

Optimizing Access to Pediatric Specialty Care

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### Abstract

The science of optimizing access and wait times is still evolving. Many confounding factors influence the capacity of health systems to offer appointments in a timely manner. Timely access to care is a determinant of medical outcomes and patient satisfaction. The purpose of this project was to develop a standardized approach for the structure of centralized services based on the patient scheduling needs for individual specialty clinics. This process improvement project utilized quantitative data to measure changes in scheduled appointment utilization, within three pediatric specialty clinics after 45 days of implementation. The implementation included adjustments in workflow and scheduling protocols; and recommendations for staffing models, performance metrics, and operational dashboards. An average 12.3% increase in scheduled appointment utilization was realized within the three clinics. The results highlight the benefits for an optimized scheduling practice to increase scheduled appointment utilization which may increase the timeliness of access to specialty care for patients and families.

*Keywords:* Pediatric, specialty, providers, patients, families, access, obstacles, solutions, scheduling

## Optimizing access to Pediatric Specialty Care

### Overview

In order to meet the increased complex needs of patients and families, along with a growing number of referring providers throughout the Midwest region, a centralized scheduling department was created. This centralized scheduling platform is intended to save time and reduce confusion of needing to schedule multiple appointments and/or procedures. This department is of particular importance since there is a complex variability of specialty providers. Provider schedules are constantly in flux: clinics close, operating rooms change, and shifts are traded amongst physicians. Because of this fluidity, having access to real-time accurate schedules is essential (Kass, 2017).

### Background

Centralized scheduling enables the use of new healthcare scheduling technology, allowing patients to book appointments online, communicate with their doctor through chat features, and receive text reminders about test updates and upcoming appointments. These types of tech features are becoming increasingly important with patients, as recent surveys show that on average, 17% of all patients book their appointments online, and 42% would use online scheduling features if given the opportunity (Creech, 2017). By creating enterprise-wide patient access, processes can be streamlined for both patients and staff. Patients call one phone number to schedule all of their appointments — and only need to provide their demographic and insurance information once (Culbert Health Solutions, n.d.). The science of optimizing access and wait times is still evolving, with little comprehensive measurement of wait times for appointments, and with targets that are often pragmatic—reflecting practitioner, staff, room availability, and cost as opposed

to evidence based. While these components are measurable, many other confounding factors influence the capacity of health systems to offer appointments in a timely manner (Brandenburg, Gabow, Steele, Toussaint & Tyson, 2015).

Looking beyond the challenges in ambulatory primary and subspecialty environments, hospitals, and rehabilitation centers experience their own struggles with scheduling and prolonged wait times causing patient and provider irritation, operational inefficiencies, and increased cost (Brandenburg et al., 2015). For some conditions, it may be necessary for multiple specialists to coordinate their care, which introduces another level of variability that must be accommodated. An additional challenge for specialty care practices is responding to new patients with urgent needs while maintaining available appointments for returning patients. Academic specialty practices experience a high degree of variability in providers' availability because the providers tend to have competing priorities in education, research, and clinical responsibilities (Institute of Medicine, 2015).

A total of 29.5% of children are reported to have needed to see a specialist at some point in 2015, which was found to be higher than the U.S. percentage of 24.2% (Professional Research Consultants [PRC], 2015). Parents of children needing specialty medical care in the past year were further asked to evaluate the difficulty of getting the needed care; 40.6% expressed some level of difficulty, characterizing it as a “major,” “moderate,” or “minor problem.” In particular, 14.9% of these parents had “moderate problems” getting their child’s specialty care, and 5.0% had “major problems” (PRC, 2015).

The centralized scheduling department at this Midwest pediatric organization has experienced constrained staffing, a decrease in employee retention, job satisfaction, a lack of clear management reporting and collaboration with operations for the specialty clinics. Outside observations and isolated opinions are that schedulers are focused on the speedy efficiencies of scheduling appointments when it is convenient for the scheduler versus the patient. These issues have dispelled the assumption that the main barriers to specialty care were truly surrounding the socioeconomic status, which is the case in a number of organizations or rural access hospitals. The majority of children with complex health care needs, are children of color and are more likely to be lower in socioeconomic status. Access to, and utilization of, care is exacerbated by socioeconomic and racial differences. Language barriers can also decrease access to care by impeding patient understanding and potentially decreasing patient's adherence to treatment (Kangovi et al., 2013).

These barriers not only increase frustration with families but also with referring providers. All of these concerns are, at best, minimal in the eyes of the leaders of this organization. However, problems began to surface up to the day a single phone call from a concerned parent was answered. The reason for the call was not a sole concern for their own child but a worry that there was a bigger issue going unnoticed that was impacting other children and families who come to the specialty pediatric clinics (SPC). The main issue for the family was simply attempting to schedule an appointment in a specific timeframe. Over the course of four months, they were unsuccessful only to be asked to call back as the schedulers were not able to make the appointment. Once they were finally able to make the appointment, the date exceeded the timeframe they needed which



forced them to seek care in another hospital on the east coast. Unfortunately, in this scenario, the clinic teams always have a small number of same-day appointment and triage spots on the clinical schedule daily for similar situations, but the scheduler focused on future first-available appointment times visible in the electronic medical record (EMR).

That specific scenario along with multiple other issues that have surfaced have put the centralized scheduling department in direct focus of leaders in the SPC. Nash, Fabius, Skoufalos, Clarke, and Horowitz (2015) found that access to the right care at the right time is the most foundational concept for practice redesign. From a healthcare delivery system's perspective, access includes having sufficient providers and offering sufficient services to the market it serves. From a patient's perspective, access is something much more personal as indicated by typical patient satisfaction measures. Access to pediatric specialists has been cited by the American Academy of Pediatrics as an important measure of the Medical Home. Unfortunately, many children do not have access to specialty care (Zuckerman, Perrin, & Donelan, 2013).

### **Problem Statement**

The most complex challenge facing healthcare organizations will be determining how to efficiently improve the clinical experience, patient care and outcomes. Centralizing patient access and revenue cycle operations is a significant cultural shift, but it can be an effective and rewarding first step toward care collaboration (Culbert Health Solutions, n.d.). Optimizing the operational aspect of the centralized scheduling office can be a tremendous benefit to any organization, ensuring that the patients and families are getting the specialty care necessary when they are being referred or when they feel

their child needs to be seen. Having these departments under one scheduling process offers the ability to schedule more than one procedure at a time and to schedule more than one patient at a time.

By streamlining the process using a single point of contact, scheduling becomes simpler and more predictable (HConnections, 2011). Scheduling specialty appointments are intended to be seamless for the families, meeting their needs without sacrificing efficiencies. The process should be easy for families to call into one place in order to get their scheduling needs met. Equally as important, the culture of the organization needs to ensure that the patients are also being seen when it is most convenient for the family, not the provider or clinical teams. What has been uncovered is that centralized scheduling efficiency has been impacted by staffing limitations due to a decrease in retaining current employees, lack of clear metrics/benchmarking meaningful to the operations leadership team and an overall inconsistent scheduling process based on scheduler, clinical employee, provider, and family feedback.

The PICOT question addressed for this project was; will implementation of a structured pediatric centralized scheduling model at an acute care pediatric specialty clinic result in an increase of scheduled appointment utilization in 45 days?

### **Purpose Statement**

The purpose of this project was to develop a more standardized approach for the structure of centralized services based on the patient scheduling needs for individual specialty clinics.

### **Outcomes**

The outcome for the purpose of this capstone project was to increase scheduled

appointment utilization from its current rate of 72%, to 85%. The goal for this project timeline of completion and implementation was set to be over a forty-five-day (45) period of time.

### **Review of the Literature**

The following databases were utilized PubMed, Medline, and CINHAL for this Capstone (Appendix A). Exclusion criteria included ‘adult specialty,’ ‘insurance,’ and ‘socioeconomic status.’ Inclusion criteria for the literature search included ‘highest level of evidence,’ focus on pediatric specialty care,’ ‘outpatient.’ Exclusion criteria for the literature search included ‘adult specialty care,’ ‘insurance,’ and ‘socioeconomic status.’ Utilizing the search terms, ‘pediatric access to specialty care,’ access to specialty care,’ ‘lack of specialty access,’ and ‘pediatric specialty care appointment scheduling,’ there was a total of ten articles that (Appendix B) were kept for the purposes of this project with the following categories/themes extracted:

- Current scheduling challenges
- Improving appointment times to Specialty Care

The literature did not show any evidence directly related to a breakdown of a current organizational workflow. Centralized scheduling can reduce template variation across the network, helping to standardize practices, drive more patient volume and increase management control. It has also proven to greatly increase patient satisfaction, as it allows easy access to online appointment scheduling and other convenient features (Creech, 2017). Limitations were observed with the literature search focusing on the issues specific to this project. Other limitations included the lack of data focusing on schedule appointment utilization for other organizations.

### **Current Scheduling Challenges**

Every specialty has a uniqueness in the type of patients they serve. Regardless of the size or rarity of the specialty all patients should be able to easily get an appointment with the specialist they are needing to see. Currently, there are many specialties with tremendous scheduling challenges where it is taking upwards of six months to be seen by a specialist. The scheduling process is not best suited for patient needs and often times a required three month follow up visit is not able to be scheduled due to either no availability within the schedule or the schedule was not open and available to be scheduled. This would require a follow up call from the patient resulting in patient dissatisfaction, lack of concern for patient preference, and poor coordination of care (Wilkins, 2018).

The Institute for Healthcare Improvement (n.d.) wrote that complex schedules with many appointment types, times, and restrictions can actually increase the total delay in the system because each appointment type and time creates its own differential delay and queue. Reducing the complexity decreases system delays. A specialty appointment can be as simple as a visit to be assessed for a bone fracture to having a complex diagnosis that requires a visit to many specialists at any given time. Unlike a primary care environment where most services can be performed within a fixed-length appointment times, specialists' appointment lengths can be highly variable and diagnosis dependent. Different patients have different urgency of need and quick access is critical to realizing good medical outcomes for urgent cases (Gupta & Denton, 2008).

Appointment scheduling systems lie at the intersection of efficiency and timely access to health services. Timely access is important for realizing good medical

outcomes. It is also an important determinant of patient satisfaction (Gupta & Denton, 2008). Perez et al. (2014) found that academic healthcare institutions provide highly specialized outpatient subspecialty care to patients who often have complex chronic diseases. In this care setting, patients and their families have the responsibility to schedule new and follow-up physician visits, nursing care visits, and elective procedures. This also assists in accurately evaluating scheduled appointment utilization for the organization. No show rates, in outpatient clinics, is defined as patients who fail to attend their scheduled clinic appointments.

No show rates is one of the targets for improving the quality of care. It leads to longer waiting times for patients to be seen in outpatient clinics, and the result is patients missing their important appointments. It also results in a waste of clinic resources, and physician and other healthcare practitioners' time (Mohamed, Mustafa, Tahtamouni, Taha & Hassan, 2016). Currently, it is inconsistent on how centralized scheduling is tracking the 'no show' rates. Molfenter (2013) found that clinical capacity is poorly utilized when clients fail to attend scheduled appointments. Reminder phone calls are a common practice used to increase appointment attendance in general medicine and dentistry.

In order to improve these metrics, Hooshmand and Yao (2017) wrote that ideal systems of care for children with special healthcare needs (CSHCN) should be accessible, reduce financial burden, deliver both caring and family-centered care to build family-provider partnerships, and optimize health outcomes. Telemedicine provides a solution or, at the least, an alternative to the traditional system of care for healthcare providers and communities attempting to address access and financial concerns. This is a great

alternative option for the patients and families that live hours away from the specialists that they need to see.

The families that live in more rural areas have the added challenge of coordinating trips with possible overnight stays. Joekel and Vance (2018) found by using telehealth, they were able to reduce the no-show rate of follow-up psychiatry appointments initially by 50 percent. In addition, trends reflect reduced and stable no-show rates for telehealth and in person appointments. By reducing no-show rates in the pediatric specialties, scheduled appointment utilization is increased providing more opportunities for patients and families to access specialty care.

Altman, Zurynski, Breen, Hoffman & Woodfenden (2018) found that families of children with medical complexity (CMC) often struggle under the financial, emotional and physical burden of meeting their child's ongoing needs and navigating a health system that is primarily based on episodic care. Their lives are ruled by multiple visits to various medical and non-medical specialists and services that are unlinked and uncoordinated. Families are impacted by time demands, distance traveled, stress, sleep deprivation, comorbid behavior problems and out of pocket costs. These children are also at greater risk of falling through the gaps of a fragmented and inequitable health care service.

This results in poorer health outcomes for the child, unplanned hospital admissions, emergency department (ED) presentations and longer hospital stays, which in turn impacts their wellbeing (Altman et al., 2018). Creech (2017) found that the added benefit of implementing centralized scheduling has shown increased levels of patient satisfaction. Hospitals and networks that have utilized these types of procedures are able

to ensure reduced wait times for patients, quicker call-back responses from medical staff, increased scheduling availability, and multi-lingual call staff. These important benefits help keep patients in the system, rather than forcing them to seek out-of-network care, over-utilize the emergency room or simply abstain from any healthcare whatsoever (Creech, 2017).

### **Improving Access to Specialty Care**

Makaroun et al. (2017) found that over the past 50 years, investments in community health centers (CHCs) have resulted in improved access for Medicaid and uninsured patients to primary and preventive care. However, as access to primary care expands, so does demand for specialty care. In one study, 25% of primary care visits at CHCs led to specialty referrals. Unfortunately, there has been no commensurate investment in ensuring access to specialty care for patients. It is therefore unsurprising that studies have repeatedly documented challenges in specialty care access for these patients (Makaroun et al., 2017).

Hardy, Vivier, Rivara and Melzer (2013) discussed a cross-sectional survey that assessed the practice characteristics and attitudes of Montana PCPs caring for CSHCN, including time spent in care coordination, access to and satisfaction with pediatric specialists, preferred methods of communication, and barriers to providing specialty care for CSHCN. Despite the focus not on pediatric patients, Liddy et al. (2018) found in a recent international Commonwealth Fund Survey, Canada continues to perform below the international average for timely access to patient care, with Canadians in all provinces reporting the longest wait times for specialists among the 11 countries included. The

study found that more than half of Canadians (56%) waited longer than four weeks to see a specialist, compared with the international average of 36%.

Timely access in clinics is determined by a variety of factors such as appropriate staffing, logistics of scheduling appointments, patient arrival times, and providers keeping to their respective schedules. Scheduling systems tend to focus on the needs of the organization, staff, and providers, which often overshadow the needs of the patient (Gavriloff, 2017). Multiple opportunities to improve the access to the specialty clinics have surfaced, such as consistent collaboration between the specialty clinics and the schedulers. This constant communication allows the schedulers to fully understand the clinic capabilities and available appointments. It also allows the schedulers to understand that there are regularly scheduled appointments and urgent appointments that may require same day visits.

Understanding the limitations of the literature search that was specific to the scheduling issues identified for this project produced productive discussions around the entire scheduling process. The literature produced evidence that there are other obstacles to getting specialty access, which will assist in the completion of this project allowing the workgroup to keep focused knowing there are other potential obstacles that have not been uncovered. Evaluating current challenges with the assistance of the families it impacts and being aware of new opportunities to improve access to specialty care will be essential to optimizing our centralized scheduling department.

### **Theoretical Framework**

The theoretical framework utilized for this project was the Ottawa model of research (Appendix C). Effecting changes across multiple settings and organizations can



be challenging. This six-step approach was developed within the context of continuity-of-care innovations. The method uses the Ottawa Model of Research Use, a knowledge translation model; to guide the process of transferring research into practice. The Ottawa model of research uses a six-step approach to guide the implementation of an innovation (Graham & Logan, 2004).

### **Step One: Evidenced-Based Innovation**

The problem was identified and was accepted by executive leadership to move forward on the project.

### **Step Two: Assess the Innovation, Potential Adopters and the Environment for Barriers and Facilitators**

A gap analysis was conducted to look at current workflows and opportunities for changes. Identifying early adopters and acknowledging resistors was critical in the implementation and overall success of the project.

### **Step Three: Practice Environment**

The setting was the specialty pediatric clinics. There were four identified specialties to pilot this for the purposes of the project.

### **Step Four: Implementation Intervention Strategies**

Making revisions to current metrics and developing new metrics allowed the team to evaluate changes made.

### **Step Five: Monitor Innovation Adoption**

Once the project was adopted by early adopters, the template was ready to implement into the remaining specialties.

### **Step Six: Evaluate Outcomes of the Innovation**

The project will continue on past the initial 45 days. The development of a dashboard will allow for continuous monitoring of the changes in optimizing scheduled appointment utilization.

### **Organizational Assessment**

The mission is such a strong reminder to every employee that the work they do is so important to the patients and families that they get to care for. If the care that the children need is not accessible, then as employees, we are not following the mission. The centralized scheduling department is located in a separate building down the street from the Specialty Pediatric Clinics (SPC) which has created a multitude of other issues scheduling appointments. One of the biggest challenges observed was that there are only a few schedulers scattered throughout the specialty clinics, so it creates a fragmented reporting structure that increases the frustration of the schedulers because they are not sure who to bring issues or suggestions to.

The clinic teams rely on the schedulers to address any questions the families have regarding their appointments which increases delays when the schedulers are unable to answer the questions. The majority of clinical practices use many appointment types and lengths in an effort to exert some control over the schedule. The belief by the clinical teams is that limiting the number of a certain type of appointments scheduled on a daily basis or assigning patients to different times or types of appointments will improve access in the practice.

Towards the end of 2017, the organization made a commitment to involve change management facilitators to assist with a multitude of already ongoing initiatives. Over the past several years, Awareness, Desire, Knowledge, Ability and Reinforcement (ADKAR)

has become the most sought-after model from the change management-learning center, with adoption by many fortunes 100 companies, the US Department of Defense and other government agencies around the world (Hiatt, 2006). This change management model truly redefines how to discuss, design and develop necessary change. This model also has a defined way to assess the team's readiness for change. With the guidelines of ADKAR, the following questions needed discussion:

- What is the nature of the change?
- Why is the change needed?
- What is the risk of not changing?

Answering these questions and submitting the official request for this project was completed and a change management person was assigned. Changing organizational culture around a practice requires that the change is consistent with organizational philosophy and political agenda and those resources are available to support the change (Van Patter Gale & Schaffer, 2009).

Understanding the barriers and having the right support to make the changes, lowers the risk of patient safety and ensures the proper care to these patients that are impacted. The risk of ignoring this obstacle for families and not supporting the schedulers throughout this implementation is unacceptable. The organization has acknowledged that it is a problem and is in full support of making the appropriate changes necessary. Examples would include empowering and engaging the employees to be as creative as possible along with truly owning these changes. Innovators are those who are willing to take risks and be on the cutting edge of change and look for ways to improve the work environment; the early majority category is of those who embrace change once a decision

has been made that innovation is to be adopted (Hauck, Winsett & Kuric, 2013).

What has been amazing with this organization is that they are currently in the construction phases of a new tower that will allow the hospital to almost double in size. This will allow the organization to ensure that children will be able to receive the care they need without having to go to other hospitals or have to see other physicians.

### **Methodology**

This project was a process improvement project that utilized quantitative data to measure improvement with scheduled appointment utilization.

### **Setting**

The overall setting for this project took place in the Specialty Pediatric Clinics (SPC) within the walls of a Nebraska Pediatric Acute-care hospital, which is a non-profit organization caring for children since 1948.

### **Sample**

For this capstone project, four specialty clinics initially came forward to be the pilot clinics. Three dropped out and two additional specialties were added. The three specialties that participated have strong physician leadership with an engaged division chief. Also, these specialties have strong clinical teams comprised of registered nurses (RN) and Medical assistants (MA) who report to a clinical manager. The clinical manager reports directly to an operations manager who works in a Dyad partnership to make decisions for their respective specialty. The three specialties that implemented this project were Orthopedics, Ophthalmology and Neurology.

### **Implementation Procedures**

The procedures for this project were guided by the Ottawa Model of Research framework as discussed earlier in this paper. Graham's Ottawa Model of Research Use is an example of a planned change theory. A project timeline was developed to keep the project moving forward, decrease potential delays and address unforeseen obstacles (Table 1).

Table 1  
*Optimizing Access to Pediatric Specialty Care*

Task	Owner	Estimated Start	Completion	Comments	Status
IRB Approval by leadership for Implementation	Rick Perez	Ongoing	2/12/19	Delays getting Capstone submitted to IRB	✓
Establish a Project team consisting of appropriate leaders, and define its structure, role and responsibilities, including approval of initiatives and benefit measurement	Rick Perez	2/13/19	2/19/19		✓
Develop a work plan to establish appropriate work steps and project timelines for timely delivery	Project Team	2/18/19	2/19/19	Develop a work plan to establish appropriate work steps and project timelines for timely delivery	✓
Develop a communication plan that clearly explains project priorities and timing efforts	Project Team	2/18/19	2/19/19	Develop a communication plan that clearly explains project priorities and timing efforts	✓
<b>Centralized Scheduling Work Team</b>					
Outline 1-3 SPC departments for the Centralized Scheduling Work team to focus on	Project Team	2/25/19	2/26/19	Continued challenges with litigation, additional leaders and providers leaving organization	✓
Complete detailed current state workflow maps and assessment of scheduling protocols and referral management, including key communication requirements	Project Team	2/25/19	2/27/19		✓
Evaluate strategies to increase scheduling/appointment utilization and ways to increase from 72% to 85%	Project Team	3/4/19	3/15/19		✓
Document recommended call center staffing models, performance metrics, and operational dashboards.	Project Team	3/11/19		In progress but delayed because of staffing challenges in IT	
Recommend staffing levels necessary to successfully manage incoming scheduling calls and referrals.	Project Team	3/18/19	5/31/19	Working with Finance to justify staffing needs	✓
Recommend staffing model for addressing future strategic growth priorities and needs.	Project Team	3/18/19	5/31/19	Planning in future budget to add additional FTE's	✓
Implement in 1-3 SPC Specialty Clinics	Project Team				✓

The first step of the intervention was to set the stage for evidenced-based innovation. Once the problem was identified and communicated to the Vice President of Pediatrics, she did not hesitate and immediately approved to proceed in developing a workgroup. The team was formed, and the initial kick-off meeting was completed. The

purpose of that meeting was to discuss the problem in detail, confirm that everyone there needed to be there and to identify any stakeholders that were missing. The workforce eventually became the overarching steering committee. To minimize potential delays, smaller workgroups were formed based on necessity. An example of this was involving Human Resources (HR), for their expertise with recruitment and retention. Information Technology (IT) also played a crucial role being the content expert for EPIC, the EMR. A project team charter was completed identifying the employees who were necessary to be on the team that assisted in facilitating the implemented changes (Appendix D).

The second step in the procedures for implementation was to assess the innovation, potential adopters, any and all environmental barriers and facilitators. In order to do this, a complete gap analysis was conducted on current workflow processes, staffing, and current process maps to ensure a more standardized scheduling process throughout the SPC, which included provider scheduling practices, etc. The early adopters were key leaders in facilitating the change assisting the team to stay on schedule and dealing with any potential resistors that attempted to derail the overall timeline.

The third step in the model addressed the practice environment in the specialty pediatric clinics, including the four identified specialties to pilot this project. The identified specialties initially participating in the pilot were Orthopedics, Pulmonology, Neurology, and Ophthalmology. Those four specialties were actively engaged with centralized scheduling from the onset of the project.

The fourth step addressed implementation strategies. The teams continually discussed scheduling opportunities, such as standardizing schedule templates, consistent appointment times for new and returning patients, the possibility of families self-

scheduling, and a communication plan. The education plan will be revised and updated on an ongoing basis to account for any additional training of the new workflows with new specialty clinics added. Also, employee and family feedback will assist with changes as the pilot groups continue to work on sustaining the changes. The steering committee will continue to meet based on need to determine the frequency of obtaining feedback from patients, families, the clinic employees, provider's and schedulers.

The final two steps will continually assess the adoption of the changes as well as the evaluation of any additional outcomes. The development of a dashboard/scorecard will continuously highlight the metrics developed for this project. Once these dashboards are completed, they will be updated each month to allow the providers and leaders to evaluate scheduled appointment utilization to ensure better access for the patients. When trends are identified, the specialty clinic team will meet to develop and carry out action plans to ensure sustainability. The data will be visible for all to view in the clinics and also be shared with the organization's family advisory board for further feedback or improvements. This project will continue and with the development of a dashboard, continuously monitor the success of the changes in optimizing scheduled appointment utilization.

### **Measurement Instruments**

The instrument utilized for this project was the EMR called EPIC. The EMR has the capabilities to produce reports that can assist in the monitoring and evaluation of the following outcome of increasing the scheduled appointment utilization rate to 85%. The timeframe to obtain this data from EPIC took place from April 1<sup>st</sup> thru May 31<sup>st</sup>, Monday



through Friday excluding all weekends and any holidays that fell into the time period that fell on a weekday.

### **Data Collection Procedure**

The software utilized was EPIC, the EMR, and EXCEL. The data was extracted from EPIC and transferred the data to EXCEL for analysis of trends and changes in scheduled appointment utilization. The ability to create reports through EPIC was critical to track the progress towards the goal of increasing the scheduled appointment utilization.

The data in EPIC were available at any time necessary to compare new and old data. Also, data located within EPIC were protected within the scheduling templates where only employees with the correct access were be able to view. At no time could data be deleted.

### **Ethical Considerations**

Nebraska Methodist College, Internal Review Board (IRB) approval was obtained prior to initiating the EdD Capstone project. The project was considered quality improvement and therefore considered exempt. Ethical consideration was taken into account. This project focused on the internal mechanisms of centralized scheduling and families were not disrupted as they scheduled appointments. Also the all data located with the EMR was password protected. For these reasons, there was very minimal risk to the patients or families so informed consent was not required.

### **Data Analysis**

This project was a process improvement project that did not utilize the services of a statistician. The metrics obtained were the foundation of the dashboard that is currently in development and will be sustained now that this project has been implemented. The

goal was to increase the current scheduled appointment utilization rate from 72% to 85% in a forty-five-day (45) period of time.

### Results

Of the four initial pilot specialty clinics that originally signed on for this project, Orthopedics was the only clinic that completed implementation. Despite Gastroenterology, Hematology-Oncology and Pulmonology dropping out, Ophthalmology and Neurology were recruited to the project. With the decreased number and the changes of the pilot specialties, the current scheduled appointment utilization was adjusted to 69.7% from the original goal of 72%. At the start of implementation, scheduling templates were evaluated by reviewing each provider's consistencies and availability. This allowed the project team to observe available appointment times by day and by each provider for the forty-five day duration of the project. Evaluating specific provider requested appointment blocks, unavailable times, and administrative time on their templates allowed the schedulers to locate additional appointments. This resulted in a 12.3% increase in scheduled appointment utilization to a rate of 82.0% (Table 2).

Table 2

*Scheduled Appointment Utilization: 4/1/2019 – 5/31/2019*

Specialty Clinics	Available Appointments	Completed Visits	No Shows	Pre-Project Implementation Utilization%	Post-Project Implementation Utilization %	Scheduled Appointment Utilization % Pre vs. Post Project
Neurology	952	644	71	48.0%	67.5%	19.5%
Orthopedics	3,580	3,292	225	83.2%	92.0%	8.8%
Ophthalmology	1,929	1,669	265	78.0%	86.5%	8.5%
Totals	6,461	5,605	561	69.7%	82.0%	12.3%

### **Discussion**

The changes implemented as part of this project impacted every employee of the clinical team as well as the employees of the centralized scheduling department. The changes have shown early results of benefitting the specialists, referring providers, patients, and their families. Early adopters, as well as the potential resistors were identified at the start of this project to ensure the success of the project for the implementation. Included were primarily the employees working in the centralized scheduling department whose workflows were impacted the most. Prior to implementation the employees of the scheduling department unanimously expressed that they wanted the best for the patients. They also acknowledged the current complexity of scheduling new patients, follow up patients and the variable provider schedules as barriers. Participation of these teams was mandatory and very critical to the successful implementation of this project.

This project demonstrated that despite all the uniqueness among the different specialties, standardizing schedule templates, removing the ability for providers to make changes to appointment times or block their schedule were the drivers in increasing scheduled appointment utilization for appointments by 12.3% percent in forty-five days. A great example of these changes was observed in Neurology. Prior to implementation, Neurology was utilizing only 48% of the appointment times available. A request was made to the five providers in the clinic to open their appointment times and remove any blocks resulting in a scheduled appointment utilization rate of 67.5% (19.5% increase). Orthopedics and Ophthalmology increased scheduled appointment utilization (8.8% and 8.5% respectively). In addition, they both exceeded the overall goal of 85% (Orthopedics

= 92%, Ophthalmology = 86.5%) (Table 2).

This project was just the beginning of more change to come: policies around cancelling clinics without approval, schedule template expectations and scheduling protocols are currently in development. Commitment to creating a high-value patient experience is required in order to affect real change in institutional practices and outcomes. Although leaders are well meaning, too often they lack simple awareness of alternative approaches or, if known, there is a lack of commitment to do the hard work of system redesign (Brandenburg et al., 2015). The identification of pilot groups that assisted in this project was crucial to the successful implementation. Due to their full engagement on improving schedules and efficiencies of clinic flow there is potential for an increase in overall satisfaction for families.

### **Limitations**

There were several limitations to this study. Discrepancies were caught on initial data obtained after the implementation of this project. As a result of the discrepancies, a full review of individual templates by provider was conducted and it was discovered that when the provider simply removed their templates for specific days or weeks for vacations, or being on service, these were not being accounted for in the scheduled appointment utilization numbers therefore showing improved results. The complexity of appointments needing to be scheduled created additional obstacles within the schedules based on provider preferences along with availability.

For example, new patients were only allowed to be scheduled in one-hour appointment times and returning patients were scheduled in thirty-minutes or less time. Also, providers wanted to schedule office time in between patients, which further

complicated appointment scheduling. Other limitations included a lack of provider accountability when cancelling clinics which required the rescheduling of many patients in a very short period of time. Historically providers have cancelled clinics with very little communication causing the schedulers to have to call multiple patients and reschedule them for a later date. This increased the frustrations on the families, causing increased stress on the schedulers having to reschedule the patients.

### **Plan for Sustainability**

In the future, for sustainability, this project is one component of multiple opportunities to improve the efficiencies of the specialty clinics and centralized scheduling. Since the project implementation, continuous improvements around scheduling workflows have continued. Gap analysis still need to be completed on patient waiting lists, prior authorizations, recalls, addressing no-show rates and continuous improvements. These areas are future projects that are in the development stage in order to create a more seamless experience for the patient.

### **Implications for Practice**

The results of this project have shown important implications for an optimized scheduling practice with the improved workflow designs for the centralized scheduling department and its employees. Even more importantly are the implications for the end users in each of the specialty clinics as these improved workflows will assist in a much more efficient clinic visit by removing challenges for families scheduling appointments.

This project was completed in forty-five (45) days from the initial implementation. Schedule/appointment utilization rates was a great starting point for the work needed to improve the overall scheduling of specialty appointments. New goals and

timelines will be created with additional outcomes to be measured and evaluated as a result of the initial success of increasing the scheduled appointment utilization rate.

Examples of additional outcomes that will be measured and evaluated include:

- Decreased new patient appointment times
- Decreased no-show rates
- Decreased referral turnaround times
- Increased employee satisfaction
- Increased provider satisfaction
- Increased referring provider satisfaction
- Different opportunities to schedule appointments
- Increased patient/family satisfaction

### **Conclusion**

The demands for pediatric specialty care will continue and the complexity of the patients served will continue to also become more complex. Children's hospitals across the country continue to experience significant shortages in pediatric specialties. Pediatric specialty shortages affect children and their families' ability to receive timely, appropriate care (Children's Hospital Association, 2018). Improving scheduling workflows and ensuring more consistent scheduling templates that assist in improving access to specialty care is just the beginning.

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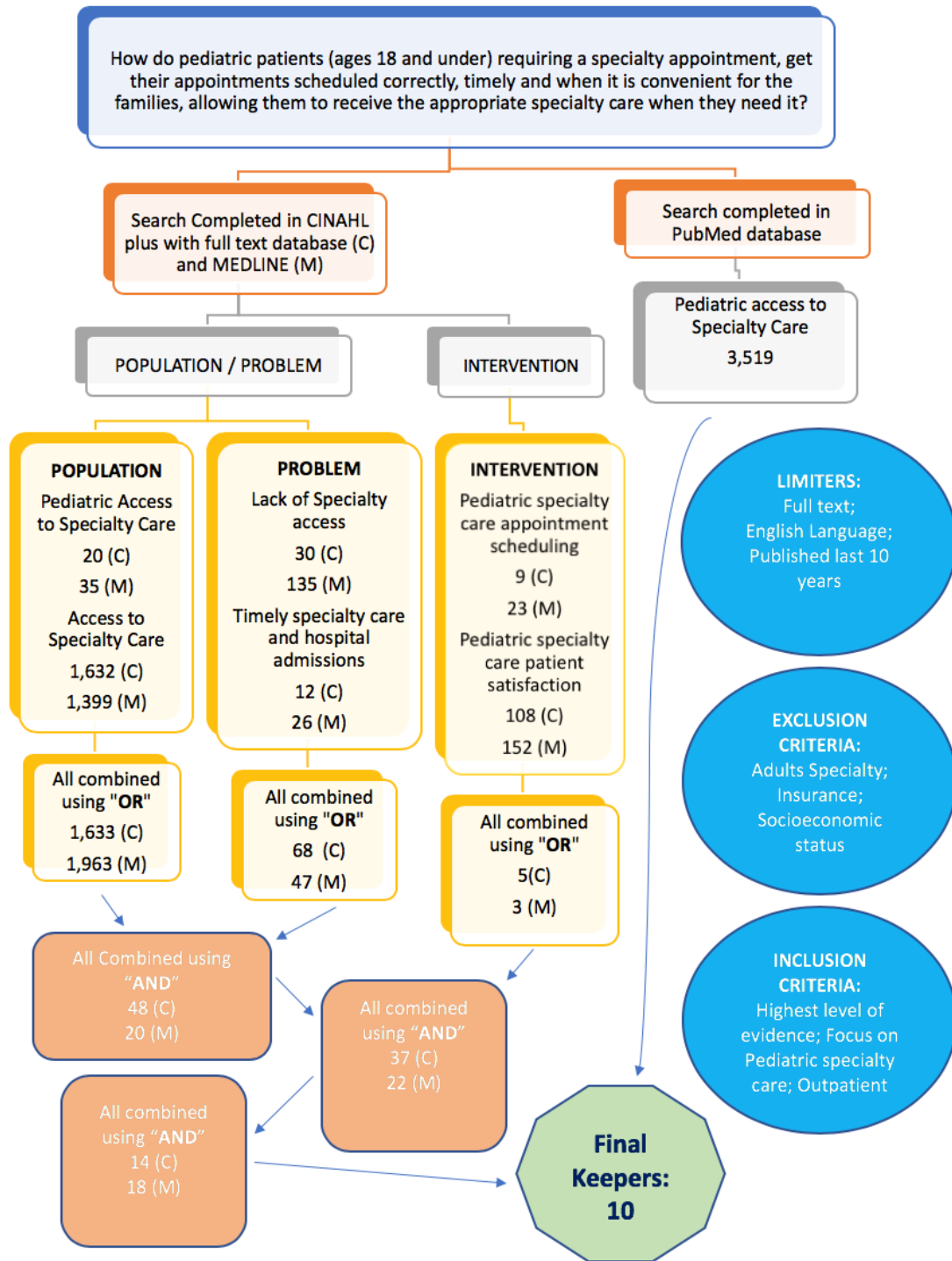
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## **Appendix A**



Appendix B

<b>PICOT</b>					
How do pediatric patients (ages 18 and under) requiring a specialty appointment in less than 60 days, get their appointments scheduled correctly, timely and when it is convenient for the families, allowing them to receive the appropriate specialty care when they need it?					
Citation/Level of Evidence	Participants/Setting/ Sample Size	Purpose/Background	Methods/Design & Limitations	Findings/Summary/ Strengths/Weaknesses	Applicability to Own Research
<p>Altman, L., Zurynski, Y., Breen, C., Hoffmann, T., &amp; Woolfenden, S. (2018). A qualitative study of health care providers' perceptions and experiences of working together to care for children with medical complexity (CMC). <i>BMC Health Services Research</i>, 18(1), 70. doi:10.1186/s12913-018-2857-8</p> <p>Level V: Evidence from a systematic review of descriptive or qualitative study.</p>	<p>Stakeholder forums, group and individual in depth interviews were conducted in this qualitative research study.</p> <p>This project spanned across the Sydney Children's Hospital Network (SCHN). It is the largest pediatric health care service in Australia with 86,000 Emergency department presentations, 44,000 inpatient admissions, 136,790 bed days and almost one million outpatient appointments each year.</p> <p>This study focused on the 1,709 Complex Medical Diagnosis (CMC) from July 2014 through June 2015.</p>	<p>The purpose of this study was to conduct a knowledge gap by exploring the perceptions and experiences of health care providers on the provision of health care for children of medical complexity (CMC) aged 0 to 18 years.</p>	<p>Data Collected between May and December 2015 at Stakeholder forums, group and individual interviews.</p> <p>Stakeholder forums lasted 60-90 min; group and individual interviews lasted 15-45 min.</p>	<p>Strength of this study was the systematic approach used in the sampling, data collection and analysis to enhance the reliability and validity of the analysis: checking of the transcripts against the audio recordings and field notes taken.</p> <p>Key themes identified:</p> <ol style="list-style-type: none"> <li>1. Family capacity – to negotiate the system, medical complexity of the children, psychosocial complexity of families</li> <li>2. Health care provider capacity – their skills, time, availability and resources</li> <li>3. System capacity – fragmentation of health care services and service culture.</li> </ol>	<p>This study impacts the current issues and complications of scheduling our complex Diagnosis patients who rely on the specialist coordination of multiple specialists and having to come back for multiple appointments.</p> <p>Families have complained and voiced their concerns and frustration and as an organization we have to empower our families along with providing better support to the specialists in order for them to properly care for our patients and make appointment times more convenient and efficient for the families.</p>

<b>PICOT</b>					
How do pediatric patients (ages 18 and under) requiring a specialty appointment in less than 60 days, get their appointments scheduled correctly, timely and when it is convenient for the families, allowing them to receive the appropriate specialty care when they need it?					
Citation/Level of Evidence	Participants/Setting/Sample Size	Purpose/Background	Methods/Design & Limitations	Findings/Summary/Strengths/Weaknesses	Applicability to Own Research
<p>Hooshmand, M., &amp; Yao, K. (2017). Challenges Facing Children with Special Healthcare Needs and Their Families: Telemedicine as a Bridge to Care. <i>Telemedicine Journal And E-Health: The Official Journal Of The American Telemedicine Association</i>, 23(1), 18-24. doi:10.1089/tmj.2016.0055</p> <p>Level VII: Evidence from the opinion of authorities and/or reports of expert committees</p>	<p>This article reviewed the results from multiple studies conducted on CSHCN children.</p>	<p>The purpose of this article is to provide an overview of the challenges facing children with special healthcare needs (CSHCN), telemedicine as a clinical option and the potential of telemedicine as a bridge to healthcare for these CSHCN kids, families and providers.</p> <p>2010 National Survey of CSHCN indicates that 15.1% of U.S. Children ages 0 to 17 have special healthcare needs and 23.0% of households with children include at least one.</p>	<p>Design: No actual study was conducted.</p> <p>Limitations: This article was not an actual research article but did discuss the importance of telehealth as a viable option for families to decrease overall costs which were pointed out as a major theme for families.</p>	<p>The literature is consistent and clear that there is tremendous burden placed on families.</p> <p>These burdens are further complicated when combined with access to care issues.</p> <p>One study estimated the cost of hospital and physician care related to chronic conditions for these children to be \$7.5 billion annually.</p>	<p>Unfortunately this was not a research article but I included it because my organization has only recently begun to utilize telemedicine as an alternative option for our patients and families. We have not fully realized the many opportunities or the potential positive impact on our families who drive extraordinary distances to see our specialists.</p>

<b>PICOT</b>					
How do pediatric patients (ages 18 and under) requiring a specialty appointment in less than 60 days, get their appointments scheduled correctly, timely and when it is convenient for the families, allowing them to receive the appropriate specialty care when they need it?					
Citation/Level of Evidence	Participants/Setting/Sample Size	Purpose/Background	Methods/Design & Limitations	Findings/Summary/Strengths/Weaknesses	Applicability to Own Research
<p>Hardy, R., Vivier, P., Rivara, F., &amp; Melzer, S. (2013). Montana primary care providers' access to and satisfaction with pediatric specialists when caring for children with special health care needs. <i>The Journal Of Rural Health: Official Journal Of The American Rural Health Association And The National Rural Health Care Association</i>, 29(2), 224-232. doi:10.1111/j.1748-0361.2012.00444.x</p> <p>Level V: Evidence from systematic reviews of descriptive and qualitative studies.</p>	<p>433 Montana Primary Care Physicians surveyed with a 5-point Likert scale used to calculate the mean need scores for each pediatric specialty.</p>	<p>Primary care providers (PCP) of children with special healthcare needs (CSHCN) in rural areas face challenges in accessing specialty care to support a patient-centered medical home.</p> <p>This study assessed the practice characteristics and attitudes regarding pediatric specialty care among Montana PCPs of CSHCN.</p>	<p>433 PCPs were identified through the Montana directory of physicians, 269 had email addresses available and were sent a web survey. The remaining physicians were sent a postal survey.</p> <p>This was deemed exempt status from IRB because providers were unidentifiable and no human's subjects were at risk.</p> <p>Respondents were asked to identify which specialties were most needed to care for their patients and asked to rank access to these most needed specialties. They were also asked to identify the top 5 specialties they most frequently used in their own practice</p>	<p>Pediatric Specialty Needs and Access: The top 5 most needed specialties identified were: child and adolescent psychiatry, developmental and behavioral pediatrics, pediatric emergency medicine, pediatric cardiology and pediatric neurology with pediatric cardiology as the one more frequently utilized.</p> <p>Urban and rural providers generally perceived similar need and access to specialty, urban providers perceived less need for endocrinology than rural providers (1.5 vs. 2.5; <math>p=.02</math>)</p> <p>Rural providers identified pediatric cardiology as one of the "top 5" most commonly used specialties more frequently than urban providers (81% vs 52%; <math>P = .039</math>).</p> <p>Rural providers also more frequently identified child and adolescent psychiatry as one of the most commonly used specialties compared to urban providers (89% vs</p>	<p>This study highlighted which specialties most needed, along with most utilized. The results coincided with the same specialty needs in my organization. It is tremendously helpful to see the consistencies in need across the country to get a better understanding of the challenges to access. This information will allow organizations to become savvier collaborating with families and physicians to get a better understanding of how to meet the needs of these children and the demand continues to rise.</p>

<b>PICOT</b>					
How do pediatric patients (ages 18 and under) requiring a specialty appointment in less than 60 days, get their appointments scheduled correctly, timely and when it is convenient for the families, allowing them to receive the appropriate specialty care when they need it?					
Citation/Level of Evidence	Participants/Setting/Sample Size	Purpose/Background	Methods/Design & Limitations	Findings/Summary/Strengths/Weaknesses	Applicability to Own Research
			along with other questions pertaining to characteristics by importance. They also asked about perceived barriers to care, selecting the top 5 from a list of 13 previously reported barriers to care.	70%; $P = .03$ .	
Liddy, C., Nawar, N., Moroz, I., McRae, S., Russell, C., Mihan, A., & ... Keely, E. (2018). Understanding Patient Referral Wait Times for Specialty Care in Ontario: A Retrospective Chart Audit. <i>Healthcare Policy</i> , 13(3), 59-69.  Level V: Evidence from systematic reviews of descriptive and qualitative studies.	Retrospective chart audit in five Ontario-based primary care clinics in 2014-2015.	When examining wait times for specialist care, the duration between a patients' referral and a specialist visit is poorly understood.	Retrospective chart audit utilizing a convenience sample of five primary care clinics in Ontario.  Data was collected from two sources: referral letters that Primary Care Physicians (PCPs) sent to specialists and the clinics electronic medical records (EMRs).  Inclusion criteria were clearly stated in this study. Limitations include: small sample size from specialty referrals;	461 referrals were analyzed.  Median wait times for non-urgent and urgent referrals were 79 and 49 days respectively. Gastroenterology, obstetrics/gynecology, and ear, nose and throat received the most referrals.  Longest wait times were for Dermatology (112 days) and the shortest wait times were for general surgery (32 days).  The results of this study are highly relevant for provincial policy makers in their efforts to address the problem of excessive wait times for specialist care, and for other researchers studying	This study highlights the need to look for better strategies to improve wait times in high utilized specialties.  The EMR is an easy data tool to extract wait times on specialties with barriers or increased wait times, allowing an organization to focus on new strategies to improve the wait times.



<b>PICOT</b>					
How do pediatric patients (ages 18 and under) requiring a specialty appointment in less than 60 days, get their appointments scheduled correctly, timely and when it is convenient for the families, allowing them to receive the appropriate specialty care when they need it?					
Citation/Level of Evidence	Participants/Setting/Sample Size	Purpose/Background	Methods/Design & Limitations	Findings/Summary/Strengths/Weaknesses	Applicability to Own Research
			Patient-level factors potentially extending wait times; items not documented in EMR was assumed to have not occurred.	wait times.	
<p>Ray, K. N., Ashcraft, L. E., Kahn, J. M., Mehrotra, A., &amp; Miller, E. (2016). Family Perspectives on High-Quality Pediatric Subspecialty Referrals. <i>Academic Pediatrics</i>, 16(6), 594-600. doi:10.1016/j.acap.2016.05.147</p> <p>Level V: Evidence from systematic reviews of descriptive and qualitative studies.</p>	19 parents/caregivers with children ranging in ages 0 to 21 and two adolescents or young adult children.	To develop a framework for high-quality, patient-centered referrals from the perspective of patients and their families	<p>Examination of family experiences of subspecialty care through qualitative analysis of family member interviews (Including parents, caregivers, and patients) informed by a stakeholder advisory group.</p> <p>Limitations: The range of potential measurement domains identified underscores the complexity of the subspecialty referral evaluation and the value of the family perspectives in identifying family-centered measurement</p>	<p>21 interviews conducted included 19 parents/caregivers whose children ranged in age in 0 to 21 years old.</p> <p>5 domains were identified as expected or desired health outcomes of high quality pediatric referrals from a family's perspective: (1) Improved functional status or symptoms; (2) improved long-term health; (3) improved knowledge and understanding of diagnosis, prognosis, and/or treatment options; (5) decreased worry or anxiety when faced with changes in their child's status.</p> <p>Median travel time to their pediatric subspecialist of 40 minutes, ranging from 5 to 120 minutes.</p>	This study is relevant because there is much to learn from the parents/caregivers as well as the adolescent young adult patient population when asking for feedback on their experiences. This has been crucial in realizing there is a current ongoing scheduling barrier to our patients/families which has been going for an unknown period of time.

<b>PICOT</b>					
How do pediatric patients (ages 18 and under) requiring a specialty appointment in less than 60 days, get their appointments scheduled correctly, timely and when it is convenient for the families, allowing them to receive the appropriate specialty care when they need it?					
Citation/Level of Evidence	Participants/Setting/Sample Size	Purpose/Background	Methods/Design & Limitations	Findings/Summary/Strengths/Weaknesses	Applicability to Own Research
			targets. Other imitations discussed are that the study was not designed to compare responses in these 2 groups (patients and families).	Weakness of this study was a very small sample size, and also that there were no pre- or post-visit evaluations from families from their appointments to assess.	
Keely, E., Drosinis, P., Afkham, A., & Liddy, C. (2015). Perspectives of Champlain BASE Specialist Physicians: Their Motivation, Experiences and Recommendations for Providing eConsultations to Primary Care Providers. <i>Studies In Health Technology And Informatics</i> , 20938-45.  Level VII: Evidence from the opinion of authorities and/or reports of expert committees	Study was based in the Champlain Local Health Integration network, which is one of 14 regional health districts in Ontario, Canada.  45 Specialists were eligible to participate (n=34, 77% response rate)	Electronic consultation can improve access to specialist care. However, specialists have been identified as less likely to adopt electronic solutions in clinical settings.	25-item, web-based questionnaire to specialist physicians registered to use Champlain BASE eConsult service on or before May 20, 2014. If they responded to at least on eConsult. Specialists who had not yet completed the survey received two reminder emails.  Exclusion and Inclusion criteria were identified.  Limitations: Small sample size which could impact how the results are discussed due to the	Current estimated wait times for non-urgent appointment was reported as greater than 6 months for 45% of respondents, 3-6 months for 21%, 1-3 months for 24% and less than one month for only 6%.  Specialists who responded to the survey had answered more eConsult cases compared to non-responding specialists (p=0.046) which was statistically significant.  Over 90% of all specialists agreed or strongly agreed that the eConsult service improved access to specialist care, resulted in improved communication between providers, and was a good mechanism for providing education	This study can be utilized for the purposes of my project because it shows another potential opportunity on improving access to specialist care for patients and families. It also bridges the potential gaps in the coordination of care for patients/families from the primary care physician to their specialist.

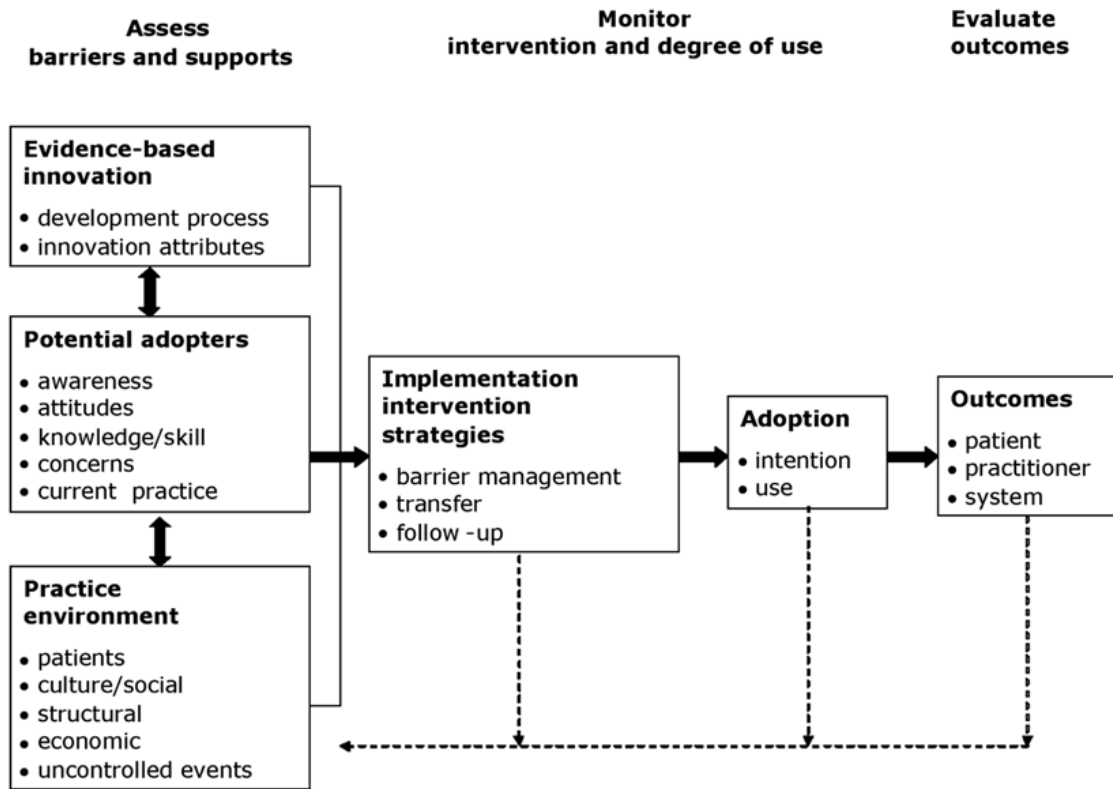
<b>PICOT</b>					
How do pediatric patients (ages 18 and under) requiring a specialty appointment in less than 60 days, get their appointments scheduled correctly, timely and when it is convenient for the families, allowing them to receive the appropriate specialty care when they need it?					
Citation/Level of Evidence	Participants/Setting/ Sample Size	Purpose/Background	Methods/Design & Limitations	Findings/Summary/Strengths/Weaknesses	Applicability to Own Research
			sensitivity of responses.	to PCP.	
<p>Perez, F. D., Xie, J., Sin, A., Tsai, R., Sanders, L., Cox, K., &amp; ... Park, K. T. (2014). Characteristics and direct costs of academic pediatric subspecialty outpatient no-show events. <i>Journal For Healthcare Quality: Official Publication Of The National Association For Healthcare Quality</i>, 36(4), 32-42. doi:10.1111/jhq.12007</p> <p>Level V: Evidence from systematic reviews of descriptive and qualitative studies.</p>	<p>A comprehensive database generated from all clinic encounters for 15 Subspecialty outpatient clinics between the dates September 12, 2005 and December 30, 2010.</p>	<p>The purpose of this article was to (1) determine the clinical and demographic factors associated with increased No-show (NS) rates at a children's hospital's subspecialty clinics, and (2) to estimate the direct institutional financial costs associated with NS events.</p>	<p>A comprehensive, retrospective analysis of data extracted from the electronic medical records of all children seen at one of the 15 outpatient subspecialty clinics.</p>	<p>284, 275 encounter and 17, 024 NS events were available for analysis.</p> <p>Scheduled visits with medical subspecialists were more likely than surgical subspecialty visits to result in a NS (OR 1.69, 95% CI 1.63-1.75, p&lt;0.0005). The results were statistically significant.</p> <p>The predicted annualized loss of revenue associated with NS visits was estimated at \$730,000 from the 15 clinics analyzed, approximately \$210 per NS event.</p>	<p>This is critical information for the purposes of my project because we have just begun to track and evaluate no-show rates and the reasons behind them.</p> <p>We need to understand the reasons behind NS rates to ensure that the organization is not creating these barriers that are forcing patients/families to no-show their appointments.</p>
<p>Gavriloff, C. (2017). The Impact of Lean Six Sigma Methodology on Patient Scheduling. <i>Nursing Economic\$, 35(4)</i>, 189-193.</p> <p>Level VII: Evidence from the opinion of</p>	<p>Pre- (n=3,385) and post-test (n=3,738) comparative design was conducted.</p> <p>Five pediatric subspecialty ambulatory care settings</p>	<p>Innovative scheduling systems such as level-loading can help greater control over the timing of patient visits and patient access, resulting in increases in patient</p>	<p>Limitations: Uncertainty of patient arrival times, provider scheduling times, cancellations and no-shows.</p>	<p>Innovative scheduling systems such as level-loading can help gain greater control over the timing of patients and patient access.</p> <p>Findings revealed</p>	<p>This article will be tremendously useful towards my project because the emphasis is closely related to the</p>

<b>PICOT</b>					
How do pediatric patients (ages 18 and under) requiring a specialty appointment in less than 60 days, get their appointments scheduled correctly, timely and when it is convenient for the families, allowing them to receive the appropriate specialty care when they need it?					
Citation/Level of Evidence	Participants/Setting/Sample Size	Purpose/Background	Methods/Design & Limitations	Findings/Summary/Strengths/Weaknesses	Applicability to Own Research
authorities and/or reports of expert committees		access to care.		that level-loading had a positive impact on patient care. The balanced appointment times allowed for more patients to be seen along with shorter appointment times  Gross revenue increased due to the increase in patients seen. This equated to 2,118 more patients being seen annually.	barriers we are currently facing. Also, our organization does utilize Lean Six Sigma.  It will also be relevant when addressing no-show and cancellation reasons to ensure us as an organization are not creating additional barriers for our patients and families.
Forrest, C. B., Glade, G. B., Baker, A. E., Bocian, A., von Schrader, S., & Starfield, B. (2000). Coordination of specialty referrals and physician satisfaction with referral care. Archives Of Pediatrics & Adolescent Medicine, 154(5), 499-506.  Level V: Evidence from systematic reviews of descriptive and qualitative studies.	Prospective study completed in three phases.  The first phase was data collection from July 1996 thru September 1997 in which 142 physicians participated.  All but 20 physicians participated through phase 3.	To describe how physicians coordinate patient care for specialty referrals and to examine the effects of these activities on referring physicians satisfaction with the specialty care their patients receive and referral completion	When the communication between physicians and specialists is efficient, there is a positive effect on the referral, even increasing the positive effect when they schedule an appointment for their patients.  Limitations: Lack of specialist satisfaction on the appropriateness of the referral. This would have	10.5% of referrals, the physicians were aware of appointment adherence with no feedback from the specialist they referred their patient to.  27.7% referring physicians scheduled consultation and sent information to a specialist. Only 11.5% scheduled an appointment, 23.0% only sent information to specialist.  50.8% of referrals physicians sent information to the specialist via letter	This article is relevant to my project because this is a huge barrier for our families. This has also been a very vocal hot button for the primary care physicians attempting to refer their patients to specialty care and even found that they running into scheduling barriers for their patients.  The other

<b>PICOT</b>					
How do pediatric patients (ages 18 and under) requiring a specialty appointment in less than 60 days, get their appointments scheduled correctly, timely and when it is convenient for the families, allowing them to receive the appropriate specialty care when they need it?					
Citation/Level of Evidence	Participants/Setting/Sample Size	Purpose/Background	Methods/Design & Limitations	Findings/Summary/Strengths/Weaknesses	Applicability to Own Research
			made the study much stronger. Although currently there is a study taking place to address this limitation.  Other inclusion and exclusion criteria were defined in the article.	or telephone conversation	challenge is actually having a conversation with a specialist and then getting zero follow up to see if their patient even completed an appointment.
Zuckerman, K. E., Perrin, J. M., Hobrecker, K., & Donelan, K. (2013). Barriers to specialty care and specialty referral completion in the community health center setting. <i>The Journal Of Pediatrics</i> , 162(2), 409-14.e1. doi:10.1016/j.jpeds.2012.07.022  Level V: Single Review of Descriptive and Qualitative Studies.	341 Families; Completed telephone survey 2 months after referral	To assess the frequency of barriers to specialty care and to assess which barriers are associated with an incomplete specialty referral (not attending a specialty visit when referred by a primary care provider) among children seen in a community center.	Limitations: Study conducted in 2 urban community health centers serving mostly Hispanic population. Survey conducted 2 months after referral.  Inclusion criteria stated included articles in English and published in the year 2000 or later.	341 of 501 parents completed survey. Nearly three-quarters were Hispanic and more than 70% had public insurance  22.9% of families experienced incomplete referrals.  42.0% of families encountered at least 1 barrier, with the most frequent barriers listed as difficulties leaving work, obtaining childcare and obtaining transportation.	This article does show support for my project because the gaps shown also included difficulty in getting appointments, inconvenient office hours and difficulty finding the doctors' offices. This study was completed in two centers, not one specialty center with more than 60+ sub specialty locations with an increased risk of

Appendix C

Ottawa Model of Research Use



## Appendix D

### Team Charter

**Project Name:** [Click here to enter text.](#)

Do you want the PI Dept. to help you complete this form?  No  Yes, contact extension 5171

**Select project type:**

- Performance/Quality/Safety Improvement Project
- Order Set, Protocol, or Clinical Pathway Development Project
- Process Improvement Project

**Problem Statement** (What problem have you identified? What gaps in quality will this address? Do not answer Why.):

**What:** [Click here to enter text.](#)

**When:** [Click here to enter text.](#)

**Where:** [Click here to enter text.](#)

**Who Impacted:** [Click here to enter text.](#)

**How Much/How Many:** [Click here to enter text.](#)

**Business Case** (Why is this project important to the organization to dedicate resources to accomplish? Why do this now? What is the impact to the organization if project not completed? Cost of poor quality?):

[Click here to enter text.](#)

**Project Scope** (Who/what areas or phases of care will this project affect? What is out of the scope that this project will not address):

[Click here to enter text.](#)

**Goal/Aim and Metrics** (What is the improvement goal or the intended change? What metrics will be used to measure the progress or achievement of the goal? Write in S.M.A.R.T. format: Specific, Measurable, Achievable, Realistic, Time-based. Include a metric about baseline improvement, if data available):

Goal/Aim: [Click here to enter text.](#)

Metric(s):

1. [Click here to enter text.](#)
2. [Click here to enter text.](#)

**Estimated Project Start & Completion Date** (What is the timeframe for this to be accomplished?):

[Click here to enter text.](#)

**Project Champion(s)** (Depending on project's scope, you may need a physician/nurse/clinical champion and/or executive champion):

[Click here to enter text.](#)

**Project Leader(s)** (This is who will own the operation after the project is completed – List by name, department/job title):

[Click here to enter text.](#)      [Click here to enter text.](#)      [Click here to enter text.](#)

**Team Members** (Who are the right people to accomplish the goal(s)? What subject-matter experts do we need? – List by name, department/job title):

Type names, department/job titles here.

[Click here to enter text.](#)      [Click here to enter text.](#)      [Click here to enter text.](#)

[Click here to enter text.](#)      [Click here to enter text.](#)      [Click here to enter text.](#)

**Key Stakeholders** (Anyone affected by the change but isn't on the team – List by name, department/job title):

[Click here to enter text.](#)      [Click here to enter text.](#)      [Click here to enter text.](#)

[Click here to enter text.](#)      [Click here to enter text.](#)      [Click here to enter text.](#)

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