International Health 2022; **14**: 1–4
https://doi.org/10.1093/inthealth/ihab052 Advance Access publication 31 August 2021

EDITORIAL

Eye health in Papua New Guinea

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Received 26 July 2021; editorial decision 29 July 2021; accepted 4 August 2021

Overview

In 2016, a Rapid Assessment of Avoidable Blindness (RAAB) was conducted in Papua New Guinea (PNG). The results of the RAAB painted a bleak picture of the status of eye health of the people in PNG, demonstrating that the prevalence of blindness among people aged ≥50 y is 5.6%,[1,2] one of the highest rates in the world.

PNG faces undeniable challenges in providing healthcare for its population. However, there is cause for optimism: the eye health sector has made major progress over the last 5 y to obtain data on eye health that were previously considered difficult, complex, dangerous and expensive. The National Prevention of Blindness Committee (PBL) of PNG is one of the strongest in the Western Pacific region and there have been significant achievements in research, in human resources development and improved infrastructure.

This editorial highlights the progress made in eye health in PNG and the role of the PBL. It highlights the achievements and successes in improving eye health in one of the world's most challenging environments. Making the case for collective action amongst like-minded organizations to achieve comprehensive outcomes is even more important as we start to emerge from the COVID-19 pandemic.

Introduction

PNG is one of the most isolated countries in the world. Writing at the time of COVID-19 this is by our design a necessity, as the country is closed to all international transport. In some ways this isolation is a metaphor for those working in the eye health sector.

However, we benefit from overseas colleagues and collaborations and provide mutual support through strong national networks. In addition, to those who have worked in eye health, it is clear that we are the outliers; the sector is seen as having got its act together, despite having being forgotten for so long and needing to forge its own path.

My fellow Papua New Guineans are coming together in solidarity and kindness during this time of unprecedented global crisis: it is reminiscent of how the PNG eye health sector has developed and flourished through adversity. We are now stronger as a sector because of the challenges we have confronted. Similarly, post-COVID-19, the world will recognize the importance of public health and the economic impact of failing to invest properly in healthcare. Those of us working in PNG eye health have already learnt this lesson and, despite the challenges, have made significant progress.

I write this editorial as both the Chair of the PBL of Papua New Guinea and as the Senior Lecturer in Ophthalmology in Papua New Guinea. These are positions that did not exist when I graduated. I look back on the past decades with pride for all that my colleagues have achieved, and I recognize that this story is a personal journey. More than that it is a story of successes (and still more challenges) born of necessity and through the commitment of dedicated individuals and organizations who understand that in PNG we are stronger together.

Background

PNG is a country of >8 million people, straddling the boundary of South Pacific and Southeast Asia. The population is 87% rural and agriculturally based. PNG plays host to more languages than any other country: >800 in all and >15% of the world's living languages. The mountainous, forested terrain, coastal island communities and spread of unique languages makes transport and communication challenging.

When I was a girl, growing up in the Highlands (the remote, mountainous spine of PNG, which is home to 80% of our people), eye care services were provided by visiting eye doctors, often (and particularly during the years prior to and after independence) from Australia. I remember this well because my sister was the fortunate recipient of eye surgery, performed by a visiting team in 1967, to correct her squint.

Throughout the 1980s, eye care services were provided by doctors employed by the government. The PNG Kina was strong

against the Australian dollar until 1997 and the government was able to employ three expatriate doctors based in Port Moresby, Madang and Rabaul. International non-governmental organizations (INGOs) like Helen Keller International and Sightsavers were involved in a prevalence of blindness surveys in the Eastern Highlands Province in the 1980s.

CBM (at that time known as Christoffell Blinden Mission) established a clinic at Goroka in 1985. The first PNG national ophthalmologist graduated in 1988 and worked in this clinic for 2 y before moving into private practice. A second ophthalmologist graduated in 1989. By the time I started training in 1992 there were four eye clinics in PNG. A limited number of outreach programs were run, but there was limited coordination. Ready-made spectacles and aphakic lenses were dispensed by the government dispensary; however, the supply was irregular and inconsistent.

An active blindness society was established with the Governor-General as a patron. This unfortunately disbanded, with most expatriates moving out of the country by the late 1990s.

I trained with two other senior registrars under an expatriate consultant and Dr. Bage Yominao, the second national ophthalmologist and first female ophthalmologist in PNG. There was no formal curriculum. Training was ad hoc with an emphasis on service delivery and little focus on training or public health. There were no dedicated university teaching staff, but we benefited from support from Flinders University, Australia, where three of our ophthalmologists were trained. The equipment and resources required to learn were either limited or not available.

Eye care during this period benefited from service clubs such as Rotary and Lions Clubs International Foundation (LCIF), The Laila Foundation (established by Mohammed Sultan in close consultation with our consultant, Dr. Nitin Verma), Dr. Frances Booth's PNG Eye Care Program and generous individuals like Dr. John Farmer, Dr. Geoffrey Cohn and Dr. John Kearney.

All these stakeholders in eye care were complementing government services, and whilst they were personal efforts, there was only limited collaboration prior to the establishment of the PBL. Around the year 2000, when the Vision2020 concept was formalized by the WHO and the International Agency for the Prevention of Blindness (IAPB), the eye care stakeholders in PNG attempted to form a Vision2020 committee, but this did not materialize.

Because the Vision2020 group did not come to fruition, The Fred Hollows Foundation decided to establish its own office in PNG in 2004 and helped with ophthalmology training, supported the cataract surgery program and the supply of low-cost glasses in Port Moresby General Hospital. In 2007, the foundation shifted its efforts to the training of mid-level eye care personnel and moved its offices to Madang. There was a need to establish an optical workshop, as identified by PNG Ophthalmologists, which led to the establishment of PNG Eye Care in 2008, with support from the Brien Holden Vision Institute (BHVI).

In 2011, a workshop was organized by the Chair of the IAPB Western Pacific, Dr. Richard Le Mesurier, who brought together all the stakeholders in Port Moresby. The PBL was reconstituted and officially registered as an advocacy body. Today, members of the committee represent The Fred Hollows Foundation, The Royal Australia and New Zealand College of Ophthalmologist (RANZCO), CBM, the Brien Holden Vision Institute, Callan Services, PNG Eye Care, the IAPB, the National Department of Health including our ophthalmologists and nurses, the Laila Foundation, Youth With A Mission, Divine Word University and the University of Papua New Guinea (UPNG).

Achievements

When you consider the statistics outlined in our RAAB, you might challenge how we can claim our successes. Simply put, we know we are uniquely challenged because we have done the hard work. We have led the Pacific Island countries in research and collaboration, and we are acting to implement our results.

Together we produced the National Eye Plan (NEP),[2] a document that used the global initiative for the elimination of avoidable blindness known as 'Vision 2020: Right to Sight' which outlined the pillars of disease control, infrastructure, consumables and human resources.[3] The document is aligned to the National Health Plan[4] and its Key Result Areas. It has been revised three times; the most recent version (2018–2021) used the evidence-based figures from the 2017 RAAB. All that we have achieved as a PBL team, we link to the NEP.

Infrastructure and human resources developments

The following summarizes our progress:

- National Resource Centre for Eye Health (NRC) Ophthalmology training center at the UPNG: led by the Brien Holden Vision Institute, managed by PNG Eye Care, funded by LCIF and providing a home office for PNG Eye Care, CBM, The Fred Hollows Foundation PNG, the Senior Lecturer in Ophthalmology and the Chief Ophthalmologist.
- Renovation of the Port Moresby General Hospital Eye clinic: also funded by LCIF to provide in-practice training facilities for those in training at the NRC.
- Creation of a teaching ophthalmologist position at the UPNG. CBM supported the position for 4 y from 2016 to 2019.
- Ophthalmology curriculum review led by RANZCO. Implementation of the curriculum is in its second year, one of only two universities in the Pacific Islands to offer the course.
- Integration of low vision services into the hospitals and creating referral pathways with other stakeholders in low vision.

Research and data collection

- Trachoma Ancillary Survey 2014 led by The Fred Hollows Foundation New Zealand and the Global Trachoma Mapping Program 2015/2016 led by BHVI, with logistical support from PNG Eye Care and funded by the UK Department for International Development.
- Rapid Assessment of Avoidable Blindness plus Diabetes Retinopathy (RAAB+) 2017: led by the Brien Holden Vision Institute, with logistical support from PNG Eye Care and funded by Fred Hollows Australia.
- Trachoma Ancillary Survey 2020 led and funded by The Fred Hollows Foundation Australia with logistical support from PNG Eye Care.

Challenges

We are justifiably proud of our achievements in eye care in PNG despite our limited resources (funding, human resources, infrastructure and consumables), but we recognize the need to continue our mission.

The results of the RAAB showed that the prevalence of blindness was 5.6% and that the two most common causes of avoidable blindness in PNG were cataracts and uncorrected refractive errors.[5] In the Highlands the prevalence of blindness was shown to be 11.1% in females.[5] Perhaps unsurprisingly, lack of awareness is a general barrier to treatment, particularly for women. More than 45 000 people in PNG are avoidably blind and there is also an unacceptable backlog of unoperated cataracts is how it would be referred to in PNG.

This is an emergency and I often feel overwhelmed and sometimes forgotten. We recognize there are many other health priorities that must be balanced, notably malaria, TB and maternal and child health. Despite COVID-19, PBL members (with the support of RANZCO) are working on a cataract surgical program to reduce the backlog. The cataract surgical outcome results from the RAAB were below WHO standards and require attention.

Uncorrected refractive error awareness and the availability of services needs to increase. In the NEP, we hope to see ready-made spectacles in the medical catalogue; NGOS are currently providing low cost yet good quality glasses, in addition to those sold by private businesses. Recently, intraocular lens, sutures and eye drops have been included in the medical catalogue; however, supplies of eye drops and adjunctive consumables frequently run out. PNG Eye Care, with the support of BHVI, have trained refractionists and optical technicians. Callan Services also train Community Based Rehabilitation (CBM) workers in screening and refraction training for the provision of affordable glasses.

We need to increase the number of eye clinics with resident ophthalmologists: there are currently five in PNG (Port Moresby, as the only tertiary hospital, has five). There are five provincial eye clinics with no ophthalmologists. This is one of the reasons we are pleased to have an ongoing national ophthalmology program at the UPNG: building human capacity through training is paramount.

The NEP suggests that we train, at a minimum, four ophthalmologists per annum.[2] We are continuing to work with provincial health authorities to fund training positions so that newly trained doctors return to placements in their respective hospitals. The National Department has limited positions that are shared by other medical specialties and allied health services. Subspecialty training for our doctors, especially pediatric ophthalmology and oculoplastic, are also being evaluated.

The infrastructure in our hospitals varies in clinic size and in diagnostic equipment availability. This limits the type of service that can be provided. The government hospitals are generally less well equipped and have limited space compared with those supported by INGOs.

In other areas of human resources, we have a significant number of eye nurses, or, as referred to in PNG, 'ophthalmic clinicians'. In 1997, a certificate primary eye care program was initiated by Dr. John Farmer. A more formal program was introduced at the Divine Word University (Advanced Diploma in Eye Care) as an initiative of The Fred Hollows Foundation New Zealand, giving us a cadre of trained eye care personnel who can treat common medical conditions as well as prescribing and dispensing spherical lenses.

PNG does not have an optometry school. This is an important requirement and optometry as a cadre has been included in the NEP; a subcommittee of the PBL has presented a plan to the Department of Health with supporting documents from the UPNG.

For much of the pandemic we remained isolated from the significant impacts of COVID-19. Now that the virus has reached PNG and the number of cases has increased, there is significant strain on the hospital system. This is a challenge for the country, but also an opportunity as it focuses attention on the importance of strong public health services. The eye health sector will need to be part of the 'build back better agenda' in PNG. We will need to redouble our efforts so that we are not forgotten in the fight to vaccinate the population and strengthen our systems and infrastructure. But perhaps there is a lesson for the rest of the health sector in our resilience and our achievements despite great challenges and few resources?

Conclusion

In the time of COVID-19, as all other health programs within PNG are put on hold or scaled down, eye care will be affected. Our aim is to start addressing the avoidable blindness rate of 5.6% by increasing cataract surgery and increasing access to low-cost glasses.

The PBL community in PNG is working strenuously to ensure that other essential services are maintained by virtual communication (e.g. E-mail, Skype and WhatsApp), preparing lectures, cataract implementation program discussions and research. Once COVID-19 is over then we will be able to resume activities that were suspended. We will be uniquely positioned, as we have led our Pacific neighbors in research and investment over the past decade. This is in no small part due to the advocacy, commitment and passion of the PBL and its members.

We will need them more than ever now, plus help and support from our friends and partners in eye care to address our remaining challenges. But our lesson has been learned: together we can do it.

Authors' contributions: JG wrote the editorial, with technical and grammar/language support supplied by DK of the International Agency for the Prevention of Blindness.

Acknowledgements: The support of The Fred Hollows Foundation in developing this editorial opportunity with the editorial team of *International Health* is acknowledged. Dr Jambi Garap is the President of the National Prevention of Blindness Committee of Papua New Guinea, Senior Lecturer in Ophthalmology at the University of Papua New Guinea.

Funding: This work was supported by (in alphabetical order):

- The Brien Holden Foundation
- CBM

- Australia Department of Foreign Affairs and Trade
- The UK Department for International Development (now the Department for Foreign, Commonwealth and Development Office [FCDO])
- The Fred Hollows Foundation
- International Agency for the Prevention of Blindness (IAPB)
- Laila Foundation
- Lions Club International Foundation
- USAID.

Competing interests: Not applicable.

Ethical approval: Not applicable.

Data availability: None.

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