

Improving Clinic Throughput in a Pediatric Outpatient Setting

by

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Abstract

Purpose: The purpose of this essay is to look at different projects that impact and improve the overall throughput of clinics within a pediatric outpatient setting. The goal of these projects was to improve patient satisfaction, decrease wait times, decrease length of stay, and increase communication within the clinic.

Approach: Implemented three different projects within an urban pediatric hospital and studied the results from start to finish. The three projects included clean-up of access points, communication during wait times, and calling late patients. I was the project manager for all projects and gathered/observed the data associated with each before and after implementation. There were various other stakeholders that helped carry out the implementation of each project.

Results: There was an increase in patient satisfaction scores, an increase in communication during wait times, a decrease in length of stay, and an increase in calls to the call center. We also believe there was an increase in employee satisfaction due to the increase in communication and throughput within the clinic, but there is currently no data to support this assumption.

Conclusion: The three projects talked about in this paper had an impact on clinic throughput in more ways than one and lead to the development and implementation of other projects. This helped get more patients into the door at the hospital and helped provide an overall better patient experience.

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1.0 Introduction

My focus throughout my residency has been improving clinic throughput within our ambulatory clinics at an urban pediatric hospital's main campus. We saw a problem with the way patients were moving through their visits. Areas of improvement were identified to improve the patient experience. It's important to keep schedules on track for the employees, patients, and families. Many parents are not wanting to wait at their child's appointment for extended periods of time when they have important activities of daily living like getting to work or getting their child back to school. It can be frustrating when you expect to be at an appointment for a certain amount of time, but it takes longer than you expected and/or planned for. When delays in the schedule occur, the schedule gets backed up and Physicians and staff are working a longer day leading to frustration and burnout.

The three themes that most often come up when discussing improving throughput include resource alignment, operational efficiency, and process improvement (Naiker et. al., 2018). I will focus on all three themes through the projects highlights in this paper. Throughput is extremely important when it comes to patient experience and overall wait times within the clinic. There are also initiatives all over the US to improve access to care and the best way to do that is to work on initiatives to increase throughput. I have focused on various University of Pittsburgh, School of Public Health competencies throughout my time as a resident. I have worked on process improvement projects while learning crucial project management skills.

These various projects helped improve patient and staff satisfaction, clinic wait times, length of stay, and the percentage of patients who are late to their appointments. I gained exposure to the operations and flows of different divisions within an outpatient setting and worked with

clinical leaders to establish the best processes. Throughout shadowing different locations, I gained insight of how processes vary at every location. I worked on the continuous development and improvement of our physician liaison program so we can understand the frustrations the physicians in the community had when it came to throughput and access at the urban pediatric hospital. In working with the Medical Assistants (MAs) and Patient Service Representatives (PSRs) to identify roadblocks and help improve throughput. I was able to identify roadblocks and help improve throughput. New processes to greet patients upon arrival were developed with the greeters. It's important to patients and families to have a positive first impression from the moment they step off the elevator. This was to also eliminate patients who do not get fully checked in and end up sitting in the waiting room for extended periods of time.

To ensure we were collecting as many patient satisfaction surveys as possible, I worked on updating the locations and providers in our patient satisfaction database to make sure surveys were being sent out for each location and provider. This was important when it came to collecting the data used to measure the success of the projects talked about in this paper. It also helped us make sure we were reaching every patient we possibly could. I assisted administrators and clinicians in navigating our patient satisfaction dashboard and pulling additional data from the database site as well.

The planning and execution of the 8th Annual Ambulatory Retreat in November of 2022 was also beneficial for increasing clinic throughput and flow. I helped bring over 100 outpatient clinical leaders and nonclinical leaders together to help work on indicatives and goals to improve clinic throughput. It helped leaders talk about what does and doesn't work within their own spaces and what might be able to be transferred to other clinics and departments. We were able to come

up with different goals and projects for 2023 which we are excited to continue to implement throughout the year.

This paper explains the different methods we used for each project as well as my role in each project. I picked the three biggest projects that had the most significant impact on clinic throughput and flow. There were many contributors to these projects that helped contribute to the success of each one. Throughout each project's executive summary, the results are explained and accompanied with tables and figures. I have also included recommendations I have moving forward as well as any competencies that were focused on, developed, or enhanced during the project. I am grateful to work for an organization that instills trust in me to carry out initiatives that positively impact the organization.

1.1 Clean-up of Access Points

1.1.1 Problem Statement

At the urban pediatric hospital, there are multiple different patient-facing platforms. Many of the phone numbers and addresses were inaccurate and directed patients to incorrect information. This caused frustration for both the patient and the staff at the hospital. Feedback through patient satisfaction surveys highlighted this frustration and the need for a clean-up of access points.

1.1.2 Purpose Statement

The goal of this project was to clean-up all patient facing access points to ensure each platform held the correct information. These platforms included location and provider Google pages, the website, the app, our electronic medical record (EHR), Outpatient Referral Guide, ED Concierge Flier, Find-a-Doc, phone trees, and various fliers that held department and hospital phone numbers and addresses. The purpose was to ensure all patients were being provided the correct information and ensuring someone was answering the phone when they called.

There was a need to prioritize which phone numbers and department specialties wanted to have their information showcased. We also needed to figure out where there were phone numbers and address listed and if they were correct. The scope of this project included all the platforms for the ambulatory department. We wanted to make sure there was consistency for all departments and locations. The desired outcome was to increase patient and staff satisfaction because the staff will not have to take time to transfer patients to the correct department and for patients to obtain the desired information in a timely manner.

1.1.3 Introduction and Background

The urban pediatric hospital has over 1.4 million outpatient visits each year. This is a very large number of people in and out of our doors each day. This also means there are a lot of patients calling to schedule appointments or talk to providers when they have questions about treatments, medications, or next steps in treatment plans. Providing the correct information for patients to reach our providers and schedulers is essential in creating good patient satisfaction and overall clinic flow.

According to a study done by the *Israel Journal of Health Policy Research*, providing phone numbers over emails for patients and their families was highly favored by the patients (Peleg et. al., 2012). This is important to note because patients want to be able to get in touch with someone easily and it is believed a phone number is one of the easiest ways to do this.

Phone numbers can sometimes change, and it is extremely important to make sure they are staying updated on all platforms within a healthcare system. It is also important that we connect them with where the patients want to be with the first call because some individuals do not have enough coverage to be on the phone for extended periods of time (Gonzales et. al., 2016). Staffing is important to consider when assigning additional tasks.

Having appropriate numbers listed can help decrease the time spent on the phone and overall improve the flow of the clinic (Anvaryazdi et. al. 2020). The reason for this is because they can appropriately call the call center and not call the division to schedule appointments. This provides additional time for the clinical staff to help make sure the flow in the clinic is moving smoothly and they are rooming patients efficiently.

1.1.4 Methods

For this project, I was the main project manager and point of contact for any questions regarding what was listed on patient facing platforms. I also became the point of contact for any changes that needed to be made to the division pages on the website. This was so I would know if there needed to be changes made to other platforms as well. At the beginning of this project, I went through every patient facing platform to analyze what departments and information was listed. I then worked with a team member to make sure all the phone numbers and address were correct by calling each number listed. We reached out to appropriate contacts to determine which numbers

and addresses should be listed, or if there even should be any listed. We then developed a “physician cheat sheet” with all department phone and fax numbers so they always have them easily available to use or give to patients. We also worked with a third-party vendor to redo the location phone trees to standardize them as well as make sure they were being routed to the correct place/person.

I also worked with the marketing team to ensure we were updating the website and Google pages correctly. We updated the Google pages for all locations and divisions, and some providers in the divisions we found the most mistakes. I also worked closely with the IT and process improvement team to make sure the information was correct in the app, Find-a-Doc, and within our EHR system. There were many different departments that played a role in the success of this project, and it wouldn’t have been possible without the effort of all the stakeholders.

1.1.5 Results and Discussion

Through the clean-up of access points within the urban pediatric hospital’s ambulatory department, we were able to increase access for patients and their families. We made the following changes/updates:

- 156 changes to the Google pages for providers at the hospital and the changes were made with the help from the process improvement team
- 42 changes to the Google pages for divisions and locations at the urban pediatric hospital
- 42 changes to the app to division and location phone numbers and addresses
- 13 division changes on the website including location, addresses, department phone numbers, and location phone numbers
- Changes to eight location phone trees

These changes were made in partnership of the marketing team, IT, process improvement, and leadership within the hospital's ambulatory department.

We also worked to increase the volume to the call center for patients to schedule appointments. In Figure 2.1.1, you can see that the number of calls received generally stayed around the same over the past year (2022). However, we did see an increase of 2.8% in the number of appointments booked from July 2022 to December 2022 compared to January 2022 to June 2022 as seen in Figure 2.1.2. We believe that this increase is due to the standardization of the location phone trees and the listing of the correct phone numbers, but another contributing factor would be the centralization of the call center at the urban pediatric hospital. This has been a project since the beginning of 2022 that Bryan Gay, Senior Manager of the Call Center has been rolling out. He has had to re-locate seven staff to the pediatric call center team to help with the increase in volume from the changes we rolled out through this clean-up of access points project.

As you can see in Figure 2.1.3, the number of nonappointment calls to the call center have increased every month since August 2022, except for December. This is important to note since we had increased the access to phone numbers and saw an increase in phone calls answered as well. You can also see from January 2022 to January 2023, there was a significant increase in calls answered and nonappointment calls. I believe this is due to the clean-up of access points and the centralizing the call center.

Through this project, I also worked with the process improvement team to create an outline to change information on all patient facing platforms. This highlights how to change various information and who to contact with any issues or questions. This allows individuals to change information as they notice it instead of waiting until another audit is done to fix all that is incorrect.

There was a significant need for this project as seen through the number of changes that were made throughout this project. Every time we would complete one section of the project, we found a new section to do and tackle. This will be something we continue to work to improve and make sure it remains updated all the time.

This project was hard to collect data due to the many phases and the implementations of other projects. For example, the centralizing of the call center could have impacted the call center volumes more than we are giving it credit for. We also updated division information on the website outside of addresses and numbers, but that data is not included because it was done by the division themselves and routed through me. There was also not many metrics to use besides the decrease of negative comments in patient satisfaction surveys and call center volumes because it wasn't a process implementation and specific data was hard to collect.

1.1.6 Recommendations

I believe this project had a significant impact on patient and staff experience. We are seeing a decrease in the negative comments regarding incorrect information in our patient satisfaction surveys. We also are seeing an increase in call center volume which means more patients can get through to schedule an appointment. Our next step is to clean up the Google cards for all providers at the urban pediatric hospital and make sure the correct information is listed. We are also looking into the division phone trees and standardizing them. Moving forward, this is a project that is going to have to be kept up with year-round, but an audit like this will need to be done every two to three years to ensure the correct information is available for patients in staff. This is most likely a resident project for future years because it teaches you about the entire department and connects you to many different stakeholders within the urban pediatric hospital.

One area we can improve on this project moving forward is making sure we have metrics to better capture and measure the success of this project. I think it would be beneficial to create a dashboard that holds different metrics. We could track how the calls get routed when patients call. It would also be interesting to look at how many clicks we get on the websites, app, and Google before and after the changes. This may also help us identify where additional changes may need to be made.

1.1.7 Competency Development

Throughout this project, I was able to enhance the following competencies: analytical thinking, communication, accountability, professionalism, community orientation, organizational awareness, performance measurement and process improvement. I was able to dive deep into each of the patient facing access platforms and connect with various individuals across the entire healthcare system to help correct the information that was wrong. This enhanced my communication skills, community orientation, organizational awareness, and professionalism. Project management is also something I really strengthened during this project. I was able to start a project and carry it the whole way through meeting deadlines and communicating appropriately with key stakeholders.

1.2 Communication During Wait Times

1.2.1 Problem Statement

Our patient satisfaction scores were not meeting the organizations standards regarding questions regarding moving through your visit. There was a need to inform patients of any delays and hopefully decrease wait times in general within the clinics at main campus.

1.2.2 Purpose Statement

Communication during wait times was put into place to increase patient satisfaction scores for moving through your visit. Previously there were patients who waited in the exam rooms for longer than 15 minutes without being seen or checked on. There were times that providers were unaware that patients were in the room and ready to be seen or the MAs (medical assistants) were unaware that the provider had gone into the examination room. The goal was to increase patient satisfaction, communication, and collaboration between all staff members, and decrease the length of stay.

We wanted to pilot this project in one clinic and then expand it to others at the main hospital if found successful. We were also hoping we would see a decrease in the length of stay (LOS) for the entire outpatient visit. This means from the moment the patient checks in to the moment the patient checks out. We wanted to incorporate a process to communicate delays/wait times to patients and check on patients every 15 minutes in the exam room.

1.2.3 Introduction and Background

Majority of the negative comments left in the patient satisfaction surveys for moving through your visit questions talked about how frustrating it is having to wait for an extended amount of time with limited communication. Many parents and children have activities of daily living like school and other things to get back to which makes it extremely inconvenient when their appointments take longer than they should or are expected to. It is also never fun to wait for an extended period with no idea of when you will be seen. Many patients often feel like their turn has been skipped or fear they will be seen in a hurry since they are behind when experiencing longer wait times (Mercieca et. al., 2014). We do not want any patient or family to feel this way and potentially have unnecessary stress at their appointments. Going to the doctors can already be a challenge, we want to make it as stress free as possible.

Wait times has some of the greatest impacts on patient dissatisfaction within health care settings (Lee et. al., 2020). According to a study published in the ScienceDirect, patients who had longer wait times were significantly less satisfied with their treatment and their hospital (Lee et. al., 2020). This is mainly due to the lack of communication the patient experiences during their wait times. This study believes that with an improvement in communication during the patient wait times, they will also see patient satisfaction improve. We wanted to give this a try within our communication during wait times project at the urban pediatric hospital. We were hoping to increase patient satisfaction scores through improving communication with patients during long wait times.

Another study by the American Journal of Managed Care, tells us that the clinical ambulatory patient experience is heavily influenced by the wait time they experience while waiting for their provider (Bleustein et. al., 2014). This shows that long wait times does not just impact

patient dissatisfaction within an inpatient setting. We knew there is a direct correlation, and it was time to implement a process within our clinics at the main hospital.

Based on our patient satisfaction scores, we quickly recognized that something needed to be done when it came to the moving through your visit domain. After thinking through various routes, we decided to implement a plan that could be adjusted based on the needs of each clinic. The project could be manipulated to best serve the patients of each clinic and division. There were already some divisions informing patients of any delays, so it made the most sense to continue to implement a variation of the project in the other clinics/divisions.

1.2.4 Methods

One out of seven of the clinics previously implemented a process of communicating during wait times. This process worked extremely efficiently and is the one we decided to use for the rest of the clinics. Each clinic is a little different and added their own spin to it, but overall, they are very similar. The process consists of the MA's writing the time the patient goes into the exam room on the door. After 15 minutes, they go in and check on the patient if the provider has not been in the room. When the provider goes into the room, they will flip the flag to indicate they are seeing the patient. The MA's also use the flags to indicate that the room is clean and ready for the next patient. This helps ensure that the process is as efficient as possible, and patients can be roomed quickly.

I worked with the nurse coordinators and nurse managers of each clinic to help determine the best process. I also talked to directors from the other urban pediatric hospital locations to see what their process are and if there was anything we could implement in main clinics to enhance the chances of success. They were responsible for communicating the new process to all providers

and MAs. I was there to answer any questions and explaining the steps of the process to all the MAs. I then went down each day to check on the pilots and answer any questions that came up. I also was able to get live feedback from all stakeholders when doing this.

We implemented this in one clinic and then quickly rolled it out to the other five clinics, one at a time, over the next three months. I continue to analyze LOS and patient satisfaction score data for the divisions within these clinics. So, we can see the long-term effects of the process as well as continue to promote the use of it.

1.2.5 Results and Discussion

Through this project, we saw an increase in patient satisfaction scores in Complect Care, Infectious Disease, Urology, Transplant, Neurology, Pediatric Surgery, HCI Cardiology, and Genetics as seen in Table 2.2.1. There were some divisions that had a major increase, and some had a small increase. The other divisions that we implemented this project in either didn't have enough survey results to know if it made a difference or they fluctuated and ended the summer lower than when they started. The fluctuation of scores is shown in Figure 2.1.4. There were no divisions that decreased the entire year consecutively.

As seen in Figure 2.1.6, overall, the LOS decreases over a one-year period (January 2022 to December of 2022). This data includes all the clinics within our main location at the urban pediatric hospital that we implemented the communication during wait times project (ones the Ambulatory department has oversight of the nurses and MAs). You will note, the LOS from Ready to be Seen by Physician to Check-Out decreased towards the end of the year. The Dog clinic saw the biggest decrease after implementation of the project seen in Figure 2.1.5. We believe this is

related to the process enhancement that was introduced through the communication during wait times project.

We also saw a decrease in the frequency of negative comments within our patient satisfaction surveys. We saw an increase in positive comments regarding wait times and being informed of longer waits. We believe this project had a direct correlation to the increase in patient satisfaction scores as well as helped decrease the LOS. The project still has room to improve and grow to help increase the patient satisfaction scores and decrease LOS.

These metrics may have also been impacted by the calling late patients project that was running simultaneously in some of these divisions/clinics. We also do not have a lot of responses in patient satisfaction surveys for all divisions which made it challenging when looking at the data to see if this project was a success or not. This also may have caused some biases because individuals who are extremely happy/mad may have been the only ones who responded to the survey. It is also important to keep in mind that the length of stay organizer is not used to its full potential (talked about more in the calling late patients project) which could also skew the data when it comes to the LOS.

1.2.6 Recommendations

Through this project we were able to see a decrease in LOS and an increase in patient satisfaction scores. Overall, it increased the flow of the clinic and staff satisfaction. Providers are going into patients' rooms quicker because they are more aware of when the patients are in the room. We are also seeing a decrease in the negative patient satisfaction comments in the surveys.

I recommend next, we look at the 12 divisions that did not end on a higher note than where they started and see if there is something we can do to change that for the following year. I also

recommend that this process is implemented in all the urban pediatric hospital locations and clinics. I believe we have seen great results that show it improves patient satisfaction scores as well as LOS. I also believe it improves the satisfaction of the employees because there is more communication within the clinics between all front-line staff. This project can be adjusted to help fit the current processes and need of the clinic/location. The main purpose is to increase the communication with the patients and improve the flow of the clinic. I think it would also be helpful to look at staff satisfaction before and after implementation. We do have staff surveys each year, but they do not include everyone on the team. It would be interesting to pull this data and see if we were able to improve these numbers as well.

1.2.7 Competency Development

Throughout this project, I was able to enhance the following competencies: analytical thinking, communication, accountability, professionalism, performance measurement and process improvement. I was able to also grow in my project management skills throughout this project. I expanded this project to all clinics at the main urban pediatric hospital that are within our ambulatory department. This gave me exposure to many stakeholders which helped improve my communication and professionalism skills. I was also able to analyze the data of length of stay and patient satisfaction scores to help improve my data analytics skills.

1.3 Calling Late Patients

1.3.1 Problem Statement

At the main urban pediatric hospital's campus (within the clinics the ambulatory department oversees), on average, 25.58% of patients arrived late to their appointment in 2021. Of that, 7.74% were more than 16 minutes late. This sets back providers and makes it extremely challenging to remain on time.

1.3.2 Purpose Statement

The purpose of this project was to decrease the number of patients that were late to appointments, but especially decrease the patients who were more than 15 minutes late to their appointment. Patients are told to arrive 30 minutes prior to their appointment time. Providers have various policies in place and sometimes do not see patients if they are more than 15 minutes late. Patients would often show up more than 15 minutes late, MAs would hold rooms for them and then they wouldn't be seen. Other times, MAs would hold rooms for them and then the patients would not show. The goal was to increase efficiency and decrease the number of patients who were late.

We also wanted to increase the overall communication within the clinic, so we could understand if and/or when the late patients are going to show up. By calling every patient who is late, we can reschedule them if needed, or communicate with the clinic on when the patient is coming. Our goal was to also decrease the overall length of stay and improve patient satisfaction scores related to moving through the patients visit.

1.3.3 Introduction and Background

There are many reasons why patients may be late or not show up to their appointments, but no matter what the reason, there is a large impact on the clinic overall. First, we really wanted to understand why late patients have such a big impact on clinics. According to a study published by the *Advances in Urology*, patients who were late spent significantly less time with their physicians compared to those who came early or on time (Okotie et. al., 2008). This is significant because many patients complain that they do not get enough time with their physician as is. If they arrive late to their appointment, they are even likely to spend even less time.

Within our EHR system at the urban pediatric hospital, we have a tool that predicts the chances that the patient will be a no show based on past appointments. This was helpful for staff to use because they can call them and reschedule them right away and can also call them earlier in the day if needed to remind them. No show rates can be high for multiple reasons; patient behavior, patient's financial situations, environmental factors, and the organizations scheduling policy (Marbough et. al., 2020). It is important to understand where patients are and if they are coming so staff can know if they need to hold the room or put the next scheduled patient in there to ensure clinic is flowing in the most efficient manner.

A study conducted by *MDPI* found that there are tools that will assist in predicting if a patient is going to be late and by how much (Srinivas, 2020). This is extremely beneficial in schedule building as well and to help assist in improving clinic flow. This is something that can be looking into down the line, but first we needed to understand the impact our late patients had on clinics as well as how many late patients we have.

1.3.4 Methods

The patient service representative (PSR) in the clinic started by calling patients who are more than 15 minutes late for one division and called patients who were one minute late for another division. I worked with the providers and administration for each division to get an understanding of what they would want out of this project. I came up with the different times for each division because one will accept patients past 15-minutes, and they specifically asked that we call them after the 15-minute late mark. The goal was to pilot this in one clinic and continue to roll it out in other clinics with continued success.

I analyzed each clinics numbers and talked to each stakeholder to determine the best course of action. I looked at the percentage of late patients, how many patients that is, on average how late the patients are, average length of stay of appointments, and patient satisfaction scores for questions about moving through your visit. I then checked on the project and got live feedback every day from the PSR calling the late patients in the clinic. I also received feedback from MA's, nurses, and providers within the clinic.

1.3.5 Results and Discussion

Through the calling late patients project, we saw a decrease in the percentage of patients who were late at the main hospital and for the urban pediatric hospital overall from 2021 to 2022. These results can be seen in Table 2.2.3 and 2.2.4. We saw a total decrease of 0.75% within the main hospital's ambulatory clinics that we oversee and a decrease of 4.59% overall across the urban pediatric hospital. This is very interesting considering we have only implemented it fully into two clinics, but it had such a significant impact on the number of patients who showed up on

time to their appointments. I tested for significance and for the Ambulatory Pods at main campus, referenced in Table 2.2.3, and the test was not significant and greater than 0.05. However, for the overall numbers, referenced in Table 2.2.4, the test was significant and less than 0.05.

The various outpatient clinics at the urban pediatric hospital are named after animals. In the cow clinic, we saw a decrease in the percentage of patients who were more than 30 minutes late which you can see in Figure 2.1.7 with the blue line. Patients who are more than 30 minutes late to their appointment really impacts clinic and can put things behind schedule significantly. This means that the MAs, nurses, and providers are holding a room for a patient for longer than their appointment is scheduled to be. This puts everyone who was scheduled to be in that room behind for the rest of the day.

The length of stay organizer can significantly impact the LOS data and the time we have recorded at the patient being put into a room. As you can see in Table 2.2.2, the use of the length of stay organizer at the main hospital's ambulatory clinics is lower than we would prefer it to be. We shoot for above 85% of utilization for the "Ready to be Seen by Physician" and "Check-Out" features. These are both controlled by the PSRs, MAs, nurses, and providers. This can have a significant impact on the LOS because we are not accurately capturing all the patients and their appointment length. It varies from clinic to clinic but remains consistent with the percentages of main campus.

The communications during late times could also impact these numbers as well, as talked about in project number two. We focused on the LOS significantly more in that project, but still believe calling late patients impacted the overall clinic flow as well. We have also implemented slight changes to our messaging system that is sent out to patients prior to arrival, and this could've

also impacted the percentage of late patients to their appointments because they are being reminded where and when to go in a more effective way.

Through the PSRs calling the late patients, we were able to automatically reschedule those who were going to be no shows. We often found that the patients who were no shows were people who forgot about their appointment or didn't know they even had one scheduled. We were more interested in figuring out where the late patients were and if they were coming at all. This gave us the ability to figure out if there were other areas projects were needed. It also gave us the ability to reschedule the patients for the next available appointment to get them into our doors to be seen.

1.3.6 Recommendations

We implemented this in two clinics within our main hospital location. We started to implement it in a third clinic, but there were issues with the crossover of the electronic health record (EHR) systems we use. They were not crossing over like we needed them to in this clinic when it came to making appointment notes and canceling/no showing appointments. This caused a pause in the project until we could implement a new process in the EHR.

I recommend moving forward with this project in other clinics in the future. We did see a decrease in more than 15-minute late patients and there was better communication and flow within the clinic. I also believe it brought up other areas of improvement, that led to minor projects, that also overall benefited the department. This is a project that can continue to be rolled out and adjusted based on the clinic/location needs.

I also recommend that we encourage the use of the length of stay organizer within the clinics. The patient check-in marker is automatically taken from the EHR system right when they check in. However, the use of "Ready to be Seen by Provider" and "Check-Out" can be improved

upon within our clinics at main that the Ambulatory department oversees. With this increase, we can better track the LOS and get a better understanding of the flow throughout the clinic. If we are unable to tell when the patient is ready to be seen by a physician and when they check out, it can be challenging to understand if this project (and others) has any impact.

1.3.7 Competency Development

Throughout this project, I was able to enhance the following competencies: analytical thinking, communication, accountability, professionalism, performance measurement and process improvement. I was able to take a current process and work to improve it while also analyzing the data along the way. I was also able to manage a project and work with key stakeholders on completing the project and then starting back over in another clinic. I also was able to build relationships and work on my communication and professionalism skills while explaining the benefits of this project and working to explain the tasks to those involved.

1.4 Discussion/Conclusion

Within the urban pediatric hospital, we focused on the clinic throughput within our outpatient setting at the main hospital. There were various project happening simultaneously that all worked to improve the overall flow of the clinic as well as patient experience, patient access, and staff satisfaction. I had the ability to be the main project manager of these projects and organize them to see from start to finish for all implementations. I was able to work on various initiatives that helped address the clinic flow within the clinics at the main hospital's ambulatory department

that we have direct oversight in. While working directly with the management of ambulatory and these clinics, we were able to see significant impacts within the clinic flow and throughput.

We saw an overall decrease in the percentage of late patients which helped improve the flow of clinic since late patients impact the length the provider spends with the patients. We saw a decrease in LOS for some clinics, especially for the time of check-in to ready to be seen by physician. This helps get patients out of the waiting room faster which gives the providers the ability to see them in a much timelier manner. This overall increased patient and staff satisfaction because operations and flow improved significantly.

There were many competencies developed throughout these three projects and I think there were many projects that have been identified for the future as well. I look forward to continuing the implementation of processes to help increase clinic flow within the urban pediatric hospital and possibly expanding these projects beyond just our main hospital location.

2.0 Figures and Tables

2.1 Figures

2.1.1 Call Center Volumes of Calls Answered and Appointments Booked

Call Center Volumes of Calls Answered (blue) and Appointments Booked (orange) by month.

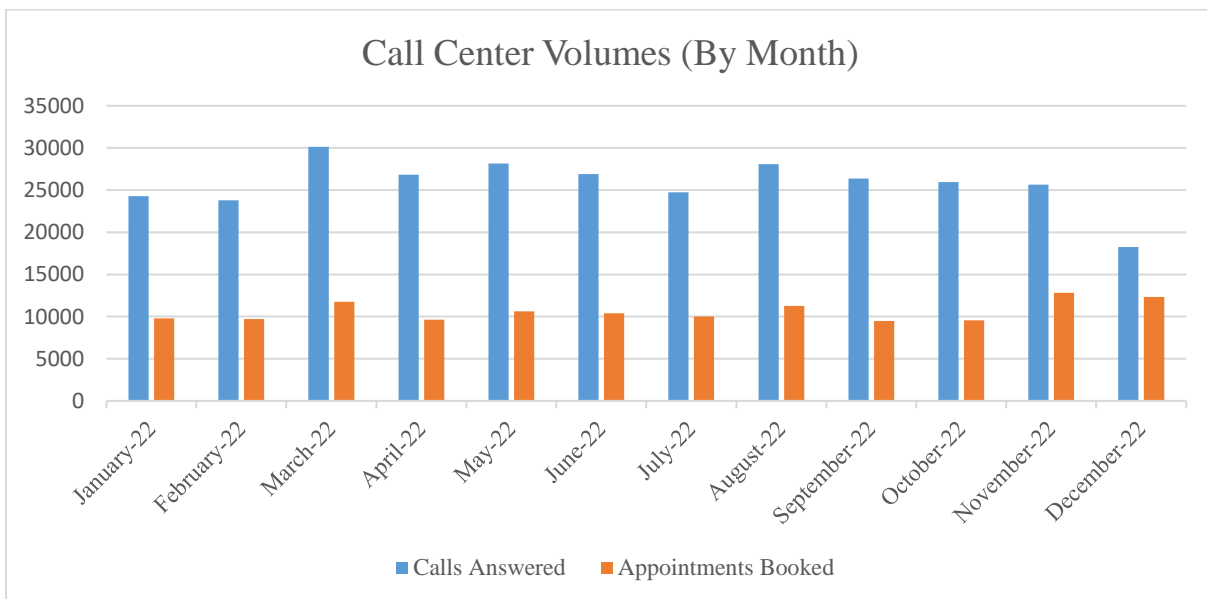


Figure 1: Call Center Volumes (By Month)

2.1.2 Call Center Volumes

Call center volumes for the first six months (January – June) and last six months (July – December). Looking at calls answered, and appointments booked. Shown in average (blue) and total (orange).

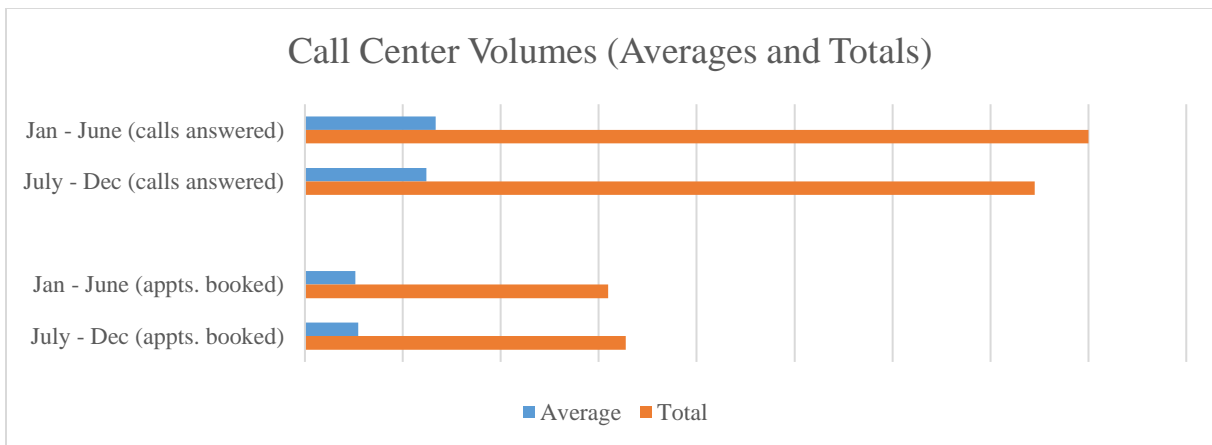


Figure 2: Call Center Volumes (Averages and Totals)

2.1.3 Call Center Volumes of Calls Answered

Call center volumes of calls answered (blue) and non-appointment calls (orange) by month in 2022.

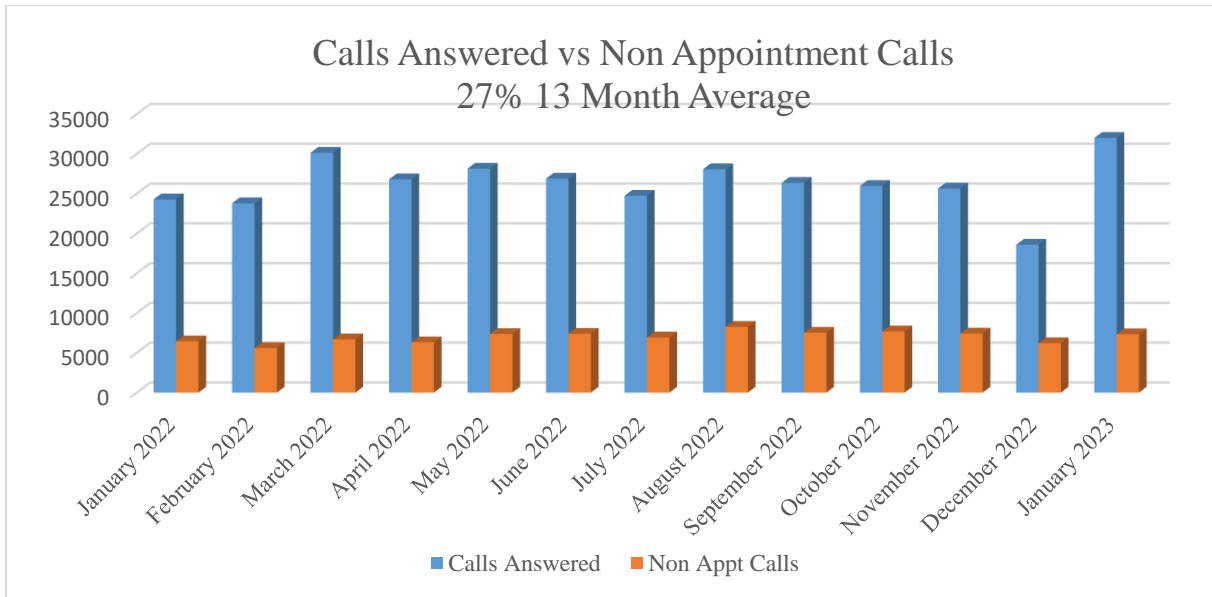


Figure 3: Calls Answered vs Non Appointment Calls

2.1.4 Neurology Patient Satisfaction Scores

Neurology saw a fluctuation in patient satisfaction scores. This was implemented in June (shown by green arrow), each month shown by point in graph (January2022-December 2022).

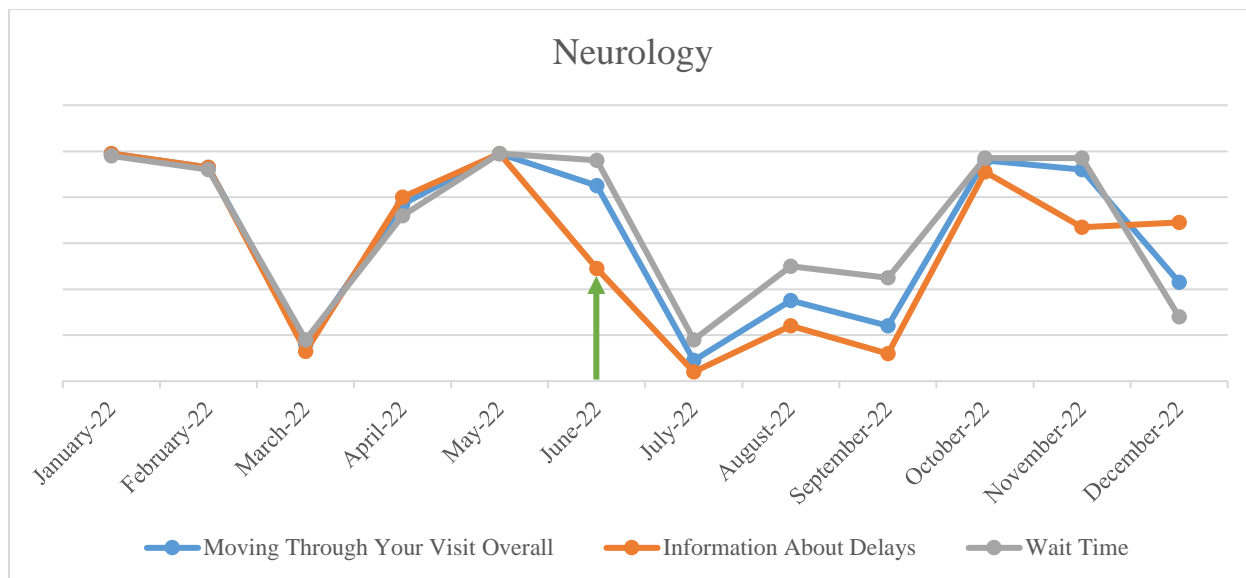


Figure 4: Neurology

2.1.5 Dog LOS

Dog saw an improvement in LOS. This was implemented in August (shown by green line).

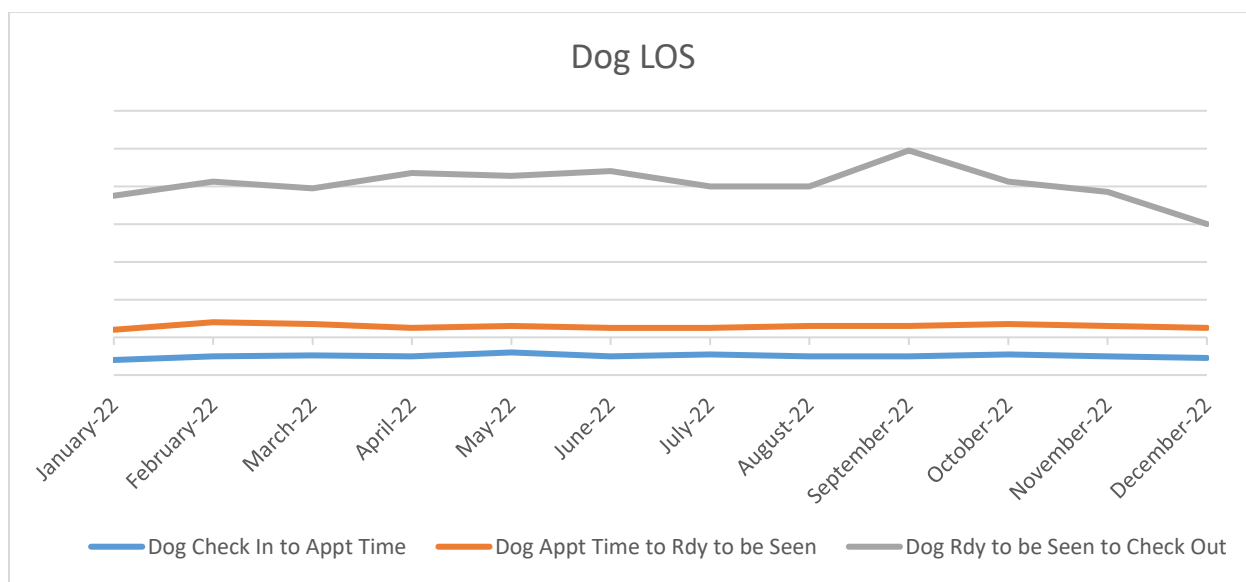


Figure 5: Dog LOS

2.1.6 Overall (Main-Ambulatory) LOS

Overall (Main-Ambulatory) LOS only looks at the clinics where this was implemented within the main hospital.

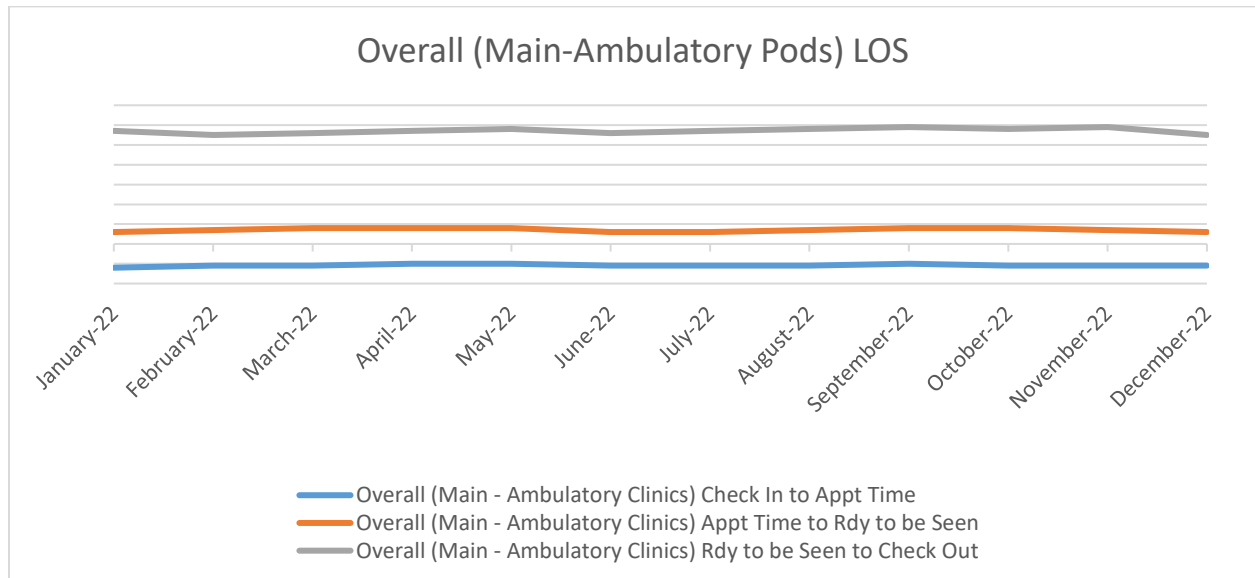


Figure 6: Overall (Main-Ambulatory Pods) LOS

2.1.7 Cow Clinic 2022 Late Patient Percentages Above 16 Minutes

The cow clinic 2022 late patient percentages above 16 minutes. Calling late patients was implemented in April (shown by green line).

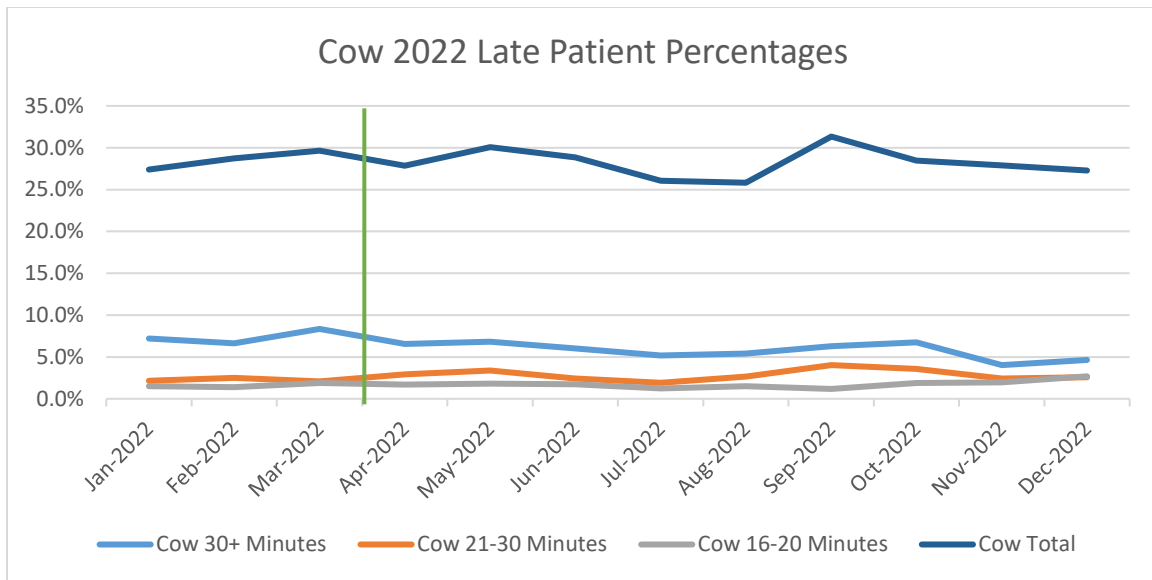


Figure 7: Cow 2022 Late Patient Percentages

2.2 Tables

2.2.1 Information About Delays Patient Satisfaction Scores

Information About Delays Patient Satisfaction Scores from March to June in the Specialties that saw the biggest increase in that timeframe.

Table 1: Information About Delays Patient Satisfaction Scores from March to June in the Specialties

Site/Specialty	Information About Delays Patient Satisfaction Scores (March – June)
Complex Care	+98
Infectious Disease	+98
Urology	+93
Transplant	+58
Neurology	+36
Pediatric Surgery	+16
HVI - Cardiology	+12
Genetics	+6

2.2.2 Overall Use of the Length of Stay Organizer

The overall use of the length of stay organizer at the main hospital for 2022. “Check Out” highlighted in yellow is what PSRs, providers, and nurses (depending on clinic) use and “Read to be Seen by Physician” highlighted in orange is what the MAs use.

Table 2: Overall Use of the Length of Stay Organizer (2022 – Main Campus)

2022 - Main Campus	
Action Display	Distinct Encounters
Ready To Be Seen by Physician	79.25%
Check Out	70.14%
Radiology/Diagnostic Testing	15.60%
Seen By Physician	15.44%
Rooming Form Complete	7.71%
Seen By Nurse	2.70%
Patient Education Required	0.83%

2.2.3 Overall Late Patients at the Main Hospital

The overall late patients at the main hospital within the clinics the Ambulatory department has direct oversight in. The 2022 numbers are shown in green.

Table 3: Overall - Main (Ambulatory Clinics)

Year	0-15 Minutes	26-30+ Minutes	Total
2021	17.85%	7.73%	25.58%
2022	17.60%	7.23%	24.83%

2.2.4 Overall Late Patients at Hospital

The overall late patients at the urban pediatric hospital. The 2022 numbers are shown in green.

Table 4: Overall Late Patients at Hospital

Year	0-15 Minutes	26-30+ Minutes	Total
2021	22.61%	7.51%	30.12%
2022	17.85%	7.68%	25.53%

Appendix A Appendices and Supplemental Content

Appendix A.1 Acronyms

EHR – Electronic Medical Record

LOS – Length of Stay

MA – Medical Assistant

PSR – Patient Service Representative

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