

Chipping away at the granite mountain: Challenges in transitional leadership for system change

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Abstract The University of South Alabama (UoSA) has a mission to deliver health care to the underserved community and provide for the education of future paediatric healthcare providers. Previously, the UoSA paediatric residency ambulatory clinic had a large percentage of missed appointments or 'no-shows', which hampered the revenue cycle, patient care and education of medical students and paediatric physicians in training. UoSA has since opened the door to enhance paediatric patient flow through the implementation of 'on demand' or an open access scheduling system. Open access scheduling has decreased the number of missed appointments. In addition, the volume of phone calls for families attempting to schedule future appointments also decreased in a short time. The implementation of this system involved an internal analysis performed on the problems that obstructed the clinics' performance. Under new leadership, the clinic created a new system of templates and schedules that accelerated the rate at which patients were seen and enforced individual responsibility among resident physician providers and advanced paediatric practitioners (APP). Scheduling changes included appointment templates that incorporated 'wave' scheduling and staggered start times. Implementation of these templates increased the number of available appointments or open access and decreased the number of no-shows. The number of incomplete charts decreased, resulting in an improved revenue cycle, as evidenced by collections. Residents were also given educational resources and visual reminders to improve the accuracy and consistency of billing and coding procedures. The educational efforts addressed the knowledge deficit about billing and coding, increasing the number of encounters that were documented as moderate complexity. The educational components consisted of reading papers and applying knowledge to billing and coding case scenarios or vignettes. In addition, billing and coding practices were reviewed in detail during patient encounters to provide instantaneous feedback. Overall, the clinic had improved access to patient care and a decreased number of missed appointments and missed billing opportunities,

leading to improved collections. Some of the issues discussed in this paper include chaotic clinic scheduling, incomplete charts affecting billing and revenue cycle, large numbers of no-shows for appointments, lack of resources due to a negative budget and a need for educating residents about billing and coding.

KEYWORDS: patient access, scheduling, revenue cycle, ambulatory clinic, redesign, education

INTRODUCTION

Academic residency clinics face challenges in providing patient care, educating residents in training and maintaining balanced budgets. One obstacle that encapsulates all three of these challenges is the 'no-show', the widespread issue of missed appointments in academic medical centres. This phenomenon is especially common in clinics whose patients are socio-economically disadvantaged and who reside in urban areas. No-shows limit the implementation of open access scheduling, and not only are they costly in terms of time, but they are also quite a financial strain on the clinic.^{1,2}

The University of South Alabama sought to enhance patient flow by examining other medical centres' means of operation. One Family Medicine resident clinic used statistical models to analyse several different possible clinic flow scenarios to manage early arrivals, late arrivals and no-shows.³ Certain clinics were able to eliminate backlogs of future appointments by carrying out open access scheduling.⁴ Another clinic saw an improvement in residents' perception of the training, teamwork and patient care of the paediatric residents, after a patient-focused primary care redesign was created with teams of faculty, advanced practitioners and paediatric residents.⁵

With this preliminary framework, the University of South Alabama first obtained baseline information of the issues concerning a general paediatric resident training clinic. A SWOT (strengths, weaknesses, opportunities and threats) analysis was performed with input from phone staff, clerical staff, nursing staff, administration staff and teaching faculty.

This information was used to develop a strategic plan and vision for the clinic redesign, which mirrored the concept of the Toyota production system to identify inconsistencies and to eliminate waste. The most obvious waste identified was the no-show rate and the volume of patients who tried to schedule visits. To resolve this unnecessary cycle, our team chose to transition to an open access system that would incorporate scheduling and template transformations.

Revenue cycle management was also reviewed with residents, APP and faculty. Training of providers, however, was identified as a need to both capture and collect revenue for all patient services. It was assumed that implementing open access scheduling would lead to a decrease in the number of no-shows and to an increase in appointment availability and the number of billable encounters.

In the clinic's transition to the new system, the team made a concrete intervention to accomplish this objective. It composed a modified quick reference coding booklet but based on a superbill from the American Academy of Pediatrics (AAP) published each year online at aap.org. This referential document included frequently utilised Current Procedural Terminology (CPT) codes for services, procedures and medications used in paediatric clinics. In addition to the booklet, brightly coloured labels with printed procedure codes, intended as visual reminders, were issued at service points throughout the clinic. The team also held small educational group sessions with residents that introduced

reference material and billing scenarios. Lastly, residents conferred with faculty on billing prior to submitting charges.

LEADERSHIP

Ideas for transitional change frequently fail during implementation. The goal was engagement, empowerment and participation of employees to manage change. Proposed changes require buy-in from the group. Teams must be formed and made functional prior to introducing changes. Individuals must feel valued and their input and ideas accepted. Employee group meetings were held, and all attendees were broken into small groups. Their input resulted in a SWOT analysis for points of service of the clinic. The employees were empowered to effect change. Team activities were completed to foster team building. In addition, small task forces were created, and employees volunteered to work on issues identified in the SWOT analysis. Long-standing issues were identified. The group became accountable for measurable results. Inefficiency of clinic operations came into focus. Some of the issues are discussed in this paper, including chaotic clinic scheduling, incomplete charts affecting billing and revenue cycle, large numbers of no-shows for appointments, lack of resources due to a negative budget and a need for educating residents about billing and coding. The leader must be patient with change and monitor progress in the transition. Communication and feedback are an important component of systemic change. Efforts can be expected to be ongoing and adjustments made for the current needs of the clinic.

Medical director candidate interview and the faculty-resident dyad

In 2015, as a candidate for the position of Medical Director at UoSA, formal face-to-face interviews were conducted between the author (candidate) and general

paediatric faculty members and advanced paediatric practitioners. Inquiries were made about clinic issues, and multiple issues were identified concerning the operational aspects of the clinic. A visit to the clinic revealed congested patient flow. During the interview process, it was revealed that 'ghost' templates were being used and that patients were being randomly assigned to attending 1, attending 2 or attending 3. In addition, patients were scheduled with unassigned residents under the faculty template. The number of patients who were scheduled was independent of the actual number of resident providers. Paper intake sheets were randomly placed in an 'inbox'. Residents randomly chose a patient intake sheet. After the encounter, residents presented their findings to the first available faculty member. Several residents were waiting in line owing to lack of faculty availability. Some faculty members were seeing patients independently, which left multiple residents under the supervision of one faculty member. At the end of the interview day, the chairman inquired about changes envisioned for the clinic. The immediate response included a proposal to create scheduling templates with a faculty-resident dyad. This would involve a variable number of residents each day with a range of 3–10 residents per day. In the analysis, clinic flow and clinical operations were chaotic and related to current template structure and ineffective communication. As an outside observer, employees were not looking at the results and were accepting the situation. The major concern was the ability to implement a more efficient schedule and change the clinic flow.

CHANGING TEAM FUNCTIONALITY Leadership role and curriculum development for high-functioning team

Previous leadership experience as associate programme director, and subsequently as programme director, led to the institution

of positive changes to a paediatric residency training programme at Texas Tech University Health Sciences Center (TTUHSC). In 2003, TTUHSC's residency training programme had an adverse review and was placed on probation by the accreditation council of graduate medical education (ACGME). In an effort to remove the probation status, annual resident retreats were instituted with a focus on team building and understanding how different personality types can collaborate. Subsequent ACGME review, in 2005, resulted in full accreditation for two years. In 2009, ACGME granted full accreditation with the maximal five-year interval. The curriculum for off-site annual resident retreats included (1) Myers-Briggs personality indicator (MBPI),⁶ (2) Thomas-Kilmann Conflict Mode Instrument (TKI),⁷ (3) SWOT analysis and (4) examination of reasons for team dysfunction along with debriefings. The residents were introduced to team building and problem-solving with low-risk, fun activities designed for the workplace.⁸ The residents performed SWOT analyses on each area of service lines and brainstormed for possible solutions. After the brainstorming activities, the group chose the best action plan. At UoSA, a compressed curriculum was utilised.

UoSA retreats, education and evaluation of the group and team formation

At UoSA, two on-site half-day retreats were conducted, one in September and the other in October 2016, with the nursing staff, the front office staff, chief residents, APPs, faculty and administrative personnel. The first meeting used a condensed and established curriculum that included (1) MBPI administration, (2) TKI Conflict Mode Instrument and (3) SWOT analysis. As part of the debriefing, individuals attached coloured circular self-adhesive labels onto flip charts identified as one of the 16 personality types for MBPI and individual preferred TKI conflict mode. The distribution of

the MBPI type was similar to the general population. During debriefing, it was pointed out that the work environment consisted of a diverse group of individuals who may view issues differently. The TKI results were heavily weighted with individuals identified as avoiding or accommodating. Of 110 attendees, 73 were self-identified as avoiding or accommodating and the rest as competitive, compromising or collaborating. The results of the TKI suggested that the majority of employees were not actively engaged in problem-solving. During the SWOT analysis, it was apparent that most employees could propose strengths and weaknesses, but few proposed opportunities or threats.

After the first meeting, the SWOT analysis was collated and used as feedback for the second meeting. The SWOT analysis provided a hierarchy of issues, from most to least commonly identified, that were addressed by separate task forces in the second meeting. Additionally, a review of the previous minutes of monthly quality assurance (QA) meetings from 2014 to 2015 identified problems. The QA group consisted of APPs, General Pediatric faculty and front office supervisors. Multiple challenges were identified that paralleled the SWOT analysis. Despite an awareness of these issues, the meeting minutes failed to demonstrate successful corrective action plans. There was no evidence that problems or proposed solutions had been researched in depth.

During the second large group meeting, the collated data of the previous minutes and SWOT analysis were used to create task forces. The team selected five task forces to address (1) scheduling, (2) phone calls, (3) no-shows, (4) resident education and (5) administrative issues of the clinic operations and revenue cycle. Each task force comprised five to six volunteers who were engaged in the change. A didactic presentation of Lencioni's *Five Dysfunctions of the Team* introduced the group to examination of

absence of trust, fear of conflict, lack of commitment, avoidance of accountability and inattention to results.⁹ The stage was set to define problems, analyse issues and recognise that change was possible at other institutions. The members appreciated that change was needed locally and were motivated to implement changes.

Leadership required agility to manage a diverse group of personalities and challenges. Ideally, one hopes to empower the entire group. Autocratic leadership was used to implement the faculty-resident dyad, wave scheduling and staggered start times owing to the urgency and the need to provide the team a 'win'. Certainly, this autocratic style is the least preferred leadership style, generally reserved for situations where individuals are less engaged and avoid issues or only respond in an accommodating manner.

The task force members (volunteers) were change oriented and exhibited their own internal drive. The medical director used a pacesetter style to encourage their proactivity. Literature (PubMed) searches were performed to review similar issues and solutions implemented at other academic medical centres. After team members reviewed publications that addressed problems in other clinics, these individuals accepted greater responsibility while involved in the task forces. They would explore alternative solutions and put them to the vote. In addition, the medical director had an open door policy and welcomed employees who had identified a problem within the clinic to offer their insight and consider possible solutions.

A laissez-faire style leadership was avoided. Prior to 2016, the administration's hands-off approach appeared to be a root cause for not addressing challenges in the clinic operations. In 2016, the task forces met, and the medical director facilitated some of these meetings to brainstorm and select the most viable action plan. The medical director worked with the administration to collect billing data along with phone data and reviewed results and

monitored implementation of action plans at monthly meetings. Some task forces kept logs (phone task force) or created distributed surveys (no-show task force).

The teams voiced frustration with the inefficiencies of the clinic, as evidenced by previous meeting minutes and the SWOT analysis. Since prior attempts to implement changes had been unsuccessful, the team expressed some hesitancy about attempting new changes. The faculty-resident dyad for scheduling templates, however, was a quick win based on the residents' evaluation of their outpatient clinic experience. The phone clerks and front office clerks also verbalised that the changes were positive. Quarterly meetings were conducted with the faculty, APPs, front desk supervisor and phone room supervisor. There was open dialogue about issues that were persistent. There were new anonymous suggestion boxes for employees and patients, and their comments were collected and placed on items for agendas at monthly meetings.

Scheduling task force

The medical director always attended meetings of this task force. The medical director presented templates and schedules, using the resident schedule and the faculty schedule to create the pairing or dyad. Educational materials were distributed to elucidate new ideas, including wave scheduling and staggered schedules. The office supervisors in this task force were involved with the roll-out to the scheduling clerks. Chief residents were also involved and communicated with residents about the clinic schedule changes. The scheduling task force's efforts led to better communication with the chief residents, who provided timely schedules. The residents' schedule was made three months in advance as opposed to the previous two-week interval deadline. In addition, scheduling changes for residents were immediately communicated via e-mail to the medical

director. The schedule was created in Excel and forwarded to the business operations personnel and placed into the electronic medical record in the section of the revenue cycle. The schedule changes generated a larger number of appointment slots to be offered to the families by the scheduling clerks. First available appointments for acute visits initially started at 14 days and then decreased to 3 days for acute visits. The first available appointment for well-child encounters decreased from two months to two weeks. These were efforts to emulate and implement open access to the clinic at UoSA.

Phone task force

The task force responsible for phone calls logged and tabulated the number of phone calls, the reasons for the calls and the specific personnel who addressed the calls. It was discovered that one-third of visits were for well-child encounters, and these types of visits were scheduled by any of four phone clerks. If the child was sick, however, the phone calls were diverted to a licensed practical nurse (LPN), who determined the level of acuity and the urgency of the visit. This one LPN answered an average of 110 phone calls per day. An algorithm with scripts was developed on the basis of a telephone triage textbook.¹⁰ The reasons for requested illness visits were divided into appointments for the same day, three days or one week. The well-child visits were generally scheduled for a one- to two-week interval. This intervention resulted in less time to schedule appointments as all phone clerks were trained to schedule for sick encounters. As a result, patients were not placed on hold to speak with the single LPN, and the number of dropped calls decreased. Informal feedback from the phone personnel was that patients were calling multiple times after dropping calls because of being placed on hold.

No-show task force

The no-show task force sent 100 questionnaires to parents who had missed a scheduled appointment to identify the reasons for no-shows. One-half of the no-shows were patients who did not have personal vehicles but relied on transportation by family or friends. At the time of the appointment, the motorists frequently had unreliable vehicles, and a quarter of the respondents indicated that the car was inoperable, which contributed to the no-show rate. This problem was not readily solvable but led to a greater understanding and compassion for the absent patients.

Resident education task force

This task force comprised the general paediatric faculty. The monthly meeting addressed resident education. Small group discussions were based on the Yale Primary Care Pediatrics Curriculum.^{11,12} The curriculum consisted of 104 topics to allow for weekly education sessions over a two-year period. Only two sessions covered very basic billing and coding. Residents requested additional billing and coding educational sessions, and additional sessions were provided.

Chief residents and residents reported that the backlog of patients in the clinic did not allow for adequate time for hands-on clinical teaching. As the clinic gained efficiency, faculty time for teaching and supervision increased. In addition, residents began to ask faculty about proper billing and coding for their patient encounters for the day. Billing data was requested from the director of operations to monitor charges from the baseline. The additional efficiency led to timely chart completion.

Another intervention was the creation of labels to remind APPs and residents about charges for office procedures and medications.

The paediatric residents provided assessments of their clinic experience

with New Innovations, that is, software to document resident training. The feedback for the clinic experience ranged on a Likert scale from 1 (poor) to 5 (excellent). In 2015, the average score was 2.1. In December 2016, the average Likert score was 4.2. The goal of this combined effort was to improve the work and teaching environment for employees, residents, APPs and faculty. An unfortunate weakness of this clinic redesign was the failure to measure patient satisfaction. This occurred because the more common problems that had been identified took precedence in the rank order of problems.

Administration task force

Inefficiency of clinic operations came into focus, with chaotic clinic scheduling, incomplete charts affecting billing and revenue cycle, large numbers of no-shows for appointments, a lack of resources due to a negative budget and a need for education of residents about billing and coding. From January 2016 to June 2016, there were over 400 incomplete charts each month, as a result of a lack of accountability of individual providers and supervision by faculty. Moreover, over 2,000 charts had not been completed or assigned charges, resulting in decreased cash flow.

By December 2016, the provider for each chart was identified by reviewing each encounter using information extracted from the charts, for example by identifying the provider who ordered vaccines, antibiotics or school excuses. From September 2016 to December 2016, the intervention of creating schedule templates consisted of a faculty and resident dyad. Audits of incomplete charts led to clear identification of the provider(s) for the patient encounter and date of service. Providers were aware that incomplete charts were traceable and the accountability in completing charts improved and led to a decreased number of incomplete charts from pre-intervention to post-intervention timeframe. During pre-intervention the time

frame, there were over 400 incomplete charts per month and during the post-intervention time frame, there were 75 incomplete charts per month. From January to March 2020, there were a total of 75 incomplete charts. In 2017, the number of days in accounts receivable was 74. In 2020, the number of days in accounts receivable had decreased to 21 days. UoSA had an automatic hold on charges for 7 days for chart review by the billers and coders prior to submission to third-party payers.

SCHEDULING CHANGES

We wanted to implement a standardised and structured system for making appointments that would respond to our patients' medical needs. Prior to September 2016, scheduling templates were generic for faculty and lacked resident templates. Patients were seen as soon as residents and faculty were available. There was no direct accountability for any individual resident.

Templates were modified to a dyad with the faculty member's last name paired with the last name of a resident physician. New templates introduced accountability, which resulted in a decrease in the number of incomplete charts each month (Figure 1). Completed charts led to a decrease in the lag days for submission of charges (data not shown).

WAVE/STAGGERED SCHEDULING

The team adopted templates that used modified wave scheduling and staggered scheduling. In a wave system, multiple patients are scheduled in sections of each hour.¹³ Patients are seen as they arrive at the clinic. The remainder of the hour is left open. This allows time for vaccinations, laboratory analysis, answering phone messages, documenting encounters, submitting billing, sending in electronic prescriptions, writing patient letters, making referrals or addressing patients who have multiple concerns.

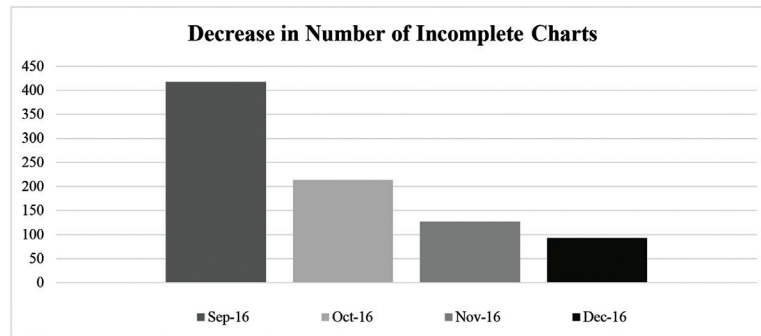


Figure 1: The number of incomplete charts for each month is shown after the implementation of faculty-resident dyad template. The number of incomplete charts decreased by 75 per cent in four months

Staggered start times were also incorporated into the templates. In this system, providers begin at different times and different intervals (15, 20, 30 or 40-minute intervals). Staggered start times are especially effective for practice settings that have patients who tend to be late or have unpredictable lengths of visits or if resident providers are less experienced and require more supervision. Staggered start times also assisted with room turnover. We paired briefer acute illness visits with more prolonged well-child visits/early and periodic screening, diagnostic and treatment (EPSDT) visits (Figure 2).

Because of the backlog of patients who needed appointments, parents called multiple times to schedule appointments. The new templates allowed additional patient appointment times and addressed the backlog of both acute visits and well-child visits, and then the number of phone calls requesting appointments decreased. There were a large number of dropped calls, indicating that parents who had been placed on hold simply hung up. Over a three-month period, the number of dropped phone calls decreased to 20 per day (Figure 3).

There is seasonal variability in paediatric clinics, as there are more acute care visits in the winter months and a larger percentage of well-child visits in the summer months. At UoSA, no-shows for visits were more

likely for well-child encounters. For all types of visits, the no-show percentage was 27 per cent in October 2015 and 23 per cent in October 2016 (Figure 4). Over this 19-month interval, the no-shows for well-child visits decreased by 25 per cent. For well-child visits over the same period, the no-shows decreased from 40 per cent to 25 per cent (Figure 5).

At UoSA, the general pediatric ambulatory clinic is composed of a resident clinic and a faculty-only clinic. The resident clinic accounts for two-thirds of the annual visits. Changes may take a significant long time until results are achieved. From 2014 to 2016, the number of clinic visits decreased from 31,250 to 29,800. From 2017 to 2019, the number of annual visits increased from 29,600 to 33,406 (Figure 6).

To maximise collections for each visit, it was determined that many providers usually billed only for 99213 at a higher rate than reported by the Office of the Inspector General. Codes for 99214 and 99215 were infrequently charged. This indicated that all providers needed to be educated on proper billing and coding. A quick reference coding booklet was created by substantially modifying a superbill from the AAP.org website for commonly used Current Procedural Terminology (CPT) codes for services and procedures and medications used in paediatric clinics (Figure 7).

Start Time	PGY1	PGY2	PGY3	PGY3
8:00	Break	Break	8:00	EPSDT
8:20	Break	Acute	8:15	
8:40	Acute	EPSDT	8:30	EPSDT
9:00	EPSDT		8:45	
9:20		EPSDT	9:00	Break
9:40	EPSDT		9:15	Acute
10:00		Break	9:30	Acute
10:20	Acute	Acute	9:45	EPSDT
10:40	Acute	Acute	10:00	
11:00	Break	Acute	10:15	Break
11:20	Break	Break	10:30	Acute
11:40	Break	Break	10:45	Acute
12:00	Break	Break	11:00	Break
12:20	Break	Break	11:15	Acute

Figure 2: Templates for wave and staggered scheduling for the morning and afternoon templates are similar. This is a representative example of scheduling for paediatric residents in their postgraduate year of training (PGY) for first-, second- and third-year residents. Advance paediatric practitioners' (APP) schedules were similar to those of PGY3 residents

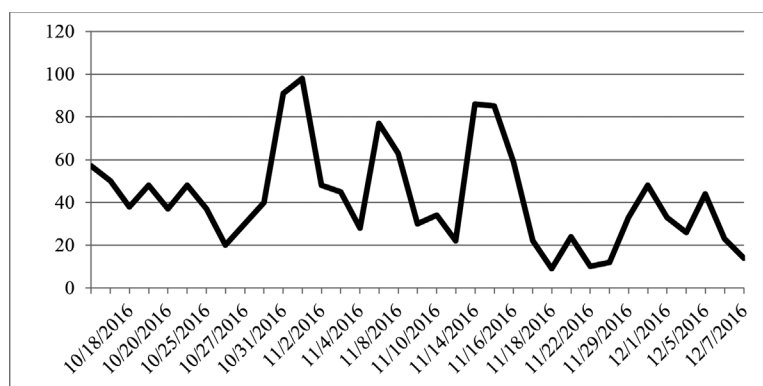


Figure 3: Decrease in number of dropped phone calls per day over time. Data obtained from Televox®

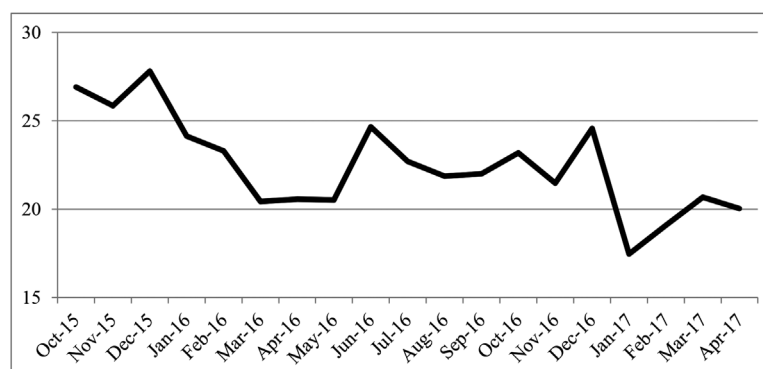


Figure 4: The percentage of no-shows for both acute care visits and well-child visits decreased over a 19-month period. The initial no-show percentage was 27 per cent, which decreased to 20 per cent. Interventions began on September 2016. Data was obtained from billing software (NextGen® and Cerner®)

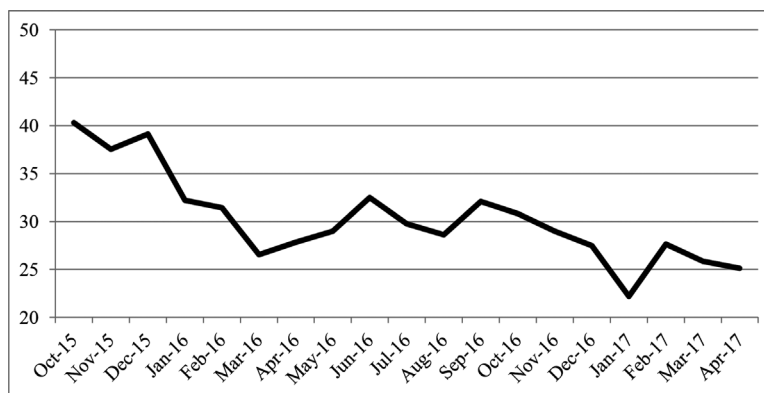


Figure 5: The percentage of no-shows for well-child visits decreased over a 19-month period. The initial no-show percentage was 40 per cent and it decreased to 25 per cent. Interventions began on September 2016. Data was obtained from billing software (NextGen® and Cerner®)

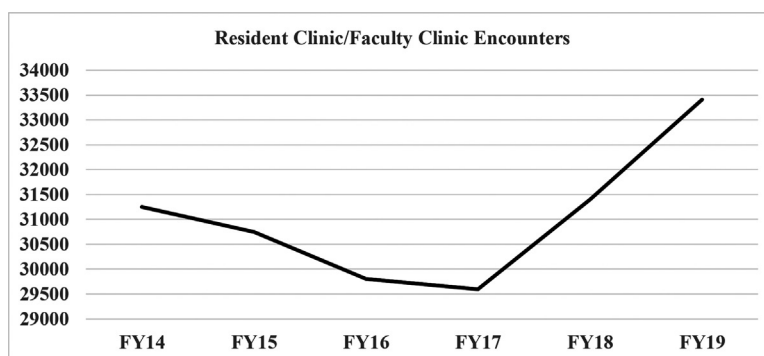


Figure 6: The number of annual visits for the general paediatric ambulatory clinic from fiscal year (FY) 2014 to FY 2019. Data was obtained from billing software (NextGen® and Cerner®)

MEDICATIONS	
J1200	Benadryl up to 50 mg
J0558	Bicillin C/R 100,000 units #__
J0561	Bicillin L-A 100,000 units #__
J1100	Decadron 1 mg #
J0171	Epinephrine 0.1 mg
J2550	Phenergan up to 50 mg
J0696	Rocephin per 250 mg #__
J7611	Albuterol, inhal, concentrated, 1 mg
J7613	Albuterol, inhal, unit, 1 mg
J7506	Prednisone, oral, per 5 mg
J7510	Prednisolone, oral, per 5 mg
J8540	Dexamethasone, oral, 0.25 mg #
S0119	Zofran (ondansetron)

Figure 7: A representative sample of an alphabetised list of medications selected for medications that were used at UoSA clinic. The code is in the left column and the description in the right column

Chartreuse-coloured self-adhesive labels were printed with procedure codes that were distributed at points of service throughout the clinic. Labels were created with CPT codes for office procedures, medications and health surveys and were used as visual reminders for billing purposes (Figure 8).

It was possible that evaluation and management (E&M) codes would not be understood by all providers. These providers, which included residents, APPs and faculty, were given some relevant articles and scenarios to read. Later, small group sessions with the providers were organised to discuss the material and to apply this information to case vignettes. Two of these educational sessions considered reference material and billing scenarios from the Yale Primary Care Pediatrics Curriculum, and three sessions focused on other coding scenarios and published reference articles.^{14–19} This setting encouraged real-time education and feedback as the residents discussed the material with supervising faculty. Residents discussed clinical care, assessed the appropriate level of E&M charge and determined whether there were any missed opportunities for CPT codes or E&M codes that may have applied.

Residents reviewed billing with faculty prior to submitting charges. They also discussed the appropriate E&M charge with the faculty to examine whether there was a missed opportunity and whether there were any omitted CPT code charges. This encouraged real-time feedback and education.

From FY 2017 to FY 2018, clinic visit volume increased from 29,600 to 31,400 encounters, or by 6 per cent. For the same period, however, collections increased from US\$2.85 to US\$3.45m, or by 21 per cent. The increase in clinic volume represents 6 per cent and only US\$3.0m in revenue. The additional US\$450,000 likely resulted in a change in the billing and coding patterns after education (Figures 9 and 10).

SUMMARY

Academic Medical Centers with clinics that are staffed by resident physicians face challenges that include a population that has high no-show rates, inefficiency that is introduced by training physicians who require close supervision, and providers who require education on topics that include revenue cycle and proper billing and coding.

Leadership must coalesce providers and create a functional team prior to introducing change to the clinic. Engagement and buy-in of team members is required to identify inefficiency in the clinic. When the system changes, results of these changes should be shared with the group and celebrated. Creating and implementing new scheduling templates had near immediate results in the no-show rates. Wave scheduling and staggered start times helped to address the inefficiency of residents in training. Introducing open access decreased the number of dropped phone calls in a short time span. Longer-range results were shown

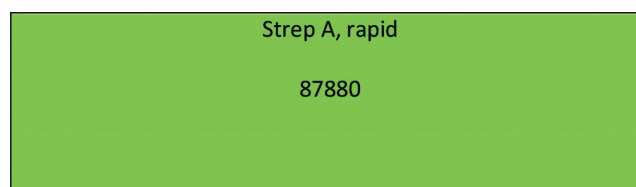


Figure 8: Example of a self-adhesive label to be removed by nursing and given to the provider as a reminder to submit these charges. Labels include the descriptor and the code

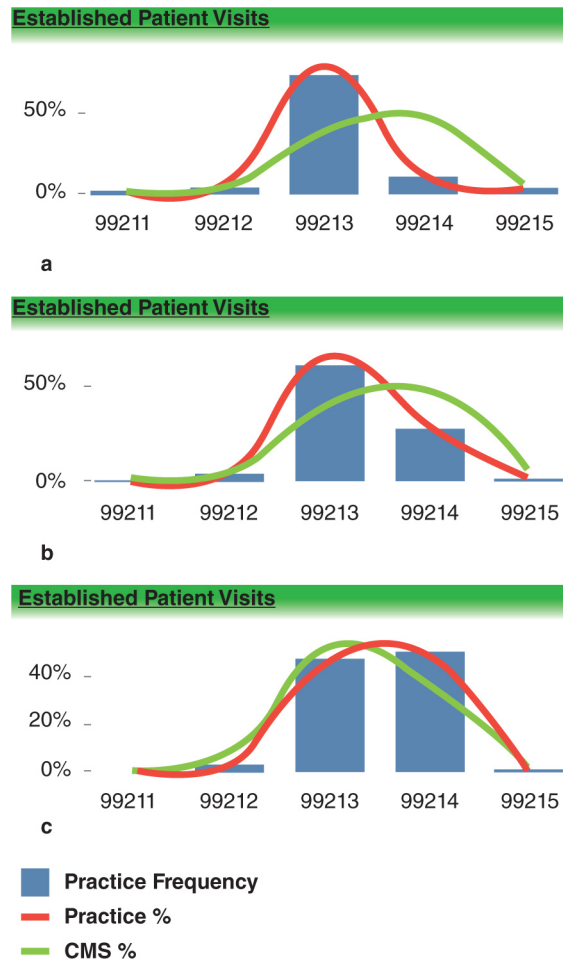


Figure 9: Billing patterns for different providers are shown for a PGY4 resident who did not attend educational sessions (a), one faculty member who reviewed billing with residents after education (b) and a physician assistant following education (c)

- a. E&M billing pattern for a PGY4 chief resident who did not attend educational sessions
 b. E&M billing pattern for a supervising faculty member with charges submitted by multiple residents
 c. E&M billing pattern for a physician assistant who staffed a complex chronic asthma clinic. The higher percentage of 99214 charges was appropriate for chronic and complex care for persistent asthma.

by a significant increase in the volume of annual clinic visits over two years and the reversal of a trend of decreased annual visits of the preceding visits. These changes require energy and effort, akin to using a pickaxe to dismantle a granite mountain.

Education of providers is time consuming and requires ongoing small group educational sessions. Education consisted of reviewing the literature on the topics paired with billing and coding scenarios, which required the application of new knowledge. The change in billing practices

was reinforced by one-on-one discussion between resident physicians and faculty. Embedding brightly coloured self-adhesive labels served as an effective reminder for coding opportunities for in-office medications, point-of-care tests and office procedures. Booklets also served as a quick reference resource that enhanced the billing and coding entry into the electronic health records. This resulted in better, more accurate billing and coding, leading to an increase in collections, which in turn improved clinic productivity and revenue cycle.

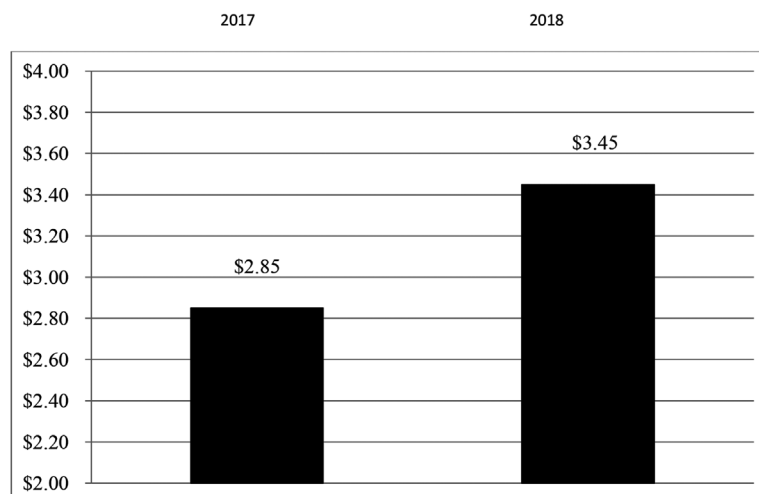


Figure 10: The collections are shown in millions of dollars; payments increased by 21 per cent from FY 2017 to FY 2018

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