The World Health Organization (WHO) estimates that there are globally 39 million blind people and 246 million visually impaired at risk of blindness. Two thirds of these individuals live in developing countries, and more than half of the cases of blindness are avoidable or curable with the technology currently available. People ≥50 years of age represent 65% of the blind and 82% of the visually impaired. In Brazil, it is roughly estimated that there are 1.2 million blind people, 40% of them due to cataract. WHO also recognizes that near impaired vision is an important ocular condition that affects quality of life, but still has to be included in WHO estimates of burden of diseases, at least in part by the shortage of population based data scientifically validated. The most common cause of near vision impairment is presbyopia, a physiological, age-related, irreversible reduction in the eye's ability to change its focus to see objects that are near, resulting in the need for spectacle correction to assist in near vision-related tasks. The aim of this population-based study is to evaluate the prevalence and causes of near and distance vision impairment and blindness in the city of Parintins, Amazonas (AM). A population-based sample of adults ≥45 years of age residents of randomly selected urban and rural districts in the city of Parintins, AM, will be identified. In addition, in equatorial regions, with a high exposure to ultraviolet radiation, pterygium can be a prevalent cause of blindness/visual impairment, having currently only isolated reports of prevalence of this ocular disease in Brazilian equatorial territory. As a general proxy for the performance of the eye care system, the delivery and visual outcomes of cataract surgical services will also be evaluated. Because of the territorial extension and socioeconomic discrepancies, studies in underserved and/or rural areas with poor access to eye care services are needed to obtain more representative estimates of visual impairment and blindness in our country. The outcomes of this study will give health authorities information to improve ocular health services in that population.
Preliminary data from a pilot study were recently collected to provide an initial picture of the magnitude of visual impairment and blindness in that Amazonian town. An urban census sector from the city of Parintins was conveniently chosen for its proximity to the eye clinic for ophthalmic assessment. Subjects were enumerated through a door-to-door survey and those with ages 45 years and older were invited for measurement of visual acuity for distance and near followed by an ocular examination. In this small preliminary urban sample of Parintins population, the prevalence of blindness (visual acuity in the better-vision eye <20/200) was three times higher than that found in a study performed in the city of São Paulo (FAPESP 04/06670-9) with the same protocol in a low-income urban area of São Paulo city, the most industrialized region of the country. In Parintins sample, cataract followed by retinal disorders and corneal scar/opacities were the main causes of blindness. These results were distinct from those of the São Paulo Eye Study (SPES) in which retinal disorders were the main cause of blindness followed by cataract and glaucoma. Visual impairment (visual acuity in the better-vision eye <20/63->20/200) prevalence in Parintins was higher than in the SPES, mainly due either to uncorrected refractive errors (myopia, hyperopia, astigmatism) or cataract. The prevalence of near vision impairment in middle-aged and older adults was almost 90% with most of it due to presbyopia. More than half of those in need of near glasses were not wearing them, reinforcing the need of access to refractive services in that region. The prevalence of cataract surgery was around 20%, higher compared with previous studies in Brazil. Cataract surgery campaigns implemented in the last 10 years in that area had provided access to this population in remote area of the Amazon. However, post-operative visual acuity was within WHO acceptable levels in less than two-thirds of operated eyes, reinforcing the need of improvement and monitoring of cataract surgery quality outcomes. Based on the preliminary experience the study is currently being performed in 15 urban randomly chosen clusters.

Figure 2. Slit-lamp exam for cataract detection and assessment of other anterior segment abnormalities of the eye


