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"What Do You Want to Learn or Work on Today?": Benefits and Barriers to Asking Residents for Self-identified Learning Goals

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ABSTRACT

Background: In the emergency department (ED), residents and attendings may have a short-term relationship, such as a single shift. This poses challenges to learner assessment, instructional strategy selection, and provision of substantive feedback. We implemented a process for residents to identify goals for ED shifts; characterized residents' goals; and determined how goal identification affected learning, teaching, and feedback.

Methods: This was an observational study in a large, tertiary pediatric ED using mixed methods. Residents were asked to identify learning goals for each shift and were asked postshift if they had identified, accomplished, and/or received feedback on these goals. Goals were categorized by Accreditation Council for Graduate Medical Education Core Competencies. Predictors of goal identification, accomplishment, and receipt of feedback were determined. Residents and attendings were interviewed about their experiences.

Results: We collected 306 end-of-shift surveys (74% response rate) and 358 goals and conducted 29 interviews. We found that: 1) Goal setting facilitated perceived learning. Residents identified goals 54% of the time. They accomplished 89% of and received feedback on 76% of goals. 2) Residents' perceived weaknesses, future practice settings, and available patients informed their goals. Most goals mapped to patient care (59%) or medical knowledge (37%) competencies. 3) Goal identification helped attendings determine residents' needs. 4) Ideal goals were specific and achievable. 5) Common barriers were busyness of the ED and difficulty creating goals. Residents were less likely to identify goals (odds ratio [OR] = 0.62, 95% confidence interval [CI] = 0.41 to 0.94) and receive feedback on busy evening shifts (OR = 0.19, 95% CI = 0.10 to 0.37) and were most likely to receive feedback overnight (OR = 3.66, 95% CI = 1.87 to 7.14).

Conclusions: Asking residents to identify goals for ED shifts as an instructional strategy facilitated perceived learning, goal accomplishment, and receipt of feedback. Resident-driven goal identification is a simple and effective instructional strategy that physicians can incorporate into their precepting in the ED.

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Due to shift work and many rotating learners, attending physicians in large academic emergency departments (EDs) may be meeting residents for the first time when starting a shift. This makes it challenging to perform accurate learner assessment or determine ideal ways to engage residents in learning. There are limited instructional strategies specifically for emergency medicine physicians described in the literature.[1] While it is known that goal setting and planning are important components of lifelong learning in medical education,[2,3] we do not know if seeking learning goals as an instructional strategy is useful for a single ED shift. Learner engagement is a key element of feedback and a focus of some feedback models,[4,5] and we theorized that resident-driven goal setting would increase engagement in learning and promote feedback from preceptors. If successful, this would be a quick and simple way to maximize resident learning in the ED. The objectives of this study were to 1) implement and evaluate a process for residents to identify learning goals for each ED shift; 2) characterize residents' goals; and 3) determine how goal identification affected residents' and attendings' experiences with learning, teaching, and feedback.

METHODS

This was an observational study using mixed methods from March 19 to August 3, 2018, in a large (100,000 visits/year), academic, children's hospital ED. It is a training site for 14 Accreditation Council for Graduate Medical Education (ACGME)-accredited residency programs including pediatrics, emergency medicine, family medicine, and psychiatry. Eligible study participants were the 194 residents and 49 pediatric emergency medicine attendings who worked in one acute care team during the study period. The Children's Hospital of Philadelphia and Johns Hopkins University Institutional Review Boards deemed this study exempt from review.

Intervention

To elicit learning goals, at the start of each shift, attendings asked residents to complete a study card containing the open-ended prompt, "What do you want to learn/work on today?" and to share their goals with the attending.

Data Collection

At the shift's end, research assistants (RAs) orally surveyed residents with three yes/no questions to determine if they had 1) identified, 2) accomplished, and/or 3) received feedback related to their goals. Survey responses and study cards containing learning goals and deidentified data (residency type, postgraduate year [PGY], shift time, and number of residents working that shift) were entered in a REDCap database. We then conducted semistructured interviews with a subset of residents and attendings. All residents were e-mailed at their rotation's end, stating that those who identified a goal at least twice were eligible to be interviewed. Attendings who worked at least two shifts per month in the study team were eligible and divided into two groups: members of our education committee and others. We randomized attendings from each group to receive an invitation. Residents and attendings were interviewed at the end of their rotation or the study period, respectively. Interviews were conducted by phone, audio-recorded, and transcribed and conducted until thematic saturation was reached.

Data Analysis

To evaluate the feasibility of our intervention (objective 1), we used quantitative survey data to report how often residents identified, accomplished, and received feedback on their goals. We then conducted unadjusted univariate logistic regression to determine predictors (residency type, PGY, shift time, and number of residents working that shift) of goal identification, accomplishment, and feedback. To characterize residents' goals (objective 2), two authors (PF, AW) mapped each goal to one of the ACGME Core Competencies. To determine how goal identification affected residents' and attendings' experiences (objective 3), qualitative interview transcripts were coded and analyzed to identify themes. The first two interviews were coded by four investigators (PF, EH, MC, and IG) to develop an initial code guide, which was iteratively revised. Subsequent interviews were parallel coded by two investigators and discussed until consensus was reached. Data were analyzed using Stata/SE and Microsoft Excel.

RESULTS

Research assistants completed a postshift survey after 306 of 413 shifts during the study period (74% response rate). Because each survey contained responses from either one, two, or three residents, depending on how many residents were working that shift, we collected 487 resident surveys after these 306 shifts. Fifty-four percent (263/487) of residents

identified learning goals. Of those, 89% (234/263) accomplished their goals, and 76% (199/263) received feedback. Residents were less likely to identify goals (odds ratio [OR] = 0.62, 95% confidence interval [CI] = 0.41 to 0.94) and receive feedback on evening shifts (OR = 0.19, 95% CI = 0.10 to 0.37), but were most likely to receive feedback overnight (OR = 3.66, 95% CI = 1.87 to 7.14) (Data Supplement S1, available as supporting information in the online version of this paper, which is available at http://onlinelibrary.wiley.com/doi/10.1002/aet2.10564/full).

We collected 358 learning goal study cards. Most goals fell within the patient care (212/358, 59%) or medical knowledge (131/358, 37%) competencies. We interviewed all 19 residents who responded to our e-mail (10 pediatrics, seven emergency medicine, two family medicine; six PGY-1, six PGY-2, five PGY-3, two PGY4). Twenty-two attendings were eligible and

Table 1
Themes and Illustrative Quotes

Theme	Quote
Goal setting facilitated perceived learning.	"So because of that goal, some of the attendings would say 'why don't you pop in this room and take a look at that kid real quick,' even if it wasn't my patient. Whereas if I just kept that to myself, I don't think that would have happened." –Resident participant #3 "I would say the times that I haven't identified [a goal] – usually we get less – almost less face time with the attending." –Resident participant #10 "I feel like we are all very goal-directed as physicians and therefore when given a challenge we try and rise to the occasion. So sometimes I actually wind up doing little lectures on something that we don't have a patient about." –Attending participant #6
Perceived weaknesses, anticipated future practice settings, and available patients informed residents' goals.	"I think for me, the main thing that I felt was knowing kind of what are common things they see in the emergency department that I felt like my knowledge was currently lacking in."—Resident participant #14 "I think I'm probably going to be an emergency medicine doctor who works in the community setting and not having nearly as many resources as I would at an academic facility. So I always try to think of things what would best serve me when I'm more on my own without the support that I have here."—Resident participant #3 "One of my goals was ketamine sedation. And that was chosen because I had a patient who needed a ketamine sedation, and I'd never done it before. And identifying that as a goal was really helpful for kind of triggering the attending to kind of stop and go through how to do the sedation, the thought processes behind it, things you want to watch out for... And I think maybe had I not had that patient and identified the goal, maybe the attending would have been like, 'Oh, we'll just give this patient to another resident or something.' But because it was an identified goal, I got the teaching and I got the experience."—Resident participant #16
Goal identification helped attendings determine residents' educational needs, which were otherwise difficult to predict.	"I think there is always something of a discrepancy between what educators think certain learners should learn and what learners think a learner should learn, either for their stage of training or for their degree of experience in our environment."—Attending participant #1 "I think when they did identify goals, it just was like—kind of like perked me up a little bit, like oh, I can talk about this now, and had something that I knew they wanted to learn about versus things that I thought they should learn about."—Attending participant #5 "[Without goal identification,] I think that they may not have gotten out what they had wanted to ... and I may end up teaching them things or talking about things that they're not as interested about."—Attending participant #9
Ideal goals were specific and achievable. Attendings helped residents adjust goals accordingly.	"Another example would be 'get better at babies.' I'm like, 'What do you mean at babies?' They're like 'Well, I feel like I don't see enough babies.' I was like, 'Okay, let's make an achievable goal. Your goal is to pick up every baby—new baby—that comes in under the age of 2 months, and come up with a differential for all of those.' And we really focused on the kind of concrete goals that are measurable that they feel that they can accomplish in that time period."—Attending participant #3 "[Some residents' goals were] 'do a pediatric intubation,' which was too rare and unlikely to happen. But some were like 'work on approach to pediatric EKG.' That's more attainable because it's likely some—a patient over the course of the night even though it's not their patient—having that. And so you would know to grab them and do some teaching whereas you otherwise might not."—Attending participant #10
There were multiple barriers and facilitators to goal setting, accomplishment, and receipt of feedback.	"Sometimes the shifts are really busy so they can just kind of be a lot more about work than about learning. But I think this did help to bring some learning into my shift."—Resident participant #9 "Initially, it was difficult to know what to identify or what to write down, and I ended up writing something down that I didn't see at all during the ED shift."—Resident participant #11 "It's always harder having discussions where someone lower in the hierarchy is telling someone higher in the hierarchy ... Usually it's easier when someone's like, 'let's talk about your goals.' But I think this helps facilitate that a little bit easier."—Resident participant #8 "So writing the goal down allowed me mentally to focus on what each individual person wanted to achieve."—Attending participant #3

10 were randomized to be interviewed (median = 7.8 years since fellowship, range = 1–25 years). Five major themes emerged from the interviews (Table 1).

DISCUSSION

We believe that goal setting facilitated perceived learning by increasing engagement in learning and teaching. We found that the process drew attention to residents' desire to learn and helped initiate conversations with attendings. It is known that the first component of a well-defined goal is that the goal is *important* to the learner,[6] and our residents described goals that were important to them in our study. Our thematic finding that residents tried to fill knowledge gaps related to complaints or diagnoses they had not seen or procedures with which they had no or limited experience was consistent with our findings that most goals related to patient care or medical knowledge competencies. These knowledge gaps were difficult for attendings to predict. Others have observed that residents and preceptors may not identify concordant learning needs,[7] but in our study, the process of goal identification brought these needs to light.

Importantly for emergency medicine educators, if residents set a goal, they were likely to report that they accomplished it and that they received feedback. With the simple intervention of asking residents for a learning goal, attention was drawn to residents' desire to learn and attendings' desire to teach, and goal identification helped facilitate instruction. Notably, in both our qualitative and our quantitative analysis, we found that the busyness (patient volume and acuity) of evening shifts was a significant barrier to the process of goal setting. Nevertheless, others have found that residents recognize challenges faced by preceptors and value their time and willingness to capture the "teachable moment."[8]

LIMITATIONS

We relied on self-report of goal accomplishment and feedback and did not objectively measure learning nor define "feedback" for our participants. Our resident interview sample may have been influenced by self-selection bias; residents with negative experiences may not have volunteered. Finally, this single-site study may not be generalizable to other EDs.

We did not instruct residents how to develop learning goals or prescribe what attendings should do with the goals. This was intentional, because our objective was to report what happened simply by asking for goals and not have results depend on additional curricular interventions that may not be generalizable. However, others have found that orienting residents to learning goals contributes to their successful use[9] and this is a next step for our group.

CONCLUSIONS

Asking residents to identify learning goals that they found important, and to share these goals with their attending, facilitated perceived learning, goal accomplishment, and receipt of feedback. It is a simple and effective instructional strategy that physicians can incorporate into their precepting in the ED.

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Supporting Information

The following supporting information is available in the online version of this paper available at http://onlinelibrary.wiley.com/doi/10.1002/aet2.10564/full

Data Supplement S1. Predictors of goal identification, accomplishment, and receiving of feedback.