Resident-as-Teacher Video Series

Self-Study Guide

DALHOUSIE UNIVERSITY

Inspiring Minds

Adapted with permission from a program developed at the Centre for Education at Beth Israel Deaconess Medical Center, Harvard Medical School

Introduction and Background

Studies show that residents spend at least 25% of their time teaching.[1,2] In turn, medical students attribute one to two thirds of their education to resident teaching.[3,4] However, residents frequently do not feel prepared for their teaching roles.[5]

The Resident-as-Teacher Video Series provides residents with a toolbox of core medical education principles and skills. Each video module is designed to enhance resident teaching of medical school students or junior colleagues. These modules were originally developed by the Centre for Education at Beth Israel Deaconess Medical Center, Harvard Medical School using senior clinician educators from their Departments of Anesthesiology, Dermatology, Internal Medicine, Obstetrics and Gynecology, and Surgery. Each was asked to speak about one of the five topics and demonstrate best teaching practices.

Goals:

Our goals for the Video Series are to: (1) increase residents' knowledge, skills, and behaviors associated with best teaching practices; (2) encourage application of adult learning principles in varied clinical settings; and (3) develop residents' confidence serving in clinical teaching and supervisory roles, providing effective feedback, and teaching procedural skills. The intention is that the preparatory work with this Study Guide and accompanying videos will be followed up with a hands on RATS (Residents as Teachers) session at our annual Family Medicine Education Weekend. With this combination, we believe Dalhousie Family Medicine Residents can have an efficient and useful introduction to this skill set. It is anticipated that completion of this study guide and 4 core modules will take under two hours.

Learning Objectives

By the end of the series, residents will be able to:

- Identify 5 key adult learning principles and describe how they might apply these principles to various clinical teaching venues
- Recognize common challenges in teaching adult learners and propose at least one solution to address or troubleshoot an issue that may arise
- Identify a minimum of 3 facilitation skills necessary to create learner-centered experiences that encourage questioning, discovery, and discussion
- Define at least 2 strategies to use in order to provide consistent, supportive feedback to medical students and junior colleagues
- Describe a plan for clinical supervision that provides students with an appropriate blend of direction and autonomy

The Self-Study Guide provides supplementary information for each video, offers take-away points, lists key teaching strategies, and presents thought questions to consider. We recommend that residents first read the accompanying section of the self-study guide, watch the video module, and then return to the guide to answer the thought questions. The topics in this guide correspond with the Video Series and are presented in the order of general teaching principles to specific teaching techniques:

- Introduction: Principles of Adult Learning
- Module 1: Clinical Teaching Skills
- Module 2: Effective Clinical Supervision
- Module 3: Providing Effective Feedback
- Module 4: Leading a Small Group Discussion (optional)
- Module 5: Teaching Procedural Skills

We have also included a limited number of suggested **Video Highlights** under each module in order to point out particular teaching strategies of which residents should take note.

Introduction: Principles of Adult Learning

Adult learning theory indicates that adults need to: know why they need to learn something; apply previous knowledge and experience to new learning; be actively engaged in the learning process; approach learning as problem-solving; and see immediate relevance and value of learning something new.[3] The following describes how resident teachers may apply these theories to clinical settings:

<u>Translating Theory to Practice</u>

In Theory: Adults need to know why they need to learn new knowledge, skills, or behaviors.

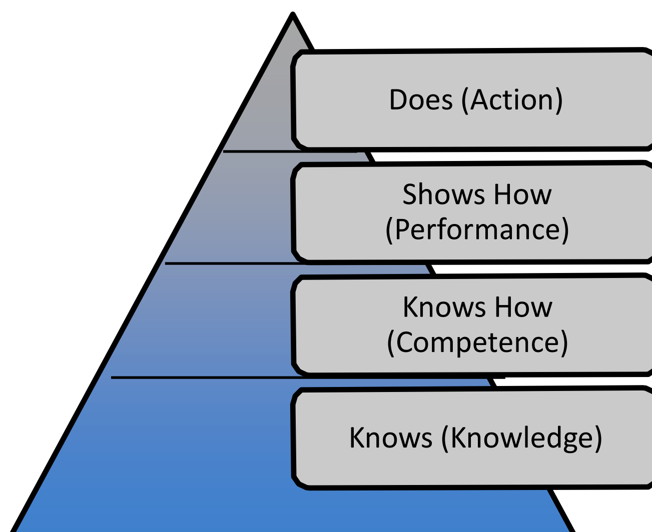
In Practice:
- o Communicate educational objectives and expectations for each learning encounter.
- o Assess the students' needs and discuss how new learning will address those needs.
- o Give concrete clinical examples of how students will use what they will be taught.

In Theory: Adults need to apply previous knowledge and experience to new learning.

In Practice:
- o Draw on previous experiences such as clinical cases and patient encounters to give meaning to new learning.
- o Determine what the learners already know using case examples and then link existing knowledge to new material.

In Theory: Adults need to be actively engaged in the learning process.

In Practice:
- o Create experiences that involve all levels of Miller's Pyramid from *Knows to Does.* [4]



Framework for Clinical Assessment

- Design hands-on, experiential activities so that students can apply new knowledge.

- Use higher-order questioning such as: Why? Why not? How? What else? These questions will actively engage the learner and help to determine underlying thought processes.
  - Tell me what you know about…
  - What other tests would be helpful to order?
  - When is this treatment not indicated?
  - What is the physiological reason for this physical finding?
  - What data supports that point of view?

In Theory: Adults learn best when engaged in problem solving activities.

In Practice:

- Take advantage of the wealth of patient cases available as educational starting points to cover specific clinical topics.
- Formulate questions for case-based discussions that encourage students to make clinical decisions and explain their reasoning.
- Incorporate cases into lectures and allow time for team-based or peer-to-peer discussion and learning.

In Theory: Adults learn best when they see the immediate relevance and value of learning something new.

In Practice:

- Move teaching from the conference room to the bedside and allow learners to experience speaking directly with the patient, identify physical findings, and practice newly-learned physical examination skills.
- Share personal experiences of applying knowledge or skills to real patient cases.
- Ask students to commit to putting into practice a newly-learned skill, and require follow-up on the experience.

Common Challenges in Teaching Adults

Mini-didactics that become lengthy lectures

When teaching medical students or interns, it is often necessary to provide a foundation or overview of new knowledge or skills; however, attention should be paid to balancing information delivery with active participation. To ensure that new concepts and principles will be retained and used, not just delivered and stored, it is best to avoid lecturing and instead build upon what the learners already know, allow them to experience learning gaps, and ask them to apply new

ideas or skills to patient cases or simulated experiences. The goal is to move students from passive to active to interactive learners.

Educational environments that do not foster learning

Learning depends on several factors; however, the most crucial is the environment in which it occurs. If students do not feel safe to ask questions, expose what they do or do not know, or ask for help, the learning process will fail. If students are harassed, ignored, or humiliated, they will only remember the emotional impact, rather than any new insights, knowledge, or skills. Educators who establish a mutually-respectful, supportive environment in which they enter into an educational partnership with their students are likely to motivate their learners to engage in critical thinking and self-directed learning. These environments encourage curiosity and guide students beyond their "educational comfort zones."

The first step in establishing a safe learning environment is to get to know your learners. Start with the basics: learn and use their names. Take an interest in them personally, and then find out their experience with the subject matter. The most important factor influencing learning is what the student already knows. This can be discovered by simply asking, "Have you ever seen a case of this before, been to a case conference, or read about this topic?" Once you know a student's background, don't be afraid to use it. If, for example, you discover the student has published on the genetics of a patient's disorder, don't stop teaching. Instead, ask him or her how it informs the case. Learning from your students' life experiences can only strengthen a mutually-respectful, teacher-student relationship.

Common fear: What if I don't know the answer?

The thought, "I'm still learning clinical medicine, how am I qualified to teach it?" is a common sentiment among residents early in their careers. As you begin teaching and supervising others, you will quickly see that the clinical experiences you have had make you qualified to share useful, practical information and clinical pearls with others. The reality for all clinician educators is that students will sometimes ask questions for which they don't know the answers. Rather than seeing this as a "failure," it should be seen as an opportunity for further learning. When you are faced with this situation, demonstrate your curiosity, say you are not sure, ask if others in the group have the answer, or suggest that someone, perhaps yourself, look into the question and relay the information back to the group. By doing this, you will model for your students essential life-long learning skills and establish a mutually-respectful tone for the group.

Take-Away Points:

- Recognize that adult learners need to:
    - Know why they are learning something
    - Connect new knowledge to past experience or prior knowledge

- Actively engage in learning
- Approach learning as problem solving
- See immediate relevance and value

Key Teaching Strategies:

- Be prepared for each teaching encounter. Consider:
  - *Who* you are teaching (assess level of learner)
  - *Why* you are teaching this particular topic (e.g. clerkship goal? learner- identified need?)
  - *What* you are teaching (i.e. prepare materials, read literature, know case ahead of time)
  - *How* you are going to teach material (i.e. pre-plan teaching strategies with room for improvisation)
  - *How* you will know the teaching encounter was successful (e.g. have student summarize what he/she learned)
- Demonstrate enthusiasm for teaching
- Make learning interactive (i.e. case discussion, "tell me what you know about…")
- Use questions effectively (i.e. instead of "What" questions, use "Why" and "What if")
- Give learners responsibility and autonomy
- Role model professionalism
- Show genuine concern for learner
- Limit key teaching points
- Provide meaningful feedback

Thought Questions:

1. Think of a time, perhaps outside of medicine, when you learned a new skill. How were the principles of adult learning put to use as you mastered this skill?

2. Describe a clinical teacher who had a positive impact on your learning. What did he or she do to create a safe learning environment and make the experience meaningful for you?

3. What unique roles do residents play in the medical education of their peers and students? Which of these roles are you particularly well-suited for or excited about, and which ones are you more hesitant to try?

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Module 1: Clinical Teaching Skills

Module Objectives
By the end of Module 1, residents will be able to:

- Compare the differences between teacher- and learner-centered instructional approaches
- Describe how active learning anchors knowledge, helps students see the relevance of learning new material, and encourages team work and consensus building
- List and describe the 5 microskills of teaching
- Discuss how to balance the needs of the patients with that of their learners
- Justify the importance of providing effective learner feedback

Overview

There has been a shift in medical education pedagogy from a traditional, teacher-centered approach, which focuses on the teacher and what he or she wants to discuss, to an emphasis on the student and what he or she needs to learn. A learner-centered approach emphasizes adult learning principles and requires the student to be an active participant. This, in turn, fosters a deeper understanding of clinical medicine and better preparation for lifelong learning. Residents new to teaching may need further practice using learner-centered methods, since many residents themselves have only experienced a teacher-centered approach during their prior training.[1]

The "micro-skills" of clinical teaching is a classic, learner-centered teaching method. It is used when a learner initially assesses a patient and then presents the case to a preceptor.[2] It provides a framework that can be particularly helpful in encouraging medical students to take ownership of their learning. Other learner-centered teaching methods include: setting aside time to discuss the course expectations and learners' needs; assessing, upfront, the students' knowledge and performance levels and then adapting clinical experiences accordingly; showing interest in the students' backgrounds and prior experiences; welcoming and encouraging their questions; and providing feedback that focuses on the skills the students have identified as areas with which they want help. For learner-centered instruction to be successful, however, the resident must first establish a safe learning environment. This may be achieved by getting to know your learners, admitting your own deficiencies, correcting mistakes in private settings, and encouraging students' curiosity. For resident-teachers using some or all of these methods can prove to be extremely helpful in fostering a safe, learner-centered environment that benefits both students and patients.

Click here to view - "Learner-Centered Teaching and the Five Microskills" video
Closing the browser tab after viewing the video will return you to this guide.

Take Away Points:

- Recognize the differences between teacher- and learner-centered instructional approaches
    - Characteristics of teacher-centered instruction:
        - The teacher takes the lead in providing patient care, relegating the learner to an observer role
        - Questions are closed-ended, mostly asking for data or facts
        - The teacher controls what information is delivered or discussed without attending to the learners' experiences or needs
    - Characteristics of learner-centered instruction:
        - The teacher facilitates knowledge exploration and encourages discovery learning
        - Emphasis is placed on critical thinking and clinical reasoning skills
        - The learner is expected to apply knowledge, ask pertinent questions, and determine what further information is needed
- Describe how active learning anchors knowledge, helps students see the relevance of learning new material, and encourages team work and consensus building:
    - Active learning requires students to discover answers they need to care for their patients rather than being handed answers
    - Active learning helps students to identify gaps in their knowledge and skills, providing motivation to fill those gaps through additional readings, discussions, or clinical experience

Video Highlight: Dr. Smith emphasizes the importance of learner autonomy: "When a learner feels like they have control or autonomy in the care of a patient, they are much more likely to be engaged, much more likely to go and investigate the topic more, and take more control of the patient and more control of their own learning." In the video, Dr. Smith encourages learner autonomy by asking his intern to send him an update him on the patient's progress.

Key Teaching Strategies

- Use the microskills of teaching --
    - Get a commitment -- – Learner becomes active participant in clinical process and feels more responsible for patient care
        - *What do you think is going on with this patient?*
        - *What is the most likely diagnosis in this case?*
    - Probe for supporting evidence -- Helps learner explain clinical reasoning; allows resident to identify student's knowledge gaps; uncovers surface vs deeper learning
        - *What clinical data supports that diagnosis?*
        - *What alternative treatment options might you have considered?*

Video Highlight: Dr. Smith points out that the first two microskills help teachers diagnose learners' needs in order to teach at an appropriate level. He says, "After getting a commitment from your learner and probing for more evidence you have a better idea of how much your learner knows about the case and their baseline knowledge."

- Teach general rules -- Provide clinical pearls, take home points
  - *I agree with your plan and evidence has found that x does impact y*
  - *Given the patient's age, I would recommend the guideline to…*

Video Highlight: Dr. Smith tells us that **"**we know from studies that it is most effective to provide a limited number of teaching points and it is best if they're evidence-based."

- Reinforce what was done well and provide positive feedback
  - *You had a tough case this morning, and I was impressed with how you put together a thorough differential diagnosis without excluding other items.*
  - *Asking the patient to describe what she understood about her new diagnosis demonstrated excellent patient-centered care.*

- Correct mistakes – Avoid vague and judgmental language
  - Start by asking learners how they thought an encounter went and then advise them how to avoid mistakes in the future. For example, *if we focus only on the possibility of a myocardial ischemia, we might miss something as important as a PE.*

- Ask a variety of questions[3]:
  - Factual: When did the patient's abdominal pain start?
  - Broadening: What are other potential causes of this patient's abdominal pain?
  - Justifying: What would be the advantage or disadvantage of PPI and watchful waiting vs endoscopy?
  - Inductive: Given what you know about the case, what might be the physiological reasons for the abdominal pain?
  - Hypothetical: If the patient were immunocompromised, how would this change your diagnosis?
  - Alternative: How does this patient compare with the 21 y.o. female we saw yesterday? What would you do differently for that patient?

- Promote critical thinking and problem solving:
  - Pose alternative scenarios or ask, "Why" or "What if" questions. Remember to pause for ≥ 4 seconds to give students the chance to offer thoughtful responses
  - Link knowledge to similar cases
  - If learner hesitates or does not answer, ask him/her to go back to the basics and think out loud with you:

"This is a complex case. Let's go back to what we learned yesterday…"

- Discuss balancing the needs of the patients and learners
  - Even during busy clinical times, remember to include medical students when seeing patients rather than assigning them to the observer role. Take a moment to check in with your students and ask if they have immediate questions or if they can explain a particular physical examination finding or justify why a particular lab was ordered. By doing so, you can quickly assess the students' learning and performance levels so that you may adapt your teaching approach accordingly.
  - Prior to seeing patients together, determine with your learners what they should focus on during the encounters, assign them particular roles, or ask them to watch how you deliver clinical information or perform certain procedures. Having students watch you with a deliberate focus will turn observations from passive to active learning, especially if you discuss the students' reflections afterwards.
  - At the end of a clinical session, have your students reflect on the most significant and impressive cases or encourage them to seek further information or conduct a literature search and report back their findings.

- Provide effective student feedback
  - Effective feedback is delivered with a sense of curiosity and an intent to help, not to demean the student
  - Effective feedback is specific – What did the student do well? What knowledge gap does he or she need to fill or which skills need further development?
  - Feedback should be timely and be given as close to an encounter as possible, but never delivered in front of other students, nurses, or patients
  - Feedback conversations start with the learners' reflections on how they think a patient encounter went—they usually self-identify the areas in need of improvement
  - Feedback discussions conclude with a plan to improve the student's knowledge, skills, or behaviors

THOUGHT QUESTIONS:

1. Think about some of the best clinical teaching you have experienced. What did you appreciate about the experience? Name two specific methods you would like to adopt in your own teaching.

2. Sometimes a busy workload and patient care responsibilities can make it more challenging to engage learners. What are some effective ways to fit in teaching when you are very busy?

3. The scenario in the video takes place in an outpatient clinic. How might the micro-skills of teaching be adapted to other clinical venues such as the inpatient wards, labor and delivery, a reading room, the emergency department, or operating room?

4. Describe what you can do at the start of any teaching encounter to emphasize a learner-centered approach.

5. Often you will have the opportunity to teach in the presence of a patient. Describe important considerations when including the patient in your bedside teaching.

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Module 2: Effective Clinical Supervision

Module Objectives
By the end of Module 2, residents will be able to:

- Describe the core set of skills needed for their role as supervisors
- Explain the importance of creating a safe learning environment
- Discuss how to use clinical case presentations to assess learners' knowledge and skills
- Define the 5 C's of clinical supervision: communication, clear explanations, curiosity, coaching, and compassion
- Discuss how to ensure patient safety while supervising students

Overview

Good clinical supervisors are approachable, enthusiastic, and able to balance the needs of their learners with the needs of their patients – all features that create a positive learning environment and enhance patient safety. Effective clinical supervision provides learners with an appropriate blend of direction and autonomy according to their competence levels and prior experiences; therefore, it can be helpful to think about supervision in terms of enhancing your learner's development and performance.[1] This can be as simple as identifying one teachable moment for every patient case seen that will move the student forward one step in his or her clinical training.

The greatest challenge for any clinical supervisor is the limited amount of time to teach in today's busy clinical environment. In reality, most clinical supervision requires teaching on the fly, quick feedback, and immediate responses to issues and questions as they arise. As a supervisor, you should take a few moments at the start of a rotation or clinical shift to share expectations for the time you will spend together, as well as enquiring about your learners' backgrounds, goals, and needs. Gathering this information will allow you to efficiently structure clinical experiences for your students that are geared toward their learning levels.

There will be times, however, when you will feel it would be easier to see a patient by yourself without involving the students. The downside about doing this is that you will lose rich, worthwhile (and fun) opportunities to share clinical pearls, advice, and essential skills. Students value hearing about your experiences, insights, and most importantly, your reasoning when caring for your patients.[2] Sharing your thoughts and igniting curiosity in your learners can be the highlight of your day.

Click here to view "Effective Clinical Supervision" video clip
Closing the browser tab after viewing the video will return you to this guide.

Take-Away Points:

- Core skills residents need in their role of supervisors
    - Preparing for the learning encounter
    - Communicating expectations
    - Assessing the learners' knowledge and skills
    - Asking probing questions
    - Identifying teachable moments
    - Structuring developmentally-appropriate clinical practice
    - Providing timely and specific feedback

Video Highlight: Dr. Atkins points out that "students are always craving feedback." She finds it helpful for the student and supervisor to discuss how and when feedback will occur. In the video, Dr. Atkins and her student agree to a 10-minute period at the end of each session in which they will reflect, provide feedback, and set learning goals for the subsequent session.

Key Teaching Strategies

- Create a safe learning environment
    - Get to know your learners and find out about their backgrounds
        - *What are your clinical interests?*
        - *What rotations have you done?*
        - *Have you done any research?*
    - Determine their learning goals and communicate your expectations
    - Encourage learners to ask questions, request help, or say "I don't know"

Video Highlight: Dr. Atkins gives examples of questions she typically asks to get to know her learners: "Where are you from? What rotations have you done? What do you want to do in your field of medicine? Do you want to do any research? Have you done any research?"

- Use clinical case presentations to assess learners' knowledge and skills. For example, asking questions such as "Why" or "What if" requires students to explain their reasoning and reveal their clinical knowledge. These questions allow the resident to determine what to teach to get students to the next educational step.
    - *Why do you think the infection progressed so rapidly?*
    - *What labs/imaging would be most helpful and cost-effective for the patient?*
    - *What if she had renal dysfunction? Would you still prescribe that medication?*

- Use the five C's of clinical supervision[1]
    - Communication

        - The more the resident and student communicate with each other about the history and physical, the patient's concerns, and their own thought processes, the better the patient care and teacher-learner relationship.

    - Clear explanations
        - Unless students understand why a resident chooses to perform a certain procedure or orders a particular lab, there is no chance for the students to build upon their current understanding or develop their reasoning skills.
    - Curiosity
        - If residents approach every learning encounter with a sense of curiosity, they will find supervising students much more rewarding. Residents need to be curious about their learners, who they are, what their level of understanding is, and how to push students beyond surface learning to a deeper level of understanding. Residents should even be curious about a student's mistakes to determine what information the student is missing that needs to be provided.
    - Coaching
        - Once a relationship has formed and the resident is aware of the student's strengths and limitations, it is best to assume the role of the coach – someone who reviews the game plan, establishes boundaries, and guides rather than assumes control. As a coach it becomes much easier to provide specific feedback on what the student did well and the areas the student needs to work on during the next patient case.

    - Compassion
        - Residents have the fortunate opportunity to model the type of compassionate and professional care they hope to inspire in their students. Medical students pay particular attention to how residents approach a clinical problem, cope with the stress of a busy clinic, communicate with the clinical team, and model care and concern for their patients. As much as the supervisor is "watching" the student, the student is also "watching" the supervisor.

- Ensure patient safety while supervising students
    - One of best ways to ensure safe patient care while teaching is to involve the patient in the process. Having students present in front of patients is time efficient, and allows patients to correct or confirm the students' presentations. Also, patients appreciate being involved in the teaching encounter as they get to explain their understanding of their clinical condition, allowing for better patient-provider communication and shared decision making.[3]

Video Highlight: Dr. Atkins reminds us that one of the most challenging aspects of clinical supervision is avoiding relegating students to the observer role. It is important that students are incorporated into patient care.

THOUGHT QUESTIONS:

1. Think about the supervisory responsibilities in residency that you have had. What was the biggest challenge you faced and how did you deal with it? What advice would you have for the next resident who has this role?

2. Now think about the next supervisory role you will assume. What are you looking forward to and what will be particularly challenging? How will you prepare for this role?

3. Describe your approach to managing this situation: An intern you are supervising does not carry out your instructions and a patient receives the wrong medication. What will you say to the intern?

4. How do you allow your students to gain independence while assuring patient safety?

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Module 3: Providing Effective Feedback

Module Objectives
By the end of Module 3, residents will be able to:

- Establish where and when feedback will be provided and discussed with their students
- Discuss the necessity to collect data and evidence of a learner's knowledge, skills, and attitudes in order to provide specific examples for praise or improvement.
- Demonstrate how to focus feedback on a task or behavior, not on the learner as a person
- Explore the learner's perspective on his/her performance
- Demonstrate how to balance praise and suggestions when giving feedback
- Identify for their learners what positive action they can take to improve or enhance their knowledge, skills, or behaviors
- Explain why it is important to avoid comparing one learner to another
- Attend to how feedback was received by a learner
- Relay a plan of what he or she will do if a leaner argues about the feedback provided or suggestions on how to improve his/her performance
- Justify the importance of connecting regularly with one's learners after providing feedback

Overview

Receiving specific, relevant feedback improves learners' knowledge, skills, and attitudes. However, providing feedback to a learner can be stressful for even the most experienced teachers. There are several reasons teachers find this responsibility challenging. One is concern about jeopardizing positive student relationships or apprehension about the students' reaction to critique.[1] However, if at the start of any learning encounter, you establish that feedback will be given on a regular and consistent basis, the "ceremony" of giving feedback will be eliminated. Students will come to understand and accept that feedback is just another component of the learning process.

When providing feedback, try to give a balance of praise and suggestions for improvement. Observe your learners and catch them doing things correctly to reinforce those behaviors. Check in with the students first to see if they have their own insights about what they are doing well or what may need to be improved. Provide focused feedback in small quantities so the learner isn't overwhelmed with information and can take a stepwise approach to improving performance. Be specific when providing feedback – it should be clear enough to remove any uncertainty about how well the learner is performing a task, or what he/she needs to do to master the task. Timing of feedback is vital. Correcting a mistake or pointing out poor performance soon after an event

stops the situation from spiraling out of control. Most importantly, remember to praise in public and criticize in private.

Click here to view "Providing Effective Feedback" video clip
Closing the browser tab after viewing the video will return you to this guide.

Take Away Points:

- Lack of effective and regular feedback is one of the most common complaints from learners. At the beginning of a learning encounter, rotation, or clerkship establish where and when feedback will be provided. Time feedback delivery carefully. Think about privacy and the student's ability to "hear it" at a particular time and place.

Video Highlight: Dr. Kent points out that "location is everything" when giving feedback. Although praise can be given publicly, consider a private location for negative feedback.

- Establish an environment where positive feedback and suggestions for improvement are done consistently and without ceremony

- Explore the learner's perspective on his/her performance.

- Avoid comparing one learner to another; instead let the learner know if he or she is meeting the expectations set for all students at their same developmental level.

- Balance praise and suggestions

  Example: *You were able to elicit many details from your patient when asking about her history. Next time try waiting a few more seconds before asking another question.*

Video Highlight: Dr. Kent demonstrates a way to balance praise and feedback. She tells her student, "While you examined her thoroughly, you were a little hesitant to perhaps push her or make her uncomfortable. Now, she is someone who is here to be evaluated for abdominal pain, and you examined her with her gown and blanket on. So, you were able to palpate the abdomen, but you were not able to look at the abdomen nor really auscultate, and those are two important additional components of the exam for someone with her complaints."

- When providing feedback, emphasize what learners can do differently "next time." This gives them a positive action to work on.

  You looked in the patient's eyes and established rapport. Next time, try waiting a bit longer after you ask the patient a question.

- If the learner argues with you regarding a suggested improvement, ask him to give it a try and report back to you about the experience (e.g. "Try the suit on before buying it.")

- Pay attention to how the feedback was received – was it heard? The best way to tell this is if you observe the student using the feedback you provided.

- Be sure to connect regularly with your learners following a feedback session to hear about their experiences and any ongoing questions they may have.

THOUGHT QUESTIONS:

1. What do you think are the challenges to giving and receiving effective feedback in the clinical setting? What challenges are unique to you as a resident?

2. Describe a time when you received feedback that was very helpful to you. Describe what made the experience beneficial.

3. Think of a time in the next few months when you will be responsible for providing feedback to others. How will you prepare for delivering the feedback? What messages do you want your student to receive?

4. What are common pitfalls faculty and residents face when giving feedback? How can you avoid them?

5. If you are responsible for supervising a group of students or junior residents, how can you help create an environment that supports the giving and receiving of effective feedback?

6. How would you rate your current ability to give effective feedback? After watching this video, what new skill or concept are you going to try to apply to your practice?

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Module 4: Teaching Procedural Skills

Module Objectives
By the end of Module 4, residents will be able to:

- Describe how demonstrating patience with a student, verbalizing each step, and creating a safe learning environment contributes to a positive teaching experience
- Explain how crafting a set of questions to ask a learner before teaching a procedure helps to assess a learner's knowledge and skill levels
- Create an educational contract with a learner – one that specifies the procedures the resident will teach and how a learner can prepare to perform a procedure
- Define the 5 ways a resident can prepare for teach a procedure:
    - Review performance objectives
    - Review equipment
    - Review anatomy and physiology
    - Anticipate what questions will arise during the teaching encounter
    - Ensure that the learner is prepared
- List essential procedural teaching skills such as demonstrating the procedure in its entirety, narrating each step, and explaining the thought processes behind each skill.
- Explain why particular procedural steps are performed
- Justify at what point he/she feels it necessary to take over a procedure or step in to guide a learner
- List ways of providing feedback to a learner during an actual procedure, especially if the patient is awake
- Relay the importance of providing timely, specific, but respectful feedback

Overview

Procedural teaching is a major requirement of many training programs. However, becoming comfortable teaching these skills to others can be challenging as clinician teachers must balance their learners' needs with their patients' safety and comfort. The key to a successful procedural teaching experience is to set aside time upfront to get to know your learners' clinical understanding, background, and familiarity with performing particular techniques. In addition, it is important to determine your students' learning edge – the point at which they can perform a procedure competently. By assessing these areas, you can determine the clinical practice and patient experiences you will need to provide to move learners safely beyond their current edges of learning.

Performing and teaching procedural skills with your learners requires constant engagement and communication to ensure positive and meaningful experiences. While resident-teachers must provide clear explanations about the equipment and procedural steps, students must explain their motivations and what they hope to gain from learning the procedure. Both the teacher and student need to be comfortable asking questions and thinking out loud. Most importantly,

students need to feel safe admitting when they don't know something or when they feel uncomfortable handling a particular piece of equipment or performing a certain technique.

Above all else, resident-teachers must keep in mind that they serve as role models for their students. How the residents interact with other members of the team, treat their patients, and engage the students in the learning process, often determines how much the students will gain and retain from these important teaching experiences.

Click here to view "Teaching Procedural Skills" video clip
Closing the browser tab after viewing the video will return you to this guide.

Take Away Points:

- Successful procedural teaching includes verbalizing each step, being patient, and creating a safe learning environment for both the student and the patient.

- Establish an educational contract with your learners – one that specifies the procedures you will teach and how the learners can prepare to perform procedures.

- Consider how to assess a learners' knowledge and skills beyond asking about the number of procedures performed. You may find the following questions helpful:
    - *What went well last time you performed this procedure? What was challenging? What part do you want to improve this time?*
    - *Was there any piece of equipment or certain technique you want to review again before seeing the patient?*
    - *Are you more of a verbal, mechanical, or visual learner?*
    - *What are ways I can help you to perform this procedure with confidence?*

Video Highlight: When Dr. Fisher prepares to teach procedural skills to new learners, she does two things: (1) determines the learner's familiarity with the skill by asking about his/her background and what he/she has done to prepare, and (2) gains an understanding of the learner's goals in order to tailor teaching to the student's expectations.

- Always be mindful of the patient and discuss ahead of time when you will take over a procedure or step in to guide the learner.

- Become comfortable with, and even expect, students to ask questions or interrupt while you perform procedures.

Key Teaching Strategies:

- Plan for the teaching of procedures:
  - Review performance objectives
  - Review equipment
  - Review anatomy and physiology
  - Review clinical indications and implications, not only the technical steps
  - Anticipate what questions will arise during the teaching encounter
  - Review potential complications and how to minimize them
  - Ensure that the learner is prepared
    - Has read material, attended lectures or discussions
    - Has observed the procedure – videos, simulation, or actual patient practice

- Demonstrate the procedure in its entirety, narrate each step, and explain the thought processes behind each skill.

Video Highlight: Dr. Fisher narrates the steps of bag-mask ventilation, placing emphasis on why each step is necessary: "I'll place the mask on the patient's face. I'll use my 'C' of my thumb and my index finger to push down on the mask to create a seal, and then I use my 3 remaining fingers of my 'E' to wrap around the patient's mandible and pull up. And that creates a seal that allows me to ventilate the patient."

- Explain why particular steps are performed, and ask students to do the same when they practice the procedure.

Video Highlight: When performing procedures with patients, Dr. Fisher routinely asks students "to verbalize what they're doing as they do it" so that she knows the students' next steps and can appropriately interrupt if she feels as though the patient's safety may be jeopardized.

- If the patient is awake during a procedure, provide feedback to a student in a manner that does not make the patient or other members of the team feel less than confident that everything is being done to ensure the safety and care of the patient.
  - *Let me show you a little trick I learned*
  - *Let me show you how to hold your hands so they don't tire*
  - *I want to show you a little adjustment*

- Provide timely, specific, and respectful feedback:
  - Praise in public, criticize in private
  - Ask for the learner's self-assessment of the experience
    - Example: *What parts of that procedure went well?*

    - Example: *What parts of that procedure did you find challenging and want to work on next time?*
  - Be specific and descriptive
    - Example: *Your knots should be square. Try crossing the suture rather than crossing your hands to achieve this.*
  - Ensure feedback is nonjudgmental and performance-based
    - Example: *You know the steps for a C-section. Next time, I'd like you to ask for the instruments before I do.*
  - Provide suggestions for future learning and/or an action plan for improvement.

THOUGHT QUESTIONS:

1. Think about the type of procedural teaching that you do in your specialty. What new concept did you learn in the video that you can apply to that setting or to a specific procedure?

2. What are the biggest challenges about teaching procedures in your clinical setting? What strategies can you use to address them?

3. Consider this scenario: You are in the room with an intern who is performing a procedure for the first time. You notice the intern is struggling with the equipment. Describe your approach to assuring the procedure is done correctly while maintaining the patient's safety and comfort during the encounter.

4. Describe a procedure that was initially challenging for you to master and think about those who taught you how to perform it well. What did they do or say that was helpful or not helpful? How might these lessons affect your own experience teaching procedures?

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Module 5: Leading a Small Group Discussion (optional)

Module Objectives
By the end of Module 5, residents will be able to:

- Identify key, small group facilitation strategies including—
  - getting to know one's learners
  - establishing a safe learning environment
  - setting clear expectation for the discussion
  - providing closure to the discussion
- Identify key, case-based facilitation strategies including—
  - getting to know the learners
  - emphasizing, and not overlooking, the "bread and butter" of a case
  - unfolding a case in bite-size pieces
  - not jumping too quickly to discussion about labs, imaging, or other patient data
  - choosing cases that have interesting decision points or clinical pearls
  - encouraging discussion of cost-effective, value-added care
  - distributing one or two relevant articles to help elucidate key concepts

Overview

Small group teaching provides an excellent opportunity for students to delve deeply into a topic, express their understanding of concepts, and demonstrate higher-order thinking skills such as analysis, synthesis, and evaluation.[i] The focus of any small group discussion should be on the students – their participation, interaction, and group work. The goal is to create a learner-centered experience that encourages questioning, discovery, case discussion, and peer-to-peer teaching. Your role is to facilitate the learning, not to lecture. Guiding the discussion, however, can be a daunting task. You will need to allow time for student interaction, reflection, and independent thought while making sure that the requisite content is covered. Most challenging will be the temptation to lecture, take over the discussion, answer your own questions, or push past a topic the students are truly interested in learning. Keep in mind that "less is more" in small group teaching. Supplemental readings and a follow-up email can always be forwarded to students after the session.

Click here to view "Leading a Small Group Discussion" video clip
Closing the browser tab after viewing the video will return you to this guide.

Take Away Points:

- Realize the benefits of small group discussions. Specifically, they allow for:
  - Active learning
  - Learner-centered experience
  - Questions
  - Self-discovery
  - Peer-to-peer teaching
  - Case discussion
  - Team based learning

Key Teaching Strategies (Small group discussion):

- Set clear expectation for the session
  - *Today we are going to cover…*
  - Find out what their interests and needs are:
    - *Are there particular areas of this topic that you want me to focus on?*
    - *Have you seen or heard about a case like this before?*
    - *As we discuss this case, are there particular questions you would like answered?*

- Know your learners
  - What do they know about this topic?
  - What common misconceptions might they have?
  - Consider distributing a mini-needs assessment ahead of time

- Establish a safe learning environment
  - Ask questions and use learners' names
  - Encourage the learners' questions
  - Be willing to say "I don't know, but let's look that up."
  - Think out loud with the group

Video Highlight: Dr. Bergin explains that one way she establishes the environment is to be the first person in the room to greet the learners and have informal discussions one-on-one. Considering asking the residents to recall what made a small group discussion "safe" vs "threatening."

- Set clear expectations for the session
  - *Today we are going to cover…*
  - Find out what the learners' interests and needs are:
    - *Are there particular areas of this topic that you want me to focus upon?*
    - *Have you seen a patient with xyz?*

- *As we discuss this case, are there particular questions you would like answered?*

Video Highlight: Dr. Bergin explains to her learners that there are a couple of reasons why she chose the discussion topic and then relates it back to a shared clinical experience: "I thought it was interesting a couple of days ago…"

- Use questions to promote student interactions and critical thinking:
  - A timely, well-phrased question captures students' attention, sparks their curiosity, highlights important points, and encourages critical thinking.
  - Try to use more open-ended, higher-thinking order questions that ask the residents to apply, analyze, synthesize knowledge or "defend" a decision.
    For example:
    - *"What are the pro's and con's for scheduling the needle biopsy?"*
    - *"What is happening pathophysiologically?*
    - *"What are alternatives treatment options that we have not yet explored?"*
    - *"Do you agree with…?"*
    - *"When might you not ….?"*
    - *Or simply asking "Why?" or "Why not" questions.*

Video Highlight: Dr. Bergin demonstrates different ways to explore the learners' reasoning beyond asking closed-ended questions. Examples include:
"What are your outstanding questions about this topic?"
"What happens now?"
"How did that happen? What is the pathomechanism?"
"Do you agree with that, Bill?"

- Engaging the learners
  The success of a small group discussion rests on the learner participation, interaction with the facilitator and the other group members, as well as the willingness to share and comment on each other's ideas. Educational resources, materials, and cases should be chosen to promote student reflection, critical thinking, problem solving, and even debate. Methods to encourage learner engagement include:
    - Displaying clinical images
    - Showing trigger videos
    - "Think-Pair-Share" activities
    - Peer teaching
    - Buzz groups
    - Brainstorming
    - Role play

Video Highlight: Dr. Bergin demonstrates how having the interns teach each other allows them the opportunity to "think out loud," demonstrate their conceptual understanding, and speak directly to the other group members,

Video Highlight: Dr. Bergin suggests dividing the larger group into pairs, have the learners discuss the topic among themselves, and then report back to the group. She explains that this technique allows shy learners to become more confident as they feel they have something valuable to contribute.

- Close the session
  - Summarize or have the group summarize take home points
  - Have learners identify what lessons they learned and how they are going to apply new knowledge/skills to the care of their patients.
  - Leave time for the learners to ask clarifying questions.
    - *Is there any part of this discussion that you want me to clarify?*
    - *What are some points you would like me to cover again next time?*
    - *If there is one overarching principle you learned from our discussion, what would it be?*

Video Highlight: Dr. Bergin tells us that any good summary needs to be "forward thinking." She suggests that in addition to reviewing what the group has learned in the session to move the group forward from knowledge transfer to knowledge application: "What one or more take home points are they going to apply when they see their next patient with this particular disease?"

Case-Based Discussions

In clinical education, small group teaching often takes place around a recent or interesting case. The following are a few strategies to help you select a good case and create a meaningful educational experience for your learners.

Key Teaching Strategies (Case-Based Discussion):

- If possible, choose cases that have interesting decision points or clinical pearls.
- Start with the basics. Don't underestimate the value of a "bread and butter" case for a new group of interns or students.
- Get to know your audience. What do they already know about the case? What do they need to learn?
- Unfold the case in bite-size pieces. Allow time for student reflections and questions about the patient presentation and treatment course.
- Avoid jumping quickly to discussions about labs, imaging, or other patient data. Be sure to fully develop the relevant context of the patient's story.

- Change the variables in a case to help your learners apply key concepts. For example: *What if this patient was pregnant? What if he also had a history of renal insufficiency? What if this elderly patient lived alone? How would this change your management in this case?*
- Encourage discussion of cost effective, value-added care by asking how test ordering affects the management of the patient.
- Be prepared to distribute one or two relevant articles for the group to help elaborate key concepts.

THOUGHT QUESTIONS:

1. As a small-group facilitator, a resident may have to assume various roles and responsibilities depending on the goals of the session. At times a facilitator may need to serve as: a discussion leader who reviews basic content; a consultant who answers participants' questions; or a skeptic who needs to be convinced about a certain treatment course. Think about an upcoming small group or case-based discussion you plan to lead and consider what roles you will need to assume as the facilitator and how you can prepare for these roles.

2. There are a number of common challenges associated with leading a small group discussion. Some examples include: a student who will not participate; a learner who dominates the discussion; a particularly quiet group; or unpredictable tangents in the conversation. What other challenges have you faced when teaching a small group? Are there methods you have tried or seen that successfully overcame these challenges?

3. Sometimes a group discussion can turn into a lecture, or conversely, dissolve into a conversation completely off topic. What are the most effective strategies to engage the group in a meaningful discussion about the topic you wish to teach?

4. Often your small group will have residents and students at various learning levels (e.g. the "one room school house.") What are strategies to engage all levels of learners at the table? What pitfalls do you need to avoid?

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We hope you found this Study Guide and video series useful. Please complete the accompanying evaluation on one45 before September 20th.

We look forward to seeing you at the Resident Education Weekend and giving you a chance to put some of these ideas into practice!