

Communication Skills and Practices Vary by Clinician Type

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ABSTRACT

OBJECTIVES: Unscheduled admission to the PICU is a stressful experience for families. During the admission process, families communicate with 4 types of clinicians (resident, nurse practitioner, fellow, and attending physician). All clinicians must manage family stress while communicating concise, accurate information. The manner and variability in how different clinicians communicate with families at the time of PICU admission is not yet known.

METHODS: We performed a prospective observational study to evaluate communication patterns of various clinician types, including the length of communication encounters and the number of provider interruptions at the time of admission to the PICU during a 3-month period. All nonscheduled admissions to the PICU were eligible for enrollment. The admission intake was audio recorded and directly observed.

RESULTS: We observed 45 different family–clinician interactions for a total of 19 unique family encounters (48% of eligible admissions). Residents and nurse practitioners spent the most time communicating with families (14.3 and 19 minutes, respectively) compared with fellows (7.3 minutes) and attending physicians (6.6 minutes). Residents were frequently interrupted by pages and phone calls (64% of interactions) and spoke at a higher reading level than all other clinician types ($P = .03$; 95% confidence interval 74.6–83.9). Qualitatively, residents had more challenges coping with distractions, acknowledging parental emotions, and aligning with parental goals compared with other clinician types.

CONCLUSIONS: Resident trainees spend significantly more time with families and, during this time, are burdened with frequent interruptions. In this stressful communication environment, residents encounter more barriers to communication and may require additional communication skills to manage relaying complex information while simultaneously responding to parental emotions.



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A child's admission to the PICU is an overwhelming experience for families,¹ and poor communication by the health care team only amplifies this stressful period.² The ability to provide complete, clear, and honest information in a format that is understandable is highly valued by families.³ Consequences of poor communication can include parental anger, poor patient outcomes, and litigation.⁴

The literature has shown that simply being admitted to the PICU is associated with parental acute stress disorders and symptoms of posttraumatic stress disorder.⁵ The trauma of an ICU admission is further impacted by how clinicians communicate with families during this critical period, with poor communication regarding illness and diagnosis severity resulting in increased acute stress.^{6,7} Family comprehension and understanding of diagnosis at the time of admission is also affected by the length of time clinicians spend with the family, with 1 study reporting poorer family comprehension when clinicians spent <10 minutes.⁸ Additionally, a study by Colville et al² revealed parents who reported poor communication by staff had higher rates of psychological distress and described communication as particularly unsatisfactory when clinicians did not introduce themselves, communicated bad news at inappropriate times, and provided inconsistent information.

The above findings highlight the importance of effective family–clinician communication to the psychological well-being of families at the time of admission, yet we know that families are not exposed to only 1 clinician but, rather, a myriad of clinician types with various training and experience levels. Despite these potential differences in communication proficiency, all types of clinicians are charged with the daunting task of potentially divulging life-altering news to families at the time of admission. Resident trainees typically learn the majority of their communication skills by modeling the behaviors of attending physicians, many of whom have varying communication strengths and weaknesses themselves.^{9,10} Interestingly, Cope et al¹¹

found similar basic communication proficiencies in both obtaining and giving information to patients among experienced attending physicians without specific communication training and medical students.¹² This lack of difference in basic communication skills found between these 2 groups draws into question if the traditional role-modeling approach is the most applicable method to teach communication skills to trainees. To evaluate the most effective way to educate trainees, it is imperative to first understand the present skill variations between clinician types in communicating with families. We aimed to observe in situ how various clinician types in the PICU communicate with families at the time of admission, including the length of communication encounters and the number of provider interruptions at the time of admission to the PICU during a 3-month period.

METHODS

Study Design and Participants

We performed a prospective observational study to evaluate the communication of various clinician types at the time of admission to an urban, quaternary, freestanding children's hospital with 47 PICU beds. The 4 clinician types included second- and third-year pediatrics residents, nurse practitioners (NPs), fellows, and attending physicians. Convenience sampling was used to enroll patients during a 3-month period. All nonscheduled admissions to the PICU were eligible for enrollment. Admissions were excluded for the following reasons: lack of family member presence at admission, non–English-speaking family, cardiac arrest in progress, and scheduled admission to the PICU. The study was approved by our institutional review board, and written consent was obtained.

Sources of Data

The PICU clerk notified research staff when a new unscheduled admission arrived to the PICU. After parental consent was obtained, family–clinician communication was assessed on the basis of a direct observational checklist completed in real time by research staff. The admission intake

process was audio recorded. The direct observational checklist was adapted from previous studies including the National Board of Medical Examiners checklist for interpersonal interactions with standardized patients and was intended to incorporate the important basic communication components.^{11,13} Face validity was established by review of the tool with experts in the field.¹⁴ The full observation tool can be found in the online supplemental material (Supplemental Fig 1). The research assistants were trained by using the checklist with a “mock” admission scenario, and a PICU intensivist observed and scored the initial 3 admission observations. The admission interactions were also audio recorded and transcribed. A random sampling of 20% ($n = 9$) of the audio recordings were also reviewed by a PICU physician for consistency in scoring the 9 items on the direct observational assessment. The interrater reliability for these 81 items was 97.5%. As a measure of language complexity, we used the Flesch reading ease score. The Flesch reading ease score is calculated to determine the educational level necessary to understand a piece of text and its ease of reading. The reading ease is scored between 0 and 100; “plain English” ranges from 60 to 70, with higher scores indicating the text is easier to read.¹⁵ Demographic data were collected from the medical record.

Data Analysis

Our primary outcome measures were the relationship between clinician types and the length of time spent communicating with families at the time of admission. Secondly, we assessed variations in basic communication skills using a direct observational checklist and language complexity and qualitative thematic analysis of the content among the different clinician types. The duration of communication at the time of admission was analyzed with log-Poisson models clustered on an encounter. Variations between clinician types via the series of parameters on the observational checklist were analyzed by using χ^2 tests clustered on an encounter. Language complexity was compared by using Flesch reading ease scores and across clinicians

by using the Kruskal–Wallis test with Dwass–Steel–Critchlow–Fligner adjustment for pairwise comparisons. Using Fisher’s exact test, we determined the association between the frequency of interruptions and clinician type.

Qualitative analysis was employed to extract the intended meaning of the clinicians’ admission intake questioning and responses to parents.¹⁶ To assess internal validity of the qualitative portion, we performed triangulation in data collection using audio recordings, the direct observational checklist, and annotation of field notes. We also performed investigator triangulation of the qualitative coding themes and performed a member check with the final themes we developed with the resident, attending, and NP cohorts.^{17,18}

Sample Size

The target sample size for the quantitative portion of the study was based on the ability to detect differences between clinician types in time spent talking with families; time spent was estimated to range from 5 to 15 minutes, assuming a moderate SD (5 minutes). Under these parameters, 6 clinicians per type (ie, 24 total) would allow for the detection of a difference (overall) between groups at $P < .05$ with 80% power. For pairwise comparisons (ie, group 1 versus group 2), this sample size would allow for the detection of differences of ≥ 10 minutes. Given this, we planned to recruit a minimum of 6 clinician types (resident, NP, fellow, and attending).

RESULTS

We observed 45 different family–clinician interactions for a total of 19 different patient encounters (48% of PICU admissions on enrollment days). Of these, 57.9% (11 of 19) of patients had a primary respiratory diagnosis. The majority (68%) of unplanned admissions were from the emergency department, 26% were from a rapid-response transfer from the pediatric inpatient floor, and 5% were direct admissions from an outside hospital.

Of the 19 total patient encounters, we captured 14 resident, 3 NP, 12 fellow, and 16 attending interactions. The residents captured were either in their second or

TABLE 1 Time Spent Communicating With Families on Admission by Clinician Type

Clinician Type	Minutes		P^a
	Mean	(95% CI)	
Resident	14.3	(10.2–19.9)	.04
NP	19.0	(16.4–22.0)	—
Fellow	7.3	(4.6–11.4)	—
Attending	6.6	(3.3–13.0)	—

—, not applicable.

^a Overall $P = .04$; fellow and attending significantly lower than resident ($P = .0006$ and $P = .05$, respectively) and NP ($P < .0001$ and $P = .003$, respectively).

third year of pediatric residency training. The NPs participating had between 4 and 20 years of experience. We found the time spent interacting with families was significantly longer for residents (14.3 minutes; 95% confidence interval [CI] 10.2–19.9) and NPs (19.0 minutes; 95% CI 16.4–22.0) compared with fellows (7.3 minutes; 95% CI 4.6–11.4) and attending physicians (6.6 minutes; 95% CI 3.3–13.0; Table 1). The direct observational checklist (Supplemental Fig 1) did not reveal any significant differences in family–clinician interaction elements based on clinician type. The Flesch reading ease scores for the transcribed interviews revealed that residents had a lower median reading ease score (82.5) than all other groups ($P = .03$; Table 2). Residents were interrupted in 64.3% (9 of 14) of interactions (Table 3) during the admission intake process, which was more than for all other clinician types ($P = .01$).

Qualitative analysis of resident clinicians revealed 3 themes: coping with distractions, use of medical jargon, and a lack of response to parental emotions (Table 4). As highlighted above, residents had more interruptions than any other clinician type, and many of these phone calls and pages resulted in resident loss of focus and the restarting of previously initiated

conversations. There was also a lack of response to parental emotions, with resident trainees missing 8 opportunities to respond to parental emotions. For example, “All of the not knowing when it will happen again is really hard. We try to do the right thing but don’t always know...it’s scary,” followed by a resident response of “um...okay and what medications does she take?”

NPs, fellows, and attending physicians had 4 similar qualitative themes: alignment with parental values, medical prognostication, care coordination, and response to parental emotion (Table 4). These groups of clinicians made statements to parents such as, “We value your input and know that you are the expert for your child,” “This is the plan of care,” and “There is a team of doctors and other health care workers who will be caring for your child.” Additionally, these clinicians responded to parental emotion and validated their concerns, anxiety, fears, and/or frustrations with statements such as, “I know this is an incredibly hard time for you and your family.” We noticed that residents did not make similar statements.

DISCUSSION

We found that resident trainees spent more time with patients’ families at the time of

TABLE 2 Flesch Reading Ease Scores of Admission Interactions by Clinician Type

Clinician Type (M) ^a	Flesch Reading Ease Score				
	Mean	SD	95% CI	Median	P
Resident (8)	79.3	8.4	74.6–83.9	82.5	.03
NP (2)	88.0	0.8	78.6–97.3	88.0	—
Fellow (4)	86.3	4.9	79.7–92.9	87.0	—
Attending (5)	85.9	1.4	80.0–91.9	86.1	—

—, not applicable.

^a Includes interactions in which 1 clinician type was present at a time.

TABLE 3 Incidence of Interruptions During Admission Interaction Based on Clinician Type

Clinician Type (N)	No. Clinicians Interrupted (%)	P
Resident (14)	9 (64.3)	.01
NP (3)	1 (33.3)	—
Fellow (12)	4 (33.3)	—
Attending (9) ^a	0 (0.0)	—

—, not applicable.

^a Five attending interactions were visual assessment only of patient and excluded from interruption analysis.

admission to the ICU and that these trainees were interrupted more frequently than all other clinician types. These interruptions were distracting to the flow of the admission process, completely halted some conversations, and, at times, resulted in frustration by the family members. The ability to navigate these intrusions adds another layer of complexity to the communication skills required by trainees. It takes a skilled communicator to cope with interruptions and competing clinical demands while obtaining an accurate history and providing families with the information they require regarding admission, diagnosis, and prognosis. Interestingly, the NP observations had fewer interruptions. There are multiple potential explanations for this, including a lower number of direct patient responsibilities for NP clinicians (particularly in the afternoons, when residents are often crosscovering patients), a more streamlined communication system (including lack of pagers and direct contact numbers), and nursing familiarity with NP clinicians (nurses are more likely to find these clinicians in person rather than by calling). In addition to participating in longer communication sessions with families, resident trainees, compared with all other groups, used more complex language when communicating with families. This may be due to the fact that these novice communicators are not armed with sufficient training and experience regarding effective communication techniques.^{19,20} Interestingly, there was no statistical difference between clinician types when we assessed whether a clinician discussed the various items on the direct observational checklist (ie, the ability to introduce oneself, etc; Supplemental Fig 1). One possible

explanation for this is that the research assistant was only instructed to assess for the presence or absence of a given element by indicating yes or no, not to evaluate how the specific communication skill was performed. The use of closed-ended questions does not reveal how those discussions occurred and if the clinician avoided medical jargon, provided uncomplicated explanations, encouraged questions, and emphasized key points as recommend in the best practice for communication in medical encounters.²¹ Additionally, the communication elements we selected incorporated basic elements of professionalism and information gathering, and thus it is possible that more nuanced variations in communication practices were not captured with our checklist. There were also clear qualitative differences between the content discussed during the admission process by resident trainees compared with the content discussed by all other clinician types. More experienced clinician types (NPs, fellows, and attending physicians) discussed medical prognostication by engaging in discussions of worst-case scenarios and prognoses, whereas residents avoided discussions of prognostication and discussions of unfavorable possible outcomes with families. This may indicate residents are not delving into discussions that they do not yet possess the skills to navigate. Another notable distinction was that experienced clinicians were more likely to respond to family emotions. These differences are likely multifactorial and in part due to resident trainees feeling overburdened by the expectations placed on them while rotating in the PICU, the perception that providing patient-centered

care is more time consuming, and a lack of comfort with medical uncertainty and training in advanced communication skills.^{21–24} Previous research has revealed the importance of using unburied, empathetic statements when communicating with families of children with critical illness, and the ability to become an empathetic practitioner is an Accreditation Council for Graduate Medical Education pediatric residency milestone.^{25,26} Despite the development of communication training programs at some institutions to achieve this milestone, pediatric residents still feel inadequately equipped in more complicated communication encounters (ie, discussing bad news, coping with difficult parents, supporting the psychosocial effects of illness, and discussing the end of life).^{24,27,28} These advanced communication techniques are often taught to critical care fellows, leaving pediatric residents without a roadmap to communicate effectively with families with critical illness.^{24,29} Our data suggest that, in addition to specific communication training programs targeted at pediatric residents, we also need to incorporate other interventions to better support pediatric residents, such as alleviating some of the resident workload through additional clinicians or support staff and teaching resident trainees techniques and strategies to manage interruptions. We believe this study adds new information regarding the important differences in communication between clinician types in this small sample we analyzed. We observed 48% of PICU admissions during the enrollment days. The most common barriers to enrollment included a lack of parent presence, patients being evaluated by clinicians before the research assistant was able to consent, and non-English-speaking families. We attempted to mitigate this issue by having the research assistants subsequently consent pending PICU admissions while waiting in the emergency department. We also were unable to enroll non-English-speaking participants because of the time sensitivity of capturing the admission process. Additionally, the behavior of the participants may have been affected by participant reactivity, resulting

TABLE 4 Qualitative Themes During Admission Interactions

Theme	Sample Quotes
Resident	
Coping with distractions	Resident: "Okay. And how, how often were you doing it, the albuterol? Every 4 hours. [Phone rings] okay, give me 1 second. [Resident talks on phone for 2 min 22 s]." Resident: "Okay, um, let's see. Are you feeling any better? Yeah?" Parent: "She can't [have] no juice or nothing? Huh? You still on the phone? Are you listening? She really can't have no juice or nothing?"
Use of medical jargon	Resident: "We can try and wean, um, and slowly progress, um, off the BiPAP. We'll probably go to high-flow nasal cannula, for now, NPO."
Lack of response to parental emotions	Parent: "It's horrible. We were literally in this room last year fighting low blood pressures...and she was throwing up, and it was horrible to watch." Resident: "Yeah okay. ...She needs 2 times maintenance fluids when she's in the hospital."
NP, fellow, and attending	
Alignment with parental values	Parent: "They have to sedate to do the MRI. I really, really don't like using propofol in her. ...It's important to me that she's comfortable and safe." Attending: "With her mitochondrial disease, yeah. We want the safest option for her, too. There are tons of medications we could do instead. We could do Versed, we could do Precedex..."
Medical prognostication	NP: "So God forbid we go the other way. ...But there's nowhere else to go from this mask except for to intubate."
Care coordination	Attending: "I've talked to X, I've talked to Y, and I've talked to Z, so I've gotten the whole picture."
Response to parental emotions	Parent: "If he doesn't have it, then basically we're just going to be living here until he can get his insulin now. ...It's just frustrating." Fellow: "I'm sorry you're dealing with this." Parent: "Don't apologize. I know it's the insurance company." Fellow: "I'm sorry that you're going through this though." Parent: "I know; I understand. I'm hoping he'll be feeling better soon."

BiPAP, bilevel positive airway pressure; NPO, nothing by mouth.

communication that occurred between families and clinicians, which may have been impactful and may have revealed additional variations between various clinicians.

CONCLUSIONS

Although trainees spent significantly more time with families, that time is fragmented by disruptions and often relies on complex language and inadequate responses to parental emotions. Trainees are some of the first faces to welcome a family to the PICU and help shape the family's perception of the PICU and, often, their entire hospital stay. Future studies should explore if a communication training curriculum that incorporates aligning with parental values, coping with distractions, and responding effectively to emotions improves the family experience, satisfaction, and psychological well-being at not only the time of admission to the PICU but also after discharge.

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in a deviation from their normal pattern of admission intake because they were being observed.²⁰ We attempted to mitigate this by ensuring anonymity in the observational process.

We also acknowledge that some of the variations observed in the duration of the admission interaction and content may be related to the typical order of when a patient is seen by a given clinician (ie, typically, the resident admits the patient

before the attending interactions with the family). Additionally, the time and content we captured during this study only included the communication that occurred at the time of admission. We know clinicians spend additional time with the families later in their stay, and the communication during these periods was not analyzed in this study because we aimed to focus on a family's initial interaction with the PICU team. We were also unable to capture the nonverbal

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