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William J. Crump, M.D.; Alyssa S. Hounshell, BS; Micah B. Kaiser, BS; Kathleen M. Wilmes, BS

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Evolution of a Student-Directed Free Clinic: Two Decades of Community Engagement at a Small Regional Campus

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Abstract

This report summarizes the 20-year evolution of community engagement at a small regional rural campus. The process includes establishing a student-directed free clinic and its transition through the wider availability of Medicaid expansion. Next came the transition to telemedicine care during the Covid pandemic and eventually to a recurring pop-up mobile clinic at a local homeless shelter. Invitations from the host community then resulted in conducting health screenings at local food banks with portable clinics planned there as well. At each stage we were directed by community steering committees and advisory councils, and we discuss their roles. We found that it is important to go where and when we are invited rather than making these choices based on our convenience. We provide details of student perspectives, planning, and finances for those who are considering similar activities.

Background

Student-directed free clinics have a long tradition. As of a 2007 report, there were 49 medical schools that had at least one student-run clinic. The average clinic had 16 student volunteers a week, and most incorporated preclinical students. Most clinics treated both acute and chronic conditions and were usually funded by private grants, with an average annual budget of $12000.[1] A 2014 update reported 86 schools with 208 student-run free clinics with chronic care of diabetes and hypertension being the routine.[2] The University of Iowa recently reported a multidisciplinary student-run clinic that began in a mobile van and developed into rotating sessions at nine fixed locations within a 50-mile radius. Continuity was not a priority, with 6% of patients returning for care.[3] Continuity of student provider was not possible in most of these clinics and was recognized as a deficiency. A recent report summarized the early implementation of telemedicine in these clinics.[4] Most reports support positive patient satisfaction,[5] some lower costs,[6,7] and positive student satisfaction.[5]

History of our free clinic

Shortly after the regional rural campus began in 1998,[8] a few students expressed interest in beginning a student-directed free clinic in the small host town, similar to what they experienced during their first two years of medical school on the urban main campus. By the time these students became comfortable with managing their time on clinical rotations, most were already focused on audition rotations and interviewing for the match, so no sustained effort was established. The host health system had a 40-year tradition of community-based education and community engagement, and some leaders expressed interest in taking the lead for such a student clinic. The clinic and hospital also had a long tradition of providing gratis care to the low income uninsured of the region, so the main purpose of any new clinic would be for the benefit of the students. The regional dean had been involved with student-directed free clinics at two previous medical schools, including several false starts, and was convinced that

William J. Crump, M.D., Associate Dean of the University of Louisville School of Medicine Trover Campus (ULSOM Trover Campus) at Baptist Health Deaconess Madisonville, Madisonville, Kentucky
Alyssa S. Hounshell, BS, M-3 Medical Student University of Louisville School of Medicine Trover Campus at Baptist Health Deaconess Madisonville (ULSOM Trover Campus)
Micah B. Kaiser, BS, M-3 Medical Student University of Louisville School of Medicine Trover Campus at Baptist Health Deaconess Madisonville (ULSOM Trover Campus)
Kathleen M. Wilmes, BS, M-3 Medical Student University of Louisville School of Medicine Trover Campus at Baptist Health Deaconess Madisonville (ULSOM Trover Campus)
Corresponding author: William J. Crump, M.D. Associate Dean, University of Louisville Trover Campus at Baptist Health Madisonville 200 Clinic Drive, Third North Madisonville, KY 42071 p. 270.824.3515 f. 270.824.3590 e. bill.crump@bhsi.com

a successful effort would require strong student leadership rather than just that from the health system. When physicians perceived that they were already providing unreimbursed care in their office which was most efficient for them, only a wide-eyed enthusiastic student could interest them in working evening hours precepting them in a much less efficient environment.

Plans for such a clinic accelerated in 2003 with the arrival on the clinical regional campus of a non-traditional M-3, who in a life before medical school had successfully organized community efforts. He, the regional dean, and an M-4 leader recruited key community leaders to serve on a steering committee. The group included a tax specialist CPA, and within 3 months the new entity was established as a 501(c)(3) that provided tax advantages for contributors. The students did a search of public sources that estimated 6000 uninsured county citizens. We used the financial maximum used by surrounding free clinics of 165% of poverty for family size and required documentation that someone in the household was employed. Almost all children in low-income families in our region were covered by Medicaid and capacity of local providers for them was adequate, so we limited our care to adults. From the beginning, the students committed to continuity of student provider as much as possible.

The steering committee was enlarged to include known local individual and corporate benefactors, and then transitioned to a board of directors. Fundraising was very effective with annual golf scrambles and galas, and at the height of activities the clinic budget was $280,000. As the target population found us, we increased from three hours every Thursday night and added a full-day Tuesday session staffed by a paid APRN. We then hired a full-time executive director, part-time nurse, and a part-time medication assistance advocate. The campus regional dean, a family physician in active practice, served as volunteer medical director. Very few visits were for acute care, focusing on longitudinal management of chronic conditions. The clinic used a simple electronic health record. For medications, inexpensive formulary medications at local chain pharmacies and pharmaceutical company Patient Assistance Programs (PAP) were used.

The host health system provided a brick-and-mortar clinic for $1 per year rent and free basic lab and imaging for those below 165% of poverty. Health system subspecialist physicians agreed to see a few consults in their office when the request was approved by the free clinic medical director, and the hospital assisted with getting indigent care application approval for expensive imaging and procedures. Each visit was reviewed by the entire class of M-3s twice per month with the regional dean, with a performance improvement focus, as part of "Dean's Hour." The effort evolved into a voluntary longitudinal elective that provided two to four weeks' elective credit, depending on the time spent by the individual student. In the 18 years since full student involvement began, only one student chose not to be involved.

By developing detailed protocols and working with an experienced part-time paid nurse, we were able to spread out visits and actively manage most conditions via telephone. This allowed us to provide longitudinal care for about 1600 patients. With full implementation of the Affordable Care Act in 2014, most of our patients received Medicaid coverage. We facilitated their applications and assisted with transitioning their care to a local PCP, many of whom were in our local family medicine residency. In 2015, the clinic board considered closing the clinic but ultimately decided to continue, enlarging the scope to the underinsured. Most free clinics in our region ceased operation. The regional dean, a member of the clinic board, advocated for continuing the clinic because of its educational value. Many of the formerly uninsured in our region who had incomes higher than the Medicaid maximum subsequently enrolled in the state insurance exchange. To minimize their premium, many chose plans that had out-of-pocket costs ranging from $5000 to $12000 per year. Health system staff were finding that these patients were not seeking primary care because of the cost, resulting in emergency department visits for medium acuity issues, many resulting in unpaid debt.

Again, the free clinic board considered alternatives, and ultimately decided to waive the financial screen that formerly was required and see anyone not covered by Medicare, with a $10 co-pay for the visit. This still required a financial screen to be done by the health system for free lab and imaging, but removed

one step that could be a barrier to prompt access to care. For patients newly covered by Medicaid with needs that couldn't wait until they could get an appointment with a PCP, we provided transition care. About a year later, with the turnover of some board members, they voted to waive the co-pay entirely.

In 2019, the clinic had settled into getting about five new patients per month and caring for 60 longitudinal patients. The staff was trimmed down to just one part-time paid nurse and one Thursday evening session with all volunteers, and the budget decreased to about $20000, with greatly scaled down fundraising efforts. The patient volume was adequate for longitudinal training purposes of the eight M-3s based at the regional campus, and many students reported that it was key in their choice of specialty, with almost 50% choosing family medicine and another 25% choosing general internal medicine.

When the health system clinics closed to in-person visits because of the COVID pandemic in March, 2020, the free clinic did the same. We re-opened in August, but many of our former patients were wary of getting out for any reason. We contacted them all, and for the approximately 30 who did, we used an in-person visit with COVID protocol to introduce their new M-3 student PCP, do ECGs to assess for LVH as outlined in our hypertension protocol, and explained the telemedicine option to them. Using the same model used by the local family medicine residency,[9] the students were trained in telemedicine and each established a dialer account so that calls would appear on the patient's phone as coming from the clinic. Regular clinic sessions were set, and appointments made in the EHR as previous in-person visits were. Telemedicine stations were set up in private rooms in the medical school training wing, and the regional dean supervised each encounter and interacted with each patient at the end of the telemedicine visit.

The students adapted quickly and became very comfortable with the telemedicine process. In July, 2021, when it was time for the new M-3s to assume the PCP role, the now M-4s completed a "warm handoff" of each patient, often connecting in for a portion of their patient's first telemedicine visit with the new M-3. We encountered similar problems reported from our residency, with about 30% of patients found not to have video capability on their phones and another 30% having inadequate internet connections to support video.[9] When video was not possible, these visits were completed as audio-only telephone visits. Funded by the local Area Health Education Center, we mailed each patient a high quality scale, automated BP machine, pulse oximeter, and thermometer for a total "home visit" equipment cost of $95. When video was possible, the students learned to have the patients point their phone at the instruments, allowing the vital signs to be listed in the "objective" portion of the visit note. They could also determine if cardiac rhythm was regular by listening as the BP machine beeped with each heartbeat as the automated cuff slowly deflated. Basic skin, musculoskeletal, and gross neurological exams could be performed, and a few students demonstrated and then observed the patient doing simple physical therapy maneuvers for common complaints like rotator cuff tendonitis and plantar fasciitis.

This telemedicine care has continued to the present, with patients reporting that their needs were being met.[10] As happens each year, a few patients became eligible for Medicare or got a new job with good insurance coverage, leaving about 25 active patients, resulting in each M-3 acting as PCP for two to four patients. With no personnel costs and much decreased "slip and fall" (general liability) insurance costs, the total budget is now $8000. This is completely offset each year by a grant from the city government, supplemented by student-managed fundraisers of a fun run and a cookout outside the host hospital supported by volunteer campus staff.

The regular chart review continues, with ongoing reinforcement of protocol use for hypertension, diabetes, and hyperlipidemia and adaptation as changes occur with new medications available by PAP. A staff member of the regional campus has assumed the role of volunteer administrator, assisting with prescription refills and PAP forms between visits. At the end of each visit, the student sends a draft progress note to the regional dean who digitally marks up needed changes, the student places the revised note in the EHR, and the dean signs each note, prescription, and lab or imaging request. Because of repeated COVID waves, the clinic has not resumed in-person visits and is accepting new patients on a limited basis until the team returns to

our brick-and-mortar clinic when the pandemic recedes.

History of community cardiovascular screening

The regional campus has supported summer pathways programs since 1996, and since 2002, this has included college, pre-M-1 (Prematriculation) and post M-1 (Preclinical) students in service learning.[11-13] During each summer session, students completed a community needs assessment in two adjacent underserved counties including key informant interviews[14] and outlined the effort for the next summer. Several of the college students returned each summer, providing some continuity to the implementation. The community input highlighted a lack of providers for the school physical exams required before kindergarten and sixth grade, as well as sports physical exams required annually. To address this need, the rising M-2 preclinical students receive an eight-hour tutorial on the physical examination. The larger group including the college students worked in teams led by a preclinical student with each team responsible to prepare for the sessions by researching common responses to history questions and physical exam, and simple lab abnormalities likely to be encountered in this population. The group took the anticipatory guidance script from the previous summer and adjusted it as needed.

The physical exam sessions were held in health department facilities in contiguous underserved counties only when we were invited.[11] Their staff chose the date and time and an experienced nurse worked with each preclinical student in their exam room. The preclinical student progressed from observing to performing the exam early in each three-hour session. The students were supervised by the regional dean or another family physician who saw each patient with medical needs. An established referral process through the school-based nurses provided continuing care as needed. The college students were responsible for setting up props in the anticipatory guidance (AG) room. The college student assisted in the exam room and then walked with the school child to the AG room. Because they had been present in the exam room, they could provide individualized AG to each child while the parent was in a separate room providing feedback on the process to a staff person. Approximately 80 physical exams were completed each summer since 2006.

In 2016, leaders of the county that hosted the regional rural campus expressed concern about the high rate of cardiovascular disease (CVD). A panel of informal leaders met with the summer pathways students and together they designed a CVD screening program based on the Franklin County Maine project that had been reported from a rural county with demographics and socioeconomic profile very similar to the campus host county.[15] This led to the formation of a county advisory council with the members shown in the table who established a recurring schedule of student-performed CVD screening at community events, churches, and food pantries.[16] Early in the process, we determined that to be effective our screening stations needed to be close to where those to be screened were already waiting for another purpose, with food pantries by far the most successful. An individual health risk summary was completed with student assistance, and a finger stick for blood glucose and total cholesterol and a BP check were offered.

Prior to the pandemic, our goal was have any person screened who had needs and no PCP leave with an appointment time at the next free clinic session as an add-on. The story of an individual patient as described below was subsequently made into a widely distributed short video by the host health system, promoting the value of community screening. Perhaps not surprisingly, only about half of the patients directed to the free clinic actually came to their appointment despite it only being a few days hence. We discovered the obvious obstacle that the small van city bus route had a stop near the clinic, but stopped running at 5 PM. To maximize the participation of our working volunteers, we began clinic at 5:00. We met with the city council and plans were underway to extend the bus service hours on the Thursday evenings that we had clinic just as we had to stop our in-person clinics because of COVID. When the food pantries stopped serving in-house meals and had volunteers deliver the baskets of food to the recipients' car, removing any organized waiting area, we stopped CVD screening. At the same time almost all in-person community events were paused. We look forward to resuming CVD screening at our

usual community sites when the pandemic has receded.

Homeless shelter experience

Just prior to the first wave of COVID in spring 2020, we had been invited to do CVD screening in the only homeless shelter in our small town that was managed by the Salvation Army. The facility provided a warm lunch for the 21 sleep-over residents as well as anyone else in the community who came just for the meal. Although small, the CVD screening effort produced almost 60% with abnormal screening values, even if they were under current treatment for diabetes, hypertension, or dyslipidemia. The vast majority listed the name of a local PCP on the risk summary, but most reported no recent visit. This resulted in some frustration among the students, as our protocol only allowed us to urge these patients to see their PCP soon. Students learned that the chaotic life that resulted in attending a homeless shelter likely precluded the clients from making and keeping appointments with their PCPs who were already too busy.

When those at the shelter who had no PCP and had needs requested our care, we scheduled telemedicine visits during our next regular clinic session. As we tried to make our routine follow-up call confirming the date and time, we quickly learned that although most of this population had cell phones, they had limited minutes, no video, and no voice mail. Even though at the screening we had given them a card with the date, time, and clinic phone number shown, they rarely would answer our call. This could have been because our services were no longer a priority for them, or an attempt to save their minutes for friends and family, or any of the myriad of social upheavals that they encountered in everyday life.

After some discussion at Dean's Hour, we decided to launch the "clinic without walls" that had been approved by the clinic board just before the COVID pandemic began. Instead of scheduling those who needed clinic care, we began providing care on the spot. We took the equivalent of the home telemedicine package that we had mailed to our regular free clinic patients to the shelter. This and a stethoscope provided the essential equipment for a basic primary care visit. When the student had completed the visit, a telemedicine connection was established with the regional dean who acted as supervising physician. The student presented the patient in their presence, and the three agreed on an initial plan. This usually involved basic lab and sometimes imaging, and the city bus had stops at the shelter and host health system clinic lab. After this step was completed, the dean saw the patient in-person at the shelter at a time convenient for all. Needed prescriptions were approved and called into a local pharmacy that had a nearby bus stop either using the $4 list or Salvation Army vouchers.

Next, we discovered a group of patients at the shelter who had a PCP but either didn't know they still had Medicaid coverage, had health exchange coverage with a high deductible, or simply couldn't navigate their way through the Medicaid application process. We decided to provide them bridge care while connecting them with the contractor working with the host health system to complete the Medicaid application process. This required getting beyond the "here's the contractor's phone number, call them" approach suggested by the contractor. By including shelter staff and active facilitation by a motivated student advocate, this process was more likely to be successful. This provided a mechanism for students to experience first-hand the social determinants of health and learn the role of patient navigator, the next logical step in our experiential curriculum development.[10] The case studies and student comments below give a first-person account of that learning process, and a formal study showed that students reported that even with free clinic care, their patients could not find their way to free local cancer screening procedures and still needed help navigating the health system outside of the free clinic.[10]

Student comments

My experience at our free clinic gave me the opportunity to truly take care of patients as my own. It helped me begin to develop my professional identity. It was an invaluable experience that will help me be more prepared for residency.

M-4, matched to FM residency

Working as a student clinic director at the longitudinal free clinic and participating in community cardiovascular screenings allowed me to put what I

had learned into action, educate patients on important health risks, and see firsthand the socioeconomic determinants of health in my patients' lives.

M-4, matched to dermatology residency

This experience gave me insight into taking care of patients who face several obstacles to obtaining medical care. My patient lacked transportation, but also was unable to take the city bus because she did not have a car seat for her three small children and nobody to watch them. She did not have finances to pay for medications. I have a better understanding why so many people who lack resources seek medical care in the emergency room.

As a medical student, it is important to be able to talk to patients, and often patient contact time in the clinic setting is limited and students do not have time to take full histories on a patient. This experience allowed me to gain confidence in my ability to take a medical history, perform a physical exam, order the appropriate lab work, and choose appropriate medications. This encounter also allowed me to build rapport with a new patient and provide follow up care.

M-3, planning an emergency medicine career

As we learn in our medical training, much of pediatrics is monitoring developmental milestones, safety concerns, diet, and anticipatory guidance. Children are often overlooked in settings such as free clinics because most children are eligible for Medicaid. However, with the average pediatrician visit being only 15-30 minutes long, there is still a need for coaching parents outside of the doctor's office. Encountering children in a homeless shelter gives a glimpse into barriers to pediatric care presented by a lack of transportation, lack of reliable income of caregivers, unstable family groupings, and lack of social support.

M-3, planning a pediatrics career

Case Studies

Case 1

Prior to the pandemic, a 47-year-old man presented to our CVD screening on Thursday afternoon. He was unemployed and uninsured, and had been newly hired for a maintenance job to begin in two weeks. He reported a history of "mild" diabetes and hypertension, but had not been taking medication for "a long time" because of finances. He could not remember if he had ever had his cholesterol checked. His BP was 230/110 and on repeat was 215/105. His random finger stick blood sugar (FSBS) was 210, and his total cholesterol was 220. He had no symptoms, and was given an add-on appointment to our free clinic later that evening. At that visit, his BP was in the same range and his FSBS was 230. His physical exam was unremarkable and he reported no medication allergies. He was given a lab request to be drawn the next morning and instructed not to fill his prescriptions until we checked those results but then to start the medications immediately. He was given prescriptions for Lisinopril/HCTZ of 20/12.5 once per day, metformin 500 mg twice per day and simvastatin 20 mg at bedtime, all available on the $4 list.

The next day his lab showed a normal complete metabolic profile except for BS of 216 with creatinine of 0.7, an HgbA1c of 8.2, and a total cholesterol of 220 with an LDL of 130 and an HDL of 35. His student PCP called him with the results and suggested he fill the prescriptions, which he did. He was seen for a nurse visit in two days and returned to free clinic a week later. He remained asymptomatic, his BP was 150/95, and FSBS was 140. He was seen again for a nurse visit in four days and a free clinic visit in a week. He remained asymptomatic and BP was 140/85 and FSBS was 120. He presented for his pre-employment physical the next day, and he called us very happy that he was approved to start work on time. He was seen for two more brief free clinic visits before his insurance was in effect, and on the last visit his BP was 132/82 and FSBS 110. We assisted his transition to his new PCP and he again expressed his appreciation for our timely and inexpensive while effective care.

Case 2

While hosting a CVD screening at the homeless shelter, a 43-year-old woman asked if we could help her get restarted on her medications for hypertension, depression, reflux, asthma, and swelling in her legs. Her heart rate was 88 and blood pressure was 154/103 with a large adult cuff, with no thigh cuff available. She reported a height of 5 feet 3 inches and a weight of 300 pounds. After doing a complete H and P, I presented the patient to the supervising physician. We ordered a CMP, CBC, non-fasting lipid panel, TSH, HbA1C, urinalysis, BNP, and

urine pregnancy test, which she had done the next day, all normal. She was found to have one more month of Medicaid coverage, but she was unaware of this. We started her back on several medications listed at her last primary care visit, which included Lisinopril 5 mg, PO, QHS, Bupropion SR 150mg, PO, BID, and Famotidine 40mg, PO, PRN. These were filled with shelter staff assistance. We planned to see her in two weeks at the shelter.

Case 3

During adult cardiovascular screenings at a homeless shelter, we were informed by staff that there was a family currently residing at the shelter who had children ages five, four, and eight months and the staff was concerned that the mother did not seem to be attentive. The female caretaker was found in fact not to be their mother but their father's girlfriend. Discussion with her and brief interview and physical exam of the children showed some diet, developmental, and hygiene concerns. We reviewed basic hygiene and infant dietary needs. We discussed infant milestones and the importance of tummy time, safe sleep practices, and nasal suctioning with saline drops for runny nose/congestion, as well as age-appropriate calming measures. We confirmed that the children had a local source of care and had well-child appointments already scheduled and offered to see the children at the shelter or return a call if the caretaker had concerns.

Table 1: Advisory Council Positions

President, City-County Economic Development
Director, Housing Authority
Co-Director, Saturday Session Food Bank
Pastor, Prominent Black Congregation
Director, Weekday Food Bank
President, Local Community College
Business Liaison, Regional Jobs Program

Conclusion

As our host community health care access evolves, so must our student-directed community-based care. Telemedicine and homeless shelter care will likely continue, and portable clinics at food pantries when these resumes will likely be our next addition. The concepts of community medicine and engagement are best learned with sleeves rolled up during service learning. Key lessons learned are that community steering committees and advisory councils are necessary and health events need to be where and when suggested by those connected to the target audience. We offer this summary of our journey to others who are considering taking concepts of community medicine into their host communities.

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