

Improving Eye-care Delivery

Community Ophthalmology & Remote Access Programs (CORAP)

UPMC Ophthalmology Community Outreach



UPMC | VISION
INSTITUTE



Team Members

csremoteaccess@upmc.edu / 412-642-5415



Dr. Jake Waxman

Program Director & Vice Chair of Ed.

waxmane@upmc.edu

Vision Institute Comprehensive Eye Clinic
G.180



Brenda Kirk

Ophthalmic Technician & Clinical Lead

kirkb2@upmc.edu

Vision Institute Telemedicine Suite
G.341



Zeila Hobson

Program & Research Project Manager

hobsonz@upmc.edu

Vision Institute Telemedicine Suite
G.346



Dr. Valeria Villabona-Martinez

Outreach Coordinator & Research Fellow

villabonamartinev@upmc.edu

Vision Institute Telemedicine Suite
G.341



Dr. Paula Sepulveda-Beltran

Outreach Coordinator & Research Fellow

sepulvedabeltranp@upmc.edu

Vision Institute Telemedicine Suite
G.341



What motivates us?

Improving Independence and Quality of Life

Vision is crucial to maintaining a high quality of life, especially for older adults.

Our purpose is to protect patients' vision so they can continue engaging with the world and remain independent and active in their communities.

Bridging Access Gaps

Many patients encounter barriers to the eye care they urgently need, whether it's due to transportation challenges, lack of awareness, mobility or financial limitations.

We are driven to dismantle these obstacles by ensuring that eye care reaches them where they are.

Reducing Treatment Costs and Burden

Eye diseases like AMD, glaucoma, and diabetic retinopathy are often unnoticed in the early stages, but costly and difficult to manage in advanced stages.

We are driven to offer timely care to prevent the emotional and financial burden of late-stage treatment for patients and their families.



The Problem: Barriers to Eye Care



Limited Time & Mobility

Physical limitations, mobility issues, work obligations and/or scheduling conflicts make it difficult for adults to visit eye care professionals.



Lack of Awareness

Many patients are unaware of the importance of regular eye exams or may not recognize early symptoms of vision problems.



Cost and Insurance Barriers

The cost of eye exams, treatments, and lack of adequate insurance coverage can prevent potential patients from seeking necessary care.



Transportation Issues

A lack of accessible or affordable transportation options can hinder patients' ability to attend appointments.

Fear or Anxiety

Some patients may have anxiety about eye exams or potential diagnoses, leading them to avoid care.



Social Isolation

Individuals living in isolation may not have the support system needed to encourage or facilitate access to care.



Cognitive Decline

Conditions like dementia can lead to a lack of follow-through on eye care due to memory loss or confusion.



Language or Cultural Barriers

Non-English speaking or culturally diverse patient populations may have difficulty accessing care due to language barriers or unfamiliarity with the healthcare system.



Our Solution: Remote Ophthalmology

Current Priorities

MOBILE EYE CARE FOR OLDER ADULTS & UNDERSERVED POPULATIONS

Deliver eye care to underserved populations and older adults by meeting patients where they are. Our mobile models ensure early detection, timely treatment, and improved follow-through, preventing avoidable vision loss.

REMOTE SCREENING: EARLY DETECTION OF EYE DISEASE

Close the CMS-identified care gap in diabetic eye screening by integrating remote imaging into primary care, enabling early detection and treatment of asymptomatic diabetic retinopathy before vision loss occurs.

eyeSUITE: EYE CARE IN THE PATIENT- CENTERED MEDICAL HOME

Integrate comprehensive eye exams into primary care settings, increasing convenience, accessibility, and coordination of care while reducing the need for separate specialty visits.

Mobile Clinic Services

Basic & Comprehensive Eye Exams (Adult & Pediatric)

- Visual Acuity Testing
- Updated Glasses Prescriptions
- **Imaging / Disease Screening:** Diabetic Retinopathy, Glaucoma, Cataract, Macular Degeneration and more.

Eyeglasses

Uninsured patients are eligible to receive a pair of glasses from the **Changing Life Through Lenses** program.

A **UPMC frame kit** is in development to allow insured patients to order glasses during eyeVan events.

Scheduling & Insurance

- Follow-up Appointment Scheduling
- Insurance Counseling / Letters of Referral
 - We facilitate Medicaid/Medicare applications and secure UPMC Financial Aid & Emergency Medical Assistance.
 - Patients insured out-of-network receive a letter of referral to share with their in-network providers.

MOBILE EYE CARE FOR OLDER ADULTS & UNDERSERVED POPULATIONS

eyeVan



- Staff-driven
- Precepted by Ophthalmology residents & attendings
- Business hours & evenings
- 2-3 events per week
- Partnerships with community-based organizations and property management companies to facilitate clinics at non-traditional sites.



Eyes On Wheels

- Student-driven
- Staff volunteers as imagers & preceptors
- Evenings & weekends
- 2-3 events per month
- Partnerships with Federally Qualified Health Centers





Large-Scale Clinic Events

Mission of Mercy (MOM24)

November 2024 - Annual

Two day, mass clinic event offering vision, dental and hearing services to underserved populations at no cost.

Mercy Days 2025

August 2 - Bimonthly or Quarterly

Mass eye clinic events at the Vision Institute. Pilot clinic scheduled August 2.

Remote Area Medical 2025 (RAM)

Erie: September 13-14 / Butler: November 8-9

Two day, mass clinic events offering vision and dental services to underserved populations at no cost.

RAM will provide food and lodging for any CORAP volunteers that participate.

Key Patient Metrics: Q4 '24-Q1 '25

Mission of Mercy (MOM24)

November 2024

- 360 women
- 269 men
- 3 nonbinary individuals
- Average age = 50

eyeVan Clinics

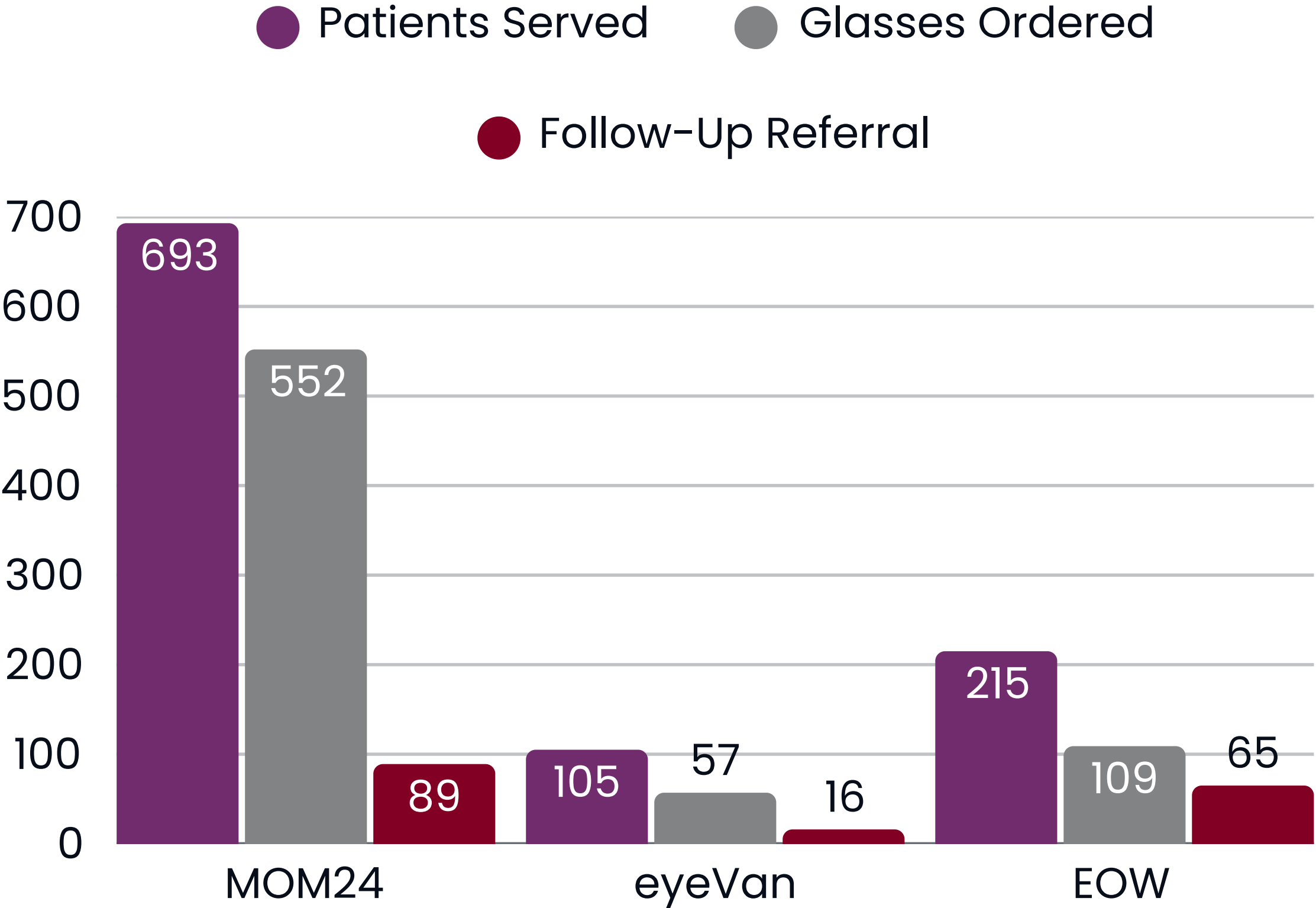
September 2024-March 2025

- 74 women
- 31 men
- Average age = 60+

Eyes On Wheels (EOW) Missions

January-March 2025

- 47 women
- 51 men



September 2024-March 2025

Peds & Young Adult Care Gaps

At MOM24 and eyeVan Clinics in Q1 2025, over 60 children received vision services.

Salud Para Ninos @ Steel City Squash

February 2025

Undocumented children, all of whom had been on the waitlist for over a year, received comprehensive eye exams and free eyeglasses. A second Salud Para Ninos clinic is scheduled for June 2025 and clinics will recur quarterly, if possible.

Thank you to [Dr. Matthew Pihlblad](#) for volunteering his time for Salud Para Ninos clinics.

Hilltop Family Care Connection

June 2025

Two glasses-only clinics for low-income children are scheduled in June 2025 in Mt. Washington; these are expected to recur quarterly or biannually.

Peds & Young Adult Care Gaps

Hosanna House

August 2025

CORAP is partnering with Vision2Learn to provide eye exams to low-income children in Wilkinsburg on Aug. 4.

Penn State Greater Allegheny Campus

March 2025

CORAP facilitates recurring, glasses-only clinics for low-income college students in McKeesport.

Washington County

May 2025-September 2025

60% of Washington High School students failed their vision screenings. Testimony from educators and coordinators in Washington County have spurred CORAP to facilitate a mobile clinic for recently graduated young adults on May 30; several more are expected to be scheduled this summer. CORAP is collaborating with UPMC Optometry to facilitate a mass screening event for schoolchildren on Sep. 3.

Indoor Clinic

- eyeVan used as transport and storage for equipment
- Increased accessibility for patients with mobility issues
- Exams facilitated in gymnasium, rec. room or adjacent community space that can accommodate multiple exam lanes (15-20ft) for increased patient volume
- Allows for optimal exam conditions:
 - Temperature
 - Lighting
 - Increased patient privacy
 - Higher-bandwidth wireless connection

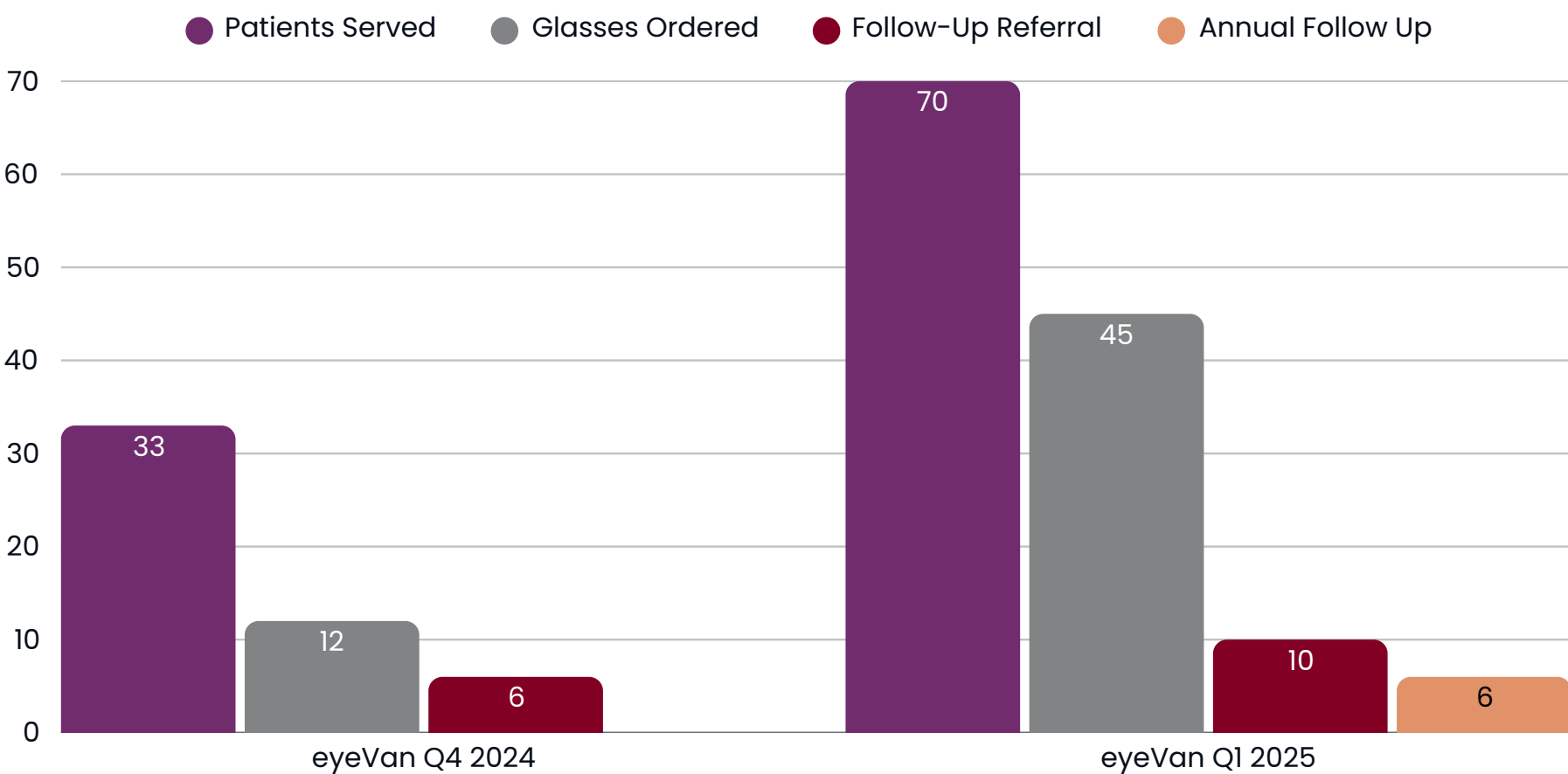
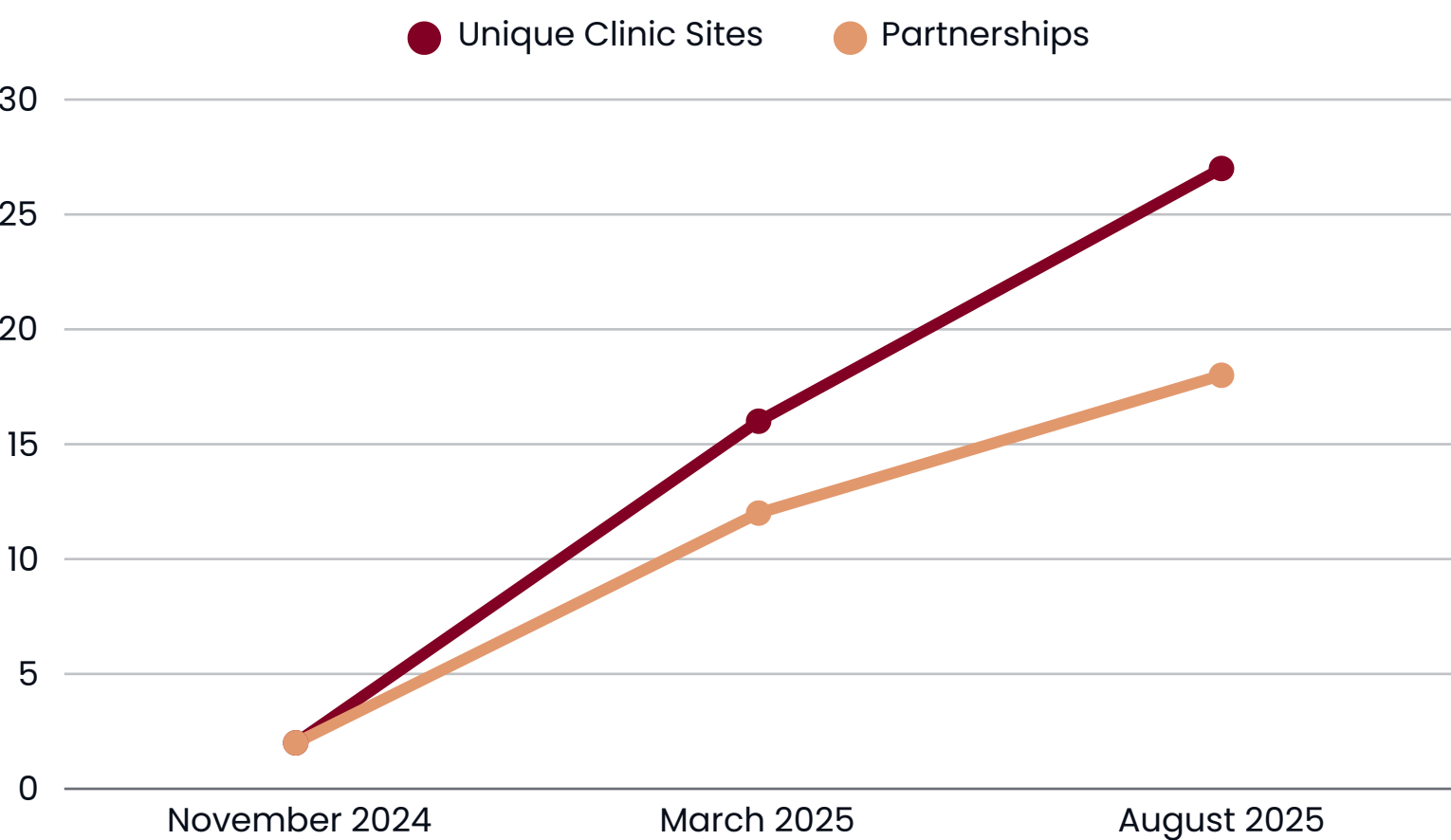


Outdoor Clinic

- eyeVan used as exam room
- Optional, additional exam lanes set-up next to eyeVan in parking lot, park or adjacent outdoor community space (sub-optimal exam conditions)
- Allows facilitation of exams for underserved populations without the need for a secondary space



Scaling eyeVan Clinics



CORAP more than doubled the amount of patients served by the eyeVan in Q1 2025, with most eyeVan clinics occurring in Homewood and the Hill District.

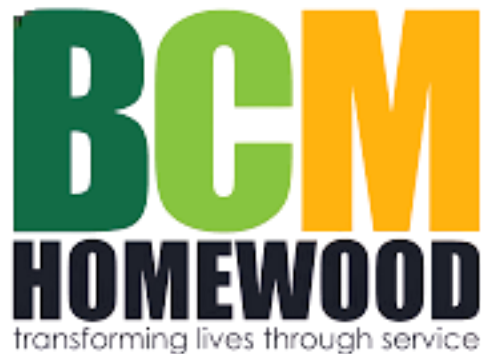
- 14% of eyeVan patients were scheduled at the Vision Institute for specialist follow-up appointments.
- 8% of patients seen at eyeVan clinics were scheduled for annual appointments at their recurring clinic site.
- Stakeholders expressed gratitude and excitement about the eyeVan clinics, resulting in the scheduling of recurring clinics at 90% of sites on a 3-6 month cadence.
- An EPIC Provider was created in the EYE TESTING MERCY department; all eyeVan clinic scheduling & charting occurs in EPIC as of March 29, 2025

A 1000% increase in partnerships with property management firms, non-profit organizations and government institutions since September 2024 resulted in the scheduling of 1400% more eyeVan clinics by March 2025. CORAP expects to facilitate eyeVan clinics at 25+ unique locations by the end of the summer.

eyeVan Partners: November 2024



eyeVan Partners: March 2025



eyeVan Clinics: Abbreviated Case Studies

Susan / North Highlands Phase 2

Susan is wheelchair bound & rarely leaves her apartment due to lack of mobility. Her gratitude for the mobile vision services was tangible. She became emotional when expressing thanks for CORAP's on-site presence. Susan related that she felt "cared for" & was delighted that CORAP can provide her annual eye exams down the hall from her apartment.



Dr. Kapoor uses a handheld slit lamp on Susan.



CORAP & Dr. Zaheer facilitate comprehensive eye exams.

Stephanie / Bedford Dwellings

Stephanie, an uninsured patient, did not report any vision issues. However, on-site imaging revealed a hole in her macula that required immediate follow-up. CORAP scheduled her appointment and will collaborate with social workers at the Bedford Dwellings Envision Center to secure financial assistance to cover her necessary eye care.

Iterating eyeVan Clinics

Scheduling Updates

- To ensure all CORAP project scopes receive adequate attention, eyeVan clinics will occur once weekly by Q3 2025.
- An [eyeVan Events page](#) and scheduling tool have been created to facilitate Preceptor signups.
- Refining patient scheduling protocols in collaboration with site coordinators.

Workflow Updates

- Facilitate pediatric and young adult clinics using the eyeVan as the exam space, weather permitting.
- Integrate a patient satisfaction survey in addition to the PRAPAR survey + vision screening form.
- Collaborate with UPMC Optical to develop a UPMC Mobile Frame Kit.
- Refine EPIC protocols in collaboration with Ophthalmology Admins.

eyeVan Modifications

- Update the embedded slit lamp so it can be repurposed for indoor clinics.
- Source a portable accessibility lift to make eyeVan exams more feasible for all patients.



MOBILE EYE CARE FOR OLDER ADULTS & UNDERSERVED POPULATIONS

"Eyes On Wheels" Rebrand



“Eyes On Wheels” Rebrand



“Eyes On Wheels” Rebrand



Our Solution: Remote Ophthalmology

Current Priorities

MOBILE EYE CARE FOR OLDER ADULTS & UNDERSERVED POPULATIONS

Deliver eye care to underserved populations and older adults by meeting patients where they are. Our mobile models ensure early detection, timely treatment, and improved follow-through, preventing avoidable vision loss.

REMOTE SCREENING: EARLY DETECTION OF EYE DISEASE

Close the CMS-identified care gap in diabetic eye screening by integrating remote imaging into primary care, enabling early detection and treatment of asymptomatic diabetic retinopathy before vision loss occurs.

eyeSUITE: EYE CARE IN THE PATIENT- CENTERED MEDICAL HOME

Integrate comprehensive eye exams into primary care settings, increasing convenience, accessibility, and coordination of care while reducing the need for separate specialty visits.

DR Screening Cameras

40+ diabetic retinopathy screening cameras are deployed in primary care and endocrine offices to address the 50%+ CMS care gap for diabetic eye screening.

Secure image transmission with 24 to 48-hour expert interpretation. **From Nov 2024 until May 2025, ~430 images were generated each month.**

An audit of [all cameras](#) is ongoing to update site contacts and addresses, annotate serial numbers and note device condition.

These camera placements reduce unnecessary in-person exams, decrease the burden on patients without retinopathy and free specialists to focus on patients needing treatment.



iCare DRS Plus



iCare DRS

DR Screening Cameras

2025 Goals

- Facilitate qualitative interviews with site stakeholders to refine workflows, update and share training materials and re-allocate devices
- Increase patient screening rates at each site
- Ensure follow-up for positive findings to improve treatment outcomes
- Explore AI-assisted image analysis to streamline workflow
- Further expand camera locations
- Gain approval for innovative replacement cameras



Topcon NW500 with AI



Resolve Optain with AI

Large-Scale Screening Events



Alliance Church Health Fair

March 16, 2025

CORAP used their iCare DRS Plus to screen older adults at the Spring health fair hosted by UPMC Magee Women's Hospital, resulting in several New Patient referrals to UPMC Ophthalmology.

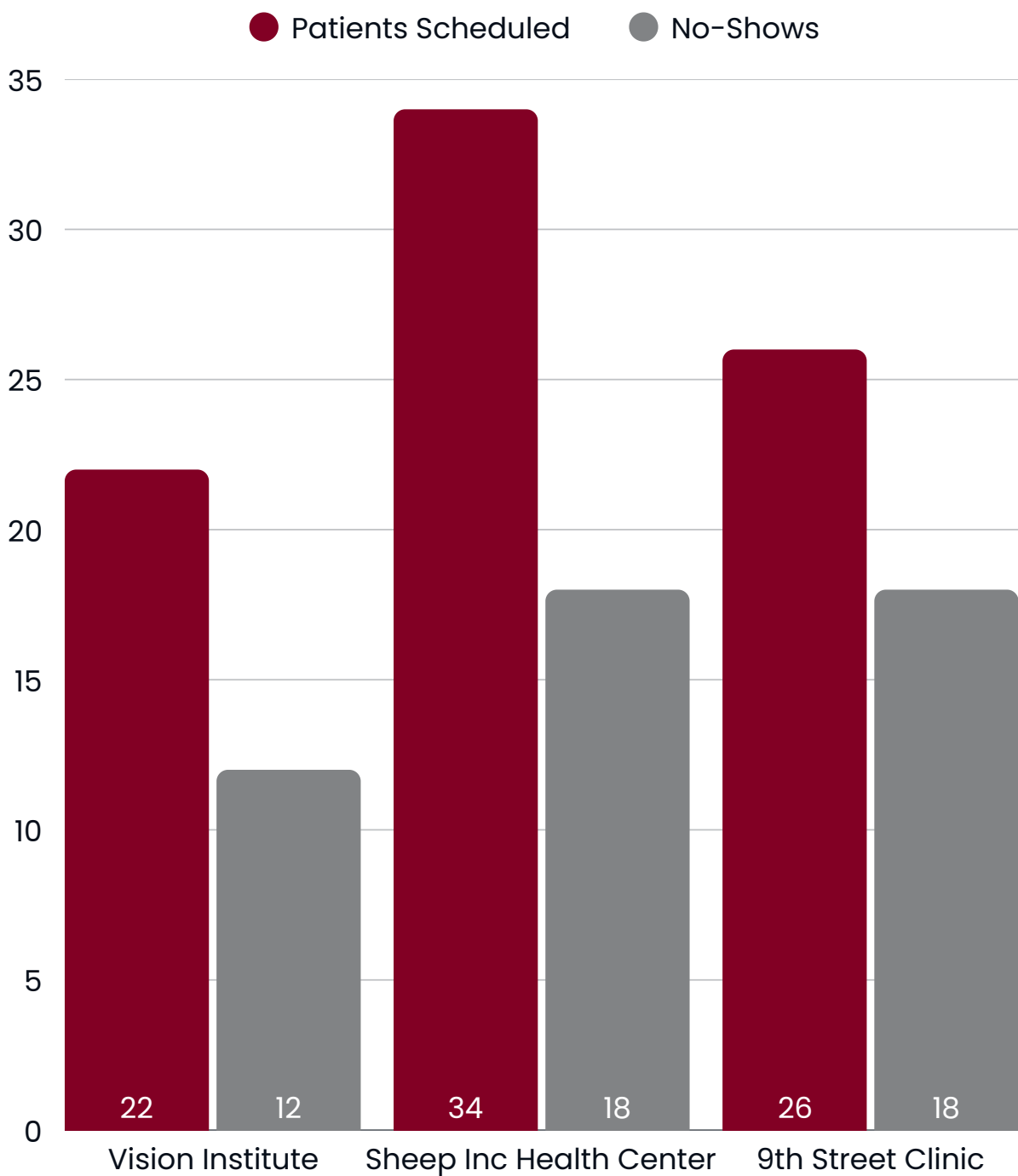
East Liberty Family Health Care Center

May 21 - Quarterly

This FQHC provides Diabetic Retinal Exam clinics quarterly using their on-site screening camera. In Q2 2025, CORAP will collaborate with the site to field another camera and an imaging tech to increase their patient volume for these screening events.



Large-Scale Screening Events



Eye Day

April 26, 2025

As part of a **state-wide initiative**, CORAP collaborated with [UPMC Health Plan](#) and [UPMC Social Impact](#) to schedule and screen diabetic and hypertensive patients for degenerative eye disease, namely Diabetic Retinopathy, in boroughs with high diabetes prevalence: [McKeesport](#), [Penn Hills](#) and [Uptown](#).

[Topcon Health Systems](#) and [Optain Health Inc](#) fielded screening cameras manned by UPMC ophthalmology staff and student volunteers on April 26, 2025.

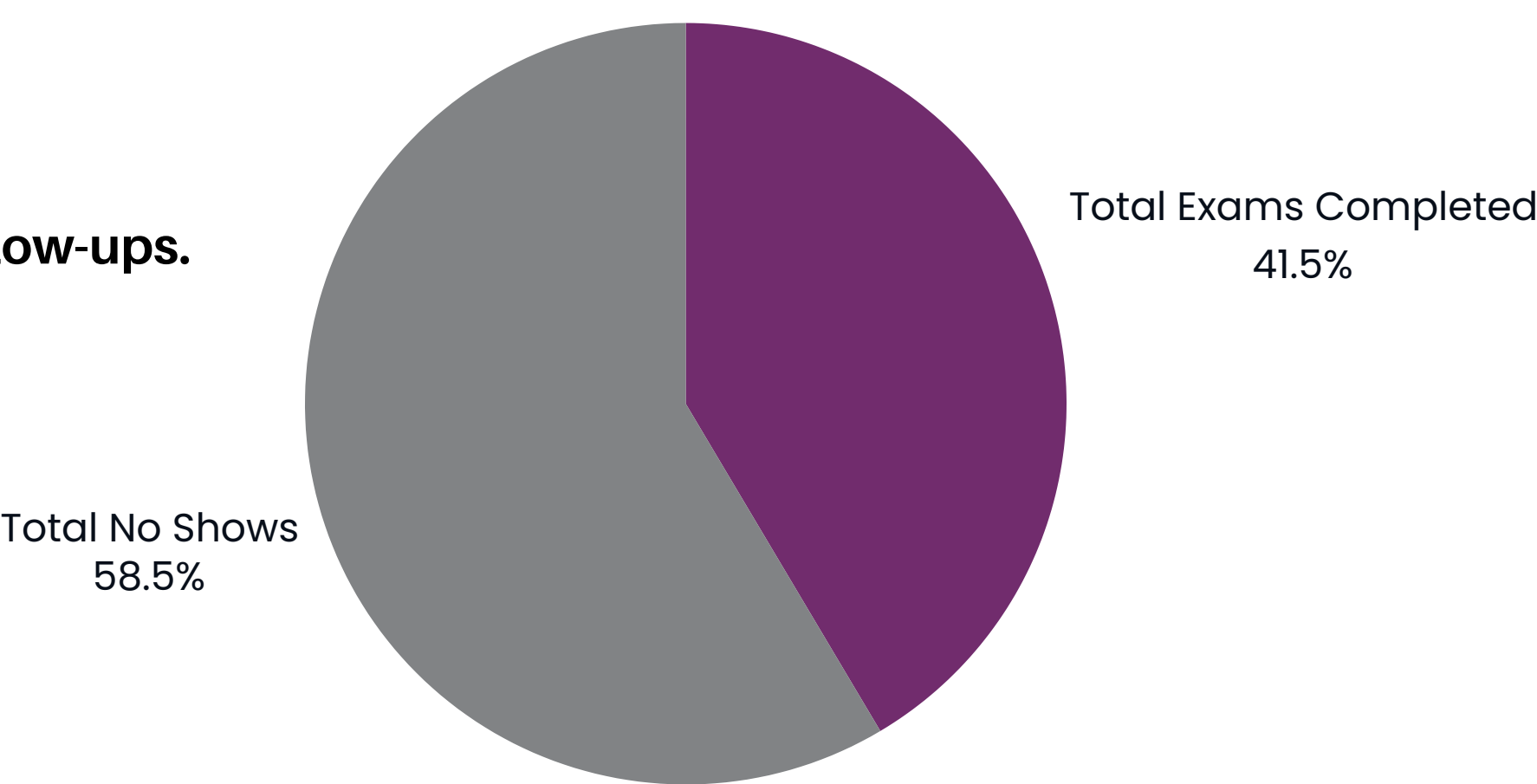
Thank you to Reverend Eileen Andrews and Dr. Yui Suguira for partnering with us to facilitate care at their FQHC sites.

Large-Scale Screening Events

Eye Day
April 26, 2025

Location	Address	Clinic Time	Billing
UPMC Vision Institute	Urgent Eye Care Center 1622 Locust St Pittsburgh PA 15219	10:00 AM–3:00 PM	Yes
9th Street Clinic	1305 5th Ave, McKeesport, PA 15132	1:00 PM–4:00 PM	No
Sheep Inc Health Center	11817 Frankstown Road, Penn Hills, PA 15235	1:00 PM–4:00 PM	Yes

- No show rates were high, reflecting rates across the state.
- ~91% of patients seen completed their annual screening.
- ~8% of patients seen were referred for urgent specialist follow-ups.



Our Solution: Remote Ophthalmology

Current Priorities

MOBILE EYE CARE FOR OLDER ADULTS & UNDERSERVED POPULATIONS

Deliver eye care to underserved populations and older adults by meeting patients where they are. Our mobile models ensure early detection, timely treatment, and improved follow-through, preventing avoidable vision loss.

REMOTE SCREENING: EARLY DETECTION OF EYE DISEASE

Close the CMS-identified care gap in diabetic eye screening by integrating remote imaging into primary care, enabling early detection and treatment of asymptomatic diabetic retinopathy before vision loss occurs.

eyeSUITE: EYE CARE IN THE PATIENT- CENTERED MEDICAL HOME

Integrate comprehensive eye exams into primary care settings, increasing convenience, accessibility, and coordination of care while reducing the need for separate specialty visits.

UPMC eyeSuite

Patients frequently present to hospitals and emergency rooms with eye problems.

Ophthalmologists are rarely available outside of flagship hospitals, so consultation relies on phone calls & ophthalmologists lack key diagnostic data.

This leads to:

- Eye conditions going unaddressed or mismanaged.
- Unnecessary patient transfers to flagship hospitals.
- Delays in needed transfers, increasing cost and overcrowding.

The theoretical **eyeSuite** is essentially an **exam room containing the ophthalmic devices necessary to complete a comprehensive eye exam in a non-ophthalmic practice.**

Manned by CORAP’s ophthalmic tech, the devices in the eyeSuite are capable of capturing relevant images to be remotely reviewed by an off-site ophthalmologist, as needed.

	eyeSuite
Visual Acuity	✓
Refraction	✓
Slit lamp Imaging	✓
Tonometry	✓
Retinal Imaging	✓
Visual Fields	✓
Two-way communication	✓

UPMC eyeSuite

Partner locations eager to integrate a UPMC eyeSuite into their primary care offices have been identified:

- University Family Medicine-Liberty Avenue (UPMC)
- Alma Illery Health Clinic (FQHC)

Plans to integrate an eyeSuite at UPMC Mathilda Theiss, assuming pilot success, are also tentatively outlined.

Project timelines are dependent on funding and device approvals.



Topcon Tempo Perimeter



**SAFAR Webcam
Enabled WOW**



**Essilor VS700
Refraction Station**



**Phelcom Eyer2
Handheld Retina Camera**

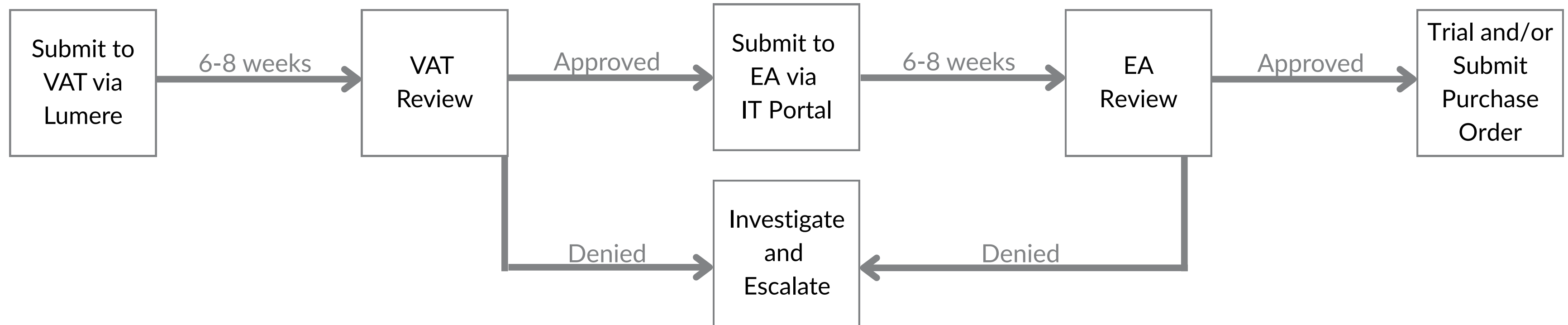


Tonopen Tonometer



**Topcon Maestro2
Retina Camera / OCT**

Device Approvals & Clinical Trials



As part of its mission to innovate ophthalmic care delivery in nontraditional settings, the CORAP team is actively evaluating remote diagnostic devices from multiple vendors.

By trialing different models in real-world outreach environments—such as mobile clinics and community sites—**we aim to identify the equipment and workflows that function best across varied settings.**

CORAP is learning how to navigate the multi-layered UPMC device approval processes and appreciates all support provided by the VAT, EA and Ophthalmology IT teams.

Device Approvals & Clinical Trials

CORAP is working with admins at the Vision Institute to implement on-site clinical trials.

Pushback is largely due to understaffed clinic spaces and resistance to interrupting clinic workflows; we are eager to establish recurring meetings with key UPMC stakeholders to reframe our project goals and provide much-needed context for these user-friendly device trials.

Device	VAT	EA	Description
Topcon NW400	Approved	Approved	Automated Fundus Imaging
Topcon NW500	Approved	Approved	Automated Fundus Imaging
Topcon Harmony	N/A	Submitted	Proprietary Imaging / Reporting Software
Topcon Tempo	Approved	Submitted	Visual Field / Perimetry
Topcon Chronos	Approved	Submission In Progress	Automate Refraction / Keramotry
Topcon Maestro2	Approved	Approved	Automated OCT
Essilor VS700	Approved	Submitted	Automated Refraction / Keramotry
Optain Resolve	Approved	Submitted	Portable / Automated Fundus Imaging Camera
Phelcom Eyer2	Submitted	Submission In Progress	Handheld Fundus Imaging Camera
Identifeye Retina Camera	Submitted	Submission In Progress	Portable / Automated Fundus Imaging Camera
Optomed Aurora AEye	Approved	Submission In Progress	Handheld Fundus Camera

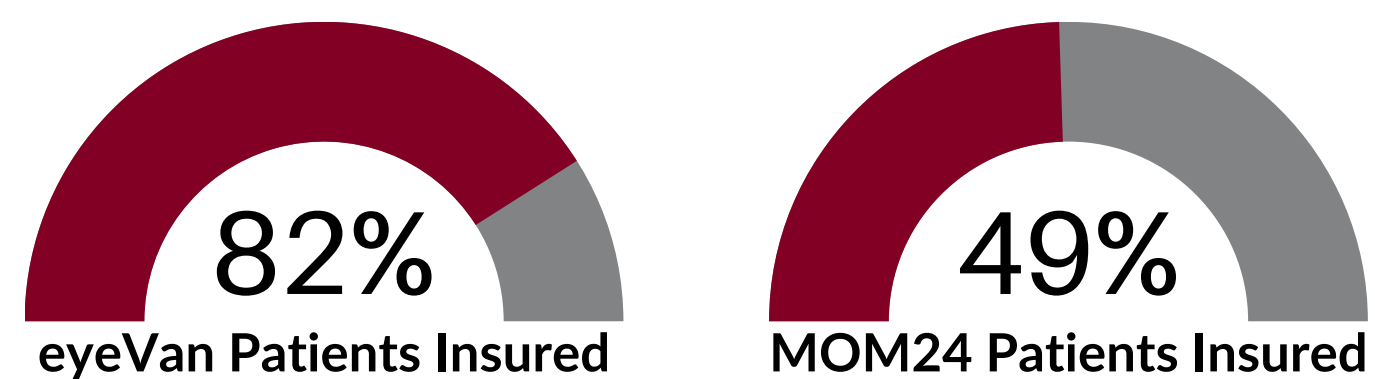
CORAP Patient Navigation & Billing

Mobile Clinics

The majority of patients that received mobile vision services with the UPMC eyeVan are new to UPMC Ophthalmology and insured by Medicare/Medicaid or a UPMC Health Plan, implying that the eyeVan clinics can eventually augment the amount of profit generated by UPMC Ophthalmology.

The majority of Eyes On Wheels patients are uninsured due to their undocumented and/or low-income status.

462 MOM24 patients reported their insurance status. Insured patients were covered by Medicare (108), CHIP/Medicaid (90), private insurance (77), or other public insurance.



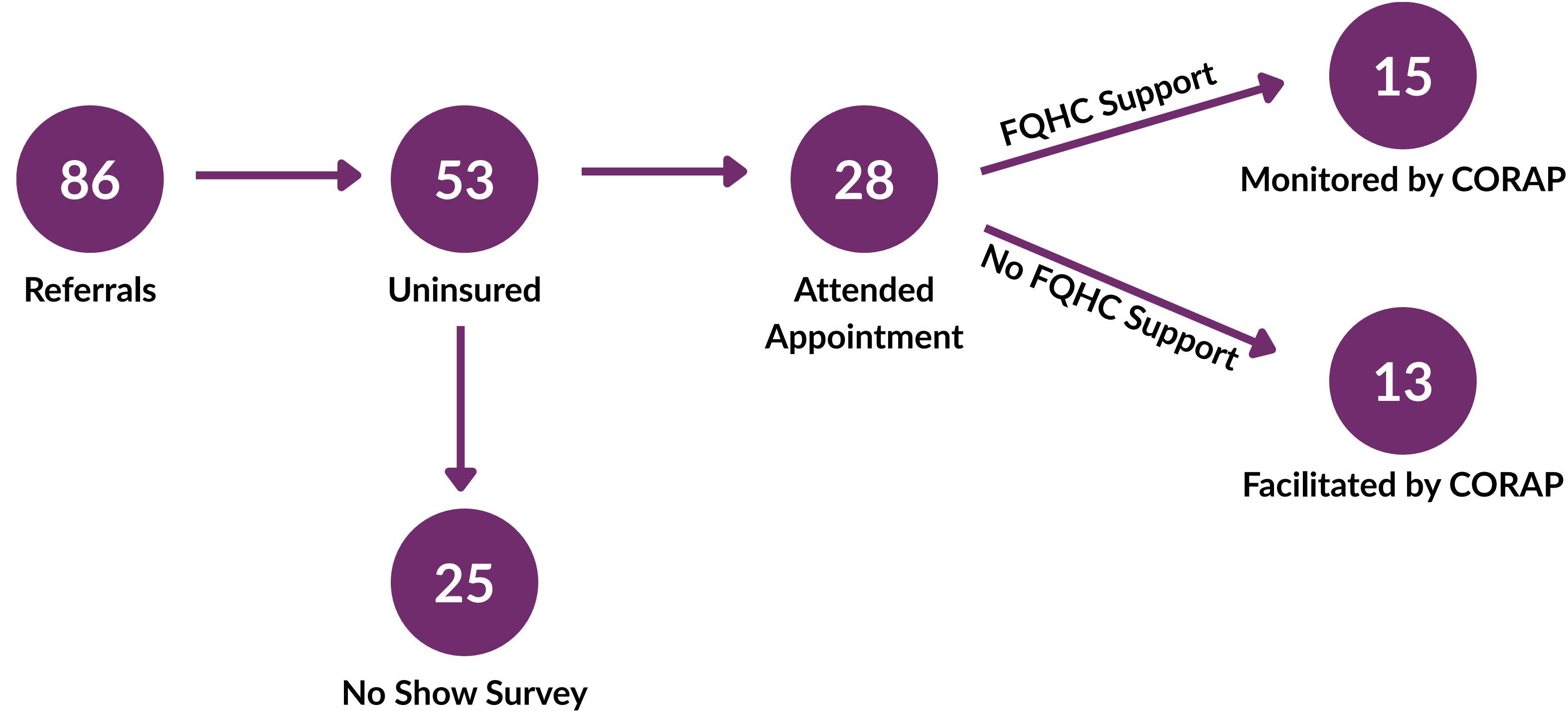
DRS Screening Cameras

Of the 40+ cameras embedded in the region, less than a dozen are embedded at indigent clinics or FQHCs. Imaging and interpretation is billed for the other 30+ cameras.

CORAP is collaborating with UPMC Compliance and Ophthalmology Admins to develop billing workflows for remote services.

CORAP Patient Navigation & Billing

INSURANCE NAVIGATION DECEMBER 2024-MARCH 2025



Research Projects: **What's Done?**

Posters @ Association of Research in Vision & Ophthalmology Conference (ARVO) 2025

- *Social Determinants of Health and Insurance Disparities in Eye Care Access: Insights from a 2-Day Community-Based Event*
- *Opportunities for Remote Ophthalmology: Patient and Operator Experience Using an Automated Refractor*

Research review articles focusing on individual and systemic barriers to Ophthalmic care are drafted for Q2 submission to *Medicina* and adjacent medical journals that highlight social work and clinical community outreach initiatives:

- *Mobile Units Efficacy*
- *Urgency in Ophthalmology*

IRB Approvals

- Eyes On Wheels: **Approved**
- Mission of Mercy 2024: **Approved**
- eyeVan Initiative: **In Progress**

Research Tools

- Vision Screening Form
- PRAPAR Survey
- Institutional Needs Assessment
- Qualitative DRS Stakeholder Questionnaire
- Databases:
 - Patient Metrics
 - Patient Survey Data
 - Insurance Tracking

Research Projects: What's Next?

Quality & Implementation (Q&I) projects related to all prioritized project scopes are in development with support from the UPitt Dissemination and Implementation Science Collaborative.

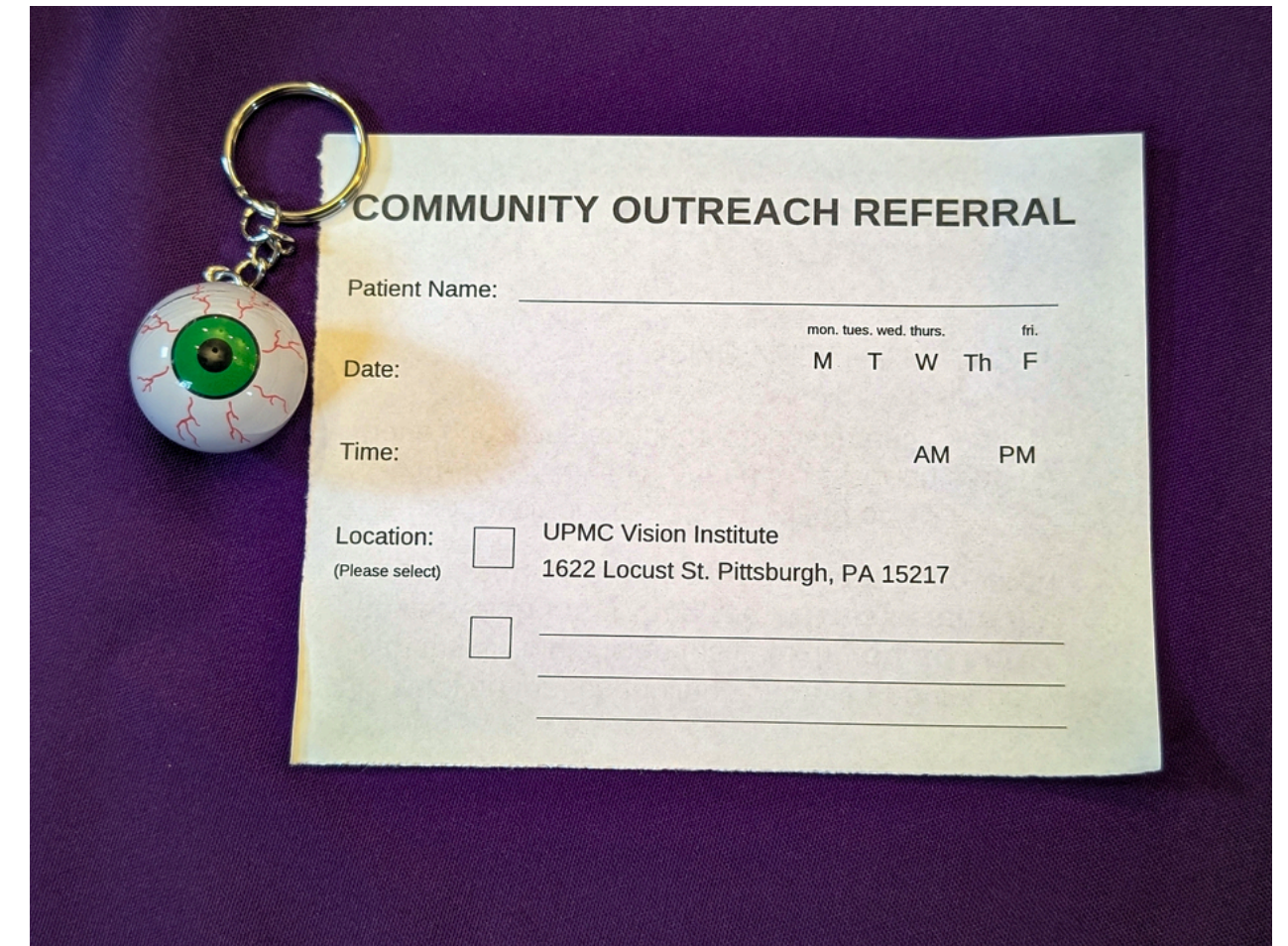
Dr. Herman James is also consulting on research project designs involving CORAP research databases.

Future Data Analysis

- MOM Database
- MOM Images
- Eyes On Wheels Patient Metrics (Gender, Age, Insurance Status)

Retrospective Projects

- eyeVan Events
- PA Eye Day
- Diabetic Retinopathy (DR) screening



The image shows a purple fabric background. On the left is a keychain with a gold ring and a white, eye-shaped charm with red veins and a green iris. To the right is a white paper form titled "COMMUNITY OUTREACH REFERRAL". The form has fields for "Patient Name:", "Date:", "Time:", and "Location:". The "Date:" field includes a small calendar grid with days of the week (M, T, W, Th, F) and months (mon., tues., wed., thurs., fri.). The "Time:" field has "AM" and "PM" options. The "Location:" field has a checkbox next to "UPMC Vision Institute" and "1622 Locust St. Pittsburgh, PA 15217". There are also empty checkboxes and lines for additional information.

Our Aims

Enhance Accessibility

Minimize barriers to care such as transportation, cost, and scheduling, making it easier for older adults and their families to access eye care services.

Decrease Vision Loss

Reduce the incidence of preventable vision loss among elderly populations by emphasizing early detection and treatment of common eye conditions.

Eye Care Awareness

Raise awareness about the importance of regular eye exams and preventative care through community education.

Improve Referral Rates

Enhance the referral process by ensuring that all patients with detected eye conditions are connected to appropriate specialists for timely treatment.

Increase Exam Participation

Boost the percentage of patients in Western PA receiving regular eye exams to detect treatable conditions like AMD, glaucoma, and diabetic retinopathy.

Reduce Healthcare Costs

Lower overall healthcare costs by preventing late-stage eye conditions, which are more expensive to treat, through early intervention.

Strengthen Partnerships

Foster collaboration with elder-care facilities, community centers and relevant organizations to provide on-site eye exams and follow-up care, reducing the burden on patients and caregivers.

Develop a Scalable Model

Create a replicable model of eye care delivery for older adults that can be implemented in other regions, sharing best practices and successful interventions.

Collaborate with PCPs

Strengthen relationships with PCPs to ensure eye exams are a routine part of patient care, increasing referrals and coordination for eye health services.

Improve Patient Outcomes

Track and report improved outcomes for patients, including stabilized or improved vision and reduced complications from eye diseases.

Our Solution: Remote Ophthalmology

Future Goals

REMOTE MONITORING: REDUCING PATIENT BURDEN & INCREASING EFFICIENCY

Shift ophthalmic diagnostic testing closer to where patients live and streamline the follow-up process, reducing unnecessary travel, wait times, and scheduling constraints.

REMOTE CONSULTATION: ENHANCING HOSPITAL & EMERGENCY EYE CARE

To improve hospital and emergency eye care access by equipping community hospitals and EDs with remote diagnostic capabilities, reducing unnecessary transfers, delays, and mismanagement of ophthalmic conditions.

eCONSULT: STRUCTURED CURBSIDE CONSULTATION

provide efficient, structured physician-to-physician consultations for outpatient and hospital-based providers, reducing unnecessary referrals and delays in care.



Thank you!