PURPOSE
❖ To evaluate the change in completion % of annual diabetic retina screenings using an inexpensive smartphone retina camera* in an urban family practice.
❖ To evaluate if positive retina screens would have a higher rate of referral completion for full exam.
❖ To evaluate if receiving a free retina screen will increase perceived diabetic empowerment.

BACKGROUND
❖ Diabetes is the #1 cause of blindness in adults from 20-70 y.o. in the US with 4.2 million at risk.
❖ American Diabetes Association recommends annual retina screening.
❖ In 2016, one study sited out of 339,646 US diabetic patients only 46% completed their screen.
❖ Healthy People 2020’s goal for screening is 58.7%.
❖ Quality-Adjusted Life-Years or QALY is the amount of money an average worker earns and this equates to 420 Billion US dollars lost if blindness occurs.
❖ Study site, urban family practice completion rate of 34% in May 2017.

SAMPLE
❖ 29 participants, convenience sample
❖ 8 providers, 6 NPs and 2 MDs
❖ On-site work Family Practice that started with 88 primary care diabetic patients and compared to end of study 106 possible participants.
❖ Advertisement for study was through in office referral on the day the participant was in the office.
❖ At the start of the study in September, the percentage of completed retina screens dropped to 17%.

METHOD
❖ Quasi-experimental design comparing the 2 groups: screen completed or not, with a pre and post quantitative % and qualitative Diabetes Empowerment Scale Short Form** survey.
  • IRB approval through ODU was obtained prior to data collection and there was no IRB at the clinic.
  • Data analysis IBM SPSS V24 statistical software.
  • Participants who were PCP patients of the clinic, older than 18, who spoke english, type I/II diabetes without pregnancy, and who were not UTD with retina screens. Consent/Survey information completed by a single investigator.
  • Local optometrist*** volunteered reading each study
  • Survey information included:
    • Demographic data
    • Current HgbA1C, BMI and lipid levels
    • Pre and Post Diabetic Empowerment Survey
    • Post study evaluation of full eye exam completed

REFERENCE/SPECIAL RECOGNITION
* Telehealth Technology: D-EYE smartphone ophthalmoscope
** Diabetes Empowerment Scale Short Form (DES-SF) survey developed by Diabetes Research and Training Center, University of Michigan, 2003
*** Dr. S.M. Enochs, Enochs Eye Care PLLC, Suffolk, VA

RESULTS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male = 79%</td>
</tr>
<tr>
<td></td>
<td>Female = 21%</td>
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<tr>
<td>HgbA1c</td>
<td>Mean = 7.70%</td>
</tr>
<tr>
<td>Last Retina Screen</td>
<td>Never = 3.44%</td>
</tr>
<tr>
<td></td>
<td>Less than 1 yr = 48.27%</td>
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<tr>
<td></td>
<td>Greater than 1 yr = 48.27%</td>
</tr>
<tr>
<td>Post Study % of retina screens in charts</td>
<td>53% complete (Out of 106)</td>
</tr>
<tr>
<td>Percentage of change</td>
<td>37% Increase</td>
</tr>
<tr>
<td>Knowledge of telehealth</td>
<td>Yes = 44.82%</td>
</tr>
<tr>
<td></td>
<td>No = 55.17%</td>
</tr>
</tbody>
</table>

❖ Descriptive statistics, frequencies, sums, percents and parametric paired t-testing. Diabetes Empowerment Scale Short Form survey, using a Likert scale, showed no statistical difference per question, section or total with <29 participants.

CONCLUSIONS
❖ Urban family practice have similar baseline screening at 48% compared to other studies of 46%.
❖ NPs care for the majority of this population.
❖ NP lead retina screen study, using smartphone technology can increase clinic screening by 37% in 4 months.
❖ Single positive screen with low sample was unable to conclude rate of referral completion for full eye exam.
❖ Retina screens can be incorporated into regular visits.
❖ Diabetes Empowerment Scale Short Form survey did not show significant change pre to post intervention.
❖ Patients are not fully aware of telehealth and potential benefits.