



Campbell University Student-Run Free Clinic: Osteopathic Medical Care for the Rural Underserved

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Abstract

Based at the Campbell University School of Osteopathic Medicine, the Campbell University Student-Run Free Clinic (CUFC) is an interprofessional effort to address the medical needs of the rural underserved population in Harnett County of central North Carolina. Although osteopathic physicians have historically been more likely to practice primary care, particularly in rural settings, than their allopathic counterparts, osteopathic medical schools are often omitted in the current research and literature on student-run free clinics. This report details the development of the CUFC, including a basic needs assessment, staffing and recruitment, resource identification, clinic operations, electronic medical record, and quality assessment and research. The CUFC demonstrates a working model for a free clinic based at an osteopathic medical school in a rural underserved area that can potentially be replicated in other regions.

Introduction

The Campbell University Jerry M. Wallace School of Osteopathic Medicine (CUSOM) was founded in 2011 with the mission “to educate and prepare community-based osteopathic physicians...[who will] care for the rural and underserved populations in North Carolina.” The school aims to train and prepare community-based doctors who will not only help alleviate the rural physician shortage, but also increase overall accessibility to quality healthcare in these targeted populations.¹

One of the ways CUSOM actively addresses its mission is through the establishment of the Campbell University Student-Run Free Clinic (CUFC) in February 2015. The CUFC aims to deliver quality care to the medically underserved residents of the surrounding community through an interprofessional model while also providing an additional extracurricular clinical learning experience for the students in the Health Science Programs at Campbell University.

The clinic offers services in the areas of physical, mental, and spiritual health. As a philanthropic arm of CUSOM, the first osteopathic medical school in North Carolina, the CUFC is able to put into practice the patient-centered approach to

medicine taught in the classroom. The CUFC serves as an extension of this approach so that students can enhance didactic learning in a hands-on setting.

Osteopathic physicians are trained to emphasize the connection among physical, mental, and spiritual health. Each of these aspects of the patient’s health is dependent upon the other and is to be addressed equally by the osteopathic physician. Further, osteopathic principles support and highlight the importance of a model of medicine that focuses on prevention and comprehensive patient care.² This patient-centered ideology preserves a tradition of providing patients with personalized and holistic care while maintaining the quality and benefits of modern medicine.

This report outlines an approach to developing a student-run free clinic aimed at a rural population while incorporating the osteopathic perspective. The purpose of this descriptive report is to demonstrate how the CUFC was established and to provide a framework for identifying community needs, marshaling resources, establishing a successful clinic model, and maintaining and improving upon that model for years to come.

Needs Assessment

North Carolina is home to four long-established allopathic medical schools which graduate over four hundred new physicians each year.³ Despite this regular local inauguration of physicians, North Carolina remains below the national median for active primary care physicians per state.⁴ The distribution of health care providers within the state is also imbalanced. While 45% of North Carolinians live in rural counties, only 18% of primary care physicians practice in these areas.⁵

Training in a rural setting during medical school has been shown to help medical students gain respect for rural-practicing physicians,⁶ and improves student inclinations towards working with the medically underserved.^{6,7} The addition of a rural health focus in medical school curricula positively influences students' future decisions to enter rural primary care as practicing physicians,⁸ which, in turn, plays an integral part in increasing the amount of primary care physicians in rural areas.⁹ Additionally, osteopathic physicians are more likely to enter into primary care specialties and to practice in rural locations than their allopathic colleagues.^{10,11} Osteopathic physicians are recognized as substantial contributors to the rural health care workforce.^{11,12}

There are eighty-one free or low cost clinics in North Carolina, as identified by the North Carolina Association of Free Clinics. However, none of these free clinics, and only two low-cost clinics, are based in Harnett County. The CUFC provides all services without charge to uninsured patients, which differs from the already existing low-cost clinics in the surrounding areas.^{13,14}

Harnett County, North Carolina is home to approximately 125,000 persons, with 16.4% of its inhabitants falling below the poverty line.¹⁵ This statistic is nearly two points higher than the national average.¹⁶ The percentage of uninsured persons in Harnett County is estimated at 21% which is nearly three points higher than the rest of the state of North Carolina.¹⁷ Harnett County is also home to many migrant farm workers and their families who may not be fully represented in the most recent United States Census data. Thus there is a clear need for health services within Harnett County. Campbell University, with its tradition in community involvement, is positioned to address this demand with the sustained operation of the CUFC.

The establishment of the CUFC aims to equip students with service-learning experiences that may positively influence their future decision to

practice primary care in rural locations while providing needed medical care to the local rural underserved community.

Staffing & Recruitment

The establishment of the CUFC was led by the CUFC planning committee, a group of students from the two charter classes at CUSOM. These students are strongly committed to making a tangible difference in the surrounding community.¹⁸ Once the foundation for the clinic had been confirmed, the executive board of the CUFC was devised to allow for an efficient transfer of responsibilities to successive classes. Prospective candidates undergo an interview and selection process to ensure continuity of the CUFC vision. The student executive board has twelve members with each member of the board serving a term of one year. The positions include two co-directors, a secretary, treasurer, and one or more board members for each of the following positions: pharmacy, scheduling, grants and fundraising, research and quality assurance, laboratory management, marketing, and continuity of care.

The CUFC utilizes the second largest healthcare professional student population in the state of North Carolina. With more than 300 osteopathic medical students on the CUSOM campus at any time, and 300 more students in community-based hospitals throughout the state, 400 doctor of pharmacy students, 80 physician assistant students, 120 doctor of physical therapy students, an undergraduate nursing program, and numerous public health and pre-health students, there is a generous pool of potential volunteers for staffing the CUFC.¹⁹ This cooperation of Campbell University students across many disciplines serves to create an interprofessional environment that mirrors the modern hospital environment and provides the skills necessary to deliver excellent healthcare and expand upon educational training opportunities.

The attending physicians, who volunteer during clinic operation, provide supervision of all student volunteers and finalize decisions on treatment plans. The primary source for volunteer attending physicians is CUSOM's clinical faculty. Additional recruitment relies on engagement of the local physician network, including members of organizations such as the North Carolina Osteopathic Medical Association, the North Carolina Society of the American College of Osteopathic Family Physicians, and the North Carolina Academy of Family

Physicians. An interactive website is being created to allow interested physicians to schedule their volunteer time through a web-based portal.

Recruiting patients to the student-run free clinic relies heavily on the marketing efforts of the executive board, partnerships with local healthcare establishments, and relationships with community organizations. Community outreach and public awareness campaigns needed to increase awareness of the CUFC have been conducted primarily through local churches in Harnett and surrounding counties. Particular focus is given to institutions with ministries active in minority and migrant populations. An additional tool for advertising will be the implementation and maintenance of a clinic website which will display pertinent information in both English and Spanish.

Resource Identification

The CUFC utilizes the facilities of Campbell University's Health Center, which operates Monday through Friday during business hours and serves a patient population of mostly students and staff. One night a week, the CUFC opens after the health center's normal hours to provide free services to the community. Use of this facility is not only cost effective but it also allows for the clinic to be located in a central and easily accessible part of the county. Although sharing a space, the CUFC remains a separate entity from the existing health center.

The CUFC is able to use existing equipment, such as exam rooms, beds, desks, and chairs from the Campbell University Health Center. Students provide their own diagnostic equipment such as blood pressure cuffs and stethoscopes. Other medical supplies for the clinic are ordered in combination with the supplies for the Campbell University Health Center, but paid for separately with funds raised by the CUFC. In order to cover these expenses, the leadership applies for funding grants and raises both in-kind and monetary donations. The initial round of grant applications focused on small, local grants donors. This approach emphasizes the community support of and investment in the clinic and may help develop long-term relationships with donors.

The North Carolina Board of Pharmacy allows charitable non-profit free clinics to serve as a physician-based dispensary of pharmaceuticals.²⁰ The CUFC may accept donations of expired medications, excluding antibiotics, from local pharmacies

while providing tax incentives for local businesses. Students from Campbell's Pharmacy School provide expertise both in patient encounters and as volunteers in the clinic dispensary. This working relationship between the pharmacy students and the clinicians-in-training is essential for not only furthering interprofessional development and respect, but also for effective treatment of CUFC patients.

The CUFC has fostered a relationship with the community-based hospital system, Harnett Health. Harnett Health has a program in place which provides appropriate avenues for care for uninsured patients as defined in Harnett's State of the County Health Report of 2012. The program, entitled Project Access, evaluates the financial needs of uninsured patients and creates a process by which these qualified patients can receive subsidized primary care at a designated location.²¹ The CUFC serves as one of the designated primary care facilities for Project Access patients. This partnership improves visibility of the clinic and continuity of care.

Clinic Operations

The CUFC opened its doors in February of 2015 and continues operations every Tuesday from six to nine o'clock in the evening. The clinic provides non-emergent primary care incorporating osteopathic techniques for an average of ten patients every week. The medical care provided by the CUFC focuses on preventative medicine and patient education, as well as the management of acute illnesses. Osteopathic manipulative treatment is offered to CUFC patients as a part of their treatment regimen when applicable. The scope of practice is designed to best serve the CUFC patients within the confines of the educational, skill, and comfort levels of the student volunteers as well as the budget and timeframe.

Students are oriented to the clinic workflow and logistical details of clinic procedure prior to volunteering. Initial training sessions included skill development in areas such as taking a medical history, presenting cases to attending physicians, recording vital signs, understanding clinic workflow, and utilizing the electronic health record (EHR). Volunteers are required to undergo an evaluation process by senior CUFC leadership before they are eligible to volunteer at the clinic.

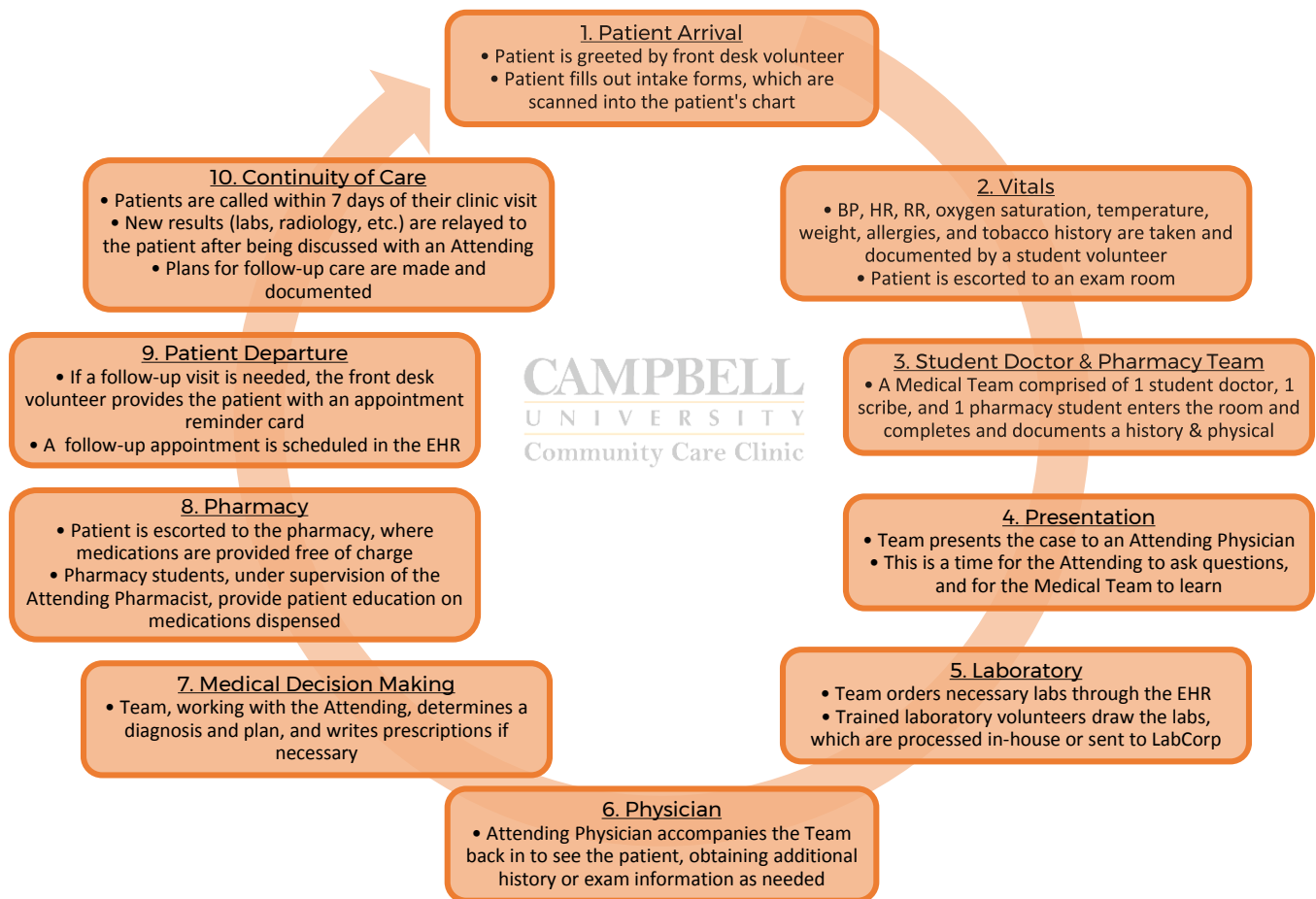
Clinic staff for each evening includes two supervising physicians, a clinic leader, and additional

students to cover triage of incoming patients, electronic record keeping, and laboratory orders for four exam rooms. The role of clinic leader, which is typically filled by a co-director or other executive board member, is to serve as a manager overseeing patient flow and clinic efficiency.

Upon arrival at the CUFC, patients are asked to complete a demographics form which will later be entered into their EHR by a student volunteer. Vital signs are recorded in a triage room, and once the patient has been escorted to an exam room, a

pair of student volunteers work together to take a full history and physical of the patient. Following the physical examination, these students present the results to their supervising physician in order to formulate a treatment plan. The physician and students then discuss the plan with the patient, answer any questions, and encourage the patient to follow up as needed. The clinic workflow is further delineated in Figure 1.

Figure 1. The clinic workflow of the Campbell University Student-Run Free Clinic



BP: blood pressure; HR: heart rate; RR: respiratory rate; EHR: electronic health record

Electronic Health Record

The use of an EHR at the CUFC assists in the education of medical students on proper electronic documentation and the use of common reporting metrics. With the introduction of computers into exam rooms, patients frequently claim that physi-

cians spend more time interacting with electronics than with the patients themselves.²² It is important that students recognize the doctor-patient barrier created by the presence of a computer or tablet in an exam room and are cognizant of the effects that the evolving interview process has on the overall experience of the patient. To

overcome this potential barrier, one student volunteer acts as a scribe while the student clinician actively gathers the history and physical findings. Use of an EHR in the CUFC provides CUSOM students with early exposure to emerging technologies and the opportunity to develop professionalism needed in the exam room.

Kareo™, an intuitive web-based electronic health record, has been adopted by the CUFC as its functional EHR. This EHR system works in compliance with HIPAA and the federal HITECH act.²³ The system is free of charge, and available to both the patient and the doctor from any web-accessible device.²⁴ Students are responsible for documenting the majority of the patient's clinic visit. The supervising physician is then required to sign-off on every aspect of the medical encounter including proper documentation on the patient's EHR. In addition, portal services and patient education reports are available through this electronic medical record. Reporting metrics provided by Kareo™ allow the CUFC to gather large volumes of data quickly. The program offers various benefits for efficient and continuous improvement, and facilitates research opportunities.

Quality Measures & Research

The establishment of an efficient clinic foundation will facilitate a strategy for measuring, analyzing, and improving operations. The CUFC implements baseline quality assurance assessments utilizing reporting metrics offered by Kareo™. These assessments also include feedback surveys from students, physicians, and patients. Monthly quality assurance meetings are held to gather suggestions from clinic volunteers and for the advisory committee to analyze the targeted population, workflow, finances, patient outcomes, and identify areas of improvement. Research shows that regular student-led quality improvement evaluation increased both the quantity and the quality of preventative care measures the patients of a student-run free clinic received.²⁵ In addition, the process helps to educate the student volunteers about the quality improvement process. The information collected from these feedback surveys allows for frequent reflection on clinic efficiency, while tangible reports to be created from this data support grant renewals, proposals, and research.

The health information gathered from the CUFC patient population with the use of Kareo™ allows the clinic to serve as a platform for the development of clinical and educational osteopathic

research. The ease by which the data can be gathered encourages the involvement of Campbell University's public health program and will allow for pertinent local outcomes to be incorporated into the curriculum of the various health sciences professions. The research will serve as a motivating factor to encourage follow up for the patients as well as a motivating factor for participation of student volunteers.

Discussion

For over one hundred years, "osteopathic physicians have built a tradition of bringing healthcare to where it is needed most."²⁶ CUSOM is the fifth established medical school in North Carolina. The CUFC is following in the footsteps of existing North Carolina medical schools, which maintain some of the oldest student-run clinics in the nation. Osteopathic medical education and a free osteopathic health clinic, however, are new to North Carolina. The CUFC is a mechanism by which the students at CUSOM and at the other Health Science Programs can work towards an initiative to positively impact their community.

The free clinic will continue to benefit the community by providing a welcoming environment for uninsured and underinsured patients to receive empathetic and holistic medical care. These often overlooked peoples now have another means of access to preventative medical care and health education. The goal of the CUFC is to drastically improve the overall health outcomes of the underserved communities of central North Carolina. Specifically, the CUFC has targeted programs to provide adequate diabetes management, hypertension control, lowering the risk of heart disease, and counseling on smoking cessation as well as health education and promotion. These long-term goals are part of the larger fundamental vision to provide care to those who need it most in a location convenient to them. By bringing this health service to the medically underserved community of Harnett County, the burden on the state and local healthcare systems may be at least partially alleviated.

As a unique entity in Harnett County, and as one of the few osteopathic-based free clinics in the United States, the opportunities for research at the CUFC are propitious and will benefit the students, faculty, and community. The CUFC has the capacity to serve as a hub for clinical and behavioral research. Further expansion from the vision of the CUFC provides numerous research opportunities

for the osteopathic profession and future training sites for rural primary care providers.

Finally, the growth of the population in Harnett County is being met by the concomitant growth in the osteopathic medical profession. In rural Harnett County, the need for quality primary care is glaring, and both the increase in osteopathic medical school graduates and the services provided by the CUFC are proposed answers to such a problem.

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