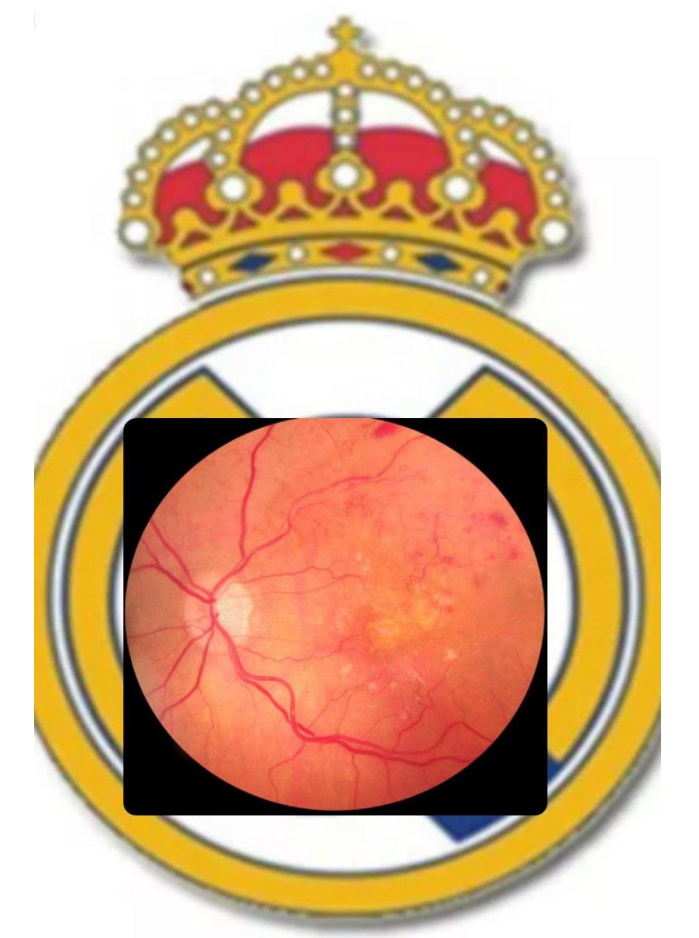


Improvement of diabetic retinopathy screening of diabetic patients seen at the Internal Medicine Clinic

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INTRODUCTION

Diabetic retinopathy (DR) is a leading cause of vision loss globally. The International Diabetes Federation (IDF) estimated the global population with diabetes to be 463 million in 2019 and 700 million in 2045.

The estimated number of Americans 40 years and older with a DR diagnosis is expected to triple between 2005 and 2050, from 5.5 million to 16 million individuals.

In the USA, studies estimate that 28.5 – 40.3 % of patients with type 2 diabetes had DR, and 4.4–8.2 % of them had vision-threatening diabetic retinopathy. According to Diabetic Retinopathy Data and Statistics from the National Eye Institute from 2000 to 2010, the number of cases of diabetic retinopathy increased 89 percent from 4.06 million to 7.69 million.

Retinopathy is a highly specific neurovascular complication of both type 1 and types 2 diabetes, and the prevalence strongly correlates to both the duration of diabetes and the level of glycemic control.

Regular follow-up with early detection and treatment of vision-threatening retinopathy enables the prevention of up to 98% of visual loss due to diabetic retinopathy. All patients with newly diagnosed diabetes will need a referral to an ophthalmologist for a screening. Non-attendance at screening is a risk factor for sight-threatening retinopathy and many patients do not take up the offer of screening.

Methods

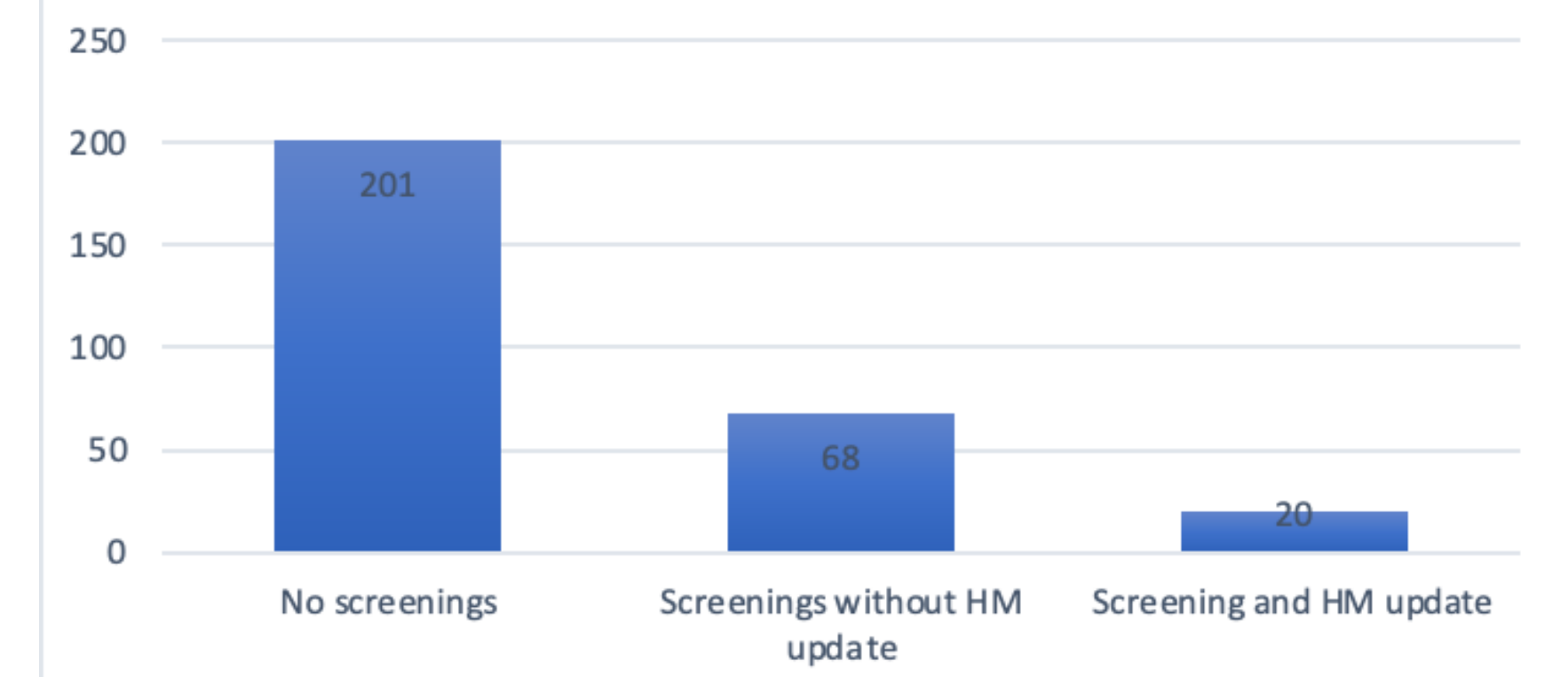
The project was conducted at the Internal Medicine GME continuity clinic at Doctors Hospital at Renaissance in Edinburg Texas. Lecture was provided to the residents to educate regarding how to properly document on our EMR, Cerner the screening for DR. Also flyers were placed in key areas throughout the clinic as a reminder of when appropriately refer a patient for Screening as well as how to document in the EMR that a patient was successfully screened. Initially a survey was done among residents regarding appropriate timing for screening for DR in DM type 1, 2 and gestational diabetes. A preintervention data was obtained a from April 2021 to October 2021 of diabetic patients seen in the clinic that period of time. A post intervention analysis was done by reviewing records from January 2022 to April 2022. The primary outcome was to achieve an increase in 30% in 3 months on diabetic eye screening properly documented on our EMR - Cerner. The expected duration of this study was 10 months. A limitation of these study was that a different set of patients was analyzed in the first (pre-intervention) and second (post-intervention) due to the period between two interventions is shorter than the 1-year interval, which is recommended between diabetic retinopathy screening.

Results

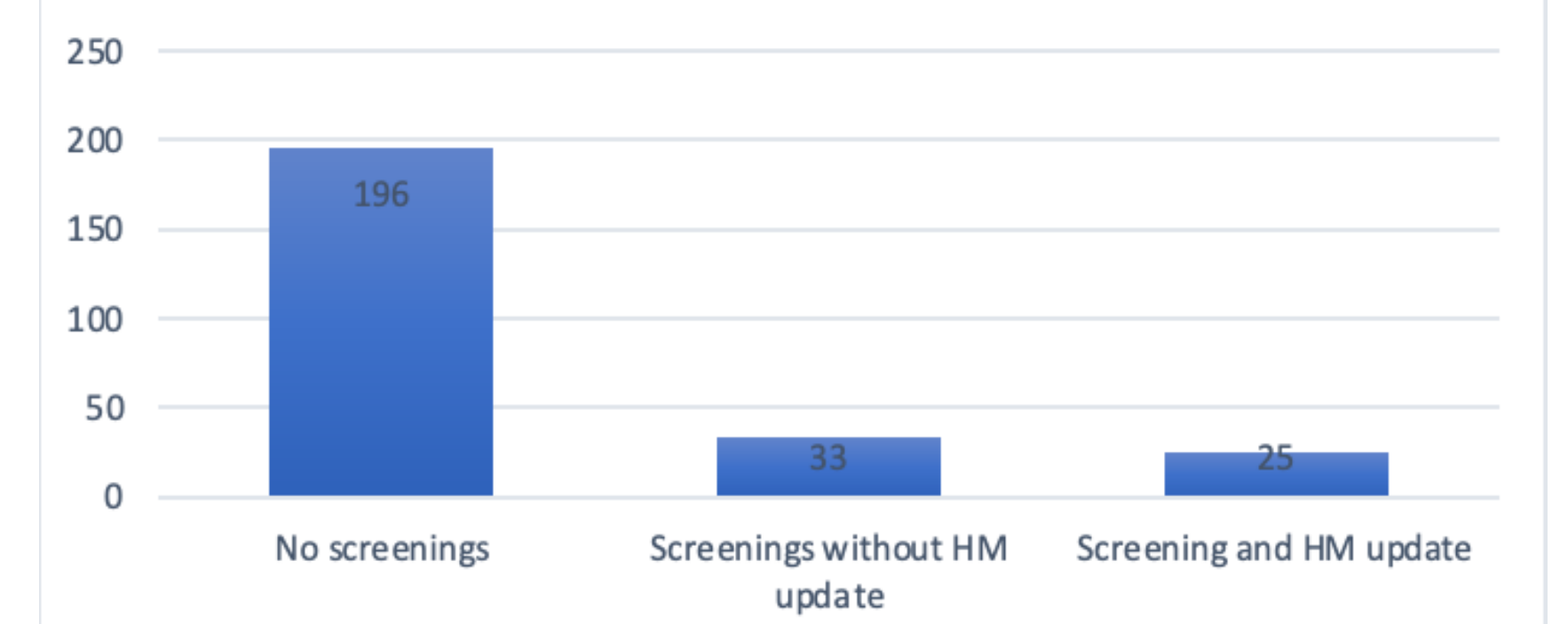
Pre-intervention statistical analysis: out of 980 (100%) patients only 289 (29.5%) met inclusion criteria. 201 patients didn't have screening for DR. 68 patients had screening for a diabetic retinopathy scanned in the EMR but none that the health maintenance section updated. 20 patients had both the screening for diabetic retinopathy scanned in the EMR and health maintenance section updated. Only 6.92% of patients were properly filled.

Post-intervention statistical analysis: Out of these 263(100%) patients only 254 (96.6%) met inclusion criteria. 196 patients didn't have DR screening. 33 patients had screening for DR scanned in the EMR but none had the health maintenance section updated. 25 patients had both the screening for diabetic retinopathy scanned in the EMR and help maintain and section was updated. 9.50% of patients chart work properly updated.

Data Analysis Pre-Intervention from 04/01 to 10/31, 2021



Data Analysis Post-intervention from 01/19 to 04/19, 2022



Conclusion

After intervention there was an increase in the percentage of properly updated charts of 2.38%, although the primary outcome of increasing 30% in documentation in EMR system was not achieved. These results may be influenced by multiple external factors, like lack of insurance coverage and unable to afford copays, as well as patient non-compliance to appointments, loss of follow-up, among others. Although all patients with newly diagnosed diabetes will need a referral to an ophthalmologist for a screening, non-attendance is common among our community due to population be uninsured and unable to afford copays or appointment.

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