Minimizing Wait Times through the Integration of Behavioral Health during Well-Child Checks

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Abstract
Family medicine offers medical service to all age groups. For pediatric patients receiving well-child checks, finding the balance of providing anticipatory guidance and a physical exam is important. Through implementing an intervention during well-child checks by including behavioral health, wait and lead times of these visits were recorded. Having behavioral health complete the anticipatory guidance not only decreased wait time, but also increased time spent on the same topic. Further exploration of this nature must be completed to determine its viability for future use.

Keywords: family medicine, pediatrics, well-child checks, anticipatory guidance, behavioral health, lead time, wait time

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Introduction

With the understanding that family medicine requires its practicing physicians to be knowledgeable about a vast amount of pathologies for various age groups, I was curious to see how this affected subgroups within their patient population. Additionally, less than a quarter of pediatric patients receive care from family physicians, making family physicians' expertise around pediatric medicine limited, solely due to the small exposure to patients within that category. Combining this with the LEAN training I received within this summer program, I decided to examine the quality of care pediatric patients receive at HealthPoint in Seattle, Washington. Unique to this community health center, is the incorporation of behavioral health services provided to patients. My goal thus developed into evaluating pediatric patients' care through recording patient visit and wait times, and trying to remedy any disparities in care through involving behavioral health consultants during patient visits.

Background

The medical specialty of pediatrics arose with the growing realization that children differ in their medical needs when compared to adults. Prior to the advent of pediatrics in the early twentieth century, children were primarily cared for during illness, rather than given preventative services. However, with the continued industrialization in the United States and the discovery of antibiotic agents, preventative services for children grew in importance. The invention of immunizations and its direct link to decreased mortality among children ages zero to eighteen further developed the need for a medical specialty exclusive to children, and thus, the creation of the American Academy of Pediatrics (AAP) followed shortly thereafter (Dworkin

2000). Today, 92.8% of U.S. children have contact with a physician at least once a year in order to receive such care (CDC 2014).

Within the last fifty years, pediatric medical care has drastically shifted to providing preventative care to patients. Studies demonstrated that psychosocial and behavioral development were rising morbidities in children due to the changing family and social structures occurring across America during the mid-twenty first century (Dworkin 2000). As a result, behavioral and social aspects of a child's health came into focus. In order to incorporate these new measures of pediatric care, guidelines for well-child checks were developed by the AAP. The guidelines directed pediatricians to collect a medical history, perform a physical exam, collect measurements, conduct developmental screenings, provide immunizations, and perform age-selective counseling (Dworkin 2000). Termed anticipatory guidance, age-selective counseling was included in well-child checks to assess a child's behavioral and social development and aid parents and families in caring for this area of their child's health.

However, not all children receive care from pediatricians. In 2013, approximately 24% of pediatric patients received well-child checks and other medical care from family physicians. With the broad range of pathology and age associated with family medicine, the quality of care pediatric patients receives has surprising been studied very little (Young and Boltri 2005). In one study conducted throughout the U.S., 1,000 family physicians were randomly selected to complete a nineteen question survey regarding their deliverance of anticipatory guidance to pediatric patients. It was determined that verbal counseling is the predominant form of anticipatory guidance, instead of the combination of verbal and written instruction, which is regularly done by pediatricians. The amount of time spent on this topic as

well as what was discussed was not explored in depth, making it difficult to determine whether patient care was limited in scope (Young and Boltri 2005).

The introduction of behavioral health into community health centers may be a remedy to this difference in quality of care. Behavioral health consultants are now commonly found in community health centers and provide integrated care for patients with chronic and/or mental illness. Their integration is usually through referrals from a patient's primary care physician, or through on-site interactions with patients. With the disproportional number of chronically ill patients visiting community health centers, behavioral health consultants are critical in managing patients' disease states through behavioral and lifestyle adjustments (Reitz, et. al 2011). The same in true for patients with mental illnesses. A longitudinal study completed in 2012 demonstrated that two year interventions with behavioral health consultants led to positive health outcomes for patients suffering from depression, anxiety, and other mental illnesses (Ray-Sannerud, et. al 2012). As these results came from patients who were receiving integrated care from both a primary care physician and behavioral health consultant, it is clear that the combination of these two medical specialties are yielding positive results for a subset of patients seen at community health centers and related medical facilities.

With the creation of pediatrics, medical care for children has drastically changed. Children now receive focused care on preventative services as well as attention to any illnesses. The differences between care delivered by pediatricians and family physicians, although poorly studied, does exist and examining it further to eliminate disparities is an important step to the continued evolution of pediatrics.

Methodology

In order to collect consistent data, a timeline was created to first develop data collection skills and then complete control and intervention phases. The experiment was completed at HealthPoint's Kent location over a six week period from June to mid-July 2014. During the first week, training in LEAN data collection was completed. This included learning how to collect lead times, determining processes and cycles, and data analysis. Weeks two and three consisted of collecting control data on Wednesdays and Thursdays of each week. Observations were conducted from the time the medical assistant called the patient into the back of the office to when the patient was told the visit was complete. Individual cycles within this process were recorded throughout. Observations of several family physicians and medical assistants were collected in order to account for variability in work flow and time required to complete cycles. Physicians were strictly observed, rather than ARNPs and PACs, in order to focus the scope of this study. All data was collected using a standardized lead time chart and a timer on a cellphone.

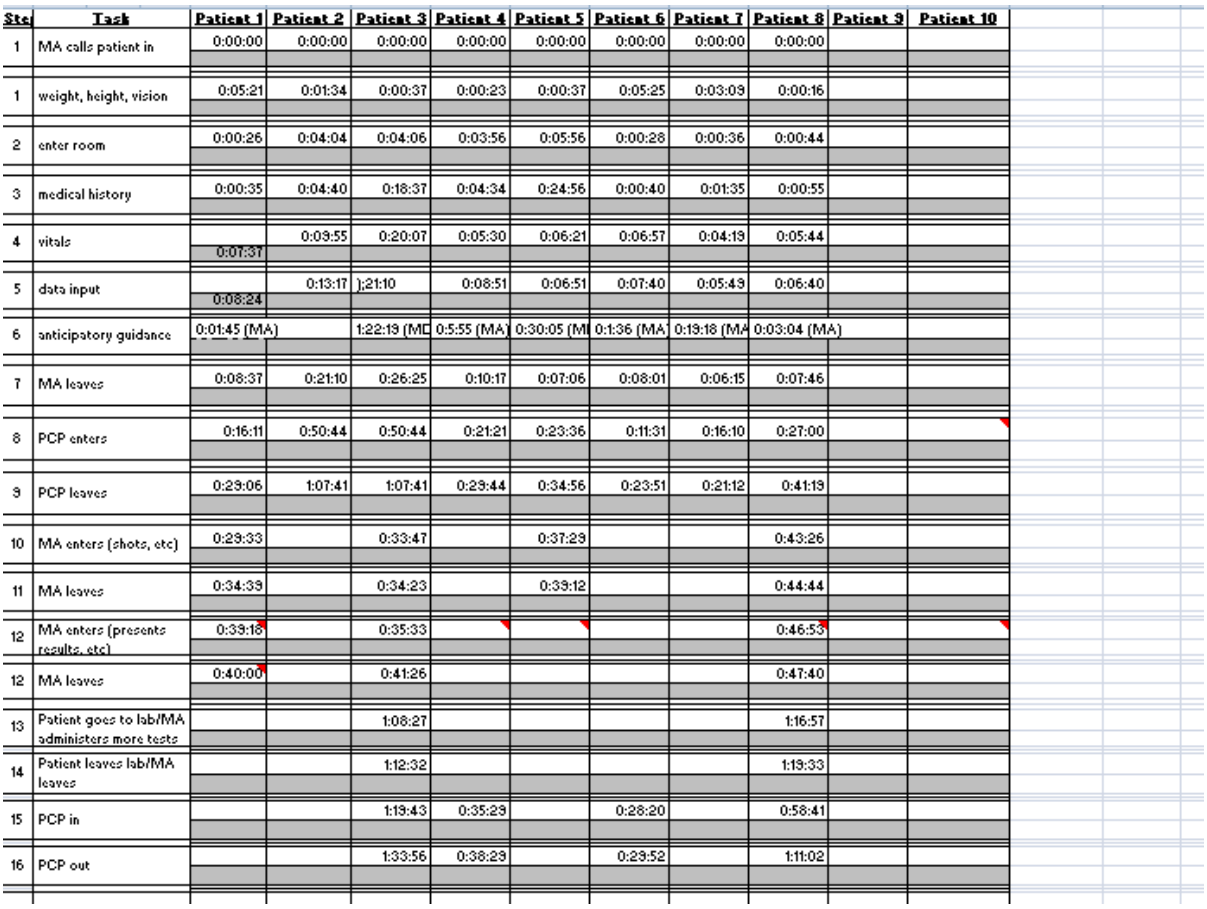
Weeks four and five served as the intervention phase. Medical assistants and physicians were notified beforehand of the intervention and when observations were to be completed in order to facilitate the intervention. Data was collected on Thursdays and Fridays. The process that was used to collect lead times remained the same, as well as the cycles. Medical assistants were instructed to not complete the anticipatory guidance portion of the well-child checks, and instead call either the Care Coordinator or Behavioral Health Intern at the Kent clinic. Either one of them were instructed to complete the anticipatory guidance prior to the physician entering the exam room. Following this, the physician completed the physical exam

and concluded of the well-child check. Additionally, any post-exam services were completed accordingly.

The final week was used for data analysis, completing the final report, and presenting the information to HealthPoint.

Results

A total of eight well-child checks were recorded from the time the medical assistant called the patient to when the patient was told the exam was over during the control phase of the experiment. In this process, a total of sixteen cycles were determined and are listed in the table below. The process time varied from a little over twenty-nine minutes to over an hour and a half. Depending on the patient and their needs, post-visit services were administered accordingly.



Step	Task	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6	Patient 7	Patient 8	Patient 9	Patient 10
1	MA calls patient in	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00		
1	weight, height, vision	0:05:21	0:01:34	0:00:37	0:00:23	0:00:37	0:05:25	0:03:09	0:00:16		
2	enter room	0:00:26	0:04:04	0:04:06	0:03:56	0:05:56	0:00:28	0:00:36	0:00:44		
3	medical history	0:00:35	0:04:40	0:18:37	0:04:34	0:24:56	0:00:40	0:01:35	0:00:55		
4	vitals	0:07:37	0:09:55	0:20:07	0:05:30	0:06:21	0:06:57	0:04:19	0:05:44		
5	data input	0:08:24	0:13:17	);21:10	0:08:51	0:06:51	0:07:40	0:05:49	0:06:40		
6	anticipatory guidance	0:01:45 (MA)		1:22:19 (MD	0:5:55 (MA)	0:30:05 (MI	0:1:36 (MA	0:19:18 (MA	0:03:04 (MA)		
7	MA leaves	0:08:37	0:21:10	0:26:25	0:10:17	0:07:06	0:08:01	0:06:15	0:07:46		
8	PCP enters	0:16:11	0:50:44	0:50:44	0:21:21	0:23:36	0:11:31	0:16:10	0:27:00		
9	PCP leaves	0:23:06	1:07:41	1:07:41	0:29:44	0:34:56	0:23:51	0:21:12	0:41:19		
10	MA enters (shots, etc)	0:29:33		0:33:47		0:37:29			0:43:26		
11	MA leaves	0:34:39		0:34:23		0:39:12			0:44:44		
12	MA enters (presents results, etc)	0:39:18		0:35:33					0:46:53		
12	MA leaves	0:40:00		0:41:26					0:47:40		
13	Patient goes to lab/MA administers more tests			1:08:27					1:16:57		
14	Patient leaves lab/MA leaves			1:12:32					1:19:33		
15	PCP in			1:19:43	0:35:29		0:28:20		0:58:41		
16	PCP out			1:33:56	0:38:29		0:29:52		1:11:02		

Figure 1: Cycles and process of well-child checks during control phase.

In analyzing this data, the median was used to determine the overall wait time and visit time in the control phase. Cycles were bulked together to simplify the value stream and thus, were determined as the "rooming cycle," "anticipatory guidance," "physician visit," and "post-visit services." Wait times were calculated from the time the medical assistant first left the exam room to when the physician entered. Additionally, the time medical assistants entered and left the room while administering post-visit services were summed to determine the overall wait time the patient experienced between seeing the physician and receiving such services. Based on this analysis, the wait time between the medical assistant rooming the patient and physician entering the exam room was thirteen minutes and forty-seven seconds. The wait time between the end of the physician visit and post-visit services was four minutes and twenty-nine seconds.

There was no wait time when the patient received anticipatory guidance; however, this cycle only lasted three minutes and twenty-two seconds. The overall visit time based on the recorded observations was forty-five minutes and thirty seconds.

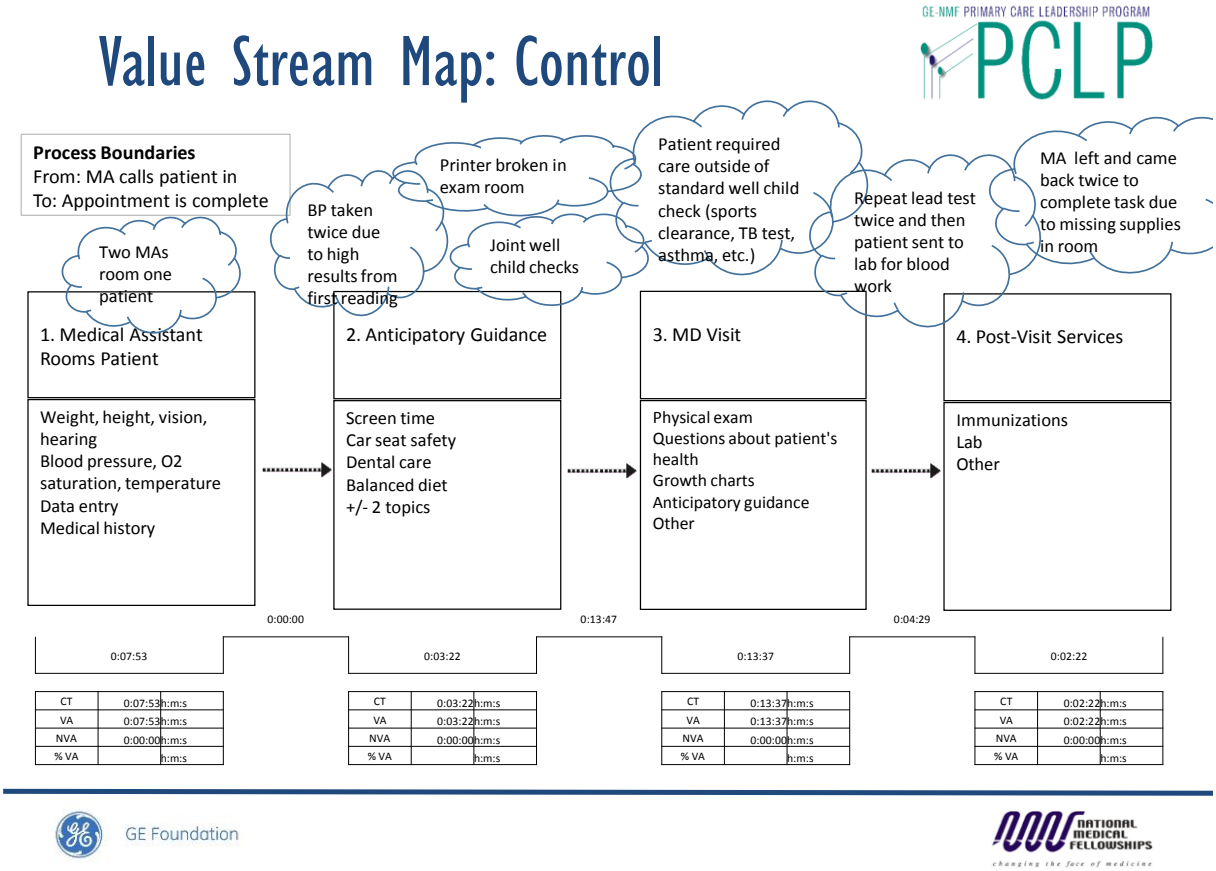
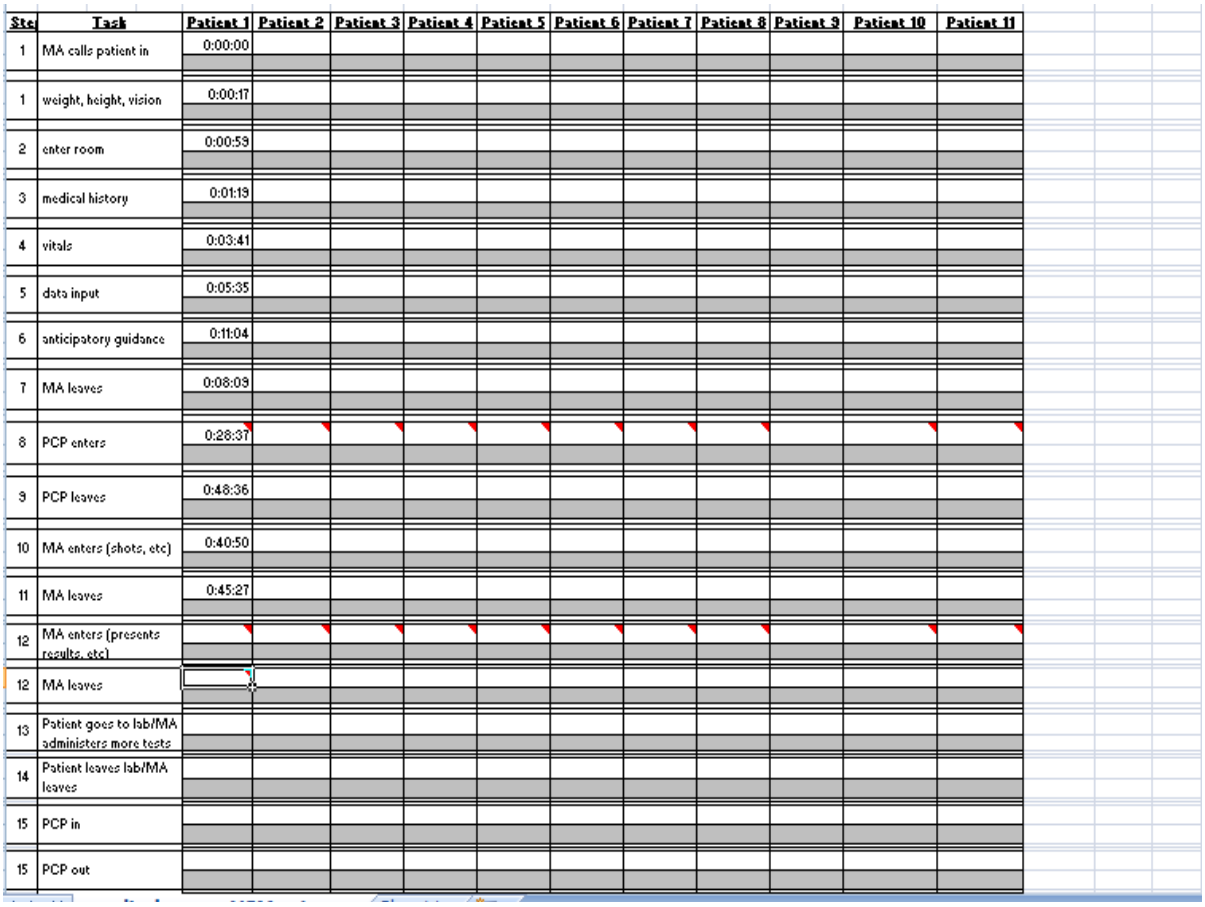


Figure 2: Value stream of control phase demonstrating the wait and overall visit times.

During the intervention phase of the experiment, a total of six observations were completed; however only one observation completed the full interventional requirements. As a result, Figure 3 only includes the single observation. This visit lasted for over forty-seven minutes.



Ste	Task	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6	Patient 7	Patient 8	Patient 9	Patient 10	Patient 11
1	MA calls patient in	0:00:00										
1	weight, height, vision	0:00:17										
2	enter room	0:00:59										
3	medical history	0:01:19										
4	vitals	0:03:41										
5	data input	0:05:35										
6	anticipatory guidance	0:11:04										
7	MA leaves	0:08:09										
8	PCP enters	0:28:37										
9	PCP leaves	0:48:36										
10	MA enters (shots, etc)	0:40:50										
11	MA leaves	0:45:27										
12	MA enters (presents results, etc)											
12	MA leaves											
13	Patient goes to lab/MA administers more tests											
14	Patient leaves lab/MA leaves											
15	PCP in											
15	PCP out											

Figure 3: Cycles and process of well-child checks during control phase.

The value stream was made from the single observation too. Due to the behavioral health intern completing anticipatory guidance, a wait time of one minute and fifty-five seconds was observed in between rooming and receiving anticipatory guidance. This cycle also lasted fourteen minutes and fifty-three seconds, which is longer than the cycle time during the control phase. Also seen in Figure 4 is the physician visit time of fifteen minutes and twenty-two seconds, with post-visit services taking four minutes and thirty-seven seconds, which was very similar to the control phase. Overall, the patient waited four minutes and twenty-three seconds during the entire well-child check; however, the entire visit ran for forty-seven minutes and twenty-nine seconds, which was slightly longer than the lead time during the control phase.

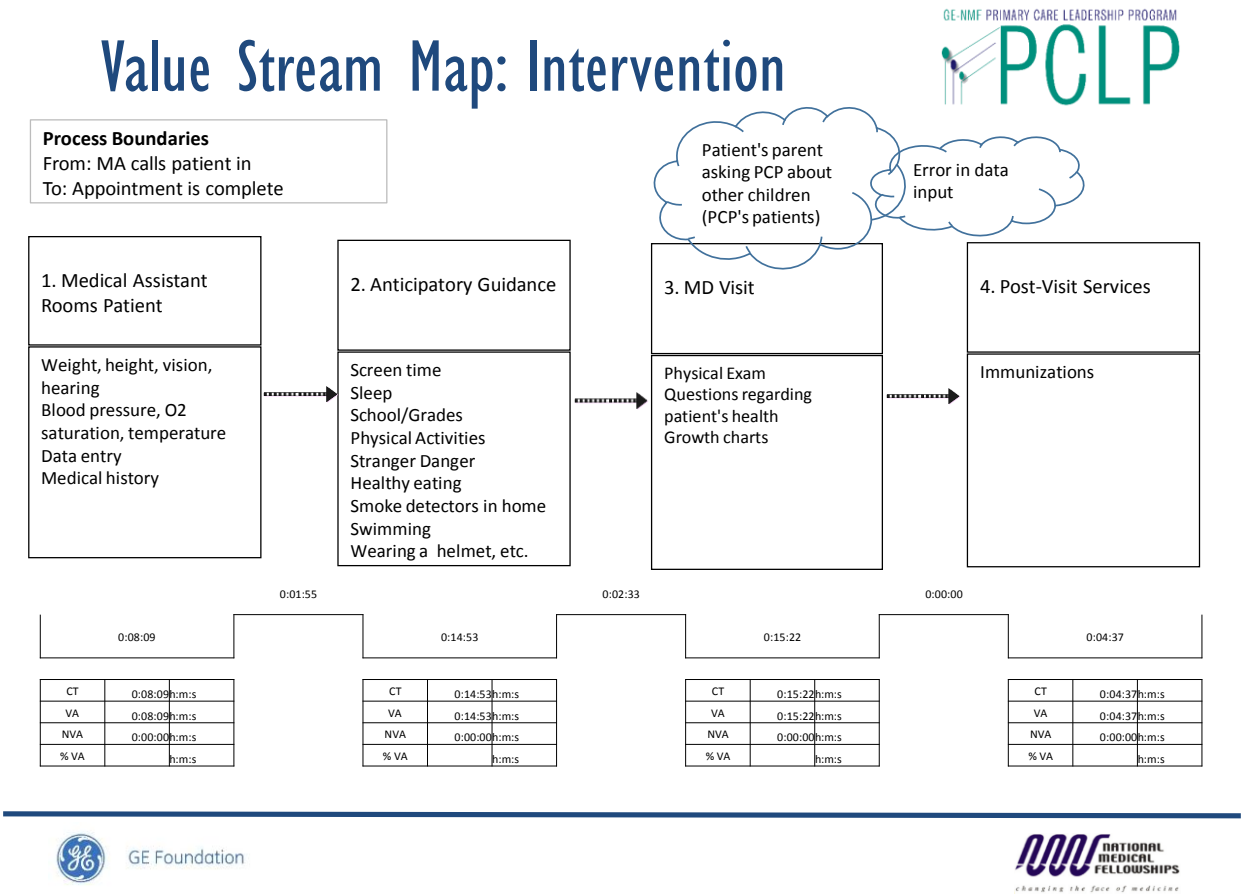


Figure 4: Value stream of intervention phase demonstrating the wait and overall visit times.

Discussion

Based on the collected data, involving behavioral health to complete the anticipatory guidance portion of well-child checks drastically decreases wait time during a patient's visit. It does not have the same effect on lead time, as it increased the visit by approximately two minutes. It is also important to note that patients are left alone in the exam room multiple times when behavioral health completes the anticipatory guidance, as the medical assistant must leave to page the intern, and then the intern leaves again prior to the physician entering the exam room. Whether this affects the patient's clinical experience was not further explored in this experiment.

There were also many variables that were difficult to control throughout the four week experiment too. These variables were noted in the blue clouds seen in Figures 2 and 4. For example, two medical assistants were often seen rooming one patient. Although this is not standard protocol at HealthPoint, this occurred twice during the control phase. This affected the lead time, as one medical assistant completed vitals, weight, height, hearing, and vision, while the other spoke with the parent/guardian to complete the medical history at the same time. When comparing this to when a medical assistant is working alone, the difference in lead times is clear.

Conversely, one medical assistant rooming two patients for a joint sibling well-child check increase both the wait and lead times for both patients. As each sibling has to wait their "turn" to answer questions as well as to be seen by the physician, each patient is left waiting additional time in the exam room before they are told their visit is complete. Although this is convenient for patients' families, it does pose additional wait time for the patient and possibly leaves the physician running behind for their remaining appointments.

Variations in physician visits also exist. A total of four family physicians were observed during the control phase, while three (two family physician and one pediatrician) were timed during the intervention phase. Some physicians chose to solely talk with the patient and their family before the physical exam, while others talked and examined the patient at the same time. Their techniques also varied, including taking longer to examine the patient instead of rapidly completing the physical exam. Parents would also talk and ask questions about things unrelated to the patient, leading the physician to spend extra time in the exam room discussing these topics despite the exam being over. All of these contributed to the various cycle times of the physician visit.

Lastly, complications with lab equipment or inappropriate readings were other variables that affected patient visit times. As mentioned earlier, these complications were usually unforeseen and caused the patient to have to retake tests or wait longer. This led to an overall increase in wait and lead times, as well as disgruntled patients in a few observed visits.

Before discussing the effectiveness of the intervention phase in further depth, it is essential to note the difficulties faced when completing it. Having been assigned to work at the Kent location, it was assumed that a strong behavioral health presence was at this clinic. When meeting with the care coordinator, it was reiterated that although there was not a current behavioral health consultant on staff, the behavioral health intern and care coordinator would be available on Thursdays and Fridays and were willing to help complete anticipatory guidance, as outlined by the experiment. However, upon reaching this phase in the experiment, it became extremely difficult. The care coordinator was usually unavailable to assist and the behavioral health intern was overbooked, having to see the former behavioral health consultants' patients as well as her own. Thus, it is important to state that a total of six observations were completed during the intervention phase; however, only one completed all the intervention steps, and therefore, was the only viable data from the two week period.

When comparing the wait time differences between the control and intervention phases, it is clear that involving behavioral health drastically decreases it. However, further examination highlights the differences in anticipatory guidance deliverance too. During the control phase, anticipatory guidance was completed by either the medical assistant or family physician. Rarely did both speak about the topic. Due to the time constraint of fifteen minute visits, the anticipatory guidance portion was often minimized and consisted of a few topics. These topics usually were restricted to eating habits, screen time, amount of sleep, and wearing a

helmet when bicycling. Furthermore, only three minutes were spent on anticipatory guidance. When the behavioral health intern completed anticipatory guidance, this cycle took fourteen minutes, almost four times as long as what was recorded during the control phase. During this time, more topics were discussed, including swimming, stranger danger, good touch vs. bad touch, dating, and nutrition. Depending on responses, a few topics were explored in more depth. Based on this quantitative data, it is clear that patients receive greater quality care specific to anticipatory guidance when behavioral health is involved during well-child checks.

Recommendations

As mentioned earlier, the data from this experiment is very limited. It would be advised to continue both the control and intervention phases to gain a further understanding of the variability of well-child checks and the impact behavioral health has on the anticipatory guidance portion of the visit. Developing additional metrics to record this impact is recommended too.

To determine the viability of including behavioral health in pediatric care, an examination of behavioral health and family physician schedules must be completed. Finding time periods to coordinate overlap to promote this integration is highly encouraged. This may include continuing well-child check days, or creating a simplified version of the model that is sustainable to include every day.

Finally, a longitudinal study to examine the effectiveness of behavior health integration in pediatric care is important. Following patients as they progress through adolescence and determining if they utilize behavioral health independent of physician visits may be correlated to early introductions to behavioral health during well-child checks. Recording

patient outcomes in regards to behavioral and social health may provide additional support and future funding for the expansion of behavioral health not only at HealthPoint, but at health centers throughout the nation.

Conclusion

Pediatric health has been a critical component of the American health system for over one hundred years. With the greater understanding of promoting preventative services in young children, tools such as anticipatory guidance have been created. In order to ensure quality of care as well as efficiency, examining wait and lead times is also important. With the inclusion of behavioral health at a community health center in Seattle, it was found that the anticipatory guidance portion of well-child checks get a greater focus, while marginally increasing lead times. Through further examination of this integration, family physicians may be able to provide both efficient and higher quality of care to young patients.

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