ORIGINAL RESEARCH

Entrustment Decision Making in the Intensive Care Unit

It's About More Than the Learner

Megan Conroy[1], Jennifer McCallister[1], and Jillian Gustin[2]

[1]Division of Pulmonary, Critical Care, and Sleep Medicine and [2]Division of Palliative Medicine, The Ohio State University Wexner Medical Center, Columbus, Ohio

ORCID IDs: 0000-0002-8357-5656 (M.C.); 0000-0002-2710-7268 (J.M.)

ABSTRACT

Background: The provision of graded supervision affording progressive autonomy is fundamental to the progression of a medical learner toward competency for independent practice; the decision of how much supervision versus autonomy to provide a trainee in the execution of clinical care constitutes an entrustment decision. Despite entrustment decision making occurring both daily in practice and summatively at points of matriculation through stages of medical training, the factors influencing entrustment decisions remain poorly understood across clinical contexts.

Objective: This study was designed to explore the central research question: How are entrustment decisions made in the medical intensive care unit (ICU)?

Methods: This qualitative case study used semistructured interviews with attending pulmonary and critical care physicians in the medical ICU at a major midwestern medical center to explore the entrustment decision-making process as it was enacted in the clinical environment.

Results: Five major themes emerged from the data: *1*) task, circumstance, and trainee factors contribute to entrustment decision making; *2*) *ad hoc* entrustment decisions are

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Correspondence and requests for reprints should be addressed to Megan Conroy, M.D., Division of Pulmonary, Critical Care, and Sleep Medicine, The Ohio State University Wexner Medical Center, 247 W 11th Avenue, 5th floor PCCS Offices, Columbus, OH 43201. E-mail: megan.conroy@osumc.edu; X: @DrMeganConroy.

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enacted by supervisors with a consideration of the care team as a unit, not only an individual; *3*) autonomy does not only arise out of entrustment, but outcomes of prior autonomous actions by the trainee inform the intention to entrust; *4*) entrustment decision making includes a social process of back-and-forth akin to negotiation; and *5*) entrustment is a learned skill.

Conclusion: The process of entrustment decision making in the ICU is more complex than prior frameworks have captured; a model with more complete incorporation of the factors that influence entrustment in the ICU is presented. It is not clear how often *ad hoc* entrustment decisions in clinical practice are primarily driven by factors pertaining directly to trainee competence, which carries implications in the use of entrustment for assessment.

Keywords:
entrustment decision making; critical care medicine; graduate medical education; qualitative research

Entrustment is defined by the Oxford English Dictionary as "assigning the responsibility for doing something to someone." The provision of graded supervision facilitating increasing autonomy to trainees is required of the teaching physician; the decision of how much supervision versus autonomy to provide a trainee in the execution of clinical care constitutes a decision of entrustment. Entrustment has arisen as an important framework for workplace assessment within competency-based medical education (1), but as a process and a skill entrustment decision making remains incompletely understood and has been examined within only a subset of clinical contexts.

Ad hoc entrustment decisions are those made daily and continuously in clinical care (2). They serve as a necessary input to summative entrustment decisions made by clinical competency committees and educational program directorate endorsing readiness for independent practice. Although *ad hoc* decisions are never the exclusive input to summative entrustment decisions, it holds that a deeper understanding of *ad hoc* entrustment decisions can form a basis for the understanding of summative entrustment decisions.

Entrustment decision making is a necessarily complex process, with myriad contributing variables. It is apparent from prior work that factors of the trainee, the supervisor, their relationship, the professional task, and the clinical environment impact entrustment decisions (3–6). Additional moderators have been described as arising in unique environments, such as parental preference in the pediatric emergency department (7), suggesting decision processes vary across clinical environments. Other studies have examined trainee characteristics and behaviors that influence trustworthiness (8, 9), some have characterized the sources whereby attending physicians obtain such information about trainees (9, 10). Others have explored ways in which a trainee may be able to enhance perceived trustworthiness (11). Work by Gingerich and colleagues (12) proposes that a supervisor's perceived responsibility for the ward underlies adjustments between hands-on and hands-off supervisory styles and that these supervisor-specific factors

may have stronger influence on entrustment decision making than factors related to the trainee, task, environment, or clinical circumstance.

The common themes of inputs regarding the trainee, task, circumstances, and supervisor clearly abound in the existing literature and are captured in a conceptual framework of the entrustment decision-making process described by Holzhausen and colleagues (13) (Figure 1). In this framework, trainee characteristics, the outcome of prior supervisory decisions, the relationship between the supervisor and the trainee, and supervisor characteristics all inform a supervisor's intention to entrust a trainee. Intention to entrust is moderated by supervisor characteristics and perceived risk. Entrustment is then manifested as the degree of supervision provided to the trainee. The outcome of prior supervisory decisions influences a supervisor's ongoing intention to entrust. They also note that a better understanding of the context in which entrustment decisions are made—defining a "unit of analysis" (14) or the ecology of the clinical setting—may allow us to find a greater strength of association between assessment of trainee trustworthiness and the decision to entrust. Certainly, it is this relationship between trainee characteristics and degree of supervision versus autonomy enacted that one would hope to capture and elaborate when using entrustment for workplace assessment.

Using entrustment as a framework for assessment has led to the development of entrustment-supervision scales (1)—tools with ordinal anchors of objective behavior rather than subjective assessment. It has been suggested that entrustment-supervision scales require anchors tailored to both the context and the level of learner to which they are applied (1), as various specialties conceptualize and operationalize entrustment differently: the surgeon's actions to provide autonomy in the operative theater vary from the actions of a palliative medicine physician allowing autonomy in a family meeting, and so on. This variation across clinical contexts

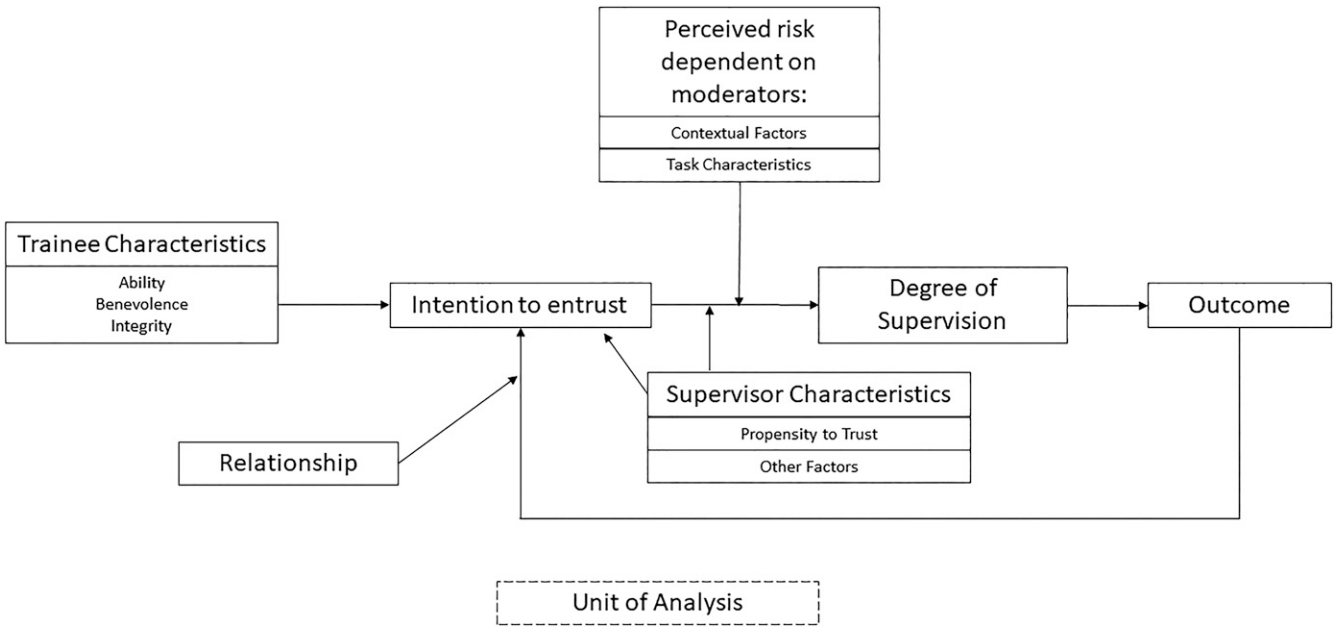

Figure 1. Conceptual framework of entrustment decision-making. Adapted from Reference 13.

underscores the value in gaining further insight to the process of entrustment decision making experienced in different settings (1, 15, 16) and the necessity to examine the process situated in clinical care, as the differing ecology of the clinical work environment likely exerts an effect on the process. A more complete understanding of entrustment decision making as it is enacted in clinical practice will allow for more precise tools of assessment and inform how such tools can be most effectively deployed to evaluators.

There has yet to be a published examination of the entrustment decision-making process in the intensive care unit (ICU). Because of the nature of critical illness, highly consequential entrustment decisions must often be made quickly, making the ICU an ideal clinical setting to examine the process.

Much of the literature on entrustment has used discussion disjointed from clinical care or by simulated clinical vignettes to elicit faculty perspectives on the process (12). Such methodology risks a loss of key contextual factors organic to the clinical environment and pertinent to the "unit of analysis" being considered. Furthermore, although expert consensus and focus groups occurring separate from clinical context have explicated a variety of trainee (17, 18) and supervisor characteristics, such methodology lacks the strength to elucidate the social aspects of enacting supervisory decisions. By interviewing supervising physicians within an academic medical center adjacent to the enactment of supervisory decisions, we may be able to better understand the factors specific to the ecology of the clinical environment.

The purpose of this study was to explore the various factors and inputs influencing *ad hoc* entrustment decision making in the medical ICU (MICU). We aimed to build on existing literature to develop a model of the entrustment decision-making process in the MICU.

METHODS

We report a qualitative case study using semistructured interviews to explore the factors and inputs that influence *ad hoc* entrustment decision making in the MICU. The setting is a single, >1,400-bed tertiary academic medical center with resident and fellow physicians rotating in the MICU under the supervision of an attending physician. Recruitment was focused on a 24-bed, noncancer, general MICU within this medical center, which includes rotating resident physicians from categorical internal medicine, internal medicine pediatrics, and internal medicine emergency medicine residency programs. In addition, intern physicians from family medicine and categorical anesthesiology residency programs work alongside internal medicine trainees. Fellow physicians are within a pulmonary and critical care medicine program. This study was approved by The Ohio State University Behavioral Sciences Institutional Review Board on March 20, 2019, with renewal on March 3, 2020 (study ID 2019B0051).

The study team consisted of one pulmonary and critical care fellow (M.C.), one pulmonary and critical care attending and fellowship program director (J.M.), and one palliative medicine attending and fellowship program director (J.G.), each with experience and expertise in medical education. One researcher with graduate-level training in qualitative research methods (M.C.) conducted all interviews with a semistructured interview protocol (data supplement) using a critical incident interview technique (19).

Attending pulmonary and critical care medicine physicians were invited to participate in a 30-minute interview during or within 3 days of ending clinical service. Physicians were asked to describe the recent enactment of entrustment decisions in the MICU, with follow-up questions directed to better understand the perceived contributing factors.

From April 2019 through December 2019, participants were recruited using a convenience sampling approach based on the clinical schedule of the MICUs of interest (20). A convenience sampling approach was deemed most appropriate in this case, as the clinical schedule of the center might be considered a relatively random assignment. As data analysis was ongoing, the research team considered if there was a need to introduce alternative purposeful sampling procedures, but it was believed that the participants recruited reflected both typical and extreme cases and showed a diversity of experience reflective of the overall population of faculty members within the center.

After obtaining informed consent, interviews were audio recorded and transcribed by a researcher (M.C.), without the names of participants or individuals discussed. We collected demographic data of each participant.

Data analysis occurred iteratively with data collection. As frameworks of entrustment published previously in the literature informed analysis, theory generation did not occur in a vacuum. We practiced reflexivity and evaluated for potential sources of bias with individual reflection. We recognize that our clinical expertise and practice setting has a necessary influence on our understanding of entrustment decision making; however, we also recognize that our expert knowledge of the clinical setting under study allows us to explore the concept with some additional ease. Preconceived ideas of entrustment in clinical practice were explored via use of the interview protocol with each member of the research team. The first five interviews underwent initial line-by-line coding independently by each researcher (M.C., J.M., and J.G.) using an inductive analytic approach, allowing themes to arise directly from the data. Individually coded interviews were then triangulated, and codes were discussed by the research team as a whole. Codes were defined and refined through constant comparison (21) across the data. After a coding framework was developed from the first five interviews, subsequent interviews underwent initial line-by-line coding by M.C., with review by the team, and revisions were made by consensus. Deductive analysis of the themes generated by initial coding was performed iteratively, with refinement and theory generation occurring by group discussion. Discrepancies in coding and thematic analysis were settled by consensus among the three research team members. Analysis for data saturation occurred iteratively throughout analysis; we reached consensus that data saturation occurred after the 10th interview, with no new themes arising in the final three interviews. We used Dedoose Software, version 8.3.21 (SocioCultural Research Consultants, LLC) to aid with data management.

Trustworthiness of the resultant themes was confirmed with a member check. Major emerging themes were communicated back to participants in writing, and we invited feedback; we received positive confirmation from participants that the resulting themes were reflective of their experience making entrustment decisions.

RESULTS

Thirteen faculty members were invited to participate, and 10 interviews were conducted. Participant demographics are summarized in Table 1.

Five major themes emerged from the data and are summarized in Table 2. Quotation examples illustrating these themes are included in Table 3.

Task, Circumstance, and Trainee Factors Contribute to Entrustment Decision Making

Trainee factors and behaviors can negatively or positively affect entrustment decisions but are only one of many inputs. Supervisors with prior knowledge of a trainee felt more confident in making supervisory decisions for that trainee. However, many entrustment decisions are driven by the clinical circumstance and specific task under consideration, rather than factors of an individual trainee's competence. Participants described supervisory decisions as biased by the level of the trainee and the time within the academic year rather than knowledge gained by direct observation.

Ad Hoc Entrustment Decisions Are Influenced Not Only by the Individual but Also by the Care Team as a Unit

Senior trainees are often tasked with determining appropriate entrustment of junior trainees. A unique aspect of entrustment within the ICU environment is the consideration of the team in the assessment of entrustment for an individual task. Participants described granting autonomy to resident physicians based on trusting a more senior team member, such as a fellow, to make entrustment decisions for more junior trainees. This delegation of entrustment may result in less direct observation of

Table 1. Participant demographics

Characteristic	Range	Median
Age, yr	35–59	46.5
Years since completion of training	2–27	12.5
Weeks per year attending		
Total inpatient medicine	10–30	18.5
In intensive care unit	5–20	12.5
Sex	(*N* = *10*)	
Female	3	—
Male	7	—
Academic rank		
Assistant professor	4	—
Associate professor	3	—
Professor	3	—
Fellowship training completed at study site institution, by rank		
Assistant professor	3	—
Associate professor	2	—
Professor	2	—

Table 2. Results: major themes

1.	Task, circumstance, and trainee factors contribute to entrustment decision making
2.	*Ad hoc* entrustment decisions are influenced not only by the individual but also by the care team as a unit
3.	Autonomy does not only arise out of entrustment, but outcomes of prior autonomous actions by the trainee inform intention to entrust
4.	Entrustment decision making includes a social process of back-and-forth akin to negotiation
5.	Entrustment decision making is a learned skill

junior trainees by the attending physician. In addition, autonomy was granted with consideration of a supervisory "safety net" of other members of the team or adjacent teams who may be able to provide direct or indirect supervision.

Autonomy Does Not Only Arise out of Entrustment, but Outcomes of Prior Autonomous Actions by the Trainee Inform Intention to Entrust

Autonomy is not solely granted out of entrustment. Autonomy may also arise as a result of competing responsibilities or as an intentional educational approach. Many described autonomy as sometimes incidental: it was necessary for a trainee to perform a task without direct supervision as a result of competing responsibilities of the attending physician, such as holding a clinic at a different site or taking overnight call from home. Thus, the level of supervision provided did not always reflect entrustment decision making, but the outcome of these autonomous actions by the trainee did serve as an input to ongoing entrustment decisions thereafter. Some described granting autonomy to trainees as an initial general approach to supervision, allowing trainees to perform tasks independently before then negotiating the appropriate level of autonomy. Sometimes autonomy was granted by an attending physician in an intentional fashion as an educational tool. Last, autonomy was granted when a trainee was entrusted with a task.

Entrustment Decision Making Includes a Social Process of Back-and-Forth Akin to Negotiation

Autonomy is not simply granted in a unidirectional fashion from supervisor to trainee; a common theme described by participants in determining the level of supervision to be provided for a given task was an active process of discussing the task ahead of time with the trainee. These conversations served almost as if it were a negotiation between the trainee and the supervisor for how a task will be performed, including both the specifics of the task and the level of supervision to be provided. Such a negotiation was described as initiated by either the supervisor, or at times by the trainee, as they "managed up." Negotiation interactions were seen as a teaching event—supervisors described exploring anticipated difficulties, offering premade scripts for communication tasks, and exploring the trainee's learning edge. Often this exploration of the learning edge was combined with knowledge of subcompetencies to determine the level of autonomy that could result in constructive rather than destructive friction (4) experienced by the learner executing the task.

Table 3. Results: quotation examples illustrating themes

Context	Quote
Theme 1: Task, circumstance, and trainee factors contribute to entrustment decision making	
Participant 6 described the impact that their relationship with and extent of prior knowledge of a trainee has on granting autonomy (trainee factor).	"I think toward the beginning of the time, or when I am first working with somebody new, I am more involved, I am more at the bedside, I am more: got the gloves and the gown on and nearby. As I get more comfortable with them, I sort of step back and let them, let them kind of guide the procedure."
Participant 3 framed this prior knowledge in having had the opportunity to probe trainee capabilities and progression from direct to indirect supervision (trainee factor).	"Often certain trainees that I've, you know, have some experience working with them. And I've, you know, probed their capabilities and I can easily just stand there and watch, or not even watch really, I'll say 'you're doing this, I'm gonna go do something—I'm gonna go do my rounds' for example 'and you're on this.'"
Participant 9 described a clinical circumstance that led to limitation of trainee autonomy (circumstance).	"It was not because of an entrustment issue, it was more just there was a lot going on in a given time. That was definitely one where I ended up taking the reins more fully just because the clinical scenario got worse."
Participant 8 framed certain clinical circumstances as triggers for direct supervision of trainees (circumstance).	"I mean if somebody's dying I'm gonna go in there, I'm not gonna stay on the outside … there are certain … patients where it's almost kind of automatic to come in [overnight]: If there's somebody really hypoxic on a ventilator, a young person, asthmatics, pregnancy, if someone is going to ECMO or something like that it's automatic for me [to be supervising at the bedside]."
Participants 3, 10, and 1 reflected on the impact of presumptive trust (that which is "based solely on credentials, without prior interaction with the trainee" [2]) on their intention to entrust (trainee factor).	3: "I mean I always see the year of training is always beneficial. Obviously, the senior-most people I tend to inherently trust a little bit more … I assume when you say a PGY-2 or 3 or 4 or 5, you know, I assume … what that person should [be able to do independently]."
	10: "[I consider] level of experience to some degree, certainly. Because you make certain assumptions about what you know a senior resident has seen versus what an intern has seen. That factors in."
	1: "It also depends, though, when in the year it is and what level of trainees that I am working with…I think you have a baseline, kind of, comfort level depending on just the level of the fellow … I think we all have our biases, and I think those biases are more based on level of training."

Table 3. *Continued*.

Context	Quote
Theme 2: *Ad hoc* entrustment decisions are influenced not only by the individual but also by the care team as a unit	
Participant 8 framed his level of trust as determined by an assessment of the team.	"So I don't think I've ever had a circumstance where the team itself—or where I haven't had almost full trust in the team itself … I don't think I've ever had a single circumstance where I've felt that the team was gonna let me down."
Participant 7 used language centering assessments of trust on the team, rather than an individual.	"It's a team effort and if you don't know all the members of the team, or if there's a weak person in the team, then it could all suffer."
Participant 2 conceptualized the role of the supervisor as also facilitating team dynamics and supervision of trainees by more senior trainees, not only the supervision of an individual.	"And figuring out, within that team, who really needs the support and the supervision? And then who in that team can give that to them? Because part of your responsibility as a supervisor, is, I think there are others on that team that need to learn how to supervise too. And figuring out how that can all come together."
Participant 4 described the habit of relying on the fellow physician to directly observe and evaluate procedural skills of a resident, even in circumstances of identified concern for a struggling learner.	"A lot of [entrustment decision making] is left up to the fellow. Like, procedure wise, that happens, where we're not sure about the procedure skills [of a resident] or there is a question or … there's some concerns, but in that case I'm still kind of delegating to the fellow so the fellow is supervising more directly."
Participant 7 described the primary source of information on resident characteristics to be from interactions on rounds, noting the delegation of direct supervision in other tasks to the fellow physician.	"My own judgement of the residents is largely, largely from rounds. And then that's it! Whereas the fellows, because of the autonomy we give them, to push them to run rounds, run the service, they have a more intimate relationship with the residents in terms of the day-to-day workings … I always think of the fellow as being a little bit of a buffer between the attending and the residents."
Participant 7 described the boundaries of the perceived team to extend beyond the single unit, inclusive of other physicians in proximity.	"I am trusting the fellow to know their limits and at the same time another thing that helps with entrustment is to know this division as well—my colleagues. I know one of my colleagues is literally down the hall and I feel comfortable leaving."
Participant 1 conceptualized the team members as layers in a safety net.	"I wasn't needed. I felt comfortable with them handling it on their own … I had the safety net of the fellow if this [resident] struggled [in the family meeting]."

Table 3. *Continued*.

Context	Quote
Theme 3: Autonomy does not only arise out of entrustment, but outcomes of prior autonomous actions by the trainee inform intention to entrust	
Participant 4 was explicit in noting that autonomy does not equate to entrustment.	"I don't make the decision a lot of times about who does what, right? Because you're not there all the time … You're not always letting people do things—they have their own responsibilities you know 'you're a resident, you're a fellow, and you do things' and your attending isn't always looking over your shoulder saying 'I let you do that.'"
Participant 6 noted incidentally arising autonomy as "artificial" rather than reflective of entrustment.	"[The autonomy granted] was a little bit artificial because I had to go to clinic and so I wasn't around."
Participant 3 described incidentally arising autonomy as "obligatory deferral" rather than reflective of entrustment.	"I was somehow in clinic, and you know it's an obligatory type of deferral [of direct supervision]."
Participant 2 described granting autonomy as an initial general approach to supervision with a "rhythm" of correction toward appropriate autonomy, influenced by a trainee setting boundaries.	"It's not perfect, but most of the time there's a comfortable rhythm where allowing that sort of comfortable level of autonomy that things will kind of correct themselves, because I think most people will reach out when they want and need help."
Participant 2 framed their approach to physically indirect supervision as an educational approach to foster independence of senior trainees.	"My tendency is to try to leave the ICU to give the fellows the opportunity to lead to the best of their ability."
Participants 6 and 5 described the intentional creation of constructive friction (2) as guiding supervisory behaviors.	6: "I was a first-year fellow and one of the newer attendings told me that 'unless you feel it at the pit of your stomach, you're not really learning anything' and I think that's really true. And so I want the house staff to actually have to stop and think about what they're doing and actually feel some angst in trying to make that decision. Like, 'what's the right thing to do here?' There's always the board answer and sometimes the real-world answer isn't quite the same, or you've got three bad options and how do you pick which is the least bad of the three options. And I think, I think, a lot of learning happens that way and so, I kind of let them learn by doing." 5: "I just think that giving the trainees the autonomy to do things is the best way for them to learn. I am not gonna let them do anything—I mean obviously—anything that's gonna cause pain, or harm to anybody but … I don't tend to micromanage because I don't think it serves the trainees very well. It's like if you do everything for your children, they are never gonna learn how to do anything for themselves, kind of thing."

Table 3. *Continued*.

Context	Quote
Theme 4: Entrustment decision making includes a social process of back-and-forth akin to negotiation.	
Participants 1, 9 and 2 describe discussing the approach to a task ahead of time, serving to coach the trainee, with the ultimate effect of allowing more trainee autonomy in the later execution of the task.	1: "I have made a conscious effort to let the team take the lead in those discussions after we've discussed how we will approach those conversations … we talked on rounds about how they would approach it, some of the language that they would use … we had kind of role-played with it how they might approach some difficulties which may arise." 9: "I went up and talked with the trainee about previous experience … and then I basically walked her through my usual process … .So, [determining the level of supervision] was a combination of getting a feel for her previous experience, and then also demonstrating my usual technique … I handed the patient back off to the trainee with, like, 'Here's the plan going forward, call me if you don't feel comfortable, or if the patient deviates from the expected course.'" 2: "We discussed it in detail on rounds and I did what I thought was my best to sort of lay the groundwork and to sort of identify the issues and then I made a conscious decision to allow this trainee to act on behalf of the health care team to communicate with the power of attorney."
Participant 2 described behaviors of trainee-initiated negotiation in the performance of a task of clinical care ahead of execution of that task as engendering trust.	"A lot of trainees like in terms of medical decision making or communication … will ask or run things by me, right? And I think that's a certain personality type who will, just, say 'Hey, this is what I was planning on doing? What do you think about this before I go into this?' And so that is someone who is testing their own boundaries, right, before they get into a situation, versus asking for permission after they have already done something, right? And so I think, so that reassures me."
Participant 1 described a fellow negotiating autonomy ahead of a family meeting.	"We discussed that one of us should be there. The fellow actually said I'm comfortable without you there—as long as you're comfortable I'm happy to do this on my own."
Participant 3 described the negotiation of task as a method of providing indirect supervision to the trainee ahead of granting autonomy in execution of the task.	"Sometimes more of the supervision is physical, it's maybe sometimes it's like verbal: you give instructions, you follow up on the instructions being done. Or your give a suggestion to see how that went through, and then decide on, uh, you know, secondary action or something?"

Table 3. *Continued.*

Context	Quote
Theme 5: Entrustment decision making is a learned skill	
Participant 5 noted the evolution of supervisory style over time.	"I've gotten my style [of supervision] down now, and it's certainly different than it was 12 or 13 years ago when I started, and it may evolve even more."
Participant 10 described feelings of discomfort as an early supervisor and discussed "striking balance" in supervisory style as "constantly evolving."	"It's terrifying! Right? Like there's a lot that you don't have control over, and that's fine to some degree, it's part of the process. But yeah, it can be a little … interesting? The first time that … I mean, for sure the first time I was ever a senior resident was scary. And then you get more and more comfortable with it, just, your own experience and necessity for time (laughs) and that sort of thing, to try to strike that balance. But, yeah, I think it's a constantly evolving process of always reassessing. And if you know one day I felt super comfortable with a particular trainee, and then something happened and I kind of feel like I have to circle back and reassess my level of confidence there, or what have you … that just, it's constantly evolving. But I think … I don't know, it just always has to be a fine balance of us providing experienced input, but also letting them, you know, think through things on their own and sometimes make some mistakes and that sort of thing. As long as avoiding harm."
Participant 8 also describes feelings of discomfort in new supervisory roles and describes improving skill in supervision over time based on feedback from learners.	"During my first year as an attending I am very cognizant of the feedback that I get from the fellows. And some of the very candid feedback was that they felt too little autonomy and I was too much there. Like the fellow didn't feel like they had a role and ever since I read that, ah, that feedback, I've been hypersensitive to that—being like 'okay, it's your call … you do it.' And so that has also kind of helped me feel better about having clinic twice a week. You know, having to let go a little bit more."
	"I've gotten better at it I think of staying out of it and really trying to assume that purely supervisory role to make sure that everything's kind of going according to you know how it should be going with it … so I think that's still the hardest thing for me to do is back up, let them do it and learn with it."
Participant 2 reflected on changing supervisory style over years.	"I didn't start this way. I think I started at quite the opposite, but I realized that I was stifling people. And I think that it was, I think that for the average learner, and I think for—and definitely for the above average learner, I think that this is the right way to let folks kind of, they'll set their own boundaries"

Table 3. *Continued*.

Context	Quote
Participant 5 describes supervisory transitions as "not always the easiest."	"[I have developed my style by] watching people, hiring people and watching people evolve in terms of their careers. Most people start off when they are first year faculty or young faculty and they are pretty hands on. And that's just because the transition from being a trainee to the person in charge is not always the easiest."
Participant 3 described supervisory operations as instinctual.	"I guess at this stage in life I'm very instinctual in my operations, so it's a little bit hard. So I'm not as—I don't watch—I'm not as perceptive, or introspective as I used to be before. I'm not trying to learn from my experience any more. I have it, I put it out, it's a little bit different for me to, um, ah, I guess ah you know call it out or, uh, explain my technique and all that. Cause it just comes out, I'm no longer thinking of it too much."
Participant 5 also described years of experience as driving instinct.	"Some of it, honestly, is just experience of being doing it a long time. Where you can … you can know fairly quickly … you can pretty quickly tell "hey, this person's sharp and got their stuff together" or "this person on their presentations, or whatever, seems to not be as sharp, or as prepare" … you just know."
Participant 1 discussed the use of modeled behavior and feedback from trainees as contributing to developing supervisory practices.	"I mean I'm still fairly junior so I think a lot of [my style of supervision] just comes from talk among [my former co-fellows as we would talk about attendings that we really enjoyed working with and those that we didn't enjoy working with as much. Trying to take what I liked and didn't like from them and trying to incorporate it into my own practice."
	"I ask for that very, like, concrete feedback: do you feel micromanaged or under-supervised. And if I'm getting a mix, then probably, you know it will vary depending on who the person is. But if everyone is saying the same then then probably I'm too far to one side"
Participant 7 describes the impact of local culture on supervisory decisions.	"I'll be honest with you—I didn't talk with the residents themselves I just kind of talked it over with the fellow and, and that might just be because of the culture here. Everything kind of revolves, or goes through, the fellow."
Participant 8 describes faith in quality of matched learners as impacting supervisory decisions.	"The fellows are always good here. I mean I've never worked with a bad fellow. So, I usually kind of let the fellow dictate most of the stuff, and I'm there primarily for an extra pair of hands."

Definition of abbreviations: ECMO = extracorporeal membrane oxygenation; ICU = intensive care unit; PGY = post graduate year.

Entrustment Decision Making Is a Learned Skill

Supervision of trainees and entrustment decision making was described by many participants as a learned and evolving skill. However, when exploring how this skill is developed, no participant discussed formal instruction or overt mentorship as a method. Entrustment decision making is influenced by supervisory style, which evolves over time and may be impacted by the local culture of the institution. Participants described the use of modeled behavior, feedback from trainees, personal experience during their time as a trainee, past mistakes, and other factors that influenced the development of their supervisory style.

DISCUSSION

These findings show that *ad hoc* entrustment decisions do not relate only to trainee competence but result from complex interactions of several factors. Autonomy granted in clinical practice is not always the result of an intentional entrustment decision. Others' models have not acknowledged the incidental autonomy described by our participants.

Many participants referred to the level of training as a key trainee characteristic influencing their intention to entrust. Although this is not a new finding, the frequent use of presumptive trust (that which is based on credentials) (2) has negative implications for competency-based assessment of entrustability and underscores the difficulty in transition from a time-based to competency-based system of medical education.

This study finds that *ad hoc* entrustment decisions in the ICU are made with consideration not only of a singular trainee but also of the whole care team. As such, in settings where team factors predominate, the use of entrustment-supervision scales asking for a description of the prior enacted level of supervision may risk a halo effect from the team in the assessment of an individual trainee. This could affect the performance of such evaluations in the discernment of borderline performers. The consideration of support provided by a team may predominate in the ICU as one method of mitigating perceived risk. The delegation of entrustment decisions of junior trainees to more senior trainees is a finding that deserves further exploration, particularly in settings using fellowship-level trainees. This suggests that systems of learner assessment should also target input from senior trainees regarding junior learners.

The framework for entrustment decision making proposed by Holzhausen and colleagues contends that "the degree of entrustment is expressed by a higher or lower level of supervision" (13). However, we have found that supervision provided is not always a reflection of entrustment decision making; clinical staffing models have a significant impact on the enactment of supervision in clinical practice. Although the degree of supervision provided for a task may initially stem from factors independent of entrustability, the outcomes from these events do influence future entrustment decisions. This finding underscores the impact of attending staffing models on the clinical learning environment of trainees. In addition, the finding of incidental autonomy emphasizes the superior utility of prospective entrustment-supervision scales (asking the supervisor what entrustment decision they would make in the future) rather than those that are retrospective (asking the supervisor to describe the level of supervision provided) in the assessment of entrustability (1).

The enactment of supervisory decisions and the entrustment decision-making process involves a conversational back-and-forth akin to negotiation between the supervisor and the trainee—the process is not entirely residing within the supervisor but is also a social process. Such negotiation may help entrustment decisions become more precise by identifying the trainee's learning edge, allowing the supervisor to provide effective scaffolding and encourage the trainee to function within the "zone of proximal development" as conceptualized by Vygotsky (22). Defining best practices in how to perform this negotiation may provide an opportunity for faculty development and could have the potential to improve the accuracy of *ad hoc* entrustment decisions. Similarly, the confident engagement in this back-and-forth with a supervisor may be a teachable skill for trainees (11).

Our data suggest that entrustment decision making in clinical practice takes skill. As the process of entrustment decision making becomes more completely understood, it may be helpful to conceptualize it as an entrustable supervisory activity of the teaching physician—a core and necessary unit of work requiring the skilled enactment of multiple competencies of supervision.

The process of entrustment decision making in the ICU is more complex than prior frameworks have captured. A model summarizing our understanding of entrustment decision making in the ICU, informed by a prior published conceptual framework and our data, is shown in Figure 2.

In any given entrustment decision, the variables and moderators that exert the most weight on the level of supervision vary because of the specific situation. An entrustment decision with stronger influence from certain factors (clinical staffing model, level of training, and supervisor characteristics) compared with other inputs (trainee characteristics, trainee readiness, and negotiation with trainee) is likely to reflect a less effective entrustment decision (23). It is not clear how often *ad hoc* entrustment decisions in clinical practice are driven by inputs

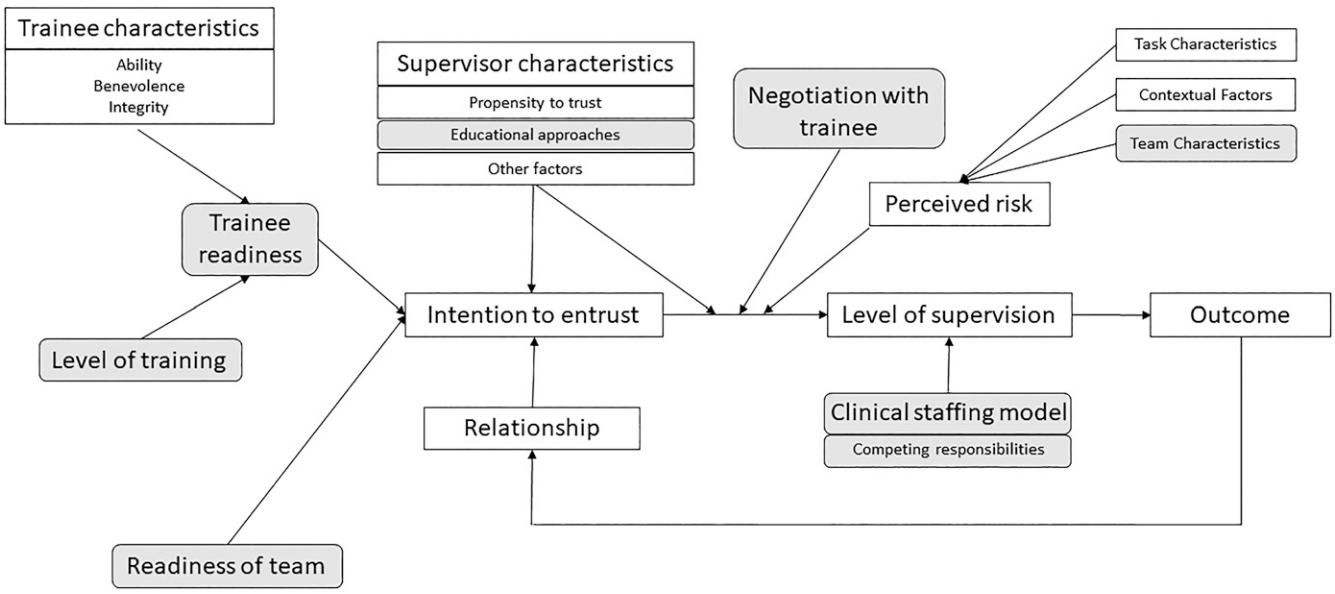

Figure 2. Model of entrustment decision making in the intensive care unit. Shaded boxes refer to components added from our data.

relating primarily to trainee competence, which carries implications for the use of entrustment as assessment.

Based on our conceptual model, there are several areas of potential intervention to strengthen the quality of an entrustment decision, benefiting learners in practice and providing a superior basis for assessment. First, instructing trainees how to leverage behavior, skills, and qualities to positively influence the assessment of their readiness for a clinical task may help to strengthen the link between readiness and entrustment actions. Equipping trainees with the ability to effectively showcase themselves to a supervisor to maximize the precision of readiness assessment provides learners agency in the entrustment decision-making process. Second, crafting the structure of staffing models in the clinical learning environment to facilitate intentional entrustment decision making and minimize incidental autonomy should be considered best practice not only for learners but also for patients. Third, development of both faculty and trainee skills to most effectively engage in negotiation of autonomy will allow a trainee's learning edge to be more precisely identified and constructive friction within the so-called zone of proximal development to be maximized (22). This is an area that would benefit from further research for a more complete understanding of the social processes that mediate entrustment decision making.

Strengths

By interviewing clinical supervisors during or adjacent to time spent on clinical service and using critical incident interview techniques, we were able to obtain rich narrative data describing recently enacted supervisory decisions and the context of the supervisor's perception of the trainee surrounding these decisions. The inclusion of some faculty without targeted training and expertise in medical education offers a diversity of insights to the entrustment decision-making process compared with prior literature that has predominantly provided the perspective of the expert educator. We captured faculty with a wide range of experience attending in the ICU (2–27 yr) and with a relatively equal distribution across academic ranks.

Study Limitations

Data gathering by interview holds inherent limitations both in recall and in cognitive insights to a process that may include subconscious inputs. Qualitative research is inherently limited in transferability. Examination of only one academic medical center, with faculty predominantly trained at the study site institution, risks even less transferability of results, a limitation further supported by the finding that local culture impacts supervisory behaviors. The use of convenience sampling may risk a lack of diversity of viewpoints.

Conclusions

Entrustment decision making in the ICU considers more than the competence of a trainee. The management of risk by a supervising physician is moderated by the characteristics of the team, comprising a safety net. The entrustment decision process includes a social process akin to negotiation between supervisor and trainee; this provides an opportunity for both faculty and trainee development to optimize entrustment decisions in practice and for assessment. The persistence of a time-based bias among supervisors carries negative implications for the use of entrustment as assessment in

competency-based education. We found that the process of entrustment decision making in the ICU is more complex than prior frameworks have captured; we presented a model with more complete incorporation of the factors that influence entrustment in the ICU.

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