A CLINIC COORDINATOR IMPROVES CLINIC EFFICIENCY AND DECREASES MISSED APPOINTMENTS IN A MULTIDISCIPLINARY SETTING

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MATTHEW JOSEPH MCLAUGHLIN

M.D., B.A. University of Missouri-Kansas City, 2009

Kansas City, Missouri

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A CLINIC COORDINATOR IMPROVES CLINIC EFFICIENCY AND DECREASES MISSED APPOINTMENTS IN A MULTIDISCIPLINARY SETTING

Matthew Joseph McLaughlin, Candidate for the Master of Science Degree

University of Missouri-Kansas City, 2015

ABSTRACT

Introduction: Missed appointments represent a significant problem in the medical community. A clinic coordinator was hired to provide a dedicated source for communication, scheduling, and care of patients between multiple providers in the same clinic. We investigated whether the coordinator improved patient care by reducing the missed appointment rate and we evaluated the financial implications of this position.

Objective: The primary objective of analyzing the effects of hiring a clinic coordinator was to determine the impact on the rate of missed appointments by using medical informatics. The financial implications and cost-benefits analysis of incorporating this position into a multidisciplinary setting was evaluated.

Methods: Rates of missed appointments before and after utilization of a clinic coordinator were analyzed using a commercially available business software system (SAP® Business Objects). The total number of clinic visits was collected for each month to determine the access available for patients. The average cost billed per each clinic visit was calculated based on billing in this clinic and correlated to the number of missed appointments saved by implementation of this coordinator. Comparisons before and after implementation of the clinic coordinator were performed using Mann-Whitney U tests to compare missed appointments per month.

Results: The mean number of missed appointments per clinic by month before employing the clinic coordinator (mean 3.46, standard deviation ± 2.750) was higher than compared to the two years following implementation (1.21, ± 1.74), which was statistically significant at $p < 0.0005$. When evaluating the lost billing amounts prior to hiring the clinic coordinator, $91,520 was lost during this time period. This is compared to the total amount of $30,160 lost during the second half of the time period evaluated ($p = 0.0009$).

Conclusion: Hiring a clinic coordinator decreased the rate of missed appointments and proved to be a cost-efficient manner to accomplish effective patient care and efficient use of clinical time in a multidisciplinary setting. This intervention allowed more patients to be seen without increasing the number of available clinic slots or requiring increased amounts of provider time.

APPROVAL PAGE

The faculty listed below, appointed by the Dean of the School of Medicine, have examined a thesis titled "A Clinic Coordinator Improves Clinic Efficiency and Decreases Missed Appointments in a Multidisciplinary Setting," presented by Matthew J. McLaughlin, a candidate for the Master of Science degree, and certify that in their opinion it is worthy of acceptance.

Supervisory Committee

Mark Hoffman, Ph.D.
Department of Biomedical and Health Informatics

Ann Modrcin, M.D., E.M.B.A.
Department of Pediatrics

Timothy P. Hickman, M.D., M.P.H., M.Ed., FAAP
Department of Biomedical and Health Informatics

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CHAPTER 1

INTRODUCTION

Missed appointments contribute to widespread inefficiencies within the healthcare system and impact clinic care delivery in a detrimental manner. When patients miss appointments, they affect the ability of clinics to appropriately and adequately schedule patients and staff. Because clinic appointments are usually a finite resource, having a missed appointment causes clinics to operate below their capacity and limits the ability of another patient from utilizing a clinic appointment. Patients who miss appointments have a higher hospitalization rate, lack of preventive care, and increased frequency of death.[1-3] The rate of missed appointments and number of patients who do not keep their appointments threaten the healthcare system with wasted clinic efficiency and lost opportunities for care.

The problem of missed appointments appears to be a widespread, multi-national issue with up to 12% of patients missing their appointments.[4] Patients, who miss appointments either knowingly or unknowingly, impact their own health and the ability of clinics to adequately schedule other patients needing medical care. Additionally, physicians exhibit varied responses to the issues of missed appointments: anxiety for a medically vulnerable patient missing an appointment, annoyance at time wasted not providing care, lost revenue for a private practitioner, relief for a few minutes to allow for administrative duties, or questions about their relationship with a trusted patient.[5] Clinic space is at a premium and missed appointments impact hospital space and provider access. The problem of missed appointments is significantly greater in clinic types where patients interact with multiple providers during the same visit.

In the specialty of rehabilitation medicine, multidisciplinary clinics are prevalent due to the potential for enhanced communication between specialties and value added for patients by seeing multiple providers in a single clinic visit. Patients with spina bifida or spinal cord injury require frequent interaction with multiple care providers to optimize health. Due to the abnormalities in the spinal cord of patients with spina bifida, these patients are at a higher risk for functional decline, orthopedic deformities, urological complications and neurologic conditions.[6] A team based approach is crucial to allow families to discuss medical concerns with every type of provider that is needed in this complex medical condition including with pediatric physiatrists, orthopedists, urologists, neurosurgeons, physical and occupational therapists, nutritionists, and specialized nursing care.

The spina bifida clinic at Children's Mercy Hospital gives patients the opportunity to see these providers in one visit rather than seeing each at multiple individual appointments. As a tertiary pediatric referral center, patients regularly travel up to 8 hours to see specialists who treat spina bifida. By organizing a spina bifida clinic with all the providers needed to care for children with complex medical conditions, the burden on families to travel to multiple appointments is decreased. One of the challenges faced in pediatrics is the higher cited rate of missed appointments in the younger population.[7] Unlike most adult patients, pediatric patients are reliant on their caregivers' schedules and transportation, which complicates scheduling in this population. Despite the convenient and integrated method of providing patient care in the spina bifida clinic, the observed frequency of missed appointments remained high for this population and limited the viability of the clinic.

The impact of missed appointments in this multidisciplinary setting is limited effectiveness of this clinic. With traditional clinic scheduling, missing one scheduled

appointment with one provider equated to one missed appointment; however, missing an appointment in a multidisciplinary clinic appointment is similar to missing 5-7 regular appointments, which reduces clinical efficiency for all the providers. If a patient missed an appointment in the multidisciplinary clinic, scheduling appointments with all the crucial providers to adequately care for these patients became an exhaustive drain on resources. Multiple phone calls and emails are needed to coordinate clinic appointments for families who travel great distances to attend multiple individual appointments in the same day. The value of the multidisciplinary model for care delivery is demonstrated in the amount of time it would take for families to schedule appointments across many different provider specialties. Even if patients had visits with multiple providers on the same date, the various clinics are not in close proximity to each other, and communication about treatment plans would be suboptimal.

Due to the continued high rate of missed appointments over the two year period from 2009 until 2011, a clinical coordinator position for the spina bifida clinic was created specifically to improve care coordination and provide a value added experience for these patients. Clinic coordinators represent a novel method to aid in the efficiency of a multidisciplinary clinic. This clinic coordinator contacted each patient or parent prior to the visit to remind them of the visit. She also sought out their most pressing concerns and questions for the upcoming appointment, ordered preventive care and routine lab work, arranged for specialty specific diagnostic tests prior to the visit and helped improve clinic efficiency by rescheduling patients as needed into the cancelled clinic appointment slots. By pre-ordering tests, results would be available to discuss with providers during the appointments. This allowed for discussion and more prompt action compared to ordering

tests during a visit, which leads to a delay in care and increased provider time to return phone calls to families. Additionally, the clinic coordinator would be able to replace patients who had urgent concerns in open clinic slots once she found out a patient may need to cancel. The effect of clinic coordinators in this setting had not previously been evaluated.

This paper evaluated the effectiveness of a clinic coordinator by examining the specific impact of this position on the number of missed appointments. We hypothesized that by hiring a specialized clinic coordinator, the rate of missed appointments would be reduced compared to the time prior to this intervention, and the clinic would function at a higher capacity to see the maximum number of patients allotted to the clinic with less provider downtime due to missed appointments. Additionally, we hypothesized that the hiring of a clinic coordinator would decrease the number of missed appointments to a level to allow for a cost-effective strategy to improve clinic efficiency by increasing the level of billing produced in the clinic.

CHAPTER 2

REVIEW OF THE LITERATURE

The problem of missed appointments poses a challenge for administration, clinic providers and staff alike. From an administrative perspective, efficiency is valued. Providers and clinic staff value patient care. Each entity sees the cause of missed appointments differently.[8] Clinics search for opportunities to prevent missed appointments; however, limitations from a patient perspective such as forgetting or receiving poor communication about appointment times are the most frequent reason patients miss appointments.[9] Patients who stand to benefit the most from medical care with multiple health related issues represent the highest population of patients that frequently miss appointments.[10] Historically, multiple attempted interventions cited differing levels of success. Decreasing the number of missed appointments in a clinic impacts both clinical and administrative planning.

The Need for Multidisciplinary Clinics to Treat Spina Bifida

Multidisciplinary clinics have shown improved benefit for patients with complex health conditions requiring multiple providers to directly impact health. In adult medical conditions such as congestive heart failure and diabetic foot care, this type of clinic care delivery resulted in decreased readmissions, a reduction in overall hospital days, and decreased adverse outcomes.[11,12] Additionally, multidisciplinary meetings for patients with cancer have led to a more collaborative approach including modifying the treatment plan in 23 percent of patients.[13] A collaborative approach either by multidisciplinary clinics or a multidisciplinary meeting of providers improves patient care.[6]

Spina bifida is the second most common disability of childhood. It is a complex disorder impacting physical, psychological, and social issues for patients with this condition.[6]

Multidisciplinary spinal bifida clinics improve patient outcomes and provide the most efficient method for receiving care. In cases where a multidisciplinary spina bifida clinic was disbanded, significant medical access and patient safety issues became apparent.[14] In this study, after the spina bifida clinic was disbanded, 45-66% of patients who previously received care in this clinic were not able to receive the same level of care even if they continued to be followed at the same location.[14] In this cohort, an increased rate of amputation and nephrectomy was found in patients with the least follow-up. Furthermore, the patient or local physician did not assume the duties of scheduling patients with all necessary providers, which highlights the need for improved coordination in this population. It is unrealistic to expect the continuation of effective care by merely maintaining the individual services of the disbanded clinic, without some care coordination.[14] In adult patients with spina bifida where multidisciplinary clinics are less common, preventable complications such as urologic infections, renal calculi, pressure ulcers and osteomyelitis represent 47 percent of admissions in this population.[15] Even after excluding professional fees, the total costs for 166 specific preventable admissions in this population totaled $860,502 over the three year period from 1990 to 1992.[15] Significant health and economic impact can be made in patients with spina bifida by improving care coordination, reducing preventable complications, and avoiding costs associated with these admissions.

Although patients in multidisciplinary spina bifida clinics are usually not acutely ill, continued evaluations of several key factors contribute to healthcare utilization and morbidity. Each specialist has a unique set of skills and addresses a specific medical problem within spina bifida management during the visit. Overlap or redundancy in patient care is

prevented by defining objective, understandable treatment areas for each provider. The providers associated with the Children's Mercy multidisciplinary spina bifida clinic and their roles are displayed in Graph 1.

Graph 1. Medical Specialties Available to See Patients in the Spina Bifida Clinic

Provider Name/Specialty	Role in Multidisciplinary Clinic
Rehabilitation Medicine (M.D. or D.O.)	Evaluate the physical function; provide bracing or wheelchair prescriptions; clinic oversight.
Orthopedic Physician (M.D. or D.O.)	Perform musculoskeletal examination to determine if orthopedic surgery is needed
Urology Physician (M.D. or D.O.)	Monitor the physiologic function of the bladder; prescribe medications to obtain continence
Developmental Pediatrics (M.D. or D.O.)	Determine developmental milestones appropriate for each patient
Neurosurgery Physician (M.D. or D.O.)	Ensure the integrity of the spinal cord and brain; perform surgery on tethered cord
Physical Therapist (D.P.T.)	Evaluate gross motor abilities; provide therapy recommendations for family
Occupational Therapist (O.T.R./L.)	Evaluate fine motor abilities and oral-motor skills; provide therapy recommendations for family
Wound Care (R.N., W.O.C.)	Education about prevention of pressure

	ulcers; treatment of skin issues
Rehabilitation Nursing (R.N.)	Discuss continence/bowel/bladder program
Social Work (L.C.S.W.)	Assist families to obtain needed financial or school services for the patient
Wheelchair Seating Specialist (A.T.P.)	Adjust/recommend wheelchair seating systems during clinic
Certified Prosthetist/Orthotist (C.P.O.)	Fabricate and modify bracing
Registered Dietician/Nutritionist (R.D.)	Discuss nutritional intake; monitor growth and nutritional needs
Clinic Coordinator (R.N.)	Provide coordination between providers and patients before, during and after visits

Prior Interventions to Decrease Missed Appointments

As missed appointments hamper health care delivery and impair clinic efficiency, other care providers and administrators have banded together with multiple strategies to decrease the missed appointment rates in their clinics. Patients who miss clinic visits appear to have two primary reasons for missing appointments, forgetting about their appointment or miscommunication about the reason for their visit.[9] Any intervention attempting to target one of these two issues may show benefit. One strategy used historically has been to "double book" patients, meaning there would be multiple appointments available for the same time slot; however, this contributes to delay in patient care and increased wait times in the clinic when both patients arrive simultaneously. This approach likely contributes to decreased patient satisfaction. With the improvement of technology, clinics have tried multiple

approaches to reach out to patients to decrease their missed appointment rate. Leveraging their patients' ability to utilize the internet, some clinics developed an internet scheduling tool. When used by patients to schedule, change, or cancel their appointments, this tool decreased the rate of missed appointments decreased by 6.9%; however, a small sample size was noted in this study and patients need computer literacy and access to navigate this tool.[7] Another successful intervention compared the use of text messaging to cell phone reminders for patients. In this comparison, there was no change in the frequency of missed appointments; however, text messaging demonstrated an economical strategy for the clinic considering the time needed to reach each patient individually by phone.[16] Several studies attempted to use text messaging as a means to decrease the missed appointment rates, as captured in a COCHRANE Review, which showed that text messaging was superior to either not receiving a reminder or receiving a reminder via mail. However, this review again noted that patients with text message reminders had similar missed appointment rates compared to phone reminders.[17] Another intervention which has increased in popularity in certain practices, is to charge patients for missing clinic appointments.[18] Charging patients for missed appointments may influence outcomes negatively. Patients may stop seeing a physician if concerned about reliable transportation or ability to make appointments. This would impact those with lower socio-economic status, which is one of the populations cited as already missing clinic appointments more frequently than the affluent population.[19] Although these interventions demonstrated variable levels of success with decreasing missed appointment rates, the majority of the interventions represented a passive reminder service without any meaningful personal interaction or value added to the patient.

CHAPTER 3

METHODOLOGY

Subjects and Design

Clinic appointments statuses were evaluated in this study. All of the patients seen had either spina bifida or another spinal abnormality which required multidisciplinary care. This clinic is held every other week for half a day. Patients were identified based on appointment scheduling type. The study team reviewed whether an appointment was noted to have been missed or kept. Patient appointments were included if they occurred between March 2009 and March 2013, as the clinic coordinator position was implemented in March of 2011. Because the clinic coordinator was hired and undergoing training in March of 2011, this month was included in the pre-intervention phase for analysis. No other programmatic changes occurred during this time period with regard to clinic structure, personnel, or clinic design.

This study is a retrospective review to evaluate the effects after implementation of a clinic coordinator in a multidisciplinary clinic. Because of the ability to evaluate this hypothesis using medical informatics, this study did not require direct access to patient charts directly and received a "Not Human Subjects" determination from the Institutional Review Board of Children's Mercy Hospital. Subjects were identified using a commercially available software program (SAP ® Business Objects) which can assess kept and missed appointment numbers retrospectively. Total numbers of clinic appointments per month and whether a clinic appointment was classified as kept or missed were collected for analysis. Additionally, an average billed amount per clinic appointment was obtained from an analysis of charged amounts per patient encounter performed by the billing department. This was factored in for

a cost analysis of this clinic coordinator's impact, to determine whether this type of position would be feasibly reproducible on a larger scale or in other clinics of similar size and complexity.

Statistical Analysis

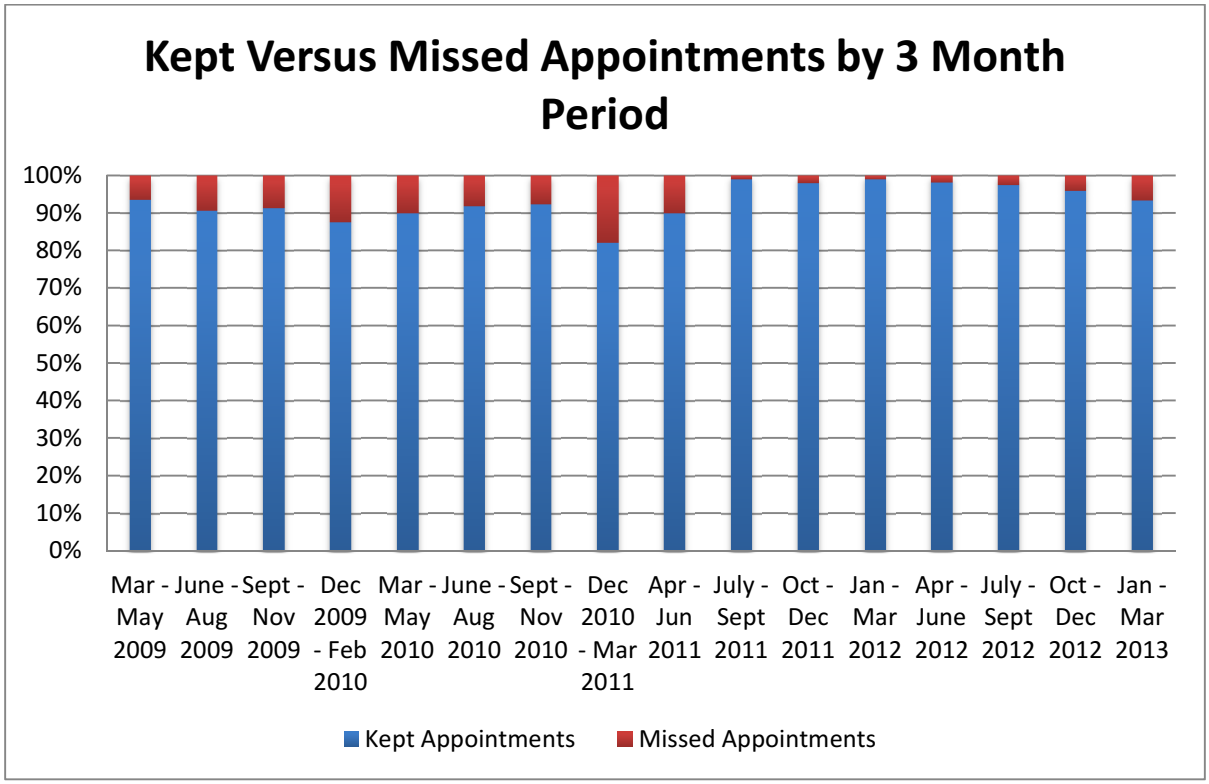
A comparison of the mean number of missed appointments per month before and after implementation of a clinic coordinator position was performed with Mann-Whitney U tests. A two-tailed α-value was set at 0.05. The number of total appointments offered between before and after the creation of this position was analyzed by using independent *t*-tests. Although these groups were similar patients, the de-identified nature of this research did not allow for use of paired intervention testing as there was no way to identify individualized patients in this model. Total amount saved as a result of the creation of the clinic coordinator position is represented as a cumulative summation of the difference between lost billing due to missed clinic appointments. Statistical analysis was performed using IBM® SPSS® 23.

CHAPTER 4

RESULTS

The mean number of missed appointments per clinic by month before employing the clinic coordinator (mean 3.46, standard deviation ± 2.750) was higher than compared to the two years following implementation (1.21, ± 1.74), which was statistically significant at $p < 0.0005$. The total number of missed appointments per three month period compared to the number of kept appointments is compared in Graph 2. Additionally, there was no difference between the number of available clinic appointments during the course of this study period ($p = 0.551$).

Graph 2 – Frequency of Kept Versus Missed Appointments by 3 Month Period.

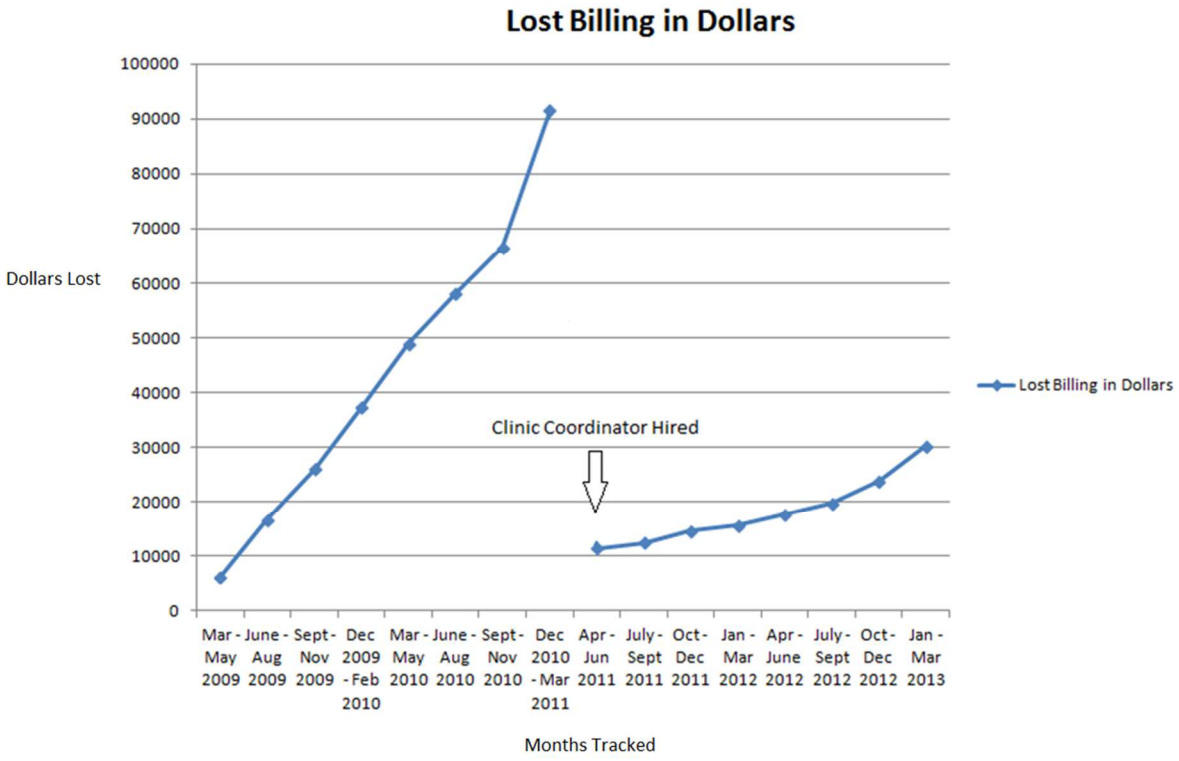


This illustration demonstrates the percentage of kept versus missed appointments during the study period. The clinic coordinator position was implemented in March of 2011. By evaluating the number of missed appointments for two years after this position was implemented, long-term effects were able to be analyzed.

On average, the amount billed per patient encounter in this clinic was $1040, which represented both the professional and facility fees charged during a traditional visit in this clinic. When evaluating the lost billing amounts prior to hiring the clinic coordinator, $91,520 was lost during this time period. This is compared to the total amount of $30,160 lost during the second half of the time period evaluated, which correlated during the utilization time of the clinic coordinator. Total hypothetical amount saved after hiring a clinic coordinator based on average amount billed per patient encounter in this clinic demonstrated

a $61,360 difference over a two year period, which was statistically significant compared to the two years before implementation of this position with a p value of 0.0009. This data is represented in Graph 3.

Graph 3 - Cumulative lost revenue from a calculation of missed clinic appointments per three month period before and after hiring a clinic coordinator to attempt to decrease missed appointment numbers.



The clinic coordinator position began in March of 2011. This figure illustrates the differences in cumulative billed amount per month from the spina bifida clinic before (line on the left) and after (line on the right) her involvement.

CHAPTER 5

DISCUSSION

This study shows the important impact of hiring a clinic coordinator in reducing missed visits during the two years following implementation of this position. The total mean number of missed appointments per month decreased from 3.46 to an average of 1.21 missed appointments per three month period evaluated. This statistically significant difference indicated the benefit of this key position. Additionally, this was accomplished using the same clinic schedule without adding additional clinics. In a traditional hospital setting where clinic space and provider availability are limited, the impact of a coordinator position is to improve access without increasing systematic or personnel demands. By replacing patients who are unable to keep their appointment with patients on a waiting list, the clinic coordinator maximized the number of patients seen due to her high level of involvement with the clinic scheduling.

The role of this clinic coordinator targeted two of the key areas cited as reasons patients miss appointments, forgetting about the clinic visit and lack of knowledge or communication about the reasons for the visit.[9] Initially by directly calling patients and families to verify that they would be willing to come, this provided an instant reminder and a personal connection between the families and the clinic. By directly discussing the upcoming visit, this formed a connection and represented an investment on behalf of both parties involved. The second reason patients traditionally miss appointments relates to not knowing the reason they have an upcoming appointment, which highlights the lack of communication about the reason for any upcoming appointments. By directly discussing the upcoming visit with the family, the clinic coordinator was able to identify concerns or questions from the

family which would be shared with providers to ensure the needs of the patients would be met during the upcoming encounter. A potential future study that could characterize the effectiveness of the pre-clinic phone call could help determine which aspect of the clinic coordinator was most effective. The clinic coordinator also contacts physicians who are part of the multidisciplinary clinic at Children's Mercy to order routine tests prior to the visit such as urodynamics, renal ultrasounds, or radiographs. Once these tests are performed, an immediate investment is made by the patient to obtain the results of the test. Patients may choose to attend an appointment when they know they will receive results of their test immediately. This contributed to a more expedited method to deliver results and saved physician time, as they did not have to allot additional time to call the family with results. The availability of the results during clinic decreased the amount of time providers spent after clinic reviewing and discussing results by an inefficient and impersonal method, such as the telephone or mailings.

Compared to prior interventions attempted in other clinics such as text message reminders or online scheduling, the clinic coordinator represented a much more active and engaging intervention than other methods.[7,16,17] These passive reminders prohibit discussion as to why an appointment might not be kept or the reason behind rescheduling an appointment. A beneficial impact of the clinic coordinator position was identification of which patients might not be able to make his or her appointment. Appointments can be rescheduled and filled with another patient, which allows the clinic to function at capacity. The primary goal of a clinic of this nature requires minimizing provider downtime as a method to improve access. The clinic coordinator was able to keep track of patients who were able to show up for a clinic appointment on shorter notice and to fill cancelled

appointment slots with patients in need of an urgent evaluation. Patients with more urgent concerns might be more likely to keep appointments, especially if they are scheduled closer to the upcoming appointment date. Additionally, knowledge of patients that may need more urgent evaluation and improved scheduling may affect health related outcomes in this population. Finally, access for new patients to enter into this type of clinic to receive care presents a challenge when a large cohort of patients with spina bifida are already scheduled and followed in this clinic. By knowing which patients are pending entrance into this clinic, these patients benefit from having an advocate within the hospital to help schedule their appointment and collect documentation from prior providers. Although the number of hours required to call each family might prove to be an inefficient strategy for general clinics that see a larger cohort of patients, in a multidisciplinary model, the decreased number of missed appointments would support this increased effort by the clinic coordinator.

By decreasing the number of missed appointments per month, the clinic coordinator position contributes to improved billing for the hospital. As this was not a full-time position, this position represented a cost-savings for the hospital during the two years following the creation of this position. Although not evaluated as a part of this study, ancillary services such as radiographic studies or neuropsychological testing referrals may have increased due to the routine ordering of these services. If a patient misses an appointment in the multidisciplinary spinal defects clinic, these potentially beneficial services may not be ordered. This was evident in a multidisciplinary clinic which disbanded, which showed that it is difficult for patients or primary care providers to make sure they receive adequate services, even if all of the services are located in the same location.[14]

The use of medical informatics contributed to this study in invaluable ways. Informatics allowed for analysis of an easily accessible data set that was specific to the population of interest. Furthermore, the patient data could be evaluated in a manner that did not require full Institutional Board Review approval as no Protected Health Information was accessed. The use of medical informatics was a cost-effective and time-efficient way to review this hypothesis. As more information becomes available electronically, the ability to capture and interpret this information to solve patient care and care delivery problems could lead to improved outcomes on a more global scale.

Despite the positive findings in this study, some inherit limitations due to study design remain. Because this study was performed using de-identified data, detailed reasons for kept or missed appointments could not be ascertained; however, this does not change the level of increased efficiency demonstrated in this clinic by decreasing the number of missed appointments. Additionally, our findings were demonstrated in one type of multidisciplinary clinic. Multidisciplinary clinics with only two or three providers may not show the same level of financial justification for this type of position. As this clinic coordinator position improved missed appointment rates, other types of clinics that use many different providers could benefit from hiring a clinic coordinator to improve access and decrease missed appointment rates. This could be evaluated in other pediatric populations such as Duchenne muscular dystrophy or cystic fibrosis. Furthermore, strategic interaction with patients, such as motivational interviewing where an interviewer discusses real-world, patient-centered desires for improving health, could be employed by a clinic coordinator to see if this strategy of patient interaction could decrease the missed appointment rate even further with limited

additional cost. Potentially, the impact of clinic coordinator positions could improve care across multiple different groups of patients.

CHAPTER 6

CONCLUSION

The number of missed appointments significantly impacts the ability of a clinic to function at the highest capacity allowable based on personnel, which is increasingly problematic in clinics where a missed appointment changes the workflow of multiple providers in a negative manner. By hiring a clinic coordinator, this study showed a decrease in the overall number of missed appointments for the two years following the creation of this position. This coordinator took an active approach to eliminating missed appointments by engaging families in discussions about their upcoming clinic visit prior to attending the clinic to attempt to achieve a level of involvement not seen by other passive clinic reminders. Furthermore, this type of clinic allows for a model to show the cost analysis of this coordinator since the majority of clinic appointments are billed at the same billing level. By showing the decreased billing amount lost in clinic after hiring a clinic coordinator, a financial argument exists for including these types of providers in a multidisciplinary model where multiple providers are involved. Overall, clinic coordinators were shown to decrease the number of missed appointments in a financially responsible way and allowed the clinic to operate at a higher capacity without increasing the number of clinics needed.

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VITA

Matthew Joseph McLaughlin entered the world in Kansas City, Missouri on November 24, 1984. He was educated in the Lee's Summit, Missouri school district where he showed excellence in multiple classes obtaining an International Baccalaureate diploma prior to his graduation. He matriculated to the 6 year combined M.D./B.A. program at University of Missouri-Kansas City where he was chosen as the most outstanding Year 1 and 2 medical student and served as the Class President of the Class 2009.

Upon graduation, Dr. McLaughlin continued to work in Kansas City where he pursued an internship in Internal Medicine, which he completed in 2010. Upon completion of this internship, he moved to Columbia, Missouri to start a residency in Physical Medicine and Rehabilitation where he was chosen to be the Chief Resident of Research. After his residency, he sought advanced training the subspecialty of Pediatric Rehabilitation Medicine at Children's Mercy Hospital in Kansas City, Missouri. After graduation from this program in 2015, he was hired as faculty in the Division of Rehabilitation Medicine and advancing his interests in as a Fellow in Clinical Pharmacology, with an emphasis on spasticity management and treating pediatric patients with disabilities. By utilizing his training in Bioinformatics, Dr. McLaughlin aims to further the level of research within rehabilitation medicine.

Dr. McLaughlin is a member of the American Academy of Physical Medicine and Rehabilitation, the Association for Academic Physiatrists, and the Central Society for Physical Medicine and Rehabilitation.