

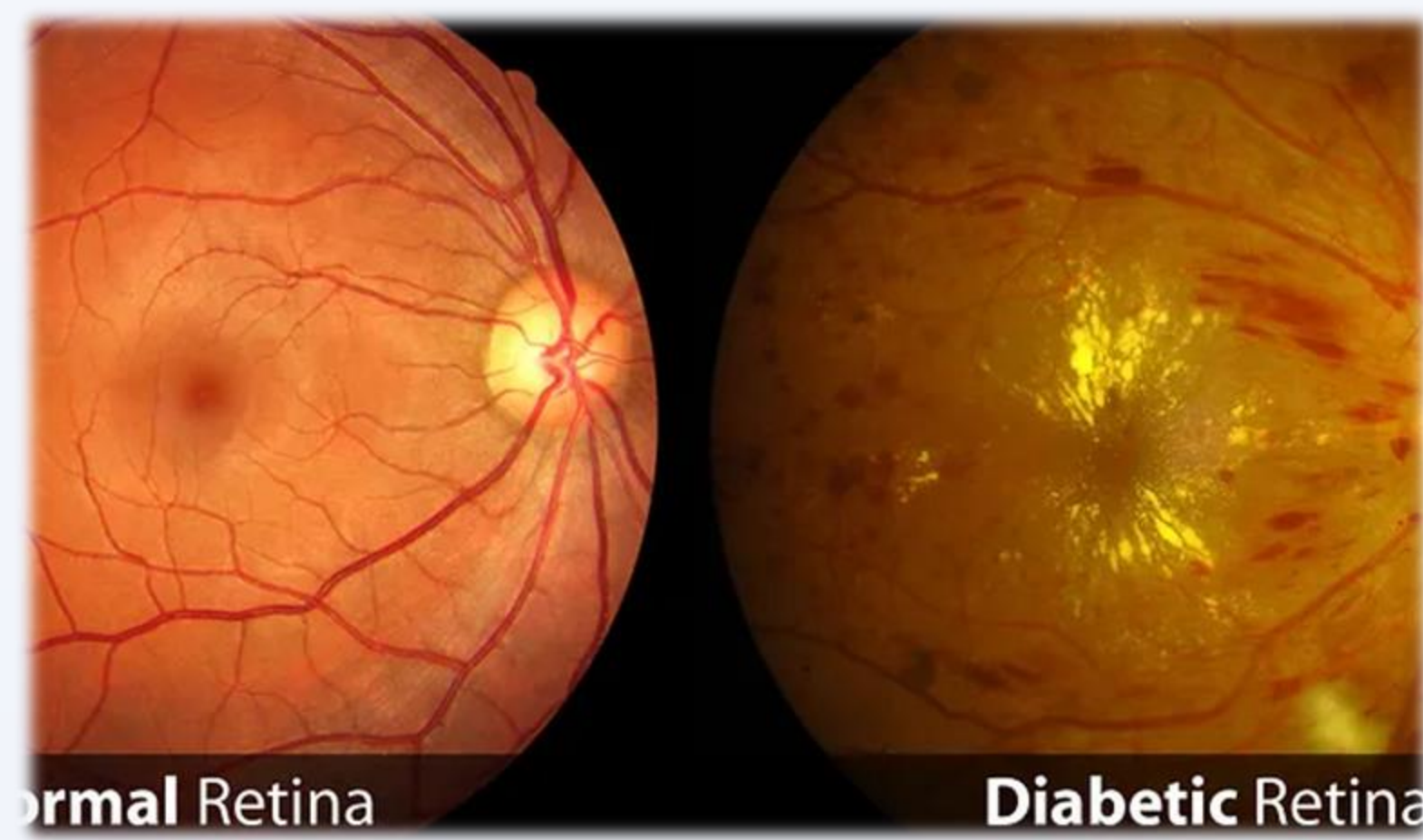
Increasing Rates of Diabetic Retinopathy Screening by means of Artificial Intelligence

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DIABETIC RETINOPATHY & BARRIERS

Diabetes affected over 37 million Americans nationwide in 2019 (American Diabetes Association). Of these, one-third of adults over the age of 40 are affected by diabetic retinopathy (DR) (CDC). Every year 60,000 people become blind, a preventable consequence of DR. Standard of care is for diabetics to complete an annual eye exam. Zufall Health Center serves a low socio-economic population which face many barriers in completing their annual eye exam including; but, not limited to:

1. Transportation
2. Limited English Proficient patients
3. Uninsured
4. Access to specialists
5. Only one optometrist on-site at one of the Zufall Health Center locations



OBJECTIVES

1. Learn the importance of diabetic retinopathy screening.
2. Understand how point-of-care screening increased the number of DR screenings and decreased need for eye care referrals.
3. Comprehend how DR screening increases patient's awareness of their diabetic health.

OBSERVATIONS

- Most patients did not complete their annual eye exam in > 2 years.
- Patients did not know where to find a specialist.
- The majority did not know their last A1C level or what significance it had on their health.

MATERIALS AND METHOD

- Retrospective 61 diabetic chart reviews
- LumineticsCore™ is the first FDA cleared autonomous Artificial Intelligence (AI) technology in healthcare.
- LumineticsCore™ machine was utilized to provide instant diagnostic results to patients at the end of their visit by means of AI. Total of 4 pictures were taken; 2 of each eye and the exam takes about 10 minutes to complete.



- With the availability of an AI diagnostic machine on-site that provides instant result. This allowed patients to complete their annual eye exam whilst also seeing their healthcare provider.
- Surveys were given to patients at the end of their visit to gain their feedback on the experience.

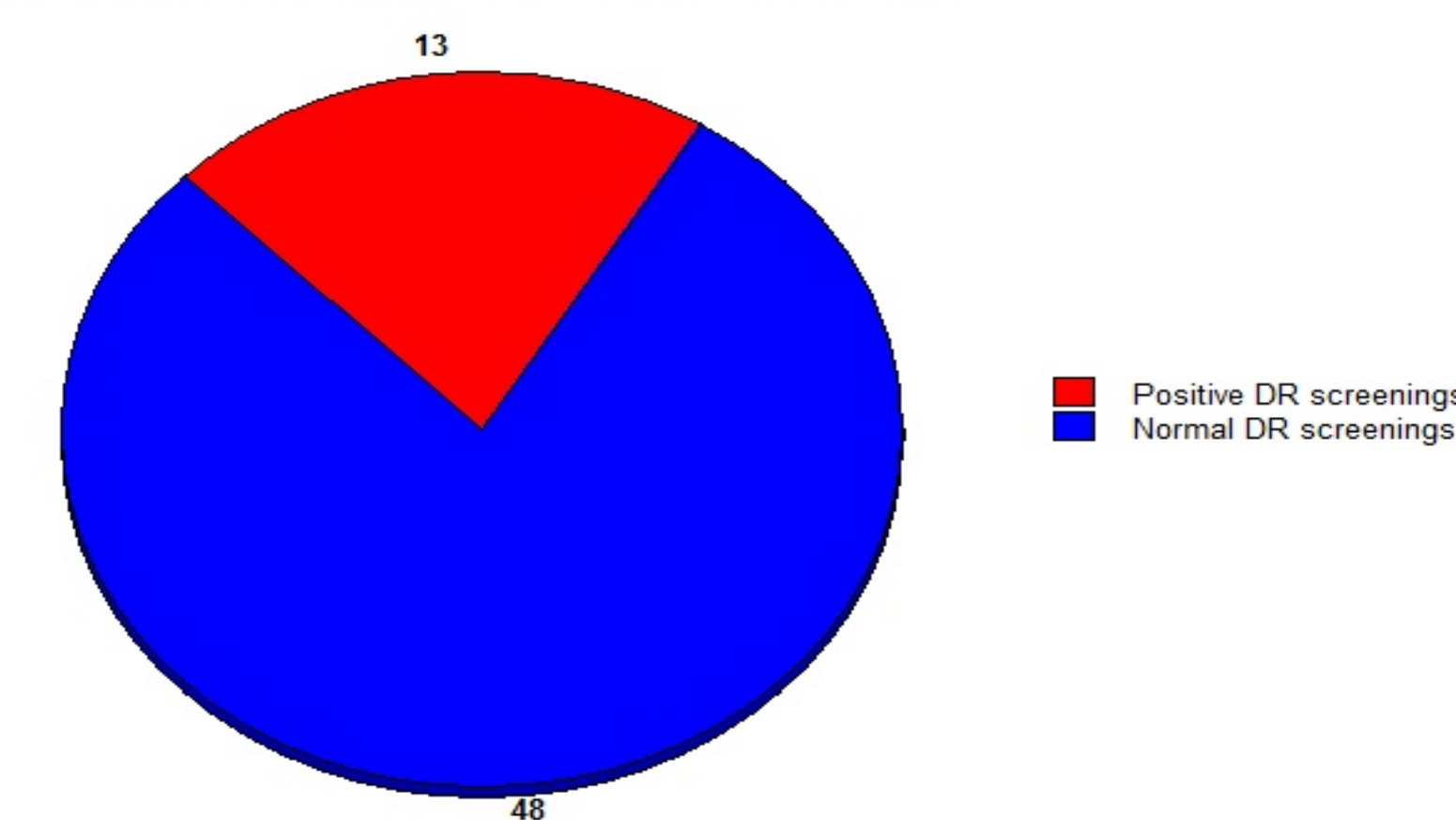


- Patients were also able to freely ask any questions or voice their concerns as the DR screener was a bilingual Spanish-speaking advanced practice nurse; thus, providing holistic care.

RESULTS

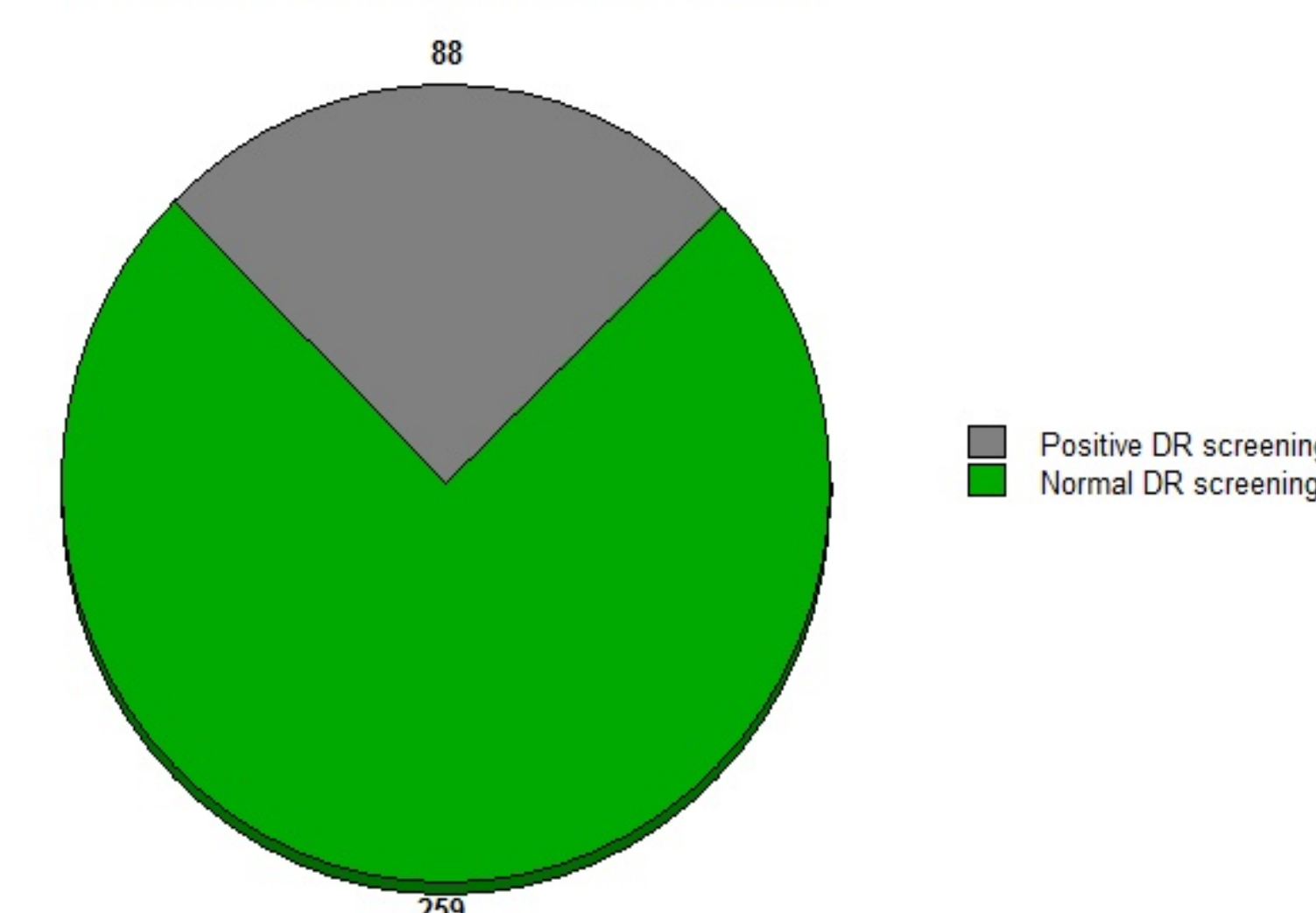
- 61 DR screenings were conducted from December 14, 2022 – May 15, 2023 on those patients who did not complete their annual eye exam.
- 13 tested positive for DR and 9 were indeterminate. Those who were insured were assisted in finding a specialist and those uninsured were also helped in setting up an appointment with "Project Best (Better Eye-Health Services and Treatment)" for a free eye exam with a specialist.

DR Screenings at Zufall - Plainsboro Location



- Overall, Zufall Health Center from April 2021 to April 2023, conducted 475 exams on diabetic patients. 259 tested negative, avoiding a referral to eyecare. 88 patients tested positive and were provided with prompt referrals. The percentage of patients with diabetes completing their annual eye exam doubled from 16% in April 2021 to 32% in April 2023.

DR Screenings at Zufall Health Center



CONCLUSIONS

- 17 patients A1C's improved as noted during their follow-up visits with their healthcare provider.
- Patients were satisfied and content with their AI eye exam experience as there was no need for eye dilation, traveling to another location, and had instant diagnostic results.
- Additionally, educational information was provided to patients in their native language and many patients were reconnected with care.
- The use of AI at point-of-care has proven to increase the rates of diabetic patients completing their annual eye exam at Zufall Health Center. Zufall plans to continue this screening and if it is a sustainable modality for them and other FQHCs to use.



Healthy eyes =
better quality of life

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