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Background

- In 2019, a novel teleretinal imaging program was implemented at the Veteran Affairs (VA) Greater Los Angeles Healthcare System providing access to teleophthalmologic consult, integrating remote OCT evaluation and retinal specialist
- Previously, 158 tele-OCT consults showed compliance with recommended follow up was 76.4% and over half of consults requested both diagnosis and management¹
- This project continues to evaluate the utilization of the pilot teleOCT program during the COVID-19 pandemic in 2020 and its impact on eye care at the VA

Objective

- To evaluate and assess the utilization of a pilot teleretinal imaging program and its clinical impact at the Veterans Affairs Greater Los Angeles Healthcare System

Methods

- Retrospective chart review study using the VA CPRS
- Inclusion criteria: all patients evaluated using the teleretinal imaging program with OCT imaging in 2019 & 2020
- REDCap was used for data collection and management²
- Variables: patient demographics, medical history, teleretinal consult results and referrals, and patient adherence
- Will analyze potential association between age, housing status, co-morbidities, ocular health, psychiatric conditions, driving distance to eye clinic with compliance rate within 2020 and between 2019 and 2020 results
- SPSS³ statistical software will be used for data analysis, and statistical significance will be determined at $p < 0.05$ (*)

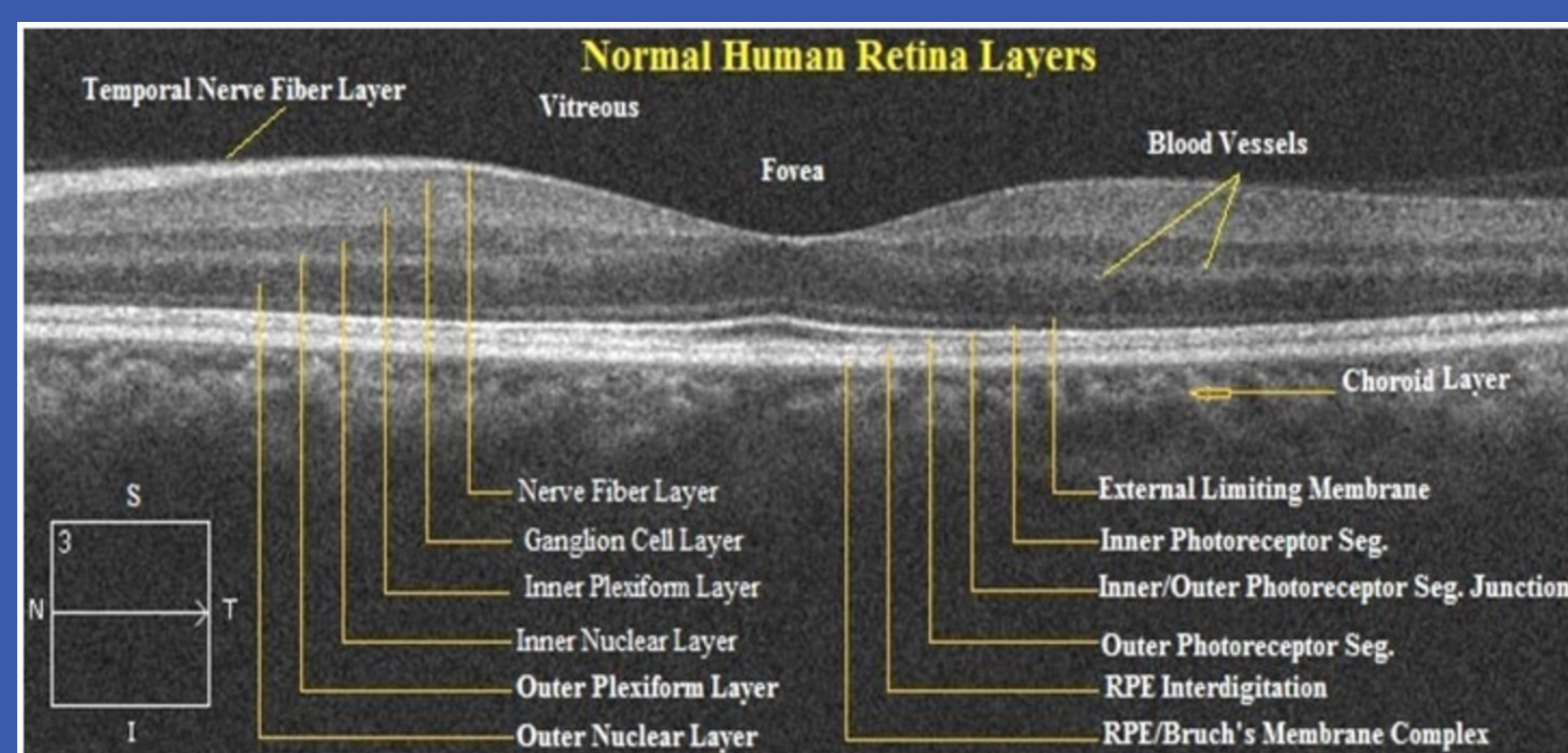
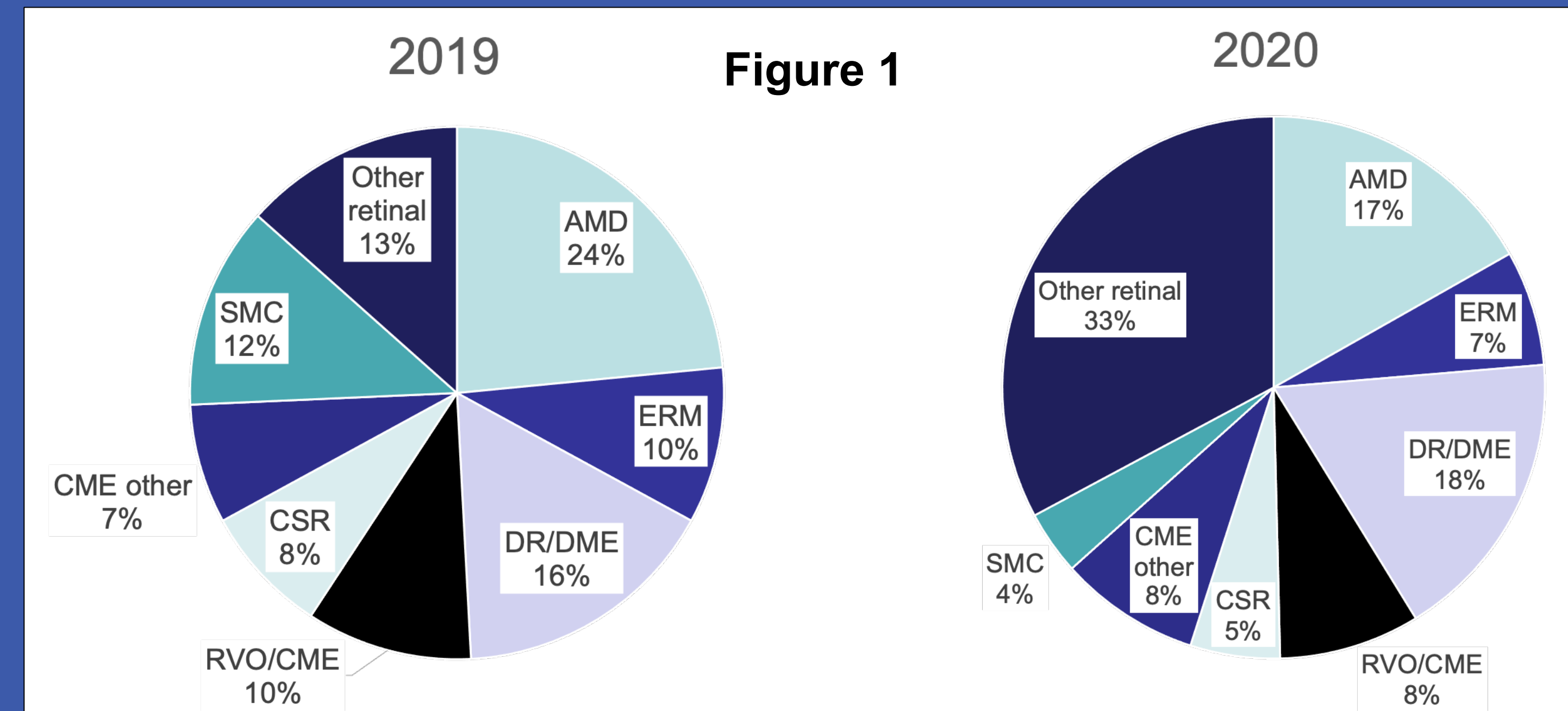


Table 1. Patient demographics			
Characteristics	N (%) 2019	N (%) 2020	p-value
Total number of teleretinal consults	158	111	0.110
Patient Sex			
Male	154 (97.5%)	107 (96.4%)	0.575
Female	4 (2.5%)	4 (3.6%)	
Patient age, years			
Mean age (SD)	65.73 (18.11)	70.81 (13.22)	0.026*
Age range	34 - 94	31 - 97	
Race			
White	70 (44.3%)	58 (52.3%)	0.004*
Black	55 (34.8%)	42 (37.8%)	0.263
Hispanic or Latinx	16 (10.1%)	11 (9.9%)	0.834
Asian	6 (3.8%)	2 (1.8%)	0.369
Native Hawaiian or other Pacific Islander	4 (2.5%)	0	0.098
American Indian or Alaska Native	2 (1.3%)	0	0.244
Unknown	11 (7.0%)	9 (8.1%)	0.662
Homelessness	21 (13.3%)	23 (20.7%)	0.079

Table 2. Teleretinal Consult Summary			
Characteristics	N (%) 2019	N (%) 2020	p-value
Reason for Teleretinal Consult			
Diagnosis	5 (3.2%)	7 (6.3%)	0.196
Management	66 (41.8%)	65 (58.6%)	0.009*
Both	87 (55.1%)	39 (35.1%)	0.002*
Originating VA Eye Clinic			
Optometry clinic (retina clinic location)	110 (69.6%)	64 (57.7%)	0.113
Ophthalmology clinic (retina clinic location)	3 (1.9%)	5 (4.5%)	
Optometry clinic (satellite location)	36 (22.8%)	37 (33.3%)	
Ophthalmology clinic (satellite location)	9 (5.7%)	5 (4.5%)	
Mean teleretinal consult response time (SD)	2.7 days (3.3)	2.15 days (2.9)	0.179
Consults resulting in changed retinal diagnosis	48 (30.4%)	14 (12.6%)	0.002*
Recommended follow-up location			
Original clinic	113 (71.5%)	70 (63.1%)	0.173
Retinal clinic	12 (7.6%)	25 (22.5%)	0.001*
Injection clinic	27 (17.1%)	26 (23.4%)	0.281
Other/additional location	16 (10.1%)	0	0.001*
Compliant with recommended follow-up plan ^a	120 (76.4%)	81 (73.0%)	0.757
Abbreviation: SD, standard deviation			
Data are presented as number (percentage) of patients unless otherwise indicated.			
^a 3 patients were excluded from the compliance calculation due to passing away during the recommended follow-up interval.			



Abbreviations: AMD, age-related macular degeneration; ERM, epiretinal membrane; DR, diabetic retinopathy; DME, diabetic macular edema; RVO, retinal vein occlusion; CME, cystoid macular edema; CSR, central retinopathy; SMC, structural macular changes
Note: Patients may have more than one consulting retinal diagnosis

Results

- From 01/01/2020 to 12/31/2020, 111 teleretinal consults were placed for 104 patients
- Table 1** summarizes demographic information of patients
- Table 2** teleretinal consults results and recommendations
- Figure 1** displays a summary of consulting retinal diagnoses of the tele-OCT program
- Comorbidities of patient population: 46.8% of patients had diabetes mellitus, 79.3% had hypertension, and 50.5% had hyperlipidemia
- 33.3% of patients had depression and 24.3% had post-traumatic stress disorder
- 39.6% of patients used alcohol and 22.5% used tobacco

Discussion

- Homeless status of patients increased from 13.3% in 2019 to 20.7% in 2020
- There was a 30% decrease in teleOCT program utilization
- Compliance to follow up recommendation were similar in 2019 and 2020, indicating adherence outcome from teleretinal screening did not change even during the pandemic
- 70% of patients were recommended to follow up at original eye clinic, however there was an increase in recommendation to follow up at retina clinic by 15%
- Noncompliant patients in 2020 were more likely to have longer distance to clinic* and follow up clinic*, have a psychiatric history notable for anxiety*, be asymptomatic*, be in a better category for BCVA of consulted eye*
- Irrespective of year, those who were noncompliant were more likely to have longer distances to clinic* and follow up clinic*, be asymptomatic*, have lower symptom severity*

Conclusion

- Teleophthalmologic services could reduce health disparities in areas where access to retina specialists are limited
- In its second year of implementation, the teleretinal screening program has shown successful in adherence to follow up recommendation
- The integration of remote OCT evaluation in the VA Greater Los Angeles Healthcare System can serve as a model for future teleretinal programs incorporated across the Veteran Health Administration for improved eye care services

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