Expanding Patient Access through Broadening of Medical Services, Process Improvement, and Standardization of Appointment Scheduling

by

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Abstract

The U.S. healthcare system can be a painstaking place to navigate for patients and is seemingly made more complicated and convoluted at every corner. In recent years especially, there has been a push for greater access to care with greater transparency as far as price, timeline, etc. During my residency at UPMC, it became clear to me that the majority of complications that severely impact patient care often stem from disorder and lack of adherence (or complete lack thereof) of policies and procedures at some point in the steps attributed to patient care, most often at scheduling. Through the following projects, process improvement initiatives were implemented after problems in the patient care cycle were identified, and the subsequent positive (or negative) effect on patient care and patient experience was measured, as well as an in-depth problem analysis detailing the reasonings behind the severity of the issue. The following projects and analysis are significant to public health due to their contributions in expanding patient access, given patients opportunities for care that they require today, while also ensuring that patients who require care in the future will have access as well.

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1.0 Introduction

When first entering UPMC Department of Medicine for my Administrative Residency, the term "access" was one of the most lucrative buzz words around due to the access revolution taking place, where there was a push for each department to create access initiatives. Each of the 12 departments across the Department of Medicine had been charged with increasing their patient access. Early on in my residency, I was exposed to the creation of individualized plans to increase appointment access for patients, the regular presentation of these plans to Executive leadership, and the subsequent reporting of the progress they made.

This new wave of emphasis placed on access worked to put the patient and their experience first, starting from before they even made an appointment with UPMC. The Department of Medicine specifically had struggled with patient access historically, with many specialties being booked out so far in advance that patients ultimately had to wait for months before being seen by a provider. This can be detrimental to patient outcomes, especially when a patient has an illness or symptoms that are more serious and need to be addressed in a timely manner. Limited access can also stunt patient satisfaction, given that the majority of patients do not want to wait to see a provider, especially a duration of a few months. To best serve patients in my given projects, it was important to consider access, appointment utilization, and patient experience/satisfaction.

1.1 Outstanding Referrals at UPMC Dermatology

X UPMC Dermatology Office was experiencing a significant backlog in referrals received. While they needed help in addressing the number of outstanding referrals, it was unclear as to why this clinic was experiencing these issues, if this was a problem afflicting other clinics, and how this issue could be prevented in the future.

1.1.1 Purpose Statement

The purpose of this project was to increase patient access and appointment accessibility. This clinic was failing to contact patients who had been referred to this specific office in a timely manner. The issue was negatively impacting patients by causing them to be forced to wait months after their Primary Care appointment to be contacted for a Dermatology appointment. To increase access and availability (and maintain the reputation) of UPMC Dermatology, it was imperative that the backlog be addressed, firstly. As a secondary goal, it was important to investigate *why* this happened at all, at the alarming rate that it did, at this specific clinic, and whether this could/was taking place at other Dermatology Clinics. The tertiary goal was then to implement a solution in order to maintain the restored referral volume, and to ensure that patients were continuing to be served by UPMC Dermatology in a timely manner.

1.1.2 Introduction and Background

The X Dermatology Clinic first came into discussion due to the unmanageable number of outstanding referrals sitting in the clinic Epic (EHR system) in-basket, but also due to the mass number of referrals that they continued to receive each week. The real concern and subsequent problem lay in the time it took to respond to these referrals. Typically, it is best practice to contact a patient within two weeks after a referral request has been received. The referral process is noted as being "an essential part of primary health care" (Ramanayake 2013), and any breakdown of this process can have severe consequences on patient access and care.

For this clinic, the response time was typically anywhere from 2-3 months after the referral request was received. A significant number of Primary Care providers who had referred their patients to our clinic had reached back out through Epic numerous times to check on the appointment status of the patient, only to receive no response. Several patients ultimately contacted their Primary Care providers in order to have an additional referral request sent to the clinic, since they were never contacted to schedule after the first request.

The Director of Operations for Dermatology was made aware of the problem by the clinic Practice Manager, who requested assistance in facilitating the contacting and scheduling of these patients. This high-volume clinic simply could not handle the number of referrals it was receiving on a weekly basis and could not possibly schedule patients within a timely manner with 200+ referrals waiting to be addressed. Unfortunately, this is exacerbated by the access problem that already exists in the Dermatology specialty. There has been a historic shortage in Dermatologists, with a recent study estimating the Dermatologist to patient ratio as being 3.4 for every 100,000 individuals, which is below the recommended 4 per 100,000 individuals needed to "adequately care for a community" (Glazer 2017). Despite Dermatology being a highly sought after specialty,

spots for fellowship are extremely limited and highly competitive. Due to the fact that there simply are not enough Dermatologists to care for the general population, “Dermatologists appointments are often scheduled 3 or more months in advance,” (Fine 2017).

With the average time it takes for a patient to see a Dermatologist being 3 months or more after scheduling, there is cause for great concern when it takes the clinic months to contact the patient to even begin the process of scheduling. This means a patient might have to wait 5-6 months to be seen at the X UPMC Dermatology Clinic, with the wait time likely being longer. This is detrimental to UPMC Dermatology on account of this clinic serving mainly as an office visit/surgery clinic (they did not offer cosmetic/med spa procedures). Primary Care providers often referred patients to this specific clinic over other UPMC/non-UPMC Dermatology locations since they typically had the most available appointments for general office visits/skin checks. With this in mind, it was essential that the referral situation be resolved for the long term.

1.1.3 Methods

To address the primary goal of this project (to relieve the office of their current outstanding referrals), I began with the oldest referrals which, unfortunately, were several months old. I understood that in order to get to the root of this problem and create a viable solution, I would need to be able to see that data. While data was not readily available, I was able to create an Excel dataset of my own. Protecting PHI is of vital importance, and when manipulating data using Excel that contains PHI, standard procedure is to upload it to the UPMC OneDrive where it can be safely housed with other reports. All access to these reports is limited to those who have access to a security VPN when not directly connected to a UPMC Wi-Fi network. When contacting a patient

to schedule an appointment, I recorded their name, Epic MRN, date of referral, date contacted, and the outcome of the call. These were the possible outcomes:

1. Already Schedule
2. Declined
3. Incorrect # for patient
4. Voicemail Left
5. No voicemail box
6. Private Practice Patient
7. Scheduled
8. Unaware of referral
9. Voicemail box full
10. Callback requested

Patients who did not answer my first phone call, or who requested they be called back at a later date to schedule, were contacted a second time, and subsequently had an Outcome #1 and an Outcome #2. Patients who requested to be scheduled were scheduled for an appointment by me. Utilizing these methods, I was able to record the data from the referrals that I personally addressed and analyzed this data for: total number of referrals received each month, the average referral lag, as well as the outcome of my contact with the patient.

To address the secondary goal, I decided to personally enter all of the clinics in the area and observe/interview front staff to better understand the referral situation at each clinic, and whether this was a typical problem to have at any other locations. It was important to gain an understanding of the unique problems in each clinic, instead of assessing a single clinic and placing all others under that problem umbrella. I interviewed the front desk staff as well as the practice managers for each location and drew conclusions from there. This included questions such as the following:

1. Do the number of phone calls you receive per day prevent you from any other duties, such as calling referred patients?
2. Do you utilize a waitlist? How long is your waitlist?
3. What is the number of outstanding referrals currently, and how often are patients called from that list?

When presenting possible solutions to leadership, I heavily relied on the interviews with the clinic staff, as they had recommendations based on personal experience regarding how the outstanding referral situation could further be avoided. While presenting solutions and how they could be implemented, I utilized the data collected from my own experience contacting/scheduling patients to further prove why change was necessary, and why these solutions were important for patient access.

1.1.4 Results and Discussion

I completed a total of 320 outstanding referrals, which includes utilizing the Epic in basket to communicate with providers and nurses, contacting the patient, and scheduling their appointment if they still desired one. MyUPMC, a platform that allows for providers/offices to directly reach out to patients, was not utilized during this process, and phone calls were deemed to be the best form of contact. I discovered during this time that many offices were reluctant to utilize MyUPMC to its full capabilities, despite having the ability to do so. A voicemail was left for 193 patients who did not answer after the initial phone call, and I scheduled approximately 66 patients who did answer during the first contact period (shown in Figure 1). During the second contact period, patients who did not answer the first time (or who had requested to be called back later) were contacted again. Of these 214 individuals, 30 more were scheduled (observed in Figure 3).

Outcome #1	Count of Patients
Already Scheduled	2
Declined	38
Incorrect # for patient	2
Message Left	193
No voicemail box	5
Private Practice Patient	7
Scheduled	66
Unaware of Referral	1
Voice Mailbox Full	4
Callback Requested	2
Grand Total	320

Table 1: Outcomes after first contact period

I found that the X Dermatology Clinic received an average of 40 new referrals per week (compounded onto the outstanding referrals that already were backlogged) between the months of April 2022-July 2022 (the end of March being when the project was assigned to me.) A graph for the new referrals that were completed by me can be seen below in Figure 2. This graph does not include the referred patients who were being contacted by office staff during this same time period. During the month of April, the outstanding referral in basket was normally at 150-200+ patients waiting to be contacted, with an average backlog of 2.5 months.

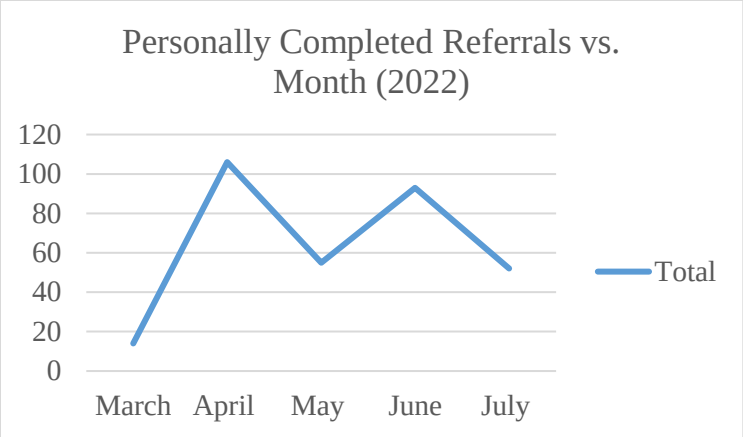

Figure 1: Referrals received each month where the patient was contacted by me for X Dermatology Clinic during April-July 2022

Once the backlog was remedied and the Epic in basket was manageable once more, I personally conducted interviews at all of the Dermatology clinics. At X Dermatology, it was revealed that the front desk staff were severely understaffed and were functioning with only two representatives for checking patients in, taking phone calls, check out, scheduling appointments, and calling referred patients to schedule. Not only was this clinic severely understaffed in administrative positions, but I also found out that they were not connected to the UPMC Call Center. The Call Center is an appointment scheduling department of UPMC that exists primarily to field calls pertaining to scheduling away from the clinics and alleviate the clinic phone lines. It is up to individual offices whether they want to be included within The Call Center or not. This can oftentimes be a choice made by providers to give their patients a more personable scheduling experience where they will speak directly with the providers office. With high volume clinics, however, not being included in The Call Center can be debilitating. The Call Center will schedule patient appointments, alleviating the burden of an ever-ringing phone in the clinics.

After meeting with the other clinics and interviewing staff, it was revealed that X Dermatology Clinic was the **only** clinic that was severely behind on referrals, since their office

offers significantly more general office visits compared to surrounding clinics, and they are therefore one of the most referred to practices by Primary Care providers. Other Dermatology clinics offer little to no general office visits, because they offer other specialized services such as med-spa services and other cosmetic procedures.

While the results of my interviews showed that the other clinics were not in any trouble, X Dermatology Clinic was still in a difficult spot. The results of my data gathering revealed that this clinic was too understaffed to handle the number of referrals they were receiving, along with juggling their remaining tasks. After discussing my findings with leadership, we deciphered that there were two options before us: hire another front desk employee and move the clinic to the Call Center, both of which were implemented. The new front desk employee would be able to help bear the burden of the sheer number of referrals, while the clinic staff had significantly less calls coming through for patients desiring to schedule appointments. This decreased the overall task burden of the front desk staff, and outstanding referrals in the following months decreased *drastically*, as did the lag time when addressing the referrals. Post intervention, most referred patients were contacted within 7 business days the clinic receiving the notification, and the front desk staff were now able to keep up with the referrals by simply calling 10 patients per day, which kept gradually brought the outstanding referrals to 0.

This project certainly has challenges where data quality is concerned. The data wasn't pulled from software, it was manually imputed by me one by one. This certainly opens the opportunity for human error. There also was not any other person working directly on the data with me, so there was not another set of eyes to double check the data as it was collected.

1.1.5 Recommendations

This project did not originate as a process improvement project. I was originally brought on to help alleviate the backlog in outstanding referrals, but I saw an opportunity for long-term improvement. My work helped a clinic that was severely struggling under the weight of their volume and staffing issues. They were able to receive an additional employee that they desperately needed, as well as get their clinic added to the call center to further alleviate the front desk employees. Furthermore, an analysis was done in the rest of the clinics to better understand the scope of this issue, and it was found that all the other clinics were in good standing. Since there is no longer a backlog of referrals and the front desk staff have a more manageable number of tasks, the clinic can now see patients in a timelier manner, and completely utilize its appointment access capabilities. Also, Primary Care providers will continue to trust the positive reputation of this clinic now that patients are being scheduled in a timely manner once more.

For next steps, I believe it would be conducive to improving the clinic workflow to have the three font desk employees assigned to specific tasks instead of all sharing the burden of all administrative tasks, as would be consistent with other UPMC clinics that are appropriately staffed. For example, one should facilitate check in and phone calls, the second check out and follow up appointment scheduling, and the third should help greet patients and be contacting patients regarding referral scheduling. Having their own task that they own would be ideal instead of all the associates having to be burdened with every task, which creates a chaotic mess with little to no accountability. If there was an area that the clinic was falling behind in, it would be easier to pinpoint who needs extra training/help by which specific area the clinic is lagging in.

1.1.6 Competency Development

- **Communication:** In order to understand the gravity of the issue at each clinic, strong communication was necessary to ensure that clinic staff felt heard without the need to get defensive.
- **Analytical thinking:** this type of thinking was integral during this project, especially since I had to create solutions by first investigating to find the root of the problem. This required a completed break down of the problem itself, identifying causes/variables, and then creating sustainable solutions.
- **Self-Development:** During my time using Epic to contact patients, I learned how to fully utilize this high performance EHR system, including scheduling appointments and contacting providers.
- **Performance Measurement and Process Improvement:** I developed the ability to quickly find a short-term resolution to a problem, further assess the issue and its impact, and then find solutions.

1.2 The Birmingham Free Clinic

The Birmingham Free Clinic (BFC) is a no-cost, multi-specialty clinic which serves individuals who are uninsured or underinsured in the Pittsburgh area. The clinic, which is sponsored by UPMC Department of Medicine, is part of The Program for Health Care to Underserved Populations (PHCUP) which works to offer quality medical care and pharmacy services at no cost to the homeless, uninsured, and disenfranchised. Due to the already high volume of patients and the desire to increase access to specialties offered by the clinic, management sought to request further funding for the hiring of additional staff. Certain high demand specialties were only able to be offered at limited times per week due to low staffing. At

the time of their request, no analysis had ever been done on the value of the clinic to the overall health system, nor did anyone have a full understanding of the cost incurred to run the clinic. Further analysis was necessary to build support for clinic funding.

1.2.1 Purpose Statement

The desired outcome of this project was to build a full-scale analysis of the clinic including (but not limited to) mortality rates, hospitalization rates, patient population, financial analysis, etc., in order display the value of the clinic to Executive leadership and receive further funding. The primary goal of the project was to gather data and create an analysis of patient metrics (like those listed above). The secondary goal was to work with clinic management to build a financial analysis (the cost of running the clinic, how much money in funding they already received from UPMC, and how much money in funding they received from other sources such as grants.) The tertiary goal was to present valuable findings to Executive leadership, in which the necessity of the clinic to the underserved of Pittsburgh would be displayed. Further funding would then allow for additional employees to be hired in order to increase patient access and appointment availability.

1.2.2 Introduction and Background

With the cost of medical care only continuing to rise, Free Clinics provide those without adequate healthcare coverage with care and are, "…oftentimes the last safety net for these (indigent and homeless) vulnerable populations," (Zhang 2019). To fully understand the true value of the BFC in the Pittsburgh community, it is important to recognize the importance that price plays in whether impoverished individuals seek care they need. In the United States, health can come at

the cost of being able to financially afford life sustaining necessities. A recent study noted that, "Lack of health insurance, underinsurance, financial concerns about care access among insured populations, and low income have each been linked to delays in seeking care and/or forgoing care altogether," (Zhuang 2019). With access to care at no cost, vulnerable populations who are not covered for health insurance will be more likely to seek out the care they require. The Birmingham Free Clinic offers an opportunity for the underserved people of Pittsburgh who don't have the extraordinary funds needed for care, to still be seen by medical professionals and have access to specialty care. It was extremely important to me to assist them in securing their funding, and to further their cause of providing care for everyone, not just those who can afford it.

While the Birmingham Free Clinic has been in practice for 20+ years, no analysis had ever been conducted while under UPMC management. This is hardly surprising, as health care is a business first, and any aspect that is not generating revenue tends to be easily overlooked. A survey on free clinics in the United States found that, "Despite widespread concern about the uninsured and the viability of the safety net, free clinics have been overlooked and poorly studied, leaving old assumptions and beliefs largely unchallenged," (Darnell 2010). This same survey also goes on to further discuss the negative ramifications of free clinics being overlook and under studied regarding important policy discussions oftentimes being "forestalled" as well as, "…potentially fruitful collaborations between free clinics and other safety net providers…" having been hindered.

At the date of the initial funding request, Executive leadership desired to further understand how the clinic had been contributing to the health of its target patient population, and whether they had been successful in their primary goal: to keep hospitalization and mortality rates low for the underinsured and uninsured community. The BFC was unique and that it offered multi-specialty services, but only had the resources to have certain specialties in house during certain times/days

throughout the week. Clinic management desired to expand these services and needed additional staff to do so. In the eyes of Executive leadership, if the clinic patient population was seeing promising metrics, then they certainly should be awarded extra funding to hire the additional staff and allow for the expansion of medical specialty visits.

1.2.3 Methods

The methods used in this project are quite simple for the patient metrics portion. Most, if not all the data pulled, was done so using Epic (UPMC EHR) reports. The Epic reports were able to provide me with patient names, number of visits, mortality, hospitalizations, and many other additional metrics. The raw data was downloaded to Excel, and then manipulated from there. My team (comprised of a data analyst and myself) started with using this raw data to succinctly summarize the patient population who had been seen in the clinic during a two-year time period. In short, our first step was to outline the number of total appointments over a specified period of time, the payer status of the patients, and the visit type. We felt that this was a necessary starting point given the lack of any prior analysis done. We also met with clinic staff and management often to discuss our findings, because they were also curious as to what our data gathering would yield.

Next, a volume analysis was conducted, using line graphs to show the spikes and dips in the volume of patients over a period of time. We wanted to see if there was any year over year correlation to the volume of patients during a given month to be able to further tell a story with the data, and display the importance of its place in the community. With this same set of raw data, we also completed a summary of patients who triggered a hospital visit with in 7 or 30 days of their

visit to the Birmingham Clinic and patients seen in the clinic who died compared to the total number of patients seen in the clinic.

Our final piece of analysis was the financial component. This proved *extremely* difficult, as even the clinic staff/management seemed very unaware of how much it cost them to run every year. They had little concrete information regarding their costs and could not confidently tell us how much in funding they received from outside sources every year. After receiving multiple different documents regarding their costs/donations, we were able to deduce a strong estimate of the finances. It was imperative that we met with clinic management often for this portion, as they were equally unaware of their own financial situation.

1.2.4 Results and Discussion

After the initial portion of the clinic analysis, we found that during the time period of May 2020-May 2022, the Birmingham Free Clinic had approximately 9,105 scheduled appointments, and 1,293 unique patients. The percent of completed appointments was 81%, with a 19% no show rate. The ratio for New: Return patients per year was about 1:1, indicating that patients who were seen in the clinic typically wanted to come back, which is promising.

The second portion of the analysis was created to show the number of completed appointments month over month/per year. We found that there was typically a dip in volume during the month of August (as shown in Figure 1 below), followed by spikes in volume during the months of September-December. While it was not completely clear to us what caused spikes during these months due to having limited data, we felt it important to acknowledge the trend.

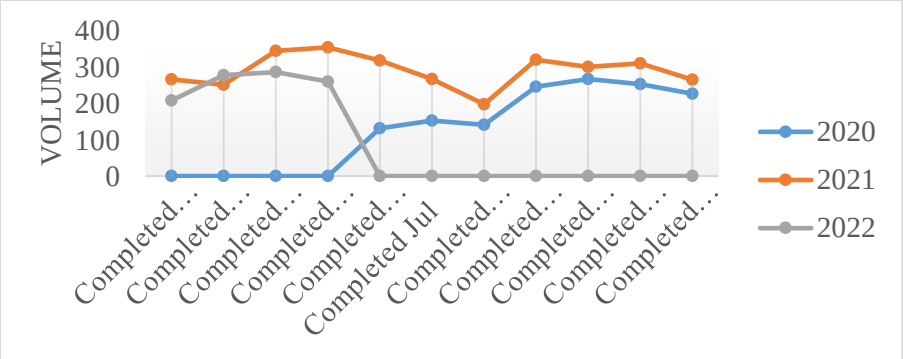

Figure 2: (Above) Line graph of total completed appointments for the Birmingham Clinic (May 2020-May 2022)

The most important portion of the clinic analysis was the mortality and hospitalization rates. While studies show that communities with Free Clinics tend to have lower hospitalization rates than those that do not (Hutchison 2018), we needed concrete data to prove that was the case for the BFC. In our findings, 7% of Birmingham Free Clinic patients were seen in a hospital. For reference, the hospitalization rate for Self-pay/No charge patients afflicted with an illness/condition is typically around 12% (Weiss 2021). After further investigation, we found that the majority of BFC patients seen in the hospital were ED frequent flyers already. There were attempts to find data comparing the ED admissions to patients who were referred to the clinic and did not go versus those who did, but the data ended up being very limited. In the chart below, you can see that the number of unique patients seen in the hospital is much lower than the number of total hospital visits per year, indicating that many of the hospital visits were completed by a single patient admitting multiple times.

Summary	Office Visits	Hospitalization Metrics		
Timeframe	# of patients seen at clinic	# of hospital visits/ year	# of patients seen in the hospital	Mortality Rates
May-Dec 2020	532	42	29	2
Jan-Dec 2021	551	83	42	2
Jan-May 2022	210	24	16	0
Total	1293	149	87	4

Table 2: (Above) Total BFC patients, hospitalization rates, and mortality rates for May 2020-May 2022

During the May 2020-May 2022 timeframe, BFC saw 87 of its patients trigger a hospital visit, with only 5% of unique patients triggering a hospital visit within 7 days of their first encounter with BFC, and only 11% of unique patients triggering a hospital visit within 30 days of their first encounter. And, during the 2-year timeframe this data represents, only four patients died. These statistics, compared to national averages, show that the BFC generally does add value to the overall health system. Not only does BFC see a significant number of patients, with an 81% completed appointment rate, but they also have very promising metrics. We were able to conclude that patients who visit this clinic typically have low hospitalization and mortality rates than average for low-income communities. It costs, on average, $1,000 per night for a hospital stay at UPMC. Even if the number of hospitalizations was only reduced by ¼ due to the BFC, (assuming a 1-night LOS) that is already $20,000 saved.

Regarding finances, when completing the analysis, obviously we were not looking for the clinic to be profitable since it is a no cost clinic, and there is no patient revenue. We just needed an idea as to how much the clinic cost to run in comparison to its patient health metrics. The analysis showed that BFC was running at ($110,000) per year, which is not surprising considering they are running on donations and hospital support from UPMC.

After presenting this analysis to Executive leadership, the requested funding was awarded to BFC, allowing them to hire the necessary additional employees and reach an even greater number of patients who otherwise would not have medical care. Not only that, but this project brought greater Executive attention to the BFC, which had been easily forgotten about in years past.

When concerning data, it is certainly important to discuss biases or weaknesses in this data. The greatest weakness of this project was finding comparable statistics to compare to ours. People who work in healthcare (or have great knowledge of the subject) can typically look at the statistics we gathered and surmise that they are, indeed, promising. Unfortunately, comparisons to *prove* this claim are very necessary. When first structuring this project, the initial plan was to find a data set from another free clinic with a comparable population to BFC and compare their data to our findings. This task proved extremely difficult, even when other organizations and data specialists were involved. Even finding certain national averages to compare to the statistics we gathered proved difficult. As a less than ideal option, comparing our findings to the national statistics we could find on the same/similar metrics (as discussed above) was a viable alternative.

1.2.5 Recommendations

The work I conducted on/with the BFC was so beneficial to the continuation of their mission: to provide care to as many patients as possible, regardless of their insurance status. Not only that, but we were also able to build a comprehensive data summary for the clinic, which had never been done before. Our purpose when investing the time and resources into this was to build an argument to advocate for their further funding, which would allow them to increase their access. We completed this, our secondary, and tertiary goal, successfully. Going forward, I would

recommend that a year-to-year analysis be conducted on the BFC. There was not much attention on this clinic before this project began and, in the grand scheme of things, it was very easily forgotten about (such is historic for Free Clinics). Large hospitals, especially one the size of UPMC, often will focus on revenue generating departments/initiatives. While no one would deny that BFC is important, as a part of the organization that does not generate revenue, it often is not considered a priority. The lag time from the BFC's initial request for funding to the funding being granted was long and drawn out, which would have hindered patients from having access to a greater amount of specialties more frequently. A significant amount of catch-up work had to be done to complete this analysis. If there had been someone keeping up to date summaries of this clinic, including the finances, it likely would not have been nearly as long of a process. The BFC might have had the opportunity to employ someone and expand their access earlier if they had been able to be awarded the funding sooner.

1.2.6 Competency Development

- **Self-development:** gathering raw data and learning to manipulate it into a data summary, utilizing Excel to do so
- **Finance Skills:** creating a complete financial analysis for the BFC
- **Information Technology Management:** learning to pull reports from Epic and export into raw data for further use
- **Community Orientation:** conducting further research into Free Clinics and fully understanding their inherent importance and value to individuals, especially those who are minority or part of a vulnerable population

1.3 Scheduling Procedures at UPMC Gastroenterology

After X Gastroenterology Clinic lost its Practice Manager, it was revealed that there were severe problems with the flow and efficiency of the clinic. This included an extremely inefficient front desk staff with little to no training, severe scheduling inefficiencies, and overall, a clinic whose reputation for patient care was dwindling. These issues heavily contributed to errors in patient scheduling, high office turnover, and overall low patient and employee satisfaction. For the sake of this paper, there will be a focus on the obstacles that directly negatively affected patient access and appointment utilization. It was imperative to leadership that these specific issues take priority and warranted immediate intervention.

1.3.1 Purpose Statement

The main purpose and primary goal of this particular project was for me to be directly inserted into the operations of the clinic for an extended period of time so I could personally assess the inefficiencies, especially those that impeded patient access and appointment utilization, then create and implement plans for remedies. By fixing the issues encountered in the practice and increasing access/appointments, practice reputation/standing, patient satisfaction, and quality of patient care would also be positively affected. As other issues arose, secondary and tertiary goals came to fruition as well, but the main cause for concern were the issues that affected access. Ideally, leadership desired to see an increase in access and appointment utilization within the clinic post intervention, as well as an understanding of the root of the problems.

1.3.2 Introduction and Background

X GI Clinic functioned as an outpatient facility where patients could be seen for general GI office visits, as well as consultations for GI surgery and procedures. The clinic consisted of 6 physicians, 1 Advanced Practice Provider (APP), 5 nurses, 1 Front Desk Associate, and 2 Schedulers. In regard to front desk/scheduling staff, this clinic was considered understaffed, and required 4 Schedulers and 2 Front Desk Associates. The practice generally held a good reputation among physicians and patients for many years, but it historically had a high staff turnover rate, particularly among the front desk/scheduler positions. Upon the departure of its long time Practice Manager, it was revealed that there were very serious issues that were impeding workflow, preventing operations from moving smoothly and effectively, and negatively affecting patient's access. I was sent to assist management in the assessment and process improvement changes the clinic would need to undergo but, more importantly, I was also sent to observe what other obstacles were in place that were preventing them from being successful that leadership was unaware of. Once uncovered, some of these issues necessitated extreme concern and immediate intervention. Below are the most severe impediments faced by the clinic that directly affected patient access and appointment utilization (and each problem will be referenced throughout the paper by its bulleted number):

1) **Call Volume:** the front desk was receiving such a high volume of phone calls that the lone Front Desk Associate was not able to keep up. Patients had complained that they could never get into contact with the front desk, nor were their messages (often about appointment scheduling/rescheduling) responded to within a timely manner. While this problem seems surface level, studies tell us that, "The manner in which patient telephone calls are addressed has the potential to affect health outcomes and patient satisfaction," (O'Brien 2017). It can be assumed that when patient calls are being missed or not at all

addressed, this can have a very negative affect on patient health outcomes, indicating the criticalness of this problem.

2) **No EMR Training:** the front desk was not only understaffed but *very* undertrained. Neither the Front Desk Associate nor the Scheduler (1 out of 2) had received Epic training yet were expected to use the EHR system to its full capacity and schedule appointments for patients. With EMR/EHR systems, it is best practice to **always** provide extensive training as, "Deliberate and comprehensive end-user training is essential for the implementation, actualization, and end-user satisfaction with an organization's chosen electronic medical record (EMR)," (Pantaleoni 2015). Errors in scheduling were rampant.
3) **Lack of Cheat Sheets and Scheduling Materials:** despite there being no Epic training provided for the staff who schedule appointments, there was also no guide built to help them accurately schedule, causing a remarkable amount of scheduling errors.
4) **Surgery Cancellations:** patients were **often** showing up to their surgery appointments without having completed their assigned pre-procedural instructions, and it was revealed that many patients were not receiving the instructions during the scheduling of their appointment. Surgeries had to subsequently be canceled and rescheduled.
5) **Closed Template Blocks:** physician schedules were hardly ever full, sometimes less than 50% utilization, while best practice dictates that daily appointment utilization be at least 90% (Buttz 2004). Upon investigation, it was discovered that this was occurring due to closed blocks in the schedule (due to the past Practice Manager having manually closed them). The blocks made it impossible for the Schedulers to schedule patients for appointments during those times, even though the physicians were "technically" available. The issues discussed have severe implications, all which negatively impact patient satisfaction, patient access/appointment utilization, and the reputation of UPMC GI.

1.3.3 Methods

The methods heavily utilized during this project were 1) staff interviews as well as 2) obstacles in the workflow I personally experienced and noted while covering various positions. I recognized that no one would be able to ascertain what the practice required to improve better than

the staff who had worked in those conditions for years. Therefore, the main approach was to ask the staff what tools or resources were lacking that prevented them from being successful in their responsibilities, and then providing the tools and accompanying training for them. Listed are the solutions to the most severe issues impeding the practice:

1) **Call Volume:** after interviewing the Front Desk Associate, it was discovered that the number of calls was so unmanageable because there was no clinic phone tree in place, so her phone rang for every single call the clinic received. A phone tree was then created and implemented.
2) **No EMR Training:** the Front Desk Associate and Scheduler were signed up for 4-day Epic training, which would give them the necessary experience and education to properly utilized the EMR.
3) **Lack of Cheat Sheets and Scheduling Materials:** post staff interviews, it was clear to me that staff desperately required materials to help them properly schedule and mitigate mistakes. I built a detailed guide on the scheduling process for each provider to aid the scheduling staff, but also so that anyone would be able to schedule, even in the absence of those whose primary responsibility it was.
4) **Surgery Cancellations:** post interviews with the Schedulers, I came to understand that they struggled to remember to provide patients with the pre-procedural instructions because they did not have the documents readily available (they were on MyUPMC patient portal) and they also became confused regarding which instructions belonged to which provider. I collected each providers individual instructions and added them to the scheduling guide I created. This document was shared with the entire clinic staff.
5) **Closed Template Blocks:** upon investigation, I found that there were closed blocks in the templates for the next year. The scheduling staff and I manually opened all the blocks so that the templates could be completely utilized.

Assessment and adaptability were integral during this project, simply because I had no idea what new problem was going to be uncovered each week, and there always seemed to be something

new that needed to be addressed. Week by week, it was imperative to assess, understand, and create long-term solutions.

1.3.4 Results and Discussion

1) **Call Volume:** post intervention, the phone tree proved to be successful, as the calls the front desk received decreased drastically, and the Front Desk Associate was left with a much more manageable number of calls. She was then able to respond to voicemails in a timelier manner and coordinate patient scheduling appropriately.
2) **No EMR Training:** the Front Desk Associate and Scheduler both completed Epic training. While some mistakes were still made in the scheduling process, the volume of small avoidable scheduling mistakes (such as imputing the wrong appointment type) dropped. It became common practice in the clinic to provide Epic training upon hiring, as is good practice.
3) **Lack of Cheat Sheets and Scheduling Materials**: this guide allowed schedulers to have a clear understanding of each provider's schedule, appointment guidelines, and other appointment materials (observed in Figure 1). It was a helpful reference for the schedulers to avoid making mistakes, but it also allowed for cross-training of the other clinic staff. The Front Desk Associate and nursing staff were also able to help schedule, and often did so to alleviate the burden from the two schedulers.

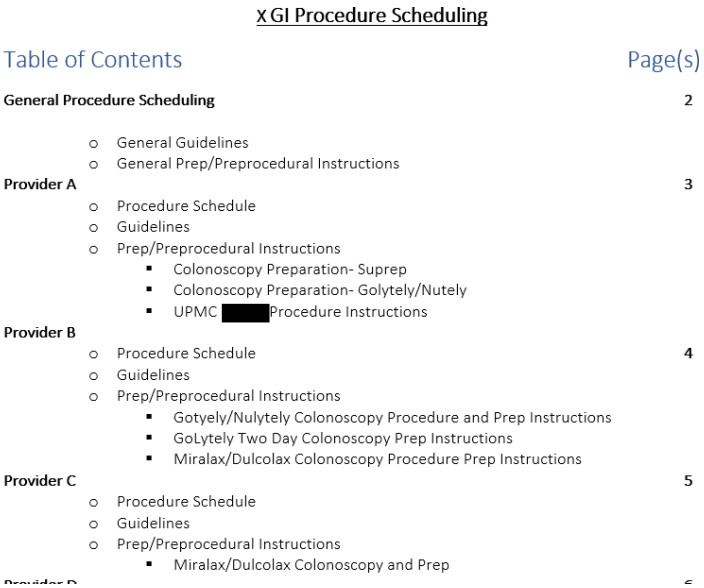

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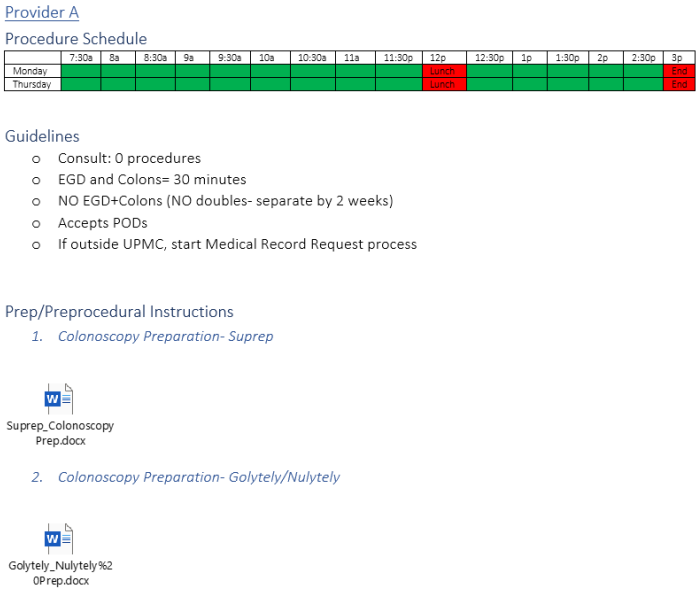
Figure 3: (Above) A small snapshot displaying the materials encompassed in the GI Scheduling Guide



Provider A

Procedure Schedule

	7:30a	8a	8:30a	9a	9:30a	10a	10:30a	11a	11:30p	12p	12:30p	1p	1:30p	2p	2:30p	3p
Monday										Lunch						End
Thursday										Lunch						End

Guidelines

- Consult: 0 procedures
- EGD and Colons= 30 minutes
- NO EGD+Colons (NO doubles- separate by 2 weeks)
- Accepts PODs
- If outside UPMC, start Medical Record Request process

Prep/Preprocedural Instructions

1. *Colonoscopy Preparation- Suprep*

Suprep_Colonoscopy Prep.docx

2. *Colonoscopy Preparation- Golytely/Nulytely*

Golytely_Nulytely%20Prep.docx

Figure 4: (Above) An in-depth view of the information encompassed in the scheduling guide which includes the provider procedure schedule, guidelines, and instructions/materials

4) **Surgery Cancellations:** with the Schedulers now having direct access to the pre-procedural instructions (format observed in Figure 2), there was a significant decrease in

surgeries cancelled (we typically had about 5-6 per week cancelled, and this decreased to around 2-3 on average) due to patients not receiving the instructions or receiving the wrong instructions. Schedulers commented that the guide, which included docs and pdfs of the instructions by provider, made it significantly easier to give the correct instructions to patients while scheduling.

5) **Closed Template Blocks:** while the full success of opening the blocks could not be observed during my last month at the clinic, the ability to schedule patients for the full provider availability was restored, and physicians were already functioning at 70-75% utilization by the time I departed, which was significantly higher than they had been prior.

Every single one of the issues I encountered not only affected patient access and appointment utilization, but they did so in the most severe sense. The interventions put into place in this clinic helped increase access to appointment utilization dramatically. I found that many of the problems overlapped with each other, such as scheduling errors being such a profound issue. This pointed to an overall inefficiency in the scheduling process as a whole, and the training that Schedulers receive when they first enter the GI department, which elevates this issue to an even higher magnitude. Unfortunately, there was no way to collect data on this process- it would be a very difficult endeavor to attempt to collect data on the appointments with scheduling mistakes prior to my time at the clinic versus after, as there is not a filter for that available in the EMR system, nor do I know if it is measureable. What I based most of the scheduling developments on was the volume of complaints I received from providers each week (which were less and less after each intervention), and their own comments suggesting there were less and less errors. Ideally, I would have like to have had data to manipulate, but there was no clear way to do it, unfortunately.

1.3.5 Recommendations

The project did successfully address patient access and appointment utilization and the obstacles that had a negative affect on them. As for next steps, I would recommend that the entire GI scheduling process be standardized. With that being said, every specialty across UPMC would greatly benefit from a standard scheduling procedure across that department. I came to understand that the reason there was so many mistakes and so much confusion when scheduling was due to every provider having a different preference for scheduling, and different prep/preop instructions for the same procedure. This seems derivative and creates a burdensome situation for the Schedulers who struggle to keep up. Accommodations could be made for providers who want their schedule/procedures to be done a certain way, but accommodations should be kept to a minimum of 2 per provider, instead of the laundry list that each of these GI physicians had.

1.3.6 Competency Development

- **Human Resource Management:** I worked directly in this practice for four months, and often tensions were running high due to frustration over mistakes that negatively affected patient care. I had to act as an intermediary between parties' countless times over the course of my stay.
- **Accountability:** implementing interventions directly affected patient care, and whether patients could be seen. This competency was very important when considering the significant repercussions if interventions failed.
- **Professionalism:** Not only was I interacting in a Managerial role with patient staff, I was also patient facing during my time at the clinic, and had to act as a problem solver when tensions became high with patients whose appointments had been scheduled incorrectly. A high degree of professionalism was essential.

1.4 Conclusion

While each of these projects were unique in the birds' eye view of the problem, all three have in common the negative downstream effects on patient access, satisfaction, and appointment utilization. Although having a clear route to navigate each of my residency projects would have been ideal, there was no clear, cut and dry road for any of the mentioned issues. While some of the negative effects were obvious and were likely what caught the attention of administrators in the first place, it took peering under the hood to sufficiently understand the ins and outs of each obstacle. Also, it was paramount that each problem not only be alleviated, but the reasoning behind the problem was discovered and corrected to ensure that the alleviation was not temporary.

My experience on all three of these projects, and the similarities between each issue, has allowed me to draw broader conclusions about inefficiencies in UPMC operations, specifically when concerning scheduling training and standardization of scheduling processes. With the access initiatives taking place at the Department of Medicine, UPMC obviously understands that patient health outcomes and satisfaction can be affected during pre-registration, yet in both the X Dermatology Clinic and the GI Clinic, the Schedulers were lacking staffing, training, and overall were just insufficiently prepared to handle the sheer volume of patients and tasks before them. This negatively impacts patients **severely.** At the GI Clinic, patients who needed emergency colonoscopies were having to have their procedures canceled the day of, due to mistakes made during the scheduling process which forced them to wait to have a procedure they needed immediately. The same can be said for the Dermatology clinic, where patients were forced to wait months (or not be called at all) to have skin lesions that could be cancerous observed by a Dermatologist. While the negative health implications of insufficiently trained/prepared Schedulers cannot possibly be understated, there are also downstream negative financial

implications. Schedulers are integral to clinic flow, and my observations have led me to conclude that current issues with understaffing in clinical roles have led to the lack of attention this issue desperately needs. Also, across all of the clinics I have attended at UPMC, none had standardized training processes for Schedulers, nor did they expect Schedulers to have experience (though applicants who did typically were given preference). It is the responsibility of executive leadership going forward to better support their schedulers by standardizing the training process, offering regular support and resources to succeed. This could include the creation of new roles, such as Scheduling managers who oversee the hiring, training, and development of schedulers in each division. This would likely decrease the turnover among scheduling staff and ensure that patient access and satisfaction remains high.

2.0 Figures and Tables

2.1 Figures

2.1.1 Figure 1

Figure 1

Referrals received each month where the patient was contacted by me for X Dermatology Clinic during April-July 2022.

2.1.2 Figure 2

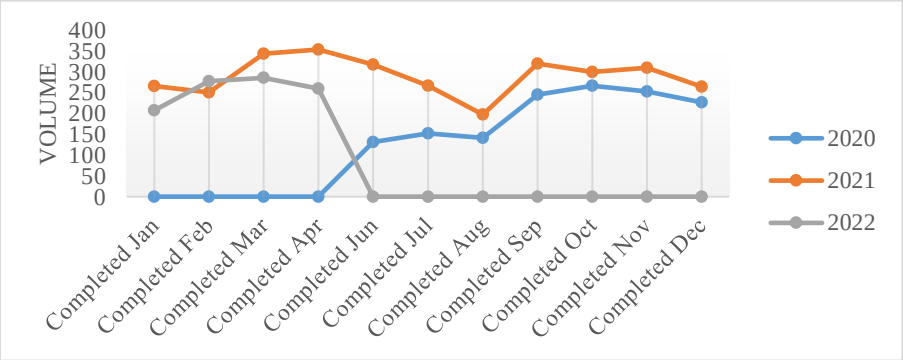


Figure 2

Line graph of total completed appointments for the Birmingham Clinic (May 2020-May 2022).

2.1.3 Figure 3

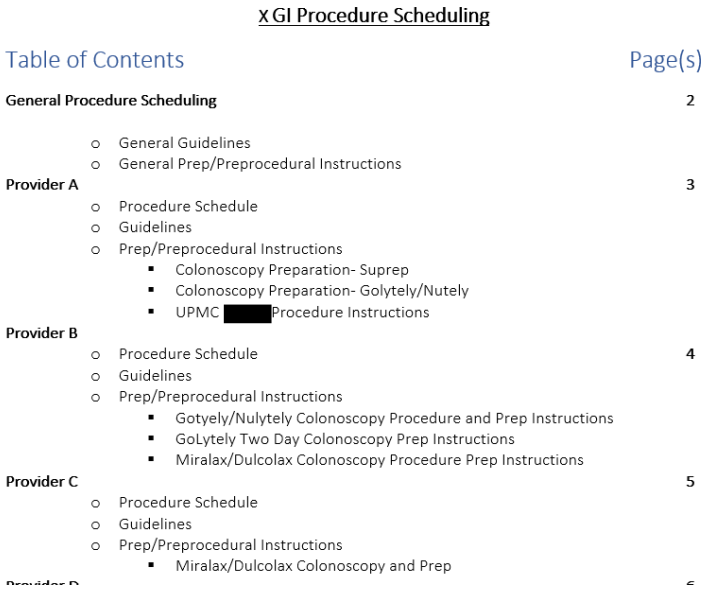


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Figure 3

A small snapshot displaying the materials encompassed in the GI Scheduling Guide.

2.1.4 Figure 4

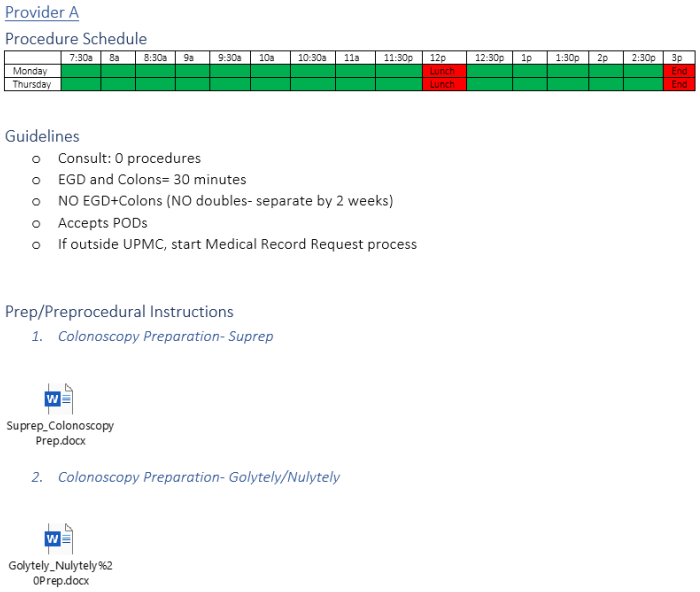

Figure 4

An in-depth view of the information encompassed in the scheduling guide which includes the provider procedure schedule, guidelines, and instructions/materials.

2.2 Tables

2.2.1 Table 1

Outcome #1	Count of Patients
Already Scheduled	2
Declined	38
Incorrect # for patient	2
Message Left	193
No voicemail box	5
Private Practice Patient	7
Scheduled	66
Unaware of Referral	1
Voice Mailbox Full	4
Callback Requested	2
Grand Total	320

Table 1

Outcome options after first contact period and subsequent number of each outcome.

2.2.2 Table 2

Summary	Office Visits	Hospitalization Metrics		
Timeframe	# of patients seen at clinic	# of hospital visits/ year	# of patients seen in the hospital	Mortality Rates
May-Dec 2020	532	42	29	2
Jan-Dec 2021	551	83	42	2
Jan-May 2022	210	24	16	0
Total	1293	149	87	4

Table 2

Total BFC patients, hospitalization rates, and mortality rates for May 2020-May 2022.

Bibliography

Buttz, Lee. "How to Use Scheduling Data to Improve Efficiency." *Family Practice Management*, 30 June 2004, https://www.aafp.org/pubs/fpm/issues/2004/0700/p27.html.

"Expediting a Dermatologist Appointment." *Melanoma Education Foundation*, 6 Sept. 2017, https://melanomaeducation.net/expediting-a-dermatologist-appointment/#:~:text=Dermatologist%20appointments%20are%20often%20scheduled,and%20information%20on%20skincheck.org.

Glazer, Alex M. "Analysis of Trends in Geographic Distribution of US Dermatology Workforce Density." *JAMA Dermatology*, U.S. National Library of Medicine, 1 May 2017, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5470415/.

Hutchison, Jenny. "The Effect of North Carolina Free Clinics on Hospitalizations for Ambulatory Care Sensitive Conditions among the Uninsured." *BMC Health Services Research*, U.S. National Library of Medicine, 12 Apr. 2018, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5897934/.

JS;, Darnell. "Free Clinics in the United States: A Nationwide Survey." *Archives of Internal Medicine*, U.S. National Library of Medicine, 14 June 2010, https://pubmed.ncbi.nlm.nih.gov/20548006/.

O'Brien, Lisa K. "Improving Responsiveness to Patient Phone Calls: A Pilot Study." *Journal of Patient Experience*, U.S. National Library of Medicine, Sept. 2017, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5593260/.

"Overview of Clinical Conditions With Frequent and Costly Hospital Readmissions by Payer, 2018." *Agency for Healthcare Research and Quality* , July 2021, https://www.hcup-us.ahrq.gov/reports/statbriefs/sb278-Conditions-Frequent-Readmissions-By-Payer-2018.jsp.

Pantaleoni, J L. "Successful Physician Training Program for Large Scale EMR Implementation." *Applied Clinical Informatics*, U.S. National Library of Medicine, 11 Feb. 2015, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4377562/.

RP;, Ramanayake. "Structured Printed Referral Letter (Form Letter); Saves Time and Improves Communication." *Journal of Family Medicine and Primary Care*, U.S. National Library of Medicine, Apr. 2013, https://pubmed.ncbi.nlm.nih.gov/24479068/.

Zhang, Michael. "Demographics and Clinical Profiles of Patients Visiting a Free Clinic in Miami, Florida." *Frontiers*, Frontiers, 16 July 2019, https://www.frontiersin.org/articles/10.3389/fpubh.2019.00212/full.

Zhuang, Thompson. “Financial Distress Is Associated with Delay in Seeking Care for Hand Conditions.” *Hand (New York, N.Y.)*, U.S. National Library of Medicine, July 2021, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8283103/.