THE FREE CLINIC RESEARCH COLLECTIVE

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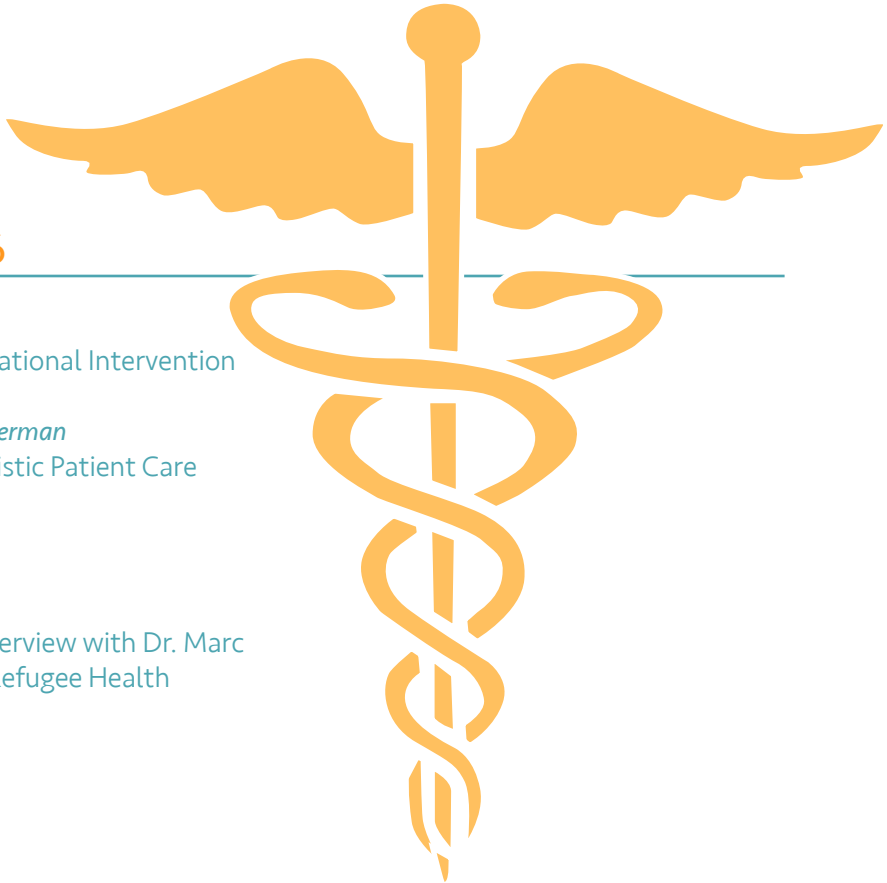

Letter from the Editors:

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Jessica Churchill

Naveed A. Rahman

It is with great excitement that we present the second issue of The Free Clinic Research Collective, a peer-reviewed open access journal of The Medical Student Press (The MSPress). Our dedicated team has worked to prepare this exciting issue for the past year, and we could not be more proud of the result.

As a whole, the FCRC strives to increase awareness of the work of free clinics across the country by promoting student publishing and supporting the dissemination of free clinic research. While free clinics have gained considerable traction in the healthcare community in the past decade, there has been a distinctive lack of published literature detailing the work done in these clinics. The FCRC is dedicated to closing this gap by presenting the successes, experiences and tribulations of student-run free clinics.

The FCRC is a young journal, but in the past two years we have grown considerably. This issue includes four brief communications, three research pieces, one refection essay and one viewpoint interview. These articles represent work from six different institutions. We hope these varied pieces will highlight the various experiences available at student-run free clinics and emphasize the important work being done by medical students all over the country. These articles are striking in their representation of the diverse world of student-run free clinics, but also uniting in their common themes of inclusion, compassion and understanding.

The FCRC would not be possible without the tireless efforts of many individuals. Each article in this issue underwent a rigorous peer-review process and thorough editing by editorial staff and authors. We would like to sincerely thank all of the peer editors, section editors and the entire MSPress team for their hard work and unflagging enthusiasm for the FCRC's message. Above all, we would like to thank Mica Esquenazi, MSPress Editor-in-Chief, and Pooja Karukonda, MSPress Executive Editor, for their guidance, support and direction. Without the unified efforts of the entire team, publication of this issue would not have been possible.

As the FCRC continues to grow, we are excited to see the expansion of free clinic publication. We strongly believe that student-run free clinics are not only integral to the healthcare system within the U.S., but essential to the growth of the nation's future healthcare leaders. We have thoroughly enjoyed working on this issue over the past year, and we thank you for your interest in the FCRC. We look forward to what this next year has to offer in the world of student-run free clinics, and we encourage you to share with us your experiences at your own clinic in future issues of the FCRC.

Cheers,

Jessica Churchill & Naveed A. Rahman

Feasibility of a Brief, Medical-Student Led Educational Intervention for Early Literacy in Homeless Children

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Abstract

Introduction: Promoting early literacy is one of the most important ways for caregivers to set their children up for success later in life. Homeless youth are at a marked increase risk for decreased literacy compared to their peers. The goal of this project is to assess the feasibility of a medical-student based educational intervention to increase early literacy awareness among homeless mothers of young children.

Methods: Two medical students were trained to give a brief, educational intervention to mothers in a homeless shelter at the same time as a student-run health clinic was conducted. Before and after the intervention, mothers were asked to complete a short survey on the importance of literacy to their child and their intention to read to their child. The children of these mothers were allowed to select a book to keep after the intervention.

Results: Sixty-six mothers completed the pre and post surveys. Most of the mothers were unemployed and had been homeless less than 6 months. Mothers identified not having enough time, a quiet place, or enough money as the most common barriers to reading to their children. Before the intervention, 65% indicated reading to their child less than 1 hour per week. After the intervention, 85% indicated an intention to read more than one hour per week to their child.

Conclusion: Our study demonstrated that a brief, medical-student based educational intervention is feasible and can improve intention to read among certain homeless mothers. Much more research is needed to confirm the efficacy of this intervention in this population.

Introduction

Reading to young children is one of the most important ways for parents and caregivers to set a child on the path for success. There is a 30 million word exposure difference by the age of four between children from middle class and underprivileged homes.[1-3] This word gap leads to a decrease in third grade literacy, which is the strongest predictor we have for life success, including high school dropout rates, college graduation rates, and employment selection.[3] Furthermore, there is evidence of a positive link between parents' literacy practices and children's later language and literacy skills.[4,5]

There are approximately 2 million homeless children in the US and over 30,000 in the state of Pennsylvania.[6,7] Less than ¼ of the children eligible for School Lunch Program in Pennsylvania meet their fourth grade reading goals as assessed by the

National Assessment of Educational Progress.[6] Many young children in this unfortunate circumstance already begin their life with an unstable home life and with many barriers to access the support systems that are available to the general population. Healthcare providers could make significant strides against this disparity by an early literacy education intervention and outreach program at the local homeless shelters. There is a substantial body of literature to support early interventions promoting parents reading to children[8-10] and future literacy.[11-13]

The American Academy of Pediatrics has developed age-specific resources[14] for parental education regarding early literacy; however, whether these tools are effective outside of the primary care office setting has not yet been studied. Research has demonstrated that other community-based interventions for literacy are feasible and beneficial.[15-17] The goal of this study is to preliminarily study the feasibility and effectiveness of a brief medical-student based educational intervention with these resources in a homeless population and to determine if it improves parents' intention to read to children.

Methods

The study took place between August 1, 2015 and June 1, 2016 during weekly sessions of a student-run health clinic in a women and children's acute homeless shelter in Philadelphia, PA. The clinic took place on the same day and at the same time (6-9PM) every week and occasionally did not occur due to holidays or inclement weather. A convenience sample of mothers present at the shelter during these weekly clinics participated in the intervention. Our goal was to seek out mothers with children less than five years old; however, providing reading resources to children remained the priority of the intervention. Therefore, no child or mother who requested information or a book was turned away.

Two medical students who attended clinic were trained on the intervention (KP, JD) by the primary investigator (AH) for two one-hour sessions. The purpose of the intervention was to be a brief (approximately five minute) discussion with mothers about the importance of early literacy in children using AAP-developed resources. In addition, each child was given one of a selection of books to keep. If the child was present the following week, they were encouraged to trade in one of their books for another one. As part of the clinic services, childcare was provided while the clinic staff was present.

The survey was developed by the study authors (Supplements 1 and 2). The survey was reviewed by the senior author (TB) for face validity. The 19 question pre-intervention and four question post-intervention survey was preliminarily tested with a pilot sample of 10 mothers from the shelter and modified based on the results. Nearly all of these changes at this stage were for grammar and formatting to make the survey more easily understandable by the mothers.

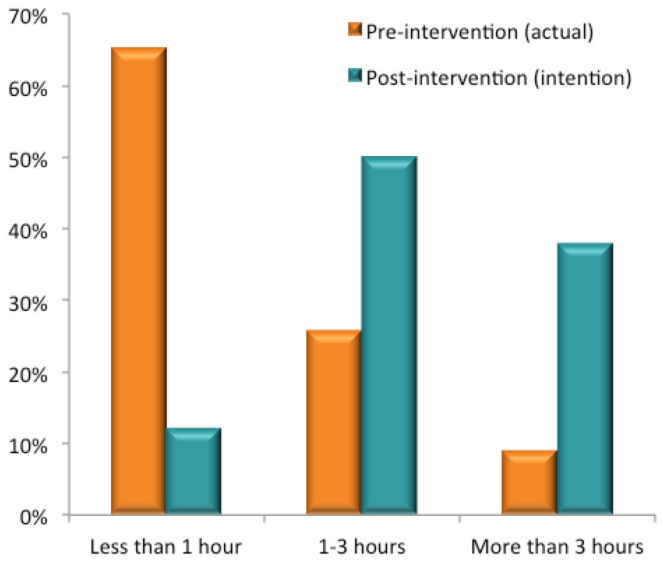
The pre-survey was administered to the mothers by one of the medical students prior to initiating the educational intervention. The mothers had the option of having the questions verbally administered or self-reporting on a paper version. After the intervention, the post-intervention survey was administered in the same manner as the pre-intervention survey. At the suggestion of the grant reviewers, we added in questions about access to healthcare. Mothers indicating they did not have a library card were given information on how to obtain one at the nearest local library. We provided information about insurance coverage and local pediatricians to those mothers indicating that their child did not have them. Opportunities for literacy and wellness promotion were provided.

Descriptive statistics were calculated with Microsoft Excel 2010 (Seattle, WA). This study was granted exemption from IRB review by Thomas Jefferson University, as no identifiable information was collected. Portions of this study were funded by a Community Access to Child Health (CATCH) grant from the AAP.

Results

A total of 66 mothers completed the survey. This was a convenience sample, so the total number of mothers eligible is unknown. Most of the mothers (64%, 42/66) were between 22-30 years old. Eight parents indicated that they did not have a child under the age of five years old. Most mothers (47%, 31/66) were high school educated, with 24% (16/66) indicating less than high school education and 29% (18/66) having at least one year more than high school education. Most (77%, 51/66) were currently unemployed and most (85%, 56/66) had been homeless less than six months.

At baseline, 65% (43/66) of mothers read to their child 1 hour or less per week (Figure 1). Most mothers (70%, 46/66) had been to the library with their child at least once in the past year, but few (27%, 18/66) had been more than five times. The most common barriers (Figure 2) to reading with children were not enough time (74%, 49/66), not having a quiet place (73%, 48/66), and not having money for books (65%, 43/66). Maternal literacy was an issue in 29% (19/66) of the respondents. Most mothers (82%, 54/66) indicated that reading and sharing books was "very important" or "the most important thing in my child's life".



At the post-intervention survey, most mothers (88%, 56/66) indicated an intention to read to their child more than one hour per week (Figure 1). Of respondents, 74% (49/66) indicated an intention to go to the library with their child more than five times in the upcoming year. Slightly more mothers (91%, 60/66) rated reading and sharing books as "very important" or "the most important thing in my child's life". All but one mother (98%) planned to have a routine for sharing books with their children in the future.

Discussion

Our medical student-based intervention shows promise as a way for student run health clinics to combat barriers to literacy in a homeless population. The AAP resources provide a foundation for a discussion with mothers in this setting on the importance of early literacy.

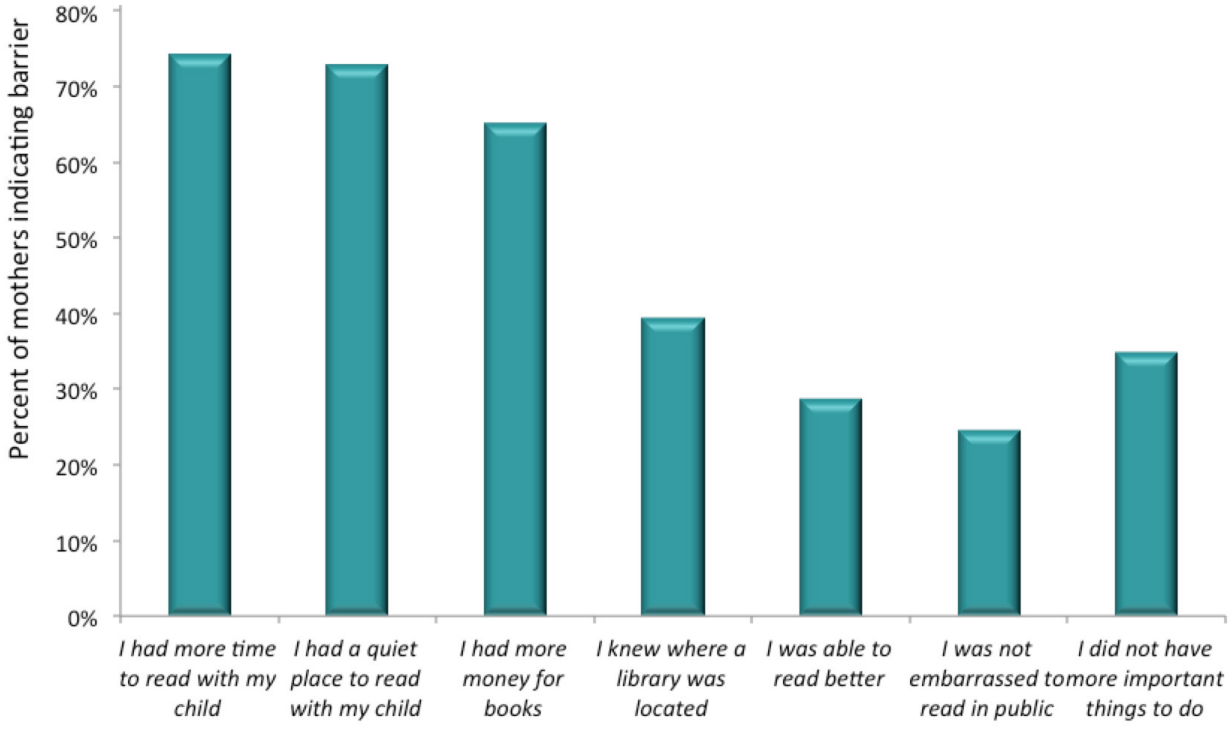
Most mothers indicated reading to their children as high importance, even before the intervention. However, the amount of time spent reading to their children and visits to the library indicate that there are barriers to making the intention to read into a reality. Our intervention improved the intention of time to read to their child and provided both books and an opportunity to read to their child. Through conversations during our intervention, we learned that mothers often struggled to engage their children in reading due to their children's young age or disinterest. Our intervention provided mothers with specific, age-appropriate techniques to engage their children in reading. We modeled these techniques often by either reading with the children in their rooms after they selected their book or by conducting reading activities with the children in the shelter's community rooms. Giving newly homeless mothers information about local libraries and how to get library cards will also hopefully make it easier for them to act on their intention to take their child to the library more often.

Because the clinic is located in an acute shelter (i.e., residents are often newly homeless and stay

less than 30 days before being transferred to more long term housing), the family's lengths of stay vary. However, we often encountered the same families for at least a few consecutive weeks. This allowed us to establish a lending library with the children of mothers who had previous participated in the intervention. By establishing this routine of exchanging books each week, we continued to support mothers' intention to read for weeks after our intervention and the enjoyment of a book exchange similar to a library.

Not having enough time, enough money, and not having a quiet place to read were common barriers identified by mothers to reading to children in this setting. Educating mothers on the importance of early literacy, providing children with access to age-appropriate books, and modeling book sharing and engagement with young children helps to combat these barriers. Also, having childcare at the time of a student-run clinic helps to allow mothers with multiple children time to read to their children and helps make the shelter a quieter environment, conducive to reading.

Our study demonstrates that this type of program is feasible. Several significant limitations exist, however, when interpreting the results for efficacy. The results of intention to read may not necessarily correlate into actual time spent reading or improved literacy. This also could have been affected by reporting bias or the fact that the mother had just received an educational intervention on literacy. Our study is open to selection bias, as the shelter is an acute homeless shelter, the shelter only accepts women, and the clinic only occurs once per week. We may have missed many potential mothers due to the episodic nature of our clinics, or to the fact that they were not in the shelter during the hours of the clinic. Also, mothers who already did not value early literacy may have chosen to not participate in the program. The acute nature of the shelter means many mothers were newly homeless, which means that they may have intentions of continuing reading practices they had previously conducted, which may not be as easy to complete in a homeless setting with more limited resources. While we plan on continuing the program, we do not have any data on sustainability beyond the one year scope of this project.



Future research on the interventions similar to this should use more concrete outcomes (actual hours reading or school performance, phone or in-person follow up), have a larger and more diverse sample size, collect more robust data to control for confounders, and consider using a randomized control design. Our study was not designed to do this, as it was an advocacy project with an evaluation component. We only sought to demonstrate preliminary feasibility. Other ideas include integrating technology into interventions (video or smart phone) to improve follow up and standardization and attempting this intervention at other community settings and institutions.

Conclusions

A medical student-based educational intervention at a student-run health clinic in a homeless shelter improved intention to read to children among homeless mothers. This preliminary study demonstrates that such a program is feasible. Much more research is needed to demonstrate its efficacy and sustainability.

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Appendix: Surveys

Initial Survey

You are being asked to complete this survey about reading to your child. This survey is voluntary, which means that you do not have to complete it or answer any questions that you do not want to. The survey should take about 5 minutes to complete. Please ask the research team member if you have any questions about the survey.

1) How old are you?
- ◯ 21 years old or younger
- ◯ 22-30
- ◯ 31-40
- ◯ 41-50
- ◯ 51 years or older

2) How many children under the age of 5 do you have?
- ◯ 0
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5 or more

3) What is your highest level of education?
- ◯ Less than 3rd grade
- ◯ 3-6 grade
- ◯ 7-11 grade
- ◯ 12th grade or GED
- ◯ 1 year after HS
- ◯ 2 years after HS
- ◯ 3+ years after HS

4) Do you currently have a job?
- ◯ Yes
- ◯ No

5) How long have you been homeless?
- ◯ Less than 1 month
- ◯ 1-5 months
- ◯ 6-12 months
- ◯ More than 1 year

6) Does your child currently have a pediatrician or primary care doctor?
- ◯ Yes
- ◯ No

7) Do you have health insurance for your child?
- ◯ Yes
- ◯ No

8) Has your child received all needed vaccines?
- ◯ Yes
- ◯ No

9) Have you ever received a book from your child's doctor?
- ◯ Yes
- ◯ No

10) How much time per week do you currently read with your child?
- ◯ Less than 30 minutes
- ◯ 30-60 minutes
- ◯ 1-3 hours
- ◯ More than 3 hours

11) In the past year, how many times have you visited a library with your child?
- ◯ None
- ◯ 1-5
- ◯ 6-10
- ◯ More than 10 times

I would be able to read to my child more if...

		Yes	No
12)	I had more time to read with my child	○	○
13)	I had a quiet place to read with my child	○	○
14)	I had more money for books	○	○
15)	I knew where a library was located	○	○
16)	I was able to read better	○	○
17)	I was not embarrassed to read in public	○	○
18)	I did not have more important things to do	○	○

19) Please rate the importance of reading and sharing books with your child BEFORE today.

- ○ Not important
- ○ Somewhat important
- ○ Important
- ○ Very important
- ○ The most important thing in my child's life
- ○ Unsure

Concluding Survey

For the following questions, please answer based on what you PLAN to do in the future.

1) How many hours per week, on average, do you plan to read with your child?
- ◯ Less than 1 hour
- ◯ 1-3 hours
- ◯ 3-5 hours
- ◯ More than 5 hours

2) In the next year, how many times do you plan to go to the library with your child?
- ◯ Never
- ◯ 1-5 times
- ◯ 6-10 times
- ◯ 11-20 times
- ◯ More than 30 times

3) Do you plan to have a routine for reading or sharing books with your child?
- ◯ Yes
- ◯ No

4) Please rate the importance of reading and sharing books with your child NOW.
- ◯ Not important
- ◯ Somewhat important
- ◯ Important
- ◯ Very Important
- ◯ Most important thing in my child's life
- ◯ Unsure

THE FREE CLINIC RESEARCH COLLECTIVE

Hypertensive Crisis: Moving Towards Holistic Patient Care

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Abstract

Introduction: Hypertension is well-known to be a "silent killer" and plays a significant role in the onset and progression of many diseases including heart failure, diabetes, cerebrovascular disease, and renal failure. Hypertensive crisis, in particular, is defined as a blood pressure greater than 180/120 and can lead to extensive end-organ damage[7]. In this study, our aim was to determine how extensive the issue of uncontrolled hypertension is for our patients being seen at specialty clinics.

Methods: A retrospective chart review was conducted on specialty clinic visits at HOPES between August 1, 2015 and July 31, 2016. All patients with (a) two or more instances of uncontrolled hypertension (as defined by the JNC8 guidelines[9]) or (b) hypertensive urgency were recorded. We then reviewed the charts of these patients to determine whether they were being followed at HOPES Primary Care clinic for their hypertension.

Results: Out of 153 patients seen at HOPES specialty clinics during the above time period, seven patients were found to have two or more instances of uncontrolled hypertension and 18 additional patients were found to have instances of hypertensive urgency. Of these 25 patients, six (24.0%) were not concurrently followed at Primary Care clinic.

Conclusion: The results of our chart review demonstrated that nearly one in four patients at HOPES with uncontrolled hypertension or an instance of hypertensive urgency were not concurrently being followed at HOPES Primary Care clinic for their hypertension. By assessing how extensive the issue of untreated uncontrolled hypertension is at our clinic, our staff can better allocate resources to our Primary Care clinic in order to schedule appointments for our hypertensive patients so that they may be cared for in a holistic manner.

Introduction

Hypertension is well-known to be a "silent killer" and plays a significant role in the onset and progression of many diseases, including heart failure,[1] diabetes,[2] cerebrovascular disease,[3] and renal failure.[4] According to the National Health and Nutrition Examination Survey[5] (NHANES), over one in four Americans has hypertension. Hypertensive crisis[6], in particular, is defined as a blood pressure greater than 180/120 and can lead to extensive organ damage,[7] including hypertensive encephalopathy, intracranial hemorrhage, and aortic dissection. Despite health care providers understanding the importance of

proper hypertension management and stressing its significance to patients, hypertensive individuals may still slip through the system, leaving them at risk for the aforementioned complications. According to NHANES data,[5] nearly half of persons with hypertension do not have their blood pressure under control (defined as less than 140/90). The CDC has reported that hypertension awareness and rates of management were the lowest among uninsured patients over the age of 18 years old who are at high risk of developing complications.[8]

Since its establishment in 2011, the Health Outreach Partnership of EVMS Students (HOPES) Free Clinic has served nearly 1,000 patients with the help of over 500 student volunteers and over 100 physicians. HOPES consists of several sub-clinics including Primary Care clinic and six subspecialty clinics (Dermatology, Orthopedics, Ophthalmology, Mental Health, Women's Health, and Ultrasound). Primary Care clinic is usually held one night a week while subspecialty clinics are held one or two nights per month and each clinic night serves 5-10 patients. HOPES is run by several student teams including the Monitoring, Evaluation, and Quality (MEQ) team. The MEQ team compiles a registry of patients with hypertension in order to track health correlations and trends with the goal of improving patient care.

At a HOPES specialty clinic night in August 2016, a 59 year old female patient was found to be in hypertensive crisis. Her blood pressure was recorded to be 206/100 and she was directed to a nearby emergency department for evaluation and treatment. Prior to this incident, patients could be seen directly at HOPES subspecialty clinics for specialized health concerns but subsequently, our clinic introduced a requirement by which patients needed to be thoroughly evaluated at a Primary Care clinic prior to being seen at a subspecialty clinic.

In this study, our aim was to determine how extensive the issue of uncontrolled hypertension is for our patients seen at subspecialty clinics. The goal of this investigation was to guide the appropriate allocation of clinic resources to our Primary Care clinic to ensure that all of our patients could be cared for as holistically as possible.

Methods

A retrospective chart review was conducted on subspecialty clinic visits at HOPES between August 1, 2015 and July 31, 2016. All patients with (a) two or more instances of uncontrolled hypertension (as defined by the JNC8 guidelines[9], i.e. ≥150/90 for age 60+ or ≥140/90 for age <60 or (b) hypertensive urgency[6] (≥180/110) were recorded. We then reviewed the charts of these patients to determine whether they were being followed at HOPES Primary Care clinic for their hypertension. Age, gender, and BMI were also recorded along with whether they had been diagnosed with diabetes. See Figure 1 for inclusion criteria.

Results

A total of 153 unique patients were seen at HOPES subspecialty clinics between August 1, 2015 and July 31, 2016. Of these 153 patients, seven (4.6%) were found to have two or more instances of uncontrolled hypertension and 18 additional patients (11.8%) were found to have instances of hypertensive urgency. These 25 patients were added to our study.

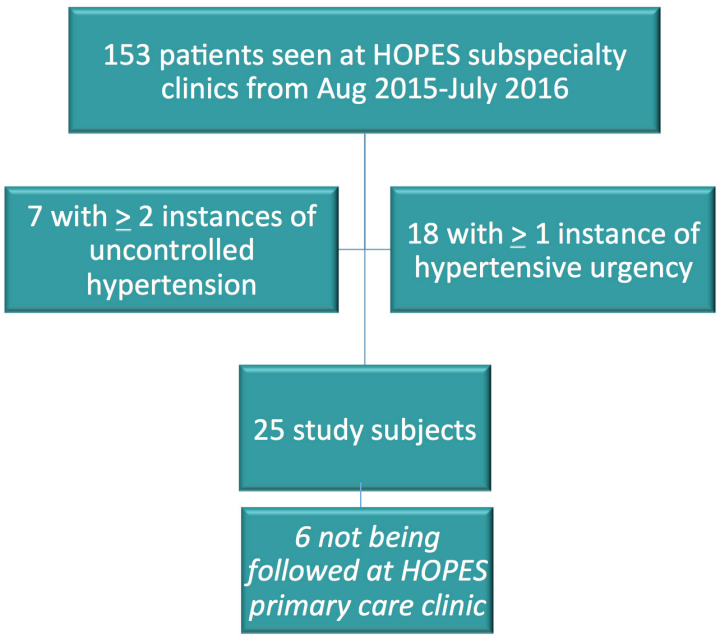

Figure 1: Study inclusion criteria

Out of these 25 patients, 22 were female (88.0%) and 3 were male (12.0%). Seven patients had been diagnosed with diabetes (28.0%). Five were morbidly obese (BMI ≥ 35, 20.0%), 10 were obese (30≤BMI<35, 40.0%), and 9 were overweight (25≤BMI<30, 36.0%); only one was of healthy weight (18.5≤ BMI<25, 4.0%). Their average BMI was 33.29 (SD = 6.66). Their average systolic blood pressure was 157.93 (SD = 22.64) and their average diastolic blood pressure was 97.09 (SD = 13.09). Most importantly, of these 25 patients, six (24.0%) were not concurrently followed at our Primary Care clinic for their hypertension.

Conclusions

Hypertension is a highly prevalent condition affecting over one in four Americans.[5] When left uncontrolled it can lead to complications such as heart failure, diabetes, cerebrovascular disease, and renal failure. Despite health care providers understanding the importance of proper hypertension management and stressing its importance to patients, there remain individuals that slip through the system, leaving their hypertension untreated.[5]

The results of our chart review demonstrated that nearly one in four patients at HOPES with uncontrolled hypertension or an instance of hypertensive urgency were not concurrently being followed at HOPES Primary Care clinic for their hypertension. Some possible reasons include a shortage in the number of available Primary Care clinic appointment slots, clinic cancellations, patients missing appointments, and carelessness in scheduling follow-up appointments.

Due to time and space constraints, the HOPES clinic has the capacity to schedule appointments for only nine to 12 patients per Primary Care clinic night, and there is a total of four to five such nights per month. Despite this, at the time of this analysis, there exists over a four month wait period to be seen at our Primary Care clinic.

Further contributing to this shortage of appointment slots are clinic cancellations; a total of six Primary Care clinic nights were cancelled at our clinic between August 2015 and July 2016, with the most common reasons including the lack of an attending physician (3 out of 6 cancellations) and a shortage of student volunteers (2 out of 6 cancellations). Lastly, the patient no-show rate is also an extensive problem at our clinic. From August 2015 to July 2016, the patient no-show rate for our Primary Care clinic was 36.0%.

By assessing how extensive the issue of untreated uncontrolled hypertension is at our clinic, our staff can better allocate resources to our Primary Care clinic, so as to better schedule appointments for our hypertensive patients so that they may receive holistic care. Steps can be taken to increase the number of patients that can be seen in Primary Care clinic. Clinic cancellations can be prevented through better recruitment of attending physicians and student volunteers. Patient no-shows can be reduced through strong enforcement of our no-show policy and improving appointment reminder calls. Scheduling regular Primary Care appointments to help our patients manage their chronic diseases such as hypertension is of utmost importance.

Limitations to this investigation include the retrospective nature of the analysis performed along with the possibility of inadequate electronic medical record documentation. During the chart review process, it was noted that vital signs were not recorded for multiple specialty clinic appointments, especially for Mental Health clinic nights. It remains unclear as to whether this was simply a clerical error or whether the vitals were not taken at all. Either way, this is against our clinic policy and subsequent steps will be taken to enforce it. Previous studies have shown populations with inadequate insurance are at the highest risk for

having their hypertension remaining untreated[10]. With this in mind, HOPES should remain diligent in its efforts to adequately screen its patient population for hypertension and treat them accordingly.

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The Impact of Student-Run Free Clinics

An Interview with Dr. Marc Altshuler

Director of the Jefferson Center for Refugee Health

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Marc Altshuler, M.D. is an Associate Professor of Family and Community Medicine at Jefferson Medical College. He also serves as an Attending Physician and the Associate Resident Director for the Department of Family and Community Medicine at Thomas Jefferson University Hospital. A lifelong advocate of the underserved, Dr. Altshuler's volunteer work began in the late 1990's with his involvement in Jeff HOPE, Jefferson Medical College's free student-run clinic serving the homeless community of Philadelphia.

Throughout the years, Dr. Altshuler's passion for aiding the medically underserved has expanded far beyond the homeless population in Philadelphia. In 2007, Dr. Altshuler started and is now serving as the Director of the Jefferson Center for Refugee Health (CRH), the largest medical provider of refugee healthcare in Philadelphia. At CRH, refugee clients receive comprehensive care in a medical home model. This model has been recognized both locally and nationally and replicated throughout Philadelphia as well as several other U.S. cities.

In 2010, Dr. Altshuler worked closely with the Nationalities Service Center, a local refugee resettlement center, to form the Philadelphia Refugee Health Collaborative—a coalition of local refugee resettlement agencies and eight area medical clinics, focusing on comprehensive refugee health care. Throughout his career, Dr. Altshuler has been recognized for his work, both locally and nationally. Dedicated to engaging others in his work, he has routinely presented at national conferences, as well as published articles in several peer-reviewed medical journals.

In this interview, Dr. Altshuler shares his unique perspective on student-run free clinics. He discusses the positive impact that Refugee Health Partners has made the refugee population in Philadelphia, and outlines the importance of student involvement in free clinics during preclinical years. He ruminates on how the role of student-run clinics will change, and explains how students can adapt these clinics in order to continue to provide care for patients.

Q: What is some of your work with student-run free clinics and the refugee population here in Philadelphia?
As a Jefferson medical student, I was very active in JeffHOPE, the medical student-run clinic that works at several homeless shelters throughout the city. During my fourth year, I was one of the overall program directors for JeffHOPE. I also served as the finance director, and I started one of the shelters called the Eliza Shirley Shelter. I have remained a preceptor for JeffHOPE since graduating residency. I will go out every couple of months to work at JeffHOPE. But more recently, I have worked with Refugee Health Partners, which has two monthly health clinics that I will volunteer at.

Q: What is your view on the role of student-run free clinics in general?
I think they are a fantastic model and provide numerous opportunities. On one level, they provide a unique learning opportunity for medical students to gain exposure. As a medical student, even though you will have some clinical exposure during your first two years, it does not really occur until your third and fourth year of medical school. I think the earlier the exposure, the better. These clinics give you a unique opportunity to take care of vulnerable populations, learn how to take histories, practice physical exams, learn how to present to physicians, learn about some of the pharmacology and some of the disease processes. I think it is a great learning perspective for students. And then for the patients, for many of them, they are unable to get to the physician. They may not have access to insurance, or they may work very arduous jobs which do not allow them to go to the physician during regular business hours. Sometimes when things pop up, it is very easy for them to walk over to the clinic where they can see a friendly face and be briefly assessed to make sure they are okay.

Q: You have mentioned Refugee Health Partners. What are some of the demographics that Refugee Health Partners works with here in Philadelphia?
The larger refugee populations that are in Philadelphia are primarily Burmese, Bhutanese, and Iraqis. Those are the three largest groups. We have had some larger waves of Congolese recently, and this year we are seeing large numbers of Syrians. The main groups that Refugee Health Partners works with are the Burmese and Bhutanese population in South Philadelphia.

Q: What specific healthcare challenges are these various refugee populations confronted with?
That is a good question. When refugees came to the United States 15 to 20 years ago, the concern was that they were coming here with infectious diseases. That is not the case. In actuality, there is a higher incidence of chronic health conditions that they are either coming here with or that we are diagnosing here. Conditions such as high blood pressure, diabetes, heart disease, obesity, smoking, and substance abuse are things that we are seeing on a much more regular basis. Some of these issues can be addressed by the primary care doctor, but this is also a place where health clinics can step in and make a difference.

Q: What specific gaps in health care does this student-run free clinic help to cover for the refugee population in Philadelphia?
All refugees get medical assistance for the first eight months, and now with the Affordable Care Act, they are able to get some kind of continued insurance. Many of them are not getting insurance through their jobs. For a number of them, navigating the healthcare system is not easy, and if their insurance has lapsed, or they were unable to sign up for Obamacare for a variety of reasons, they really do not have access to care. So when they get sick, they usually will either go to a health center or go to an emergency room. A lot of these conditions can be managed by a primary care physician. Our goal is to really keep them out of the hospital and, as providers in these clinics, assess whether this is someone who needs to be seen on an urgent basis in a hospital. We strive to set refugees up with a primary care doctor. Oftentimes, they may just need some assistance in getting signed up for insurance so that they can get connected to a primary care doctor.

Q: Has this student-run free clinic made a positive impact on the health of the refugee population?
I think it has definitely made a positive impact. These clinics have been an extension of what we do here at our Center for Refugee Health in Jefferson. These clinics are seen as an extension of Jefferson in the community, which I think is a wonderful thing. I believe there are a lot of useful services that the students provide. They help refugees set up dental care, sign up for insurance, and navigate the system. Acting as patient navigators is very important. Speaking with these populations, they are very appreciative of the care that they get both in my office but also at these clinics. For some of them, it is the peace of mind knowing that they are seeing the doctor and knowing that they will be okay, or that a loved one will be okay.

Q: What are some of the challenges that student-run free clinics face in working specifically with the refugee population?
Translation is a big one. We need to make sure that we are using translators to make sure that everything we discuss is being interpreted appropriately. The other challenge at these clinics for some of these patients is that we cannot provide the type of treatment that they truly need. When they come with acute symptoms we can put out the fires of their acute illness. They may have a rash or a sore throat that we can treat. But many people who come to these clinics really need to get connected to a primary care provider, and these clinics are not set up to provide longitudinal primary care. They are really there to provide acute care on an intermittent basis. I think some of the struggles that students face are that they are seeing patients come back over and over again, when really those patients should be going to a primary care provider. Patients who have hypertension or diabetic, for example, should not be treated at these clinics. They can be assessed to ensure that they are getting care, but I do not believe that the clinic should be the acting primary care provider.

Q: After the passage of the Affordable Care Act, how has the role of Refugee Health Partners had to change?
Continuing to be a voice and advocate for these patients is really crucial. It is great that we have the Affordable Care Act, but you need to be somewhat savvy in order to sign up. I believe Refugee Health Partners has done a very nice job in identifying individuals who do not have access to insurance but may be eligible for the Affordable Care Act, and then walking these people through the process to get signed up.

Q: How do you anticipate the role of student-run free clinics in general will change over the upcoming years?
I think part of it depends on the election, but my hope is that they continue to provide an educational outlet for our students, as well as an outlet for our clients in the community to get access to urgent care, get access to social services, and act as an extension of the care that we are trying to provide in the healthcare system. I hope that the roles played by the students will continue because we live in a city where there are large numbers of refugees and other groups of immigrants coming in, and I think we need to be able to provide these services in a culturally competent manner. I believe that the students do a great job.

Self-Discovery in Outpatient Clinical Practice

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"There are moments which mark your life. Moments when you realize time is divided into two parts—before this, and after this." –Unknown

Looking back, I can see that my initiation into medicine has been a profound, transformative experience that shaped me into the person that I was meant to become. It began most poignantly after becoming Assistant Head Coordinator of Montclair Clinic, one of Western University of Health Sciences student-run free clinics situated next to Pomona, an area of stark poverty. I didn't realize at the time that accepting this position would alter the course of my medical education by challenging me to not stand idly by when it comes to health care disparities.

When I started school in 2014, I had some vague notions on how I wanted to make a tangible difference in the lives of my patients. I had previously been exposed to the social issues that factor into medicine while living and working in San Diego, where free clinics near the border of Mexico revealed the clinical manifestations of neglect. For instance, untreated diabetes in this community, a direct result of poverty and a lack of access to care, led to patients suffering from irreversible blindness and even bilateral limb amputations from undetected diabetic foot ulcers. I myself read denial letters sent to these patients on behalf of pharmaceutical companies, outlining their refusal to provide life-sustaining medications that could prevent these complications. These scenarios became all too familiar and seemed to repeat themselves. I hoped once I became a medical student, I would somehow be able to have a greater degree of involvement in the lives of my patients and prevent these adverse outcomes.

My opportunity came with Montclair Clinic. Here, students dedicate their evenings to serving low-income patients who rely on the clinic as their sole source of healthcare. At the clinic, medical students have the chance to step outside the confines of the classroom and act with almost complete autonomy in regards to patient care. Within the clinic walls, the algorithm taught to us in school on how to direct our patient encounters does not need to be strictly adhered to—instead, we learn to be our own leaders, thinkers, problem-solvers, and most importantly, listeners who reassure patients that they are being heard and acknowledged. We become exposed to what it means to treat patients not just clinically, but compassionately, and with a greater degree of human understanding.

Yet, time at the clinic also exposes us to our frustrating limitations as healthcare providers, even when we have our patients' best interests at heart. Seeing the same patients routinely gave me greater insight into their personal lives and the challenges that they face. In an attempt to try and help, I found myself making promises I wasn't sure I could keep. When I discovered that one of my patients was sleeping in his car, I felt certain I could help him secure low-income housing. I called over ten different communities in Pomona and the surrounding areas, only to find that the shortest waiting list was seven years long. In another case, I visited the social security office on behalf of one of our disabled patients in order to address his disability denial, and was informed that I was a day too late—his 60-day window to appeal the court's decision had passed. He would need to reapply and navigate through the court system once more. It was disheartening to discover that I could not always find the ideal solution, or even a simply passable solution, to every patient problem.

What resonates with me most from these experiences is the magnitude of the obstacles that low-income patients face, how those obstacles contribute to many of the chronic health issues we see in the clinic, and the challenges we can expect to contend with as future physicians. It has become clear to me that while we may be aware that social issues can impact our patients' well-being, awareness is not enough—we need to strive to connect our patients to community-based resources to address these discrepancies as part of the standard of care. Otherwise, we cannot truly care for our patients the way we intended when we took our oath upon induction into medical school.

Though these experiences may highlight potential limitations we will have as future physicians, they also underscore the importance of student-run free clinics like Montclair Clinic—not just for our patients, but for medical

students as well. They have taught us what it means to truly advocate on behalf of your patient and remind us what is important in medicine. When we are able to implement these patient-centered approaches to care, we are rewarded with positive patient outcomes. In one notable case, a patient who relies on Montclair Clinic for her health maintenance was found to have a hard, fixed mass on her lower extremity by one of our student physicians, which was later identified as cancer. Due to its early stage, she was able to have it resected without complications after we made the proper referral. This experience and others like it reiterate the importance of what we do at free clinics. At the end of the day, even if our patients' lives are in a state of uncertainty and constant flux due to limited income, they have the reassurance of receiving care at our clinic consistently. This kind of diversity in clinical exposure has taught us important lessons that cannot be replicated elsewhere, and will serve us well as physicians no matter where we go.

From exposing me to some of the social co-morbidities our patients face, to the critical role student-run free clinics play in the setting of lower socioeconomic status, Montclair Clinic has served to divide my time into before my role as Assistant Head Coordinator, and after. My only option now is to continue supporting my patients in the greatest capacity that I am able, even if it is not always straightforward.

THE FREE CLINIC RESEARCH COLLECTIVE

Assessing the Utility of Electrocardiogram (ECG) Use in the Free Clinic Setting

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Abstract: Electrocardiograms (ECGs) have been a staple in the assessment of chest pain for many years and have been determined to be the most useful bedside test to evaluate myocardial infarctions (MI) and other cardiac events. Populations at a greater risk of developing poor outcomes following cardiac events are often served by student-run free clinics. Many of these clinics may lack ECG machines potentially due to the cost of a machine. This review assesses the utility of ECG testing in the HOPES Clinic, a student-run free clinic in Norfolk, Virginia, and suggests beneficial value in exposing student volunteers to pre-hospital emergency decisions.

Introduction

In the workup of acute chest pain, the electrocardiogram (ECG) has been established to be the most useful bedside test to evaluate for MI.[1] Therefore, the ECG remains a valuable tool when assessing the need for emergent services. A population-based cohort study found a significant association between low socioeconomic status and decreased access to specialized cardiac services. [2] The same study found a significant effect between low socioeconomic status and increased mortality one year following acute myocardial infarction. An additional study found that the national use of pre-hospital ECG for diagnosis and treatment of MI remains low despite evidence that pre-hospital ECG is associated with a significantly shorter time to cardiac reperfusion and better patient outcomes.[3]

These findings suggest potential benefits from equipping clinics servicing lower income populations with ECGs for use in the setting of acute chest pain. Such ECG monitoring in student-run free clinics also provides student volunteers with valuable insight into pre-hospital cardiac workup. This review explores the use and success of ECG in HOPES general medicine clinic, a student-run free clinic at the Eastern Virginia Medical School (EVMS).

Methods

We completed a retrospective chart review that assessed all EVMS HOPES general medicine clinic patient charts between April 1, 2015 and July 31, 2015. All ECG tests performed during this study period were identified. The charts of patients who received ECG testing were assessed for documentation of symptoms warranting the test order, ECG interpretations, and appointment outcomes. All ECGs were performed by students on the HOPES Laboratory Team and interpreted by a licensed physician. All tests were performed using a 12-lead Welch Allyn CP 150 ECG Machine according to the established HOPES Laboratory Team ECG protocol.

Results

One hundred and seventeen patients were seen and seven ECGs were run and assessed during the study period at the EVMS HOPES general medicine student-run free clinic. All seven of these patients met the criteria for being a HOPES patient which are: lack of insurance, income below 200% of the poverty level, and Norfolk, Virginia resident.

Six ECGs were included in this assessment; one was excluded due to incomplete data documentation. Of the six ECGs run during the study period, three were run based on patient complaints of chest pain. Two ECGs were run based on complaints of palpitations. One ECG was run for complaints of syncopal episodes. Of the three tests run for patient complaints of chest pain, two exhibited abnormal ECG readings; however, all three tests resulted in a recommendation to seek emergent treatment. Of the two tests run for palpitations, both resulted in unremarkable ECG findings and no emergent treatment was recommended. In the single test run for syncopal complaints, the ECG findings were unremarkable and no emergent treatment was recommended.

Longitudinal metric data was unable to be obtained due to narrow study window and inconsistent patient follow up. Overall, six ECG tests were performed and analyzed during this review period. Of these, three tests resulted in a recommendation to seek emergent treatment.

Discussion

During the four-month review period, one hundred and seventeen patients were seen in the HOPES general medicine clinic, and ECG testing was performed seven times (6.0%), indicating that, while infrequent, situations do arise in the EVMS HOPES Clinic that warrant ECG use. Of the six ECGs examined, three resulted in a recommendation for emergent treatment. Therefore, ECG use at HOPES allowed the physicians to make more informed treatment recommendations, and allowed students to gain experience running ECGs and making decisions based on the results. While informative, this study is limited by a narrow study period and small sample size. Continued evaluation of outcomes after receiving an ECG at HOPES Clinic is needed to determine if ECG testing in this setting has any significant affect on the amount of Emergency Room visits. Future studies may also quantitatively address student volunteer benefit from exposure to ordering EKGs and making decisions based on the results through pre and post experience surveys.

Conclusions

Based on the results of our review, we feel ECG testing in the free clinic setting is valuable. Student volunteers receive the opportunity to perform valuable, hands-on ECG testing while learning about pre-hospital emergency decision-making. Patients may avoid an emergency room visit and associated costs and inconveniences by having their chest pain or other worrisome symptoms assessed at a free clinic. Overall, ECG use at HOPES has educated students and successfully and appropriately identified cases that required further medical evaluation. Whether this identification in the student-run free clinic setting has reduced emergency room visits for patients remains to be determined.

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The State of the Clinic: Data collection and reporting at HOPES Free Clinic

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Abstract

In April 2015, HOPES Free Clinic introduced the State of the Clinic report, a monthly newsletter describing clinic statistics for each month including the number of patients seen at each clinic, the number of physician and student volunteers, lab tests ordered, and reminder call success rates, and other statistics. This essay serves to describe the report, including an overview of its organization, the process of data collection and presentation, summary statistics from its first year (April 2015-March 2016), strengths and shortcomings of the report, and finally, our plans for its future.

Introduction

The Health Outreach Partnership of EVMS Students (HOPES) Free Clinic was established in 2011 and since its inception has served nearly 1,000 patients with the help of over 500 student volunteers and over 100 physician volunteers. At any given time, there are around 100 students considered to be on clinic staff, which consists of several teams each with different responsibilities (Figure 1).

The Monitoring, Evaluation, and Quality (MEQ) team at HOPES Free Clinic collects data regarding different aspects of clinic operations. In April 2015, the MEQ team introduced the State of the Clinic report, a monthly newsletter presenting key statistics and information about the clinic. This essay serves to describe the report, including an overview of its organization, the process of data collection and presentation, summary statistics from its first year, strengths and shortcomings of the report, and our plans for its future.

Organization of the report

The report is a four-page newsletter which begins with a foreword written by the Directors of Quality, a photo from HOPES clinic that month, and a quote from a renowned individual in healthcare. The report then illustrates the data collected for that month including information on clinic participants, a breakdown of the number of new and returning patients by clinic type with corresponding no-show rates, the success rate of reminder calls to patients, lab tests ordered, and any clinic cancellations for that month.

Data Collection and Presentation and Summary Statistics

Clinic participants

The Student Relations team has the responsibility of recruiting students to volunteer as junior and senior clinicians and front-desk receptionists. The Professional Relations team likewise has the responsibility of recruiting attending and resident physicians to volunteer at clinic nights. Both these teams record the names of the volunteers in HOPES' master spreadsheet of clinic night participants.

The Patient Continuity team maintains continuity with patients and is responsible for scheduling appointments and adding these

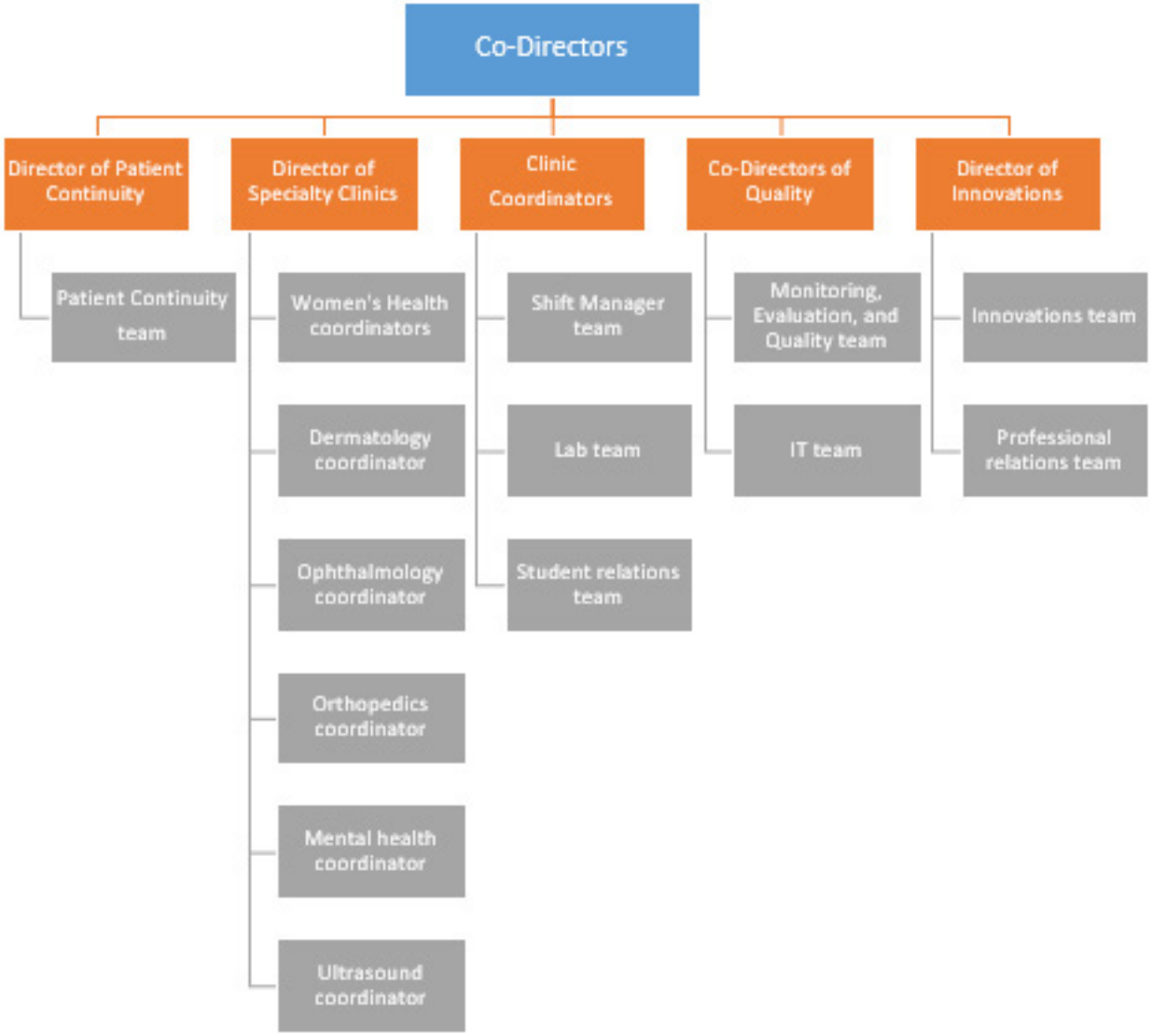

Figure 1. Organization scheme of the HOPES free clinic.

appointments to the electronic medical record. The MEQ team then records the number of student or physician volunteers and patients for each clinic night from the master spreadsheet and electronic medical record respectively. Also recorded was the distribution of student volunteers by program of study (e.g. MD, PA, MPH).

In the report, the number of physicians, patients, and student volunteers per clinic night is graphed (Figure 2) alongside a list of the most active physicians (both for that month and year-to-date) and the average and range of physician-patient load (patients per physician during clinic night). The latter is also compared to the previous month.

Also graphed is student volunteer distribution. From April 2015 to March 2016, a total of 78 clinic nights were held; the average clinic night served 7.44 patients with the help of 2.49 physicians and 9.06 volunteers. Among volunteers, 88.1% were from the MD program.

Breakdown of patients by clinic type

HOPES has a total of seven sub-specialty clinics – primary care, women's health, dermatology, ophthalmology, orthopedics, mental health, and

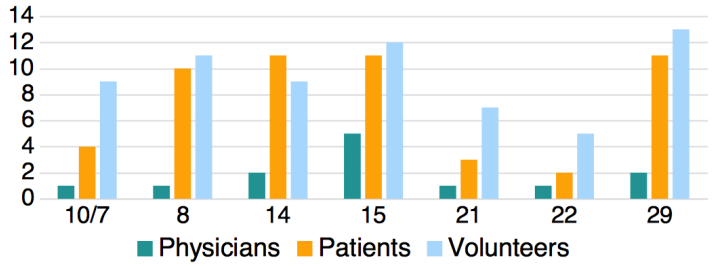

Figure 2. Physicians, patients, and student volunteers per clinic night (as seen in October 2015 report).

ultrasound. On average, primary care clinic is held once every week, women's health thrice every month, and the remaining clinics once every month. The total number of patients seen by each clinic every month is recorded by the MEQ team via the electronic medical record. Also recorded is the number of first time patients at HOPES and the number of patients who did not show up for their scheduled appointments.

In the report, this information collected is simply presented in the form of a table with comparisons to the previous month. Table 1, found at the end of this paper, summarizes this information for our clinics from April 2015-March 2016.

Reminder call Success Rates

Patient Continuity team members usually attempt reminder calls to patients a few days before their scheduled appointments. Information regarding whether patient reminders were attempted as well as the rate of success was recorded in the patient's electronic medical record. The MEQ team then recorded this information and used it to create a pie graph indicating the percentage of patients where a reminder was not attempted and patients where a reminder was attempted unsuccessfully (Figure 4). From April 2015-March 2016, there were a total of 1,001 appointments scheduled. 160 patients (16.0%) were not attempted to be reminded and 78 patients (7.8%) were attempted to be reminded but could not be reached.

Lab tests

HOPES has the capability to run a number of lab tests on-site – basic metabolic panel, dipstick urinalysis, EKG, fingerstick blood glucose, hemoccult, hemoglobin A1c, lipid panel, and urine pregnancy (β-hCG). Lab team members perform tests at clinic nights and record each test performed on a Google form. This information is then recorded by the MEQ team and used to create a cumulative line graph of the lab tests in order to identify trends in test usage (Figure 5). Table 2 summarizes this information for April 2015-March 2016.

Clinic Cancellations

Sometimes, clinic nights must be cancelled for various reasons. At such times, a clinic coordinator will email staff members regarding the cancellation. The MEQ team uses these emails to record cancellation information, which is then listed in the report. From April 2015-March 2016, there were a total of 21 clinics cancelled. The most common reasons for cancellation were the lack of an attending physician or an insufficient number of student volunteers (7 clinics each).

Strengths of the data collection and report

The State of the Clinic report, with its introduction in April 2015, helped share information on different aspects of clinic function with staff members, physician volunteers, and even our school's administrative staff. Through this, the report was able to foster a greater sense of awareness about our clinic. Prior to the introduction of the report, MEQ members presented similar information at quarterly clinic meetings. However, the concise presentation of this report made it more amenable for members to review and analyze the information in order to implement those ideas in practice.

For example, awareness of the high no-show rate and less than ideal reminder call rate prompted the Patient Continuity team to increase their efforts at reminding patients of their appointments. Also, the realization that almost 90 percent of student volunteers were from the MD program prompted the Student Relations team to increase efforts to recruit students from other medical programs (e.g. PA, MPH).

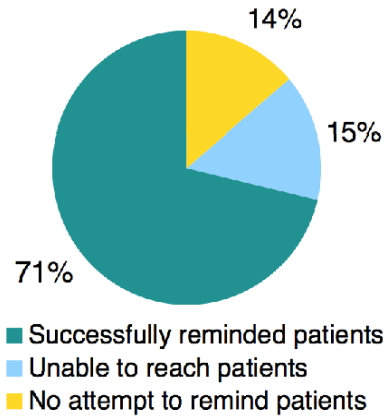

Figure 4. Reminder call success rates (as seen in October 2015 report).

Shortcomings and Future of the Data Collection and Report

Though the monthly State of the Clinic reports were a step in the right direction, a lag still exists as the report is only available at the end of the following month since the MEQ team has to manually collect data and

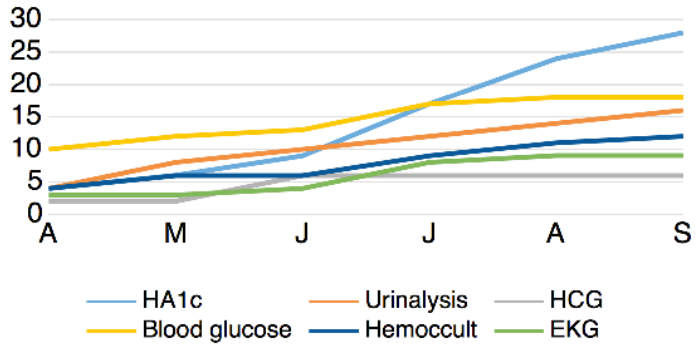

Figure 5. Lab test trends (as seen in September 2016 report)

assemble the report. In the ideal scenario, the data in the report would be available real-time after each clinic night.

In October 2015, HOPES completed its transition to using EMR. Work is currently underway to populate the EMR with information from paper charts. It is thought that these steps will help our clinic to develop the capability for real-time reporting in the near future.

It is also noteworthy that the State of the Clinic report lacks information about patient outcomes. The HOPES clinic has two longitudinal research projects monitoring patient outcomes in patients with hypertension and diabetes, respectively. The goal is that future reports will regularly incorporate findings from these research projects. As our EMR is populated with information from paper charts, we aim to incorporate information regarding the top conditions diagnosed and medications prescribed at the HOPES clinic so that we may be better suited to take care of our patient population.

	Total seen	No-shows (%)	First visit (%)
Primary care	301	165 (35.4%)	55 (18.3%)
Women's health	101	58 (36.5%)	41 (40.6%)
Dermatology	35	24 (40.7%)	15 (30.0%)
Ophthalmology	36	20 (35.7%)	10 (21.7%)
Orthopedics	44	22 (33.3%)	10 (22.7%)
Mental health	18	9 (33.3%)	2 (11.1%)
Ultrasound	10	6 (37.5%)	1 (10.0%)
Total patients	545	304 (35.8%)	134 (24.6%)

Table 1. Breakdown of patients by clinic from April 2015-March 2016.

	Total runs
Basic metabolic panel	63
Dipstick urinalysis	26
EKG	16
Fingerstick blood glucose	30
Hemoccult	14
Hemoglobin A1c	58
Lipid panel	10
Urine pregnancy (βhCG)	10
Total	227

Table 2. Lab tests run (April 2015-March 2016)

Acknowledgements

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East Linn Community Clinic – Serving Others Through Education

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Abstract

This brief communication reviews the background and organization of the Community Outreach East Linn Community Clinic, the operations of the Osteopathic Manipulative Medicine (OMM) clinic, and volunteer recruitment. The clinic is located in Lebanon, Oregon, a rural town with a population of about 16,000. The Community Outreach East Linn Community Clinic is staffed by Western University of Health Sciences College of Osteopathic Medicine of the Pacific-Northwest (WesternU COMP-Northwest) first and second year medical students, OMM fellows, and faculty-physicians. Clinic is held twice a month and is managed by one Community Outreach Health Services Coordinator and two second year medical student Clinic Coordinators from Western U COMP-Northwest. The clinic aims to create a healthier Oregon by reaching out to those in need of health services, exposing medical students early on to clinical decision making, and highlighting the importance of community involvement in medical education.

Background

Founded in 1971, Community Outreach Inc. is the premier provider of transitional housing and free medical services within the Linn and Benton counties of Oregon. Community Outreach, partnered with local organizations and private donors, strives to offer support to the underprivileged and uninsured residents in the area. Maintaining the motto "Helping People Help Themselves", the organization assists with emergency shelters, temporary housing, community food banks, childcare, crisis intervention, and medical/dental care. Community Outreach is all-inclusive and the diversity of residents is directly mirrored in the diversity of the staff and volunteers who make operations possible.

The East Linn Community Clinic is managed by a Health Service Coordinator who maintains clinic operations through recruiting nurse/physician volunteers, interacting with patients to schedule services and follow-up appointments, and bridging the gap between the patient and Samaritan Health Services for continued care. The Health Service Coordinator partners with WesternU COMP-Northwest to expand available services and meet the needs of the uninsured community.

The clinic serves as an opportunity for medical students to practice clinical and osteopathic skills learned in the classroom and translate that knowledge to benefit patients. Students are making an impact by seeing patients in a community where healthcare access is limited. The community clinic provides an opportunity to solidify the principles of compassion, humanism, and patience during the early stages of medical education. Clinic opportunities facilitate the formation of well-rounded, skilled, and caring physicians.

Operations and Organization

WesternU COMP-Northwest first and second year students take roles at clinic, including an intake volunteer role and a student-doctor role. Western U COMP-Northwest first years fill the intake volunteer role starting in October. Second years fill the student-doctor role from the start of the school year in August until April. In April, the first year students transition into the student-doctor role, while simultaneously maintaining the intake volunteer role. This allows the second years to focus on Step 1 USMLE/COMLEX exam studies. Clinic Coordinator leadership transitions and training begins in March, following application review.

A free clinic night progresses as follows: 4 intake volunteers arrive at 5pm, 6 student-doctors arrive at 5:30pm, and one to three faculty-physicians accompanied by zero to two OMM fellows arrive between 5:45-6:15pm. Doors are open to patients from 5:30pm-6pm, and patients are allowed to begin lining up at 4:30pm. Patients may arrange OMM appointments through the Health Services Coordinator. However, there is no way to predict exactly how many patients will arrive on a Tuesday evening. We generally serve between one to nine patients.

The Clinic Coordinators train intake volunteers and student-doctors upon arrival. Intake volunteers are responsible for rooming patients, measuring vitals, getting patient signatures for paperwork, and collecting voluntary $10 donations. Once roomed, a Clinic Coordinator will collect the chief complaint from the patient and deliver this to a pair of student-doctors waiting in a separate room. The Clinic Coordinator collects the WesternU COMP-Northwest specific paperwork before passing the patient chart onto student-doctors.

With the guidance of faculty-physicians and the Clinic Coordinators, the student-doctors prepare a list of possible diagnosis, associated symptoms, and physical exam systems to review. Student-doctors also prep any in office procedures that might be warranted, such as Finger-Stick Glucose Monitoring or Urine Dipstick tests.

Clinic Coordinators guide student-doctors to their patient's room, where student-doctors are responsible for obtaining a subjective patient history and objective physical exam from their patient within twenty minutes. Upon exiting the patient's room, student-doctors have the opportunity to prepare for their oral presentation with the help of a Clinic Coordinator. Upon faculty-physician availability, student-doctors orally present their patient's SOAP note (Subjective, Objective, Assessment, and Plan), before returning to the patient's room with the faculty-physician.

Once the patient's subjective history and physical exam has been verified, the faculty-physician counsels the patient on their diagnosis, necessary tests/referrals, and treatment options. Student-doctors and faculty-physicians briefly exit the patient's room to fill out lab and referral requests as needed. At the same time, student-doctors practice writing prescriptions on a white board for faculty-physicians to approve, before prescriptions are written out permanently onto a prescription pad. This results in less mistakes and thus less wasting of prescription pads. This is one way in which resources are rationed at East Linn Community Clinic.

All labs and the first designated provider referral appointments are free. Prescriptions are free if filled at the local Samaritan hospital pharmacy, and only $4 per prescription if filled at Walmart.

Student-doctors and the faculty-physician re-enter the patient's room one last time to deliver prescriptions, lab orders, and referral requests before concluding the appointment.

Special Programs: Osteopathic Manipulative Medicine

In recent years, the clinic has increased the diversity of available care that is offered by incorporating Osteopathic Manipulative Medicine (OMM) appointments. OMM is a hands on technique used to increase range of motion at joints, decrease musculoskeletal related pain, loosen fascial layers, and

realign musculoskeletal structures. The practice is a useful therapy for treating a wide range of patients and ailments, and is commonly used by osteopathic physicians as an adjunct to other medical therapies.

Expanding services to include OMM has allowed for a broader and more holistic patient experience. While one faculty-physician oversees all of the OMM treatments, most of the OMM assessment and care is provided by WesternU COMP-Northwest OMM fellows and student-doctors.

OMM patients are greeted by intake volunteers while the student-doctors conduct a basic history and physical to gain an assessment of the patient's chief complaint and treatable ailments. The students' findings are then presented to the OMM fellow and/or faculty-physician. The student-doctors, OMM fellows, and faculty-physician then re-enter the room to perform Osteopathic Manipulative Treatments (OMT) and educate the patient. OMM appointments are scheduled in advance due to their longer nature. Each clinic has two OMM fellows on-call and four available appointment slots, at 5:30pm, 5:45pm, 6:00pm, and 6:30pm.

Many patients utilizing the OMM services give positive feedback and return for additional treatments. This service has grown in popularity as word about the OMM clinic has spread. Patients that use the traditional free clinic as a resource have found additional value in OMM, and patients who originally came to the clinic for OMM have had additional medical needs met by the traditional clinic. Adding OMM appointments has transformed the free clinic into a more all-encompassing patient-centered service for the Linn County community.

Volunteer Recruitment

Free clinic volunteers consist of first and second year medical students, OMM fellows, and faculty-physicians from WesternU COMP-Northwest. Currently there are more than 140 active volunteers. Intake volunteer sign up occurs at a mandatory clinic training at the beginning of each academic year. The list of names is randomized and a schedule is made to fill the set clinic dates. Volunteers are notified of their assigned date and are responsible for finding a substitute if unable to attend. Most students are on the clinic schedule at least twice per academic year and some are able to participate more as substitutes.

The same process is used for the student-doctor sign up in March. Faculty-physicians and OMM fellows are scheduled separately via an emailed list of dates to which they respond with any evenings they are able to attend. Currently we have four physicians and six OMM fellows who regularly volunteer at clinic.

The East Linn Community Clinic has been very lucky to have such a generous list of active student, OMM fellow, and faculty-physician volunteers. The large interest stems from WesternU COMP-Northwest's enthusiasm to serve the greater Lebanon community. From the student interview day, applicants are told about the important connection that the school shares with the Lebanon community and students are informed of the exciting opportunities available to them.

The symbiotic relationship between the community and the University is one of the reasons WesternU COMP-Northwest successfully turns out excellent clinicians that not only pay attention to the medical needs of their patients, but also to the strengths and needs of the surrounding community.