The Greater Good: How Supervising Physicians Make Entrustment Decisions in the Pediatric Emergency Department

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ABSTRACT

BACKGROUND: Graduate medical education is transitioning to the use of entrustable professional activities to contextualize educational competencies. Factors influencing entrustment decisions have been reported in adult medicine. Knowing how such decisions are made in pediatrics is critical to this transition.

PURPOSE: To understand how supervisors determine the level of procedural supervision to provide a resident, taking into consideration simulation performance; to understand factors that affect supervisors’ transparency to parents about residents’ procedural experience.

METHODS: We conducted 18 one-on-one interviews with supervisors in a tertiary care pediatric emergency department, iteratively revising interview questions as patterns in the data were elucidated. Two researchers independently coded transcripts and then met with the investigative team to refine codes and create themes.

RESULTS: Five factors influenced supervisors’ entrustment decisions: 1) resident characteristics that include self-reported confidence, seniority, and prior interactions with the resident; 2) supervisor style; 3) nature of the procedure/characteristics of the patient; 4) environmental factors; and 5) parental preferences. Supervisors thought that task-based simulators provided practice opportunities but that simulated performance did not provide evidence for entrustment. Supervisors reported selectively omitting details about a resident’s experience level to families to optimize experiential learning for residents they entrusted to perform a procedure.

CONCLUSIONS: In pediatrics, supervisors consider various factors when making decisions regarding resident procedural readiness, including parental preferences. An educational system using entrustable professional activities may facilitate holistic assessment and foster expertise-informed decisions about residents’ progression toward entrustment; such a system may also lessen supervisors’ need to omit information to parents about residents’ procedural readiness.

KEYWORDS: entrustable professional activities; medical education; resident assessment; simulation

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Traditionally, residency is viewed as an apprenticeship; much learning occurs in the relationship between supervising physicians and trainees. When making entrustment decisions, ie, decisions regarding when and how much supervision to provide a resident carrying out clinical responsibilities, supervising physicians balance trainees’ need for experiential learning with patients’ need for safe, high-quality care. The Accreditation Council for Graduate Medical Education (ACGME) core competencies, issued in 2001, describe the requisite knowledge, skills, and attitudes of a physician. However, there is a tendency to break down each core competency into component parts and lose sight of the complex, interrelated whole that comprises clinical practice.

Ten Cate introduced the concept of entrustable professional activities (EPAs), or units of clinical practice that can be entrusted to unsupervised practice by trainees after proficiency is observed. By contextualizing core competencies, EPAs provide a holistic view of trainees as they integrate core competencies in the delivery of care. Thus, EPAs enable supervising physicians to holistically assess trainees in clinical settings. By focusing on the complex, interrelated
whole, EPAs may serve as a guide to decision making around the graded level of supervision needed by the trainee, one that respects the expertise of the supervisor.1,6–8

Ten Cate identified, and others have confirmed, 4 general factors that influence entrustment of a given professional task: the trainee’s ability, the personality of the supervising physician, the environment and circumstances in which the task is executed, and the nature and complexity of the task itself.6,9,10 Understanding factors that affect levels of entrustment in pediatric emergency departments (PEDs) is important for a number of reasons. First, there is rapid turnover of patients, many of whom require procedures, and relatively short rotations for trainees; thus, supervising physicians must make quick decisions about trainees’ readiness to perform procedures and the level of graded supervision they will provide.11–13 Additionally, many trainees rotating in the PED have limited exposure to procedures such as lumbar punctures, making procedural skills difficult to acquire.14–18 However, little is known about the factors that influence the entrustment decisions in pediatrics in general and readiness to perform procedures in PEDs in particular. This gap is particularly noticeable as pediatric subspecialties develop their own EPAs.19,20

This study sought to understand factors affecting the degree of supervision and entrustment provided to a given trainee performing procedures in the PED while addressing the potential role of simulation performance in this decision-making; and to understand factors affecting the degree of transparency that supervising physicians provide to patients and families regarding trainees’ procedural experience.

METHODS

We conducted our study at a single urban tertiary care PED located in a freestanding children’s hospital with an annual census of 35,000 pediatric patients. We recruited 18 supervising physicians, 13 pediatric faculty and 5 pediatric emergency medicine fellows, who regularly supervised trainees performing procedures to participate in one-on-one interviews. Both faculty and fellows regularly participate in procedural training of trainees from pediatric, emergency medicine, and family medicine programs in the PED as well as in educational sessions such as mock codes and skill training sessions. Additionally, faculty and fellows participate in faculty development sessions on teaching procedural skills using simulation; over 50% of the faculty and all the fellows have completed a simulation-based educator course.

We developed the interview guide in collaboration with an expert in qualitative research (DB). Interview questions were open-ended and included prompts to encourage detailed discussion.21 In line with grounded theory, we iteratively revised the interview guide as new understanding was gained from subsequent interviews.22 Table 1 provides the final version of the interview guide.

GT, a pediatric emergency medicine fellow with experience in qualitative research, conducted all face-to-face interviews. Interviews were audiotaped and transcribed verbatim. Identifying information was removed from the transcripts before review by the research team. We obtained institutional review board approval at Yale University and verbal consent from the participants before each interview.

GT interviewed all 18 supervising physicians in the PED, although saturation was reached after 14 interviews. Table 2 provides descriptive information about the participating supervising physicians. Interviews lasted for an average of 18 minutes. For the purpose of this report, we refer to fellows and faculty as supervising physicians or supervisors and refer to trainees as residents.

Two researchers (GT and KO, a research associate without experience in medicine) independently reviewed the transcripts and coded data by applying initial codes, or labels, to summarize and categorize portions of data.23 Because data collection and initial coding occurred simultaneously, they iteratively revised the list of codes and applied updated codes to incoming data.24 The full research team then discussed and refined the codes during a series of conference calls. When the coding process was complete, we scrutinized and clustered coded data to create themes that reflected factors affecting entrustment decisions using ten Cate’s factors as an initial guide. We used qualitative analysis software (ATLAS.ti 5.0, Scientific Software Development, Berlin, Germany) to facilitate data organization and retrieval.

We maintained an audit trail of our coding process to enhance the dependability of our analytical process.25 The side-by-side process of data collection and analysis continued past the point of saturation, ie, when no new concepts emerged.22 To enhance the creditability of data, we conducted a member check: we presented preliminary findings to participants and asked if our interpretation of the data was a reasonable account of their experience.22
Table 2. Characteristics of Supervising Physicians

<table>
<thead>
<tr>
<th>Physician</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellows*</td>
<td>5/18 (28%)</td>
</tr>
<tr>
<td>Attending physician</td>
<td>13/18 (72%)</td>
</tr>
<tr>
<td>Clinical appointment</td>
<td>3/13 (23%)</td>
</tr>
<tr>
<td>Academic appointment</td>
<td>10/13 (77%)</td>
</tr>
<tr>
<td>&gt;5 y in faculty position</td>
<td>9/13 (69%)</td>
</tr>
<tr>
<td>PEM board-certified faculty</td>
<td>12/13 (92%)</td>
</tr>
<tr>
<td>Female gender</td>
<td>8/18 (44%)</td>
</tr>
</tbody>
</table>

PEM indicates pediatric emergency medicine. *Fellows had all completed 3-year pediatric residencies and were pursuing a 3-year fellowship in PEM.

RESULTS

Supervising physicians in the PED described 5 factors that influenced their entrustment decisions: 1) resident characteristics, 2) environmental factors, 3) the nature of the procedure and characteristics of the patient, 4) supervisor style, and 5) parental preferences.

RESIDENT CHARACTERISTICS

Supervising physicians, hereafter referred to as supervisors, contemplated multiple resident characteristics when determining residents’ readiness to perform a procedure. These included previous interactions with residents, residents’ comfort, residents’ experience with the procedure, and seniority of residents. One supervisor summed up these factors:

For this particular trainee, it was clear that she’d done many [lacerations]. It was something that she was comfortable doing. . . . I think about years of experience, how confidently they’re able to describe the procedure to me. I think about my past experience with the trainee, if I have any experience, and I might think, “Well, this person did a fantastic job the last time.”

Another supervisor described characteristics important to her, i.e., the resident’s experience and comfort level:

Some of it has to do with how well you already know that trainee and know what they’ve done in the past, their own level of experience, their own confidence. If they say, “I’m very comfortable,” I tend to kind of trust that personal instinct.

Supervisors recognized limitations in their assessment of residents’ readiness to perform procedures, such as overreliance on residents’ seniority and level of comfort. One supervisor recalled a time when he entrusted a senior resident to attempt a lumbar puncture but later noticed several off-center needle marks when he checked on the resident:

It’s a struggle with the residents who rotate through here for a month and sometimes even less. You know, we give a lot of deference to their seniority in the program. A fourth-year resident should be fairly competent in performing an LP but very rarely do I have direct evidence of such competence.

Supervisors had different opinions about the impact of simulation on entrustment decisions. Many believed that simulation provided residents with much-needed practice and helped identify residents who lacked certain skills, but that it did not replicate the nuances of performing a procedure on a real patient and thus did not provide sufficient evidence for entrustment. A skeptical supervisor stated:

If they say they’ve done it on a simulator but not on a real patient, then probably I would treat that the same way as “I’m not comfortable doing it” or “I’ve never done it before” because you still haven’t seen them do it. Simulation might make me a little bit more comfortable, but I can’t see that it changes what I do, and how I supervise, all that much.

ENVIRONMENT

Many supervisors commented that competing clinical demands limited the supervision they provided, even when they sensed a need for more supervision. One talked about how a busy PED often curtailed her supervision:

There are times when you’re all alone on a day shift and the place is about to fall apart and you just can’t physically do it all very well. That happened a couple of months ago when we had a resident come through, and even though she was confident in laceration repair, the sutures fell out. I couldn’t physically make it in there to watch what was she doing and I relied on her comfort and it didn’t work out.

Supervisors discussed alternate strategies for supervision during busy times, such as relying on a proxy to supervise, steering skilled people toward certain procedures, or waiting to do procedures until help was available. One attending supervisor described using a proxy:

To help fill the gap in busy times, you have to have someone else that can fill that supervisory role, sometimes putting a senior resident or a fellow in charge of a junior resident when doing LPs or laceration.

NATURE OF PROCEDURE AND PATIENT CHARACTERISTICS

Supervisors were less hands on when residents attempted low-stakes procedures than when they did high-stakes procedures. One supervisor described his thought process:

With relatively low-stakes procedures like when there was a kaleidoscope stuck on a patient’s index finger and we were going to use a cast saw to get it off, I might be more willing to charge in with a relatively unprepared trainee and let them attempt to do it than, say, an intubation.

Supervisors considered the acuity of the problem and weighed what was best for the patient when deciding how much supervision to provide. They supervised less when the patient was stable, older, and/or cooperative than when the patient was unstable, younger, and/or uncooperative. One supervisor talked about the influence of patient characteristics this way:
I think, certainly, the higher acuity, the sicker the kid or when a delay would compromise care, then I have less of a tendency to be flexible in terms of opportunities [for residents to perform procedures].

**Supervisor Style**

Supervisors were aware of how their own supervision style influenced entrustment decisions. On the one hand, supervisors who were confident in their ability to rescue a resident tended to supervise less. One such supervisor described his decision-making process:

I’m pretty liberal about letting residents [do procedures] because I think that’s how you gain confidence in doing things . . . and I think some of that is a function of how comfortable I feel in rescuing a patient that’s in trouble.

On the other hand, supervisors who described feeling an ultimate responsibility for patient care and/or believed that work hour restrictions limited residents’ procedural proficiency tended to supervise more. One supervisor mentioned residents’ lack of procedure experience:

I’ve become actually more involved as time has gone on because I feel like over the years . . . the residents are less experienced and do the procedures less often, so they need somebody to guide them through the procedures more than I felt they did in the past.

**Parental Preferences**

Supervisors reported that parental preferences sometimes limited residents’ procedural experience with pediatric patients. They often advocated for residents by assuring parents of adequate procedural supervision and underscoring the value of experiential learning. Nonetheless, supervisors ultimately honored parents’ requests regarding who would perform procedures. One supervisor described bargaining with parents like this:

Some parents who have been in the system, or are really well educated, will ask for the attending. Sometimes I’ll bargain, like, “How about the senior resident?” I’ll bargain that way, since they just don’t want the intern fresh off the boat. Ultimately, I’ll just say OK and not fight because the parent has to be comfortable with the procedure.

Some supervisors recalled times when they performed procedures themselves or called a specialist when caring for a patient with medically savvy parents. One supervisor reflected on her experience with “high-maintenance” parents:

If it’s a high-maintenance family and they get the sense that you’re doing this for the first time, that potentially will undermine our therapeutic relationship. Even if I’m not necessarily the best person, I have the confidence to pull off the procedure without my hands shaking.

**Transparency to Parents**

Supervisors expressed conflicting feelings about sharing residents’ level of procedural experience with parents. On the one hand, supervisors valued transparency; on the other hand, they valued learning from the experience of doing procedures on real patients. Supervisors rationalized their omission of residents’ level of experience by saying supervision prevented untoward consequences and assured patient safety. They tended to believe that parents were unaware of the process of assessing competency in residency and that offering too much information about residents’ procedural experience would increase parental anxiety. One supervisor described partial omission of information as the “greater good”:

If we said, “The resident has only done one or none of these procedures before and we’d like your child to be the first,” no parent in their right mind would ever agree to that and we would never have any trained physicians. We walk a fine line between a little bit of omission and, ethically in the bigger scheme of things, I think it’s the right thing. There is a lot of teaching medicine that we put families through for the greater good in the end.

Finally, some supervisors talked about framing information so parents would be less inclined to object to residents’ performing procedures. When asked by parents to perform the procedure himself, one supervisor says, “I am the most senior person in the emergency department right now, but Dr X [the resident] has done more LPs in the last 6 months than I have.”

**Discussion**

Our qualitative study suggests that supervising physicians in PED contemplate various factors when making entrustment decisions. Aside from resident characteristics, supervisors consider their own style of supervision, the nature of the procedure and characteristics of the patient, and the environment in which the procedure takes place. In our pediatric setting, supervisors also consider parental preferences but sometimes omit details about residents’ procedural experience in favor of experiential learning.

Our findings in pediatrics corroborate factors that influence progressive unsupervised performance of a task in adult medicine: the trainee, the supervisor, the circumstance, and the nature of the task.6,9,10,26 Consistent with ACGME program requirements for pediatrics, our findings suggest that the degree of supervision should attempt to match the observed proficiency in completing a unit of clinical practice, such as performing general procedures in pediatric emergencies. Also, appropriate supervision may vary: observation with no execution, supervision at a distance or with oversight after completion of the procedure, or supervision provided by the trainee himself or herself to a junior trainee.5,27

Our findings introduce a new factor that influences the progression of entrustment: parental preference. Parents, in an effort to optimize their child’s care, sometimes object to residents’ performing procedures, even though...
supervisors are ready to entrust residents to perform the procedure under their supervision. This factor sheds light on the complexity of entrustment decisions in pediatric settings; even if the supervising physician thinks that a resident is ready to perform the procedure with a given level of supervision, parental preference may prevail. Efforts to make EPAs transparent may help to shape expectations of residents and supervising physicians and may allay parents’ fears.

Our study is among the first to look at supervisors’ beliefs about candor with families as it relates to pediatric residents’ procedural readiness. Supervisors may selectively omit information about residents’ level of experience to afford them the experience of learning to do procedures on real patients. It stands to reason that increased transparency about residents’ abilities and public confidence in how residents are trained—primary drivers behind competency-based medical education—may diminish supervisors’ need to omit information about residents from their conversations with parents.

In our study, supervisors in the PED mentioned that they often relied on residents’ reported comfort and their seniority when allowing a resident to perform a procedure. Using this type of subjective data to make entrustment decisions is concerning. First, multiple studies cast doubt on physicians’ ability to self-assess. Second, 2 multicenter studies recently reported no differences in procedural success rates with increasing years of residency training; another reported no association between LP success and postgraduate year. Although objective data from the assessment of simulated performance may be better than subjective data in some situations, supervisors in our study had reservations about using assessment data from low-fidelity simulation. EPAs, which are observable in real-life clinical contexts, may be a more accurate way to assess proficiency.

As is true of all qualitative research, our findings are not generalizable in a statistical sense. However, they may be transferable to other pediatric settings. Although we studied only one PED, we interviewed a spectrum of supervisors with academic and clinical appointments as well as different levels of experience to encompass a spectrum of teaching and practicing styles. Interviews facilitated by a fellow within the same department may have influenced participant responses; however, participants were encouraged to speak honestly and were assured confidentiality of their responses, and we believe that the fellow who served as an informed interviewer could capitalize on nuances that an outsider might have missed. Our data comprise rich narratives but nonetheless represent perceptions of supervisors, not direct observations of their supervisory practices.

CONCLUSIONS

Supervisors consider various factors when making entrustment decisions in pediatric settings. Although they have positive regard for parental preferences, they also favor experiential learning for residents. An educational system using EPAs may facilitate holistic assessment and foster expertise-informed decisions about when and how much to entrust trainees; such a system may also lessen supervisors’ need to omit information to parents and boost parents’ confidence in residents’ procedural readiness.

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REFERENCES


