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Towards 100% Effective Eye Care Coverage

How can better data improve eye health programmes?

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FOREWORD

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By **Professor Andrew Bastawrous,** co-founder & CEO, Peek Vision; Professor of Global Eye Health at the International Centre for Eye Health at the London School of Hygiene & Tropical Medicine

A staggering 1.1 billion people live with unmet eye health needs that leave them blind or vision impaired. The problem is global, but 90% of those living with sight loss live in low- and middle income countries. Cost-effective, proven interventions such as cataract and refractive error treatments (e.g., glasses) would solve 90% of the problem.

Eye health organisations worldwide are making phenomenal progress towards reaching the growing number of people who need eye health services, but significant challenges remain. Many people do not know they need care, or do not have the means to access it. Many start the care journey but fall out of the system before they are treated. The challenge is not so much delivering new innovations but innovating delivery.

To achieve this, organisations would benefit from better data. Eye health professionals know what the broad range of problems are, and they usually know the solutions once they see the patient. But they rarely have the timely, granular data that tells them where the patients are at a local level. Scarce resources are further stretched in finding these patients, adding to the challenges faced by eye health programmes. We have become very good at identifying solutions to the visible problems, but there remains an invisible 'unmet need' gap.

As health care professionals we are trained to treat who is in front of us and manage the waiting room. Beyond the waiting room are many more who haven't made it that far.

Drawing on Peek's experience working with partners around the world to improve people's eye health, this paper highlights how better actions, based on data, can lead to better services. It shows how quality data can build a reliable picture of unmet needs, allowing eye health services to effectively deploy resources and move towards universal eye health coverage.

1.1 billion

people live with unmet eye health needs that leave them blind or vision impaired

We would like to thank the following for their insight and expertise that made this report possible:

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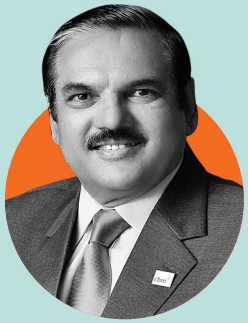

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Country Director at CBM Christian Blind Mission, Zimbabwe

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PART 1

Why it pays to have universal access to eye care

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The scale of the global vision loss problem has been captured in excellent detail by The World Report on Vision, The Lancet Global Health Commission on Global Eye Health and the 2030 In Sight strategy by The International Agency for the Prevention of Blindness. Many readers will be acutely aware of why it pays to have universal access to eye care but for readers new to the topic, we summarise a few key points to highlight the scale of the issue.

- Good vision promotes learning, earning, safety, social participation, and mental and physical wellbeing, whilst vision impairment can hold people back. In the absence of sustainable solutions, it is projected that 1.8 billion people will be blind or have a vision impairment by 2050.[1]

- Eye conditions affect all stages of life, with young children and older people being particularly affected. Crucially, women, rural populations, and ethnic minority groups are more likely to have vision impairment[2] perpetuating existing disadvantages.

- Education performance is linked to vision[3] and children with vision impairment in lower and middle-income settings are up to five times less likely to be in formal education than children with good eyesight.[4]

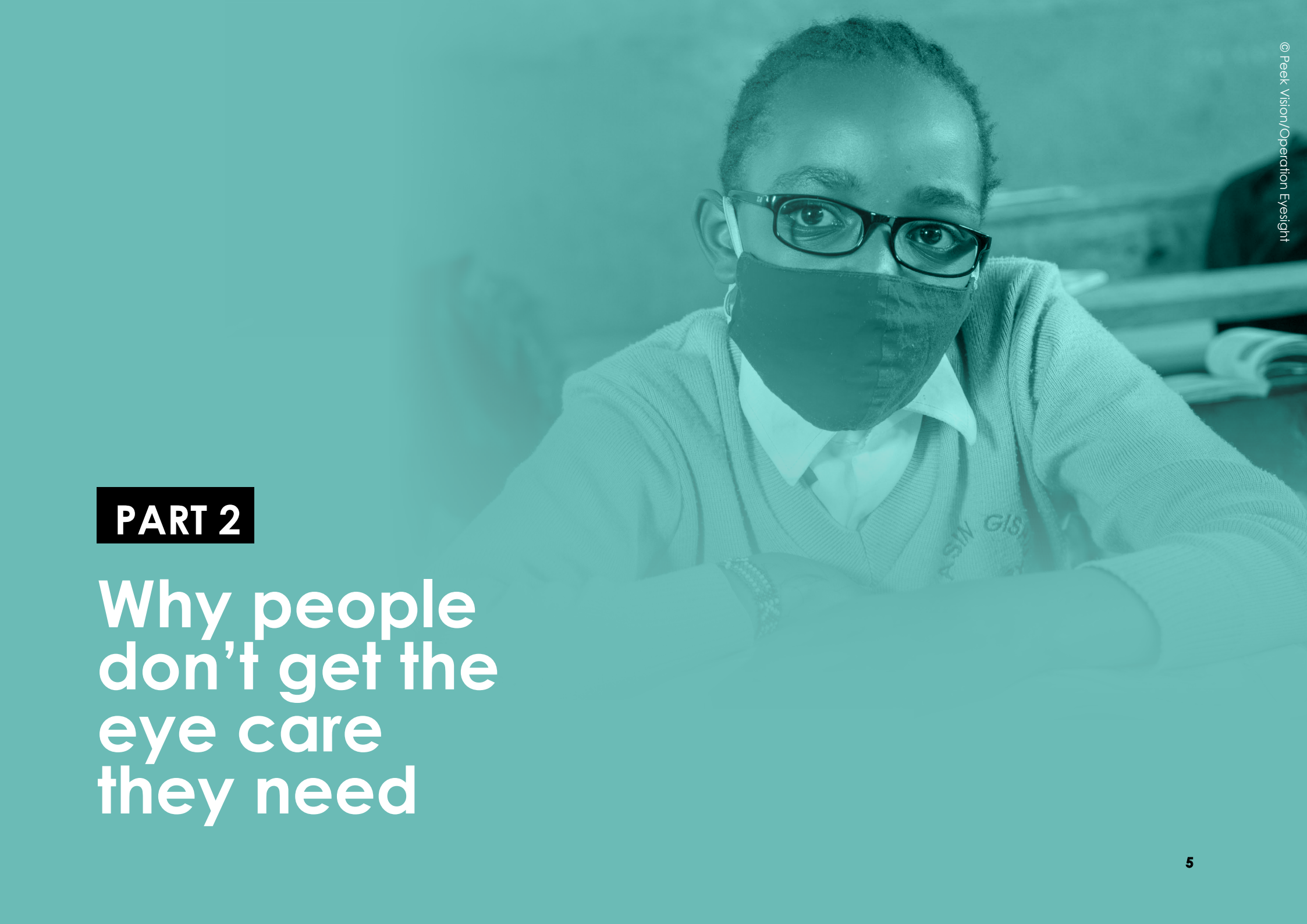
Beyond the profound implications to individuals, this is a missed opportunity to improve a country's long-term economic productivity. The cost to the global economy of vision impairment is estimated at $411 billion/year.[5]

It is projected that

1.8 billion

people will be blind or have a vision impairment by 2050.

1. The Lancet Global Health Commission on Global Eye Health: vision beyond 2020, The Lancet Global Health, 2021
2. The Lancet Global Health Commission on Global Eye Health: vision beyond 2020, The Lancet Global Health, 2021
3. The Lancet Global Health Commission on Global Eye Health: vision beyond 2020, The Lancet Global Health, 2021
4. The impact of disability on the lives of children; cross-sectional data including 8,900 children with disabilities and 898,834 children without disabilities across 30 countries, PLoS One 2014 Sep 9;9(9):e107300
5. The Lancet Global Health Commission on Global Eye Health: vision beyond 2020, The Lancet Global Health, 2021



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PART 2

Why people don't get the eye care they need

"Even if there are facilities and there's awareness and you tell people where to go, 70% still don't reach those facilities."

BABAR QURESHI

The solutions to most eye health problems already exist. Where problems are known, the global eye health community has - subject to availability of funding, facilities, and expertise - become adept at delivering the solutions across varied global settings.

However, a problem remains that is well-recognised but not well addressed: the unmet need. How do we reach the many people who are not accessing the eye care services they require?

In this section we will look at some of the most common reasons people do not access eye health care or start to access care but don't complete their journey to treatment. Reasons vary within and between locations, but some universal themes emerge. In Part 3 of the paper, we will consider what can be done to address some of the problems.

Low awareness that there is a problem, or a solution

Many eye conditions get worse over time, and many people do not know they have a problem until it's too late. Even where problems are known, people with vision impairment may be unaware of the facilities and treatment available to them. The most vulnerable members of society often do not know or believe that they have a right to eye care, nor do they know that their condition is treatable. Often, individuals simply do not understand the impact that treatment or spectacles will have on their lives.

"They sometimes don't know where to go. And sometimes they don't know they have a problem."

PRIYA MORJARIA

Barriers to accessing eye health services

Obtaining diagnosis or treatment for an eye health condition is often too resource intensive both financially and in terms of time. For example, health facilities are often located a long way from rural populations and travelling to these facilities incurs costs that they cannot afford such as transportation, accommodation, and lost work. The burden is placed on a member of the family or community who need to accompany them.

"Someone I met recently had to walk six hours to get reading glasses."

BABAR QURESHI

Fear of the unknown

Some people are offered an intervention but do not take it up. Fear of the unknown can be a big factor. For example, when people have heard unsettling stories of low-quality treatments, they may not attend their appointment. Others are worried about social stigma. If a neighbour's glasses are considered unattractive, an individual may put off getting their eyes checked.

"If someone has lost an eye in surgery, the whole village will not go for treatment for some time. One bad case demotivates hundreds. Quality and good communication are of paramount importance."

BABAR QURESHI

"People were told they had a cataract and when to come for surgery, and that it was covered by charitable organisations but they still weren't turning up. They hadn't had the counselling they needed. They were sceptical. They didn't know what would happen on the day. There are so many myths."

FATIMA KYARI

We don't know what we don't know

One of the biggest challenges for eye health programmes is that we often do not know who is being missed, who is dropping out, or why. Professionals know from experience what the range of reasons are, but they often don't have good quality data that applies to the current situation.

"We need to drill down into what the data is telling us. We need granular data, and we need it to be analysed and presented in an understandable form. We want to be able to understand the magnitude of eye health need disaggregated by where people live, gender, age, marital status, and critically how groups respond differently to different interventions. If we have data that show a particular group is underserved, the system can respond. In that way, we can start optimising programmes in real time."

MATTHEW BURTON

One of the biggest challenges for eye health programmes is that we often do not know who is being missed, who is dropping out, or why.

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PART 3

Creating a 100% coverage eye health programme

Universal eye health coverage is an integral part of universal health coverage (UHC), defined by the World Health Organisation (WHO) as 'all individuals and communities receive the health services they need without suffering financial hardship'. There are two essential indicators related to eye health that the WHO uses to measure progress towards UHC, effective cataract surgical coverage (eCSC) and effective refractive error coverage (eREC).

Universal eye health coverage remains an aspiration in many parts of the world, but it is important to push towards it. Eye health organisations worldwide have made incredible progress towards improving eye health coverage, in many cases thanks to their willingness to embrace innovation and adapt working practices to the latest evidence. But without comprehensive data on how services are being used, who is missing out, and why, progress towards UHC can only go so far.

In this section, drawing on experience from programmes powered by Peek, and that of professionals we spoke to, we highlight some of the elements needed to push towards a 100% coverage eye health programme. Some will be obvious to our readers, but we believe it is worth covering the range of pieces that need to work together.

Invest in partnerships to take screening to the community

A tried-and-tested way to find people with an unmet eye care need is to run community outreach screening services. School and community-based programmes streamline the process of screening, with large cohorts having their eyesight checked in a single location. Household screening makes it easier to find vulnerable and underserved members of a community who would not otherwise seek treatment, such as women, older people, people with disabilities and children including those who are out of school and working.

To make this work, teams must form strong partnerships with the community, engaging local stakeholders from the very start. These are essential to building trust at a local level and confidence in the eye health recommendations. This can be reinforced by training and equipping larger numbers of community screeners (e.g., village health workers, community health volunteers and paramedics) to carry out eye health screening and make referrals.

> "I see children being screened at school as a really easy win. They are in one place on a set day, and you can access them quickly. Screening in schools would also nicely align with the promotion of a healthy school environment."
>
> **PRIYA MORJARIA**

> "We need community health workers and volunteers to do door-to-door household screening. We need to quickly empower them to diagnose problems and make on the spot decisions about next steps. And we need data on how many were screened, where they were, how many continued to have their need met, and how many were lost."
>
> **UMANG MATHUR**

Keep screening technology simple

Smartphone technology is providing simple tools to identify community eye care needs. Tools such as those created by Peek can check vision quickly and simply. Clinical trials have shown these tools to be as accurate as conventional vision tests. For example, in Zimbabwe[6] five provinces have been carrying out app-based eye health screening (using Peek) in schools and communities since 2019.

Peek technology allows community and school eye health screeners to flag whether checks by an eye health specialist are needed, and makes it straightforward for those in need of a diagnosis to be referred. This simple 'appropriate technology' empowers anyone to deliver screening with minimal training. This has the dual benefit of bringing eye care closer to the community while also relieving the burden on specialists in regions where their numbers are extremely limited.

Crucially, these digital tools can also track referrals through the system, allowing follow ups with those who do not attend to find out why.

> "The most important point of any screening programme is that we make things easy to use for non-experts."
>
> **DEBORAH TIGERE**

Use screening and follow up data to match eye care interventions to need

A well-designed data-driven screening and referral monitoring programme enables a service provider to build a picture of what each community looks like. This in turn allows the eye health provider to efficiently mobilise resources including medical interventions, finances, and people to address the problems that prevent people from seeking care. It also allows them to track who sought care and who didn't and to investigate why.

6. Using technology for eye health impact in Africa, Peek Vision, 2021

© CBM Uganda

How exactly resources are deployed will be specific to any given community, and the answers will lie in the data.
To illustrate the value of this approach, we provide three examples from CBM programmes powered by Peek, where quality data helped identify a problem, which led to refinements that made the programmes more successful. Data-led discoveries of this kind can lead to interventions that can have dramatic improvements on the success of eye health programmes.

i. **Adherence to referral appointments:** A programme in Pakistan found around 90% of patients kept their referral appointments when the health centre was within walking distance of their home, but this figure dropped to 20% when the referral location wasn't within walking distance. By following up on this timely data, programme partners quickly identified measures to facilitate appointment attendance, such as fixed appointments and subsidised transport, resulting in a 26% increase in attendance.

"Tools like Peek point us to that 70% of a community that doesn't access eye care service. Without this, we don't know who they are. With this tool, you screen the person, you refer them, and when the person doesn't appear, you have the data that shows this."

BABAR QURESHI

ii. **More efficient use of health services:** Primary eye health services are often underused, leading to increased pressure on hospital specialists. Small but significant changes can free up capacity so that a hospital ophthalmologist can focus on more complex eye conditions that need specialised treatment and surgery. In a programme in Zimbabwe, programme partners implemented changes in their referral practices in response to data from Peek. As a result, cataract cases increased from 30% to 50% of the hospital case mix, a positive shift reflecting a more appropriate use of the specialist's time as well as greater identification of cases through community screening.

"Often specialist skills and equipment are in short supply. Good data lets us deploy limited resources in the most effective ways."

DEBORAH TIGERE

iii. **Building equity into eye care delivery:** Every community will have groups of people who are less likely to access eye health services than others. Who these people are will naturally vary between communities. Current data shows who is seeking intervention, but not why. If more women seek eye care, for example, it may be because women are more at risk of eye health problems, or it may be that men are not identified or coming forward.

If something looks odd in the data, it needs investigating to understand the cause. For example, in a programme in Pakistan a low rate of men were attending screening. On investigation, we found that the Lady Health Visitors (LHVs) who conducted the screening - who had been carefully selected to put women at ease - were perceived by men as associated with female health care only and not with eye health. The data helped to uncover the issue and allowed local eye health teams to develop tailored education initiatives for both local men and health workers, which delivered a significant change in outcomes within weeks.

"Good data can shock local government into action. They may not appreciate that something is a problem, or be convinced that the solution lies elsewhere. But when you show the problem exists - it's there in the data - then they are more likely to support the right intervention."

DEBORAH TIGERE

Design a data-driven programme that delivers joined-up eye care with continuous improvements

To plan effective and impactful eye health services, it is vital to understand the current and real-time evolving needs of a population. Considering all of the above, we urge eye care programmes to put quality data collection and analysis at the heart of a joined-up eye health programme.

The Rapid Assessment of Avoidable Blindness (RAAB) is a good place to start, as a planning tool that drives the collection and interpretation of high-quality eye health data. But there is also a need to track data in real time as people progress through, drop out of, and re-enter the system.

Peek Vision's tools help eye health providers gather and understand the data insights they need to make programmes more efficient, more effective and more equitable. Peek's software for community and school eye health programmes powers smartphone-based vision screening, data capture and analysis, plus the RAAB7 eye health survey platform.

Programme design and data analysis based on insights from our software set up programmes for success and enable services to continuously improve and ensure nobody is left behind.

Through the Peek system's automated SMS function, non-attendance at appointments is flagged and fed back to community workers, who can follow up to understand why, and encourage that person to attend. The reason for non-attendance can help to provide a rich picture of local challenges and concerns.

This data can then be studied by data and healthcare experts to understand the most pressing eye health problems on a community-by-community level, and common reasons for hesitancy and non-attendance. Resources can then be allocated efficiently to address these issues which will often involve adapting proven approaches from elsewhere, whether they be educational resources to help community workers provide reassurance, or physical interventions such as transport to the surgery.

Systematically collected data provides a detailed on-the-ground picture that enables continuous improvements to be made to a programme to ensure the right interventions are available for the right people, in the right places, at the right time.

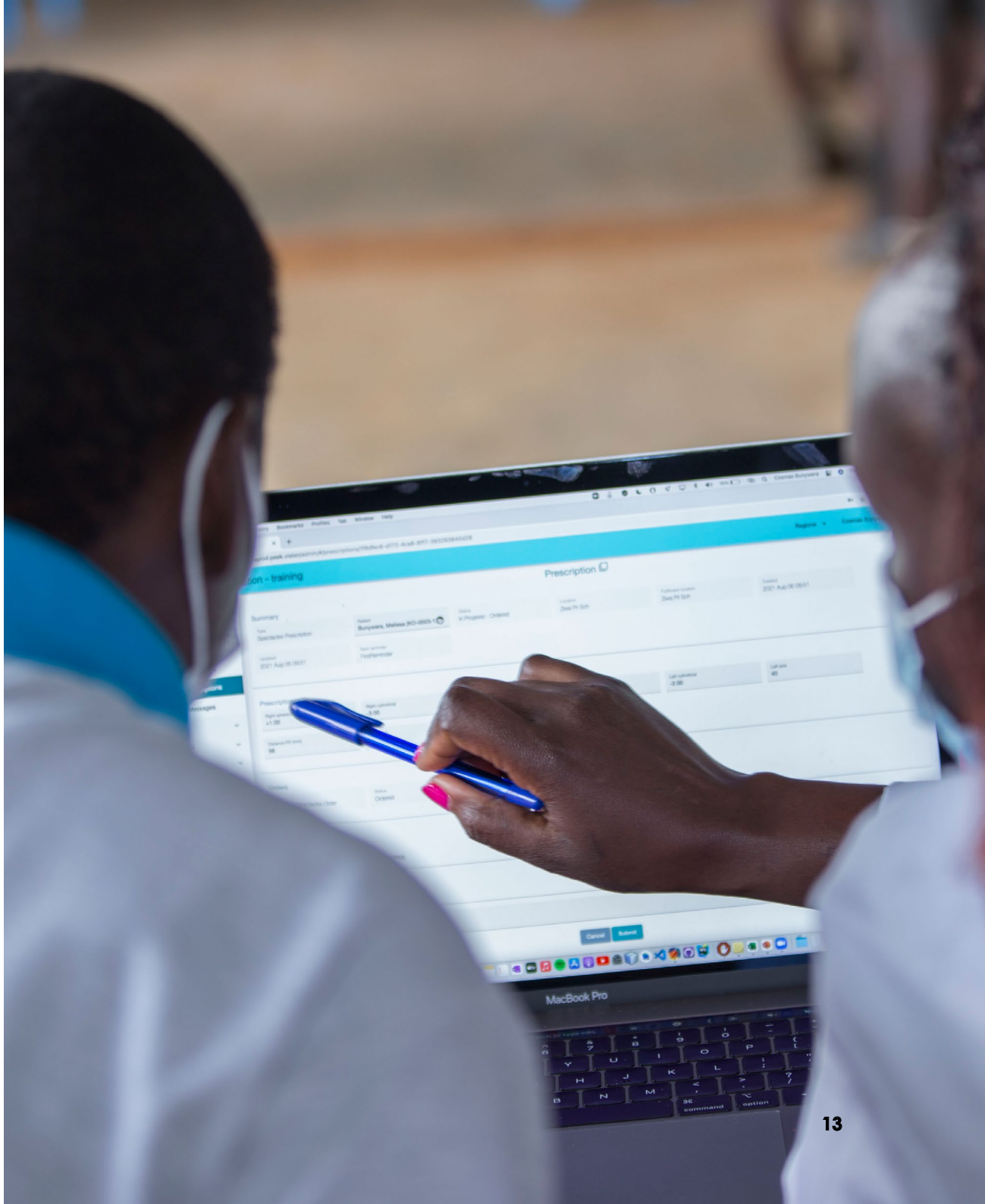
The Rapid Assessment of Avoidable Blindness (RAAB) is a good place to start, as a planning tool that drives the collection and interpretation of high-quality eye health data.

“If you don’t know the nature of the problem or where it is, you can’t have a logical approach to addressing it.”

MATTHEW BURTON

“RAAB population survey data is extremely valuable for targeting interventions. But we also need data in real time to understand how things change in response to our interventions. Such data improves workflows. I can make reference to the data to extrapolate local needs... I get onto my dashboard and see a patient’s journey - the location, triage, problem, follow-up, how many specs were provided - I get it all.”

DEBORAH TIGERE



CONCLUSION

Solving the global vision crisis will need concerted action in many different areas: better investment, better training and infrastructure, and better patient awareness. But we cannot expect to solve this pressing global development issue if we do not know the scale of the problem, nor who is being missed by current services.

If we are to reach the millions of people worldwide who need access to eye health services, better eye health data is a necessity, not a luxury. A decade ago, gathering and analysing these data would have been so resource-intensive as to be impossible. But new digital tools like those developed by Peek Vision mean that eye health services now have the ability to survey, track in real-time and analyse patient data with a fraction of the effort, time and resources required by conventional paper-based systems.

If eye health funders are prepared to back this data-driven approach to eye health, we believe that progress towards eliminating avoidable vision loss could be accelerated and even achieved in the next three decades. Eye health providers in low- and middle-income countries are already enthusiastic adopters of innovative interventions for eye health. With the data-driven approach that Peek enables, the benefits in terms of improved services and better use of resources could transform their outcomes for patients.

Eye health data for better investments

Despite its huge impact on wellbeing and productivity, eye health has historically been an under-funded area of healthcare. The International Agency for the Prevention of Blindness (IAPB) Vision Atlas project has played a huge role in consolidating national and regional eye health data worldwide and making a strong case for better investment.

The service-level data uncovered by Peek solutions could play an important role in continuing to persuade health ministries of the scale and nature of eye health needs in their regions, encouraging more investment from governments and NGO funders to build better, more targeted eye health services.

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