

# REAL-WORLD APPLICATIONS OF AI – RETINAL EYE SCREENING

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## Healthcare from the Eye™

**Matt Rosenberg, MD**  
Managing Partner, Mid-Michigan Health

# Introduction – Matt Rosenberg, MD

- **Managing Partner, Mid-Michigan Health Centers**
- Nearly 30 years of experience as Medical Director at Mid-Michigan Health Centers
- Former Chief of Family Medicine at Henry Ford Allegiance Health
- Pioneered research on Painful Bladder Syndrome, leading to two of North America's largest epidemiologic studies
- Office is adorned with family photos
- Enjoys lake activities when not seeing patients



# Introduction – John Bartolovich

- **Manager Healthcare Economics and Reimbursements Manager at Topcon Healthcare**
- 13+ years of experience in diabetic imaging
- 30 years of experience helping medical professionals with innovative products and ideas
- Proud father of twin daughters and twin sons
- Enjoys family time when not working



# Agenda

- Overview of *Healthcare from the Eye*™
- Gaps in compliance
- Changing landscape of diabetic retinopathy screening
- AI closing the care gaps for diabetic retinopathy screening
- Retrospective review outcome & learnings
- Holistic care

# *Poll Question*

Is your practice/plan currently performing the diabetic eye screening in office?

- A. Yes
- B. No
- C. We were but.....



Partnership:



# *Healthcare From The Eye™*

Our vision is to improve access and quality of healthcare while decreasing the cost of care. To achieve this vision, we created Healthcare from the Eye™, the strategy of applying AI models to imaging data from the eye to facilitate earlier detection and better management of disease. Healthcare from the Eye™ is powered by Harmony®, a cloud-based, vendor-inclusive digital health information platform enabling a connected care ecosystem



Partnership:



# Healthcare From The Eye™

## CURRENT SCREENING ENVIRONMENT



### DIABETES

Blood test (FPG, A1C) + body measures



### CARDIOVASCULAR DISEASES

Blood test + ECG/CT



### NEUROLOGICAL DISEASES

MRI, PET, spinal fluid analysis



### EYE DISEASES

Slit lamp biomicroscopy



## HEALTHCARE FROM THE EYE™

Robotic, rapid, accessible, and affordable eye test

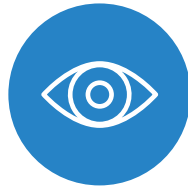


Health score risk calculators



# Current screening environment

- Cost of screening to the healthcare system:
  - \$3,000+/patient
  - Cost to patients: Unmeasurable



## Diabetic Retinopathy (DR)

Prevalence: ~3%  
(10 million patients in the US)  
Method: Fundus imaging  
Screening environment: Primary care, primary eye care  
Cost to healthcare system: ~100\$ / test



## Diabetes

Prevalence: ~9%  
(30 million patients in the US)  
Method: Blood test (FPG, A1C, OGTT) + body measures  
Screening environment: Primary care + lab  
Cost to healthcare system: ~200\$ / test



## Cardiovascular disease (CVD)

Prevalence: ~50% of the adults in the US is in risk of CVD  
Method: Blood test + ECG/CT  
Screening environment: Primary care + lab  
Cost to healthcare system: ~400\$ / test



## Neurological diseases (Alzheimer's, Parkinson's, MS, stroke)

Prevalence: not available  
Method: MRI, PET, Spinal fluid analysis  
Screening environment: Hospital + imaging + lab  
Cost to healthcare system: ~2000\$ / test



## Eye diseases (Glaucoma, AMD, etc)

Prevalence: ~20% of > 40years (27 million patients in the US)  
Method: OCT + Visual field + IOP  
Screening environment: Eye care provider  
Cost to healthcare system: ~\$200 / test



# **USE OF AI AT PRIMARY CARE TO CLOSE DIABETIC RETINOPATHY SCREENING GAPS**

Mid-Michigan Health Centers – Retrospective Review

# Gaps in compliance

- Less than 50% of Americans with diabetes are tested for diabetic retinopathy despite the risk of vision loss
- 25% of people in the United States with diabetes have diabetic retinopathy
- 5% of Americans with diabetes have vision-threatening advanced microvascular complications.
- More than 90% of diabetes-related vision loss can be avoided with early detection and treatment.
- Lower compliance with diabetic eye exams is often seen among disadvantaged populations due to barriers such as lack of access to care, socio-economic factors, and inadequate patient education

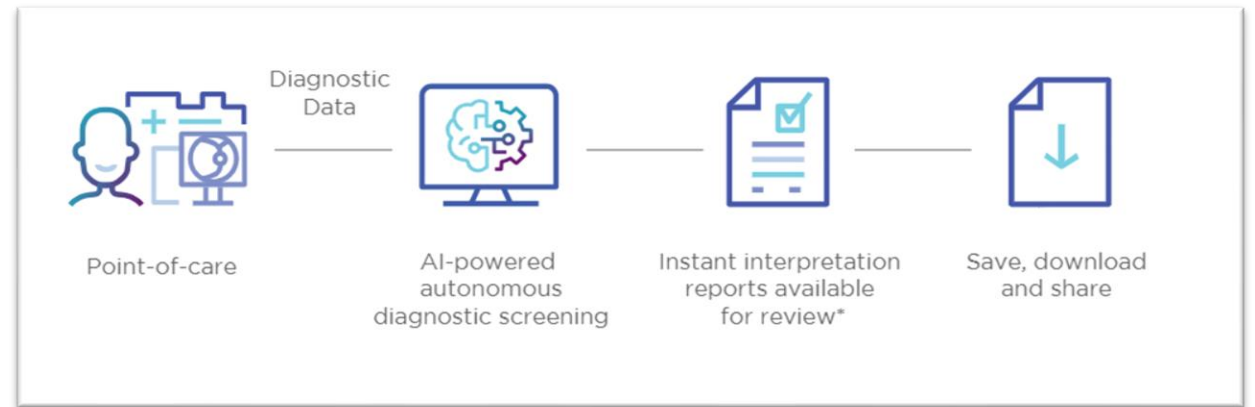
# Existing screening challenges

- Labor-intensive
- Complex screening devices
- Interruption in clinical workflow
- Prone to manual errors
- Delayed responses from reading centers
- Extensive device training required
- Challenges in patient follow-ups
- Difficulty in closing healthcare gaps



# AI screening solution

- Seamless workflow
- Automated robotic device
- Instant AI diagnostic screening
- Minimal staff time and training
- Proactive patient care
- Improved disease management
- Close healthcare gaps



# **INSIGHTS FROM THE RETROSPECTIVE REVIEW**

Mid-Michigan Health Centers

# Retrospective review demographic

## Intermediate results reported 7/12/2024:

Total patients screened successfully*	207
Type of study	Retrospective chart review
Duration of study	5/6/2024 - 8/2/2024
Average population age	62.5 years (23years – 95years)
Gender distribution	95 Females, 112 Males
Ethnicity distribution	5 Hispanic, 8 Black, 1 Asian, 110 Caucasian, 83 Unknown
Type of insurance	Medicaid, Medicare, Medicare Advantage & Commercial
Type of DM	Type 1- 62, Type 2- 145

\* Successful screening: A total of 215 patients were screened but we were unable to obtain reports for 8 patients, resulting in a successful screening rate of 96.3%

# Retrospective review outcome

- Patient screening more than doubled:
  - Clinically significant increase in patient screenings: 207 patients screened successfully in 2 months vs. 98 patients in 2023
- Screening tests completed in less than 2 minutes with instant results
- Compliance rates improved from approximately 51% to 96%, demonstrating significant gap closure
- Approximately 13.5% (28/207) of the cases were identified as positive for more than mild diabetic retinopathy requiring immediate attention from eye care professionals
- Reimbursement
  - Commercial Average: \$64.69
  - Medicaid Rate: \$26.20
  - Medicare Rate: \$37.29



# Retrospective review learnings

- **Fast Topcon robotic camera** →  
Saves both staff and patient time
- **AEYE AI instant results** →  
Enhances clinical efficiency
- **Screening at the point of care** →  
Minimizes care gaps and timeliness of referrals
- **Topcon's one-click referral system** →  
Streamlines effortless collaborative care
- **Rationale for referrals** →  
Increases patient education and compliance





# Holistic care principles

- Maximize healthcare assessment at point-of-care
- Increase access to health and vision care
- Improve compliance and disease management
- Higher HEDIS and quality bonuses
- Enhanced support for underserved communities
- Reduce travel time
- Reduced economic burden on the healthcare system



# Doctor Testimonial

“In the past for every ten I would send to a specialist I would get only three reports back, but with this, I don’t have to worry about that”

**Van Rushing, MD**

*Consolidated Medical Practices of Memphis*



# Staff Testimonial

“As easy as taking another vital sign.”

**Elizabeth Zwick, PA-C, Mid-Michigan Health Centers**

“Easier to use compared to old system.”

**Jenn Burch, Mid-Michigan Health Centers**

“We all love the new eye exam and it’s easier for us.”

**Adda Lo, Milwaukee ProCare Medical**

# *Poll Question*

Has your perspective changed about the importance/effectiveness of providing in-office retinal screening at your practice?

- A. Yes
- B. No
- C. Not sure/need more information



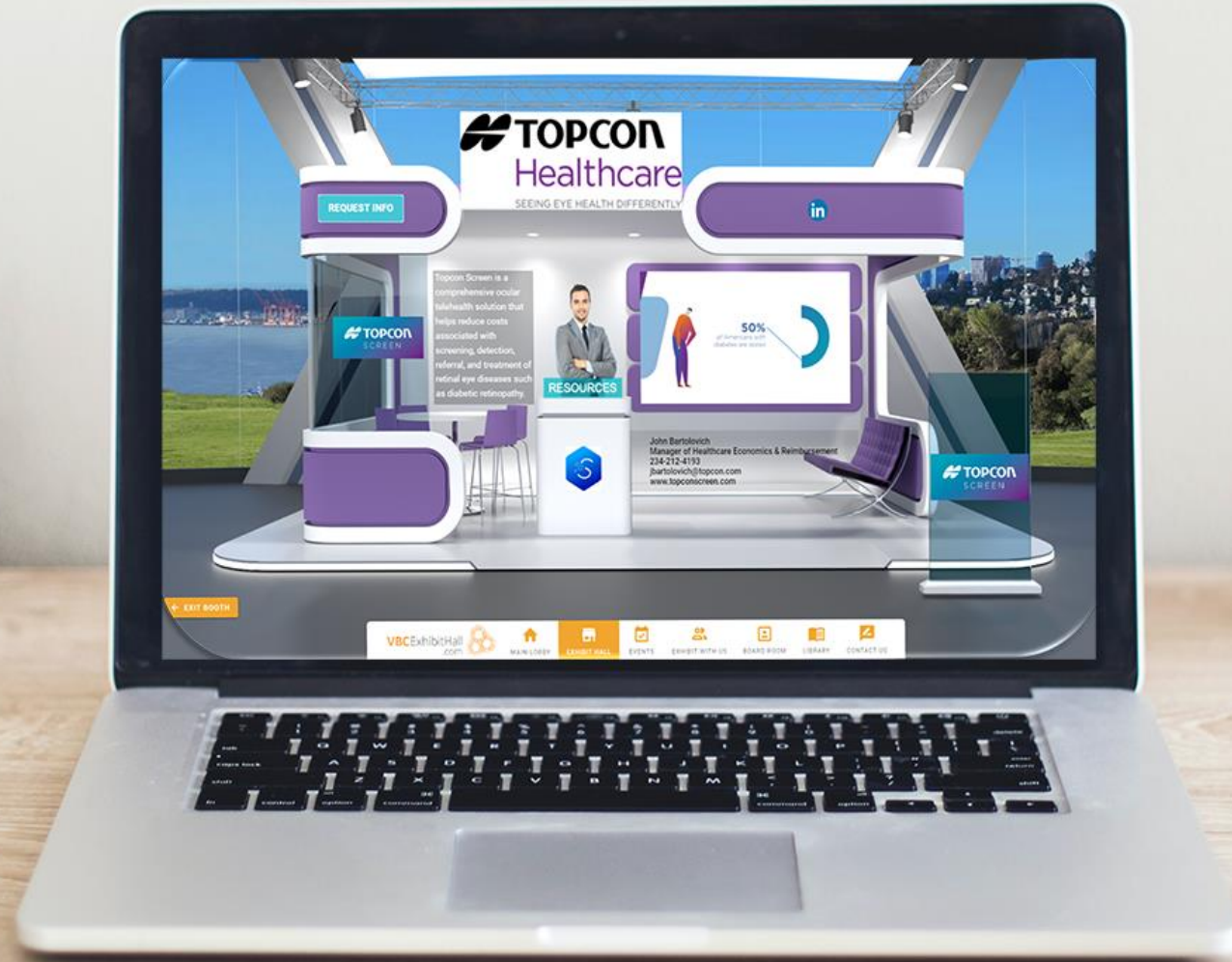
Partnership:



# Q&A

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Stop by our [VBCExhibitHall.com](https://VBCExhibitHall.com) Virtual Booth



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# THANK YOU

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Dr. Matt Rosenberg: [matttoren@yahoo.com](mailto:matttoren@yahoo.com)

517-414-7235 Mobile

John Bartolovich: [jbartolovich@topcon.com](mailto:jbartolovich@topcon.com)

234-212-4193 Mobile