Evaluating Retinal Imaging as a Screening Tool for Vascular Damage Secondary to Hypertension and/or Diabetes in Eastern North Carolina Farmworkers: A Case Series

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INTRODUCTION

Migrant farmworkers in North Carolina face a multitude of barriers in accessing and receiving regular, reliable healthcare. These typically include lack of transportation, financial insecurity, and little control of work schedules. Increasingly, mobile clinic programs are attempting to address problems in accessing care, but are often limited in resources, providers, and the amount of clinical information that can be gleaned in these settings.

METHODS AND MATERIALS

Data collection will begin in August 2023, pending IRB approval.

- Participants are migrant farmworkers at Tull Hill Farms in Kinston, North Carolina, over 18 years of age.
- Participants will be screened for diabetes and hypertension, according to the following guidelines:

<table>
<thead>
<tr>
<th>Blood Pressure Category</th>
<th>Diastolic (&gt; 90 mmHg) and/or Systolic (&gt; 120 mmHg)</th>
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</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Less Than 90 and Less Than 120</td>
</tr>
<tr>
<td>Elevated</td>
<td>90-109</td>
</tr>
<tr>
<td>High Blood Pressure</td>
<td>110-119</td>
</tr>
<tr>
<td>Stage 1</td>
<td>or 120-129</td>
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<tr>
<td>Stage 2</td>
<td>or 80-89</td>
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</tbody>
</table>

- Participants who screen positively for hypertension, and/or prediabetes or diabetes will have their retina imaged
- Images will be read by physician in the mobile clinic at the farms, and results will be interpreted to patients with assistance from outreach workers at the Kinston Community Health Center
- Retinal images will be examined for any of the following signs of damage due to hypertension and/or diabetes

- Normal Retinal Image
- Diabetic Retinopathy
- Hypertensive Retinopathy

- By analyzing the retinal blood vessels and the optic nerve, among other structures, potential signs of organ dysfunction or chronic disease could be identified, allowing for timely intervention and improved health outcomes.

GOALS OF STUDY

- We hypothesize that retinal imaging can serve as a non-invasive and easily accessible method for mobile clinics to detect early indicators of organ failure in H-2A farmworkers.
- Considering the challenges in administering regular primary care and preventative medicine in migrant farmworkers, the benefit of retinal imaging lies in its portability to be brought into fields, non-invasiveness, and relatively low cost, in addition to its ability to visualize the health of the eye and its vasculature.

ACKNOWLEDGEMENTS

We would like to acknowledge the assistance and support of the Kinston Community Health Clinic for their help in establishing contact and trust with our study population.

We would also like to acknowledge the assistance of Dr. Ashley Burch in her guidance throughout the study design and application process.

REFERENCES