

TRANSFORMING LIVES: AN INVESTMENT CASE FOR EYE HEALTH

Frequently asked questions

- 1. We say this report is “the first of its kind for eye health”. There have been other investment cases in the past, what makes this model unique?**
 - a. This is the first investment case to model the costs and benefits associated with the two leading causes of vision impairment: cataract and refractive error. This report uses a unique data set on the prevalence of eye conditions by severity and five-year age groups (and sex and country) provided by the Vision Loss Expert Group (VLEG), which has never been used in studies of this kind.

- 2. The cost estimates in the report are significantly higher than the US\$24 billion estimated in the WHO World Report on Vision to address the total backlog of cataract and refractive error globally. How does the report account for this difference?**
 - a. The unit costs provided in this report were developed using a detailed unit cost method (with costs varying by country) as opposed to the World Report on Vision, which included standardised costs for cataract and refractive error. Detailed ingredients-based costing is used to define the unit costs for cataract and refractive error treatment for each country included in the model. Some countries (e.g. China) have a large unit cost for treatment of eye conditions due to several factors mentioned in the Appendix of the report. Hence, the figure is larger than previously estimated.
 - b. The cost estimates used in this report include direct non-medical costs. For example, costs associated with management and reporting, transportation, outcomes monitoring, and facility overheads are included, rather than simply the direct medical cost of the surgical or other intervention itself.
 - c. The cost estimates in this report account for ongoing provision of glasses and refraction every two years, in line with recommendations on updating of prescriptions.

- 3. The report estimates the return on investment across 19 countries where The Foundation works and where the burden of disease is high. Why were these countries chosen? Can these results be generalised to a global context?**
 - a. These 19 countries account for 40% of the global burden of disease relating to cataract and refractive error. They were chosen due to The Foundation’s existing relationships with implementing partners in these countries. These relationships allowed The Foundation to collect costing data from public and private providers. This data contributed to development of unit costing estimates that were essential for generating benefit cost ratio estimates in the model.
 - b. Results vary significantly from country to country, as such global generalisations should be made with caution. It is important to note that South and Central America are absent from the current estimates, given The Foundation does not program in these regions. However, the regional variation currently incorporated into the model suggests that investing in eye health remains an economic net positive in all regions included in the model.

- 4. How applicable is this report to Australia? Does restoring sight in Australia generate similar significant ROI? Are there any learnings we can apply in an Australian context?**
 - a. It is unclear whether restoring sight in Australia would generate similar returns on investment, given the exclusion of Australia from the modelling. However, the fact that all countries showed a net economic benefit from investing in eye health suggests it is likely that restoring sight in Australia generates significant returns on investment.
 - b. Given Australia is excluded from the modelling, further research is required to determine whether the findings are consistent in an Australian context. In particular, this would require an assessment of the impact of eye health on economic productivity on distinct groups of the Australian population, such as disadvantaged or marginalised communities, that may benefit most from investment.

- 5. Costs for refractive error treatment are higher in the report than the estimates for cataract surgery, which is counterintuitive. Why is this the case?**
 - a. Costs associated with training screeners, particularly in regions where prevalence is low and techniques for identifying patients are undeveloped, can lead to high costs for treatment of refractive error. For example, in countries where equipment and refraction costs are high, yet the relative number of patients is low, unit costs will be higher.
 - b. Similarly, costs of lenses and other key materials and equipment associated with treating refractive error are high, and only custom spectacles are included in this calculation. In regions where identification of refractive error conditions are less developed, this can increase the overall unit cost of provision.
 - c. The cost estimates in this report account for ongoing provision of spectacles and refraction every two years during the intervention period, in line with recommendations on updating of myopic prescriptions. Cataract treatment costs on the other hand are only calculated for a one-off treatment.

- 6. Why are the unit costs for cataract surgery in China so much higher than the unit costs in other countries included in the study? Why is there so much variation country by country?**
 - a. Factors leading to an increased unit cost for cataract surgery in China include a high price of IOLs, longer post-operative stays, and greater proportions of phacoemulsification surgeries, among others.
 - b. The ingredients-based costing method induces large variation by country, where things like professional salaries, monitoring and reporting, and equipment and materials vary greatly in each local context.

- 7. There is a difference in treatment costs for cataract between PHACO and SICS. Does the ROI estimate of an average of 20.5 account for this difference?**
 - a. Yes, the unit cost is weighted by the estimated proportion of PHACO vs SICS surgeries in each country.

- 8. How were the unit costs for both cataract and refractive error estimated? Is this data publicly available?**
 - a. An ingredients-based costing method (see Appendix costs of interventions) was used. Unit costs were estimated based on data provided by The Foundation's program delivery partners via country offices. Individual data is not publicly available. However, data for low, middle, and high-income scenarios can be provided on request.

- 9. The report estimates that the cost of treating the interventions required to achieve scale-up goals over the 10-year period across the 19 countries included in the model is US\$337.1 billion. Is this aim realistic?**
 - a. It is important to consider this cost in the context of total health expenditure. Using data on total health expenditure for the last 10 years of data published by the WHO,

we fit a linear trendline to conservatively estimate (due to the rapid increase in health expenditure in the last five years) total health expenditure across the intervention period (i.e. to 2030) for the 19 countries included in the report. The total health expenditure across this period was estimated at over USD \$13 trillion, of which the US\$337.1 billion accounts for less than 2.5%.

- b. The estimated expenditure for eye health is a significant increase for the countries included in the model, in line with the increased treatments associated with meeting the WHA targets. However, as demonstrated by the model, this investment can provide enormous economic returns.

10. With limited formal research on the eye health-related benefits on productivity, how has the report estimated the changes in productivity associated with vision improvement?

- a. Changes in labour force participation are based on literature published by Marques et al (2021) and use changes in disability weights as a proxy for labour force participation changes, as investigated by the report.
- b. Productivity is estimated using stepwise decreases based on vision impairment levels, which are conservative compared to estimates provided by Reddy et al (2018) in an oft-cited randomised trial. This method is in line with adjustments for severity of other health conditions studied by similar investment cases, such as adolescent health (Sweeny et al 2019; Sheehan et al 2017; Rasmussen et al 2019; Rasmussen et al 2016).

11. Why does the report use benefit cost ratios (BCRs) compared to a simple return on investment (ROI)?

- a. BCRs are used as the benefits are not 'realised' to the investor. So, if a government is funding cataract surgeries, the benefits are to the broader economy rather than directly back into the investor's pockets. As an ROI typically measures return to the investor, it is not an accurate representation of the costs and benefits modelled in the report.

12. Does the model include robustness checks to account for regional variations in unit costs and productivity changes?

- a. Yes, these results were deemed too detailed for inclusion in the report and will be included as supplementary material under a formal publication currently being written.

13. What does a 'Year of Sight Saved' (YSS) mean?

- a. One year of sight represents one year a person has lived with full sight, when they would have lived as a person who is blind.
- b. It's a standardised way of looking at our interventions, not all of which impact people who are blind, but also people with different severities of vision impairment.
- c. A year of sight saved can be considered analogous to a disability adjusted life year (DALY) averted. DALYs represent the loss of one year in full health. The difference between YSS and DALY is that YSS do not account for years of life lost (YLL), due to the perceived limited impact of blindness and vision impairment on mortality.

14. The report notes that the economic benefit can be calculated by assigning an economic value per year of sight saved. Has this method been explored, and how does it compare to the estimates based on productivity, schooling, and employment alone?

- a. This method has been extensively applied to DALYs. However, the valuation of a YSS is more complex, given the lack of research on the valuation of this specific metric.
- b. The Foundation is working on additional research, including quality of life instruments that will allow a standardised, evidence-based valuation of a YSS for incorporation into future models.

15. How are the benefits of an additional year of schooling translated into economic value? What age groups have been used to define school-aged individuals?

- a. Individuals aged 5-9, 10-14 and 15-19 are defined as school-aged individuals, due to the five-year age disaggregation in our data.
- b. If an individual receives glasses, they are assumed to receive the benefits associated with staying in school for one additional year. The report notes this is a broad assumption but provides several citations of studies that suggest these estimated returns are conservative.

16. The report refers to a 'discounted cost' of providing interventions to treat eye health. What is a discounted cost and how does it differ from a normal cost?

- a. Discounted costing adjusts for the time preference of money. Individuals want more money now, so if costs are estimated to be incurred in the future, we need to discount it.
- b. Discounting is associated with the economic concept that a dollar today is worth more than a dollar in the future, and accounts for forgone opportunities (e.g. investments) associated with the time period.

17. Will it really be possible to meet the WHA 2030 goals?

- a. The WHA goals are ambitious, but the results from this investment case show that there is a clear economic incentive for countries to actively target achievement of these goals.