BRIEF
REPORTS

Effects of Clinic First Educational Interventions on Resident Wellness and Engagement

Holly Hofkamp, MD; Alex Verdieck, MD; Anthony Cheng, MD; NithyaPriya Ramalingam, PhD; Rebecca Rdesinski, MSW, MPH; Roger Garvin, MD

BACKGROUND AND OBJECTIVES: Tensions between clinical and hospital training, along with dysfunctional family medicine training clinics, have resulted in continuity clinic being the least favorite part of training for some residents. These factors are all contributors to burnout. We hypothesized that following Clinic First action steps to prioritize and enhance outpatient clinic would positively affect resident wellness and clinic engagement. This study describes our interventions and their effects within the Oregon Health & Science University (OHSU) Family Medicine 4-year Portland residency program.

METHODS: In July 2017 the Oregon Health & Science University Family Medicine Portland residency program implemented scheduling and curricular interventions inspired by the Clinic First model. We conducted a mixed-methods cross-sectional study using focus groups and surveys to understand the effects of these interventions on resident wellness and engagement.

RESULTS: Clinic First-inspired interventions, particularly a 2+2 scheduling model, decreased transitions within the day, and a clinic immersion month were associated with improved residents' perception of wellness. These interventions had variable effects on clinic engagement. Eighty-eight percent of interns surveyed about the month-long clinic orientation in the beginning of residency reported that they felt prepared managing continuity patients in the clinic setting and their upcoming rotations.

CONCLUSIONS: This study demonstrates that Clinic First-inspired structural changes can be associated with improvement in resident perceptions of wellness and aspects of clinic engagement. This can give educators a sense of hope as well as tangible steps to take to improve these difficult and important issues.

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The majority of family medicine clinicians provide care primarily in outpatient settings,[1] yet most family medicine residencies use rotation-based models favoring inpatient care. This comes at the expense of outpatient training, which often occurs in underfunded, dysfunctional clinics.[2-4] Furthermore, most programs lack structured outpatient curricula and fail to deliver skills necessary to thrive in evolving primary care models.[5] These tensions between inpatient and outpatient training result in clinic being the least favorite part of training for some residents.[4]

Inadequate training and dysfunctional practices are risk factors for burnout, which disproportionally affects family physicians.[6] Cumbersome geographic and mental transitions from inpatient to outpatient settings can further add to learner stress.[4] Models prioritizing quality resident outpatient training are needed to improve wellness.[7]

Bodenheimer, et al describe a Clinic First model that provides steps programs can take regarding resident scheduling, engagement, and work-life balance to emphasize quality ambulatory training in high-functioning clinics.[4,8,9] While studies have examined alternative scheduling models, few have evaluated comprehensive Clinic First educational interventions.[3, 10-16] Most studies focus on clinic metrics, leaving the effects on resident wellness and engagement largely unstudied.

We hypothesized that adopting a Clinic First model to make outpatient clinic training a cornerstone would positively affect resident wellness and clinic engagement.[9] This study describes our interventions and their effects within the Oregon Health & Science University (OHSU) Family Medicine 4-year Portland residency program.

From the Department of Family Medicine, Oregon Health & Science University, Portland, OR.

Methods

We conducted a mixed-methods cross-sectional study of 47 residents enrolled in our residency program from July 2017 to February 2019 (Figure 1). Seven scheduling and curricular interventions were made (Table 1) in July 2017.

Focus Groups

Eighteen months after intervention implementation, family medicine department research associates conducted focus groups without evaluative roles within the residency (Table 2). Primary outcomes were resident wellness and clinic engagement. To encourage a wide range of responses, outcomes were not predefined.

The study team developed a series of open-ended questions that asked residents to reflect on how the curricular interventions affected their wellness and engagement (See Appendix). Third- and fourth-year residents (PGY-3s and PGY-4s) were asked to compare their experiences before and after the interventions. Second-year residents (PGY-2s) had no preintervention reference point so were not asked to compare. First-year residents (PGY-1s) were not included, given their limited time in the program at the time of study. A third party transcribed the interviews.

We used grounded theory and immersion-crystallization approaches to transcript analysis. For the purpose of analysis, we defined wellness as performing well at work and gleaning meaning or enjoyment from work while maintaining physical and mental health. We defined clinic engagement as residents' enjoying clinic, being present for a patient panel, and being involved in clinic operations. Independent analysis and coding by each member of the research team was followed by in-person meetings to develop themes by consensus.[17]

Survey

We administered an online survey to two classes of PGY-1s (n=24 total) in August 2017 and August 2018 at the end of the clinic immersion month(s). We used open- and close-ended questions to understand residents' perceived preparedness for work in their continuity clinics and rotations after the intervention. Close-ended questions used a 5-point Likert scale. The OHSU Institutional Review Board approved this study.

Results

We convened five focus groups December 2018 through February 2019. Participants included 6 of 12 PGY-2s (50%), 9 of 12 PGY-3s (75%), and 8 of 14 PGY-4s (57%). Emergent themes around wellness and clinic engagement included control and predictability in one's schedule, transitions within the day and between rotations, duration and intensity of rotations, continuity, connection, work/life balance, and clinic operations (Table 3).

Completion rate for the survey was 70% (17/24); 88% of residents reported feeling prepared for rotations and managing continuity patients. Residents reported they would feel more prepared with increased clinical sessions, electronic health record inbox training, and community activities. They also recommended fewer didactic lectures.

Discussion

This study provides early data on the potential effects of Clinic First interventions on resident wellness and clinic engagement. Themes suggest the 2+2 model, decreased daily transitions, reduced inpatient time, and the clinic immersion month are associated with improved perceptions

Figure 1: Timeline of Clinic First Interventions: Preparation, Implementation, and Analysis

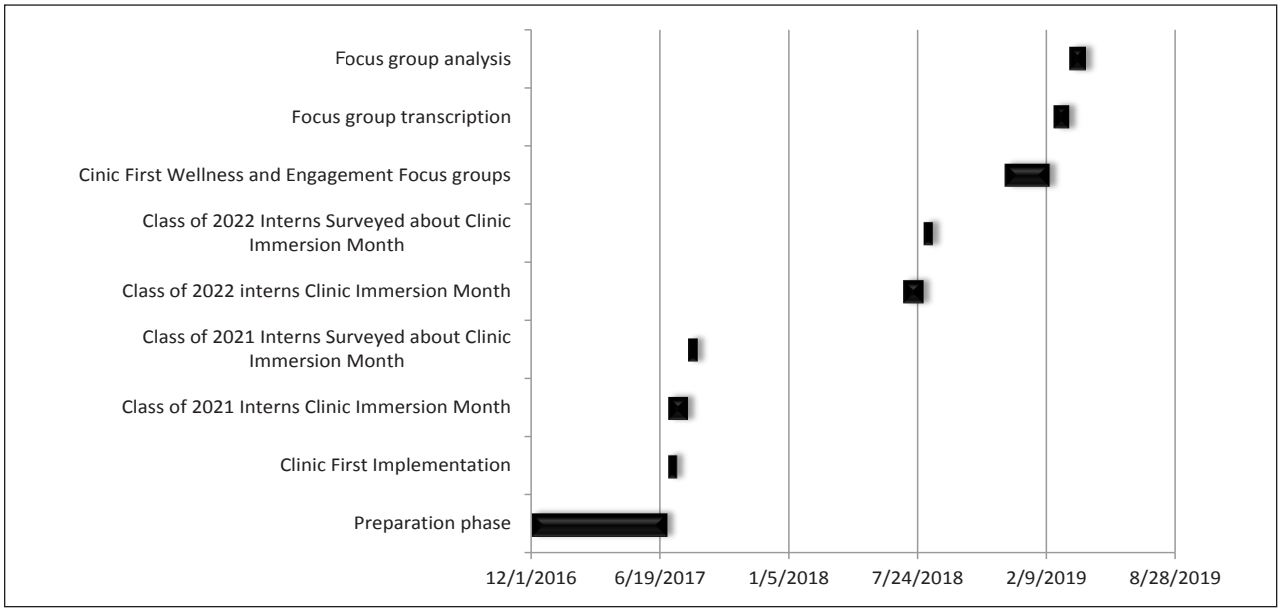

Table 1: Clinic First Interventions

	Intervention	Description	Rationale
Scheduling	2+2 scheduling	Shortened the duration of each instance spent in an inpatient clinical learning environment from 4 weeks to 2 weeks. Each inpatient block alternates with 2 weeks of outpatient block that averaged three to five continuity clinic sessions. This resulted in 2 weekends off out of 4 most months of residency.	Improve patient-centered continuity, visit numbers, resident wellness, clinic team dynamics
	Decreased daily transitions	Decreased number of times residents transitioned from the hospital to clinic within a day from ~90 per year to 30.	Ease tension between inpatient and outpatient duties to promote resident wellness
	Clinic immersion month	Added a month-long clinic orientation month held at the start of intern year that includes multiple clinic sessions, EHR and workflow efficiency training sessions, and other didactics.	Integrate residents into their clinic teams earlier to accelerate competence in clinic setting and increase their sense of belonging within the clinical team
	Reduced inpatient time	Removed one month of inpatient medicine from intern year as the program had adequate inpatient training without this month	Make room to add more clinic time and curriculum
	Alignment of resident schedules with clinician meetings	Moved clinic clinician meetings to the noon hour on resident conference day to facilitate resident attendance.	Increase attendance at meetings essential to clinic engagement
Curricular	Clinic rotation with structured outpatient clinic curriculum	Added multiple 2-week clinic blocks with a longitudinal clinic curriculum in PCMH, EHR and workflow optimization, team-based care, data driven panel management, and clinic finances.	Enhance learning and efficiency in the outpatient setting
	Primary care transformational curriculum	Added longitudinal curriculum in leadership, population health, improvement science, information mastery, and health equity topics.	Increase resident participation in clinic-based transformation efforts

Abbreviations: PCMH, patient-centered medical home; EHR, electronic health record

of multiple factors known to contribute to wellness.[4,6,7,11] Increased transitions between rotations inherent to 2+2 scheduling are perceived as mostly positive with some caveats that appear to be based on learning style differences.

Clinic engagement themes suggest residents may feel more comfortable and present with their patients while in clinic, but continue to struggle with asynchronous patient care tasks and being involved in clinic operations. Specifically, clinician meeting attendance has not improved, likely due to the need to physically transition to clinic at noon without adequate travel time. Additionally, resident engagement in QI project meetings has not improved. While the ability and expectations of residents to attend these meetings has not changed, residents perceive that the 2+2 scheduling creates barriers to attendance and meaningful group work because it creates two separate cohorts of residents. These findings highlight the importance of evaluation and continual process improvement when undertaking curricular changes.

Table 2: Focus Group Composition (N=5)

PGY Level	Focus Group	# of Participants (N=23)
PGY2	Group A	4
	Group B	2
PGY3	Group C	3
	Group D	6
PGY4	Group E	8

In total, there are 38 residents; 12 PGY2s, 12 PGY3s, and 14 PGY4s. Of these, 23 of 38 were able to participate in the focus groups.

This study has a number of limitations. As a single training site testing one approach to Clinic First implementation, our results may not be generalizable to other programs. Further, lack of a comparison group inhibits us from attributing causality to interventions. Bias among the analysis group is a possibility, as they created the study interventions.

Table 3: Focus Group Qualitative Themes and Exemplar Quotes

Theme	Description	Exemplar Quotes
Control and Predictability	Regularly-spaced outpatient rotations with weekends off improved residents' sense of control and predictability in their schedules.	"…It [2x2 scheduling] makes some weeks a little bit more in control, and you can focus on those other elements of being a human. For me, that makes me feel more whole in a very spiritual, holistic way… I'm able to actually engage with the world around me more." [PGY3] "I can predict that, hey, if I need to take my car in to get fixed, I got to just get through this week and then anticipate that I can do that." [PGY3]
Transitions	Reduced daily transitions between clinic and the hospital decreased resident stress and increased feelings of being present with patients in both settings.	"I think not having to race off to clinics a couple of times a week when you're on inpatient setting [is a positive change]. That was…stressful [and] did not contribute to wellness." [PGY4] "…when I'm at clinic all day…I have more time to actually call the patients back that are acutely ill, or I'm very worried about, and I have time to check on them myself versus five seconds at home where I'm sending the nurse a message to call and check in on them" [PGY3]
	Increased transitions between rotations inherent to the 2+2 model improved wellness and learning for the majority of residents, but had negative consequences for some due to variation in learning styles.	"I'm somebody who gets pretty anxious when I haven't been on a service…for awhile. Having…regular transitions, it's easier to jump back into things." [PGY4] "…If you do two weeks and then you go back to clinic…you're seeing it a little bit more often, even though it's the same amount of weeks. I felt like I was learning better after that change." [PGY3] "You also get a bit more self-confidence of coming back to something that's semi-new again and realizing that you're better at it." [PGY3] "I was just starting to feel comfortable with skills and then rotating off of a service […]. I felt like I didn't have a lot of time just to get my feet underneath me." [PGY2]
Duration and Intensity of Rotations	Shortened duration of rotations to 2 weeks and alternating high-intensity rotations with low-intensity rotations improved perception of wellness.	"I think doing two weeks of anything is not too bad. No matter how bad those two weeks are, it's only two weeks." [PGY2]
Continuity	The 2+2 schedule improved perception of clinical and educational continuity for most residents.	"Being able to follow up with patients and follow them and see them again and do more coordination of care…makes me happy. I feel better at my job. I don't think I ever really felt like I was coordinating care in that capacity before." [PGY4] "It allows you to grab educational opportunities that you might otherwise miss, so you think of specifically procedures… It just seems a lot easier to say, 'Hey, can you wait two weeks? I'll be back in clinic.' Or, 'I'm in clinic next week.'" [PGY4]
Connection	Earlier and more regularly spaced time in clinic improved sense of connection to residents' home clinics.	"…With the change, regardless of the year, you're in clinic at least every two weeks. I think that feeling of increasing your sense of belonging, increasing your comfort within your clinic." [PGY4] "With the two-by-two curriculum, they have started to make your clinic be your home. That was something that I missed out on. My first three months of residency, I probably went to my clinic three times in those three months. Now, I think, they start out, the whole first month they're basically in their clinic." [PGY4]
Work/Life Balance	Regularly spaced outpatient rotations and weekends off improved residents' ability engage in wellness activities.	"I think in terms of self-care…you know you have more flexibility on your two weeks outpatient, so you know for at least two weeks of the month…I can consistently exercise. I can consistently cook healthy dinners, and it's just a bit of a relief…" [PGY3]
	Asynchronous electronic health record work contributed to resident's struggle to find a comfortable work/life balance.	"There's virtual work all the time, so we always have notes. We always have our patients who are asking us for things on our inbox. We always have emails from the residency or from our clinic, so there's tons of virtual stress that you are engaged in even if you are away from the hospital or from the clinic." [PGY3]

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Table 3: Continued

Theme	Description	Exemplar Quotes
Clinic Operations	Aligning resident schedules with clinician meetings had a variable impact on ability of residents to attend.	"I feel like I've been able to go to more department meetings, provider meetings, that sort of thing." [PGY4] "…It's maybe made it harder for me because I'm on the rotation line where, for the most part, when we have clinic conference, I'm on inpatient. That means pretty much every single month, I miss provider meetings and things like that." [PGY3]
	Scheduling changes were perceived as having a negative impact on attendance at quality improvement (QI) project meetings and ability to form cohesive work groups around resident QI projects.	"I would like to specifically talk about QI projects …Each class is split into two cohorts who typically are alternating between inpatient and outpatient rotations. Typically, only the cohorts that are on their outpatient rotations can make it to…work on our clinic QI projects." [PGY2]

Measurement bias is also possible as our clinic immersion month survey measured resident preparedness, which we viewed as a surrogate for wellness and engagement.

This study focused on the scheduling aspects of our Clinic First transition. It will be important to further study optimal Clinic First scheduling models and curricular interventions and methods for blending inpatient and outpatient care responsibilities.

Nationally, many programs have interest in moving towards a Clinic First model.[18] The implication that this model could improve resident perception of wellness and clinic engagement can give educators a sense of hope when tackling these difficult and important issues.

PRESENTATIONS: This study was presented at the 2019 Society of Teachers of Family Medicine Annual Spring Conference, April 30, 2019, Toronto, ON, Canada.

CORRESPONDING AUTHOR: Address correspondence to Dr Holly Hofkamp, 3303 SW Bond Ave, Portland, OR 97239. 503-494-4114. Fax: 503-494-3457. hofkamp@ohsu.edu.

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