



Retrospective Analysis of Patient-Reported Reason for Visit

Unveiling the Most Common Presentations at a Student-Run Free Clinic Serving Patients with a History of Substance Use

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Abstract

Background: Student-run free clinics are crucial in providing healthcare to underserved populations; however, few studies have evaluated common reasons patients seek care, particularly those in recovery from substance use. This study focuses on the patient population at Drexel University College of Medicine's (DUCOM) Salvation Army Adult Rehabilitation Center (ARC) clinic, which serves individuals in recovery from substance use. The aim is to identify the most prevalent concerns addressed during beneficiary appointments to implement patient-centered efforts to improve care access for this group. Beneficiary is the preferred term used to describe patients.

Methods: The data was collected through a retrospective analysis of medical charts from DUCOM's Salvation Army ARC Clinic covering April 2020 through June 2023. Data on demographics, clinic visit frequency, chief complaints, and referrals were extracted from beneficiary encounter notes in the clinic's secure electronic medical record system.

Results: Of the 160 beneficiaries with a documented primary reason for visit, 419 chief complaints were identified. Forty-seven percent of beneficiaries visited once, 39% visited 2 to 4 times, and 14% visited more than 5 times. The most common chief complaint categories were Pain and Musculoskeletal (25.1%), Well-Visit/Medication Refill (24.1%), and Cardiovascular concerns (9.5%).

Conclusion: The primary chief complaints at the Salvation Army ARC clinic suggest significant barriers in chronic pain management, accessing routine primary care, and managing chronic cardiovascular conditions. A hypertension sub-clinic and a medication refill system have already been implemented, and further interventions, including academic center partnerships for streamlined referrals, and psychiatric training, have been proposed to reduce patient barriers to care and improve outcomes. Further research is needed to develop efficient interventions that will address the healthcare needs of this at-risk patient population, given the constraints of a student-run free clinic.

Introduction

Student-run free clinics (SRFCs) exist at most accredited medical schools, offering hands-on learning opportunities for student volunteers, as well as providing necessary medical services to over 140,000 patients annually, representing a notable source of access to care in these areas.¹ Drexel University College of Medicine (DUCOM) sponsors a series of free clinics through the Health Outreach Project (HOP), providing free health services to underserved populations in the Philadelphia area.

One of these clinics, the Salvation Army Adult Rehabilitation Center (ARC) in Roxborough, Philadelphia, PA, serves adults of all genders recovering from drug and alcohol use. Beneficiaries, the preferred term to reference patients at the Salvation Army ARC, live on-site for eight months to one year, participating in work therapy (up to 40 hours per week of job training designed to teach strong work

habits and restore self-esteem), activities promoting spirituality, and community integration as part of their recovery process.² On most Tuesday nights, the HOP clinic operates to address the health concerns of this community. The clinic comprises a care team of an attending and resident physician, medical students serving in the roles of elected clinic coordinators and health advocates, and weekly medical student volunteers. Medical student volunteers begin the patient encounter, obtain a history, and present their findings to the attending physician. This clinic is essential, as many beneficiaries are uninsured and/or do not have a primary care physician (PCP). Due to the funding and the limited scope of this free clinic, services are restricted to conducting a complete history and physical examination, monitoring vital signs, stocking a limited medication supply, and ordering bloodwork, insurance permitting. For this reason, a better understanding of the medical requirements and demographics of the population at Salvation Army ARC is needed to better allocate resources and provide the highest quality care possible.

Despite the critical role SRFCs play, limited research has been done to record the reasons patients seek care, especially at clinics serving patients with a history of substance use. Within the existing literature, SRFC-specific chief complaint data has been used to guide quality improvement. These interventions have included increasing funding for frequently utilized medical equipment, developing outreach programs, and recruiting subspecialists to address the needs identified.³⁻⁵ Of these, only one addressed the needs of patients in adult long-term rehabilitation centers for substance use.⁴

A recent study at this Salvation Army ARC clinic showed an increase in the mean age of beneficiaries from 38 to 49 years old and an increase in the prevalence of chronic health conditions including hypertension, diabetes and musculoskeletal (MSK) concerns from 2002-2004 to 2020-2022.⁶ This shift in the clinic's demographics is reflective of the aging population of the United States, further supporting the need for an updated review of the relevant health concerns of this population, and the potential applicability to other SRFCs serving aging populations, especially those in recovery.⁷

This study aims to provide a current assessment of the needs at the Salvation Army ARC, helping guide clinic resource allocation and improve patient care. This research will provide valuable insight into the needs of an under-studied population with the hopes of informing other SRFCs that serve patients in recovery, especially those in long-term residential programs.

Methods

This study used beneficiary medical record notes collected by the Salvation Army ARC clinic from April 2020 through June 2023. These notes included a section for history of present illness (HPI) which documented the reason for each visit. The research protocol was exempt from Internal Review Board review due to the intention of continuous quality improvement with no experimental or atypical intervention.

A team of ten medical student clinic coordinators reviewed patient notes within the 3-year timeframe. Given that patients often present with multiple concerns, the team focused on determining the primary reason by reviewing the PHI for the visit. Each student individually reviewed a subset of the charts. Cases of uncertainty were discussed among all research team members and resolved collectively. For certain beneficiaries, their clinic visit could not be summarized by a single chief complaint. In such instances, additional reasons for visit were documented. For beneficiaries needing specialized care beyond the clinic's scope, referrals to specialists were made and documented in the beneficiaries' charts. Demographic data, including age and sex, was also collected. Inclusion criteria required beneficiaries to be seen by the clinic during the study period and documentation of the reason for the visit. Repeat visits by the same beneficiary were treated as a unique data point.

Primary reasons for the visit were then grouped into categories based on the system of concern. In certain charts, a single category did not encompass the beneficiary's primary complaints. In these instances, additional categories were listed. These categories were created to encompass the diverse ways a health issue may be presented in the notes. Patient visit information was stored in a

Table 1. Sex and age of the population at the Salvation Army Adult Rehabilitation Center clinic

Demographics	N (%)
Sex	
Male	113 (70.6)
Female	47 (29.4)
Age, years	
20 - 30	16 (10.0)
31 - 40	23 (14.4)
41 - 50	38 (23.7)
51 - 60	67 (41.9)
61 - 70	16 (10.0)

The demographics of the population of beneficiaries (N = 160) receiving care at Drexel University College of Medicine's Salvation Army Adult Rehabilitation Center clinic project are outlined above. Most beneficiaries attending the clinic were male and/or between 41-60 years old.

secure Microsoft SharePoint behind university firewalls. Excel was used within this SharePoint for data organization and processing (Microsoft 365, Microsoft Corp. Redmond, WA).

Results

Beneficiary demographics including age and gender were recorded from the electronic medical record (EMR) system. Results showed the majority of patients at the clinic were male and/or between the ages of 41 to 60. (Table 1). Chief complaints were reported by each beneficiary and categorized by the research team members. The top 3 chief complaints were noted to be Pain and Musculoskeletal (MSK) (25.1%), Well-Visit/Medication Refill (24.1%), and Cardiovascular (9.5%). Within the Pain

Table 2. Chief complaints by category at the Salvation Army Adult Rehabilitation Center clinic

Chief Complaint	N (%)
Pain + Musculoskeletal	105 (25.1)
Well-Visit/Medication Refill	101 (24.1)
Cardiovascular	40 (9.5)
Gastroenterology/Genitourinary	27 (6.4)
Miscellaneous	26 (6.2)
Psychiatry	26 (6.2)
Respiratory	23 (5.5)
Sleep	23 (5.5)
Neurology	15 (3.6)
Infection	12 (2.9)
Endocrine	10 (2.4)
Dermatology	6 (1.4)
Dental	5 (1.4)

Drexel University College of Medicine's Salvation Army Adult Rehabilitation Center clinic project. The three most common concerns that beneficiaries had at the clinic were related to pain/musculoskeletal concerns, well-visit/medication refill, and cardiovascular concerns. The total number of chief complaints (N = 419) exceeds the number of beneficiaries (N = 160), since some beneficiaries had multiple documented reasons for a single visit and/or more than one visit to the clinic.

and MSK category, back and knee pain were the most common. The Well-Visit/Medication Refill category included 17 visits for general exams or to establish care and 84 visits for medication refills. As for the Cardiovascular category, hypertension was the most common condition, comprising 75% of the Cardiovascular chief complaints (Table 2).

The Miscellaneous category was used for any complaint that did not fit in any of the main categories listed above. These included Allergies, Peripheral Edema, Ear Bleed, Hearing, Nosebleed, Syncope, Smoking Cessation, Vision, Weight Loss, and Itching.

There were 58 referrals. These included referrals to specialists, lab work, and the Salvation Army ARC's Better Back and Joint's (BB&J) sub-clinic (Table 3).

Discussion

The findings from this retrospective study shed light on the healthcare needs of the population served by the DUCOM's Salvation Army ARC clinic. This study revealed three primary chief complaints: Pain and MSK, Well-Visit/Medication Refill, and Cardiovascular concerns. These findings highlight opportunities for targeted interventions and future research to better address the needs of this population.

The high prevalence of Well-Visit/Medication Refill visits suggests a gap in access to primary care, often due to barriers such as limited transportation, lack of adequate insurance coverage, and delayed Medicaid approval for services outside of the Salvation Army ARC clinic. As such, the clinic plays a critical role in providing basic healthcare services and medication management. With the clinic's limitations (meeting only three times a month, limited access to imaging studies, and difficulty managing referrals, given independent operations and lack of academic center partnerships), Salvation Army ARC staff attempt to enroll most beneficiaries in nearby primary care practices.

One solution would involve partnerships with academic medical centers to create a streamlined process for referral and care. Educating potential future partners about the Salvation Army ARC's structure, the rules the beneficiaries must follow, and the challenges they face would improve efficiency, decrease wait time and ensure better care for conditions requiring specialized attention.⁸

Many beneficiaries come to the clinic with multiple health concerns, often after months or years of not being seen by a physician. To alleviate the strain on clinic resources, the clinic recently implemented a medication refill system facilitated by the Salvation Army ARC's Lead Counselor to reduce time spent on refill visits. This change occurred after data collection and is not reflected in this study's results.

The prevalence of pain concerns underscores the significant burden of pain within this community. To address this, the clinic can emphasize non-pharmacological approaches such as the BB&J clinic for MSK pain, or therapies such as exercise, physical therapy, and mindfulness.

A previous study detailing a SRFC in Memphis implemented collaboration with a local physical therapy school to provide further services to address MSK needs without incurring significant costs.³ Previously, the Salvation Army ARC clinic enjoyed a similar partnership with monthly help from a family medicine faculty member with a focus in Sports Medicine, and a Sports Medicine Fellow, however, this service was suspended during the pandemic shutdown. At the time of publication, clinic leaders are working to re-establish this service.

The high frequency of cardiovascular concerns signifies the need for preventative measures and early detection. The Salvation Army ARC clinic has recognized this issue and recently implemented a Hypertension Sub-Clinic which includes blood pressure tracking, medication counseling, and promoting healthy lifestyle choices. A 2017 report reviewing longitudinal hypertension outcomes for new patients at student-run free clinic sites found a significant reduction in patients' systolic and diastolic blood pressure, emphasizing the positive impact SRFCs can have on controlling hypertension and preventing cardiac events.⁹ Through the Salvation Army ARC Hypertension Sub-Clinic, the hope is to achieve similar outcomes for beneficiaries.

Table 3. Number of referrals to other specialties or clinics from the Salvation Army ARC clinic

Referrals	N (%)
Psychiatry	12 (20.7)
Primary Care Physician	10 (17.2)
Better Backs and Joints Clinic	5 (8.6)
Orthopedic	4 (6.9)
Ophthalmology	4 (6.9)
Labs/Testing	3 (5.2)
Neurology	3 (5.2)
Podiatry	3 (5.2)
Emergency Room	2 (3.4)
Urology	2 (3.4)
Gastroenterology	2 (3.4)
Rheumatology	2 (3.4)
Obstetrics and Gynecology	1 (1.7)
Pulmonology	1 (1.7)
Cardiology	1 (1.7)
Oncology	1 (1.7)
Dentistry	1 (1.7)
Physical Medicine and Rehabilitation	1 (1.7)

Drexel University College of Medicine's Salvation Army Adult Rehabilitation Center clinic project. The most common reasons beneficiaries received a referral from the clinic to another healthcare provider were for psychiatry and primary care services. Due to rounding, the sum of the percentages is 99.7.

ARC: Adult Rehabilitation Center

Mental health concerns were also prevalent in this community, with many beneficiaries requiring care the clinic cannot fully provide. Unfortunately, lack of health insurance and long wait lists can often delay access to specialized psychiatric services. While the clinic physicians do renew and occasionally adjust the dosing of previously prescribed psychotropic medications, it is critical that beneficiaries are referred to mental health providers for comprehensive care. Given that over 40% of referrals are made to a PCP or psychiatrist, there is a clear need within this population.

One SRFC implemented a lay counselor model and utilized a psychologist and psychiatrist to train health professional students to provide evidence-based psychosocial interventions. The clinic reported improvements in depression scores, as well as increased student comfort in mental health topics and working with underserved populations.¹⁰ This approach could be adapted to other SRFCs, including the Salvation Army ARC clinic, by training students and resident volunteers to provide psychosocial support. This would increase access to mental health care, while also reducing the time to receive help and decreasing the reliance on referrals.

Despite its valuable insights, this study has several limitations. The data is retrospective and has a small sample size due to changes in the clinic's EMR. Historically, the clinic's records were organized on paper copies, until 2020 when the clinic transferred to an electronic SharePoint for EMR storage. Due to this change, the sample size was limited by the lack of convenient access to prior records. Categorization of additional patient data could prove powerful and improve the generalizability of results. Chart review was conducted independently by ten medical student clinical coordinators, with uncertain cases discussed and resolved collectively. However, standard interrater reliability was not established prior to individual chart review, introducing potential for reviewer variability in determining the primary chief complaint. Furthermore, the categorization of chief complaints depended on the wording used by the person completing the intake, leading to possible variability in

categorization. Retrospective interpretation of these notes could have led to misclassification of some complaints.

Conclusion

At this student-run clinic serving adults recovering from drug and alcohol use, beneficiaries presented for three primary reasons: Pain and MSK, Well-Visit/Medication Refill, and Cardiovascular concerns. By identifying the most common chief complaints, the clinic can now make data-driven decisions to enhance its services to optimize resources and better serve its unique patient population. This work will allow for improved and targeted training of student coordinators, volunteers, and resident physicians to provide better care for the population at this clinic. These insights also provide guidance to other SRFCs, particularly those serving older populations and patients in recovery.

Limitations of this study include a small sample size and potential categorization errors due to a lack of a standardized process for determining chief complaints. Future outcomes research could investigate the impact of targeted interventions aimed at reducing the number of clinic visits for these common chief complaints. For example, a streamlined medication refill program or a partnership with physical therapists could be established to provide regular care to help alleviate pain for patients. Partnering with other professionals can further strengthen the clinic's impact and help increase access to healthcare systems for these at-risk patients.

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Disclosures

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References

1. Rupert DD, Alvarez GV, Burdge EJ, et al. Student-run free clinics stand at a critical junction between undergraduate medical education, clinical care, and advocacy. *Acad Med*. Published online May, 19 2022. doi:10.1097/ACM.00000000000004542. [LINK](#)
2. Adult Rehabilitation Centers FAQs. The Salvation Army USA. Accessed March 9, 2026. <https://www.salvation-armyusa.org/recovery/arc-faqs/> [LINK](#)
3. Cesari WA, Vaikunth SS, Lewis JB, et al. Know your audience: analysis of chief complaints at Clinica Esperanza, a student-run free clinic in Memphis, Tennessee. *J Prim Care Community Health*. Published online April 19, 2012. doi:10.1177/2150131912442713. [LINK](#)
4. Tran T, Briones C, Gillet AS, et al. "Knowing" your population: who are we caring for at Tulane University School of Medicine's student-run free clinics? *J Public Health*. Published online October 11, 2020. doi:10.1007/s10389-020-01389-7. [LINK](#)
5. Hohl M, Dodd J, Penman A. A retrospective review of the patient population served by the Jackson Free Clinic, a student-run free clinic in Jackson, Mississippi. *J Health Care Poor Underserved*. 2022;33(1):362-373. doi:10.1353/hpu.2022.0027. [LINK](#)
6. Agarwal S, Newman M, Patel M, et al. Shifting patient populations: an examination into more commonly seen diseases and disorders due to increasing age at a Salvation Army Clinic Adult Rehabilitation Center. Poster presented at: *Society of Student Run Free Clinics National Conference*; March 26, 2022; Mobile, AL.
7. Administration on Aging. 2023 Profile of Older Americans. Accessed December 9, 2024. https://acl.gov/sites/default/files/Profile%20of%20OA/ACL_ProfileOlderAmericans2023_508.pdf [LINK](#)
8. Wallace S, Johnson TJ, Hendel E, et al. The financial impact of a partnership between an academic medical center and a free clinic. *Am J Med*. Published online July 17, 2021. doi:10.1016/j.amjmed.2021.06.011. [LINK](#)
9. Smith SD, Rojas SM, Huang J, et al. Longitudinal hypertension outcomes at four student-run free clinic sites. *Fam Med*. 2017;49(1): 28-34. [LINK](#)
10. Rodriguez Guzman J, Ramos MA, Silva M, et al. Training health professional students as lay counselors to treat depression in a student-run free clinic. *J Stud Run Clin*. 4(1):1-7. doi:10.59586/jsrc.v4i1.61. [LINK](#)