The FY2020 – FY2023 Implementation Plan will focus on the following vision health needs identified from the Community Health Needs Assessment conducted in 2019 (in order of priority):

1. Low awareness of ocular diseases that cause vision loss such as diabetic retinopathy and age-related macular degeneration among adults in underserved areas

2. Pediatric vision screenings in children under 17 and low adherence to obtain glasses or follow-up with a pediatric ophthalmologist

3. A sustainable model for vision screenings and adherence to follow-up care in community centers in underserved areas

**Priority #1: Low awareness of ocular diseases that cause vision loss such as diabetic retinopathy and age-related macular degeneration among adults in underserved areas**

Performing annual eye screenings allows for the monitoring, detection and management of sight threatening eye disease such as diabetic retinopathy and age-related macular degeneration. Telemedicine eye screenings involves fundus imaging (photo of the back of the eye) that shows the microvasculature and the health surrounding the optical nerve and macula (posterior pole), which could show signs of eye disease and health issues such as diabetic retinopathy, hypertension, macular degeneration, glaucoma, cardiovascular disease, thyroid disease, and cancer/tumors. Early detection and timely treatment of eye disease can often delay or prevent severe vision loss. Telemedicine fundus eye screenings provides a level of eye care for populations with high prevalence of disease, and allows for the identification and prompt referral of individuals for evaluation and management of their eye health.

To bring awareness of ocular diseases that cause vision loss, *Wills Eye Telemedicine* aims to reduce barriers and increase eye health awareness to patients by providing fundus eye screening services. Telemedicine diabetic retinopathy eye screenings is a proactive approach that supports global and nationwide efforts to reduce costs and improve care management of persons with diabetes. Diabetic retinopathy is one of the leading causes of blindness in the United States and early detection and annual undialated fundus examinations are recommended to preserve vision and prevent blindness. Diabetic African Americans and Hispanic/Latinos are at a higher risk to develop diabetic retinopathy and both populations share several barriers in receiving adequate medical care.
Eye health care is not only a consideration for people with diabetes but for populations that are in rural and underserved areas with limited health care access and for populations vulnerable to eye disease due to the conditions of their current life situation of having addictions, a low-income status or are homeless. Many in this setting have disparities that without the help of dedicated services would most likely result in having a higher level of health issues with frequent ER visits and healthcare issues that require treatment at a higher cost. *Wills Eye Telemedicine* is working with partners on creating rural, national and international telemedicine collaborations to support regions with lower socioeconomic status, lower healthcare scores, and barriers to care.

**Update on Specific Goals addressing Priority #1 for FY2021:**
In FY2021, *Wills Eye Telemedicine* continued to re-evaluate and adjust delivery of diabetic retinopathy screening services to the public in order to comply with the fluctuating federal, state, and local mandates and other barriers as a result of the COVID-19 pandemic. Many of the Specific Goals outlined to address Priority #1 for FY2021 were postponed indefinitely as the COVID-19 pandemic continues to surge. The status of FY2021 Specific Goals are listed below to show how the COVID-19 pandemic has hindered our efforts. To work around these barriers, *Wills Eye Telemedicine* shifted its focus in FY21 to implementing, developing, and managing a new telemedicine video visit application to serve our patients in Philadelphia and surrounding regions.

**Status of Specific Goals addressing Priority #1 for FY2021:**

- Partner with March Vision and Aetna Better Health to provide asynchronous retinal screening services for the diabetic population in underserved areas in the state of New Jersey.
  
  - This initiative was placed on hold due to the COVID-19 pandemic and government-mandated healthcare and social distancing restrictions. A decision to commence these services in November 2021 is in current discussion with hopes of safely moving forward with Wills Eye technicians providing diabetic retinopathy eye imaging services to the underserved diabetic populations in the state of New Jersey.

- Collaborate with Greater Philadelphia Health Action to offer asynchronous retinal eye screenings to their diabetic population.
  
  - This initiative did not move forward due to no available funding for the Greater Philadelphia Health Action (GPHA) entity. Due to the pandemic, GPHA’s tasks have been redirected, focusing on services including COVID-19 testing and vaccination for the populations they serve. GPHA plans to secure funding for future collaboration.
• Create a telemedicine hybrid model to increase the utilization of synchronous video services. Patients would be offered offsite ophthalmic eye testing with a follow-up test results review conducted through a telemedicine synchronous video visit.
  o This hybrid model was to merge satellite facility diagnostics with remote synchronous video visits. The hybrid model consisted of performing offsite ophthalmic diagnostic testing at a Wills Eye ancillary site. The patient’s physician would review the test results with a telemedicine video visit schedule with the patient to review test results. Attempts made with scheduling patients for the hybrid model were unsuccessful with the patient's responses not supportive of testing with a video follow-up with their provider. Patients wanted to have their testing completed and see the provider in person at the same appointment time. Providers were scheduled at offsite locations to maximize availability to patients in their community.

• Continue to work with the Vickie and Jack Farber Vision Research Center at Wills Eye to develop a model of eye care for the homeless and very low-income population in Philadelphia.
  o This initiative was temporarily canceled due to the COVID-19 pandemic. Our primary partner in this effort, Stephen Klein Wellness Center, has redirected their projects to focus on maintaining essential patient continuity of care to relieve the hospital systems, care of the homeless population, and care of our residents in housing. There is hope that after the pandemic restrictions are released, discussions will reemerge.

• Continue to work with the Center of Academic Global Ophthalmology to target services to international families in the Philadelphia region and globally.
  o There has been no movement on this effort due to the COVID-19 pandemic.

Specific Goals addressing Priority #1 for FY2022:

The goals of FY2022 will be to increase partnerships with payers and entities that provide health screening services to their constituents.

• Continue to work with Jefferson Health System to expand diabetic retinopathy screening services in PCP offices.

• Work with LabCorp Inc. to increase our diabetic retinopathy eye screening services. The service includes partnering with LabCorp’s contracted home phlebotomy group, performing health events together, including PCP offices.

• Enhance our Telemedicine screening software, including testing the validity of newly developed Diabetic Retinopathy screening applications for potential use.
• Establish a Diabetes Health event at Wills Eye Hospital and consider as an annual event.

• Mobile Imaging Implementation (e.g. prisons, nursing homes)

• Increase partnerships with payers to support the provision of diabetic retinopathy screening services with contracted pay rates.

Priority #2: Pediatric vision screenings in children under 17 and low adherence to obtain glasses or follow-up with a pediatric ophthalmologist

Wills Eye Vision Screening Program for Children
The Wills Eye Vision Screening Program for Children was established in partnership with the School District of Philadelphia to help conduct in-school vision screenings for children in grades K-5, provide free glasses to children with refractive error, help children with suspected non-refractive eye disease(s) to be evaluated by a pediatric ophthalmologist and provide vision screening trainings for school nurses. Additionally, The Wills Eye Vision Screening Program for Children conducts summer vision screenings at Boys and Girls Clubs of Philadelphia and Chester, PA and children receive free glasses before returning to school in the fall. The Wills Eye Vision Screening Program for Children team consists of a pediatric ophthalmologist, project director, project manager, optometrist, vision screeners, optician, and social worker. A school nurse coordinator is appointed by the School District of Philadelphia to select the schools each semester, attend screenings, and manage parental/guardian consent form return. The majority of chosen schools are in underserved areas of Philadelphia. The Wills Eye Vision Screening Program for Children also works closely with the school nurses, teachers, school staff and parents to educate about the importance of vision screening, glasses and follow-up care for their children.

Give Kids Sight Day
Give Kids Sight Day provides free eye care and glasses to children 17 years and under living in Philadelphia and the surrounding suburbs. Additionally, pediatric ophthalmologists are present to provide immediate care if non-refractive eye disease(s) is suspected. The child and family will work with a social worker to set up follow-up visits with the pediatric ophthalmologist if non-refractive eye disease is confirmed.

Update on Specific Goals addressing Priority #2 for FY2020:

Wills Eye Vision Screening Program for Children
The changing landscape of government COVID-19 safety restrictions, precautions, and in-person school closures prevented the Wills Eye team from assisting the large numbers of children serviced in previous years. From January 1, 2021 to June 30, 2021, 241 children received or are in the process of receiving two free pairs of glasses.
Summer 2020

- The Wills Eye team visited the Boys & Girls Clubs of Philadelphia and Chester, PA. The team facilitated 94 free vision screenings for children, provided complimentary glasses to 28 children, and our social worker scheduled three children for follow-up appointments at Wills Eye Hospital.

Fall 2020

On July 30, 2020, the Philadelphia School District announced a Virtual Learning Plan (online only) to begin the 2020-21 School Year with plans to return to in-person learning in October 2020. In early October, with rising COVID-19 cases and recommendations from the Philadelphia Health Department, it was announced that schools planned to return to in-person learning on November 17, 2020. Soon after the schools opened for in-person learning, outside visitors were prohibited due the pandemic. To overcome this barrier, the Wills Eye Vision Screening Program for Children team partnered with school nurses from 10 schools in the fall of 2020 to identify students who failed their screenings during the 2019-20 school year. Our team contacted parents and guardians of these students to schedule a time for the students to come to Wills Eye Hospital for eye exams and free eyeglasses.

- During fall 2020, a total of 115 children were screened and/or examined and were also provided information to contact Wills Eye Hospital for complete eye exams and eyeglasses.

Spring 2021

The Philadelphia School District re-opened schools the week of March 15, 2021 with a new hybrid model for grades pre-k, 1st, and 2nd and children with special needs.

- Since schools opened on March 15, the Wills Eye team made 30 visits to 13 schools resulting in the screening of 438 students. As a result, a total of 223 students needed glasses and have received or will be receiving them soon. In addition, a total of 18 students will need follow-up care at the Wills Eye Pediatric Ophthalmology Clinic.

Give Kids Sight Day 2020

Give Kids Sight Day in 2020 went virtual to adhere to the social distancing guidelines. Virtual vision screenings were conducted over the phone by volunteer vision screeners on October 10, 2020. Children who did not pass the vision screening were invited to attend an in-person eye exam at Wills Eye Hospital on October 17, 2020.

- 478 children were scheduled for virtual vision screenings on Sight Day on October 10th, 2020 with the following results:
  - 346 children attended their Sight Day appointment.
  - Of the children attending their appointment, 132 (38%) passed the vision screening and 212 (61%) did not pass the vision screening, and 2 were unable to be screened.

- A total of 262 children (76%) needed further vision care.
166 appointments were made on Sight Day for in-person eye exams at Wills Eye Hospital on Saturday, October 17th, 2020.

Another 12 children were identified on Sight Day as needing replacement glasses and were scheduled for walk-in appointments at the Wills Eye Optical Shop on October 17th.

There was an overflow of 84 children who also needed in-person eye exams and those children were provided with a voucher for a free exam at Wills at a later date.

161 children (45%) were prescribed two free pairs of eyeglasses.

- 175 children (36.5%) were from an immigrant family (i.e. another language other than or in addition to English was spoken in their home). Other than English, Spanish was the top language spoken (N=106, 22.1% children), second were Chinese languages (N=30, 5.8% children), and third was Indonesian (N=9, 1.9% children).

- 160 children (33.3%) had no insurance, and another 28 parents/caregivers (5.8%) did not know if their child had coverage.

**Specific Goals addressing Priority #2 for FY2022:**

**Wills Eye Vision Screening Program for Children**

As a result of the pandemic, the need for vision care for children has grown substantially. More than 12,000 K-5 students in the 30 Wills Eye catchment-area schools have not received essential in-person vision care services as they have in previous years. Correspondingly, over the last several months, school nurses have become overwhelmed while seeking our assistance. As we return to the schools, we plan to re-engage with the nurses and schools not comfortable with having outside staff in their buildings. These schools will be put at the top of the list for initial visits this fall. We cannot wait to return to see these children in person.

- With many restrictions lifted and the school district’s recent announcement that children will return for in-person learning five days/week beginning August 31, 2021, the Wills Eye Vision Screening team is excited to get back to all schools for the 2021-22 school year.

- In July and August 2021, Wills Eye plans to conduct vision screenings at the Philadelphia Boys & Girls Clubs, the Chester PA Boys & Girls Club, and Girard College as they have in previous summers.

- The Wills Eye team also plans to attend the Philadelphia In-Person School Nurse meeting in August 2021 to prepare for the upcoming school year.

_Give Kids Sight Day 2021_
Give Kids Sight Day 2021 will be held virtually on October 9, 2021 to meet social distancing requirements and in-person eye exams will be held on October 16, 2021 for children who do not pass their virtual vision screening. With limited visual screenings in the school due to virtual learning, the importance of Give Kids Sight Day is even more crucial this year.

- Wills’ partner, Public Citizens for Children and Youth (PCCY), will make appointments for patients to be called for telehealth vision screening.

- For those patients who then fail the telehealth screening, they will have the opportunity to make an appointment where the patients will be examined at Wills Eye Hospital, refracted, given prescriptions, and pick out their glasses.

**Priority #3: A sustainable model for vision screenings and adherence to follow-up care in community centers in underserved areas**

The World Health Organization estimates that 285 million persons have poor vision worldwide, of whom 39 million are blind. Approximately 80% of vision impairment is estimated to be avoidable through treatment or prevention. Annual vision screenings can help detect many sight-threatening conditions such as uncorrected refractive error, cataracts, glaucoma, diabetic retinopathy, and age-related macular degeneration, however many individuals at highest risk of these sight-threatening conditions are in underserved communities with limited access to eye care services. In order to have a valuable impact on the eye health of the patient, a vision screening program needs to be sustainable and have a high adherence to follow-up care if pathology is detected.

Glaucoma is the #1 cause of preventable blindness in the U.S., and despite its prevalence, it is not sufficiently scientifically understood. African Americans and underserved communities have a higher incidence of glaucoma, making outreach to underserved communities critical. Only with early identification can glaucoma be identified in its early stages. Once glaucoma is diagnosed, geographic and financial barriers to treatment must be overcome.

To develop a sustainable model for vision screenings and adherence to follow-up care, a partnership between the Vickie and Jack Farber Vision Research Center at Wills Eye and the Stephen Klein Wellness Center was established to work towards the goal of eliminating correctable and avoidable vision impairment, and achieving eye and vision health equity in an at risk, underserved population. The Stephen Klein Wellness Center is located in North Philadelphia and dedicated to providing health care services including medical and psychiatric care as well as individual, group or legal counseling to men, women and children who are currently or formally homeless. They also provide these services to the residents of the North Philadelphia community. The vision screening model should be efficiently integrated into the routine care provided to clients of the Stephen Klein Wellness Center.
Update on Specific Goals addressing Priority #3 for FY2021:
Our partner in this endeavor, The Stephen Klein Wellness Center, asked that we postpone the planning and resuming the project will be contingent on the status of the COVID-19 pandemic.

Specific Goals to address Priority #3 for FY2022:
Once pandemic restrictions are lifted, we will focus on implementing a sustainable model for vision screenings and adherence to follow-up care in community centers in underserved areas is to conduct part 2 of the pilot study which will
- Target recruiting high risk patients (persons with diabetes, over the age of 60, and/or with a family history of glaucoma)
- Construct a dedicated telemedicine pod in the Glaucoma Service in order to support and facilitate greatly increased assessment exams for glaucoma in the community.
- Construct additional exam lanes in the Glaucoma Service to increase capacity to treat members community needing focused services to prevent irreversible vision loss.
- Incorporate screenings during primary care visits on high risk groups
- Increase follow-up for eye care after screenings
- Increase awareness of eye health/vision screening importance - develop educational materials targeted at high risk groups