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Original Study

Student-Run Free Clinic as a Source of Meaningful Ophthalmologic Care for Underserved Patients

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Abstract

Background: There are many student-run free clinics in existence, however few of them offer medical specialty care. Even fewer of these clinics offer eye care. Previous studies have demonstrated that ophthalmologic services are particularly difficult to access for patients who are un- or underinsured. The aim of this study was to assess community need for specialty care in an underserved neighborhood, and following implementation of these services, to evaluate the impact on our patients.
Methods: Patients at a free clinic in Minneapolis were surveyed to assess demand for specialty care. After community needs were assessed, the clinic partnered with the University of Minnesota Department of Ophthalmology to establish a bimonthly ophthalmology night. Patients were then surveyed at each specialty night to determine health insurance status, reason for visiting the clinic, and satisfaction with various aspects of their clinic experience.
Results: The most requested specialty was ophthalmology (34%). Following implementation, over the course of 5 clinic nights, 50 patients were seen. Of the patients surveyed, 59% did not have health insurance and 89% were satisfied or very satisfied with the clinic.
Conclusions: Having adequate eye care is important for multiple aspects of patient health and well-being. Our study contributes further evidence that students in free clinics can offer important visual services to patients who would not otherwise have this access.

Introduction

While many student-run free clinics exist in affiliation with health professions schools, the majority of them offer patient services that would be available in most outpatient clinics.[1] Few of them offer specialty services, such as dental care, legal service, or complementary therapy.[1] Even fewer of them offer ophthalmology services. A survey of student-run free clinics done in 2007 showed that only 24% (14) offered glaucoma screening and 21% (12) offered eye exams or glasses.[2]

Having free clinics that offer these services is particularly important given the prevalence of visual impairment and eye disease. Based on the National Health and Nutrition Examination Survey 1999-2002 it was estimated that 6.4% of Americans have visual impairment.[3] Of those with visual impairment, 83.3% of cases are due to uncorrected refractive error.[3] In individuals with visual impairment not due to refractive error, age-related macular degeneration, open-angle glaucoma, and diabetic retinopathy are the most commonly identified causes.[4] Predictions of the future prevalence of eye disease in the U.S. suggest that visual impairment will become an increasingly greater problem as the population ages.[5]

Unfortunately, ophthalmologic care can be difficult to access, especially for patients who are un- or underinsured. The Center for Disease Control and Prevention estimates that only 4% of individuals without health insurance have access to some form of vision coverage.[6] According to the Behavioral Risk Factor Surveillance System, which is a survey of U.S. residents about health-risk behaviors, conditions and use of preventative services, the number one reason people do not seek eye care is "cost or insurance."[7] Coverage is

highest for Americans with private health insurance, 58%, followed by 44% of Americans with public health insurance.[6] Under the Affordable Care Act (ACA), all qualified health plans must include pediatric vision coverage.[8] However, the ACA does not require plans to include adult vision services.[8] Medicare will provide screening exams for patients with diabetes or those at risk for glaucoma, but not for exams to get corrective lenses.[9]

Following cost and insurance coverage, the most common reason patients reported for not attending eye exams was "no reason to go."[7] This perception that eye care is unnecessary demonstrates lack of understanding of the need for preventative eye care. Numerous studies have shown the detrimental effect of delayed or unavailable eye care, especially on those of lower educational background or socioeconomic status.[7,10,11] Progressive visual impairment or uncorrected refractive error has also been associated with worse health status, social isolation, increased risk of falling, and death.[10]

In addition to those individuals already diagnosed with visual impairment, there are an estimated 61 million adults in the United States who are at high risk for vision loss, with high risk being defined as patients with self-reported diabetes, vision, or eye problems, and those age 65 and older.[7] Only half of these high risk individuals reported being seen by an ophthalmologist in the last year. In comparison, approximately one third of adults who were not classified as high risk had been seen by an ophthalmologist in the last year.[7] This demonstrates that individuals at high risk for visual impairment are more likely to seek eye care. However, given the large portion of this population who have not been seen by an ophthalmologist, there are clearly barriers preventing them from pursuing eye screening exams despite risk factors.

A significant body of research is emerging looking at factors that encourage and enable the underserved to seek eye care. One study revealed three tenets to accomplish this goal: continuity and availability of care, eye care coverage, and a physician's advice after the eye examination.[11] Previous studies have demonstrated that student-run free clinics are able to employ these ideas in order to provide ophthalmologic care to underserved patients.[12,13] This study demonstrates how our student-run free clinic assessed the need for specialty services in an underserved neighborhood and, after determining that ophthalmologic care was the highest need, how we implemented and evaluated the impact of this service for our patients.

Methods

Setting

The Phillips Neighborhood Clinic (PNC) is a student-run free clinic that provides healthcare to residents of one of the most impoverished neighborhoods in Minneapolis, Minnesota. The clinic is open two days per week and operates on a walk-in basis in the educational building of a church. The PNC provides numerous health and community resources, in addition to dedicated specialty clinic nights. Patient care is provided by teams of students from the University of Minnesota, with supervision by volunteer preceptors. Funding for the clinic comes from monetary donations, fundraising, and grants.

Assessment of Community Need

Prior to this project, the two types of specialty care provided by the PNC were dermatology and foot care. These two areas were chosen based on perceived patient needs without formal assessment of patient demand. A seven-question survey was written (Appendix 1) to assess usage of current specialty nights, as well as determine which areas of care participants would like to see added at the PNC. Options for specialty care were provided based on the capabilities and resources of our clinic.

The surveys were written in Spanish and English and administered either verbally or in writing depending on the patient's literacy. Patients were offered no incentives to participate. Between May 2014 and September 2014, 100 patients were surveyed and results were recorded and analyzed with Microsoft Excel.

Specialty Night Implementation

A plan for implementing the ophthalmology specialty night was drawn up by the authors and presented to the PNC board for approval. The clinic was then advertised by word of mouth to current PNC patients and in the community through outreach and flyers. Methods of advertising were chosen based on feasibility and cost effectiveness.

Residents and faculty from the University of Minnesota Department of Ophthalmology were recruited to oversee patient visits and conduct the more intricate portions of the examination. Equipment for comprehensive eye examinations

including numbing and dilating eye drops, an ocular tonometer, ophthalmoscope, portable slit lamp, and an autorefractor were purchased by the Department of Ophthalmology. A volunteer optician was present at clinic nights to fit patients with glasses. The glasses were then made free of charge through donations from a local optical shop. When an optician was not available, medical students would help patients to enter their information and order glasses online through a non-profit organization that collects and redistributes donated glasses at no cost to patients. Individuals who needed surgical or medical care beyond the capabilities of the PNC were referred to the local county hospital.

Workflow

Clinic was set up in a large hall with tables arranged in a "U" shaped pattern. Patients initially checked into the primary clinic and were then directed to the eye clinic. Patient care was documented on a clinic visit sheet (Appendix 2) including risk factors, pertinent medical history, and results of the complete ophthalmologic examination. Medical students gathered patient history and assessed visual acuity, fields of vision, extraocular movements, and intraocular pressures. Indirect ophthalmoscopy, slit lamp examination, and autorefractor examination were later conducted by ophthalmology residents and fellows. At the end of each visit, patients received their diagnosis, treatment plan, and a prescription for glasses if necessary. A selection of frames was available from the optician and glasses were later delivered to the clinic for the patients to pick up.

After completing their ophthalmology visit, all patients were asked to complete a questionnaire to assess their satisfaction with various aspects of the clinic. The survey included questions to determine health insurance status, reason for visiting the clinic, and satisfaction with the clinic experience, as well as a section for additional comments and suggestions. These were administered by medical students through verbal or written means, in English or Spanish (Appendix 3). Feedback was recorded and used for future quality improvement.

Results

Needs Assessment

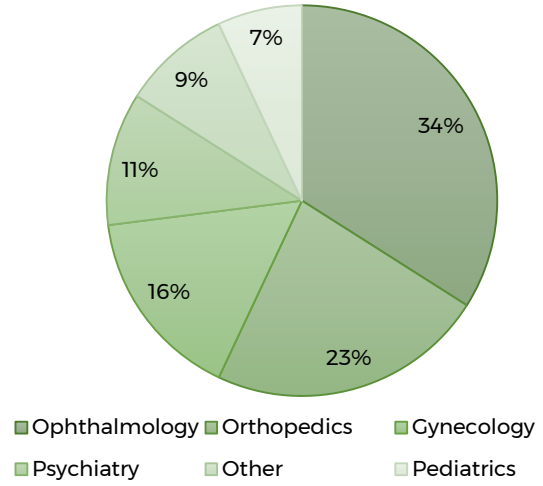
Between May 2014 and September 2014, 100 PNC patients were surveyed to determine specialty night usage, desire for a new specialty night, and what additional care they would like to receive (Appendix 1). Of the 100 patients surveyed, 8/100 (8%), had previously attended a specialty night, but 84/100 (84%) desired additional specialty care. Patients had the option to list more than one specialty of interest. There were 149 specialty responses total. We found that 50/149 respondents (34%) were interested in ophthalmology. This was followed by orthopedics (23%), gynecology (16%), psychiatry (11%), other (9%), and pediatrics (7%) (Figure 1).

Of the surveys administered, 65/100 were in English and 25/100 were in Spanish. The remaining 10 surveys were completed by the patients in English with the assistance of a translator who spoke their preferred language (e.g., Arabic or Somali).

Ophthalmology Night Data

There were five ophthalmology specialty nights between April 2015 and January 2016, during which a total of 50 patients were seen over the course of 52 visits. The average age of patients seen was 51 years old. Two percent (1/50) of patients were under 21, 10% (5/50) were age 21-30, 12% (6/50) were 31-40, 18% (9/50) were 41-50, 36% (18/50) were 51-64, and 22% (11/50) were greater

Figure 1. Needs Assessment Survey



One hundred patients were surveyed on the specialty night in which they would be most interested. Patients could select more than one option or write in their own response. One hundred and forty-nine responses were recorded, of those 34% (50/149) chose ophthalmology, 23% (34/149) orthopedics, 16% (24/149) gynecology, 11% (17/149) psychiatry, 9% (14/149) other, and 7% (10/149) pediatrics.

than or equal to 65 years of age. Gender distribution was 66% (33/50) female and 34% (17/50) male. Blurry or poor vision was the most common chief complaint, with 42% of visits (21/50). In our patient population, diabetes was the most reported risk factor for eye disease, with 28% (14/50) of patients stating a history of the condition, followed by hypertension (9%). Six percent of patients had a family history of glaucoma (4%) or age-related macular degeneration (2%).

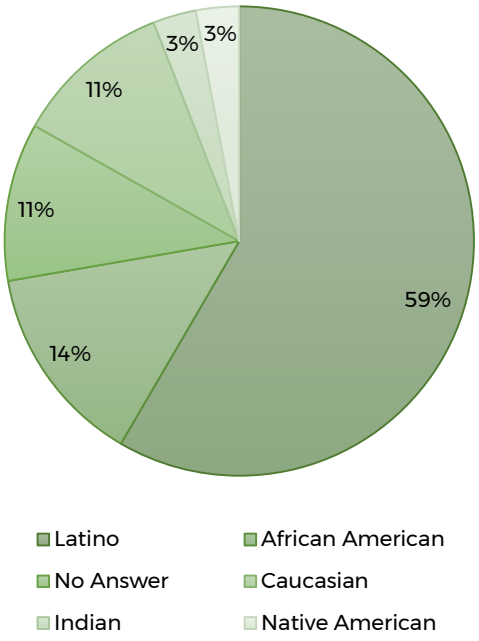
The most common slit lamp exam finding was nuclear sclerotic cataracts, seen in 58% of patients (29/50). Most dilated fundus exams revealed normal fundi. Notably, three patients were diagnosed with retinal hemorrhages in the setting of diabetic retinopathy, with one patient referred to the county hospital for a glaucoma evaluation. Another patient had a significant vitreous hemorrhage with cataract, for which she had a vitrectomy and cataract surgery, provided free of charge at a local ophthalmology clinic. Funds were provided by a charitable cataract surgery program. Fifty percent (25/50) of patients were provided free custom-made eyeglasses.

Over the survey period, 37 patients filled out a satisfaction questionnaire, 20 in English and 17 in Spanish. According to the American Community Survey of the Midtown Phillips Neighborhood,[14] the Phillips Neighborhood is comprised of 20% white and 80% population of color. The ethnicity of patients seen at the PNC ophthalmology specialty night reflected this with 59% (22/37) patients identifying as Hispanic or Latino and 14% (5/37) identifying as African American. Caucasians comprised 11% (4/37) with Native American and Indians representing 3% (1/37) each. Eleven percent (4/37) declined to state their race (Figure 2).

Of the patients surveyed, 59% (22/37) did not have insurance, 32% had insurance (12/37), and 8% (3/37) declined to state. Approximately 75% of patients heard about our clinic through their community via friends (32%, 12/37), family (19%, 7/37), or the church congregation (24%, 9/37). Nineteen percent heard about the clinic through PNC volunteers (11%, 4/37) or flyers (8%, 3/37). Two patients were referred from a local federally qualified health center, and one through county resources.

When it came to patient satisfaction with the wait time, volunteer interactions, staff education of their diagnoses and the treatment options available, more than 89% of all patients reported being somewhat satisfied or very satisfied with each element of the clinic experience. Wait time was the most unsatisfactory aspect of the clinic, with 11% reporting a satisfaction level between 1 and 3 (Figure 3). Ultimately, 95% (35/37) of patients would recommend the PNC ophthalmology night to their friends. Feedback about the clinic experience was overwhelmingly positive with such comments as “They are from another world. They are Great.” and “very fast and efficient.” A few suggestions were made, including “Make letters bigger of this survey.” and “had to wait too long.”

Figure 2. Patient Demographics

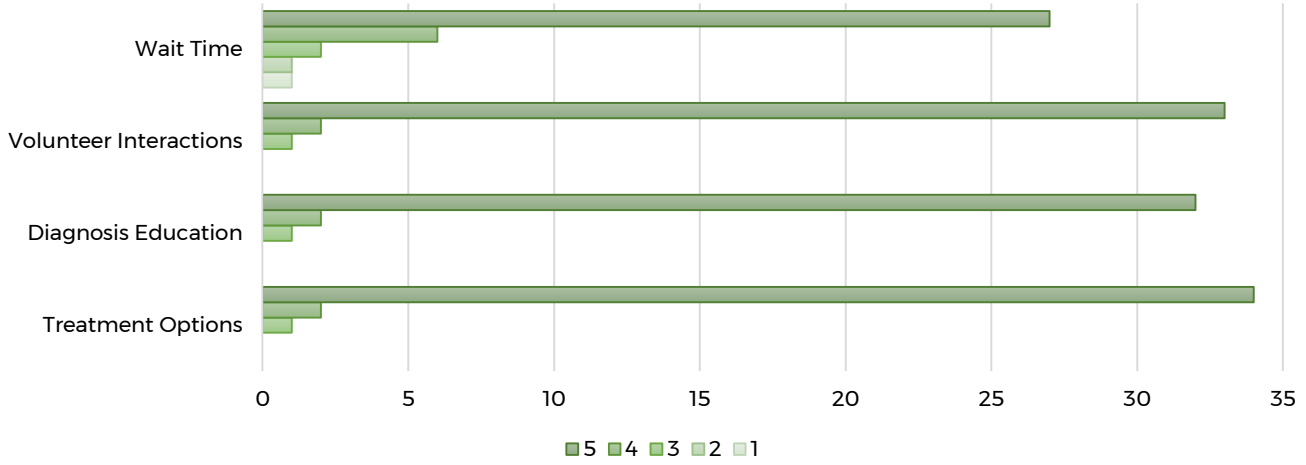


Patients who attended ophthalmology nights were surveyed on demographics. Thirty-seven patients responded to the survey. Of those, 59% (22/37) were Latino, 14% (5/37) African American, 11% (4/37) chose not to answer this survey question, 11% (4/37) Caucasian, 3% (1/37) Indian, and 3% (1/37) Native American.

Conclusions

There is a large demand for medical specialty care for patients that are un- or underinsured. After performing a community needs assessment, we found that ophthalmology was the specialty that our patients were most interested in seeing added to the PNC. While there are many student-run free clinics across the country, there are relatively few that offer comprehensive eye examinations and eyeglasses.[2] Being able to

Figure 3. Patient Satisfaction



Patients were surveyed on satisfaction with clinic wait times, interactions with volunteers, education on any diagnoses received, and treatment options. Satisfaction was graded on a scale of 1-5, with 1 being not satisfied, 2 being somewhat unsatisfied, 3 being neither satisfied nor unsatisfied, 4 being somewhat satisfied, and 5 being very satisfied.

provide eye care to patients in a free clinic setting is particularly important, given the barriers that the population typically served by our clinic faces with regards to proper ophthalmologic care.

The majority of the patients (73%) seen at ophthalmology nights identified as Hispanic or African American. Previous studies have found that age specific prevalence of visual impairment is significantly increased in Hispanics and non-Hispanic blacks compared to non-Hispanic whites. In addition to being at increased risk for visual impairment, these patients are less likely to receive timely preventative eye care, leading to untreatable complications.[11,15] The Behavioral Risk Factor Surveillance System demonstrated that cost and lack of insurance are some of the top reasons that patients delay or elect not to have an eye exam.[7] Similarly, the majority of patients (59%) seen in our eye clinic did not have health insurance. While a lack of insurance is not a criterion for utilizing PNC services, this was a lower percentage than in the population typically seen at the PNC, which is 70%. The higher percentage of insured patients attending clinic could reflect a lack of coverage for eye care services even among patients who are insured. In addition to lack of insurance coverage for eye examinations, patients who are un- or underinsured are also significantly less likely to be able to afford eyeglasses.[7] Given that uncorrected refractive error has been found to be the leading cause of visual impairment,[3] being able to provide patients with free prescription lenses is an important step towards addressing causes of visual impairment in the community served by our clinic.

As this was the first time that a specialty night had been added at the PNC due to patient demand, we were especially interested in the results of our satisfaction survey. Given that 89% of our patients were satisfied or very satisfied with all aspects of their eye care, we believe we have demonstrated that a student-run free clinic can provide meaningful ophthalmologic care to patients. In particular, patients were highly satisfied with their treatment options and the education they received about their diagnoses. This is significant, as education at the end of visits has been shown to motivate patients to attend eye examinations in the future.[11]

Our study was limited by the small number patients included and the short duration of the survey period. Additionally, since this study took place in one clinic, the generalizability of the findings may be limited. This study can inform future research in other settings especially in other student-run free clinics. Future projects include refinement of clinic organization and patient services, as well as assessing volunteer engagement and education.

In conclusion, having access to adequate eye care is important for multiple aspects of patient well-being, as visual impairment predisposes patients to higher medical expense and further limits their access to healthcare.[15] Our study

contributes further evidence that student-run free clinics are a viable source of ophthalmologic services for underserved patients.[12,13]

Disclosures

The authors have no conflicts of interest to disclose.

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Appendix 1. Specialty Night Survey Questions

Specialty Night Survey Questions

1. Are you aware of dermatology night?

2. Are you aware of foot care night?

3. Have you attended specialty care nights in the past?

4. Are you interested in additional specialty nights at the PNC?

5. What specialty would you be interested in?
   - ▫ Gynecology
   - ▫ Ophthalmology
   - ▫ Pediatrics
   - ▫ Orthopedics
   - ▫ Psychiatry
   - ▫ Other _____

6. What specialty do you think would be most helpful?
   - ▫ Gynecology
   - ▫ Ophthalmology
   - ▫ Pediatrics
   - ▫ Orthopedics
   - ▫ Psychiatry
   - ▫ Other _____

7. What is the best way to remind you of upcoming specialty nights?
   - ▫ Flyers in the community
   - ▫ Flyers at the PNC
   - ▫ Word of mouth at the PNC
   - ▫ PNC website
   - ▫ Phone call reminder
   - ▫ Email reminder
   - ▫ Text message reminder
   - ▫ Other _____

Appendix 2. Phillips Neighborhood Clinic Eye Exam

Phillips Neighborhood Clinic Eye Exam

CC:
PMH:

DM Y/N HTN Y/N THYROID Y/N

MEDS: See EPIC
EYE Meds:

FHx: Glaucoma Y/N ARMD Y/N Other:
SHx: Tobacco: ppd EtOH:

EXAMINATION

VA cc/sc OD 20/ OS 20/ PH OD 20/ OS 20/

PUPILS APD MOTILITY OD OS DEVIATION

IOP (tonopen @ pm) OD OS

Dilated with 2.5 Neo and 1% Myd @ pm

Slit-lamp exam	Right Eye	Left Eye
Lids/Lashes		
Conjunctiva/Sclera		
Cornea		
A/C		
Iris		
Lens		
Ant. Vitreous		

CYCLOPLEGIC AUTOREFRACTION:
OD
OS

Dilated Fundus Exam	Right Eye	Left Eye
Cup to Disc Ratio		
Optic Disc		
Macula		
Vessels		
Periphery		

Assessment:

Plan:

Rx = OD
OS

_____
Attending Physician

Appendix 3. Eye Clinic Satisfaction Survey

Please tell us what you thought about the newly added Eye Clinic at the Phillips Neighborhood Clinic (PNC).

Race/Ethnicity:

African American Caucasian Hispanic/Latino Asian Other_____

Do you currently have Health Insurance? YES NO

1. What was your main reason for showing up to the Eye Clinic today? _____
2. Where did you hear about us?

   Friend Family Congregation PNC Flyer PNC Volunteer

   Other_____
3. How satisfied were you with the wait time at the PNC Eye Clinic?

Not Satisfied	1	2	3	4	5	Very Satisfied

4. How satisfied were you with the volunteer interactions while at the PNC Eye Clinic?

Not Satisfied	1	2	3	4	5	Very Satisfied

5. If you had any new diagnoses for your eyes, how well do you feel the PNC staff educated you on your condition?

Not Satisfied	1	2	3	4	5	Very Satisfied

6. How satisfied were you with treatment options at the PNC Eye Clinic?

Not Satisfied	1	2	3	4	5	Very Satisfied

7. Would you recommend the PNC Eye Clinic to your friends and family?

   YES NO

8. Would you like to share any comments or suggestions about how the clinic was run today?

   _____

   _____

   _____

Thank you for visiting the PNC Eye Clinic Night!