

# Budget impact analysis of Faricimab for treating patients with Diabetes Macular Edema or Neovascular Age-Related Macular Degeneration in Guatemala



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## Introduction

Diabetic macular edema (DME) and neovascular age-related macular degeneration (nAMD) are severe eye conditions that can cause irreversible vision loss if left untreated [1,2]. In Guatemala, these conditions affect a significant portion of the population, and the current treatment options can be costly and burdensome. Faricimab is a newly approved treatment that offers a more convenient dosing schedule and has shown promising results in clinical trials [3-5]. Therefore, it is essential to assess the potential budget impact of integrating faricimab into the healthcare system of Guatemala to ensure that patients have access to the best possible care. The purpose of this study is to present the results of a budget impact analysis (BIA) conducted on using faricimab to treat patients with DME and nAMD in Guatemala. In addition, the study aimed to evaluate the potential economic impact of integrating this new treatment option into the healthcare system of Guatemala. The findings of this BIA can provide valuable insights into the potential financial implications of introducing faricimab as a new treatment option for these debilitating eye conditions in Guatemala.

## Methods

This BIA aims to assess the financial impact of introducing faricimab for patients with DME or nAMD in Guatemala. The BIA estimated the number of patients currently suffering from DME in Guatemala based on the following variables: distribution of the population aged 18-64 and > 65 years [4], prevalence of diabetes in each age group, prevalence of DME in patients in diabetic patients, proportion of patients with DME diagnosed, and patients eligible for anti-vascular endothelial growth factor (anti-VEGF) therapy. Based on the above, the model estimated that by 2023 there would be 32 090 DME patients eligible for treatment with faricimab, of which 48 % the model assumed to have bilateral disease. The annual growth of new patients with DME who will need therapy is 6.4 %. In the case of nAMD, the model considered the following variables to estimate the number of patients who currently have the disease: population > 50 years [4], the proportion of patients who probably have nAMD, the ratio of patients diagnosed, and patients who are candidates for anti-VEGF therapy. Based on the above, the model estimated 2 383 patients with nAMD eligible for faricimab treatment by 2023, with 36 % assumed to have bilateral disease. In addition, the annual growth of new patients needing therapy is 11 %. Table 1 shows the number of patients and the number of eyes eligible to receive faricimab between 2023 and 2026 in patients with DME and nAMD in Guatemala. The market share assumed by the model in 2023 is that no patients are receiving faricimab, 90 %, bevacizumab; 7 %, ranibizumab, and 3 %, aflibercept. Furthermore, the model assumes that faricimab's market share will grow by 3 % per year between 2024 and 2026 at the expense of the bevacizumab market. The perspective of the analysis is from the third-party payer, and the costs are in USD 2022.

## References

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## Results

Table 3 shows the number of patients per comparator who would receive treatment for DME in Guatemala in the current scenario without faricimab and in the plan with faricimab. Likewise, Table 4 has the same results for patients with nAMD. The budgetary impact of including 3 % of patients with DME and nAMD in Guatemala each year is \$ 1.71 million in the first year, \$ 3.46 million in the second year, and \$ 5.23 million in the third year.

**Table 1.** The number of patients and eyes with DME or nAMD candidates for anti-VEGF treatment in Guatemala between 2023 and 2026.

Year	DME		nAMD	
	# of patients	# of eyes	# of patients	# of eyes
2023	32,090	47,493	2,383	3,241
2024	32,377	47,918	2,405	3,270
2025	32,656	48,331	2,425	3,298
2026	32,927	48,731	2,445	3,326

**Table 2.** The number of anti-VEGF injections in the first year and from the second year, and the drug dose in each injection in patients with DME / nAMD.

Anti-VEGF Therapy	Dose per injection (mg)	# of injections per year			
		DME		nAMD	
		Year 1	Year 2+	Year 1	Year 2+
Faricimab	6.00	8.4	4.9	6.79	4.69
Aflibercept	2.00	9.4	5.0	8.00	5.63
Bevacizumab	1.25	9.9	5.5	10.06	8.44
Ranibizumab	0.50	9.5	5.4	9.13	7.14

Table 2 shows the dose per injection (mg) and the number of annual injections of faricimab and anti-VEGF comparators for DME and nAMD, based on those reported by faricimab clinical trials [1-3] and a meta-analysis of anti-VEGF [5]. In addition, the BIA compares the total costs over three years between the introduction of faricimab.

## Discussion

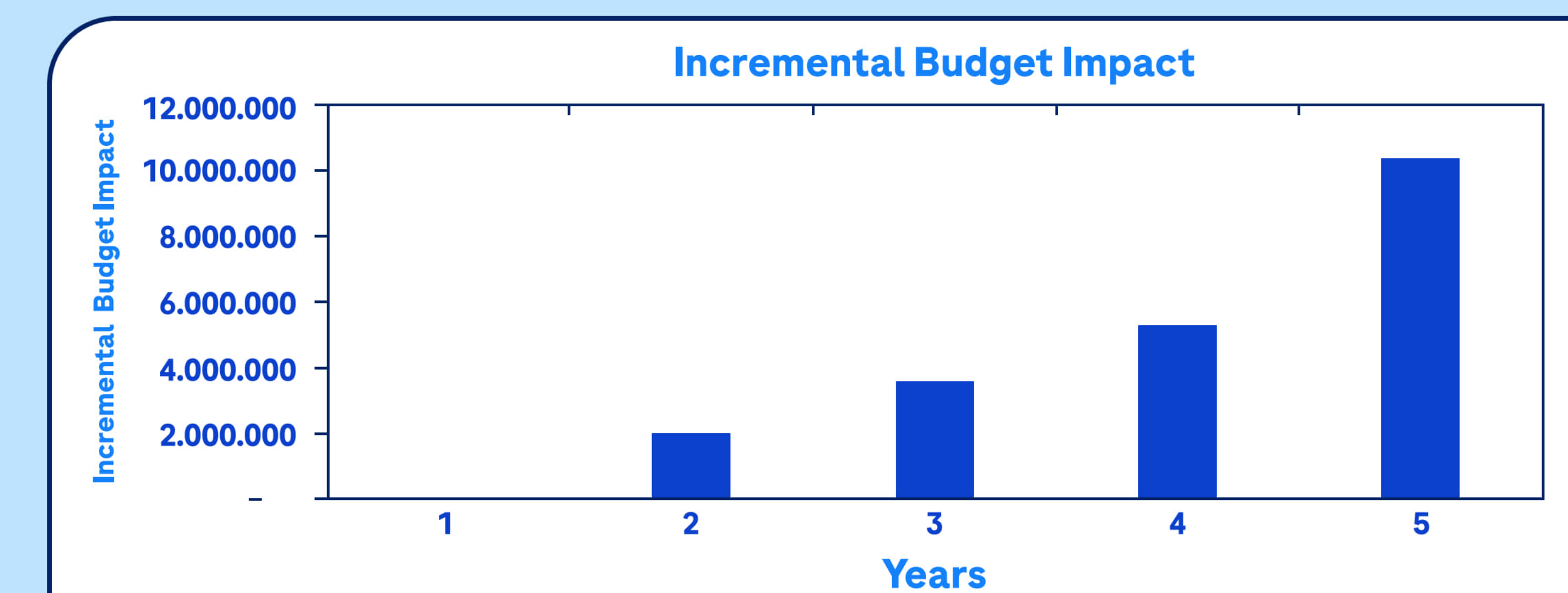
Including faricimab in treating DME and nAMD in Guatemala has a budget impact of \$10.4 million for the country's health system in three years, with a market share in which the proportion of patients receiving faricimab increases by 3 % each year. After three years, this 9 % market share would be 3 183 patients out of the almost 35 000 who would need to receive treatment for DME and nAMD in Guatemala by 2026. This result happens because the standard of care for DME and nAMD in Guatemala is a very low-cost drug, although its frequency of application is higher (Table 2). The main weakness of this economic model is that it does not estimate the costs of adverse events related to bevacizumab, as the model assumes that they do not exist. However, subconjunctival hemorrhages, vitreous hemorrhages, and endophthalmitis, among others, have been described [8]. The main strength of this economic model is that a group of expert retinal ophthalmologists who attend to patients with DME and nAMD in Guatemala estimated the cost of healthcare resources.

## Conclusion

The inclusion of faricimab for the treatment of DME and nAMD in Guatemala has a budget impact of \$ 10.4 million in three years because the primary drug used in the country has a low price. However, its use for this disease is off-label.

**Table 3.** The number of patients per comparator who would receive treatment for DME in Guatemala in a scenario with/without faricimab.

	The base year (2023)	2024	2025	2026
	Scenario without Faricimab			
Faricimab	0	0	0	0
Aflibercept	963	971	980	988
Bevacizumab	28,881	29,140	29,391	29,634
Ranibizumab	2,246	2,266	2,286	2,305
Total	32,090	32,377	32,656	32,927
	Scenario with Faricimab			
	0	971	1,959	2,963
Aflibercept	963	917	980	988
Bevacizumab	28,881	28,168	27,431	26,671
Ranibizumab	2,246	2,266	2,286	2,305
Total	32,090	32,377	32,656	32,927



**Figure 1.** The incremental budget impact of faricimab for treating DME and nAMD in Guatemala, with a market share that increases by 3% each year for faricimab.

**Table 4.** The number of patients per comparator who would receive treatment for nAMD in Guatemala in a scenario with/without faricimab.

	The base year (2023)	2024	2025	2026
	Scenario without Faricimab			
Faricimab	0	0	0	0
Aflibercept	71	72	73	73
Bevacizumab	2,193	2,212	2,231	2,250
Ranibizumab	119	120	121	122
Total	2,383	2,405	2,425	2,445
	Scenario with Faricimab			
	0	72	146	220
Aflibercept	71	72	73	73
Bevacizumab	2,193	2,140	2,086	2,030
Ranibizumab	119	120	121	122
Total	2,383	2,405	2,425	2,445

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