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Health Economics Article Series

The annual economic burden of patent foramen ovale-associated stroke in the United States¹

John J. Volpi,^a Scott E. Kasner,^b Jet Neervoort,^c Lambertus F. Wolters,^c Timon Louwsma,^{c,d} Anne K. Marti,^e and Erik J. Landaas^e

An in-depth analysis of stroke data reveals the significant patient- and budget-related impacts around the treatment of cryptogenic stroke (which occurs without a clear underlying cause), including screening, diagnosis, and device selection.

Current challenge

Stroke is the second leading cause of death worldwide

25%-40%

of ischemic strokes are classified as cryptogenic, with patent foramen ovale (PFO) as a potential underlying cause

44,000-71,000

new and recurrent PFO-associated strokes occur annually

Up to 2,900 PFO-associated strokes are fatal

\$56.5B

In the US, the **economic burden of stroke** between 2018 and 2019 was **estimated at \$56.5 billion**, corresponding to 0.26% of the gross domestic product in that year.

a. The Houston Methodist Institute for Academic Medicine, Houston, Texas, USA.

b. Department of Neurology, University of Pennsylvania, Philadelphia, Pennsylvania, USA.

c. Asc Academics BV, Groningen, Netherlands.

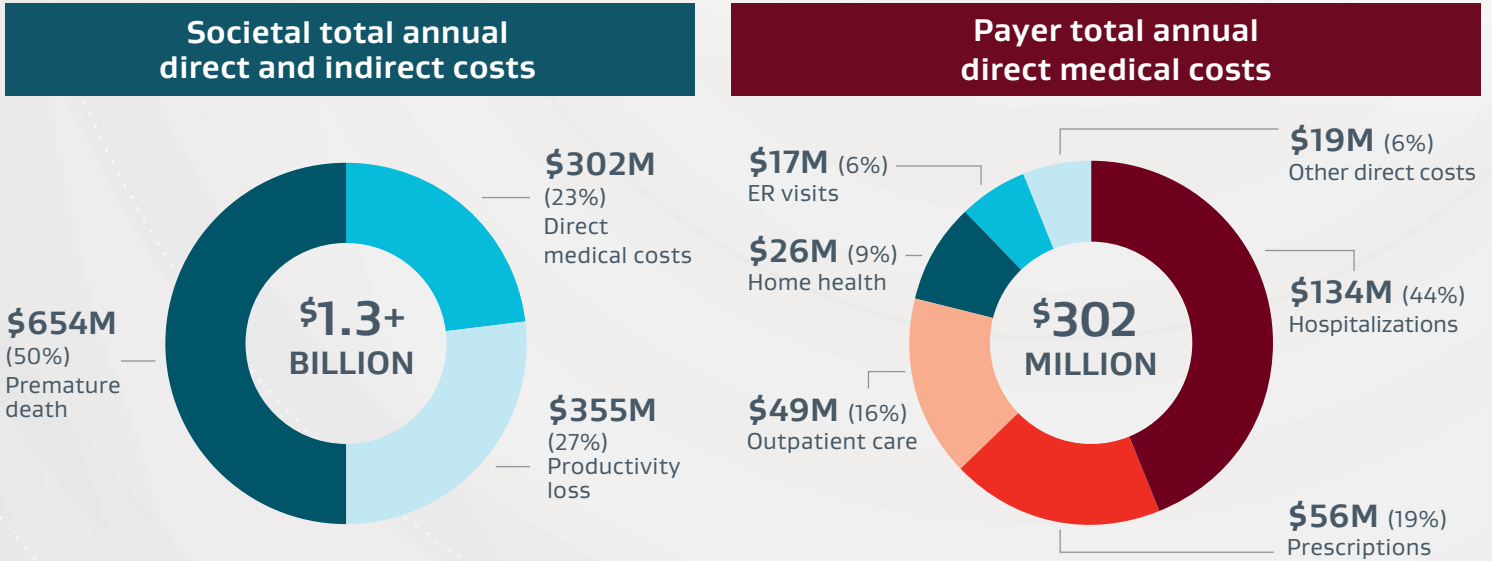
d. Department of Health Sciences, University Medical Center Groningen, Groningen, Netherlands.

e. W. L. Gore & Associates, Newark, Delaware, USA.

Early intervention and PFO closure could significantly reduce both clinical and economic burden

Study results^f

The total direct and indirect costs of PFO-associated strokes in the US were estimated at \$1.3 billion annually, with \$1.0 billion from new strokes and \$305 million from recurrent strokes.



Conclusions

Recurrent strokes account for 25% of total societal costs, and in-patient hospitalization is the largest driver of direct medical costs.

Recurrent PFO-associated stroke is a costly, preventable condition. These findings provide a powerful case for increased screening and treatment.

By changing the way we look at PFO screening, diagnosis, and treatment, we have the opportunity to reduce PFO-associated stroke costs and improve patient outcomes.

Discover the potential impact of PFO diagnosis and treatment. [Access the full publication.](#)

f. The data presented utilized a top-down, prevalence-based approach. This estimate applies national stroke incidence and cost data to calculate the annual economic burden of PFO-associated stroke. The societal perspective includes both direct and indirect medical costs. The payer perspective focused solely on direct health care costs.

Reference
1. Volpi JJ, Kasner SE, Neervoort J, et al. The annual economic burden of patent foramen ovale-associated stroke in the United States. *Stroke Cerebrovasc Dis.* 2025;34(6):108319. doi:10.1016/j.jstrokecerebrovasdis.2025.108319

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