



Georgetown Eye Health Initiative

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Abstract

As diseases that affect vision become increasingly prevalent, access to vision screenings will become more important. The inhabitants of D.C. General Family Shelter, a homeless shelter in Southeast Washington, D.C., have limited access to primary care, let alone vision care. Educational strategies to improve this disparity provide students the opportunity to develop the attitudes, knowledge, and skills necessary for providing a needed service for underserved patients. Medical students, resident physicians, and faculty of Georgetown University School of Medicine, MedStar Georgetown University Hospital, and MedStar Washington Hospital Center created the Georgetown Eye Health Initiative (GEHI) to provide an opportunity for students to participate in vision and eye health screening clinics for the underserved and homeless. The establishment, missions, and protocol of GEHI as a functional and educational clinic are described, as well as challenges encountered and future directions. Medical students, residents, and faculty working in collaboration can provide increased access to vision screening and eye health education for the medically underserved. With a focus on community engagement and education, ophthalmology represents a specialty area that has been previously overlooked in student-run clinics and has a significant role at the forefront of preventative care.

Eye Health and the Underserved

Many student-run clinics are focused on providing primary care to underserved populations. While the need for primary and preventative care is crucial, specialty care is often not addressed and represents an area for improvement and expansion.¹ Some specialty services, including ophthalmology, are overlooked due to the lack of clinic resources and equipment to perform a thorough examination.²⁻⁴ In ophthalmology, certain tools are needed to properly evaluate eye physiology and health. Vision loss is a serious problem and many people do not have the resources to seek appropriate care before they suffer permanent eye damage.

In a national survey, over 70% of participants reported that vision loss, over all other ailments, would have the greatest impact on their daily life.⁵ The loss of vision can lead to a loss of independence, greatly diminishing one's quality of life. Gradual vision loss associated with systemic

illnesses, such as diabetes, can result in severe anxiety and depression.⁶ While vision loss can be delayed and often avoided with proper screenings and care, many people do not have access to specialty eye clinics. It is estimated that more than 61 million adults in the United States are at high risk for serious vision loss and more than half of adult Americans do not seek vision care due to a lack of awareness and resources.^{7,8}

Diabetes, a worldwide epidemic especially seen in the United States, can result in diabetic retinopathy and subsequent vision loss if not treated.^{9,10} Diabetic retinopathy compromises the integrity of retinal blood vessels and can lead to scarring and blindness.^{11,12} The prevalence of diabetes is projected to increase to approximately 30.3 million people in the United States population in 2030 from 17.7 million in 2000.⁹ With diabetes continuing to affect our country, a focus on eye health is increasingly important. Additionally, glaucoma is a degenerative condition that affects the optic nerve and, if left untreated, can

cause permanent loss of peripheral vision.¹³ The prevalence of open-angle glaucoma is projected to increase from 2.2 million people to 3.6 million people in the United States by 2020.¹⁴ Moreover, African Americans are more likely to become visually impaired or blind from glaucoma as compared to Caucasians^{15,16} The insidious loss of peripheral vision from glaucoma highlights the importance of screening and early intervention, especially in those at risk.¹⁷ While education concerning diabetes management and screening for glaucoma are important, without access to specialty eye care, underserved individuals may not receive the appropriate treatment to avoid vision loss.

Homelessness can further compound these challenges, and these diseases are prevalent in underserved populations.¹⁸⁻²⁰ During May 2014, the District of Columbia Community Partnership Policy and Programs Team reported that the homeless population totaled 7,784 and of these, over 600 families reside at D.C. General Family Shelter, a homeless shelter in Southeast Washington, D.C.²¹ Many shelter occupants already receive their healthcare through a free Georgetown medical student-run primary and urgent care clinic operated out of the shelter.²² The student-run primary and urgent care clinic has served the shelter three times per week since 2007. Diabetes was documented as the sixth most common diagnosis of patients who seek healthcare at the shelter and referral to ophthalmology services to MedStar Washington Hospital Center was the fourth most frequently made referral.²² The majority of the shelter inhabitants are African American and underserved, putting them at risk for many systemic illnesses related to eye health. With a student-run clinic already established, there was an opportunity to provide a specialized eye health screening service for the at risk population of D.C. General Family Shelter and detect diseases that may be overlooked during a primary care evaluation.

The Georgetown Eye Health Initiative

In the spring of 2014, a group of medical students at Georgetown University saw a need for ophthalmology education and services during their volunteer experiences with the primary and urgent care clinic. They created the Georgetown Eye Health Initiative (GEHI), which focuses on promoting eye health to the community of Southeast Washington, D.C. GEHI was implemented as

an official student organization at Georgetown School of Medicine in order to receive funding. The operation is based at the D.C. General Family Shelter.

GEHI's primary plan included establishing a location, an eye health team, and a protocol to provide free vision screenings and eye health education to those that would otherwise not have access.

Already familiar with the layout of the shelter from their volunteer experiences with the student-run primary and urgent care clinic operated inside D.C. General Family Shelter, GEHI medical students decided to operate out of a recreation room adjacent to this clinic. To better recruit patients, GEHI holds clinic hours during the same dates and times as the adjacent clinic. This is both convenient for the shelter occupants and would further establish GEHI as an integral component of the care provided at the shelter. GEHI operates from 6:00pm to 8:00pm to accommodate the health team's schedules and is also appropriate for patients to have a dilated fundoscopic examination, which can result in temporary blurry vision from the pupil-dilating drops. Clinics occur four times per year, which provides several opportunities for patients to be screened for serious eye diseases.

Staff and Protocol

The eye health team is managed by medical students and includes post-baccalaureate students, ophthalmology resident physicians, and the chairman of the Department of Ophthalmology of MedStar Georgetown University Hospital and MedStar Washington Hospital Center. Supervision is coordinated under the chairman. At least two ophthalmology resident physicians supervise the screening exams and provide the final assessment and plan. First and second year medical students and post-baccalaureate students comprise the bulk of the eye health team. The ophthalmology departments at MedStar Georgetown University Hospital and MedStar Washington Hospital Center provide the ophthalmic equipment and medications necessary to conduct the exams.

The three main leadership roles within GEHI are clinic scheduling coordinator, volunteer recruitment coordinator, and patient education coordinator. Since GEHI was created as a student organization within the Georgetown University School of Medicine, leadership is only available to actively enrolled medical students. The clinic scheduling

and volunteer recruitment coordinators are responsible for corresponding with ophthalmology resident physicians and scheduling the screening clinics. These coordinators also recruit medical and post-baccalaureate student volunteers. Volunteers learn and practice the protocol under the supervision of ophthalmology resident physicians before attending the clinics. The patient education coordinators oversee all the educational materials that are presented to patients during the clinics and collaborate with resident ophthalmology physicians to ensure accuracy. The education materials include brief presentations about eye diseases, such as diabetic retinopathy and glaucoma. Shelter occupants are educated with the use of visuals of what a normal retina looks like compared to a pathologic retina. These presentations are delivered via portable tablet devices and presented to each patient prior to the screening evaluation. Student volunteers are actively involved in patient education in a one-on-one setting facilitated by the patient education coordinators.

The protocol consists of students interviewing patients about their eye health and obtaining a medical and ophthalmologic history. Next, a preliminary eye screening is performed, including visual acuity, pupillary response, extraocular motility, intraocular pressure, and gross visual fields by confrontation assessment. Students then review their notes from the preliminary screen and present their data to the resident or attending ophthalmologist. If a dilated funduscopic examination is warranted, students administer pupil-dilating eye drops under supervision. Pertinent exam findings are recorded on an approved exam sheet created by medical students. These charts are scanned into the electronic medical record that is used by the adjacent student-run clinic where many patients receive their primary care. If immediate care is needed, contact information regarding walk-in hours at MedStar Washington Hospital Center is provided or patients are referred directly to the nearest local emergency room. If eye care beyond the scope of the screening is warranted, GEHI would refer patients to MedStar Washington Hospital Center for further evaluation. This protocol was created by second year medical students and approved by the ophthalmologists at MedStar Georgetown University Hospital.

Student and Community Education Goals

In most medical schools, pre-clinical education includes physiology and pathology of the eye, but clinical exposure to ophthalmology is not available until the clerkship years.³ One goal of GEHI has been to expose medical students to ophthalmology at an earlier stage, providing them with the unique opportunity to get involved in and learn about the field prior to clinical rotations.

Community education is another critical component to GEHI's success, as lack of awareness is a major obstacle in seeking vision care.⁸ In addition to the one-to-one patient education that occurs during clinic sessions, GEHI provides community education and advertises its establishment through pre-existing health fairs, both at the shelter and other community sites. By including ophthalmology in the discussion of community health, more patients will consider eye screenings as an important and necessary part of their primary care. Students distribute faculty-approved informational brochures, which contain information about proper eye care, eye symptoms that represent medical emergencies, contact information for local vision centers, and information on ophthalmologists that serve the uninsured. At these fairs, student volunteers have the opportunity to engage with potential patients by providing visual acuity assessments. Additionally, people have the opportunity to ask questions, develop a rapport with the medical students, and acknowledge the establishment of GEHI within their community.

Challenges and Future Directions

GEHI was founded under the principle that everyone deserves access to eye healthcare and that poor vision can exacerbate the burden of homelessness. Many of the shelter inhabitants often lack the financial means to successfully manage chronic medical conditions, and vision loss would further impair their health outcomes. Serving the underserved has been a longstanding commitment of Georgetown University School of Medicine. GEHI empowers shelter inhabitants to become better stewards of their eye and overall health by bringing needed screening services and education to them.

Additionally, GEHI provides medical and post-baccalaureate students the opportunity to be trained by ophthalmologists in a field that they have limited exposure to in pre-clinical training.

For most first and second year medical students, volunteering through GEHI is their first clinical exposure to a specialty field. By volunteering, students are able to educate and build rapport with a vulnerable population. Additionally, GEHI provides students with the opportunity to collaborate with resident ophthalmology physicians through the creation and implementation of educational documents and presentations.

During its pilot year, GEHI has faced and learned from a few obstacles. While students and ophthalmologists were easy to recruit, it proved more difficult to recruit patients. The high turnover of occupants in a homeless shelter made it difficult to establish trust with the patient population on a continuing basis. Since the availability of the ophthalmology resident physicians realistically affords eye screening services only four times per year, GEHI plans to participate in more health fairs geared towards community eye education. Students can give educational presentations and pass out brochures, furthering GEHI's place within not just the D.C. Homeless Shelter, but the community of Southeast Washington, D.C.

Another solution to recruiting more patients was to provide incentives. Incentives have proven to be successful in recruiting patients in the past. Providing small financial incentives for smoking abstinence has been shown to promote smoking cessation in homeless individuals.²³ Likewise, financial incentives increased university student participation in chlamydia screening.²⁴ During a health fair held at D.C. General Family Shelter, GEHI alerted the attendees that two \$25 gift cards to local grocery stores would be raffled during the next eye screening clinic. The incentive, in addition to health fair promotion, significantly increased the number of attendees from five to twenty-five.

As a student organization of Georgetown Medical School, GEHI receives an annual budget to cover the cost of supplies needed to maintain the clinic and is also used to provide incentives. The budget, however, is not enough to compensate the cost of expensive ophthalmic procedures. Since referral services were previously compensated by the student-run primary and urgent care clinic, which has more funding through grants and private donors, GEHI uses this referral fund to sponsor necessary ophthalmic procedures.

Future GEHI directions include clinical research surveys to assess the shelter inhabitants' knowledge about eye health both before and after their visit. These surveys will evaluate the effectiveness

of educational brochures and presentations created and given by the medical students.

By addressing these areas for improvement, GEHI hopes to have longevity as a staple of Georgetown University's philosophy of caring for the whole person. GEHI will continue to strive to offer eye health screenings and education to those at risk with limited access. Simultaneously, GEHI will focus on its mission to educate future and current physicians who are dedicated to the care of others and the health needs of our society.

Disclosures

The authors have no conflicts of interest to disclose.

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