# Indirect Costs Associated With Neovascular Age-Related Macular Degeneration (nAMD) in Colombia

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## Introduction

Neovascular Age-related Macular Degeneration (nAMD) is a degenerative disorder of the macula characterized by the development of choroidal neovascularization, meaning abnormal growth of fragile new blood vessels beneath the macula, causing it to lift and resulting in leakage of blood and fluid [1]. The prevalence of this condition is estimated to be between 0.2% and 5.4% in individuals aged 60 to 85 years and between 12% and 30% in those aged 85 years or older. Of the 100% of patients with this disease, it is estimated that 86% have atrophic nAMD and 14% have exudative or wet stage [1].

From the Barometer Program, a global survey was conducted targeting patients, providers, and clinical staff regarding the treatment of this disease, analyzing patients' perspectives on treatment adherence, presenting sociodemographic data of the participants, and identifying the main challenges and opportunities to improve adherence. Additionally, aspects such as the effectiveness of current treatments and unmet needs in the management of these diseases were evaluated

The survey conducted for the estimation of neovascular age-related macular degeneration (nAMD), titled 'A Global Survey of patients, providers, and clinic staff regarding the management of neovascular age-related macular degeneration (nAMD),' aimed primarily to provide a comprehensive view of the factors contributing to non-adherence in the treatment of the disease, as well as to obtain an overall perspective on patients' experiences regarding the care received from clinical staff.

The study was conducted globally in 24 countries, resulting in a report with specific findings for Colombia, where the survey was applied in five ophthalmology clinics. In these clinics, four printed optical recognition questionnaires were used, designed to gather information on the perceptions and opinions of the following groups: [2]

- Patients currently receiving anti-VEGF therapy for the treatment of DME.
- Healthcare professionals (or providers) who prescribe and/or administer anti-VEGF injections in the treatment of DME.
- Staff members of any kind in the participating clinics who, although they do not prescribe or administer anti-VEGF injections for the treatment of DME, regularly interact with patients in other ways.

# Objetive

To calculate indirect costs associated with nAMD over a period of 2 years (2022 to 2023), based on data from survey 'A Global Survey of patients, providers, and clinic staff regarding the management of neovascular age-related macular degeneration (nAMD)' conducted globally, in which Colombia was a participating country.

# Methods & Results

A total of 283 patients with nAMD were surveyed in Colombia. Estimation was made in terms of productivity loss calculated from time spent on transportation and healthcare attention, including medical appointments, administration of Anti-VEGF therapies with/without caregiver, adjusted for the patient's age.

The sociodemographic data collected in the survey provide relevant information about patients affected by nAMD, such as age, gender, and place of residence. In Panel 1, the distribution of patients among these variables can be observed together.

## References

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### Panel 1. Sociodemographic Information of Surveyed Patients

### Figure 1. Ages of patients with nAMD







Indirect Costs for Care Expenses were calculated only for patients who have a paid caregiver or healthcare worker, in order to assess the annual indirect costs that patients incur when hiring a specialized healthcare caregiver to ensure constant support in their treatment.

C caregiver = (Q pat.\_caregiver. \* % pat caregiver) \* (Salary month\_caregiver \* 12)

For Indirect Costs Due to Productivity Loss, the calculation of indirect costs due to productivity loss was segmented into: • Unreceived income due to time spent attending appointments. These indirect costs were calculated only for unpaid caregivers of patients in order to estimate the economic impact associated with the time they dedicate to accompanying patients, which represents a loss of income from their economic activities.

**Per Prod** unpaid\_caregiver

= [(( Qcaregivers \* % caregunpaid. \* % pat<6hrs) \* (Qappointments + Qinyecc) \* Qhourspond<6 \* salary hour\_caregiver )] + [(( Qcaregivers \* % caregunpaid. \* % pat>6hrs) \* (Qappointments + Qinyecc) \* Qhourspond>6 \* salary hour\_caregiver )]

• Productivity Losses for Patients Under 60 Years. The indirect costs due to productivity loss for patients under 60 years old were calculated under the assumption that this population is in the active working age (11,3%).

Loss\_Prod par <60 years = (Q tot pat \* % patients <60 years) \* ((Salary month\_gral \* 12) \* Ponderator GHE)

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Pat: Patients I Care: Caregiver I Pond: Ponderator I CT: Trasnportation Costs I PProd: Lose of productivity I Q: Quantity



#### Figure 3. Place of residence of patients with nAMD

To estimate transportation costs, the average costs of urban and intermunicipal transportation (less than and more than 5 hours) was calculated based on secondary information from the cities where the participating clinics in the survey are located The calculation was carried out as follows:

#### **Transportation costs of patient**

<b>CT</b> patients	
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= [( Qpat * %pat<2hrs)	* (Qappointments + Qinyecc) * (costsTray<2h * 2)	2))]
<pre>+ [( Qpat * %pat2-5hrs) * (Qappointments + Qinyecc )</pre>	<pre>* (Qappointments + Qinyecc) * (costsTray2-5h* 2 * (costsTray&gt;5h* 2))</pre>	2))] +

#### **Transportation costs of caregiver**

**CT** caregiver

= [( Qcaregiver * %pat<2hrs)	* (Qappointments + Qinyecc)	* (costsTray<2h * 2))]
+ [(Qcaregiver * %pat2-5hrs)	* (Qappointments + Qinyecc)	* (costsTray2-5h * 2))]
+ [(( Qcaregiver * %pat>5hrs)	* (Qappointments + Qinyecc)	* (costsTray>5h * 2))

It should be additionally considered in these calculations that the transportation costs should be multiplied by two, as it would account for the round trips of both the patient and the companion. On the other hand, the annual dose corresponds to the total treatment for one year; therefore, the calculations made correspond to the total annual value. For the calculation of the costs for year 2, the transportation costs adjusted for CPI and the frequencies of anti-VEGF therapy for year 2 were used in those cases where the number of consultations in the second year differed from the first.

Consumer price index (CPI)

Using an exchange rate of COP\$4.061 Colombian pesos per US dollar (USD), the indirect costs results presented in the following table correspond to the total by costs category for the two years of study (2022 – 2023), at 2024 prices for patients plus caregivers

### Table 1. Indirect Costs results by category.

Costs	Values (USD\$) to prices 2024 n=283	Values (USD\$) by pperson to prices 2024
Transportation costs	\$143.112	\$252.85
Total Costs of Paid Caregiver	\$45.093	\$6.884
Total Unreceived Income	\$60.011	\$249.24
Total Productivity Losses	\$95.498	\$2.986
Total Indirect Costs	\$343.714	\$607.26

## Conclusions

Indirect costs of nAMD for patient/caregiver in a two-year period was USD\$1,215. The increase in these indirect costs is related to the frequency of the treatment, highlighting the benefit that a treatment scheme such as the treat and extent could provide in terms of reduction of these costs.



(Qpat \* %pat>5hrs)

