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Nurse-led Triage Clinic in an HIV Supportive Housing Apartment Community

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Doctor of Nursing Practice Project Presented to the  
Faculty of Graduate Studies  
University of Missouri – St. Louis

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In Partial Fulfilment of the Requirements  
For the Degree of Doctor of Nursing Practice

by

Sally Breen, BSN, RN

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### Abstract

**Problem:** HIV-positive persons living in supportive housing who were otherwise homeless are reported to have better health outcomes than those who remain homeless. This was a quality improvement project to obtain baseline information regarding the implementation of onsite nursing services for individuals and their families residing in an HIV-positive supportive housing apartment community in an urban Midwestern city.

**Methods:** A nurse triage clinic was implemented in partnership with the Doorways organization. Two registered nurses staffed the clinic two days per week. Data was collected on demographics and clinic utilization over a nine-week period.

**Results:** Of the apartment residents,  $N=95$ , the clinic was utilized by a small number ( $n=6$ ). Greatest clinic usage occurred on days when events were held ( $n = 5$ ). Two of the six residents (33%) reported not having a regular source of primary health care. BMI was noted to be in the overweight or obese range for all six clinic patients. A decrease in blood pressure was observed in a clinic patient after education on medication adherence and repeat visits.

**Implications:** Hand-off of the clinic to the next cohort of DNP students will continue to build rapport in the community. Adding an APRN on staff at the clinic with collaborating physician would offer a broader range of services to the community. Interventions that engender trust in the health care system, promote self-care, increase health literacy and an individual's ability to navigate the complex system of health care are necessary to improving the health of this population.

### Nurse-led Triage Clinic in an HIV Supportive Housing Apartment Community

Homeless individuals in supportive housing communities often have unique medical, mental health, and socioeconomic challenges. These individuals and their families often face multiple barriers to health care and untreated pre-existing medical conditions. Lack of health insurance, poverty, unemployment, histories of emotional and physical trauma, and an increased risk for substance abuse have likely prevented them from seeking necessary care (CORE, 2013). A strong correlation,  $r=.774$  ( $p < 0.00$ ) exists between race, poverty, and access to health care (Smith et al., 2017). Emergency rooms are a safety net and often their only source of healthcare, resulting in inadequate treatment and fragmented care. Dobbins et al. (2016) found contact with a nurse was associated with the use of primary care services by people who were homeless or marginally housed. On-site nursing care reduced ED visits by two per year in a Direct Access Housing study in San Francisco, California (Dobbins et al., 2016). The Healthcare for the Homeless Clinicians Network (2005) reported nurses and nurse practitioners made up 37% of its network of providers and were instrumental in providing care to the homeless. Nurse-led clinics in supportive housing may be an effective intervention for providing medical management, education, and support to individuals and families.

Being homeless increases the risk of HIV infection due to the conditions in which individuals live. Many homeless inject intravenous drugs and may share needles, and many cases of HIV are due to risky sexual practices among the homeless population. Homeless persons are three to six times more likely than housed individuals to become ill. Managing HIV while homeless is difficult due to difficulty obtaining treatment, and adherence is difficult for those who live in unsanitary conditions and who lack access to food, clean water, and health insurance (National Coalition for the Homeless, 2009).

Since nurse led clinics have demonstrated improved health outcomes for HIV-positive individuals (Griffiths et al., 2007), the purpose of this project is to develop a nurse-led triage clinic in a supportive housing apartment complex for formerly homeless, HIV-positive individuals and their families. The overall goal of this clinic is to improve access to health services, increase health literacy through personalized health education, reduce unnecessary emergency department visits, and assist in healthcare referrals.

**Problem:** Underutilization of primary care services and poor medication compliance by residents living in an apartment community for those with HIV/AIDS.

**Problem Statement:** Residents at a Midwestern, urban HIV residential apartment community have a high rate of emergency department utilization, and low primary care provider utilization.

**Purpose:** The purpose of the project was to determine demographic and utilization characteristics observed in the use of primary care and emergency department services by individuals diagnosed with HIV/AIDS and their family members residing in an HIV residential apartment community. This project was also developed to provide nursing services to the residents in the apartment community.

**PICO(T) Objectives:**

1. Over a 9-week period in a Midwestern, urban apartment community for individuals with HIV/AIDS and their families when an APRN student is onsite two days per week, what demographic and utilization characteristics will be observed in:
  1. chief medical complaints seen by the APRN student in the clinic?
  2. age and gender of patients that utilize the clinic?
  3. patterns of utilization; most frequent time and day of visits?

2. Over a nine-week period in a Midwestern, urban apartment community for individuals with HIV/AIDS and their families when an APRN student is onsite two days per week, what is the number of:
  1. referrals to appropriate level of care?
  2. Repeat visits for new complaints or follow-up?

### Literature Review

The literature search was conducted using CINAHL, Cochrane Library, Research Gate, Science Direct, Google, PubMed, SCOPUS and Medline. Key words included: nurses in supportive housing, housing first, healthcare for the homeless, HIV and the homeless, nurse triage, nurse-led clinics, HIV supportive housing, risk-reduction housing, HIV biomarkers, emergency department use by the homeless. The search was limited to studies published after 2006; however, there were two studies from 2006 that were included because of their relevance to the topic of healthcare outcomes for resident of supportive housing and the role of nursing. Included were studies conducted in the United States, China, and Canada. The included studies reported the use of emergency departments, primary care, and behavioral health services among formerly homeless supportive housing residents and home nursing visits for HIV positive individuals. The literature search returned more than 80,000 articles. Twelve articles are cited for this project proposal.

Wohl et al. (2011) conducted a cross-sectional observational study of 400 HIV positive individuals in 2007 and an additional 400 in 2008 that were randomly selected from a list of HIV positive individuals in Los Angeles County who had a primary care visit between January 1, and April 30 of the respective years. These individuals were interviewed to determine the unmet needs for supportive services of individuals living with HIV in Los Angeles County. The most frequently reported needs were; assistance in finding dental care (39%), HIV case management

(34%), mental health counseling (30%), and transportation services (29%) (Wohl et al., 2011).

This study excluded primary care services from the analysis, and although not statistically significant, home health services and HIV education were cited by several participants as unmet needs.

Cunningham, Sanchez, Li, Heller, & Sohler, (2008) conducted a retrospective cohort study examining the association between the use of support services and medical services among individuals newly enrolled in the Health Services Program collaborative between the CitiWide Harm Reduction organization and Montefiore Medical Center in New York City. Access and utilization of HIV ambulatory care is often poor in marginalized populations, and the unstably housed. The program was developed to offer a variety of support services and locations to address these barriers. The program offered acute care and comprehensive HIV medical services in the medical center facility, The CitiWide drop in center, and in the patient's single room occupancy hotel. Additionally, the individuals received supportive counseling, accompaniment, and general health coordination services. The study found an increase in quarterly medical visits among individuals who utilized case management services and support groups.

In a supportive housing environment, Henwood et al., 2013 performed a qualitative analysis of a peer-led support group to improve self-management skills for chronic disease. Major themes evolved, including; health care becomes 'relevant' with housing, internal and external factors constrain healthier living, meeting basic needs is important, a process of participation and activation was effective, and tools for healthier living can be developed. Wang et. al. (2010) conducted a randomized controlled trial in China for HIV-positive heroin users with a home (not supportive housing). The purpose was to determine the success of home visits and telephone follow-up by nurses to improve HIV medication adherence. Nursing interventions

improved medication adherence and reduced depression to some extent for HIV-positive heroin users. Additionally, home visits and telephone counseling improved the participants' health literacy about HIV medication and HIV disease (Wang et al., 2010). These studies suggest when basic needs were met, and education and peer support were available, participants were likely to take a more active role in managing their chronic condition.

Access to on-site nurses in supportive housing has had a positive impact on the health outcomes of residents in supportive housing in San Francisco. Dobbins et al. (2008) conducted a random cohort study of residents in supportive housing with on-site nurses or to housing without on-site nurses. Findings supported the hypothesis that on-site nursing care was associated with a decrease in emergency department visits with a potential cost-savings that supported the placement of nurses in supportive housing. Results also demonstrated that people living with HIV who had access to on-site nursing care showed increases in CD4 counts and decreased HIV viral loads (Dobbins et al., 2008).

The Center for Outcomes Research and Education (CORE, 2013) conducted an evaluation of supportive housing on the health and health care costs for residents at Bud Clark Commons in Portland, Oregon. The researchers accessed available medical records, Medicaid, and Medicare billing records, and conducted interviews with the residents of Bud Clark Commons. The review of data noted an average cost per member per month for health care was about \$2006 during the year before supportive housing, and an average cost beyond the 2<sup>nd</sup> year of residence as \$680. Also, 80% the participating residents reported that their health was "fair" or "poor" during the year before move in. After two years of residence, 52% reported their health as "fair" or "poor" ( $p < .05$ ) (CORE, 2013). The most useful and most utilized service was case



management with an advocate cited as the most common reason for the usage and satisfaction with case management services.

Perlman et al. (2006) examined the actual health and emergency service records of 19 residents for the 24-month period prior to and after entering a supportive housing program in Denver, Colorado. Outcomes measured were emergency room use, inpatient medical or psychiatric hospitalization, outpatient visits, detoxification services, incarceration, and shelter utilization. Results demonstrated an average decrease in cost for emergency room care from \$99,860 to \$65,579, a cost savings of \$34,280 (34%). Outpatient visits increased slightly by 1.1%, the associated costs of inpatient hospital care decreased from \$197,173 to \$67,118, for a difference of \$130,055 (66%). Thus, a housing first approach offered promise for improving health while reducing costs.

As an ongoing process and quality improvement project, the plan, do, study, act framework was chosen to conduct this project. The investigators collected data from the clinic visits and from follow up information that was available. The objective was to determine health care utilization patterns by the residents of the apartment community. The investigators collected data from the residents including source of primary care, number of emergency department visits before and after implementing the clinic, chief complaints of residents using the clinic, which days and times the clinic is most used, and the level of care advised by the onsite nurse. The onsite nurse triage clinic was staffed by advanced practice registered nurse (APRN) students 2 days per week for 9 weeks to provide nurse triage and medication management assistance to the residents.

## Methods

### Design

This was a quality improvement initiative using the plan, do, study, act method. The nurses collected frequency data on emergency department visits, primary care visits, number of visits to the clinic, age of patients, and the chief complaint. The registered nurses provided nursing triage services such as screening physical exams, blood pressure, blood glucose and A1C monitoring, and referrals to additional care as indicated.

### Setting

Mama-Kaya is a supportive housing apartment community for otherwise homeless, HIV-positive individuals and their families that is operated by the Doorways organization's residential program. The apartment community consists of two adjacent buildings with 29 units of varying sizes (Doorways, 2011). A total of 29 HIV positive heads of household, 10 spouses or other adult family members, and 56 children reside in the Mama/Kaya apartments. An HIV positive diagnosis for the head of household and being homeless prior to moving in is a requirement for acceptance into the housing program. African American is the predominant race of the heads of household ( $n=28$ ), and one Caucasian head of household. The complex is in a North Saint Louis neighborhood. There are no health centers or urgent care facilities within the boundaries of this neighborhood. Residents of this neighborhood are known to have higher rates of chronic disease such as asthma, obesity, and diabetes. There is only one grocery store and one pharmacy within the boundaries of the JeffVanderLou neighborhood and is designated a food desert. (City of St. Louis Department of Health, 2016a). The apartment complex is in the zip

code of 63107, with a total population of 11,736 in 2013 City of St. Louis Department of Health. (2016b).

### Sample

Participants were from a convenience sample of HIV positive individuals living in the Mama/Kaya apartments, and any member of the household residing in the housing complex regardless of HIV status. Inclusion criteria was residence in the supportive housing complex during the period of March 6, 2018 and April 30, 2018. Exclusion criteria was any individual who did not wish to utilize the clinic or were not registered residents.

### Approval Process

Approval from the University of Missouri Saint Louis Institutional Review Board (IRB) was obtained after approval by the project committee members. Doorways approval was obtained from Doorways Chief Program Officer who is also a member of the Project Committee. Ethical considerations associated with this project included protecting the identities of the study participants and ensuring that the advice offered at the nurse clinic visit was the appropriate course of treatment. All identifying information was password protected and in the possession of the primary investigators. It was predetermined that all residents would be referred to a higher level of care if treatment for the health concern is above the scope of practice for a registered nurse.

### Data Collection/Analysis

Data was collected via self-report during the initial clinic visit and each subsequent clinic visit as appropriate. Demographic data including age, gender, race, and payor status were recorded on paper and recorded in an excel spread sheet. Data was stored on a password-protected computer and jump drive owned by the primary investigator. All data was de-identified

and coded, using identification codes provided by the apartment complex social worker.

Frequency analysis was performed on the collected data using version 2013 of Excel. Data quantity was insufficient for statistical analysis.

### Procedures

The clinic was in a community room in the apartment complex. Flyers were distributed to the residents and posted in common areas with services and clinic hours listed. Events were hosted by the clinic nurses to promote the clinic and invite residents to utilize the clinic. Events included an Open House with dinner served, a shoe giveaway with shoes donated by Nike, an ice cream social, kids coloring contest, and a presentation by Walgreens and the Saint Louis University School of Pharmacy on medication adherence.

Medical information and health histories were documented during the first visit to the clinic. Demographic information and health care needs were collected from a questionnaire during the first visit to the clinic and updated as needed. A Clinic Visit form was completed during each visit to the clinic. Biomedical data appropriate to the visit; blood pressure, pulse, height, weight, and temperature, were recorded at each visit, along with chief complaints, examination findings, recommendations and referrals that will be documented in the individual's clinic file.

### Results

During the 9-week data collection period, a total of six residents utilized the clinic. Three were men and three were women, see Table 1. The largest number of clinic visits occurred when events were held ( $n=5$ ). Thursday afternoon was the most utilized clinic day ( $n=10$ ) (Figure 1). Five of the six clinic patients had a visit on the day of the shoe give-away (Figure 1). The median age of the clinic patients was 41, range 36-68 years, (Table 1). 100% of the clinic patients were African American. Five of the clinic patients were heads of household, one clinic

patient was a spouse,(Table 1). Two clinic patients reported having no PCP (Table 2). Three of the six patients reported having at least one emergency department (ED) or urgent care (UC) visit within the past year (Table 2). Two clinic patients reported 2 or more ED visits. Two patients reported having no health insurance. 67% of the clinic patients reported having at least one PCP visit in the past year ( $n=4$ ), (Table 2). The two patients who reported having no current PCP were referred to a local Federally Qualified Health Center (FQHC). It is unknown if the patients made appointments with a PCP.

BMI measurements were calculated for the six clinic patients (Figure 1). The mean BMI of the sample was  $33.4\text{kg/m}^2$  with a range of  $25.8\text{ kg/m}^2$  to  $44.8\text{ kg/m}^2$  (Figure 2). Figure 2 shows chief complaints for clinic visits. Most common chief complaints were nasal allergy symptoms ( $n=2$ ) and “check-ups” ( $n=2$ ). A 68-year-old male patient presented to the clinic for a blood pressure check, at which time his blood pressure was 210/120 (Figure 3). The patient was referred to the ED but refused. The patient was also referred to his PCP, which he refused. Education on the class, action, and importance of his medications was given. The patient agreed to start taking his medication and return for follow up blood pressure monitoring. The patient had 5 subsequent visits and reported adherence to his medication with a downward trend in his blood pressure readings (Figure 4). Encouragement was given at each clinic visit to schedule an appointment with his PCP. It is unknown if a PCP appointment was made.

## Discussion

From the limited amount of data collected, it is difficult to generalize the findings to larger populations. The data that was collected showed that there are patient education and engagement opportunities within this community. More health promotion education programs and activities should be developed and offered. All the clinic patients ( $n=6$ ) had a BMI in the

overweight or obese range. Although the sample size was small, this finding is worth taking notice, and developing interventions to reduce the risks associated with obesity. Incentives for attending events showed a positive effect on clinic utilization. 50% ( $n=5$ ) of the clinic visits were associated with an event. The shoe give-away was successful not only to increase clinic visits, but to help the community. A positive change in one patient's blood pressure and medication adherence was seen when the nurses spent time educating and encouraging medication adherence strategies. The project and clinic had limitations. The project duration was nine weeks, which was not sufficient to collect enough data to generalize the findings to the population of the apartment community. The clinic was open two days per week for 4 hours which limited access to nursing services.

### Conclusion

The findings show a need for health care providers to engage the residents of this apartment community in discussions about healthy lifestyles and nutrition, medication adherence, health promotion, and disease prevention strategies. This project and clinic was designed to be continued as a clinical site for graduate nursing students, and that idea continues to be promoted.

### Implications for Practice

Hand-off of the clinic to the next cohort of DNP students will continue to build rapport in the community and continuity of nursing care. Adding an APRN on staff at the clinic with collaborating physician would offer a broader range of services to the community. Interventions that engender trust in the health care system, promote self-care, increase health literacy and an individual's ability to navigate the complex system of health care are necessary to improving the health of this population.

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## Appendix A

**Table 1. Clinic Patient Demographics**

<b>Gender/Status in Household</b>	<b>Race A=African American, C=Caucasian, O=Other</b>	<b>Age</b>
Male, spouse	A	68
Male, head of household	A	38
Male, head of household	A	54
Female, head of household	A	44
Female, head of household	A	38
Female, head of household	A	36
<b>Total number of clinic patients n=6</b>	<b>100% African American n=6</b>	<b>Median Age 41</b>

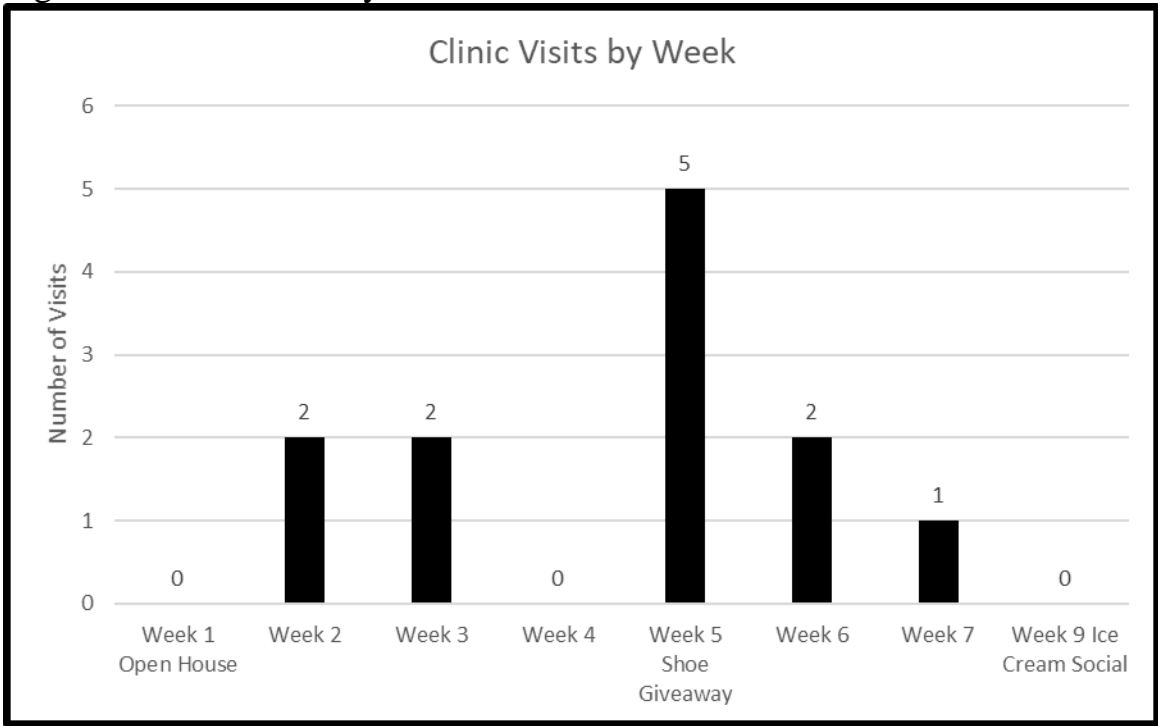
## Appendix A

Table 2. Insurance and Health Care Utilization

Resident	Currently Have Primary Care Provider (PCP) Y/N	Referred to new PCP Y/N	Made appointment with PCP if referred by clinic Y/N/Unknown N/A(not applicable)	Payor Source	Number ED or Urgent Care visits past 12 mo.	PCP Visit within past 12 months. Y/N
68 M	Y	n/a	U	GEHA	1	Y
38 M	Y	n/a	N/A	Medicaid	0	Y
54 M	Y	n/a	U	Missouri Care	0	Y
44 F	y	n/a	N/A	UHC, AARP	3	Y
38 F	N	Y	U	None	0	N
36 F	N	Y	U	None	2	N
<b>n=6</b>	<b>PCP n=4 No PCP n=2</b>	<b>n=2</b>	<b>No data available</b>	<b>67% reported having insurance. n=4</b>	<b>n=6 ED visits 50% of clinic patients had at least 1 ED visit in past 12 mo.</b>	<b>67% had at least 1 visit to PCP in past yr. (n=4)</b>

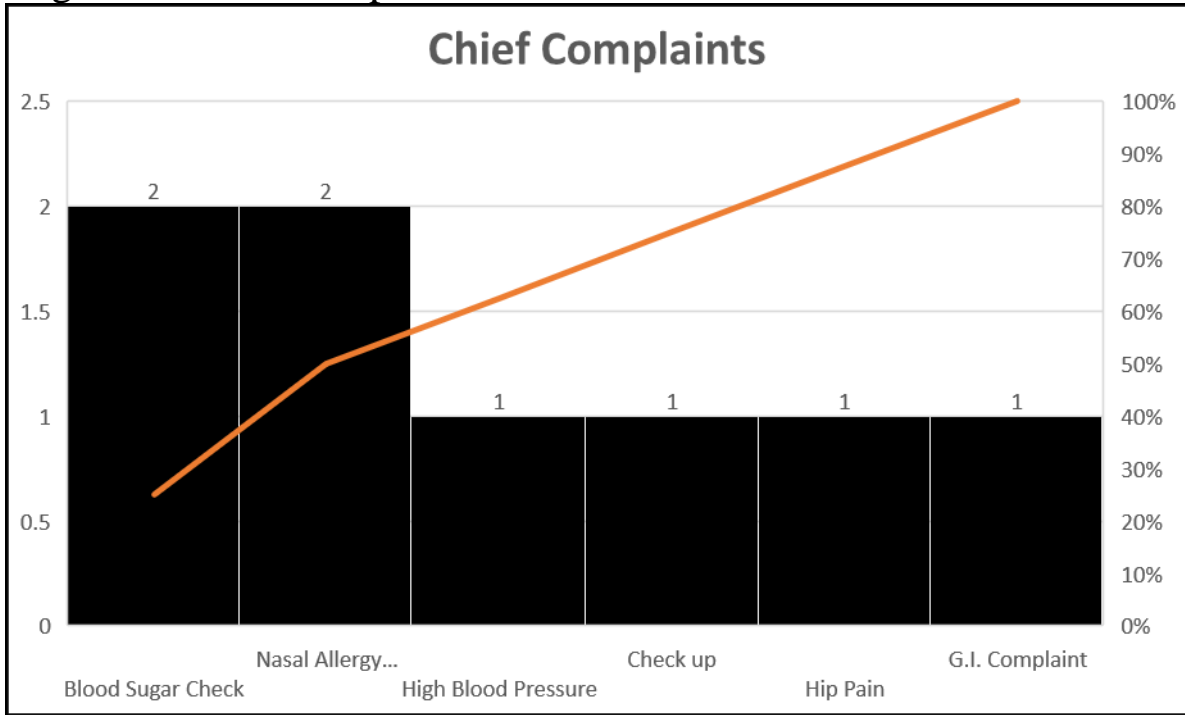
### Appendix A

Figure 1. Clinic Visits by Week



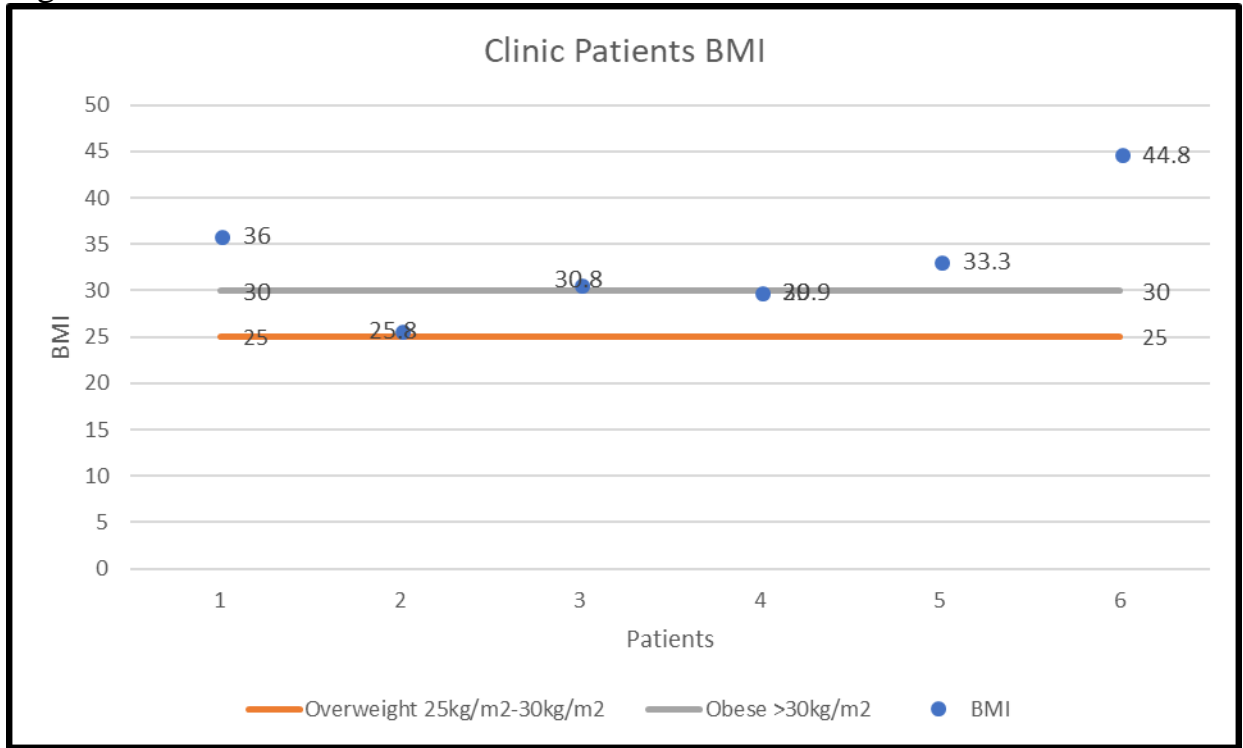
### Appendix A

Figure 2. Chief Complaints



### Appendix A

Figure 3. BMI



Appendix A

Figure 4. Blood Pressure

