RESIDENT AS TEACHER: PRACTICAL TIPS TO ENHANCE FEEDBACK ON THE FLY

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This is the first in a series of articles to enhance resident teaching skills. Both residency and clerkship directors recognize that duty hour reform and increasing patient care demands compete with residents' time to teach. Yet, residents play a critical role in the education of medical students. Consequently, the Association of Program Directors of Internal Medicine and the Clerkship Directors of Internal Medicine created a joint task force to develop tools to help residents incorporate teaching into daily patient care activities. In this series, we will use common clinical scenarios to highlight practical tips to encourage teaching "on the fly."

Most residents will recall the excitement felt when they were medical students finally leaving the classroom to start clinical rotations in the "real world" of medicine. Adult learning theorists note one reason for this excitement is that adults prefer *experiential learning*—learning that is meaningful because it is applicable to one's work or interests [1,2]. Knowles et al [2] further elucidated this process of experiential learning by describing a cycle of experience followed by observation and reflection, which allows the learner to integrate the observations into theories that may be tested in a new situation. Thus, past experiences become relevant to the learner's understanding of future problems.

Although self-reflection is important to this process, medical students and interns are novices to clinical medicine and need instruction and insight, or *feedback,* from more experienced practitioners to know whether they are learning correctly. In his seminal article on this topic, Ende [3] defined feedback as information describing a learner's performance in a specific clinical activity that is provided to guide future performance in a similar or related activity. As such, feedback ideally is based on careful observation by individuals who are well-informed about the standards of clinical competence. Yet, students report that residents are the ones most likely to observe their clinical skills and to provide them with instruction [4–6]. To maximize their experiential learning in clinical settings, students rely heavily on residents to provide feedback based on observations of concrete experiences, such as examining a patient or writing a progress note. It is not surprising, therefore, that students report wanting more feedback and that the provision of feedback strongly correlates with perceived teaching effectiveness [7,8].

Learners are likely to perceive only the formal, sit-down sessions with supervisors as feedback and to overlook the informal, but rich feedback that may occur during day-to-day clinical experiences, or "on the fly." Furthermore, this informal feedback has unique advantages that complement formal feedback sessions. This article presents a few simple techniques residents can apply to enhance the quality of informal feedback given during the normal flow of a workday and to make it more recognizable as feedback to students and interns. To begin, consider the following typical scenario between a third-year student and a second-year internal medical resident on busy morning rounds.

Student: Mr. Smith is our 72-year-old man with diverticulitis on day 3 of ciprofloxacin and metronidazole, who reports improved pain. He tolerated his breakfast this morning except for the eggs, but he said that was because they weren't real eggs but he did eat his bacon and toast.

Resident: (interjects) Good. Why don't you move on to the physical exam.

Student: ...well-developed, well-nourished man in no acute distress, normocephalic, atraumatic, HEENT showed PERRLA, nares patent…

Resident: (interjects) Good. You can just focus on the pertinent findings for rounds, including the vitals.

Student: OK. He was afebrile overnight with BP 125/82, pulse 72, and his abdomen is soft and nontender. The lab did call this morning and said 1 of 4 blood culture bottles is growing gram-negative cocci, so I thought we should start vancomycin because he doesn't have good gram-positive coverage.

Resident: That was likely a contaminant, but you're right

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Table 1. Characteristics of Effective Feedback

Occurs in nonthreatening settings
Resident and student in alliance to achieve common goals
Timely
Focuses on limited (1–2) areas
Based on directly observed and modifiable behaviors
Cites specific examples, avoids generalizations
Avoids judgmental language and focuses on descriptions of behaviors
Focuses on *what* the student did, not *why*

that he doesn't have good gram-positive coverage. Good job.

Was This Effective Feedback?

Did this student receive effective feedback? Do you think the student recognized this as feedback?

The characteristics of effective feedback have been well-described and are summarized in **Table 1** [3]. Many of these features are particularly well-suited to providing feedback on the fly. Consider our case scenario—in fact, it does exemplify characteristics of effective feedback. It is timely, based on directly observed and modifiable behaviors, limited in quantity, and focused on limited areas. In addition, the resident is specific and nonjudgmental with the advice to include the vital signs and to focus on the pertinent parts of the physical examination. However, Ende [3] reminds us that feedback should offer insight into what the learner did and its consequences.

Reflecting on the opening scenario, what insight do you think the student gained from this interaction? The resident appears to want the student to omit extraneous details from the oral presentation and to better prioritize the information. Yet, it is easy to imagine that the student thought the presentation went very well. Although the student was interrupted and told to move on, she may not have recognized that this was because she was providing unnecessary details and ineffectively prioritizing the information. She simply could have assumed that the resident was in a hurry to finish rounds. It is unlikely that the student's presentation will be much better the next day. It is also uncertain whether the student understood that the resident did not want her to start vancomycin. If you were the resident, would you want to listen to a similar presentation the next day or to learn that the antibiotic was started?

What Would Make the Feedback More Effective?

Several things occurred in the scenario that may have undermined the success of the feedback.

Keep feedback nonthreatening. The teacher and learner are working toward common goals.

First, although it was timely, the resident's interruption of the student in front of others adds to an already stressful setting and could create an adversarial situation. Whenever possible, you should try to provide corrective feedback privately, one-on-one, as this is less threatening and may help you maintain an alliance with the learner [3,9,10]. Unfortunately, in the fast-paced environment of clinical medicine, corrective feedback sometimes must be given immediately, with others present, to keep the feedback timely and to enhance the quality of patient care. When this occurs it is easy for the learner to focus on her own stress and not process the message of the feedback. Taking a minute to reinforce the key point with the learner later in private can enhance this real-time feedback. Regardless of setting, it is important to keep feedback nonthreatening.

Always link feedback to specific behaviors, but link *positive* feedback only to *desired* behaviors.

Second, the resident may have recognized that interrupting the student was stressful, so he interjected with positive words ("good") to make the feedback sound nicer. However, linking undesired behavior with positive words can undermine the message of corrective feedback [9,10]. Some students focus only on positive phrases such as "good job" and incorrectly overestimate their performance, which leads to frustration and confusion when they are ultimately evaluated. In fact, it is the lowest-performing students who tend to overestimate their abilities the most [11,12]. This problem can be avoided by linking positive phrases only to the specific behavior that was in fact good. Even when giving positive feedback, it is important to be explicit about what the learner did well.

Be sure the learner leaves with a clear plan of action.

Third, the resident did not make it clear to the student that her oral presentations should be more focused and that he does not agree that the patient needs vancomycin. It is to be expected that students will need corrective feedback by the very nature of their position as novices

to clinical medicine. A popular approach in this situation is the technique of "sandwiching" corrective feedback between positive feedback [13]. This technique has been criticized as potentially diluting or undermining the message of the corrective feedback. One suggested modification is to sandwich the corrective feedback between positive feedback and a specific next step for improvement, rather than more positive feedback.

Be sure the learner recognizes feedback when it is given.

Finally, the student may not have recognized the resident's comments as feedback simply because the word "feedback" was not used and because the comments were made during work rounds rather than in a formal sit-down session. More formal feedback sessions such as those that occur at the middle and end of rotations have the advantage that their feedback purpose is made explicit. The purpose of feedback on the fly also can be made explicit, without adding extra time, simply by using the word "feedback." Even the best feedback will not be effective if the learner does not recognize that she is receiving feedback. This simple habit can allow you to combine strengths of both formal and informal feedback.

Applying these simple strategies to the original scenario, we can see how the resident might have more effectively provided feedback on the fly.

Student: Mr. Smith is our 72-year-old man with diverticulitis on day 3 of ciprofloxacin and metronidazole, who reports improved pain. He tolerated his breakfast this morning except for the eggs but he said that was because they weren't real eggs but he did eat his bacon and toast.

Resident: (interjects) You can move on to the physical exam.

Student: ...well-developed, well-nourished man in no acute distress, normocephalic, atraumatic, HEENT showed PERRLA, nares patent…

Resident: (interjects) For rounds you can just focus on the pertinent findings, which always include the vitals *(avoids linking corrective feedback with positive phrases).*

Student: He was afebrile overnight, and his abdomen is soft and nontender. The lab did call this morning and said 1 of 4 blood culture bottles is growing gram-negative cocci, so I thought we should start vancomycin because he doesn't have good gram-positive coverage.

Resident: That's a good thought, but I suspect this is a contaminant because it is only 1 positive bottle, it took several days to grow out, and he is improving without good gram-positive coverage as you pointed out *(acknowledges student's understanding of an important clinical concept; first layer of feedback sandwich).*

After rounds, the resident pulls the student aside, and the following exchange occurs.

Resident: I just wanted to give you some feedback about why I interrupted you during rounds *(makes it clear that the comments are meant to be instructional).* I'm glad that you are taking the time to listen to your patients' complaints and are performing such thorough exams *(another piece of positive feedback)* but work rounds are pretty fast paced and focused. So, in your oral presentations, you should edit out the information that doesn't directly relate to the main problem, like the part about the patient not liking eggs and the HEENT exam *(one-on-one corrective feedback; second layer of feedback sandwich).* Once I mentioned this, you did a good job focusing on the abdominal exam in this patient *(links positive words with desired behavior; reinforces what was done right).* Try to maintain that focus tomorrow on rounds *(next time, do this; third layer of feedback sandwich).*

Student: Thanks, I wasn't sure how much detail I was supposed to go into on rounds, as I'm not sure I always know what is important.

Resident: Learning what is important does require a lot of experience, but in general for oral presentations less is more. I'll ask you for any details I think are important, and that way you can learn the types of things we focus on in our patient population. And I'll let you know if there are certain details the attending likes to hear, as they all have their own styles *(reinforces an alliance with the student; further instruction to guide next steps).*

In this improved scenario, the resident still felt the need to provide some of the corrective feedback during rounds in order to keep things moving. However, he avoided saying "good" after the undesired behavior and instead linked his positive feedback to a positive behavior (the student understands antibiotic coverage). This allowed the positive feedback to become the focus in the public setting. Yet, it is clear the student needed the corrective feedback, so the resident waited for a private moment to reinforce the point about being more focused in giving oral presentations in a

Table 2. Practical Tips to Improve Feedback on the Fly

Use the word "feedback" even in the most informal settings
Try to provide feedback (or at least reinforce corrective feedback) in the least threatening environment possible
Always try to link adjectives to specific behaviors
Don't dilute corrective feedback by linking positive adjectives (such as "good") to negative behaviors
Apply the modified feedback sandwich (positive feedback, corrective feedback, next step) when giving corrective feedback

less threatening setting, using the modified feedback sandwich technique (positive feedback, corrective feedback, next step). He explicitly told the student that this was "feedback," but he also made it clear that he and the student were allies with the common goal of caring for the patient and making sure the student performed well for the attending.

Now, it is easy to imagine that the student understands that she needs to give more focused oral presentations by prioritizing information. While this is no guarantee her presentation will be dramatically better the next day, the resident created an alliance with the student that may also encourage her to solicit more feedback. At times, students may not understand the feedback or may react defensively. If there is a positive alliance, you might be successful trying again when time allows you to solicit the student's own feedback and to address her questions or concerns. In this situation, you should arrange for a more formal sit-down session with the learner. However, the characteristics of effective feedback remain the same and should be applied.

Conclusion

Residents are in the challenging position of being the primary teachers of the next generation of clinicians. In the busy environment of a residency, where one is still in the process of learning, providing effective feedback to those who are less skilled is frequently a balancing act between the ideal and the realities of the real world. Taking a nonthreatening approach to providing corrective feedback, linking positive phrases only to behavior that is desired, using the modified feedback sandwich which includes a next step, and preceding informal feedback with the word "feedback" are some practical tips to help you balance the demands of giving high quality feedback with the realities of being a busy resident (**Table 2**). By enhancing the efficacy of your feedback, your students may become more effective in helping you in the care of your patients.

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