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Impact of X+Y Scheduling on Pediatric Resident and Faculty Perceptions of Education and Patient Care

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Abstract

Purpose: Traditional half-day per week continuity clinic experiences can lead to fragmented education in both the inpatient and outpatient arenas. Five pediatric residency programs were granted the ability from the ACGME to create X+Y scheduling where residents have continuity clinic in "blocks" rather than half-day per week experiences. The aim of this study is to assess the impact X+Y scheduling has on pediatric resident and faculty perceptions of patient care and other educational experiences.

Methods: Electronic surveys were sent to residents and faculty of the participating programs both prior to and 12 months after implementing X+Y scheduling. Survey questions measured resident and faculty perception of continuity clinic schedule satisfaction and the impact of continuity clinic schedules on inpatient and subspecialty rotation experiences using a 5-point Likert Scale. Data were analyzed using z-tests for proportion differences for those answering Agree or Strongly Agree between baseline and post-implementation respondents.

Results: 126 out of 186 residents (68%) responded pre-implementation and 120 out of 259 residents (47%) responded post-implementation. 384 faculty members were sent the survey with 51% response pre-implementation and 26% response at 12 months. Statistically significant

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($p<0.05$) improvements were noted in resident and faculty perceptions of ability to have continuity with patients and inpatient workflow affected by clinic scheduling.

Conclusions: From both resident and faculty perspectives, X+Y scheduling may improve several aspects of patient care and education. X+Y scheduling could be considered as a potential option by pediatric residency programs, especially if validated with more objective data.

What's New: While X+Y scheduling has been used in internal medicine residency programs, pediatric programs are limited in its use by the ACGME. We describe the perceived impact of the only ACGME-approved multi-center pilot of X+Y scheduling on pediatric residents and faculty.

Keywords

Pediatric residency; Continuity clinic; X+Y schedule

Introduction

Outpatient continuity clinics are an important component of pediatric residency training for both educational and patient care experiences. These clinics are so vital to the education of pediatric residents that The Accreditation Council on Graduate Medical Education (ACGME) Residency Review Committee (RRC) for Pediatrics requires that all pediatric residents experience at least 36 half-day continuity clinics in each year of training.[1] The RRC also states that these clinic sessions have to occur over no fewer than 26 weeks each academic year.[1] This requirement has been met traditionally with residency programs utilizing half-day per week continuity clinics during each rotation, including during inpatient experiences. Having clinics scheduled in this way could help to improve continuity with patients which is associated with improved patient outcomes;[2] however, competing demands from inpatient rotations may contribute to poor continuity.[3] Residents leaving inpatient rotations to attend clinic one half-day per week may also lead to fragmentation of the educational experiences for both the inpatient rotation and continuity clinic.[4]

Internal medicine (IM) residency programs were tasked with improving their ambulatory experiences in part to help reduce the tension between inpatient and outpatient continuity clinic responsibilities that arise from a traditional half-day per week clinic model.[5] One recommendation was to develop ambulatory block rotations where residents do not have any inpatient responsibilities.[6] Several IM residency programs then developed "X+Y" scheduling.[7–11] This model has various rotations during the "X" block with no scheduled continuity clinics. The "Y" block has a number of scheduled continuity clinics that may or may not be paired with another type of ambulatory experience. IM residency programs have developed different X+Y models including 4+1, 3+1, 4+2, and 6+2.[9] Implementation of X+Y in IM programs led to many perceived improvements including reduced fragmentation of care provided by residents, improved resident satisfaction with continuity clinic, and improved learning environments both in clinic and during inpatient rotations.[7,8] Yet, the constraints from the pediatric RRC limits the ability of pediatric residency programs to create the same type of immersive experiences.

One pediatric residency program has previously reported on X+Y scheduling.[12] The authors showed that X+Y led to improved continuity in outpatient clinic and decreased handoffs on inpatient rotations. This report is limited in the fact that they did not create a "true" X+Y model: residents had continuity clinics added during inpatient rotations due to the Pediatric RRC requirements described above. Given the perceived improvements X+Y scheduling had in IM programs, we wanted to determine if similar results would occur in pediatric residency programs. Utilizing the Advancing Innovation in Resident Education (AIRE) pilot from the ACGME[13] we sought to create "true" X+Y schedules in several pediatric residency programs across the United States. We compared perceptions of various patient care and educational experiences before and after X+Y implementation from both the resident and faculty perspective.

Methods

Through the AIRE pilot, we received a waiver of rule IV.C.6.e).(1) in the ACGME Program Requirements for Graduate Medical Education in Pediatrics stating that continuity clinic "sessions must not be scheduled in fewer than 26 weeks per year."[1] This allowed us to create and implement "true" X+Y schedules at five different pediatric residency programs in July of 2018. These programs include Advocate Children's Hospital – Park Ridge in Park Ridge, IL; Dell Children's Hospital in Austin, TX; New York University Langone Health in New York, NY; Rainbow Babies and Children's Hospital in Cleveland, OH; and University of Toledo in Toledo, OH. The residency programs are medium to large in size with total number of categorical residents at each program ranging from 24 to 84. Each participating residency program determined their X+Y schedule with the different models used shown in Table 1. Advocate Children's Hospital had created a "modified" X+Y schedule for their post-graduate year (PGY)-1 class similar to the type described above [12] prior to implementing the schedule in the entire program as part of the AIRE pilot. Only the PGY-1 class had a modified X+Y schedule, the other PGY classes utilized a traditional half-day per week clinic schedule. The other programs utilized a traditional half-day per week continuity clinic design for all residents with continuity clinic scheduled during almost all inpatient weeks prior to the switch to X+Y scheduling.

We performed a cross-sectional survey study to evaluate how X+Y scheduling compared to traditional half-day per week continuity clinic scheduling. The surveys were created after reviewing the literature on X+Y in IM programs.[7,8] Topics focused on perceptions of education in continuity clinic settings, continuity with patients, and inpatient workflows. Questions based on these topics were developed by a group consisting of one author from each site (REM, LT, HH, JB, JL). The faculty survey was then piloted with the other faculty authors for feedback (KW, PP, MBW, KP). These faculty encompassed outpatient general pediatrics, hospital medicine, and subspecialty pediatricians. Resident surveys were piloted at Advocate Children's Hospital in their PGY-1 class.

Prior to the initiation of X+Y, we sent surveys to both residents and clinical faculty at the participating institutions in July of 2018. All PGY-2 and PGY-3 residents received the baseline survey prior to the initiation of X+Y. They were asked to respond based on their experience during the 2017–2018 academic year when traditional scheduling models were

being used. PGY-1 residents did not receive the baseline survey as they had just started residency training. Faculty who received the survey were identified by residency leadership at each site as being faculty who spent time with residents in clinical arenas and would be able to determine how a change to X+Y would affect both education and clinical outcomes. A follow-up survey was sent in June of 2019, one year after initiation of X+Y, to all residents and previously identified faculty. To the best of our knowledge, no programmatic changes other than the change to X+Y scheduling were made that could have influenced responses. Surveys were distributed via email and utilized Research Electronic Data Capture (REDCap - www.projectredcap.org) software. The surveys were entirely voluntary and anonymous.

The resident survey measured perception of outpatient continuity, clinic schedule satisfaction, and the impact continuity clinic schedules had on inpatient and subspecialty rotation experiences utilizing a 5-point Likert scale (1-Strongly Agree, 5-Strongly Disagree) (survey available to readers upon request). Educational outcomes included whether continuity clinic scheduling allowed for adequate time for teaching both outside of rounds during inpatient rotations and during continuity clinic sessions. The impact of resident time on subspecialty rotations was also assessed. Patient care outcomes included perceived continuity with patients in clinic and the perception of how often continuity clinic schedules allowed residents to see patients for repeat visits. The perceived impact of continuity schedules on workflow and quality of patient handoff during inpatient rotations was also assessed.

The faculty survey asked participants to self-identify their clinical focus: general pediatrics, hospital-based medicine, or other subspecialties. Questions were then tailored to the area of focus to determine the perceived impact continuity clinic schedules had on general pediatrics, hospital-based, and subspecialty rotation experiences using a 5-point Likert scale (Appendix 1b). For general pediatrics, the survey assessed whether the schedule allowed for adequate time for teaching in clinic in addition to perceived continuity with patients in clinic and how well continuity clinic schedules allow residents to see patients for repeat visits. For hospital-based medicine, questions assessed faculty perceptions regarding resident schedules allowing for adequate teaching time outside of rounds and whether continuity clinic schedules impacted the workflow of inpatient services. Subspecialists were asked their perceptions regarding resident schedules allowing for adequate teaching time on subspecialty rotations and whether these schedules limited resident time on subspecialty rotations.

The baseline and follow-up surveys for both residents and faculty were identical with the exception of the follow-up survey asking faculty and PGY-2 or higher residents to give a preference between X+Y versus a more traditional continuity clinic schedule.

Quantitative data from the baseline and one year follow up surveys from all five participating institutions were analyzed using Microsoft Excel 2016 (Microsoft Corp. Redmond, WA). Responses of “Strongly Agree” and “Agree” on the 5-point Likert scale were combined for analysis to determine the percent of “Agree” responses. Since the potential respondents would be different individuals between the baseline and one-year

follow-up surveys given residency on-boarding, graduation, and faculty attrition, z-tests for proportion differences were utilized to determine statistical significance.

The institutional review boards at each of the participating institutions reviewed the study protocol and found the project to be exempt.

Results

Resident perceptions

Surveys were distributed to 186 residents across the 5 participating programs pre-implementation and 259 residents at 12 months post-implementation. The initial survey received 126 responses (68% response rate) and the 12 month survey received 122 responses (47% response rate). Resident outcomes evaluated can be divided into categories assessing continuity clinic, inpatient, and subspecialty experiences. The baseline and 12-month resident response data is shown in Table 2. X+Y was preferred over traditional half day per week continuity clinic by 94% of resident respondents.

For the continuity clinic measures, respondents perceiving the ability to have continuity with patients increased from 27% pre-X+Y to 60% post-X+Y ($p<0.005$). The perception of being able to see patients back for repeat visits rose from 25% of respondents to 45% of respondents with the implementation of X+Y ($p<0.005$). Adequacy of teaching time in continuity clinic also improved with X+Y with 35% of residents feeling it was adequate in traditional schedules compared to 72% with X+Y ($p<0.005$). Resident satisfaction with continuity clinic schedules improved from 23% with traditional models to 63% with X+Y ($p<0.005$).

Inpatient and subspecialty experiences for residents also showed improvements in each metric. Less residents perceived that continuity clinic schedules impacted workflow on inpatient rotations with X+Y compared to traditional schedules (79% pre-X+Y and 18% post-X+Y, $p<0.005$). Residents noted that quality of handoffs was being affected by clinic scheduling more during traditional models (69% of respondents) compared to after implementing X+Y (10% of respondents, $p<0.005$). X+Y led to increased perception of learning time on inpatient rotations with only 36% of residents feeling teaching time outside of rounds was adequate with traditional schedules compared to 63% of respondents with X+Y ($p<0.005$). For subspecialty experiences, 46% of respondents felt that traditional schedules limited their time on subspecialty rotations compared to 17% with X+Y ($p<0.005$).

We stratified resident responses by self-reported career path: general pediatrics, hospital medicine, or other subspecialty (Table 3). Statistically significant perceived improvements in all groups were seen for continuity schedule satisfaction, quality of handoffs being affected by clinic scheduling, and inpatient workflow. Responses from residents planning on entering subspecialties noted significantly improved perceptions for all questions. Resident responses were also stratified by location (Table 5).

Faculty perceptions

Surveys were distributed to 384 faculty members across the 5 participating institutions with 51% overall response pre-implementation (Advocate 85%, Dell 32%, NYU 45%, Rainbow 56%, and Toledo 44%) and 26% overall response at 12 months (Advocate 32%, Dell 28%, NYU 1.3%, Rainbow 28%, and Toledo 45%). Given the low 12 month response rate of 1.3% from NYU, we report the analysis of the faculty data both with and without responses from NYU in Table 4. When responses from NYU faculty are removed from both the pre-implementation and 12 month data, the overall response rates become 53% pre-X+Y and 32% at 12 months.

Looking at the overall data including all responses, each outpatient general pediatrics faculty outcome was improved in the X+Y model compared to traditional clinic schedules. Only 38% of outpatient general pediatric faculty respondents perceived that residents had continuity with patients at baseline compared with 93% after implementing X+Y ($p<0.005$). X+Y also increased perceived ability to see patients back for repeat visits with 36% pre-X+Y compared to 71% post-X+Y ($p<0.05$). Outpatient general pediatric faculty also perceived an increased amount of teaching time with X+Y compared to traditional schedules. For outpatient general pediatric faculty, 67% of respondents preferred X+Y over traditional schedules.

Some perceived improvements were noted with X+Y for hospital medicine faculty. Seventy-nine percent of hospital medicine faculty perceived that resident continuity clinic schedules impacted inpatient service workflow pre-X+Y as opposed to 31% post-X+Y. While an increase in perceived teaching time after rounds from 63% prior to X+Y to 81% post-X+Y was noted by hospital medicine faculty, this just missed statistical significance ($p=0.052$).

Subspecialty faculty results did not show much change between traditional and X+Y schedules. Fifty-four percent of subspecialty faculty respondents felt that resident continuity clinic schedules allowed for adequate teaching time on subspecialty services during both traditional and X+Y schedules. While subspecialty faculty felt there was some difference in the perceived time spent on subspecialty rotations (50% feeling clinic schedules limited resident time pre-X+Y with 60% post-X+Y) this was not statistically significant.

When responses from NYU were removed from both the faculty pre-X+Y and 12 month responses, the pre-implementation percent agree is altered as shown in Table 4. Even with this change, there is still a statistical improvement in the perception that residents had continuity with patients from general outpatient pediatricians and hospital medicine faculty perceived that resident continuity clinic schedules impacted inpatient service workflow less with X+Y scheduling.

Discussion

To our knowledge, this is the first study in pediatric residency programs to evaluate the perceived impact of X+Y scheduling from both residents and faculty. It is also the first study to evaluate “true” X+Y scheduling in pediatric residency programs where residents do not

have continuity clinic scheduled outside of their “Y” blocks. We have shown that transition to X+Y has perceived benefits for both residents and faculty.

Just as IM programs have shown perceived improvements in educational experiences in both inpatient and outpatient settings with transition to X+Y,[7–11] we have shown similar perceived improvements. In the outpatient setting, both residents and faculty perceive improved resident continuity with patients in the X+Y model compared to traditional half-day per week continuity clinics. Improved continuity with patients can increase resident satisfaction with continuity clinic experiences.[14,15] Residents also perceived increased ability to see patients back for repeat visits. Seeing the same provider for repeat visits leads to increased patient satisfaction.[16,17] X+Y scheduling also led to increased resident satisfaction with their continuity clinic schedules. This is possibly due to the ability to focus more on outpatient clinic education and patient care due to not being on an inpatient rotation at the same time. Residents and faculty also felt that X+Y scheduling led to an increase in time for teaching in continuity clinic. This is likely due to residents spending more concentrated time in continuity clinic without distractions from inpatient responsibilities. Removing residents from inpatient responsibilities during other educational experiences has been shown to increase educational outcomes.[18]

Perceptions of inpatient experiences also improved with the transition to X+Y. Residents and faculty both perceived improvements in resident workflow on inpatient rotations. They also perceived an increase in teaching time outside of rounds with X+Y although the faculty perception was not statistically significant. X+Y leading to perceived increases in teaching time is likely multifactorial. X+Y scheduling allows inpatient teams to stay whole since there are no pediatric residents leaving for clinic during the workday. This may allow for increased ability for inpatient faculty to come back for teaching sessions outside of rounds. X+Y can also allow subspecialty consultants to educate the resident who called a consult in the morning since they will not have left in the afternoon for continuity clinic. Residents also perceived that handoff quality improved with the transition to X+Y. Improved handoffs lead to overall better patient care and patient safety outcomes.[19] X+Y scheduling can decrease the number of resident handoffs per week due to no cross-coverage of patients by other team members when a resident leaves the inpatient team for continuity clinic.[12] Quality of handoffs is likely increased for the same reason as the primary resident for the patient can sign out directly to the night team rather than through an intermediary resident covering while she or he is away in continuity clinic.

Subspecialty faculty did not perceive a difference in time for teaching with X+Y. This may be due to different factors. First, we did not specify to subspecialty faculty to consider teaching time on inpatient services versus outpatient clinics. Second, some X+Y models may pair subspecialty elective rotations with continuity clinic “Y” weeks. This type of model may lead to some educational fragmentation if residents are not in subspecialty clinic every weekday; however, the resident data does not show concerns for fragmentation from their perspective.

Nearly all residents preferred X+Y over traditional clinic schedules. Improved continuity, increased educational time, and other outcomes shown above all likely impact that

preference. There may, however, be additional factors that we did not examine in our study. Being on an inpatient rotation is associated with increased rates of burnout in pediatric residents.[20] With X+Y, there are inherent limits to the number of consecutive weeks a resident can be on inpatient rotations. Spacing out inpatient blocks via X+Y scheduling may lead to decreased burnout in residents. X+Y scheduling may lead to increased time for residents to be together on the same rotation. One study has shown that residents can build close personal bonds between other residents on the same "Y" block.[21] The majority of faculty also preferred X+Y over traditional schedules although this was not as strong as in the residents. While most faculty outcomes were statistically improved, their change from pre-X+Y to post-X+Y was not as large as in the residents.

While our study is the first to evaluate "true" X+Y scheduling in both pediatric residents and faculty and is the first multi-center pediatric X+Y study, there are some limitations. First, we collected perception data utilizing surveys and have not yet collected objective information such as patient-level continuity data from electronic medical records or scheduling software. We also did not examine the objective amount of teaching time in the various educational settings. Perception of teaching time, however, may be just as important as actual available teaching time. A quantifiable amount of available teaching time may or may not be filled with teaching, making resident perception possibly a preferred outcome over the measured amount of time. Second, we had a lower response rate on the post-X+Y survey for both residents and faculty than we did for the pre-X+Y survey potentially leading to response bias. Given the low response rate of 26% in the post-X+Y survey for faculty, we performed additional analysis on the faculty data without the institution with the lowest post-X+Y faculty response rate. Some faculty perception measures still showed statistical significance with this additional analysis. However, the faculty outcomes may be more exploratory in nature given the low post-X+Y response rate. Third, it is difficult to determine the response rate for the subtypes of faculty as there may be some faculty who could self-identify as either a subspecialist or a hospital-based faculty. Examples include emergency medicine, critical care, and neonatology. Finally, multiple variables can be used to measure the impact of schedule changes for residents. We chose to focus on perceptions of continuity, inpatient handoffs, and time for educational activities. Further studies will need to be done to determine the impact on other variables such as resident wellness, readiness for independent practice, in-training exam scores, board passage rates, and patient/family satisfaction. Also, the five programs participating in the study are a small fraction of ACGME-accredited pediatric training programs. As X+Y becomes more popular, additional studies will need to be done to confirm these results in more pediatric programs.

Recommendations if considering X+Y

Each of our programs implemented X+Y schedules in different ways. When deciding upon X+Y, we believe it is best to involve all potential stakeholders especially continuity clinic faculty, inpatient faculty, and ICU faculty as X+Y will have significant effects on their rotations. Other rotations to consider are adolescent medicine, developmental/behavioral pediatrics, advocacy, and community pediatric rotations. Discussing X+Y with the leaders of these rotations in advance will likely make the transition smoother. We also recommend involving chief residents and program coordinators early in the process to help determine

which X+Y model will work best for your program and discuss any administrative changes that will occur. If your institution has an associated IM residency or combined IM/Pediatrics residency, they may already have a version of X+Y used for the IM residents. If that is the case, then an X+Y model may already exist at your institution potentially making the transition easier. Finally, continued assessments and discussions with residents and faculty will be key to the success of your transition.

CONCLUSION

Our data suggest that X+Y scheduling leads to perceived improvements in both patient care and educational outcomes including improved patient continuity, inpatient workflow and handoff quality, and increased time for teaching in both continuity clinic and inpatient settings. The majority of resident and faculty respondents preferred X+Y scheduling to traditional half-day per week continuity clinic scheduling. We hope these results will aid in the next review of the ACGME program requirements for pediatric residency programs to allow “true” X+Y scheduling at any interested institution.

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Table 1 –

X+Y Schedule Models

Program Name	X+Y Model	Continuity Clinic Model on Y Block
Advocate – Park Ridge	3+1	5 half days of clinic each week
Dell Children's Hospital	3+1	4 half days of clinic each week
NYU Langone Health	4+4	An average of 2 half days of clinic each week
Rainbow Babies and Children's Hospital	6+2	3 half days of clinic each week
University of Toledo	3+1	5–6 half days of clinic per week

Table 2 –

Resident Perceptions

	Pre-X+Y Agree	Post-X+Y Agree	p-value
CONTINUITY CLINIC EXPERIENCES			
I have continuity with my clinic patients.	27%	60%	<0.005
How often does your continuity clinic schedule allow you to see patients for repeat visits? #	25%	45%	<0.005
The resident schedule allows adequate time for teaching during continuity clinic sessions	35%	72%	<0.005
How satisfied are you with your current continuity clinic schedule? ##	23%	63%	<0.005
INPATIENT EXPERIENCES			
Resident staffing of continuity clinic impacts the workflow of inpatient services. (ICU, NICU, Wards)	79%	18%	<0.005
The quality of patient handoff for inpatient services (ICU, NICU, Wards) is affected by resident continuity clinic schedules.	69%	10%	<0.005
The resident schedule allows adequate time for teaching outside of rounds.	36%	63%	<0.005
SUBSPECIALTY EXPERIENCES			
Resident staffing of continuity clinic limits my time on subspecialty rotations	46%	17%	<0.005
Prefer X+Y		94%	

Response choices for questions above were based on a 5 point Likert scale using strongly agree, agree, neutral, disagree, strongly disagree except where indicated. The responses for the first two choices were combined for analysis to determine the percent of “Agree” responses.

always, usually, sometimes, rarely, never;

extremely, very, somewhat, slightly, not at all

Table 3 –

Resident Perception by Career Preference

	General Pediatrics		Hospital Medicine		Subspecialty	
	Pre-X+Y Agree	**Post-X+Y Agree**	**Pre-X+Y Agree**	**Post-X+Y Agree**	**Pre-X+Y Agree**	**Post-X+Y Agree**
N (%of total respondents)	33(26%)	43	17(13%)	13	63(50%)	58
CONTINUITY CLINIC EXPERIENCES						
I have continuity with my clinic patients.	42%	63%	29%	62%	24%	59% *
How often does your continuity clinic schedule allow you to see patients for repeat visits? #	39%	42%	12%	38%	22%	48% *
The resident schedule allows adequate time for teaching during continuity clinic sessions	30%	67% *	41%	62%	38%	78% *
How satisfied are you with your current continuity clinic schedule? ##	39%	65% *	12%	69% *	13%	34% *
INPATIENT EXPERIENCES						
Resident staffing of continuity clinic impacts the workflow of inpatient services. (ICU, NICU, Wards)	72%	19% *	82%	15% *	79%	19% *
The quality of patient handoff for inpatient services (ICU, NICU, Wards) is affected by resident continuity clinic schedules.	64%	12% *	59%	8% *	71%	9% *
The resident schedule allows adequate time for teaching outside of rounds.	45%	53%	41%	69%	28%	64% *
SUBSPECIALTY EXPERIENCES						
Resident staffing of continuity clinic limits my time on subspecialty rotations	30%	14%	41%	15%	51%	17% *
Prefer X+Y		96%		90%	96%	

* denotes $p<0.05$

Response choices for questions above were based on a 5 point Likert scale using strongly agree, agree, neutral, disagree, strongly disagree except where indicated. The responses for the first two choices were combined for analysis to determine the percent of “Agree” responses.

always, usually, sometimes, rarely, never;

extremely, very, somewhat, slightly, not at all

Table 4 –

Faculty Perceptions

GENERAL PEDIATRICS					**Without NYU**	
	Pre-X+Y Agree	**Post-X+Y Agree**	**p-value**		**Pre-X+Y Agree**	**p-value**
The resident schedule allows adequate time for teaching during clinic sessions.	63%	93%	0.047		71%	0.10819
The resident schedule allows for continuity with clinic patients.	38%	93%	0.001		46%	0.004
How often does the continuity clinic schedule allow a resident to see patients for repeat visits? #	36%	71%	0.029		42%	0.076
Prefer X+Y		67%				
HOSPITALIST						
	Pre-X+Y Agree	**Post-X+Y Agree**	**p-value**		**Pre-X+Y Agree**	**p-value**
The resident schedule allows adequate time for teaching outside of rounds.	60%	81%	0.052		69%	0.253
Resident staffing of continuity clinic impacts the workflow of inpatient services. (ICU, NICU, Wards)	79%	31%	<0.001		82%	<0.001
Prefer X+Y		75%				
SUBSPECIALTY						
	Pre-X+Y Agree	**Post-X+Y Agree**	**p-value**		**Pre-X+Y Agree**	**p-value**
The resident schedule allows adequate time for teaching during subspecialty rotations	54%	54%	0.966		56%	0.752
Resident staffing of continuity clinic limits resident time on subspecialty rotations	60%	50%	0.207		64%	0.1
Prefer X+Y		56%				

Response choices for questions above were based on a 5 point Likert scale using strongly agree, agree, neutral, disagree, strongly disagree except where indicated. The responses for the first two choices were combined for analysis to determine the percent of “Agree” responses.

always, usually, sometimes, rarely, never

Table 5 –

Resident Perceptions by Location

	ADVOCATE		DELL		NYU		RAINBOW		TOLEDO	
	Pre-X+Y Agree	**Post-X+Y Agree**	**Pre-X+Y Agree**	**Post-X+Y Agree**	**Pre-X+Y Agree**	**Post-X+Y Agree**	**Pre-X+Y Agree**	**Post-X+Y Agree**	**Pre-X+Y Agree**	**Post-X+Y Agree**
N	30	20	25	34	21	12	42	44	8	11
Response Rates	83%	56%	57%	52%	54%	21%	66%	46%	53%	48%
CONTINUITY CLINIC EXPERIENCES										
I have continuity with my clinic patients.	53%	95%*	0%	41%*	43%	75%	12%	45%*	50%	100%*
How often does your continuity clinic schedule allow you to see patients for repeat visits? #	63%	75%	0%	18%*	19%	50%	10%	41%*	50%	82%
The resident schedule allows adequate time for teaching during continuity clinic sessions	53%	85%*	28%	76%*	10%	50%*	33%	64%*	63%	91%
How satisfied are you with your current continuity clinic schedule? ##	57%	90%*	4%	53%*	14%	58%*	14%	61%*	25%	55%
INPATIENT EXPERIENCES										
Resident staffing of continuity clinic impacts the workflow of inpatient services. (ICU, NICU, Wards)	60%	20%*	92%	9%*	76%	33%*	90%	11%*	50%	55%
The quality of patient handoff for inpatient services (ICU, NICU, Wards) is affected by resident continuity clinic schedules.	53%	15%*	76%	3%*	76%	25%*	79%	2%*	25%	36%
The resident schedule allows adequate time for teaching outside of rounds.	60%	50%	32%	59%*	14%	67%*	31%	82%*	38%	18%
SUBSPECIALTY EXPERIENCES										
Resident staffing of continuity clinic limits my time on subspecialty rotations	17%	20%	52%	0%*	48%	42%	62%	7%*	50%	73%
Prefer X+Y		92%		100%		100%		100%		100%

*denotes $p<0.05$

Response choices for questions above were based on a 5 point Likert scale using strongly agree, agree, neutral, disagree, strongly disagree except where indicated. The responses for the first two choices were combined for analysis to determine the percent of “Agree” responses.

#always, usually, sometimes, rarely, never;

##extremely, very, somewhat, slightly, not at all