# Forus Health
Technology delivering care

Creator of a proprietary, fully integrated, AI-assisted digital health platform of solutions for eye care and ocular disease management. Forus Health is developing the future of eye care on its mission to eradicate preventable blindness. Visit Forus Health's website.

I. FY 2024 IMPACT GRAPHICS
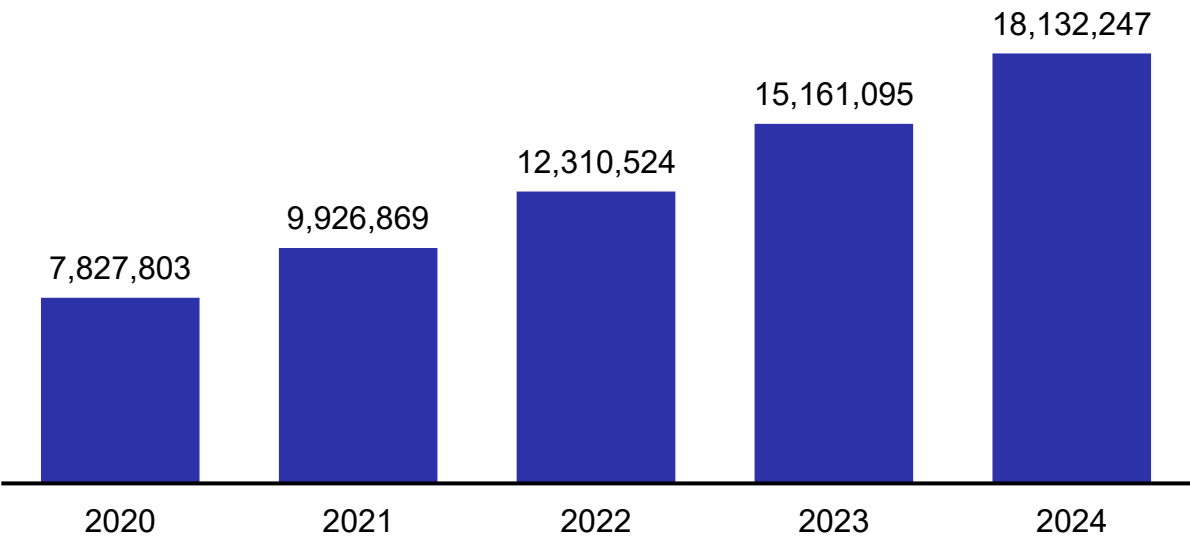
A. Patients/Populations Touched

1. Total Unique Patients Served by Year (through 2024)
N = 2,971,152 (2024); 18,132,247 (cumulative)
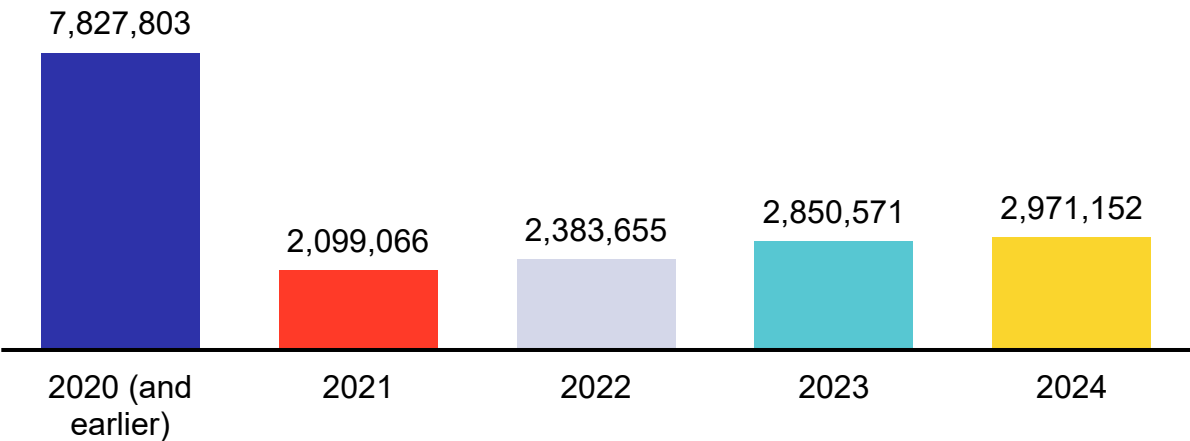
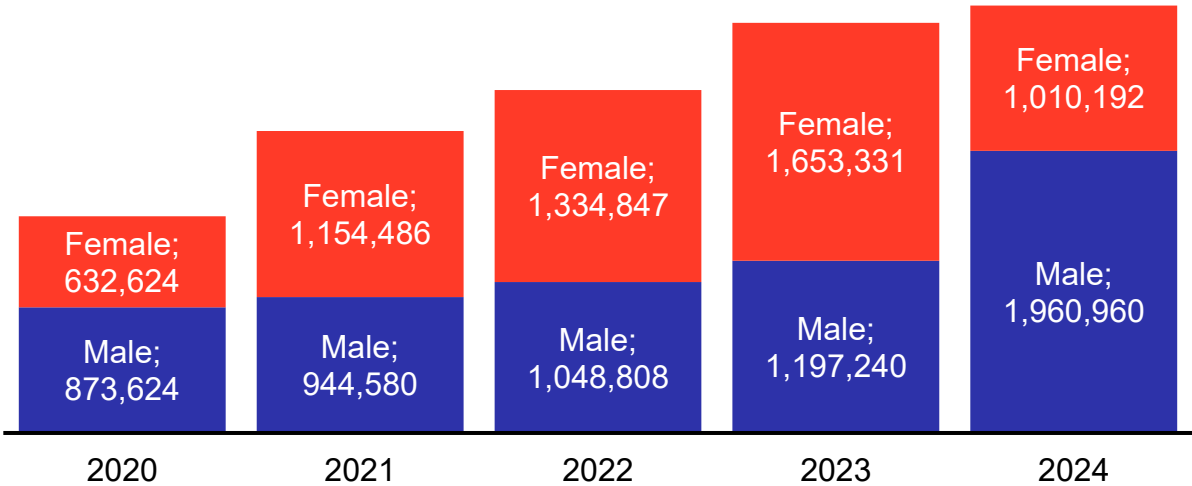**2. Cumulative Unique Patients Served by Year (through 2024)**
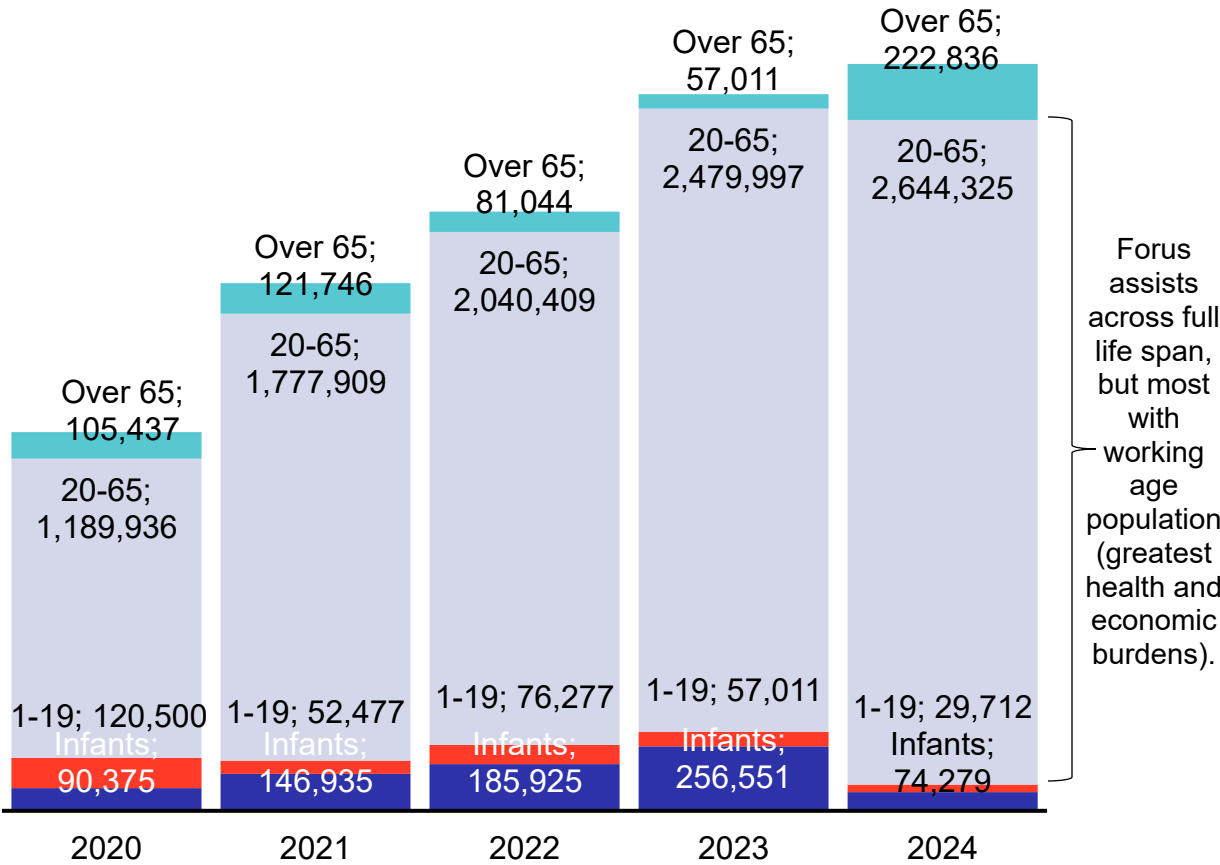*N = 2,971,152 (2024); 18,132,247 (cumulative)*

3. Population Profiles
a. Estimated Unique Patients by Gender and Year (Annual 2020 – 2024)
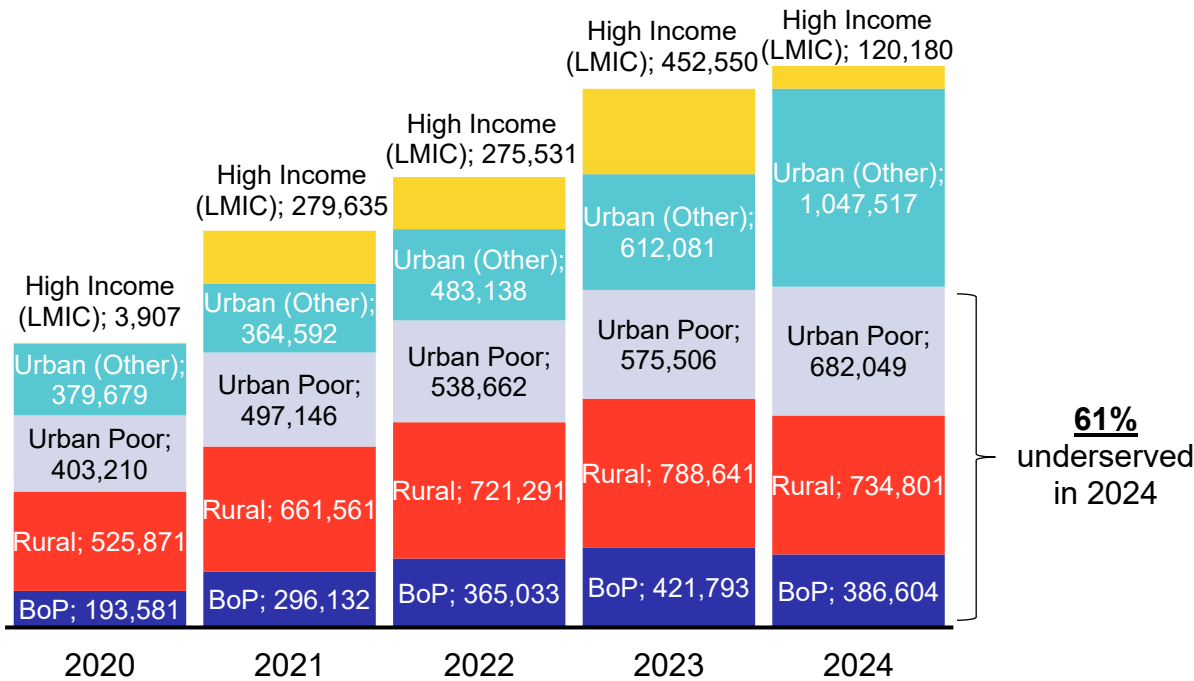*N = 2,971,152 (2024); 18,132,247 (cumulative)*

2020
- Female; 632,624
- Male; 873,624

2021
- Female; 1,154,486
- Male; 944,580

2022
- Female; 1,334,847
- Male; 1,048,808

2023
- Female; 1,653,331
- Male; 1,197,240

2024
- Female; 1,010,192
- Male; 1,960,960

b. Estimated Unique Patients by Age and Year (Annual 2020 – 2024)
N = 2,971,152 (2024); 18,132,247 (cumulative)

2020
- Over 65; 105,437
- 20-65; 1,189,936
- 1-19; 120,500
- Infants; 90,375

2021
- Over 65; 121,746
- 20-65; 1,777,909
- 1-19; 52,477
- Infants; 146,935

2022
- Over 65; 81,044
- 20-65; 2,040,409
- 1-19; 76,277
- Infants; 185,925

2023
- Over 65; 57,011
- 20-65; 2,479,997
- 1-19; 57,011
- Infants; 256,551

2024
- Over 65; 222,836
- 20-65; 2,644,325
- 1-19; 29,712
- Infants; 74,279

Forus assists across full life span, but most with working age population (greatest health and economic burdens).

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c. Unique Patients by Underserved Status and Year (2020 – 2024)[1,2,3]
N = 2,971,152 (2024); 18,132,247 (cumulative)

2020
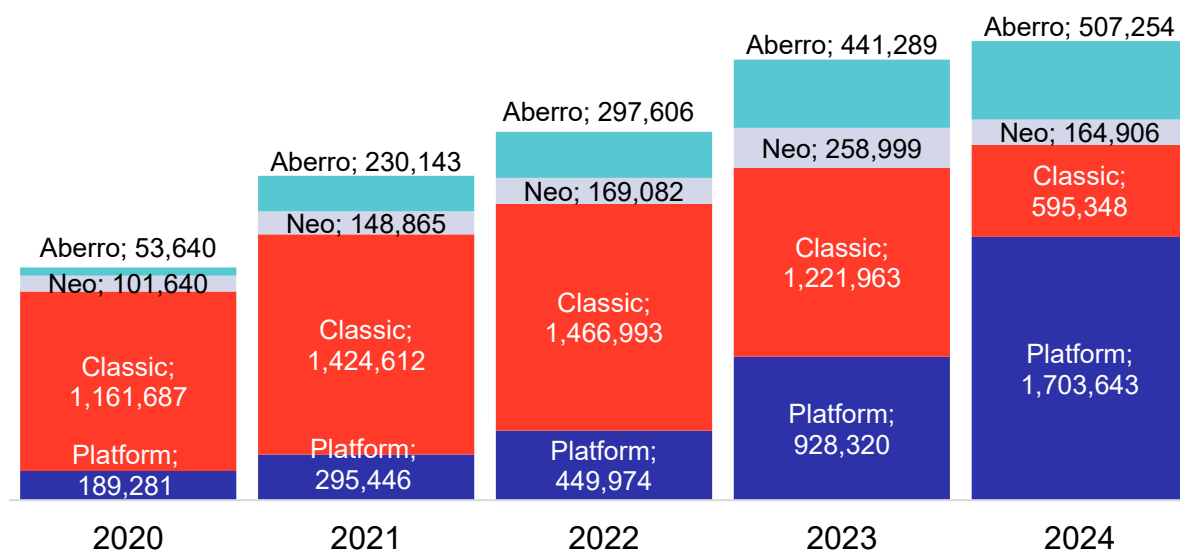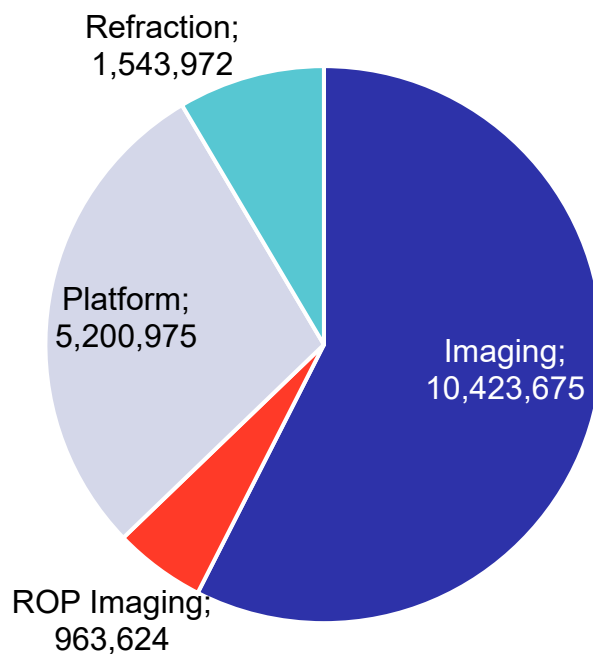- High Income (LMIC); 3,907
- Urban (Other); 379,679
- Urban Poor; 403,210
- Rural; 525,871
- BoP; 193,581

2021
- High Income (LMIC); 279,635
- Urban (Other); 364,592
- Urban Poor; 497,146
- Rural; 661,561
- BoP; 296,132

2022
- High Income (LMIC); 275,531
- Urban (Other); 483,138
- Urban Poor; 538,662
- Rural; 721,291
- BoP; 365,033

2023
- High Income (LMIC); 452,550
- Urban (Other); 612,081
- Urban Poor; 575,506
- Rural; 788,641
- BoP; 421,793

2024
- High Income (LMIC); 120,180
- Urban (Other); 1,047,517
- Urban Poor; 682,049
- Rural; 734,801
- BoP; 386,604

61% underserved in 2024

d. Unique Patients by Underserved Status (cumulative)
N = 18,132,247 (cumulative)

- High Income (LMIC); 1,252,608
- BoP; 2,725,843
- Urban (Other); 3,978,958
- Rural; 5,797,623
- Urban Poor; 4,377,214

71% underserved cumulatively

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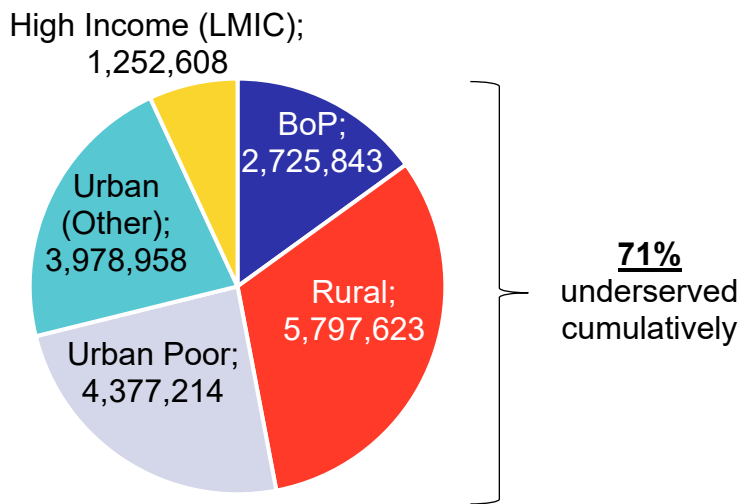
[1] BoP is an abbreviation for 'Base of Pyramid'. TEAMFund collectively categorizes the Base of Pyramid, Rural and Urban Poor as 'Underserved Populations'. These areas are served by public health facilities.
[2] Socioeconomic data until 2018 was provided on a cumulative basis (and as such is omitted for readability). The breakdown for the 2018 cumulative period was - BoP (16%), Urban Poor (27%), Rural (37%), and Urban/High Income (19%).
[3] The greater % of patients in the Urban (Other) category was attributable to the increased scale of Forus' B2B solutions business. Customers in that business are enterprises that tend to have an urban/white collar employee base.
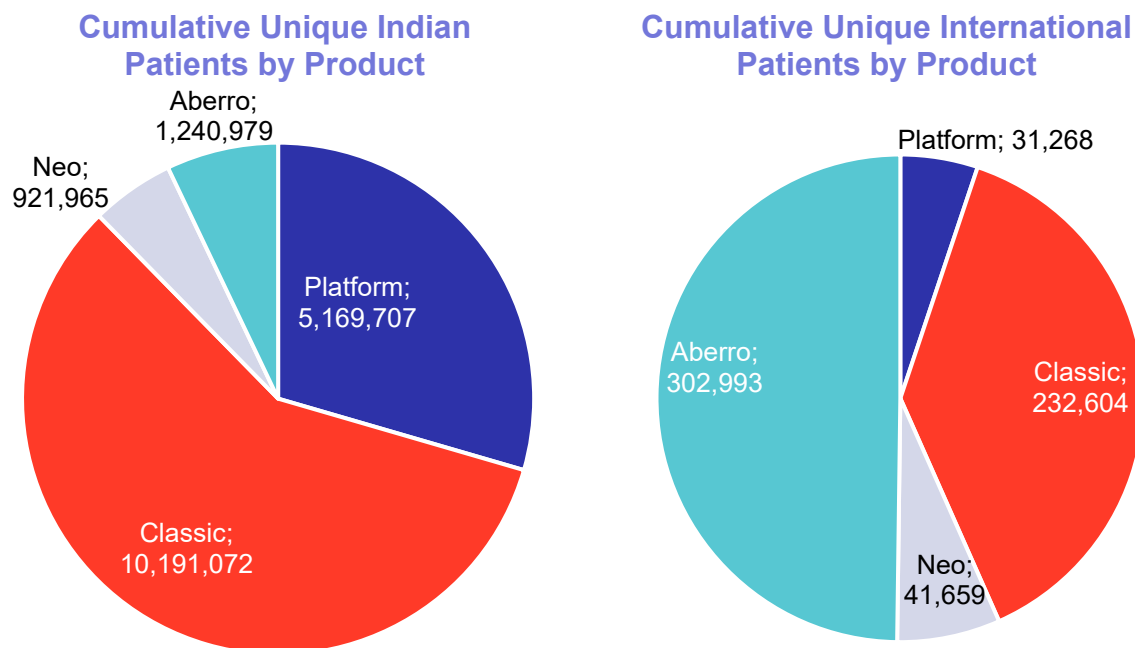
e. Unique Patients by Product (Annual 2020 – 2024)[4,5,6]
N = 2,971,152 (2024); 18,132,247 (cumulative)

2020
- Aberro; 53,640
- Neo; 101,640
- Classic; 1,161,687
- Platform; 189,281

2021
- Aberro; 230,143
- Neo; 148,865
- Classic; 1,424,612
- Platform; 295,446

2022
- Aberro; 297,606
- Neo; 169,082
- Classic; 1,466,993
- Platform; 449,974

2023
- Aberro; 441,289
- Neo; 258,999
- Classic; 1,221,963
- Platform; 928,320

2024
- Aberro; 507,254
- Neo; 164,906
- Classic; 595,348
- Platform; 1,703,643

f. Cumulative Unique Patients by Product Category (2024)[3]
N = 18,132,247 (cumulative)

- Refraction; 1,543,972
- Platform; 5,200,975
- Imaging; 10,423,675
- ROP Imaging; 963,624

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[4] Imaging (i.e. retinal imaging) and ROP imaging are used to diagnose retinal issues, the most serious of eye diseases, and represent most uses.

[5] We note that Neo patient totals declined in 2024 vs 2023 despite higher units distributed. This is because a greater share of units were sold outside India, where patient volumes per device tend to be lower.
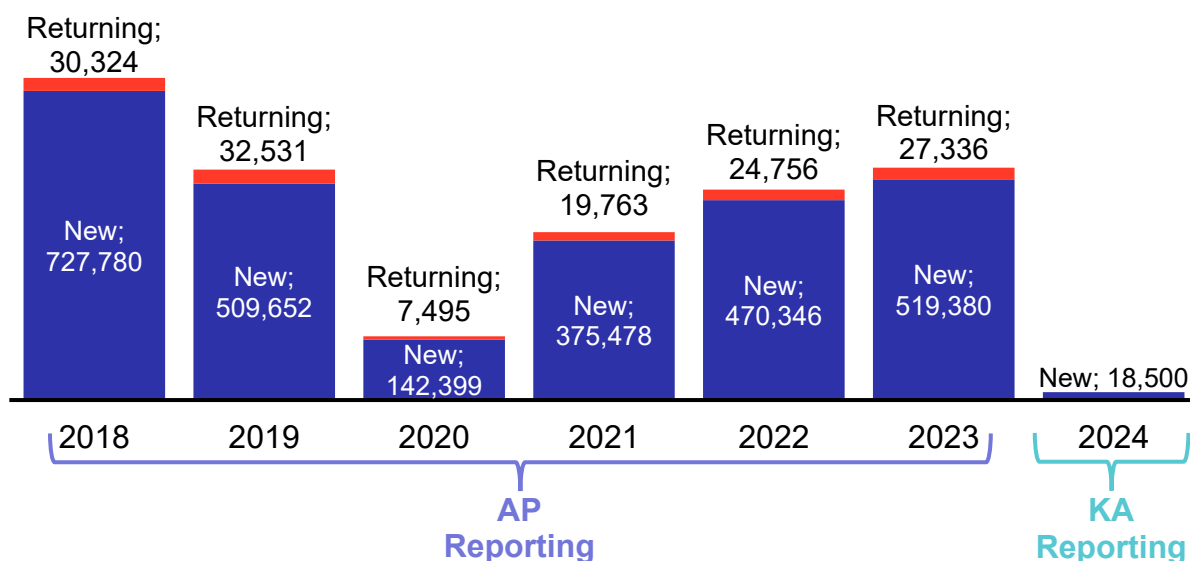
[6] Classic patient totals were down in 2024 as a result of the end of the Andhra Project, which has historically been a large user of the Classic device.

g. Population by Product Category and Geography (India vs. International 2024)
N = 2,971,152 (2024); 18,132,247 (cumulative)

Cumulative Unique Indian Patients by Product

Aberro; 1,240,979

Neo; 921,965

Platform; 5,169,707

Classic; 10,191,072

Cumulative Unique International Patients by Product

Platform; 31,268

Aberro; 302,993

Classic; 232,604

Neo; 41,659

4. Patient Interventions/Compliance Cohorts (where available)
a. General (from AP and KA[7,8] cohort; 2018 – 2024)

Returning; 30,324 — New; 727,780 — 2018

Returning; 32,531 — New; 509,652 — 2019

Returning; 7,495 — New; 142,399 — 2020

Returning; 19,763 — New; 375,478 — 2021

Returning; 24,756 — New; 470,346 — 2022

Returning; 27,336 — New; 519,380 — 2023

New; 18,500 — 2024

AP Reporting

KA Reporting

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[7] In prior reports, we have provided annual patient intervention data collected as part of a screening program in the State of Andhra Pradesh ("AP"). In 2024, the Company shifted to using it in a new program in Karnataka ("KA"). As such, readers should take care in directly comparing the 2018-2023 period to the data reported starting this year and going forward.

[8] We also note that the KA program has two distinct programs – one that is refraction focused (using the Forus Aberro device) and a telemedicine program (using the Forus Classic device) – unlike the AP program. As such, we report both totals under the 'general' segment, but only the Aberro-focused program under the 'refraction' segment.

b. Refractions (from AP and KA cohort; 2018 – 2024)[4,5,9]

Refractions						
Year	Program	Total	New (%)	Returning (%)	Needing Spectacles	Receiving Spectacles
2018	AP	758,104	96%	4%	629,235	612,815
2019	AP	542,183	94%	6%	442,405	464,525
2020	AP	149,894	95%	5%	126,870	121,155
2021	AP	395,241	95%	5%	328,347	324,887
2022	AP	495,102	95%	5%	420,121	404,919
2023	AP	546,715	95%	5%	510,440	502,276
2024	KA	18,500	100%	0%	2,200	2,200

c. Imaging (from Welcare; 2018 – 2024)

Year	Referred to Specialists	Other	Total
2018	84,700	36,300	**121,000**
2019	69,120	26,880	**96,000**
2020	21,000	9,000	**30,000**
2021	21,000	9,000	**30,000**
2022	21,000	9,000	**30,000**
2023	21,000	9,000	**30,000**
2024	22,825	N/A	**22,825**
Total	**260,645**	**99,180**	**359,825**

d. ROP Population (2018 – 2024)

Welcare and Imaging Subscription Patients		
Year	% Referred to Specialists	% Treated Once Referred
2018	100%	100%
2019	100%	100%
2020	100%	100%
2021	100%	100%
2022	100%	100%
2023	100%	100%
2024	100%	100%

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[9] Many 2020 patients were seen again 2021 due to the impact of COVID-19, resulting in the sum of the annual patients exceeding the cumulative total number of unique patients.

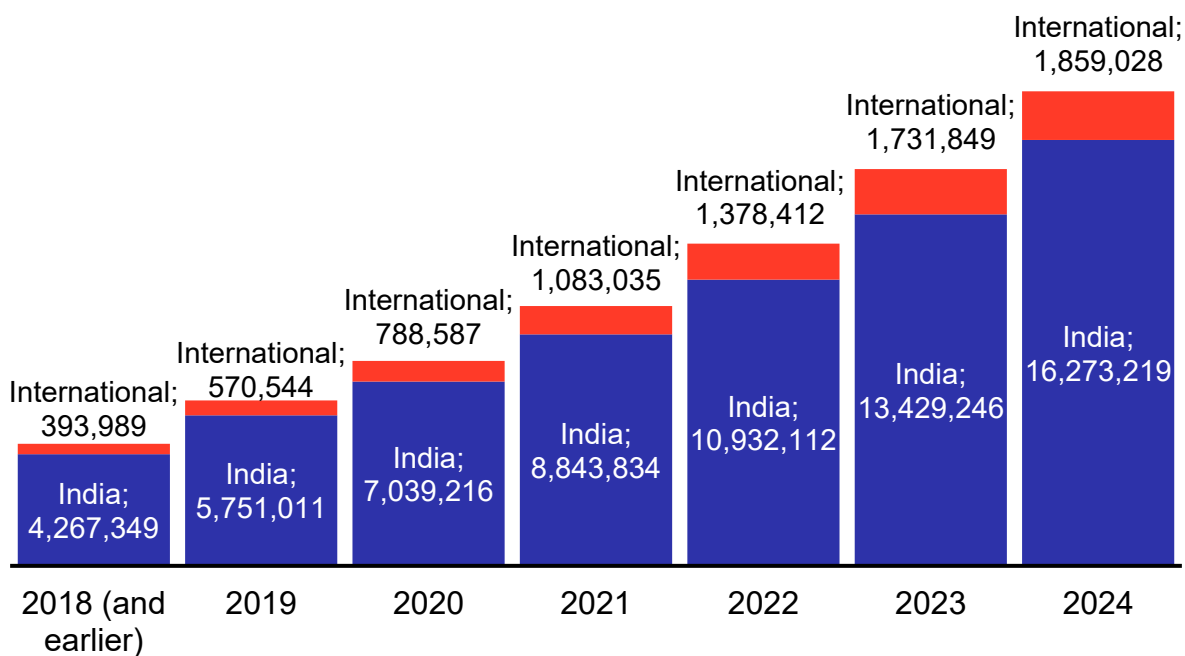**5. Total Unique Patients by Geography (India vs. International)**

a. Annual Unique Patients by Geography (2018 – 2024)
N = 2,971,152 (2024); 18,132,247 (cumulative)
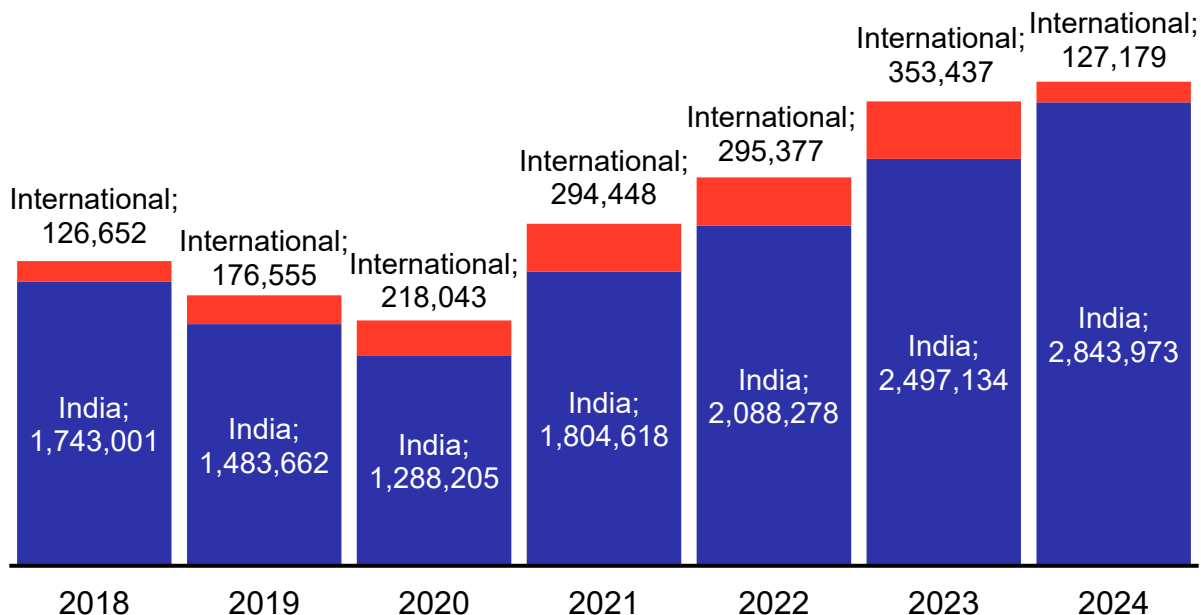
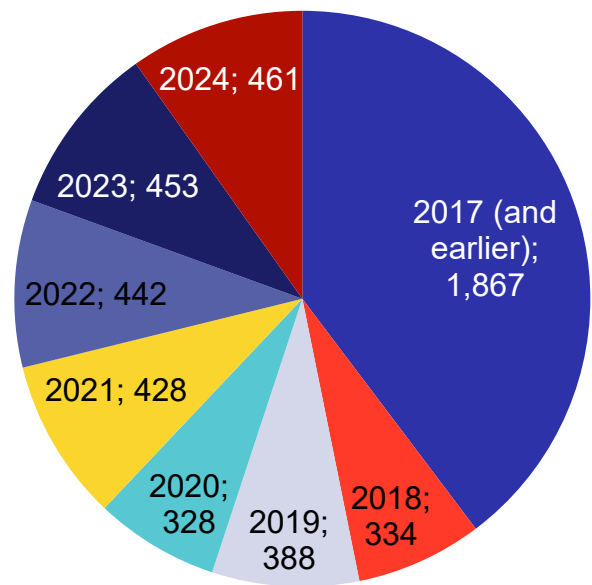**b. Cumulative Population by Geography (2018 – 2024)**
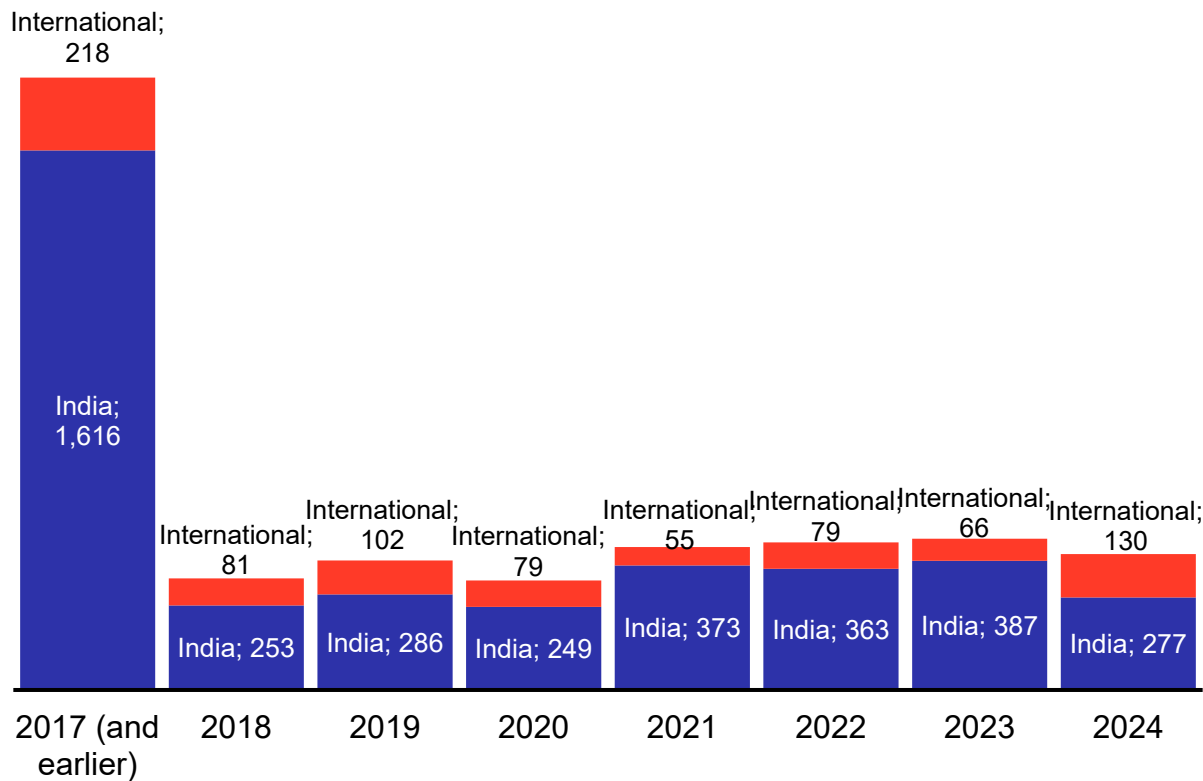*N = 18,132,247 (cumulative)*

B. Units
1. Total New "Units" (2017 and earlier, 2018 – 2024)
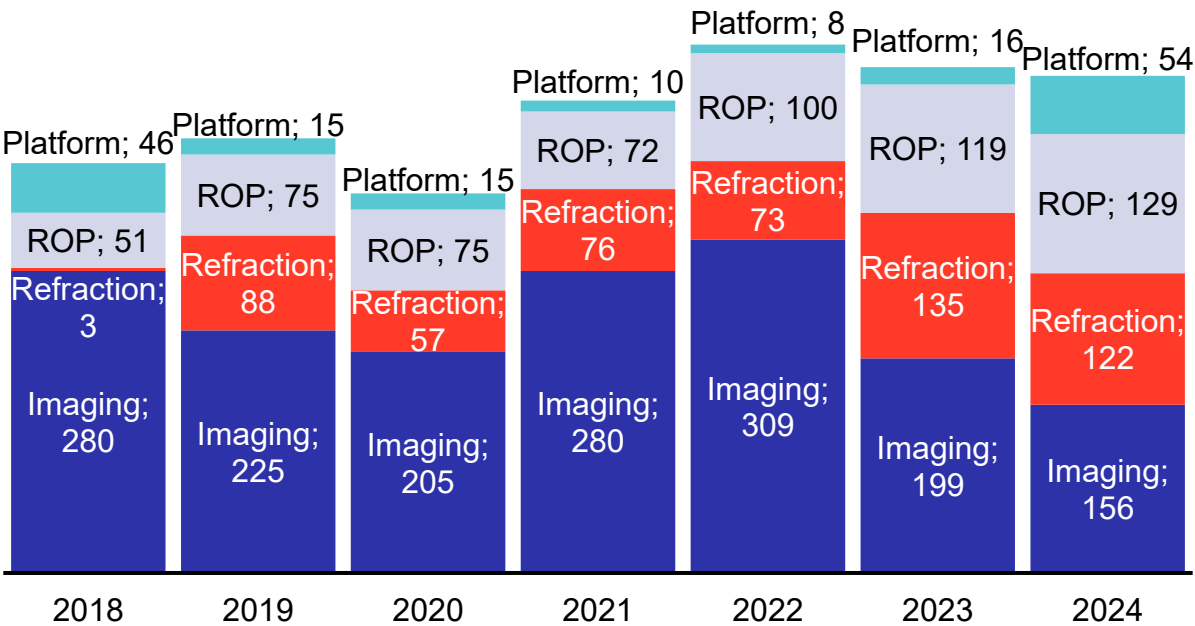*N = 461 (2024, including platform); 4,701 (cumulative)*

2. Units by India vs. International (through 2024) [10]
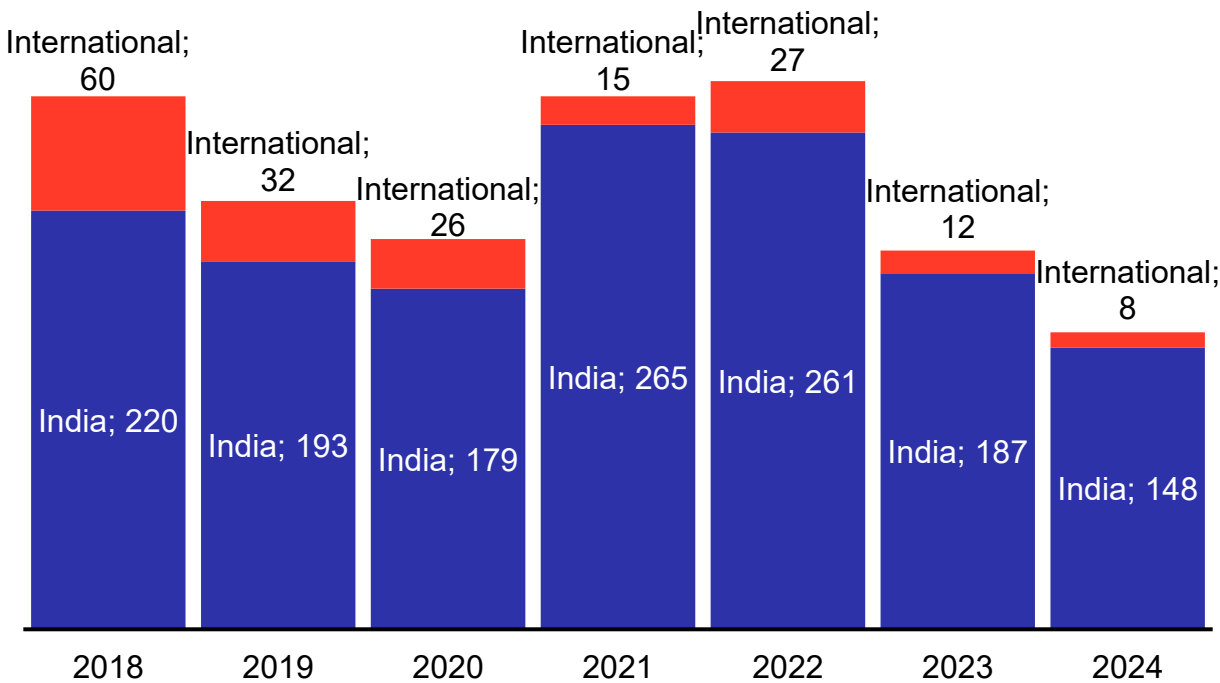*N = 407 (2024, excluding platform); 4,701 (cumulative)*

[10] Platform is often bundled with other products and thus we exclude the platform from this summary total.

3. Units by Product Category (2018 – 2024)[5]
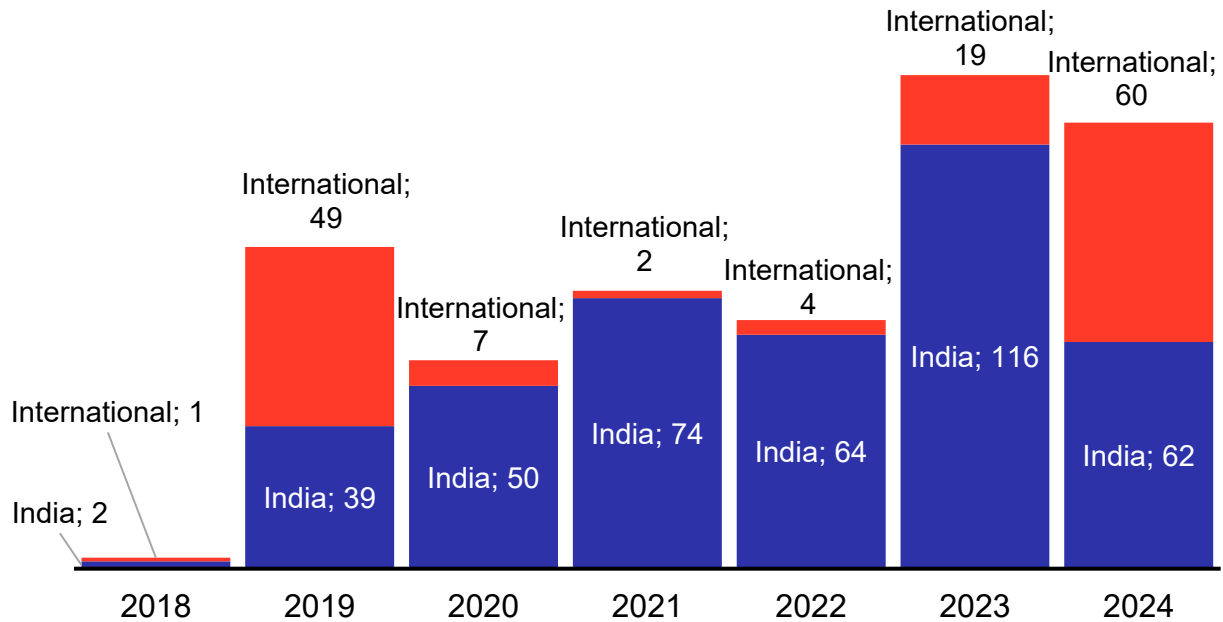*N = 461 (2024, including platform); 4,701 (cumulative)*

Platform; 46
Platform; 15
Platform; 15
Platform; 10
Platform; 8
Platform; 16
Platform; 54

ROP; 51
ROP; 75
ROP; 75
ROP; 72
ROP; 100
ROP; 119
ROP; 129

Refraction; 3
Refraction; 88
Refraction; 57
Refraction; 76
Refraction; 73
Refraction; 135
Refraction; 122

Imaging; 280
Imaging; 225
Imaging; 205
Imaging; 280
Imaging; 309
Imaging; 199
Imaging; 156

2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024

a. Imaging Units by India vs. International (2018 – 2024)
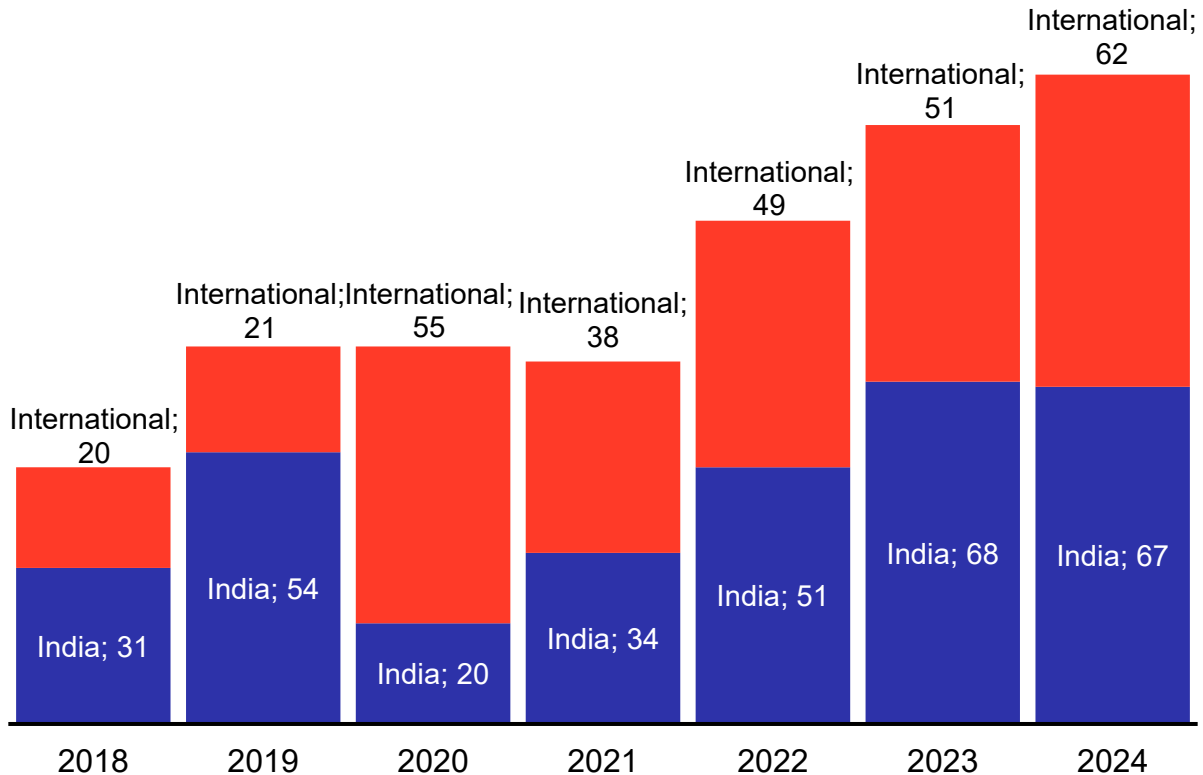*N = 280 (2018), 225 (2019), 205 (2020), 280 (2021), 288 (2022), 199 (2023), 156 (2024)*

International; 60
International; 32
International; 26
International; 15
International; 27
International; 12
International; 8

India; 220
India; 193
India; 179
India; 265
India; 261
India; 187
India; 148

2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024

b. Refraction Units by India vs. International (2018 – 2024)
*N = 3 (2018), 88 (2019), 57 (2020), 76 (2021), 68 (2022), 135 (2023), 122 (2024)*

International; 1

India; 2

International; 49

International; 7

International; 2

International; 4

International; 19

International; 60

India; 39

India; 50

India; 74

India; 64

India; 116

India; 62

2018   2019   2020   2021   2022   2023   2024

c. ROP Units by India vs. International (2018 – 2024)
N = 51 (2018), 75 (2019), 75 (2020), 72 (2021), 100 (2022), 119 (2023); 129 (2024)

International; 20

International; 21

International; 55

International; 38

International; 49

International; 51

International; 62

India; 31

India; 54

India; 20

India; 34

India; 51

India; 68

India; 67

2018   2019   2020   2021   2022   2023   2024

d. Platform Units by India vs. International (2018 – 2024)
N = 46 (2018), 15 (2019), 15 (2020), 10 (2021), 8 (2022), 16 (2023), 54 (2024)
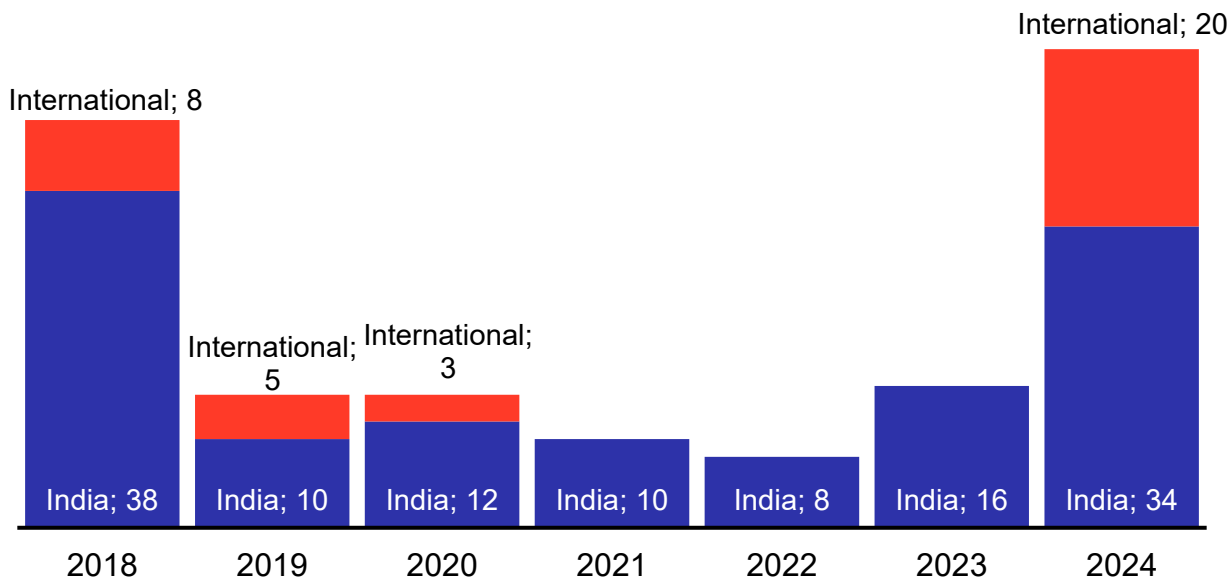
C. Facility Profiles
1. Facilities by Type (2018 – 2024)
N = 334 (2018), 388 (2019), 332 (2020), 427 (2021), 484 (2022), 419 (2023), 444 (2024)

11
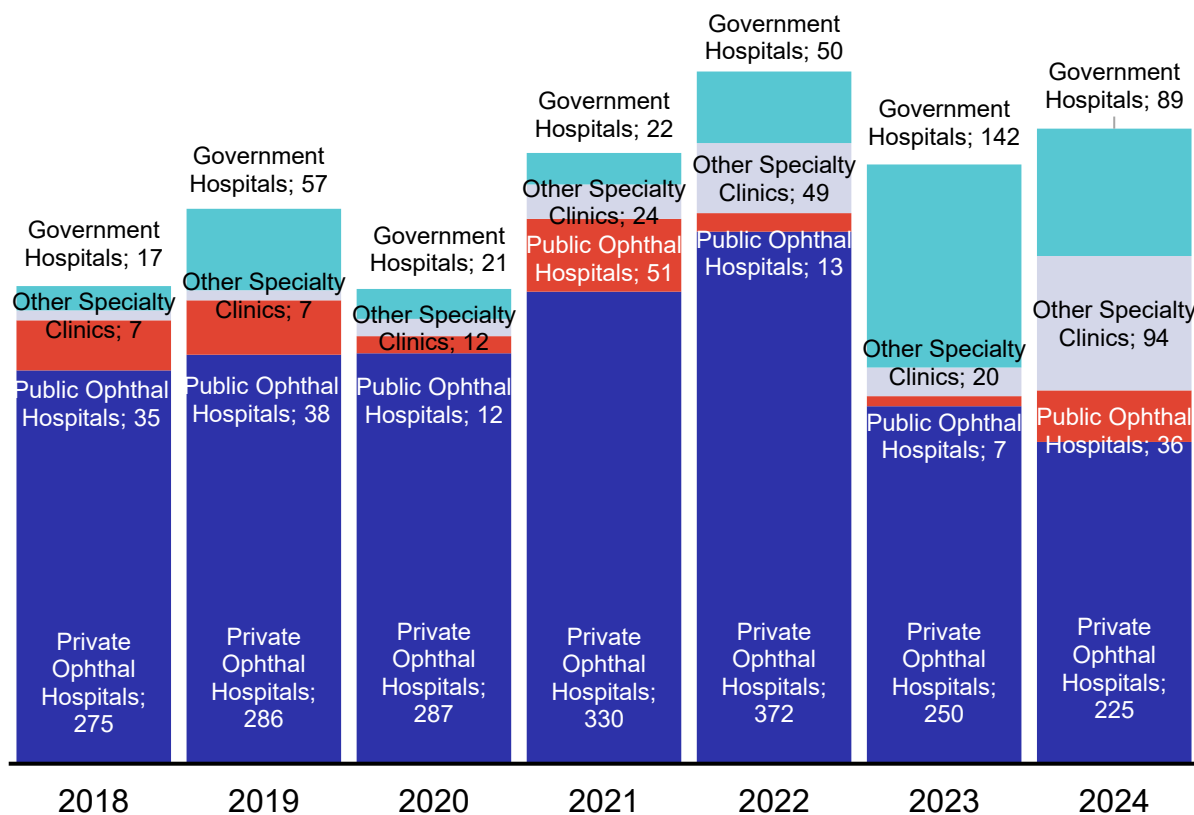
D. Provider Profiles
1. Providers / 'Users' by Type (2018 – 2024)
N = 334 (2018), 388 (2019), 330 (2020), 428 (2021), 638 (2022), 636 (2023), 424 (2024)
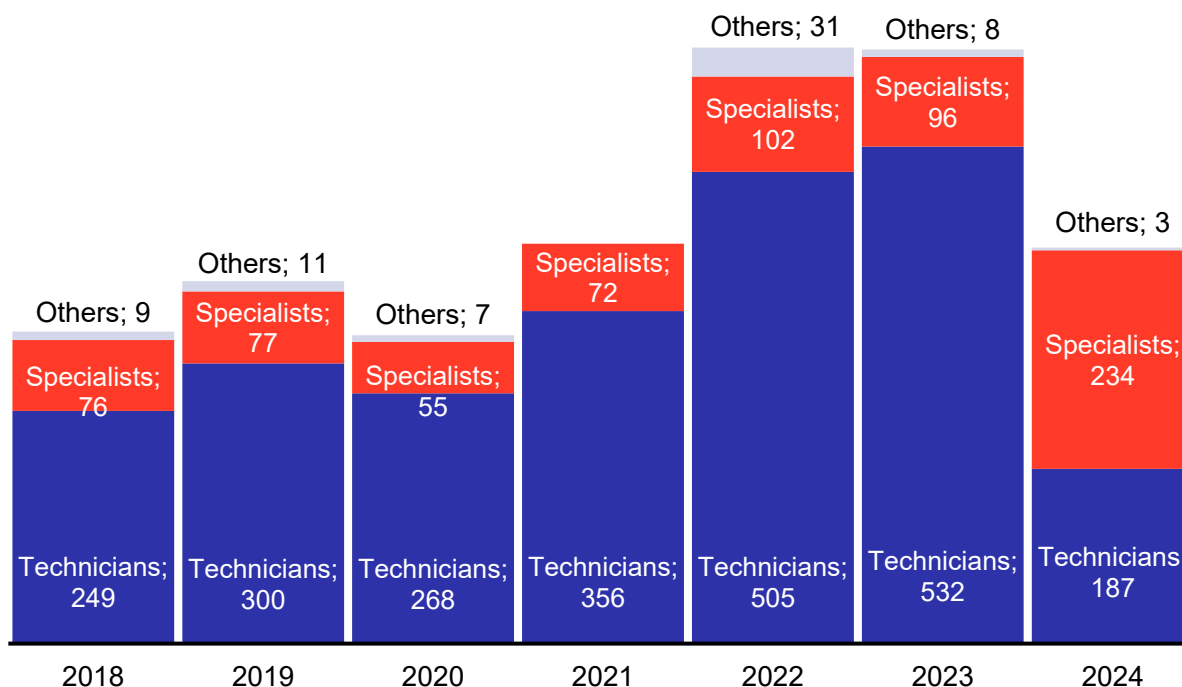
a. Imaging Providers / 'Users' by Type (2018 – 2024)
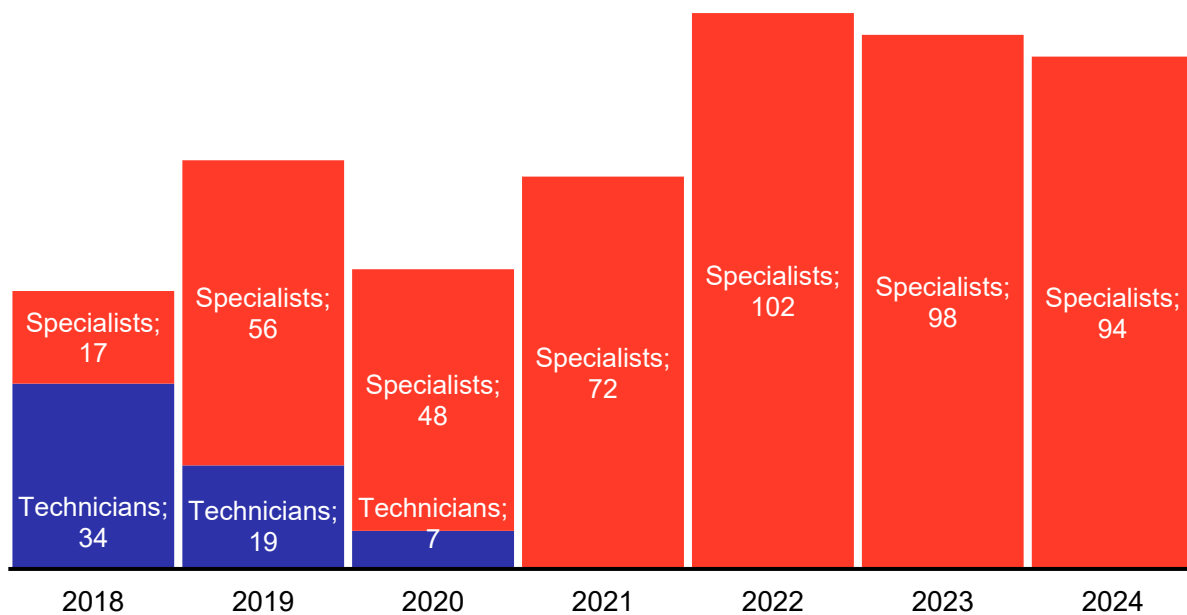*N = 280 (2018), 225 (2019), 330 (2020), 290 (2021), 563 (2022), 591 (2023), 151 (2024)*
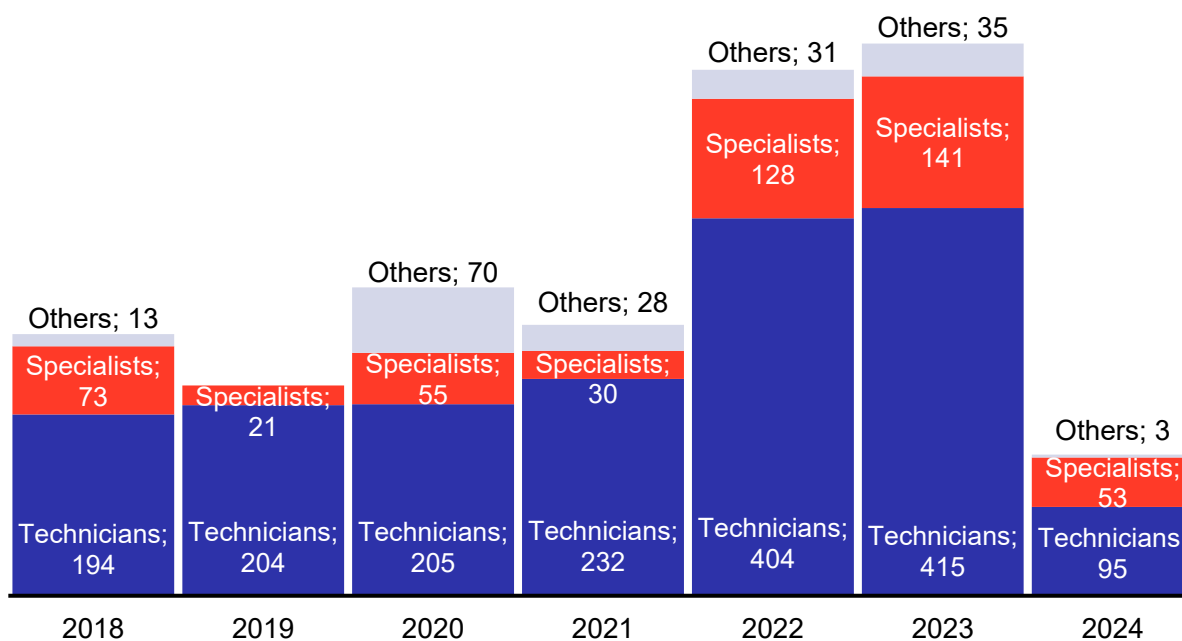
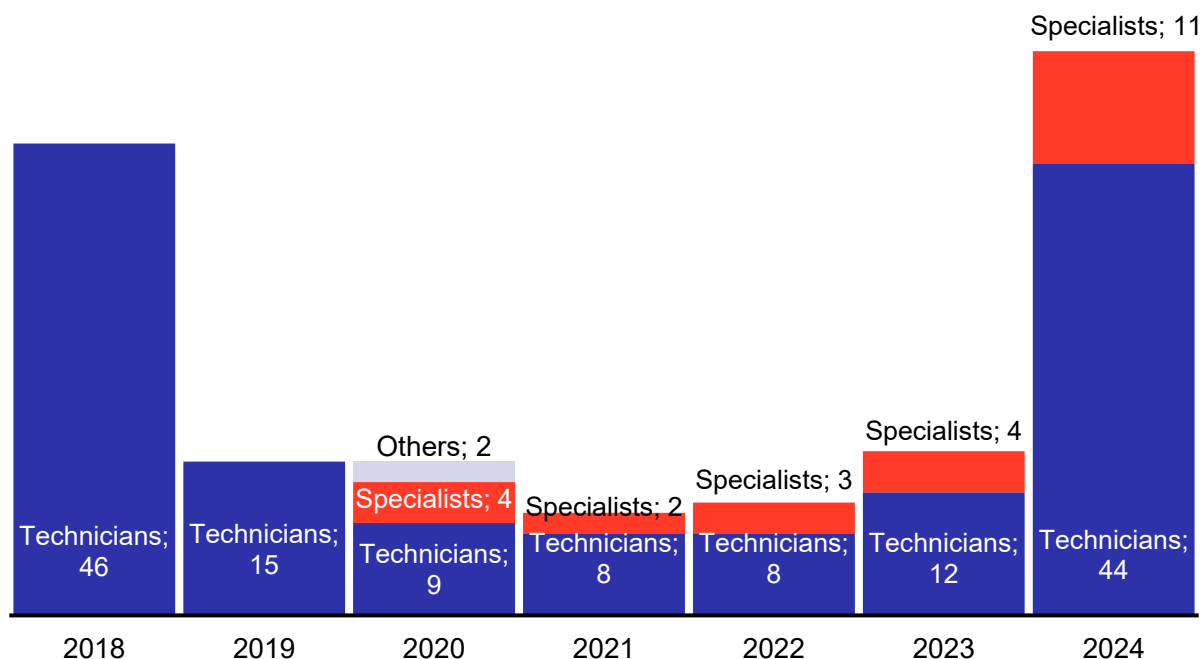**b. Refraction Providers / 'Users' by Type (2018 – 2024)**
N = 5 (2018), 88 (2019), 68 (2020), 83 (2021), 95 (2022), 140 (2023), 124 (2024)
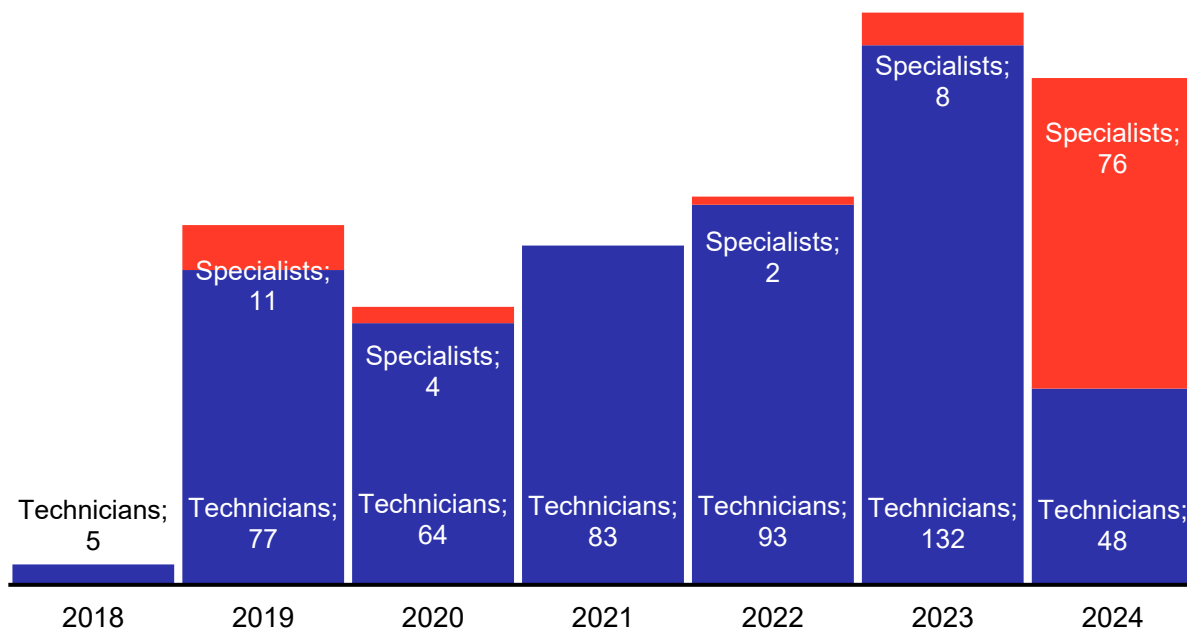
c. ROP Providers / 'Users' by Type (2018 – 2023)
N = 51 (2018), 75 (2019), 55 (2020), 72 (2021), 102 (2022), 98 (2023), 94 (2024)

d. Platform Providers / 'Users' by Type (2018 – 2024)[11]
N = 46 (2018), 15 (2019), 15 (2020), 10 (2021), 11 (2022), 16 (2023), 55 (2024)

2. Training by Type of Provider (2018 – 2024)[12]
N = 620 (2018), 1,562 (2019), 775 (2020), 1,454 (2021), 1,488 (2022), 1,510 (2023), 731 (2024)

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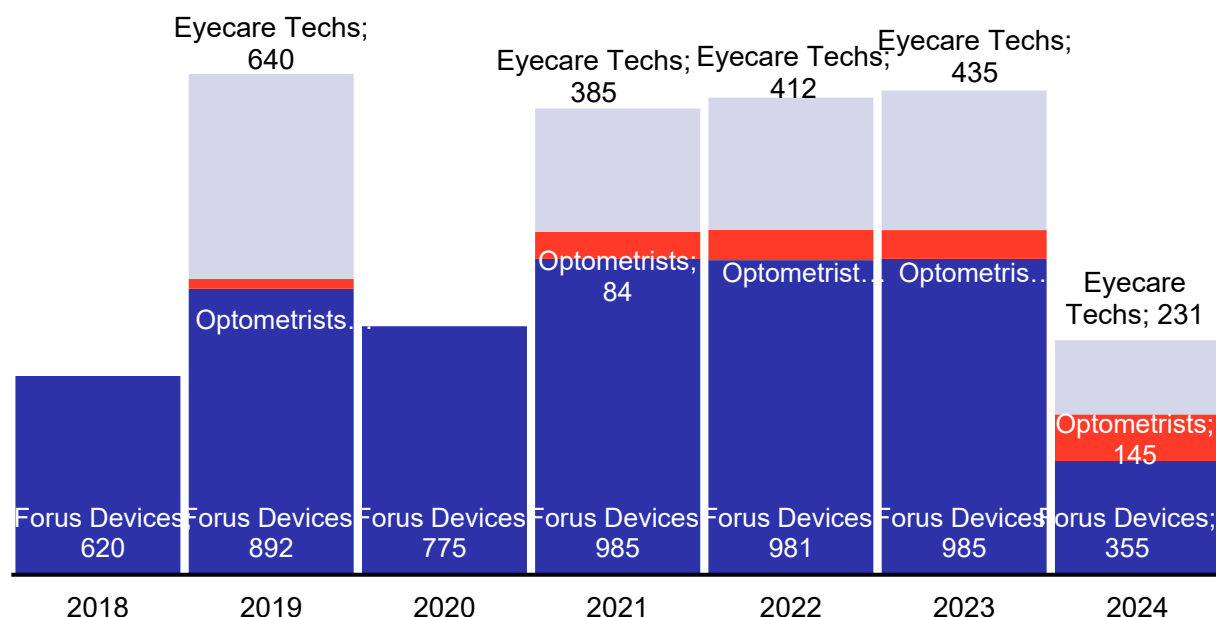
[11] There is not a precise correlation between users and facilities across categories.

[12] The increased ratio of specialists to non-specialists trained was the result of more customers requesting that the Company train its specialists, with the intent that those specialists would train the technicians and other staff. The overall training total declined due to fewer retraining being required.

II. IMPACT SPOTLIGHT: Bringing large-scale screening to India, improving access and providing public health insights
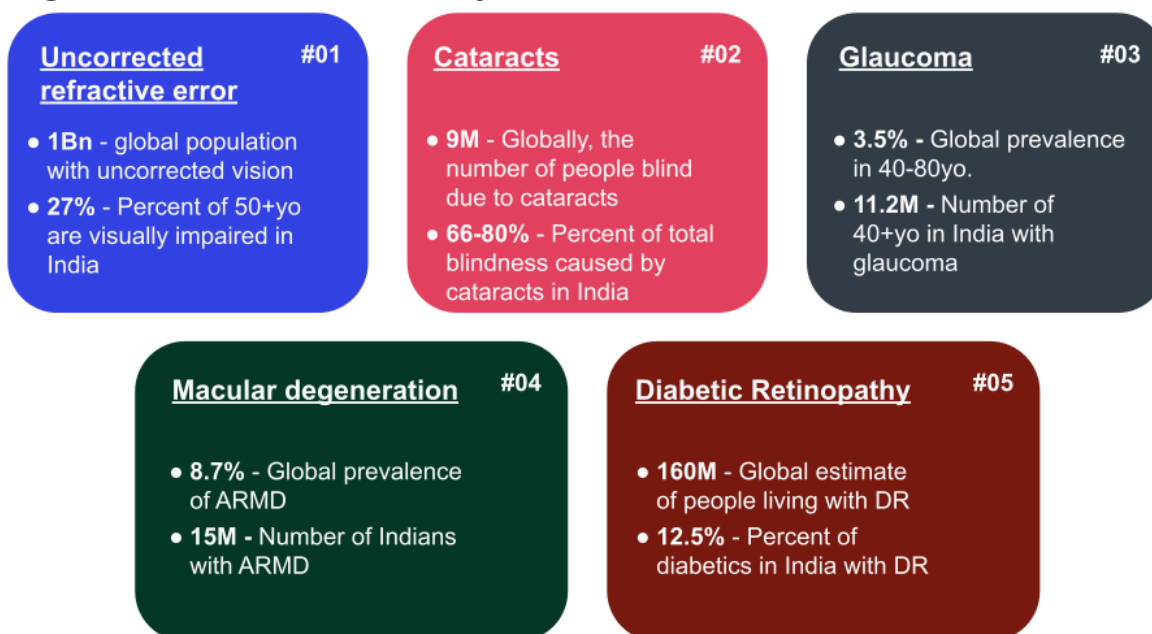
Background

The WHO estimates that **2.2 billion people globally** live with a vision impairment, of which **1 billion cases could either have been prevented or have yet to be addressed**. Thanks to advances in eye health, **90% of all sight loss is now considered avoidable** if detected and treated early. However, **significant inequalities in low- and middle-income countries ("LMICs")** continue to drive vision loss among the most vulnerable populations. Within LMICs, **rural communities face even greater barriers** compared to their urban counterparts. In response, the WHO has shifted from disease-specific eye care interventions to a **systems-based, people-centered approach**, as articulated during the **73rd and 74th World Health Assembly ("WHA") meetings**[1]. This strategy aims to **integrate eye care into primary and community health systems**, enabling cross-sector coordination, expanding access, reducing patient costs, and ultimately improving quality of life.

Statistics show that virtually everyone will experience at least one eye condition in their lifetime[2]. While aging and genetic factors are the most common risk factors leading to eye conditions, rising cases of diabetes, environmental exposures (such as UV-B and poor air quality), and lifestyle changes (smoking, alcohol consumption, and pollution exposure) also drive many eye conditions, especially cataracts. For most people, eye conditions remain one of the least invasive and easiest medical issues to treat or

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[1] World Health Organization (2022) 'WHO launches new guide on integrating eye care in health systems', *WHO News*, 24 May. Available at: https://www.who.int/news/item/24-05-2022-who-launches-new-guide-on-integrating-eye-care-in-health-systems (Accessed: 14 July 2025).

[2] World Health Organization (2023) *Blindness and vision impairment* [Fact sheet], 10 August. Available at: https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment (Accessed: 14 July 2025).

Figure 1 - The five most common eye-related conditions and burdens

Uncorrected refractive error #01	Cataracts #02	Glaucoma #03
• **1Bn** - global population with uncorrected vision • **27%** - Percent of 50+yo are visually impaired in India	• **9M** - Globally, the number of people blind due to cataracts • **66-80%** - Percent of total blindness caused by cataracts in India	• **3.5%** - Global prevalence in 40-80yo. • **11.2M** - Number of 40+yo in India with glaucoma

Macular degeneration #04	Diabetic Retinopathy #05
• **8.7%** - Global prevalence of ARMD • **15M** - Number of Indians with ARMD	• **160M** - Global estimate of people living with DR • **12.5%** - Percent of diabetics in India with DR

correct, so long as patients have access to routine eyecare. However, many poor and rural people face challenges in accessing routine screening in India, meaning there are considerable unmet patient needs. Surveillance data on the five most common diseases highlight the vast needs for improved eyecare both globally and in India **(Figure 1)**.

The Rapid Assessment of Avoidable Blindness ("RAAB"), a National Blindness and Visual Impairment Survey conducted in India from 2015 to 2019, covered 31 districts across 24 of the country's 28 states and union territories. It serves as the most comprehensive source of eye health data and highlights the uneven progress made in combatting visual impairment in India. The survey reported a notable decline in blindness among adults aged 50 and older—from 5.3% in 2001 to 1.99% in 2019 **(Table 1)**. This is largely attributed to increased community outreach, public awareness efforts, and a renowned national program offering free cataract surgeries[3].

Unfortunately, although India has achieved lower rates of blindness compared to many LMICs, it continues to report nearly four times higher prevalence of moderate-to-severe visual impairment ("MSVI") than

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[3] Murthy, G.V.S., Jain, B., Shamanna, B. and Subramanyam, D. (2014) 'Improving cataract services in the Indian context', *Community Eye Health*, 27(85), pp. 4–5.

Table 1 - Prevalence of Vision Impairment ("VI") in India based on the Rapid Assessment of Avoidable Blindness ("RAAB") survey			
Category	0-49yo	>50yo	Total population
Blindness	0.52	1.99	0.36
Severe VI	0.48	1.96	0.35
Moderate VI	3.62	9.81	1.84
Moderate-to-severe VI	3.81	11.77	2.19
Mild VI	11.05	12.92	2.92
Total VI	15.38	26.68	5.47

high-income countries, and worse than many other comparable countries[4]. Persistent barriers to early detection – stemming from social, geographic, and economic inequities – have contributed to these disproportionately high rates of visual impairment. With appropriate attention and funding, India could reduce MSVI as **93% of blindness and 97% of visual impairments** are considered avoidable with adequate access to care, early intervention, and financial support.

Surveys conducted by the Indian government using Rapid Assessment of Avoidable Blindness ("RAAB") methodologies provide information about the burden of blindness and visual impairment (**Table 1)**; however, it does little to describe the economic, geographic, and policy-based reasons for why India suffers from such high rates of eye conditions. The literature, and our own conversations with the Forus Health team, indicate that the issues are multifactorial, and include:

1) **Aging populations** – Currently around **10% of India's population** is 60 years or older, but this number will double by 2050 to more than **330 million people**. Aging is the strongest risk factor for cataracts, glaucoma, and age-related macular degeneration ("ARMD"), but geographic barriers, low health literacy, and financial constraints, all represent strong headwinds to link this population to routine eyecare.

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4 Burton, M.J., et al. (2021) 'The Lancet Global Health Commission on Global Eye Health: vision beyond 2020', *The Lancet Global Health*, 9(4), pp. e489–e551. doi: 10.1016/S2214-109X(20)30488-5.

2) **Distribution of vision services** – Rural, low income, female, and elderly individuals all experience a considerably higher rate of visual impairment and limited access to care. In India, **over 70% of all ophthalmologists and optometrists are located in urban areas**, with an average distance of **30-50km[5]** to reach an eye specialist, which is on par with Nigeria (30-60km)[6], Ethiopia[7] (40-100km), and Tanzania[8] (25-80km). The density of eyecare specialists are estimated to be **5-10x higher in urban areas** with shorter wait times and better access to private clinics and vision centers in India, which serve to widen population level disparities. Delays to diagnosis, particularly for glaucoma and diabetic retinopathy ("DR") lead to irreversible vision loss.[9]

3) **A limited number of eyecare professionals –** India has developed an extensive set of training programs to increase the number of eyecare professionals, but as recently as 2024, the India Vision Institute has stated there is a need for an additional **100,000 optometrists and technicians,**[10] in particular to cover underserved rural areas.

4) **Out of pocket costs** - With the exception of cataract surgery, eye care is not covered through insurance in India. Individuals are able to get reading glasses, but not general use glasses for free. Therefore

[5] Das, T., Ackland, P., Correia, M., Hanutsaha, P., Mahipala, P., Nukella, P.B. and Raman, U., 2018. *Is the 2030 agenda for sustainable development achievable without addressing blindness and vision impairment?*. Indian Journal of Ophthalmology, 66(5), pp.545–547. https://doi.org/10.4103/ijo.IJO_390_18

[6] Fadamiro, C.O., Adenuga, O.O., Baiyeroju, A.M., Oluwatimilehin, A.A., Onakpoya, O.H. and Adegbehingbe, B.O., 2021. *Geospatial distribution and access to optometric services in Nigeria: implications for eye health equity*. BMC Health Services Research, 21, Article 783. https://doi.org/10.1186/s12913-021-06764-3

[7] Berhane, Y., Worku, A., Bejiga, A., Adamu, L., Alemayehu, W., Bedri, A. and Gudeta, T., 2018. *Prevalence and causes of blindness and visual impairment in Ethiopia: a national survey*. PLOS ONE, 13(11), p.e0205809. https://doi.org/10.1371/journal.pone.0205809

[8] Maestrelli, H., Kuper, H., Polack, S., Mathenge, W., Morjaria, P., Vande Borne, F. and Lansingh, V., 2020. *Geospatial analysis of eye health system indicators in Tanzania: implications for planning*. Global Health Action, 13(1), p.1791460. https://doi.org/10.1080/16549716.2020.1791460

[9] Ragni K, Salal K, Sunil Kumar G, Rajiv J, Jamshed A, et al. A Hospital based Study on Prevalence and Clinical Presentation of Cataract in Northern India. JOJ Ophthalmol. 2024; 10(5): 555797. DOI: 10.19080/JOJO.2024.10.555797

[10] Pioneer News Service (2024) 'India needs 100,000 more optometrists, technicians to combat eye care: report', The Daily Pioneer, 21 September. Available at: https://www.dailypioneer.com/2024/india/india-needs-100-000-more-optometrists--technicians-to-combat-eye-care--report.html (Accessed: 14 July 2025).

low-income populations will often delay or avoid care due to the costs involved.[11,12]

5) **Weak integration into PHC** - Eyecare is not routinely integrated in the primary healthcare or school health programs in India, meaning these services are rarely offered at the first level of contact that most people have with the medical system. A 2018 study showed that less than 20% of adults over the age of 40 had undergone an eye exam in the past two years[13].

6) **Health seeking behavior -** Partly due to the challenges above, many individuals do not actively seek out preventative screening services. This can be due to any number of factors, including financial prioritization, insufficient knowledge of services, accessibility issues, cultural beliefs such as the attribution of visual issues being related to aging and unavoidable factors, and/or concerns around the complexity and risks of eye-related procedures.[14,15]

7) **Environmental and lifestyle factors** – Long exposure to UV-B, particularly among outdoor workers is a known cause of cataracts, as are lifestyle factors such as smoking, alcohol, environmental pollution, and poor diet.[16]

[11] Vs Murthy G, Jain B, Shamanna B, Subramanyam D. (2014) Improving cataract services in the Indian context. Community Eye Health. 27(85):4-5. PMID: 24966453; PMCID: PMC4069775.

[12] Marmamula, S., Yelagondula, V. K., Varada, R., & Khanna, R. C. (2023). Improving access to eye care in low and middle-income countries – challenges, opportunities, and the way forward. *Expert Review of Ophthalmology*, *18*(6), 365–377. https://doi.org/10.1080/17469899.2023.2281448

[13] Singh, D., Sapra, S., Singh, K., and Singh, G., 2018. Prevalence and predictors of eye care utilization among older adults in India: Evidence from a national survey. Indian Journal of Ophthalmology, **66**(3), pp.409–415. https://doi.org/10.4103/ijo.IJO_1029_17

[14] Marmamula S, Keeffe JE, Raman U, Rao GN. Population-based cross-sectional study of barriers to utilisation of refraction services in South India: Rapid Assessment of Refractive Errors (RARE) Study. BMJ Open. 2011 Jul 15;1(1):e000172. doi: 10.1136/bmjopen-2011-000172. PMID: 22021782; PMCID: PMC3191577.

[15] Vignesh, D et al. "Barriers to treatment-seeking for impairment of vision among elderly persons in a resettlement colony of Delhi: A population-based cross-sectional study." The Indian journal of medical research vol. 154,4 (2021): 623-630. doi:10.4103/ijmr.IJMR_592_19

[16] Nirmalan PK, Robin AL, Katz J, Tielsch JM, Thulasiraj RD, Krishnadas R, Ramakrishnan R. Risk factors for age related cataract in a rural population of southern India: the Aravind Comprehensive Eye Study. Br J Ophthalmol. 2004 Aug;88(8):989-94. doi: 10.1136/bjo.2003.038380. PMID: 15258010; PMCID: PMC1772282.

The high cost of poor vision

Vision impairment and blindness impact the country in a variety of ways. People with vision impairment are less likely to be employed, with the global reduction in employment among working-age individuals with vision loss estimated at 30%, leading to an annual productivity loss of 0.3% global GDP. In India, where treatments, surgeries, medications, and glasses are frequently not covered by insurance, added expenses can place heavy financial burden on poor families and may result in lost income for caregivers as they need to provide unpaid care for visually impaired family members. Finally, children with uncorrected vision impairments face educational barriers that limit their future employment opportunities. Overall, the economic burden is significant, with vision impairment costing India an estimated US$38.4 billion in gross national income ("GNI") and an estimated annual productivity loss of US$29.4 billion.

The promise of person-centered care

The most recent WHO Integrated People-centered Eyecare ("IPEC") strategy outlines a strategy shift towards people-centered eye care services. People-centered care has rightly gained traction as a key method for improving healthcare services in LMICs. The key principles of person-centered care focus on not only respect for individual preferences (cultural and patient perspectives), but also empowering people through health education, integration, and coordinating care across different disease sectors. This means it is crucial to make every healthcare visit count by taking a holistic and comprehensive approach to healthcare.

For India to further reduce not only the prevalence of blindness, but also the incidence rate, more must be done via national and state programs, leveraging public and private partnerships. WHO guidelines focus on integrating eyecare into primary healthcare systems, and conducting free screenings in communities, both of which improve patient knowledge of eye conditions, and allow opportunities for healthcare staff to emphasize the need for routine eye exams, especially among the elderly and the poor. Community level engagement, which Forus Health is uniquely positioned to

support through its robust and mobile ocular health platform, is an obvious answer to addressing these current eyecare gaps.

Routine eye examinations in primary care can provide insights outside of eye health as well. Diabetes, hypertension, heart disease, autoimmune diseases, and even some cancers can be identified through an eye exam[17,18]. While all of these conditions would require follow-up examinations with specialists, eye examinations provide unique opportunities to routinely monitor for a range of illnesses. Going forward, artificial intelligence ("AI") algorithms are expected to play a significant role supporting screening for other illnesses through eye vision exams. With advanced community screening strategies, and the right technology, the eyes could ultimately prove to be not just a window to the soul, but could also provide insights into the broader human condition.

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[17] Liew, Gerald, and Jie Jin Wang. "Retinal vascular signs in diabetes and hypertension--review." Arquivos brasileiros de endocrinologia e metabologia vol. 51,2 (2007): 352-62. doi:10.1590/s0004-27302007000200027

[18] Jin K, Zhang J and Grzybowski A (2024) Editorial: Predictive and diagnostic approaches for systemic disorders using ocular assessment. *Front. Med.* 11:1529861. doi: 10.3389/fmed.2024.1529861

Tackling the problem

Mass screening at Maha Kumbh Mela, the world's largest religious gathering

Maha Kumbh Mela has been recognized by UNESCO as the largest peaceful gathering of humanity in the world. Upwards of **600 million pilgrims** are estimated to have flooded into Prayagraj in **Uttar Pradesh** over a **45 day period.**[19] Located in Northern India, Uttar Pradesh abuts the Himalaya mountains on the border with Nepal. It is the most populous state in India, with over 240 million people residing in **mostly rural** settings (76-78% of the population is rural). The area has **significant rural poverty** with large populations of marginalized groups. Healthcare access is variable, with large disparities noted between urban and rural areas.

This year, Forus Health, together with the nonprofit Eyebetes Foundation, conducted a mass screening campaign at the Maha Kumbh Mela, screening over **20,000 people** with only **35 staff** conducting eye exams from 9am to 9pm over **10 days**. This total included the testing of **5,000**

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[19] The gathering is driven by the belief that drops of the nectar of immortality fell near the confluence of Ganga, Yamuna, and the mythical Saraswati rivers after a struggle between the gods.

police officers who were supporting the event. Health screenings at mass events present both unique opportunities and considerable challenges. Because the 3nethra platform produced by Forus Health is highly portable, durable, and captures high quality data capable of diagnosing cataracts, refractive error, and retinal pathology, it is uniquely suited to operate in community-based testing situations. While demographic data from the event shows some variability between those tested and national populations **(Figure 2A-C)**, a surprisingly high percent of individuals screened had some level of vision impairment **(Figures 2D and 2E).** Demographic data from the event reveal:

- **20,363** individuals were screened at the event

- **69%** of participants were men (compared to a national average of 51.5).

- **52%** of the participants were 20-40 years old (compared to ≈31.9% of the national population.

- **90%** were less than 60 years old (similar to the national average of 93%).

The demographic variability, and the nature of the screening event, make it difficult to come to many rigorous conclusions. That being said, it was clear that many of those who attended the Maha Kumbh Mela event came from comparatively poor parts of the country, which does allow some insights into the vast needs within that population.
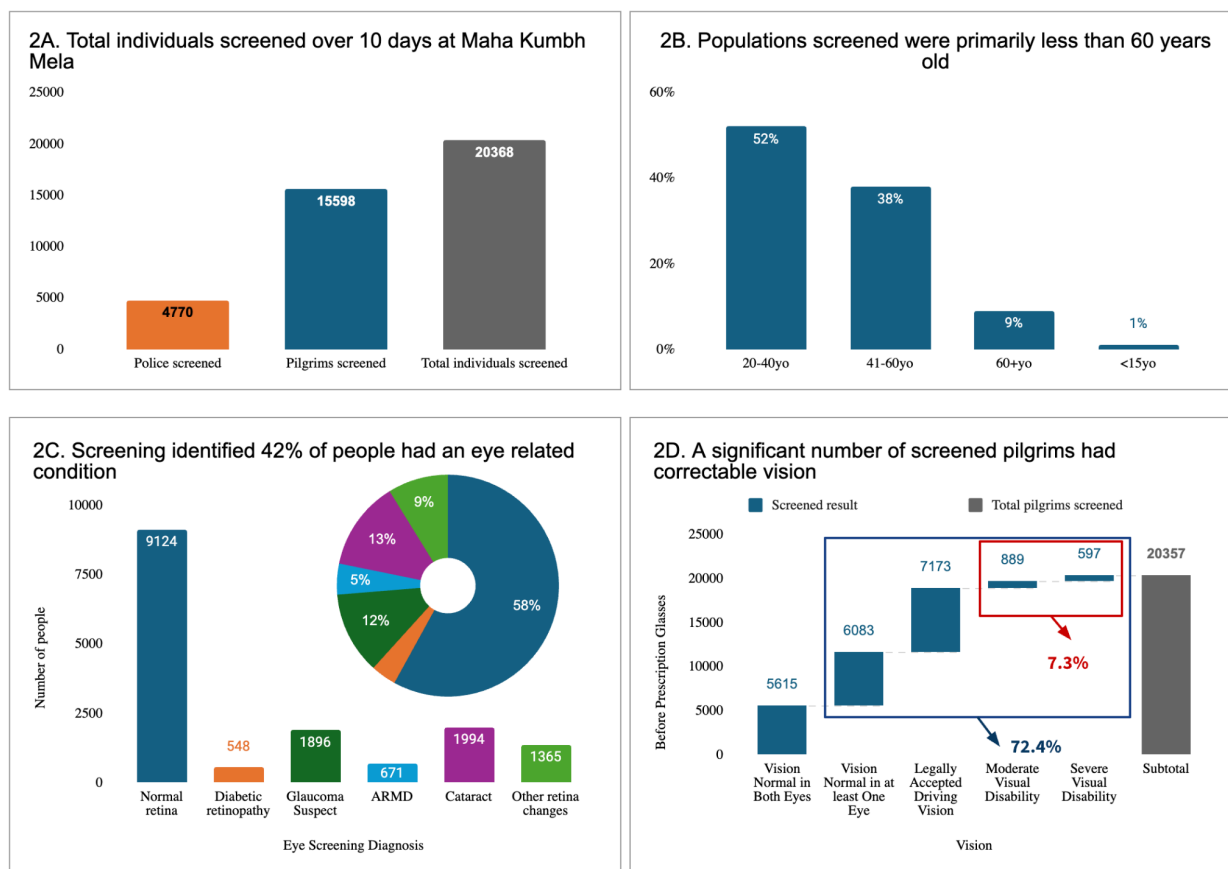
Together the data indicate:

- **72.4%** of people had some form of vision impairment in at least one eye warranting correction or treatment;

- **7.3%** of pilgrims had **moderate to severe visual disability**;

- **42%** of people diagnosed with cataracts, DR, glaucoma, ARMD, and/or other retina changes;

- **7.8%** of screened clients were diagnosed with either DR or glaucoma, both of which can lead to irreversible blindness;

- Cataracts were identified in **13%** of the people screened, and ARMD was found in **5%** of the population;

- **25%** of police had visual impairment, **11.8%** with moderate-to-severe visual disability; and

- Over **3,500** police were provided spectacles.

Taken together, the data above suggest that the levels of unrecognized vision impairment in India could be notably higher than the estimated 27% VI reported in the most recent national survey. This underscores the need for further research among poor, rural, and young adult populations to fully understand the scope of eye health needs in these communities. The Forus Health team also noted that approximately **95% of people screened indicated it was the first time they had received a vision test,** further highlighting poor access to trained eyecare professionals in primary healthcare settings in India.

As we will discuss further in the next section, this screening event at Maha Kumbh Mela provides additional evidence of the potential impact that the Forus Health's digital technology platform could have on eye health, including opportunities for expanded community testing and diagnostic strategies based on competitive advantages provided by its integrated AI.

2A. Total individuals screened over 10 days at Maha Kumbh Mela

2B. Populations screened were primarily less than 60 years old

2C. Screening identified 42% of people had an eye related condition

2D. A significant number of screened pilgrims had correctable vision

Future of AI in monitoring population level eye-care

The Platform for Ocular Intelligence for Systemic and Eye Diseases ("FH-POISE") represents an advanced, cloud-based, AI solutions platform integrated into the 3nethra platforms. Capable of operating in both community and clinic settings, it tackles two of the biggest challenges facing scale-up of eye tests in India – limited eyecare staff and the need for community based testing strategies. FH-POISE operates on an ISO and HIPAA compliant platform, automatically analyzing high resolution fundus (back of the eye) images to detect ocular conditions such as DR, glaucoma, ARMD, and cataracts. The AI integrates within the FH-TeleCare and FH-TeleEye systems to enable remote diagnostics with eyecare professionals.

FH-POISE captures high resolution images, leveraging AI analysis and decision support by generating heatmaps that highlight key abnormalities in the eye. As we have noted in other spotlights this year, the potential impact

of telehealth and AI in remote and community settings is incalculable, particularly in settings where there are limited healthcare professionals available, and where there is poor health seeking behavior. These systems can allow non-specialists to conduct diagnostic tests, and with the aid of medical professionals via the telehealth platform, give immediate specialist-level recommendations to patients. [20,21,22]

Looking Forward

Globally, India has both the highest number of people with uncorrected vision impairment (**estimated at 275 million in 2020**), and has the **5th highest rate of total vision loss**. This represents a substantial economic burden, such that vision screening and correction should be a **key primary health focus** for the country in the coming decade. To do so, the country will need to balance government expenditures and patient out-of-pocket costs, bearing in mind a basic tenet of the World Health Organization's ("WHO") IPEC guidelines that state, *"all individuals receive the health services they need, of sufficient quality, without experiencing financial hardship."* People within the poorer, often more populous, states will not likely be able to afford regular screening and monitoring visits required for vision care and eye diseases without financial assistance or insurance.

Given the **close interrelationship** of eye diseases and major **non-communicable disease ("NCD")** burdens like **heart disease** and **diabetes** that have begun to be prioritized in India, the country now has reasons to further elevate and expand its focus on eyecare, especially for the poorest of populations that can least afford out-of-pocket expenses. Supported community care should consider promoting not just **routine NCD screening opportunities, but also eye screening** to reduce severe

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[20] Eilts, S.K. *et al.* (2022) 'External validation of a retinopathy of prematurity screening model using artificial intelligence in 3 low- and middle-income populations', *JAMA Ophthalmology*, 140(8), pp. 791–798. doi:10.1001/jamaophthalmol.2022.2135

[21] Cleland, C.R. et al. (2023) 'Artificial intelligence for diabetic retinopathy in low-income and middle-income countries: a scoping review', BMJ Open Diabetes Research & Care, 11(4), p. e003424. doi:10.1136/bmjdrc-2023-003424.

[22] Shah, Z. et al. (2023) 'A technological approach to "Reaching the Unreached" – leveraging teleophthalmology services in rural Gujarat', Indian Journal of Ophthalmology, 71(8), pp. 2995–3000. doi:10.4103/IJO.IJO_3010_22.

eye burdens and avoidable blindness that continue to afflict the nation. As was discussed in our spotlight last year, public private partnerships such as the **Asha Kirhana** initiative can facilitate and accelerate improved eyecare at the community level, particularly in poor states like Uttar Pradesh, the focus of this year's report.

In the sections below, we will discuss how the Asha Kirana project set the stage for a successful **national diagnostic screening program** by addressing many of the challenges India faces in scaling eyecare support. Forus Health is well positioned to be a **leading private sector partner** in any future expansions of this type of program that, if extended to all states, could have substantial health, social, and economic benefits for the country.

We also discuss the value of **data-driven strategies** to inform decision-making and targeted interventions for those populations most in need of state-supported eyecare at the community level and public-private sector partnerships with companies like Forus Health could facilitate data gathering efforts.

What's old is new again – Person-centered care

The Asha Kirana program ("ray of hope", in Kannada)[23] leveraged the person-centered WHO IPEC framework, focusing on **refraction** for vision care, and **teleophthalmology** for more serious eye concerns. Initially, Karnataka State used primary care centers as screening locations, but, after foot traffic leveled off, moved operators of Forus Health refraction devices into **home screening**, marking the **first initiative** to bring **care to the doorsteps** of Karnataka's population. A separate teleophthalmology program involving retinal screening, ordinarily done at district hospitals, was brought closer to patients at primary care community sites across the State. To date[24]:

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[23] Karnataka is the 6th largest state in southwestern India with a diverse topography running from the coastal mountains to the high interior plateau. Home to an estimated 70 million people, 61% of whom are in rural locations, it is one of India's most economically developed states, but disparities between the urban and rural areas are notable. Like most States, rural populations in Karnataka have limited access to eyecare services, optometrists and ophthalmologists, and community awareness in rural settings.
[24] The Hindu (2024) 'Asha Kirana, Prerna programmes launched in Kalaburagi', The Hindu, 9 March. Available at:

- 3,47,174 people have been screened

- 1,44,513 recommended for free eyeglasses across 8 districts

- 1,905 have been recommended for further investigations

Asha Kirana showed the powerful impact that people-centered approaches can have, especially when serving at-risk, poorer populations in more rural environments. Karnataka successfully **reduced out-of-pocket expenses**, not only by covering the cost of the vision screening, spectacles, and cataract surgery, but by also **bringing diagnostics closer to the home**. Forus Health further validated the effectiveness of decentralized, community based screening with the 3nethra devices through trained Accredited Social Health Activists ("ASHA"). This model presents multiple opportunities for scaling throughout India, **improving the quality of life for vision-impaired individuals, while also boosting local productivity that directly contributes to the local economies**[25]. This initiative exemplifies how **person-centered care** and **public-private partnerships**, two key aspects to global health, can effectively be integrated.

Better together - integrated financing strategies

Person-centered care strategies are key to increasing access to diagnostics, as well as to educate and empower patients to take control over their own visual health; however, they need to be implemented through comprehensive public health strategies. In India, **where most health insurance does not include eyecare**, public-private partnerships can provide the funding, technical assistance, and staffing to provide safe, effective, timely, and affordable care. The Asha Kirana project leveraged the strengths of both public-private partnerships and people-centered care, with philanthropic health funding and expertise from state and national personnel, alongside community-level, high-quality diagnostic products and

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https://www.thehindu.com/news/national/karnataka/asha-kirana-prerna-programmes-launched-in-kalaburagi/article67924995.ece (Accessed: 14 July 2025).

[25] Harp, M.D. (2024) 'The value of sight: unveiling the economic returns of eye care', Ophthalmology Times, 18 March, 49(3). Available at: https://www.ophthalmologytimes.com/view/the-value-of-sight-unveiling-the-economic-returns-of-eye-care (Accessed: 14 July 2025).

services provided by Forus Health. Together they successfully expanded access to underserved areas where eyecare infrastructure is weak.

We recognize that expansion of this program will require considerable time and resources to implement, and it is unlikely that poorer, more populous states, will be unable to do so alone. But, we believe this public-private partnership initiative can be recreated throughout the country to reach the most vulnerable, particularly if the program can be expanded through a combination of **State, National, and/or Corporate Social Responsibility ("CSR") funding**. India was the **first country** to **mandate** CSR responsibility[26], and more recently, it tightened its reporting requirements to induce more comprehensive corporate participation.[27] To advance these types of public-private partnerships, there should be broader consideration of funding assistance from **India-based big pharma**, **telehealth**, **health technology**, and/or **pharmacy services** in India, all of which have an interest in India's healthcare space.

Recent acclaim from the WHO for the Asha Kirana initiative should provide clear evidence for the value of **integrating eye care into primary healthcare**, prioritizing accessibility, and **expanding community screening**.[28] To serve as a model for the world, the WHO has proposed a

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[26] Net worth = US$60M; Turnover of US$120M, or a net profit of $600,000

[27] In 2013, India introduced mandatory CSR spending through Section 135 of the Companies Act. Companies meeting certain financial thresholds are required to spend 2% of their average net profits from the past three years on CSR activities. The requirements are applicable to companies with a net worth of Rs. 500 crore or more; a turnover of Rs. 1000 crore or more; or net profits of Rs. 5 crore or more in the immediately preceding financial year. Eligible companies must form a CSR Committee at the Board level and formulate a CSR policy. The law specifies categories of activities that qualify as CSR, including health. Companies are required to report on their CSR activities in their annual reports and on their website. If a company fails to spend the required amount on CSR, it must disclose the reasons in its Annual Report. Recent amendments have further strengthened reporting requirements, including the introduction of Form CSR-2 for detailed disclosure of CSR expenditures. (Key Changes to India's CSR Policy for Companies. *India Filings.* https://www.indiafilings.com/learn/key-changes-to-indias-csr-policy-for-companies/; Changes introduced by the CSR Amendment Rules 2022 -- MMJC. *MMJC.* 2022. https://www.mmjc.in/changes-introduced-by-the-csr-amendment-rules-2022/; Weeme, Peter ter. CSR in India Is Now a Law. *B The Change.* June 7, 2016. https://bthechange.com/csr-in-india-is-now-a-law-2502aa6d0daa.). This legislation made India **the first country** to **legally mandate corporate social responsibility** spending, aiming to increase corporate involvement in addressing Social and Environmental issues.

[28] WHO to document Karnataka's 'Asha Kirana' as a global eye care model. *Healthworld.* July 3, 2025.

comprehensive assessment of the initiative using established tools to "*document the processes, outcomes, and lessons learned from the Asha Kirana initiative.*"[29]

Large-scale implementation projects like Asha Kirana provide a blueprint for a successful national expansion of the program. **Forus Health** digital technology and capacity-building services are remarkably well positioned to replicate the successes seen in Karnataka across the rest of the country through similar multi-stakeholder agreements.

Such a program could be even more impactful if they are built on a solid foundation of both **high-quality survey and time-sensitive surveillance data**. While the Indian government and research institutions will need to conduct the former, State-level data sharing agreements would mean Forus Health is well positioned to help with the latter through community level diagnoses enhanced by AI-enabled decision making processes and telehealth.

Opportunities for data-driven decision making and targeted interventions

India should be commended for prioritizing ongoing surveys that expand their understanding of priority populations that are suffering from visual impairment. The 2015-2019 comprehensive RAAB National Survey showed considerable progress in reducing the prevalence of avoidable blindness throughout the country, while more recent studies have provided

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https://health.economictimes.indiatimes.com/news/industry/who-recognizes-karnatakas-asha-kirana-as-a-model-for-global-eye-care/122216309.

[29] Medical Dialogues (2025) WHO commends Karnataka's Asha Kirana eye-care model, 6 July. Available at:
https://medicaldialogues.in/news/health/hospital-diagnostics/who-commends-karnatakas-asha-kirana-eye-care-model-151186 (Accessed: 14 July 2025).

targeted evidence related to eye condition prevalence rates and relative risk for various sub-populations in the country.[30,31,32,33]

Although extraordinarily useful, ongoing small sample studies and more comprehensive RAAB surveys pale in comparison to the volume and timeliness of data that can be acquired by companies like Forus Health. While it is important to distinguish between surveys – which limit bias and aim to be representative of the national or subnational population – and data collected from routine healthcare visits, **community outreach** can generate **valuable screening and referral data** that can **inform district level planning** and **improve targeting of resources**.

With such a treasure-trove of data available, incorporation of patient screening data into **case-based surveillance modules** via **public initiatives** and **public-private partnerships** can provide further insights into prevalence, incidence, and severity of eye conditions, while also navigating India's strong privacy, consent, and security requirements.

Crucially, Forus Health's AI-enabled telehealth allows for greater community outreach by supporting clinically effective remote care, reaching more people across more communities, and generating data and insights that otherwise may have never been obtained, particularly on underrepresented populations such as those less than 50 years old. **Recent surveys suggest that approximately 40% of all blindness occurs in those less than 50 years of age,** a concerning statistic given these are among the most productive members of an economy. Tracking

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[30] Zubair, M.Y., Sathiyamoorthy, R.J., Nawab, T., Eram, U. and Mehnaz, S. (2025) 'Pattern of ocular morbidity in a rural community in India', IMC Journal of Medical Science, 19(1), p. 005. doi:10.55010/imcjms.19.005.

[31] Mukhopadhyay, D. et al. (2024) 'An Indian epidemiological overview of ocular emergencies of the year 2022', Clinical Epidemiology and Global Health, 27, p. 101589. doi:10.1016/j.cegh.2024.101589.

[32] Pardhan, S., Raman, R., Biswas, A. et al. Knowledge, attitude, and practice of diabetes in patients with and without sight-threatening diabetic retinopathy from two secondary eye care centres in India. BMC Public Health 24, 55 (2024). https://doi.org/10.1186/s12889-023-17371-3

[33] A 2025 study in Aligarth Uttar Pradesh determined prevalence of refractive error was ≈30%, while 16.9% were diagnosed with cataracts
In a study published in 2024, 70% of blind people in India live in rural areas, and 40% of all blind people are between 15-49 years of age.
In a 2024 study, only 4.5% of diabetics were found to have knowledge about how to control diabetic retinopathy, 61% did not have periodic eye exams, and 38.5% were not aware of the benefits of routine retinal screening.

community outreach opportunities through data sharing can also identify hot spots for vision impairment issues, an important aspect of surveillance given the environmental and behavioral aspects of various eye conditions. Combined, these strategies can improve future screening strategies, allowing for effective targeting of finite fiscal and human resources, and providing ongoing insights into national eyecare challenges.

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In most scenarios, the greatest challenge to reducing disease burden is a lack of disruptive diagnostic technology. Fortunately, that is not the case for eyecare in India. The products developed and advanced by Forus Health fill the necessary niche, and give India (and other countries seeking to improve eyecare) a powerful technology to improve access for the most difficult to reach populations. Together, we believe a combination of advanced surveillance strategies, public-private partnerships, and person-centered care models could substantially reduce the burden of untreated and uncorrected vision impairment and disease in India.

We applaud the Karnataka government, the WHO, and Forus Health for their forward-looking efforts to promote more regular eye screening closer to the patient in India, and potentially across other LMICs as well. As this year's report on Focus Health's mass screening highlights, the Company is at the forefront of people-centered eye care in India and beyond.