

Where's My Doctor? The Development of a Novel Electronic Health Record Based Tool to Aid in the Pilot of Scheduled Based Family-Centered Rounds on an Inpatient Pediatric Hospital Medicine Service

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What might the attendee be able to do after being in your session?

Attendees will learn how they may be able to create a similar clinical support tool within, or linked to, their own electronic health record. Additionally, attendees will learn how we developed this innovative process and how they may be able to adopt a similar workflow in their own hospitals (whether adult or pediatric).

Description of the Problem or Gap

Family-centered rounds on our pediatric hospital medicine (PHM) teaching service are often prolonged with unpredictable progression. This contributes to inconsistent nursing participation, inefficiencies in patient care, and variable end times. Moreover, no standard exists for the start time and the order in which patients are seen. Senior residents print a paper list from the electronic health record (EHR) but decide the order of patients to be seen at random. Consequently, we aimed to improve this process with the implementation of a schedule-based rounding process using an EHR based tool. With this clinical informatics based quality improvement initiative, we had the following aims: 1) start 90% of rounds encounters within 30 minutes of the scheduled rounding time, 2) increase nursing presence on rounds to >90%, and 3) increase the percentage of rounds completed by 11:20am to 80% by November 2019.

Methods:

This initiative started in November 2018 and was focused on the PHM teaching service at a university-affiliated children's hospital. Building from another service's use of a previously created custom EHR scheduling tool, our information services team worked directly with front line providers on the PHM service to modify and improve the tool to fit our unique workflow. The tool was modified to pull in individual patient level data (e.g. patient location, discharge status, and preferred language) and applied a custom logic developed by the clinicians for rounding order to generate a schedule (Figure 1). Each morning before rounds, the senior resident was responsible for reviewing and publishing this schedule by an agreed upon time. Additionally, slots for teaching or buffer time for transit were created that the senior resident could add in between patient encounters with dynamic "drag and drop" action in the tool. Once published, the schedule was visible to all in the EHR and nursing staff were educated on where to access it. This information was communicated to nursing staff each morning by unit managers to encourage nursing attendance on rounds. Shared expectations were communicated regarding rounding start times and this was reinforced in the scheduling tool with a hard-coded default start time. Emails were sent at the beginning of each rotation block to senior residents with specific instructions on how to use the tool and included visual aids and an instructional video demonstrating tool use. Starting in June 2019, patients and families were given a +/- 30 minute time-frame surrounding their scheduled rounding time of when to expect the medical team at their bedside. Weekly check-in meetings were held with the medical team, nursing, and IS team members to discuss real-time issues with the process and tool. Refinements in the tool were made based on suggestions for improvement from end users.

Results

As of November 2019, 94% of rounds occurred within 30 minutes of scheduled rounding time, nursing presence increased from 76% to 93% and the percentage of rounds completed by 11:20 am increased from 19% to 74% (Figure 2). After the implementation of scheduled rounds, the percent of residents who were "somewhat" or "extremely satisfied" with rounds increased from 25% to 75% ($p < 0.001$). Weekly meetings revealed the following challenges: frequently rotating trainees leading to resident unfamiliarity with the process and tool, maintaining end times during high census, patients in multiple units, and extended discussions on complex patients.

Discussion

The use of a novel EHR-based scheduling tool was key in establishing a new rounding process on a busy inpatient PHM service. Clear communication and partnership with the information services team and front-line providers was crucial. The development and use of the tool enabled family-centered rounds to have more predictable start and end times, a shared mental model for rounding progression, and improved nursing attendance and overall efficiency. Residents were more satisfied with the new rounding process compared to prior.

Conclusion

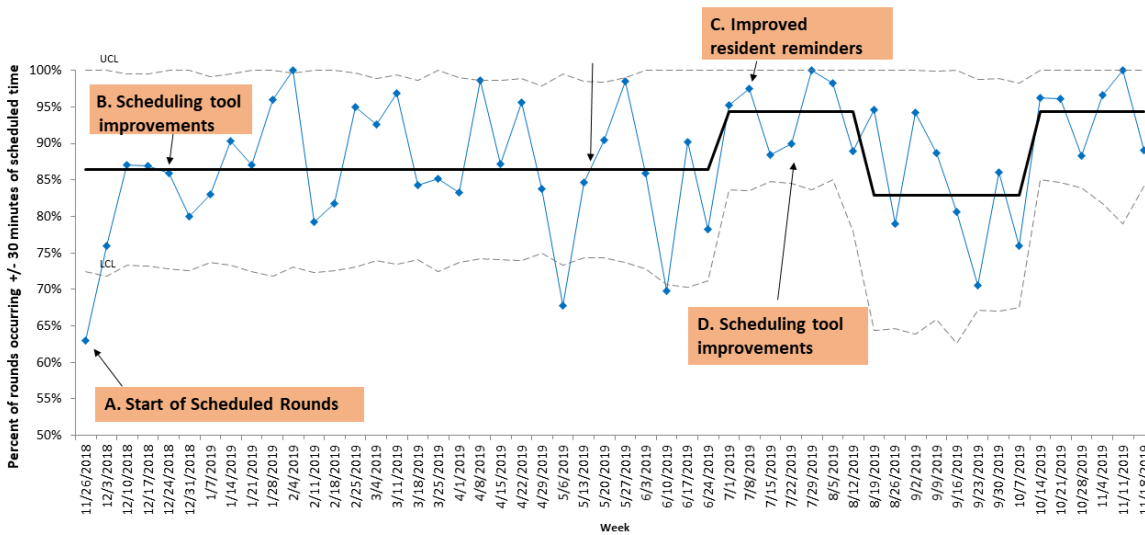
The use of a semi-automated EHR-based scheduling tool with custom and hard-coded patient level data elements can aid in a more efficient rounding workflow on a busy inpatient PHM teaching service and is adaptable for use in similar settings.

Figure 1. EHR-based Scheduling Tool Screenshot

10 Patients											Draft Only
Start Time	Patient	Unit	Room	Nurse	Service	Language	Discharge	DC Before Rounds?	Duration	Comments/Consults	
	White, Snow	PCU 300	3010-A	Andrews, Kristina M (19714)	PAMF	Spanish	Tomorrow	Yes			
08:45	Med Rec, Testing	PCU 300	3024-A	Lpch, Ip Nursetwo	PAMF	English	> 48 hrs	No	11		
08:56	Beast, Beauty ND	PCU 300	3026-A	Inpatient, Nurse	PAMF	English	> 48 hrs	No	11		
09:07	Buffer Slot #1								10		
09:17	Delirious, David	CVICU 320	3218-A	Lpch, Ip Nursetwo	PHM	English	> 48 hrs	No	11		
09:28	Eos, Teenager Donotuse	PCU 300	3038-A	Epiccare Link, Nurse	PHM	English	> 48 hrs	No	11		
09:39	Billyb, Iftest	PCU 200	2006-A	Lpch, Ip Nursetwo	PHM	English	> 48 hrs	No	11		
09:50	Main - West Transit #1								5		
09:55	Testing, Case	PCU 380	3800-A	Andrews, Kristina M (19714)	PHM	Armenian	> 48 hrs	No	13		
10:08	Bpam, December	PCU 380	3816-B	Lpch, Ip Nurse	PHM	English	Tomorrow	No	11		
10:19	Bpam, Four	CVICU 220	2208-A	Abramyan, Anna	PHM	Assamese	> 48 hrs	No	13		
10:32	Bpam, Six	CVICU 220	2236-A	Abramyan, Anna	PHM	Assamese	> 48 hrs	No	13		
10:45	End of Rounds								0		

Figure 2. Select Process Control Charts of Primary Metrics

A. Percent of rounds occurring +/- 30 minutes of scheduled time



B. Percentage of rounds encounters with nursing presence

