RESEARCH ARTICLE

Look Who's Talking: Comparing Perceptions Versus Direct Observations in Family-Centered Rounds

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ABSTRACT

BACKGROUND AND OBJECTIVES: Family-centered rounds (FCR) are an important and recommended component of pediatric hospital care. This study compares direct observations versus perceptions and ideals of who talks during FCR.

METHODS: A silent investigator observed FCR and noted who spoke, time in patient rooms, nurse and family presences, and patient information. After the observation period, the medical team was offered an anonymous survey regarding typical and ideal usage of time on FCR. Data analysis included general linear models and analysis of variance tests.

RESULTS: Thirty rounding sessions involving 234 encounters of FCR over a 12-week period were analyzed. On average, teams spent 7 minutes in each patient room and approximately the same amount of time outside of the room. Attending physicians were the dominant medical speakers during rounds (30.8%), and nurses spoke the least (2%). When inside a patient room, there was no significant difference between the percentage of time that attending physicians spoke (25.6%) and that of families and patients (23.0%). The surveys revealed that the medical team consistently underestimated the percentage of time attending physicians talked and desired attending physicians to talk less. They also overestimated the time spent in the patient rooms, the time families talked, and nurse presence during rounds and desired an increase in each of these areas.

CONCLUSIONS: The medical teams' perceptions of FCR do not reflect clinical observations. Medical teams believe and desire that attending physicians talk less and families and nurses talk more than observations reveal.

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Family-centered care has gained recognition as a vital aspect of caring for pediatric patients. Since 2003 the American Academy of Pediatrics and the Institute for Family-Centered Care have endorsed policy statements strongly recommending the use of family-centered care in hospitals, clinics, and community settings.[1,2] Studied benefits of family-centered care include improved family and patient satisfaction, shorter hospital stays, fewer lawsuits, and increased job satisfaction among health care workers.[1–5]

Family-centered rounds (FCR) continue to lack a uniform implementation despite recent recommendations.[6] In 2007, Sisterhen et al published *Defining Family-Centered Rounds* in which they proposed the definition as "bedside rounds in which the patient and family share in the control of the management plan as well as in the evaluation of the process itself."[7] However, this definition is interpreted in diverse ways, leading to wide variation in the implementation of FCR.[8,9] Differences extend even to the location, essential participants, and objectives.[10] Few studies explore these components of FCR in practice, and descriptions are often limited to surveys and self-reports.[5,11,12,13]

The time value of FCR has not been well defined.[14] A survey of residents in Indiana revealed overall support for the use of FCR, although concerns were raised about a loss of didactic teaching and efficiency during rounds.[12] Factors such as length of time in the hospital and order on the computer printed patient census have also been shown to significantly influence the length of time spent discussing the patient on rounds.[15] Another study looking specifically at FCR in a pediatric population found that parent participation, teaching, and rounding location did not significantly affect time spent during rounds.[3] However, few studies have examined relative degrees of participation by health care providers and families during pediatric FCR. Without a more objective characterization of what is actually occurring on FCR, as well as an understanding of the degree to which this differs from the perceived and ideal states, implementation and evaluation will continue to be subject to a high degree of individual and institutional variability.

We sought to better characterize FCR at our institution through a quantitative and time-based assessment of rounds, with emphasis on how the team spent its time on rounds and the duration of participants' speaking time. We hoped to identify factors that significantly affected rounding time by tracking various details of each patient encounter. In addition, we attempted to define the medical teams' ideals and perceptions of time spent on rounds to compare this with objective data.

METHODS

The study was conducted at a freestanding academic children's hospital. The general pediatric hospitalist teams consist of a pediatric hospitalist attending, a senior resident (either a second- or third-year pediatric resident), 2 interns, and 1 to 3 medical students. All teams are expected to complete rounds within a 2-hour time window on weekdays to attend a daily conference. At the time of the study, the hospital medicine group had agreed on the regular use of FCR for >3 years.

A 6-week pilot phase was undertaken to determine the quantity of data that could reasonably be gathered and develop an observation tool. A single pediatric hospitalist fellow (SP) served as the silent observer during both the pilot phase and the formal study period. A customized spreadsheet was developed, which, when paired with a stopwatch, allowed quick and subtle annotations of the predominant speaker in each 10-second interval. The spreadsheet was modified to allow tracking of the entry and exit times from a patient room, family presence, nurse notification before rounds, and nurse presence during any point of FCR. The observer kept track of any patient who did not participate in FCR. On the basis of the team's conversation about that patient, a reason for not conducting FCR was noted.

During the pilot period, the survey was also constructed and tested by volunteers for ease of use.

After the pilot phase, observations occurred on 30 weekdays over a 12-week period from March until May of 2011. Observations were divided between 6 general pediatric teams. Efforts were made to observe teams on varying days of the week throughout a month-long rotation. The participants observed during rounds included attending physicians, senior residents, interns, medical students, family (any adult present with the patient was counted as family), patient, interpreter (any person acting to interpret regardless of credentials), and nurse. Any other person who spoke during rounds was counted in the "other" category. This category included respiratory therapists, physical therapists, pharmacists, consultants, and social workers. Time spent demonstrating physical examination findings while not speaking was also included in the "other" category.

The silent observer was present with the medical team for the entirety of the scheduled rounding process. The observer carried a clipboard, which contained a stopwatch, a pen, a paper copy of the customized spreadsheet, and a copy of the team's rounding list for that day. The team members were aware the observer was studying FCR but unaware of the objectives of the study or of the specific data being gathered. The observer was introduced to families as an observer of FCRs. Observations were stopped when the team indicated that rounds were complete or when the majority of the medical team left to attend the afternoon lecture series. A note was made of any patients who were not discussed during the designated rounded time. These patients were seen by the attending and varying members of the medical team later during the day, although these encounters were not observed.

The team's rounding list provided the patient's age, length of hospitalization, working diagnosis, and medical complexity. The silent observer listed a patient as medically complex if >2 subspecialties were involved on a daily basis or the patient was currently in a medically fragile state that might require eminent transfer to a higher level of care. The observer assigned each patient exclusively to 1 of 9 diagnostic categories based on the working diagnosis given on the rounding list. Table 1 describes

TABLE 1 Diagnostic Category of the Rooms Entered During FCR

Category	Description	Examples	Total (%)
Failure to thrive	Infants <13 mo meeting the hospital's failure to thrive protocol	Undiagnosed organic etiology, nonorganic etiology	10 (4.3)
Gastrointestinal	Pathology primarily affecting the gut	Vomiting, diarrhea, constipation, Crohn disease, ulcerative colitis, pancreatitis, short gut	20 (8.5)
Infectious	Febrile illness suspected to be infectious in origin even if no organism was identified	Respiratory tract infections, skin and bone infections, bacteremia, meningitis, neonatal fevers, and urinary tract infections	132 (56.4)
Neurologic	Pathology related to the central nervous system	Seizure, migraine, concern of a primary neurologic disorder	9 (3.8)
Other	No clear fit into other categories	Neonatal jaundice, apparent life-threatening event	14 (6.0)
Pain	Pain that does not easily fit into another diagnostic category	Chronic pain syndromes, post–lumbar puncture headache	10 (4.3)
Psych	Those awaiting psychological evaluation or medical clearance to be placed into an inpatient psychiatric facility	Attempted suicide, suicidal ideations, homicidal ideations, severe depression, schizophrenia	2 (0.9)
Respiratory	Pathology of the respiratory tract not attributed to infection	Asthma, reactive airway disease	26 (11.1)
Rheumatologic	Primary rheumatologic process	Systemic lupus erythematosus, dermatomyositis, juvenile idiopathic arthritis	11 (4.7)

the 9 diagnostic categories and provides examples.

After each team was observed for a month, all members of the medical team (attending, senior resident, interns, and medical students) were then provided with an anonymous and voluntary written survey regarding FCR. The survey included questions on the percentage of time each participant in FCR was estimated to talk during a typical day of FCR and in an ideal version of FCR. The survey also inquired about the percentage of rooms entered, percentage of time spent in rooms, and nurse notification, and presence during a typical and an ideal day of FCR.

Approval from the hospital's institutional review board was obtained before conducting the study.

Initially all data were logged into an Excel document for basic statistical analysis. Demographic data were summarized using descriptive statistics. Differences among health care provider groups and families were compared using analysis of variance with Tukey's test. A general linear model was used to assess health care worker and family factors associated with significant differences in communication times. To be included, factors needed to be significant at $P < .05$ level.

RESULTS

Direct observations were made for 30 full rounding days. This included 3355 minutes of observation, which translated into the recording of 20 130 different 10-second intervals. Each team had the same core senior resident and interns for the month but alternated between 2 attending physicians during that time period. This resulted in 11 attending physicians, 6 senior residents, 11 interns, and 16 medical students being observed.

During the observation period, the teams conducted 301 discrete rounding events. Two hundred and thirty-four of the rounding encounters were conducted in the patient's room with at least 1 family member present and were labeled as FCR. All encounters of FCR occurred inside a patient room, and at no time during the observation period did families speak to the team outside their room. Patients who were observed on >1 occasion were noted, resulting in observations of FCR involving 211 different patients. No patients discussed during the designated rounding time were excluded from the study.

On average, the teams started rounds with 11.4 patients on their census (± 2.8), rounded on 10 patients during the designated rounding time (± 2.6), and entered 8.2 patient rooms per day (± 2.5). Tables 1 and 2 include basic demographic data on the patients and families.

The data can be subdivided to look into how time was spent inside and outside the patient room. Nearly half of time on rounds was spent inside a patient room (50.3% vs 49.7%). On average, teams spent ~7 minutes in each patient room entered, with a range of <1 minute to 23 minutes. Table 3

TABLE 2 Patient Age and Family Attendance of the Rooms Entered During FCR

Age or Adult Presence	*n* (%)
Patient age category	
Infant (<1 y)	80 (34.2)
Toddler (1–3 y)	48 (20.5)
Preschool (3–4 y)	18 (7.7)
School age (5–13 y)	66 (28.2)
Adolescent (>14 y)	22 (9.4)
Adult presence	
Mother	135 (57.7)
Father	12 (5.1)
Mother and father	49 (20.9)
Mother, father, and other	10 (4.3)
Mother and grandparent	13 (5.6)
Grandparent	5 (2.1)
Mother and other	6 (2.6)
Other	4 (1.7)

TABLE 3 Percentage, Mean, SD, and Range of Time Each Participant Spoke Inside Patient Rooms

Role on Team	% of Time Talking Inside a Patient Room	Mean Talking Time per Patient Room (min)	SD	Range of Talking Time per Patient Room (min)
Attending	25.6	1.8	1.9	0–13.7
Senior	9.1	0.6	0.8	0–7
Intern	20.2	1.4	1.1	0–5.5
Medical student	13.1	1.4	1.1	0–7.8
Family/patient	23.0	1.7	1.7	0–16.7
Interpreter	4.5	2.1[a]	1.2[a]	0.3–5.2[a]
Nurse	0.9	0.1	0.3	0–2.0
Silence	0.7	0.0	0.1	0–0.5
Other	3.1	0.2	0.5	0–4.8

[a] Mean and range of interpreter talk time per patient room only include the rooms with limited English proficiency.

illustrates who was and was not talking inside a patient room, and Supplemental Fig 3 shows a box-and-whisker plot of the times each person spoke in a patient room. Although teams always had 2 interns and on average had 2 medical students per day, it was rare for multiple interns or medical students to speak in the same patient room. There were 18 occasions when both interns spoke in a room, and only 3 occasions where >1 medical student spoke in a room.

Teams averaged 6.4 minutes between entering different patient rooms with a range of 10 seconds to 42.5 minutes. While outside the rooms, attending physicians spoke the most (36% of the time), followed by interns (21.3%), then senior residents (17.5%). Medical students spoke less outside the room (8.8%). There was more silence, and other noncategorized speakers outside the room than inside the room (6.5% and 6.8%, respectively). Outside the room the nurses spoke the least of any other category (3.2%). Supplemental Fig 4 shows a box-and-whisker plot of the times each person spoke between patient rooms. Discussions outside of patient rooms included, for example, reviewing information to be discussed with families, conversations regarding teaching topics, and rounding on patients in whom FCR was not to be conducted. Reasons for not conducting FCRs could be grouped into 6 categories: team ran out of time (16.4%), family or patient declined (13.1%), family not present (18.0%), patient was at procedure (9.8%), patient had known anxiety that could be provoked by FCR (9.8%), or team decided against FCR (32.8%). Common reasons for the team deciding against FCR included that the attending physician had seen the patient and spoken with the family before rounds, that there was no new information to be shared with patient or family, or that the social situation was not conducive to FCR.

Although day-to-day fluctuations existed, overall attending physicians spoke the most of any member of the medical team ($P < .001$). Interestingly, an attending's time spent talking showed no correlation to his or her years of experience as a pediatric hospitalist. Figure 1 reveals the variation among the 11 attending physicians observed both inside and outside the patient rooms and is ordered from the most experienced hospitalist (A) to the least experienced (K). Of note, inside a patient room there was not a significant difference between the amount of time attending physicians spoke versus the amount of time families and patients spoke ($P = .19$). However, in the family and patient category, families were the dominant speaker, with verbal patients only speaking 5.8% of that time.

Of the verbal patients, they only spoke an average of 15 seconds per encounter with the team, with a range of 0 to 140 seconds. Older patients talked more than younger patients, and female patients tended to talk slightly more than male patients, although this finding was not significant.

Nurses were notified either in person or via a phone call before rounds being held on their patients 37.8% of the time. Regardless of notification, nurses were present for rounds 44.7% of the time. Notification of the nurses raised their attendance of FCR from 27.5% to 73.1% ($P < .001$).

Multiple factors impacted the time it took to conduct FCR in a patient room (Supplemental Table 4). However, day of hospitalization, age of the patient, rounding order, and nurse presence did not significantly affect the length of rounds. FCR took more time if >2 family members were present in the room ($P = .003$) or if the patient was considered complex ($P < .05$). If >2 family members were present, the team spent on average 99.4 seconds more in the room than if only 1 family member was present. However the percentage of time the family and medical team talked while in the room was similar regardless of how many family members were present. There was a direct correlation between the increase in the time spent in a room and the length of time family spoke if the patient was considered complex. In the case of complex patients, the family spoke on average 84.7 seconds longer ($P < .001$), and the episode of FCR took 90.7 seconds longer than the average FCR encounter ($P < .05$). Family members also talked 154.5 seconds more than average if the patient fit into the diagnostic category of pain and 69 seconds more than average if the patient was in the diagnostic category of other ($P = .004$).

The only factor found to significantly decrease the amount of time a family spoke was if they had limited English proficiency. Family members spoke 50 seconds less than the average family during FCR if they had limited English proficiency ($P = .02$), and FCR was 55.3 seconds shorter compared with families with proficient English. Of note, during the observed periods of the study, a member of the medical team served as Spanish interpreter 35 times and the hospital's medical Spanish interpreter was never used.

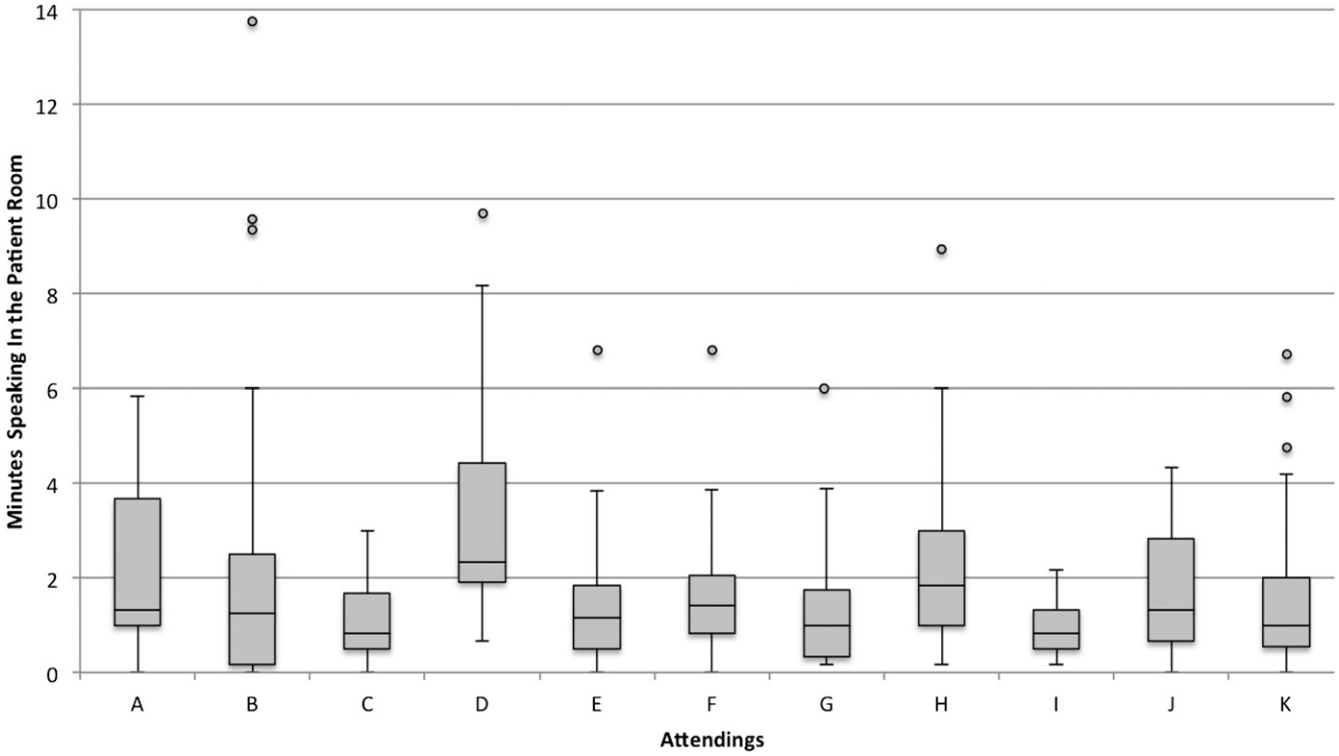

FIGURE 1 Box-and-whisker plot for the times each individual attending spoke in each patient room entered. Attending physicians are listed by years of experience as a hospitalist with attending A having the most years and attending K having the least.

The voluntary and anonymous surveys were completed by 77.8% of the medical team. There were significant differences between observed proportion of talking, perception of talking, and the respondents' ideal (Fig 2). Survey results revealed that attending physicians spoke 51.2% more than they were perceived ($P < .001$). The medical team overestimated the amount of time families and patients talked by 41.7% ($P < .001$). When asked about who would talk during an ideal day of FCR, the survey revealed that the medical team would have the attending physicians talk 58.3% less than observed ($P < .001$), which translates into attending physicians talking 18.5 minutes less per observed rounding session of 120 minutes. There were not dramatic differences between the observed times, perceived times, and ideal times for senior residents, and interns talking (P values ranged from 0.33 to 0.97). Medical students were perceived to talk more than observed ($P < .001$), but in an ideal situation they were not wanted to talk more than perceived ($P = .82$). However, in the ideal scenario families and patients would talk 137% more than observed, which would equal 14.7 more minutes of families and patients talking per rounding session. Ideal rounds would have >90% of nurses notified (which is significantly more than the 33.7% observed to be notified, $P < .001$), and nurses would speak 515% more than observed ($P < .001$).

We found that the medical team significantly overestimated percent of rounding time spent in the patient room, percent of patient rooms entered, percent of nurses notified of rounds, and percent of rounds with nurses present (all Ps $\leq .02$). They also answered that in an ideal day of rounds, the percentage of patient rooms entered, nurse notification, and nurse presence should be occurring significantly more often than they estimated (all Ps $< .001$). Supplemental Table 5 shows the metrics by what was observed, perceived, and considered ideal.

DISCUSSION

This study attempted to quantify participation during FCR and associated perceptions. We were able to provide objective perspective on FCR, which has been inconsistent in previous research. This revealed that attending physicians are the dominant medical speaker during rounds, although families and patients speak as much as attending physicians in a patient room. The combination of observation and survey results highlighted large discrepancies among direct observations, perceptions, and ideals of what occurs during FCR. Given these differences, caution is needed in interpreting FCR research that is based on perception.

In this study, attending physicians and families are the predominant speakers during rounds. The tendency of attending physicians to dominate speaking time during rounds is consistent with the outcome of Mittal et al's survey of pediatric residents, which found that "FCR efficiency was principally attending dependent."[5] In Mittal et al's study the inconsistency between attending styles was seen by residents as a major barrier to conducting FCR.

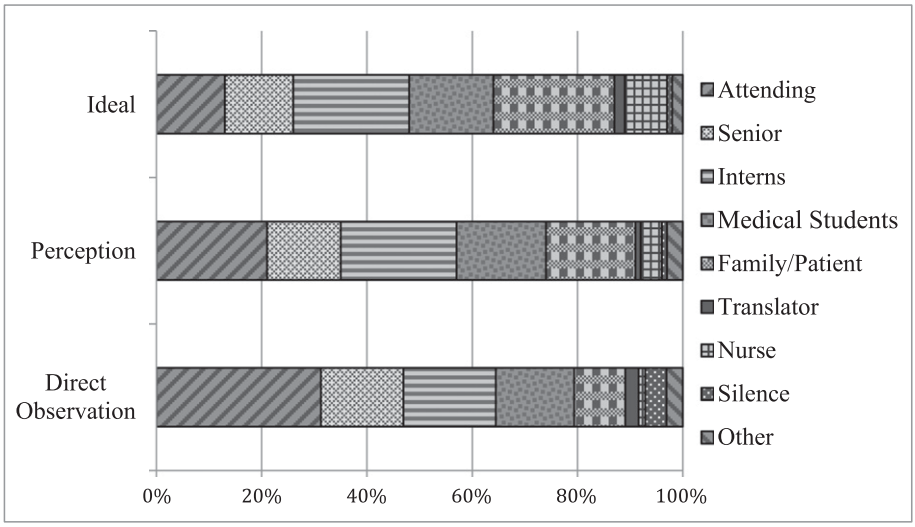

FIGURE 2 Direct observation versus perception and ideal of who was talking during rounds (including time inside and outside the patient room).

The medical team in our study underestimated the amount of time during which the attending physician spoke and preferred less attending participation and more nurse involvement. We found that the medical team consistently overestimated the time spent in patient rooms, the percentage of time families talked, and the involvement of nurses during rounds. The wide variation of family talk times during the observed FCR sessions is in line with the findings of Subramony et al.'s ethnographic study of FCR, which showed that FCR does not guarantee family participation.[8] The study does highlight that families with limited English proficiency speak less during FCR and have overall shorter FCR compared with English-proficient families. Because the surveys involved only the medical team, it is unclear if families (regardless of English proficiency) wanted to speak more during FCR. Additional research into family's perceptions and ideals of FCR and how to involve families with limited English proficiency is needed.

During this study, there was a striking lack of nurse presence and input during FCR despite the medical team reporting a desire for more nurse notification and participation in an ideal setting. Although the team members involved in FCR vary, one could argue that the input of the nursing staff is a key component to implementing FCR. The data did reveal that notifying a nurse immediately before rounds is an effective way of increasing their attendance. This is consistent with Sharma et al's study, which showed a dramatic increase in nurse attendance during FCR if they were contacted by a hands-free communication system before rounds start.[16] More research is needed into the impediments behind notifying nurses and nurses attending rounds.

This study represents an initial attempt to quantify the degree of participation by various participants on FCR. Although the medical teams ideals for rounds were explored, it would be premature to suggest who should be talking during rounds without gathering opinions of all parties involved in FCR. Limitations include the absence of qualitative or contextual evaluation of the interactions on rounds. The use of 1 hospital and 1 observer, the lack of formal validation of the observation tool and survey, and only focusing on the medical team's perspective are limitations of this study. Family and nursing perspectives on typical versus ideal time usage on FCR will be important to describe. Additionally, this investigation occurred in an academic setting, and FCR without trainees are inadequately described in the literature. As efforts to improve the patient and family experience of care mature, further quantitative and qualitative descriptions of the current state of FCR will be needed to better evaluate the impact of family-centered care on pediatric hospital care.

CONCLUSIONS

There is discordance between reality and perception of what is occurring during FCR. Attending physicians are the dominant medical speakers during FCR, and the medical team perceives that families/patients, medical students and nurses should be speaking more. This suggests a role for greater empowerment of those participants. Nurse presence during FCR is also lacking, although notifying a nurse before rounds is an effective way to increase their attendance.

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