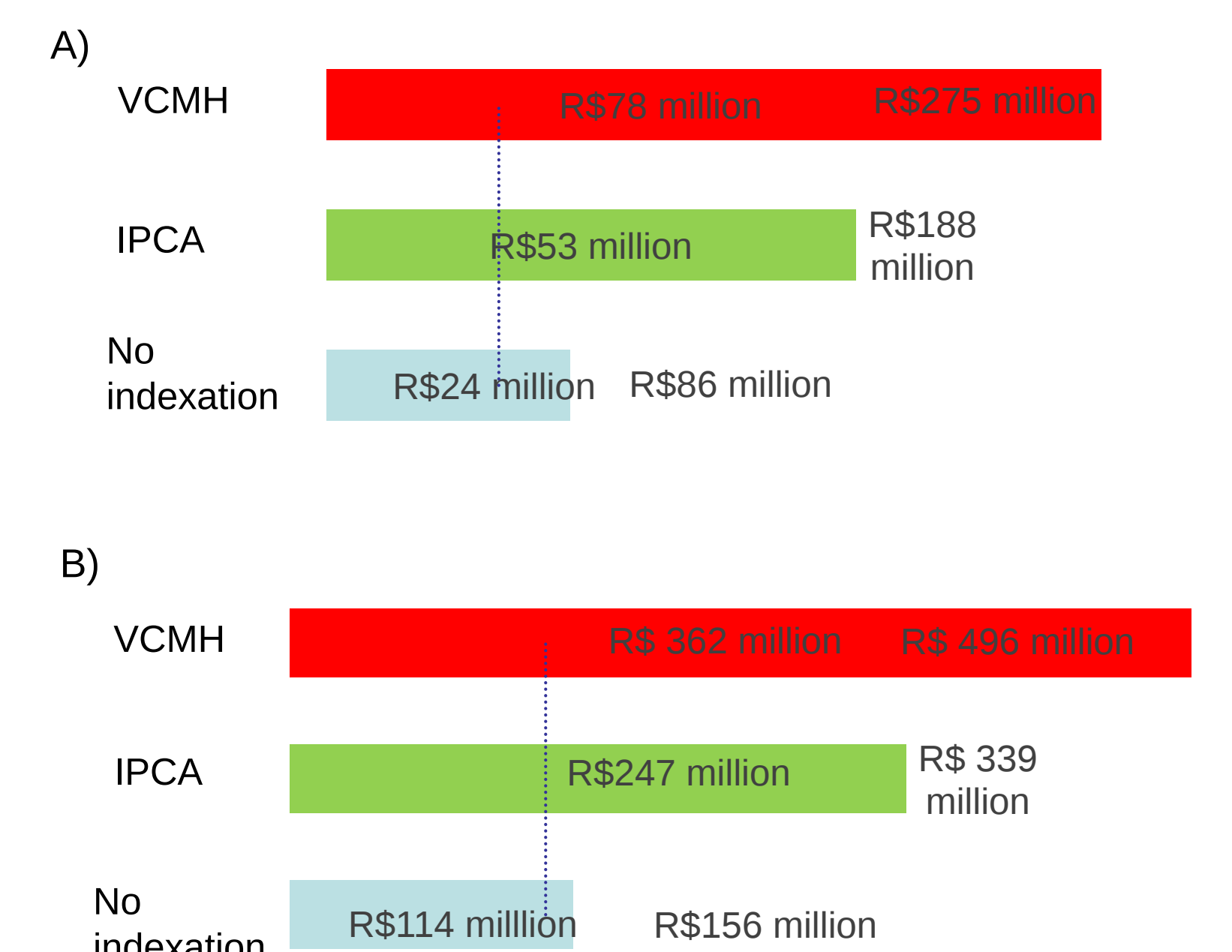


Figure 4: Tornado Sensitivity Analysis of stroke treatment costs indexation: A) Hemorrhagic stroke; B) Ischemic stroke

Note:

Purchasing Power Parity index:
USD 1 = R\$ 3,82.

Conclusions

The present study demonstrated that the occurrence of stroke leads to high economic losses for the country. The results indicate the need to implement public policies focused on reducing stroke cases in Brazil, not only to generate better allocation and distribution of resources in the health system, but also to save with productivity losses.

Table1 – Parameters considered in the calculation of indirect costs with loss of productivity

PARAMETERS	NUMBER	
Mean monthly income of the employed population	R\$ 2.227,50 (USD 583)	
Mean rate of unemployment	8,2%	
STUDY	HEMORRHAGIC STROKE	ISCHEMIC STROKE
Population	45	271
% of population ≤ 60 years	17/45 (38%)	127/271 (47%)
Employed population ≤ 60 years	15	116
Mean duration of hospitalization (days)	12	13,3
Costs with loss of productivity during the length of stay in hospital	R\$ 13 thousand (USD 3.4 thousand)	R\$ 114 thousand (USD 29.8 thousand)
NATIONAL POPULATION		
Employed population ≤ 60 years which had stroke	11.602	89.507
National costs with loss of productivity per hospitalization day	R\$ 861 thousand (USD 225 million)	R\$ 6 million (USD 1.5 million)
National costs with loss of productivity regarding mean duration of hospitalization	R\$ 10 million (USD 2.6 million)	R\$ 88 million (USD 23 million)