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Improving Access to Eye Care among Persons at High-Risk of Glaucoma in Philadelphia — Design and Methodology: The Philadelphia Glaucoma Detection and Treatment Project

Lisa Hark[#a], **Michael Waisbourd**[#a], **Jonathan S. Myers**[a], **Jeffrey Henderer**[b], **John E. Crews**[c], **Jinan B. Saaddine**[c], **Jeanne Molineaux**[a], **Deiana Johnson**[a], **Harjeet Sembhi**[a], **Shayla Stratford**[a], **Ayman Suleiman**[a], **Laura Pizzi**[d], **George L. Spaeth**[a], and **L. Jay Katz**[a]

[a]Wills Eye Hospital, Glaucoma Research Center, Philadelphia, PA, USA

[b]Temple University School of Medicine, Department of Ophthalmology, Philadelphia, PA, USA

[c]Vision Health Initiative, Division of Diabetes Translation, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, GA, USA

[d]Thomas Jefferson University School of Pharmacy, Philadelphia, PA, USA

[#] These authors contributed equally to this work.

Abstract

Purpose—The Wills Eye Glaucoma Research Center initiated a 2-year demonstration project to develop and implement a community-based intervention to improve detection and management of glaucoma in Philadelphia.

Methods—The glaucoma detection examination consisted of: ocular, medical, and family history; visual acuity testing; corneal pachymetry; biomicroscopy of the anterior segment; intraocular pressure (IOP) measurement; gonioscopy; funduscopy; automated visual field testing; and fundus-color photography. Treatment included laser surgery and/or IOP-lowering medication. A cost analysis was conducted to understand resource requirements. Outcome measures included; prevalence of glaucoma-related pathology and other eye diseases among high-risk populations; the impact of educational workshops on level of knowledge about glaucoma (assessed by pre- and post-test evaluation); and patient satisfaction of the glaucoma detection examinations in the community (assessed by satisfaction survey). Treatment outcome measures were change in IOP at 4–6 weeks and 4–6 months following selective laser trabeculoplasty treatment, deepening of the anterior chamber angle following laser-peripheral iridotomy treatment, and rate of adherence to recommended follow-up examinations. Cost outcomes included total program costs, cost per case of glaucoma detected, and cost per case of ocular disease detected.

Results—This project enrolled 1649 participants (African Americans aged 50+ years, adults 60+ years and individuals with a family history of glaucoma). A total of 1074 individuals attended

CONTACT Lisa Hark, PhD, RD lhark@willseye.org Director, Glaucoma Research Center, Wills Eye Hospital, 840 Walnut Street, Philadelphia, PA 19107, USA. Tel: +1 215 928 3045. Fax: +215 928 3225.

Declaration of interest

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a glaucoma educational workshop and 1508 scheduled glaucoma detection examination appointments in the community setting.

Conclusions—The Philadelphia Glaucoma Detection and Treatment Project aimed to improve access and use of eye care and to provide a model for a targeted community-based glaucoma program.

Keywords

Access to eye care; community-based; glaucoma detection; glaucoma treatment; underserved population

Introduction

Glaucoma is a chronic, optic neuropathy with typical visual field defects and progressive vision loss.[1,2] Glaucoma is a major global health problem and the second leading cause of irreversible blindness worldwide.[3] Without appropriate treatment and frequent long-term follow-up with an eye-care provider, glaucoma can progress and cause irreversible vision loss and blindness, worsening an already major public health problem.[4-8]

Open-angle glaucoma affects 2.2–2.7 million Americans and given the rapidly aging population, rates of glaucoma are projected to increase by 50% to 3.4 million people by 2020.[1,9] The increasing prevalence of glaucoma is expected to cause a significant economic and quality-of-life burden, as annual United States healthcare costs associated with glaucoma are estimated at $2.9 billion.[3,10-12]

Risk factors for glaucoma are well understood and include advanced age (65+ years), family history of glaucoma, race (African American, Asian), and ethnicity (Hispanic/Latino).[13-18] Diabetes is also an independent risk factor for glaucoma, and people with diabetes are twice as likely to develop glaucoma as those without. Glaucoma is 4 times more prevalent in African Americans than in non-Hispanic whites.[16,19] African Americans also develop glaucoma at a younger age; the disease progresses more rapidly and they are almost 7 times more likely to go blind than non-Hispanic whites.[1,14,15,20-26] Asians are also at higher risk of narrow-angle glaucoma.[3,27]

Despite the advanced technology and available diagnostic testing, 50% of people with glaucoma remain undiagnosed because the condition is asymptomatic in its early stages, does not cause pain, initially affects only one eye, and vision loss progresses slowly and asymmetrically.[3,24] Poor outcomes in patients with glaucoma are often attributed to barriers to care, such as lack of knowledge about glaucoma and its progression, lack of access to and use of eye care, lower education level, cost of treatment, and difficulty adhering to medication.[23,28-30] A study has demonstrated that the cost of co-payments for prescription medication was a barrier for African Americans with glaucoma.[31] In addition, cultural and educational barriers have been identified, including poor individual-provider communication, denying the risk of blindness, and low-health literacy levels contributing to disparities related to glaucoma detection, treatment, management, and follow-up eye care.[29,32-35]

Numerous efforts to improve access to and use of eye care and perform glaucoma screenings in high-risk populations have yielded marginal results.[36-39] In those who were diagnosed with glaucoma, adherence to medication and attendance at follow-up appointments in an office-based setting presented major challenges.[36,37] Additional studies have shown that African Americans are significantly less likely than other groups to obtain ocular examinations from an ophthalmologist, despite adequate health insurance coverage.[40,41] Although Medicare policies include glaucoma screening for the Medicare population and eligible African Americans aged 50 years and older, few participate in glaucoma screening.[30] Therefore, a new model of detection and follow-up care is needed to ensure improved access to and use of eye care services.

In 2013, the US Preventive Services Taskforce (USPSTF), after noting the limitations of screening methods concluded: “Evidence on the accuracy of screening tests [especially in primary care settings] and the benefits of screening or treatment to delaying or preventing visual impairment or improve quality of life is inadequate. Therefore, the overall certainty of the evidence is low, and the USPSTF is unable to determine the balance of benefits and harms of screening for glaucoma in asymptomatic adults.”[42] However, according to the American Academy of Ophthalmology Primary Open-Angle Glaucoma Preferred Practice Pattern Guidelines recommendations, screening may be more useful and cost-effective when it is targeted at populations at high risk of glaucoma, such as African Americans, Asians, and Hispanics.[43] Given the grave effects of glaucoma, *Healthy People 2010 and 2020* objectives V-5.3 calls for the reduction of visual impairment due to glaucoma.[44]

In recognition of the known risks of glaucoma, the asymptomatic character of the disease, the lack of a simple screening test for the disease, the known limitations to access to and use of eye care among high-risk populations, the Wills Eye Glaucoma Research Center initiated a distinct public health approach to reach those at high risk of glaucoma in community-based settings. The 2-year demonstration project, The Philadelphia Glaucoma Detection and Treatment Project, funded by the US Centers for Disease Control and Prevention (CDC) began in the fall of 2012. Employing public health strategies, the project aimed to mobilize local agencies to plan, develop, implement, and evaluate an integrated, community-based, targeted intervention with the goal to improve detection, management, treatment, and follow-up eye care among people at high risk of glaucoma in Philadelphia. The expected outcomes were to enhance access to and use of eye care, and reduce disease burden and glaucoma-related vision loss. Overall project goals are summarized in Table 1.

Materials and methods

Target population

According to the 2010 US Census, 42.2% of Philadelphians are African American, 36.9% are Caucasian, 12.3% are Hispanic, and 6.3% are Asian.[45] In order to reach underserved populations at greatest risk of glaucoma, the intervention targeted neighborhoods in Philadelphia where the poverty rates were above the national average of 10%.[46] According to the US Census, nearly 25% of Philadelphia families live in poverty, representing the highest poverty rate of the 10 largest cities in the US.[45,46] In addition, 19% of older adults live below the poverty level in Philadelphia. Nearly 3 times more African Americans live in

poverty than their white counterparts (24.8% compared to 8.4%), and Hispanics in Philadelphia are 3 times more likely to live below the poverty level than whites (25.4% vs. 8.45%).[45] Philadelphia also has the second-highest ratio nationally of Asian to white exposure to poverty, as Asians are nearly twice as exposed, and live in neighborhoods with a 13.4% poverty rate.[47]

Community partner organizations

Wills Eye has a history of partnering with local, community-based organizations, and these relationships were continued for this project, allowing access to the targeted population. With the help of over 40 partners, 1649 participants were examined in The Philadelphia Glaucoma Detection and Treatment Project. Partners included governmental agencies, non-profit organizations, and community-based organizations serving African Americans, Hispanics, and older adults in Philadelphia, including the Philadelphia Corporation for Aging, Philadelphia Housing Authority, Young Men's Christian Association (YMCA), faith-based organizations, human services organizations, and various senior housing and senior centers.

Given the outreach protocol, each partner organization identified a site coordinator to work closely with the Wills Eye team to promote attendance at the workshops, examinations, and follow-up visits. The site coordinators organized training sessions to address the cultural, linguistic, and health-literacy issues of each site and to provide culturally responsive, site-specific materials.

Intervention structure

Outreach and recruitment—In order to reach and identify high-risk groups, Wills Eye community health educators fostered a high level of partner engagement by working closely with each site coordinator. The site coordinators worked with Wills Eye health educators to develop content for newsletters, websites, and announcements to promote participation in vision education and detection activities. In order to promote glaucoma education programs, out-reach was conducted at the individual (flyers) and community (posters) level. Subsequent to the education program, those who chose to participate in the eye examinations received telephone reminders for initial and follow-up appointments. In addition, community health educators contacted and rescheduled patients who missed eye examinations, treatment, or follow-up appointments.

Glaucoma education—Following initial meetings and discussions with community partners, the community health educators conducted at least two 45- to 60-minute glaucoma awareness workshops for potential consumers.[48,49] Prior to the workshop, a brief pre-test was administered to assess audience knowledge about glaucoma. The components of the workshop included introduction to glaucoma and its affects, diagnosis, symptoms and warning signs, risk factors, and why patients should learn about glaucoma. Educational materials were distributed in English, Spanish, Cantonese, Russian and Mandarin Chinese. Participants were given an opportunity to ask questions and schedule a glaucoma examination. Up to 50 participants attended workshops at each community location. A total of 1074 individuals attended the workshops. Glaucoma examinations occurred

approximately 1 week after each workshop. Site coordinators also offered examinations to eligible walk-in patients who were not scheduled. The approaches that our program used to overcome known barriers to eye care are shown in Table 2.

Examination—The team consisted of six members; an ophthalmologist (glaucoma specialist or a glaucoma fellow), project manager, ophthalmic technician, two community health educators, and an ocular technician. A large sprinter van transported the team and all the necessary equipment for examinations and treatment, including a slit lamp, direct ophthalmoscope, lensmeter (Topcon Medical, Oakland, NJ), autorefractor, Snellen eye charts, pachymeter, hand-held fundus camera (Volk Pictor, Optomed Oy Ltd, Oulu, Finland), and one Octopus 300 visual field analyzer (Haag–Streit Inc, Bern, Switzerland).

The initial visit consisted of a complete medical and ocular history, slit lamp examination including intraocular pressure (IOP) measurement, indentation gonioscopy and visual field testing. Since our population was at high risk of glaucoma, we performed visual field tests on all subjects prior to the slit lamp examination as part of the targeted detection intervention. While visual field results may not detect abnormalities in people with normal appearing optic discs, individuals with small discs or subtle notching could represent early glaucomatous pathology and potentially be missed on undilated fundus examination. In cases where visual field results were unreliable, the ophthalmologist was able to obtain a repeat visual field test either on the same day or on the next follow-up visit.

Laser therapy was conducted using the Selecta Duet (Lumenis, San Jose, CA, USA). Laser supplies included the lens, goniosol, eye wash, and steroid eye drops. Additional supplies included alcohol pads, tissues, Q-tips, tears, proparacaine, fluorescein strips, and dilating drops. To enter the patient data into the Wills Eye NextGen electronic medical record (EMR) system (NextGen Healthcare Information Systems, Horsham, PA), five laptop computers were set up and a printer produced eye examination reports at checkout.

At least 15 individuals at risk of glaucoma completed testing and a complete eye examination for initial and follow-up visits each day. All scheduled patients were confirmed by the community health educator and the site coordinator via a telephone reminder call. The team also accepted walk-ins. Criteria for walk-in patients included those with a family history of glaucoma and patients who had been previously diagnosed with glaucoma but had not seen an eye care provider in at least 1 year.

The Wills Eye EMR system housed all data, which included medical history, test results, ocular examination, and follow-up recommendations. After the examination, the physician reviewed the test results with patients, and if they had glaucoma or were considered glaucoma-suspect, a recommended treatment and follow-up plan were discussed and a written summary was provided. Depending on the results of the examination, patients either required a community-based follow-up in 4–6 weeks and 4–6 months, follow-up visit in 1 year with their own ophthalmologist, or referral to an eye care provider for other ocular conditions. Table 3 lists the possible scenarios for diagnosis, recommended treatment plan, and follow-up based on the American Academy of Ophthalmology's Preferred Practice Pattern Guidelines for glaucoma.[43] On each community-based follow-up visit, a medical and

ocular history, slit lamp examination including IOP measurement, repeated indentation gonioscopy (if indicated) and visual field testing were conducted.

Disease management—The laser therapy (selective laser trabeculoplasty, SLT, or laser-peripheral iridotomy, LPI) treatment for glaucoma has been performed for over 15 years in the US and around the world. Patients diagnosed with open-angle glaucoma were recommended for SLT as initial therapy in this project. Patients diagnosed with angle closure (defined as more than 180° of iridotrabecular contact in primary gaze on gonioscopy) and considered at risk of pupillary block, were recommended for LPI. All patients recommended for the laser therapy received an informed consent form and an explanation of treatment by the physician. All laser procedures were performed by the physicians at the community site on the same day (both eyes if needed) or when the intervention team returned for follow-up over the next few weeks or months. Those who received laser therapy were scheduled for follow-up eye care within 4–6 weeks at the community site.

Patients with open-angle glaucoma who were not eligible for or did not agree to laser therapy received a prescription for medications (timolol maleate or generic prostaglandin analogs; Table 3). The team taught patients how to administer eye drops and reviewed the importance of taking their medications every day. Patients were provided with prescription assistance forms and received the medications either at Wills Eye Hospital or at the community center. Within 2 weeks of this contact, the project manager or an ophthalmic technician called each patient to confirm that they filled their prescription. The team referred patients diagnosed with other ocular conditions, such as diabetic retinopathy, age-related macular degeneration, and cataract to their own eye care provider, local ophthalmologist, or one of the various services at the Wills Eye Hospital, depending on patient preference.

Follow-up appointments—In order to improve follow-up adherence, the community health educator contacted all patients to confirm follow-up visits. Patients who were diagnosed with glaucoma or who elected to receive a laser procedure were scheduled for follow-up appointments at 4–6 weeks and 4–6 months from the original visit or treatment date. Glaucoma suspects were recommended to follow-up in 4–6 months and were scheduled at the community-based location. Patients who did not have glaucoma were recommended to follow-up with their own eye care provider or local ophthalmologists of their choice within 1 year, and a list of ophthalmologists was provided to each participant.

After the 6-month follow-up visit was completed, all patients were offered future follow-up eye care with the Wills Eye Glaucoma Service, Temple University School of Medicine Department of Ophthalmology, or local ophthalmologists. Patients also received individual counseling about the importance of follow-up eye care by the physician, ocular technician, and community health educators.

The breakdown of the 28-week process and activities is shown in Figure 1 and was customized according to the needs of each community site.

External intervention evaluation

Methods to measure and track the project—Wills Eye Hospital, in conjunction with the CDC and Westat, Inc., developed rigorous evaluation methods to measure and track clinical measures and process outcome data of all patients who participated in the detection project (Tables 4 and 5).

Outcome measures and data analysis—The purpose of this project was to improve access to eye care among individuals at high risk of glaucoma in underserved areas of Philadelphia. Outcome measures included the prevalence of glaucoma-related pathology and other eye diseases among high-risk population (African Americans aged 50 years, adults 60+ years and individuals with a family history of glaucoma), the impact of educational workshops on level of knowledge about glaucoma (assessed by pre- and post-test evaluation), and patient satisfaction of the glaucoma detection examinations in the community (assessed by satisfaction survey). Treatment outcome measures were change in IOP at 4–6 weeks and 4–6 months following SLT treatment and deepening of the anterior chamber angle following LPI treatment. The rate of adherence to recommended follow-up examinations was also evaluated. Cost outcomes included total program costs, cost per case of glaucoma detected, and cost per case of ocular disease detected.

Clinical outcome and process measures tracked during the project are listed in Tables 4 and 5.

Demographic baseline characteristics of all patients and results of their initial and follow-up eye examinations were tracked. This clinical data included past medical and ocular history (including family history of glaucoma), systemic and ocular medications, visual acuity, IOP, anterior segment exam including gonioscopy (Spaeth grading system of the angle), cataract grading, funduscopy including disc grading (cup-to-disc ratio, disc damage likelihood scale and disc diameter) and evaluation of the macula, central corneal thickness, visual field, and fundus photography.

Statistical analyses of differences between groups were assessed by t-test for continuous variables, and chi-square and Fisher’s exact tests for categorical variables (within subjects differences used paired t-test for continuous measures, and McNemar’s test for categorical measures). Prevalence of eye diseases by age and race were compared to National Eye Institute reported proportions in the US population using a z-test. Adherence to recommended follow-up was examined via logistic regression, assessing the impact of predictor variables on patient attendance to scheduled follow-up appointments. Finally, cost analyses applied cost multipliers to specific services comprising screening and follow-up care for groups of patients, to compute total cost.

Cost-effectiveness analysis—A cost analysis was conducted in order to identify potential efficiencies for refinements and/or translation of the project by other institutions or to other settings. The objectives of this analysis were to determine the costs of the glaucoma evaluation in terms of cost per participant evaluated, as well as the cost per diagnosis made (for glaucoma as well as other eye diseases detected). The perspective of the analysis was that of a health system, under the assumption that our findings will be primarily useful to

other health systems interested in implementing glaucoma evaluation programs. The types of costs captured included human costs as well as non-human costs. Human costs reflected the time requirements for staff members involved in conducting the evaluations and the corresponding costs of this time (wages plus benefits).

Non-human costs were captured via project-related receipts for medical equipment, travel (fuel, mileage, rental, and maintenance), office supplies, community partners' expenses, medical supplies, and communication (phones and wireless internet connectivity). Although the healthcare system perspective is not concerned with patient transportation costs since these would be borne by participants, we secondarily examined the types of transportation being used to get to visits (bus, rail, car, customized community transportation, taxi, or walk) and corresponding travel costs, which were captured in the patient check-out survey, since transportation is often identified as a barrier to eye care.

This project adhered to the guidelines of the Declaration of Helsinki and the Institutional Review Board of Wills Eye Hospital approved a retrospective review of the data collected in this demonstrational project.

Results

A total of 1649 individuals received a glaucoma detection examination. There were 1508 individuals who were scheduled for an eye examination after attending the educational workshops and/or receiving promotional materials, including flyers and posters. Of these, 1,056 (70%, 1056/1508) attended the glaucoma detection examination. The remaining individuals who received eye examinations were walk-ins.

Discussion

This project provided a community-based, eye care delivery model in an urban setting to reach those at high risk of glaucoma. The aim of this project was to systematically overcome barriers identified in the literature that impede access to glaucoma eye care; these barriers include knowledge about the disease, access to eye care providers, glaucoma detection strategies to overcome limitations of single measure screening protocols, treatment, and sustained follow-up. Moreover, evaluation questions were designed to measure the capacity of the project to have a sustainable, measurable impact, suitable to guide replication and expansion of detection programs in other communities.

Glaucoma screening has historically been challenging because of a poor balance of sensitivity and specificity of screening procedures. The USPSTF report was unable to provide recommendations regarding glaucoma screening of adults without vision symptoms who are seen in primary eye care.[48]

The experience of the community-based program in Baltimore supported by the Hoffberger Family Philanthropies demonstrated that a substantial effort is required to identify persons who are at greatest risk for eye disease and who are the least likely to be part of the eye care system. The Hoffberger Program used technicians and lay volunteers to conduct community-based glaucoma screening examinations on 5352 people and refer glaucoma suspects for

confirmation examinations back to the urban eye care center.[50] Among the 1331 individuals they screened, only 552 (41%) completed a definitive eye examination appointment and the authors concluded that failure of those screened to come for examination and loss to follow-up were identified as serious problems. This Wills Eye community-based project aimed to detect, treat, and manage patients with glaucoma by conducting educational workshops and initial and follow-up community-based slit lamp examinations by an ophthalmologist including IOP measurement, optic disc assessments, and gonioscopy as well as visual field tests (Table 2).

The results of this project provide important information on the value of using this community-based strategy for detecting, following, and treating patients with glaucoma or glaucoma suspects in a metropolitan area.

This project has the eye care infrastructure to diagnose patients and ensure that those who have glaucoma receive the treatments they need. In addition, the project has not only reached at-risk, under-served African American patients aged over 50 years and other older adults in Philadelphia, but also increased awareness of glaucoma in more than 1600 community members. Underserved, vulnerable populations are more likely to have cultural and linguistic barriers to eye care. Wills Eye has designed this intervention to overcome those barriers by providing community-based care as shown in Table 2. In addition, an educational workshop preceded the eye examination. Educational workshops should increase rates of participation and rates of adherence. Few community-based ocular-examination programs for at-risk populations have incorporated an educational component and a comprehensive eye examination to detect glaucoma. Another innovative aspect of this project was performing bilateral laser procedures (SLT or LPI), if indicated, at the community sites.

Over 2 years, with the help of community partners, this project aimed to increase patient knowledge and awareness of glaucoma and its risks, improve access to glaucoma examination by providing community-based early detection and management, increase follow-up eye care, and possibly reduce the unnecessary suffering and disability in an underserved population. The project likely impacted health behaviors and assured continuity of eye care for adults at high risk of glaucoma, vision loss, and related eye conditions. By tracking outcome performances, this project provides useful information on the value of a targeted, community-based glaucoma detection program in an urban setting.

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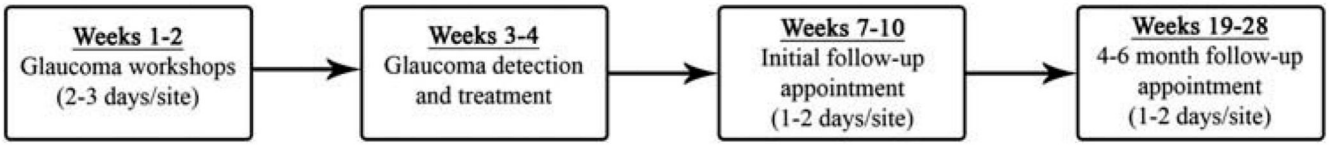

Figure 1.

Glaucoma detection and follow-up schedule in The Philadelphia Glaucoma Detection and Treatment Project, United States; a 28-week schedule was used to detect, treat, and provide follow-up care to patients with glaucoma.

Table 1

Goals of The Philadelphia Glaucoma Detection and Treatment Project, United States.

(1)	Identify and engage African Americans aged 50+ years and adults 60+ years in underserved communities in Philadelphia who are most vulnerable to glaucoma.
(2)	Provide educational workshops at community sites to increase awareness about glaucoma and its risks.
(3)	Perform community-based focused ocular examinations to detect glaucoma.
(4)	Provide community-based management, treatment, follow-up examinations, and referrals for patients diagnosed with glaucoma or suspected of glaucoma.

Table 2

Approaches to overcome barriers to eye care in the Philadelphia Glaucoma Detection and Treatment Project, United States.

Barrier to eye care	Approach to overcome barrier
Reaching high-risk populations	Community-based, targeted intervention performed near or at the residency of individuals at risk of glaucoma.
Lack of knowledge regarding risk	Educational programs/workshops prior to glaucoma examinations.
Lack of trust	Collaborating with trusted local community partners; establishing relationship with community partners and patients.
Lack of access to eye care provider	Facilitating access by providing the examination at community sites and providing names of local ophthalmologists for follow-up.
Need for multiple visits once glaucoma treatment initiated	Reducing number of visits by offering laser treatment at the community site and treating both eyes on the same day.
Low rate of follow-up	Reminding patients of follow-up appointments by letters and phone-calls; providing follow-up appointments in the community setting.
Lack of single test to diagnose glaucoma	Establishing a detection system that includes intraocular pressure, corneal pachymetry, visual field, gonioscopy, and slit lamp examination in one visit.
Poor adherence to using glaucoma medication	Offering selective laser trabeculoplasty as a first line treatment as an alternative to eye drops for primary open-angle glaucoma.
Language	Translate educational material; medical interpreters on site.
Transportation	Transporting the intervention team and equipment to the community; community and senior center managed transportation.
Lack of medical insurance	Assistance with application to charity care and referral to city health centers that provide eye care for uninsured residents of Philadelphia.
Cost of eye care for office visits and treatments	Provide comprehensive eye examination and laser treatment at no cost to the patient as part of the demonstrational project.

Source: Wills Eye Hospital Glaucoma Research Center.

Adopted from *American Academy of Ophthalmology*.[41]

Table 3

Recommended treatment and follow-up schedule in The Philadelphia Glaucoma Detection and Treatment Project, United States.

Visual field	Optic nerve	Intraocular pressure	Gonioscopy	Diagnosis	Recommended treatment	Initial follow-up	Second follow-up
Abnormal	Abnormal	Normal or high	Open-angle	Open-angle glaucoma	Eye drops or selective laser trabeculoplasty	4–6 weeks	4–6 months
Normal	Normal	Normal or high	Occludable	Angle closure (anatomically narrow-angle)	Laser peripheral iridotomy	4–6 weeks	4–6 months
Normal	Abnormal	Normal	Open-angle	Glaucoma-suspect	Observe	4–6 months	
Normal	Normal	Normal	Normal	No glaucoma	None	1 year	

Adopted from *American Academy of Ophthalmology*.[43]

Table 4

Clinical outcome measures tracked in The Philadelphia Glaucoma Detection and Treatment Project, United States.

- Prevalence of glaucoma
- Prevalence of glaucoma suspect
- Prevalence of angle closure (anatomically narrow angles)
- Prevalence of other eye diseases (diabetic retinopathy, macular degeneration)
- Prevalence of cataract
- Recommendation for laser therapy (SLT and LPI)
- Individuals receiving laser therapy (SLT and LPI)
- Individuals initiated on glaucoma medication
- Adherence rate at community-based follow-up examinations at 4–6 weeks and 4–6 months
- Individuals requiring additional referrals for other eye conditions

SLT, selective laser trabeculoplasty; LPI, laser-peripheral iridotomy.

Table 5

Process measures tracked by site in The Philadelphia Glaucoma Detection and Treatment Project, United States.

• Community partners and corresponding sites
• Glaucoma educational workshops conducted
• Individuals who attended glaucoma educational workshops
• Glaucoma educational materials distributed during workshops
• Individuals who scheduled an eye examination after educational workshops
• Completed and incomplete pre/post-test questionnaires
• Individuals who scheduled eye examinations
• Individuals who walked-in/cancelled/did not show/rescheduled eye examinations
• Individuals who completed satisfaction survey after eye examinations