



Medical Student Participation in Patient- and Family-Centered Rounding: A National Survey of Pediatric Clerkships

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ABSTRACT

OBJECTIVE: Pediatrics rotations may be medical students' only experience with patient- and family-centered rounding (PFCR). It is unclear how students participate in or are prepared for PFCR. We surveyed national pediatrics clerkships to determine the prevalence of PFCR and the proportion providing orientation in order to inform a needs assessment for PFCR orientation.

METHODS: A 5-item peer-reviewed survey was distributed to the Council on Medical Student Education in Pediatrics (COMSEP) membership as part of a larger survey in 2017. Institutional differences among programs performing PFCR were compared using chi-square and *t*-tests. Responses to 1 open-ended question were coded and grouped into broad categories using content analysis.

RESULTS: The full COMSEP survey received answers from 190 participants representing 103 medical schools. Our questions received 174 responses representing 94 schools (98 training sites) and had an 85% (83/98) prevalence of student PFCR participation. Although most (*n* = 108; 85%) reported that their students received PFCR orientation, half (*n* = 62; 49%)

considered orientation "informal," and only 2 reported using published curricula. After didactics, the most common orientation materials were handouts (*n* = 33; 26%), videos (*n* = 13; 10%), and role play (*n* = 7; 6%). Orientation was most commonly initiated at the start of clerkship (*n* = 62; 49%) by clerkship administration (*n* = 38; 30%), but 20% (*n* = 26) reported resident-led orientation. Qualitative responses (*n* = 98) were coded and organized into 4 themes; the greatest perceived challenges for medical students on PFCR were communication and anxiety.

CONCLUSIONS: Although most students participate in and receive orientation to PFCR, there is wide variability in the content, timing, and administration of orientation. A nationally disseminated, evidence-based orientation curriculum may reduce educational variability and better prepare students for PFCR.

KEYWORDS: medical student education; patient- and family-centered rounding

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WHAT'S NEW

Patient- and family-centered rounds are performed by pediatric educators, but the scope of medical student orientation to and participation in this experience is unknown. This national survey describes current practices and could inform standardized curricula to prepare students for patient- and family-centered rounding.

In 2003, THE American Academy of Pediatrics recommended that patient- and family-centered rounding (PFCR) become standard hospital practice.¹ As a result,

pediatric inpatient providers often conduct PFCR, wherein the full teaching team (often some combination of attendings, residents, medical students, pharmacists, nursing staff, and care coordination) enters the room together and forms a plan for the day with the help of the patient and family. PFCR has been endorsed by multiple governing and accrediting organizations, including the Accreditation Council for Graduate Medical Education.² The use of PFCR has been shown to increase staff and family satisfaction,^{3,4} improve communication,^{5,6} and enhance resident education^{7,8} and is now the most common form of rounding conducted by pediatric hospitalists.⁶

Limited studies report that PFCR is educationally valuable for medical students;^{9,10} however, students express concerns about presenting information that is understandable to families, unclear expectations, and “pimping” during rounds.^{9–11} The American Academy of Pediatrics recommends that education and training in PFCR be provided to all students;¹² yet, uncertainty remains as to if and how institutions prepare students for PFCR, and the proportion of institutions involving medical students in their local PFCR practices is unknown.

Students may be less prepared for PFCR than residents, as third-year clerkships often represent medical students’ first clinical experiences, and the pediatric clerkship may represent the only consistent opportunity for students to participate in family-centered rounds during medical school training.¹³ Medical student concerns with family-centered rounds may also differ from residents, as students are less likely than senior residents to feel comfortable discussing patients with families present.¹¹ Thus, specific attention is needed to identify and develop orientation strategies for students.

As an initial needs assessment, the objectives of our study, using a survey of members of the Council on Medical Student Education in Pediatrics (COMSEP), were to determine the national scope of medical student participation in PFCR, the prevalence and type of student orientation to PFCR, and student challenges with this rounding model from the perspective of clerkship directors and leadership.

METHODS

COMSEP has members with diverse roles related to pediatric undergraduate medical education. COMSEP surveys its membership annually for general demographic information and specific research questions posed by COMSEP members. We submitted 5 questions about PFCR to the COMSEP Survey Committee; questions were pilot tested, revised, and included in the 2017 COMSEP membership survey. COMSEP members received an e-mail with a personalized link to the survey on May 1, 2017. During the 36-day study period, 2 reminder e-mails were sent to non-responders until the survey closed. Survey data were de-identified by COMSEP, stored in a confidential database, and made available to investigators for analysis. The study was considered exempt from approval by the Institutional Review Board at Johns Hopkins All Children’s Hospital in St. Petersburg, Fla.

To compare individual respondent demographics, responses were grouped by answer to the question, “Do 3rd year medical students on your general pediatric inpatient rotations participate in PFCR?” Those reporting “No, PFCR is not utilized at our institution” or “No, they just observe during FCR” were grouped together and compared to “Yes” and “Don’t know” answers using Pearson’s chi-square.

Resulting survey data were next analyzed at the institutional level to compare demographics (length of rotation, number of students both per year and per rotation, and

clerkship structure) between institutional training sites that do and do not have medical students participating in PFCR. Within duplicate responses from each site, discordant responses were considered false and removed if 2 or more additional responses were concordant. If only 2 responses were available and 1 was missing, the available response was selected as true. If only 2 responses were available and did not match or if only missing data were available, that response was excluded from analysis. Statistical analysis was performed on adjusted *n* totals.

Continuous variables were compared using *t*-tests, and categorical variables were compared by chi-square; all statistics were performed in SPSS Statistics 25.0 (IBM Corp; Armonk, NY). At the individual level, descriptive statistics were used to illustrate variability in practices related to student orientation to PFCR. Although individuals at the same institution may have responded differently, all data were included due to the possibility that a respondent could be aware of different PFCR orientation practices or barriers. One open-response question was analyzed using qualitative methodology via content analysis. Two authors (M.J.T. and N.M.P.) individually reviewed responses to identify codes organized into categories, and a third author (P.D.Q.) aided in resolving discrepancies.

RESULTS

The full 2017 COMSEP annual survey reported that 103 medical schools responded to at least 1 question, and there were from 1 to 4 participants per medical school. The 2017 COMSEP survey had an individual response rate of 36.5% (190/521) and a school response rate of 66% (103/156).

RESPONDENT CHARACTERISTICS

Our survey questions received a total of 174 responses (*n* = 521; 33.4%). Respondents were generally female (66.6%), evenly split between older and younger than age 45, and self-identified as clerkship or associate clerkship directors (66.6%). Individuals who did not respond or reported they did not know if PFCR was practiced at their home institution were more likely to report their job role as “coordinator” and less likely to be a clerkship director or assistant program director; there were no other significant demographic differences. The 30 respondents who did not answer or reported not knowing if their program participated in PFCR were excluded from further analysis.

TRAINING SITE CHARACTERISTICS

Included responses came from 94 schools (*n* = 156; 60%) and 98 unique training sites/campuses; 83 (85%) reported that medical students participated in PFCR, and 15 (15%) training sites did not have students on PFCR. There were no statistically significant differences in reported characteristics between sites that either did or did not include students in PFCR (Table 1).

Table 1. Training Site Demographics

Characteristic	No PFCR (N = 15)	PFCR (N = 80)	P Value*
Length of rotation (wk), mean (SD)	6.46 (1.25)	6.62 (1.19)	.655
Students per year, n (%)			.592
<100	4 (26.7%)	25 (33.8%)	
100+	11 (73.3%)	49 (66.2%)	
Students per rotation, n (%)			.570
<20	11 (73.3%)	50 (65.8%)	
20+	4 (26.7%)	26 (34.2%)	
Clerkship type, n (%)			.817
Departmentally based	13 (86.7%)	71 (88.2%)	
Interdepartmental or other	2 (13.3%)	9 (11.8%)	

PFCR indicates patient- and family-centered rounding.

Total N values for PFCR differ due to duplicate or missing responses per training site; see Methods.

*P value for length of rotation determined by *t*-test; for all other categories, by Pearson's chi-square test.

PFCR ORIENTATION PRACTICES

To further evaluate local practices related to how students were oriented and prepared for PFCR, we analyzed the 127 individual responses that affirmed student participation in PFCR. Half ($n = 62$; 49%) considered their orientation practices to be “informal,” and only 2 respondents used a published formal curriculum (Table 2). Aside from didactic lecture, the most commonly used teaching methodology reported was a handout ($n = 33$; 26%) followed by a video ($n = 13$; 10%). The timing of orientation was most commonly at the beginning of clerkship ($n = 62$; 49%), but one-third ($n = 37$; 29%) did not conduct orientation until the first day of the inpatient component of the clerkship. Clerkship directors were often responsible for performing the orientation ($n = 38$; 30%), but 26 (20%) responses indicated that residents were the primary orientation leaders.

STUDENT PFCR BARRIERS

One open-ended question at the end of our survey asked about the major perceived challenges to having students participate in PFCR. Ninety-eight answers were supplied; 2 of the 98 responses came from respondents at programs where students did not participate in PFCR. Content analysis of the 98 responses identified 17 codes organized into 4 major categories of 1) communication, 2) anxiety, 3) expectations, and 4) systems (Table 3).

COMMUNICATION

The medical student's ability to interpret medical terminology and basic science concepts into language that families can understand was a commonly identified challenge; for example, a respondent reported:

Balancing learning to “speak like a doctor”/learning the medical language, with explaining things to families using non-medical jargon.

A common phrase among many responses was “in front of families.” In relation to communication, many commented that students have difficulty knowing what exactly

Table 2. Practices Regarding Orientation to PFCR

Characteristic	No. (%) N = 127
Orientation*	
Informal	62 (49%)
Unpublished but formal	23 (18%)
Published formal curriculum	2 (2%)
Other	21 (17%)
Don't know	19 (15%)
Orientation content†	
Handout	33 (26%)
Video	13 (10%)
Role play	7 (6%)
Other (written in)	
IPASS	2 (2%)
OSCE/simulation	3 (2%)
Online module	1 (1%)
Orientation timing‡	
Start of preclinical years	5 (4%)
Beginning of clerkship	61 (48%)
First day of inpatient rotation	37 (29%)
Don't know	21 (17%)
Other (written in)	
On wards	2 (2%)
Via e-mail only	1 (1%)
Who performs orientation?§	
Senior resident	22 (17%)
Attending on student's team	27 (21%)
Attending <i>not</i> on student's team	7 (6%)
Clerkship administration	38 (30%)
Don't know	23 (18%)
Other (written in)	
Chief residents	4 (3.1%)
Site director	1 (0.8%)
I-PASS faculty	1 (0.8%)
Non-medical doctor	2 (1.5%)
A specific PFCR champion	1 (0.8%)
No response	1 (0.8%)

PFCR indicates patient- and family-centered rounding; I-PASS, patient handoff tool; and OSCE, observed structured clinical examination.

*If respondent chose more than 1, the most formal response was reported.

†Respondent could choose as many as desired.

‡If respondent chose more than 1, the earliest date was reported.

§Respondent could choose only 1 response.

Table 3. What Is the Biggest Challenge for Students on PFCR?*

Categories (No. of Code Applications)	Representative Codes
Communication (59)	Medical jargon What to disclose (FOF) Family/patient inclusion Various team members present
Anxiety (28)	FOF Lack of familiarity Increased observers Mistakes
Expectations (18)	Style Family present (FOF) Attending preferences Roles
Systems (19)	Time constraints Teaching Team size Census size Infection control

PFCR indicates patient- and family-centered rounding; FOF, front of family (a common phrase appearing in responses).

*Free-text question that received 98 responses; codes were applied 124 times.

to say when, and to whom, when in front of families, especially when there are social issues or potential diagnoses on the differential that might elicit strong responses from the families:

Knowing what to bring up in that setting versus what to save for a different conversation with the team. (But just eye contact w families is challenging, too!)

Adding to that challenge, several respondents commented on how students need to simultaneously include families in decision-making and communicate with others in the room:

Suggesting a plan of care in front of the patient and family and then discussing that plan with the medical team in front of the family.”

ANXIETY

Many COMSEP respondents perceived fear, anxiety, and lack of confidence that accompany students participating in PFCR. Some statements also referenced reasons why this anxiety may exist, such as students having concerns about making mistakes in front of both families and evaluators and lacking experience with the PFCR format:

Overcoming the concerns about presenting to a large group of people in front of the patients and all of the anxiety and apprehension that come along with that.

Very unfamiliar for most students and they feel uncomfortable in front of so many people, particularly the parents.

EXPECTATIONS

Several commented that students are used to a particular way of presenting a patient and noted the challenge that comes with adjusting that habit:

Modifying the presentation from the standard structured SOAP format they had been taught up to this point to the PFCR format [that] still contains SOAP style information but delivery is much different from what they have know[n] as “normal.”

Another common theme addressed differences in the attending physician’s preferred manner of oral presentations, which may lead to confusion on the medical student’s part with regard to what they are expected to say and how they should present:

Each attending has different expectations—some do it as formal rounds that happen to be in patient’s room or just outside the door and some do it truly as family centered rounds. Hard for students to know what their attending wants.

SYSTEMS

Systems-level factors were frequently identified as challenges to medical student participation in PFCR. Respondents noted time limitations for rounding that must include large volumes of patients, teaching, and gowning for infection control. Also, the student presentation can sometimes lead to suboptimal PFCR performance:

Lack of teaching at the bedside since so much energy is focused on balancing family communication and timeliness.

Difficulty in engaging the students when we cannot fit everyone in the room, the inability to hear the discussion.

DISCUSSION

In this national survey of medical student educators and coordinators, we found that 85% of training sites have medical student participation in PFCR during pediatrics clerkships. Findings from our study also revealed a wide variety of types of student orientation to PFCR, with many survey respondents being unsure if any orientation was provided. Furthermore, the individuals surveyed (mainly faculty) perceived several PFCR challenges for students, including issues with communication skills, anxiety, PFCR expectations, and the incorporation of various systems involved in the new style of patient presentation.

There is no Liaison Committee on Medical Education requirement that students must experience PFCR, and 1 study found no difference in shelf exam scores before and after instituting PFCR.¹⁴ However, PFCR participation has educational value for students in that it increases student empathy and enhances communication skills, in addition to providing learners with the opportunity to directly observe physicians modeling respect, sensitivity, and clinical reasoning.^{9,10}

We did not identify significant demographic differences between program sites that did (85%) or did not (15%) include students in PFCR; however, many potential barriers such as hospital policies, historical experience with

PFCR, and patient volume were not measured in our study. As increasing numbers of medical students compete for limited pediatric patient populations, students within the same institutions may be divided among several community or remote sites that have different PFCR practices. Four such sites were identified in our study, 1 of which reported not conducting PFCR. However, the identification of training not on the main campus required write-in responses from survey participants, thus limiting our ability to draw conclusions from this finding. Pediatric leaders should examine local practices to identify barriers and ways to include students in PFCR.

Our qualitative findings revealed COMSEP members' perceptions of multiple ongoing challenges for students, including communication with families, varied attending physician styles, and emotional distress, thus supporting findings of student concerns previously reported.^{9,10} These findings suggest that a standardized orientation preparing students for PFCR could be beneficial, particularly if it targets the key areas of concern identified in our survey—namely, reducing variability in expectations and preparing students for commonly encountered emotions and challenging case scenarios.

Further support for a PFCR orientation stems from the need to promote factors that optimize student self-efficacy, defined as an individual's belief about his or her capability to organize and execute a behavior, which is important for students adopting a family-centered care approach. In addition to having opportunities to observe and practice, the ability to 1) build a relationship with the family, 2) exchange information with the family, and 3) engage families in decision-making is crucial for the development of student self-efficacy in PFCR.¹⁵ The opportunities to observe and practice could be provided through simulation of care as it occurs in the clinical setting; consequently, it has been suggested that students in the preclinical years may benefit from an orientation to learn key family-centered care tasks.¹³

Our questions related to PFCR orientation for students revealed broad variability among practices observed by responding COMSEP members. Although published formal curricula for orienting medical students to PFCR do exist,¹⁶ almost none of those surveyed endorsed using them. Low use of such materials may simply be due to unfamiliarity or could be due to lack of sponsorship by major medical student organizations or governing bodies. Most respondents did some kind of PFCR orientation, but very few used engaging teaching methodologies such as video or role play. Residents were identified as delivering the PFCR orientation in 20% of responses; however, orientation may be highly variable among instructors within the same program. Standardization would allow both attendings and residents to practice teaching skills and would reduce time burdens on clerkship leaders, and best practices for such a model could be the focus of future studies.

This study was limited by recall bias of survey participants, and results were potentially influenced by confounding variables that were not measured in our 5-item survey. However, this study is strengthened by being part of a larger

national study with a relatively strong response rate and anonymous participant identification numbers that exclude duplicate responses. Of the 156 medical schools initially surveyed, we were able to capture responses from 94 (60%) unique programs, but we do not have information about the pediatrics clerkship structures for those schools not participating in the COMSEP survey, which may limit the generalizability of our findings. Finally, a weakness of our study is that medical students were not survey participants.

FUTURE WORK/NEXT STEPS

Future work is needed to identify reductions to barriers and promote student participation in PFCR at institutions that currently have limited student involvement. Further work is also needed to develop, implement, and evaluate the impact of curricula designed to enhance student preparation for PFCR. In addition, there is a need to design faculty development programs to improve the ability of attending physicians and residents to prepare students for PFCR. Finally, we plan to study attending physicians' perspectives of student participation in PFCR, as well as further explore student experiences with PFCR, to optimize the educational experience for students with this rounding model.

CONCLUSIONS

Survey respondents from student-inclusive PFCR institutions report wide variability in the content, timing, and performance of orientation to PFCR. In addition, a significant number of institutions do not practice PFCR. A nationally disseminated, evidence-based orientation tailored to address commonly identified challenges to student-inclusive PFCR may reduce educational variability and improve student experiences with PFCR during the pediatric rotation.

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