



Reaching the Homeless Patient Population: A Novel Student-Run Clinic Outreach Program

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Abstract

Introduction: The Bishop Dudley Hospitality House (BDHH) is a non-profit organization founded in 2015 that provides support services, resources, and shelter to the poor and homeless community members of Sioux Falls, South Dakota. Recognizing that physical access to healthcare is a major barrier for many individuals that utilize the BDHH, University of South Dakota Sanford School of Medicine student leaders at the Coyote Clinic instituted a bimonthly satellite clinic in the on-site BDHH clinic room.

Methods: In this study, we first describe the establishment of the collaboration between a student-run free clinic and a community homeless shelter. Additionally, to demonstrate the impact of such an outreach and subsequent referral program, we have collected and analyzed data regarding the demographics, insurance status, and access to a primary care provider of the patients, their chief complaints, acuity level, referrals, and whether they attended their follow-up appointment.

Results: Over the course of February 1, 2022 through June 30, 2023, a total of 80 clinical encounters and 57 patients were seen at the Coyote Clinic BDHH Satellite Clinic. A total of 29 referrals to the main Coyote Clinic downtown were made and one patient was sent to the Emergency Department directly from BDHH.

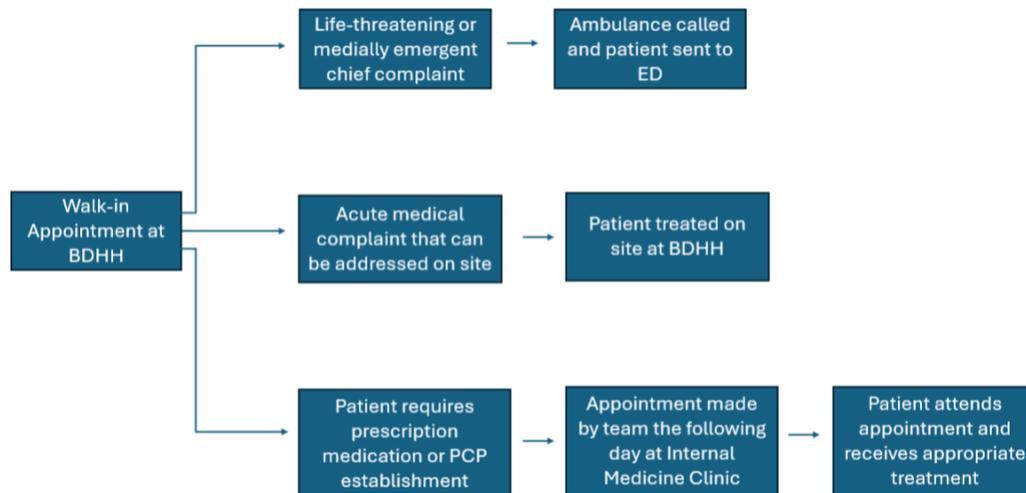
Conclusions: The BDHH satellite clinic has created an additional entry point for healthcare to a high-risk population. Our hope is this model can be adopted by other student-run free clinics seeking to serve similar patient populations.

Introduction

The Coyote Clinic is a free clinic run by medical students at the University of South Dakota Sanford School of Medicine in Sioux Falls, South Dakota. Coyote Clinic has a well-established internal medicine clinic operating on Tuesday evenings. In addition, a psychiatric clinic is available the first Wednesday of the month. Services at the clinic are provided to uninsured and underinsured individuals.

The Bishop Dudley Hospitality House (BDHH) is a non-profit organization founded in 2015 that provides support services, resources, and shelter to poor and homeless community members of Sioux Falls, South Dakota. BDHH can house up to 155 people per night. This population is known to have higher and premature mortality than those with stable housing.^{1,2} This can be attributed to increased rates of mental disorders and suicide, unintentional injuries, infectious diseases, and substance misuse.³ It has been well documented that access to healthcare for homeless populations has many challenges.⁴⁻⁶ Recognizing that transportation, physical access, and costs to healthcare are a major barrier for residents of BDHH, the Coyote Clinic instituted a satellite clinic on-site at BDHH. This outreach triage clinic was established in February of 2022.

Figure 1. Triage and treatment for patients seen at Bishop Dudley Hospitality House



At the BDHH satellite clinic, medical students, under the supervision of a physician, provide limited basic health services and screenings. The clinic is set up as a walk-in service with no scheduling or established appointments. The clinic is open from 6:30pm, corresponding to the time BDHH opens their doors for residents to reserve a bed, until 8:00pm on the first and third Monday of the month. The exam room consists of an exam table, locked medicine cabinet, scale for weight, blood pressure cuff, thermometer, glucose monitor, otoscope, and wound/medical care supplies. The patient encounters are spearheaded by the two medical students under the expert guidance of the supervising physician. If the diagnosis can be addressed with education or over-the-counter medications, treatment is provided at that time. If the diagnosis is more complex or additional testing is needed, patients are referred to the Tuesday night Internal Medicine Coyote Clinic. Referral visits are coordinated by the medical student volunteers for the next night. Lastly, if the diagnosis is emergent, an ambulance is called, and the patient is taken to the Emergency Department (Figure 1).

An analysis of the patient encounters was performed to better understand the reach and demographics of the clinic. A primary aim of the satellite clinic is to offer medical guidance by furthering access to care, encouraging establishment with primary care providers, and directing patients to the emergency department when warranted. Our hope is that this model can be adopted by other student-run free clinics seeking to serve similar patient populations.

Methods

Identifying patient information, vitals, diagnoses, and referrals made to the Coyote Clinic are collected and stored using the Research Electronic Data Capture (REDCap), a secure web-based application used to track data from patient encounters. The same REDCap system is used at regular Internal Medicine Coyote Clinic nights. Thus, we can track a patient that was seen at both the BDHH clinic and the Coyote Clinic. This allowed for follow-up on referral completion.

For this paper, data was extracted from REDCap for the following variables: REDCap Record ID (an identification number assigned to each patient to allow for de-identification), date of birth, gender, insurance status, primary care provider status, whether or not the patient was referred to the Coyote Clinic, what the patient was referred for, the number of appointments the patient had at the Coyote Clinic, the number of times a patient did not show up for their Coyote Clinic appointment, and

diagnoses addressed at Coyote Clinic appointments. The Coyote Clinic partners with outside healthcare

Table 1. Demographics of BDHH Clinic Patients

Demographics	N
Total patients	57
Total BDHH encounters	80
Age	
Median	50
Maximum	75
Minimum	15
Gender	
Male	39
Female	18
Insurance status	
Yes	14
No	28
Unreported	15
Primary care provider status	
Yes	14
No	28
Unreported	15

BDHH: Bishop Dudley Hospitality House

agencies, including the Avera downtown clinic where Coyote Clinic Internal Medicine clinic nights are held. Data for appointment attendance was confirmed using historical data from Avera’s electronic medical record. International Classification of Diseases codes were used to determine the subject of clinical encounters. Data was extracted from February 2022-June 2023.

Results

Over the course of February 1, 2022 through June 30, 2023, a total of 80 clinical encounters and 57 patients were seen at the Coyote Clinic BDHH Satellite Clinic (Table 1). Patient ages ranged from 15-75 years old. The patient population was predominantly male, did not have insurance, and did not have an established primary care provider (Table 1). The three most common diseases by ICD classifications for the clinical encounters were cardiovascular system; musculoskeletal and connective tissue; and skin, subcutaneous tissue, and breast (Table 2). A total of 29 referrals to our main clinic downtown were made, and one patient was sent to the emergency department directly from BDHH. There were 7 patients who attended their appointment while 11 patients who were no-shows (Table 3). Of the clinic appointments attended, the three most common ICD codes were skin, subcutaneous tissue, and breast; nervous system; and alcohol/drug use or induced mental disorders (Table 4).

Discussion

The goals of the BDHH satellite clinic were twofold: to expand access to care in the vulnerable homeless patient population and to create a referral program for Coyote Clinic. During and after the COVID-19 pandemic, Coyote Clinic saw a dramatic decrease in clinic visits. In addition, the homeless population in the United States was at increased risk for COVID-19 and had poorer outcomes.^{7,8} Further, access to care for this population was limited during the pandemic.^{9,10} Creating referral

programs for the clinic was one way to address these problems. The Coyote Clinic primarily sees patients without insurance, and many residents at BDHH may not have insurance or access to healthcare. The satellite

Table 2. BDHH disease frequency by International Classification of Diseases

BDHH Disease	N
Circulatory system	14
Musculoskeletal system and connective tissue	11
Skin, subcutaneous tissue, and breast	9
Other	7
Nervous system	6
Mental diseases and disorders	6
Respiratory system	4
Digestive system	4
Infectious and parasitic diseases and disorders	2
Endocrine, nutritional, and metabolic system	1
Ear, nose, mouth, and throat	1
Kidney and Urinary Tract	1
Alcohol/drug use or induced mental disorders	1
Burns	1

BDHH: Bishop Dudley Hospitality House

Table 3. Referrals from Bishop Dudley Hospitality House Clinic

Referrals	N
Total referrals	29
Referred patients	24
Sent to emergency department	1
Coyote Clinic	
Clinic appointments	9
Clinic patients	7
Missed clinic appointments	12
Patients that missed an appointment	11

Table 4. Diagnoses addressed at referral appointments

Diagnoses addressed at clinic appointments	N
Skin, subcutaneous tissue, and breast	4
Nervous system	3
Alcohol/drug use or induced mental disorders	3
Musculoskeletal system and connective tissue	2
Mental diseases and disorders	2
Circulatory system	1
Other	1
Respiratory system	1
Infectious and parasitic diseases and disorders	1

Endocrine, nutritional, and metabolic system	1
Kidney and urinary tract	1
Reproductive system	1

clinic successfully addressed barriers to care such as transportation, costs of care, lack of identification, and challenges with finding primary care providers. By design, outreach at BDHH occurs the day preceding the weekly internal medicine clinic so patients can be seen promptly the next day when needed. In addition, the cost of transportation is covered, a meal voucher is provided, and reservation of a bed at the shelter is coordinated and offered to all patients scheduled for follow-up at the internal medicine clinic. This coordination ensures that a patient is not faced with the barrier of choosing between receiving medical care or a free meal, since the Internal Medicine clinic takes place at the same time as the dinners provided at the local soup kitchen. Coyote Clinic leaders met with leadership at BDHH to identify how to successfully create this partnership. It was from these meetings that the barriers of transportation and meals were identified. The overlapping timing of the free meal and internal medicine clinic would not have been known without these meetings. Addressing challenges specific to the population being served was key in the success of the clinic. Based on the data presented above, both original goals set were accomplished.

Typically, the clinic would see about 4-6 patients, accounting for about a 2-4% reach of the target population each clinic night. This demonstrates the need for care in this population and the importance of the satellite clinic. Without the satellite clinic, many of these patients may not have sought or received care. The satellite clinic serves an important role as an entry point for healthcare that many of the BDHH residents would not otherwise have. Clinics like these can be established with limited resources and volunteers. The clinic originally was established with one committed physician and 18 committee member volunteers. As standard protocols were finalized, resident physicians became involved, and the list of attending physician volunteers lengthened. Volunteer opportunities were expanded to all medical students. We have since had seven other physicians volunteer and more than 30 non-committee volunteers have taken advantage of this opportunity. This provided unique opportunities for medical students to gain a better understanding of the challenges faced by their fellow community members and to further their experience working with social determinants of health and barriers to healthcare. Undergraduate premedical students became involved as well, with their role focusing on taking vitals and ensuring data tracking. In addition, a partnership was formed with BDHH beyond the clinic. Coyote Clinic organized a winter clothing drive for BDHH, and partnerships with local pharmacies were created to help stock over-the-counter medications and supplies at the satellite clinic.

Moving forward with the BDHH clinic, it is important to recognize some of the limiting factors faced. Tracking of patient visits and data was inconsistent at the inception of the clinic. The number of encounters at the clinic was likely much larger than recorded. Additionally, due to shortage of both physician and student volunteers, there were a handful of clinic nights that were canceled. As the Coyote Clinic seeks to continue its presence BDHH, these challenges are being addressed. In the future, we aim to continue expanding our impact by implementing a mental health screening questionnaire. It has been well documented that mental health and substance abuse are common challenges faced in this population.^{3,11} Establishing a referral program to Coyote Clinic's monthly Psychiatry Clinic could be of great benefit to these people.

Conclusion

The homeless population is vulnerable and oftentimes does not have access to healthcare. This can be due to a lack of insurance or due to barriers related to social determinants of health such as transportation, safe housing, and access to meals. During the coronavirus disease 2019 pandemic, the Coyote Clinic saw a drop in patient numbers. In addition, the homeless population was at increased risk for illness during the pandemic. In response, the steering committee decided to increase focus

on community outreach to promote public health as well as increase referrals to our clinic. As part of this effort, an outreach clinic was established at the BDHH, a local homeless shelter, two nights a month. This satellite clinic was strategically designed to occur the night preceding the established Coyote Clinic internal medicine night so patients could be directly referred to the clinic the following day. Over the last year, 57 patients have been seen at BDHH for a total of 80 encounters, and 29 referrals were made to the Coyote Clinic. This project has established a need at BDHH for patients to be seen, and the aim of increasing referrals to the Coyote Clinic was achieved. The steering committee hopes this manuscript inspires and provides a framework for other student-run free clinics interested in establishing a similar outreach clinic.

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Disclosures

The authors have no conflicts of interest to disclose.

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