Resident Teaching Skills Manual

Created by:

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10th Revision

Foreword

Teaching is an integral role of the practicing physician regardless of career path or specialty. Teaching responsibilities begin early in medical education, but the most dramatic shift from learner to teacher occurs during the transition from internship to residency. Many studies have shown that residents are often the primary teachers of medical students and junior house staff and spend as much as 20 – 25% of their time teaching. (Bensinger, et al. 2005.)

Residents at teaching hospitals also play an integral part in the accreditation of medical institutions. Organizations such as Association of American Medical Colleges (AAMC), Liaison Council on Medical Education (LCME), and Accreditation Council for Graduate Medical Education (ACGME) require “residents who supervise or teach medical students to be familiar with the educational objectives and be prepared for their roles in teaching and evaluation.” (LCME 2006 – 2007: Standards for Accreditation)

Purpose of Manual

This manual is intended to be a resource to assist residents in their day-to-day teaching encounters. It is intended to: 1) provide “how – to” guidelines for the novice and experienced teaching resident, 2) identify additional resources [with information pertinent to educating others], and 3) be a quick reference guide for common teaching situations. Eighth Revision: 2015

Acknowledgements

With deep admiration for all of the residents who take the time to teach and have taught me. You are impacting the future of your specialty as well as the medical profession. Without your contributions and insights, students would only have book knowledge and not real world application. Thank you!

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Revision 10 Changes

New section was added—Learning Climate. Sections on Managing Challenging Learners and Observation were expanded

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Introduction: What makes a good clinical teacher in medicine?

Excellent clinical teaching, although multi-factorial, transcends ordinary teaching and is characterized by inspiring, supporting, actively involving, and communicating with students. Medical students report these common themes regarding good clinical teachers:

- Maintains positive relationships with students and a supportive learning environment
  - Maintains positive learning climate of respect and support
  - Encourages students
  - Sensitivity and responsiveness to the educational needs
  - Allows sufficient time for discussion and questions
- Demonstrates enthusiasm for teaching
  - Demonstrates enthusiasm for and enjoyment of teaching
  - Sense of teacher identity
  - Stimulates students' interest in learning and/or subject
  - Actively involves students
- Provides effective explanations, answers to questions, and demonstrations
  - Provides clear, simple, lucid, logical explanations
  - Links subject matter with experience
  - Teaches fundamental principles, approaches to problems, and basic concepts and not simply facts
- Provides feedback and formative assessment
  - Provides prompt and constructive feedback
  - Provides fair and constructive criticism without belittling
- Is organized and communicates objectives
  - Sound planning for teaching
  - Defines realistic objectives
  - Sets clear goals
- Demonstrates knowledge of teaching skills, methods, principles, and their application
  - Practical teaching skills
  - Self-reflective about teaching
  - Open to feedback on her/his teaching
  - Uses questioning skills
- Teaches professionalism
  - Acts as a role model for appropriate behaviors
  - Demonstrates positive attitudes and values

Perhaps what makes a clinical educator truly great depends less on the acquisition of cognitive skills such as medical knowledge and formulating learning objectives, and more on inherent, relationship-based, non-cognitive attributes.

(Sutkin et.al, 2008)

QUICK ACCESS GUIDE

Recommended topics for the following teaching challenges if the learner:

Is not familiar with or aware of learning objectives…

- Expectations (page 2)
- Goal setting (page 2)
- Orientation (page 4)

Is challenging…

- Expectations (page 2)
- Goal setting (page 2)
- Microskills (page 39)
- Observation (page 31)
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Lacks skills/knowledge…

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- Observation (page 31)
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Is multiple levels…

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Recommended topics for the following teaching challenges if the teacher:

Has no time to teach…

- Microskills (page 39)
- Priming the learner (page 17)
- Questioning (page 23)
- Teachable moments (page 19)
- Time management (page 59)

Doesn't know what to teach…

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- Questioning (page 23)

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Has to motivate learner…

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- Soliciting feedback (page 49)

Beginning the Rotation

Key Points

1. Make sure you understand the department's objectives for students during the clerkship.

2. Clearly identify your expectations and goals for the learner.

3. Plan ahead for learning objectives, questions, and topics for discussion (e.g. what 3 – 4 subjects do you think are most critical that every learner should understand about clinical care in general or your discipline in particular?).

4. Allow the learner to clearly identify her/his expectations and goals.

5. Prioritize the identified goals and plan how they will be accomplished.

6. Identify how each of you will provide feedback to the other and schedule feedback sessions.

Setting Goals and Expectations

Clearly identifying your goals and expectations at the beginning of the rotation will help prevent or eliminate many of the performance problems that learners experience. There are two areas of goals and expectations you will need to clarify with your junior team members:

A. Job Performance – typical day-to-day functions while a member of your team.

B. Professionalism – behavioral actions that demonstrate proper demeanor and respect for patients and staff.

1. Review department objectives and clarify roles and tasks of the new learner
2. Tell learners your goals and expectations at the beginning of the rotation ("I expect you to ask questions when you are not sure of a medication's effects.")
3. Ask learners for their expectations and encourage them to pick at least three personal goals they would like to accomplish during the rotation
4. Anticipate challenges such as: whom to contact if absent; how to handle emergencies; call expectations; what to do during downtime; and resources for independent learning

The resident and each learner should determine:

- **Which goals should be met** (e.g., prioritize the list of goals and the criteria for successful completion)
- **How the learner will achieve those goals** (e.g., through independent study or through activities that you plan)
- **What is the timeframe for achieving the goals** (e.g., completed at the end of the rotation, every Friday, etc.)
- **How accomplishment of the goals will be judged** (e.g., presentation, small group discussion, one-on-one, written report, etc.)

Clear goals and expectations will help to ensure no surprise evaluations at the end of the rotation.

Setting Goals and Expectations

In the following space, identify 3 expectations you believe should be communicated to every new learner:

In the following space, indentify 3 goals you believe every new learner should focus on:

Orientation

Every time new learners become part of your team, you need to conduct an orientation. They may have received a departmental orientation before arriving, but that doesn't mean they are prepared to perform as a member of your team.

The **purpose** of an orientation is to:

1) Get to know the learner a little better (prior knowledge/experience)

2) Reduce anxiety; create a positive impression that you are genuinely interested in the learner's successful completion of the rotation

3) Familiarize learners with their surroundings, including each other as members of the team

4) Answer any initial questions

5) Establish goals and clarify expectations

Consider these items for new learner orientation:

- Meet one-on-one or with all new learners the first day in an area where you will not be disturbed
- Ask the learner to tell you a little about themselves and identify previous clinical experiences
- Briefly describe your team (including the attending, other team members, staff, etc.) and introduce learner to each team member
- Provide information that will help the learner avoid mistakes
- Have learner print out their weekly schedule so you will be aware of their activities
- Discuss your goals and expectations for the learner
- Discuss the learner's goals and expectations of you and this rotation
- Ask the learner if they have any questions, concerns, or don't understand something
- Discuss how you prefer to communicate with the learner (face-to-face, paging, email, telephone, etc.) and the learner with you
- Discuss how you will provide feedback and evaluate the learner's professional abilities
- Discuss who to contact for personal absences or emergencies
- Identify resources for independent learning and learning during down time

A few minutes orienting new learners will shorten the learning curve, thereby increasing productivity and reducing errors, improve satisfaction, and promote better communication. (Morfeld, C. 2002)

The “ORIENT” Approach to Orienting a Learner to a New Rotation

Orientation

- Clarify mutual goals for this orientation session: what are the learner’s expectations today?
- Discuss mutual goals and expectations for the rotation
- Start with the learner. What does s/he hope to get out of this rotation? Explore learner’s concerns and interests in detail.
- What are his/her learning goals?

Responsibilities

- Explain learner’s role in patient care and other teamwork:
  - Format for supervision and teaching
  - Expectations regarding charting
  - Where and when learner will receive feedback
  - Call arrangements
  - Anything else s/he should know about your particular institution

Interchange

- How can the learner best balance service vs. learning goals during the rotation?

Education

- Model self-directed learning: ask learner to define his or her own learning goals and how s/he can best achieve them.
- Offer suggestions for reading and learning during the rotation (books, articles, online resources, consultants)

Needs

- What questions does the learner have?
- Is there anything else going on that you might help with (e.g., any special needs or concerns_?

Timing of follow-up session

- Any final questions or comments?
- When would learner prefer to meet again to follow up on mutual goals for the rotation?

(Wilkerson & Irby, 1998)

Orientation Checklist

The following list contains common areas to be covered during any orientation with a new learner. Use it as a beginning to help create your checklist.

- ☐ Greet the learner by name (nickname if preferred)
- ☐ Review the department's learning goals and objectives
- ☐ Review department rules and policies (dress code, computer use, forms, etc.)
- ☐ Review the clinical skills inventory and/or a learning contract
- ☐ Clarify the learner's expectations for this rotation
- ☐ Understand the learner's expectations of you
- ☐ Review working hours, schedule, and locations
- ☐ Review potential schedule conflicts and possible solutions
- ☐ Clarify how to contact each other (unexpected schedule changes, emergencies)
- ☐ Review contents of Operating Room or Exam Room and location of equipment, supplies, and forms
- ☐ Clarify when and how feedback will be provided
- ☐ Indicate how you want patients presented
- ☐ Indicate how your attending wants patients presented
- ☐ Obtain a copy of the learner's weekly schedule
- ☐ Identify common errors/mistakes that new learners often make on this rotation
- ☐ Clarify starting times for rounds (i.e. review records before rounding or see each patient before rounding, etc.)
- ☐ Additional items:

Learner Contract

Part 1: **STUDENT'S GOALS**

List the three most important goals you have for this rotation:

1.

2.

3.

List specific strategies you suggest for accomplishing these goals:

1.

2.

3.

Part 2: **RESIDENT'S GOALS**

List the three most important areas on which you believe the student should focus during this rotation:

1.

2.

3.

List strategies you suggest for addressing these areas:

1.

2.

3.

Part 3: **SUMMARY**

Clarify performance goals and expectations:

Clinical Skills Inventory

Part 1: To help understand your level of clinical skills, please indicate your experience by checking the appropriate box.

Clinical Skill	No experience	Some experience	Much experience
(list any pertinent skills for this rotation)			

Part 2: Are there other areas in which you feel that you need specific instructions? Please indicate below:

Procedures	No experience	Some experience	Much experience
(list procedures the learner would like to improve/refine)			

Part 3: Are there other areas about this specialty/during this rotation that you would like to learn/experience?

Topics	Yes	No
(list additional topics for this rotation)		

Comments:

Motivating Learners

How well learners perform during a rotation is a combination of three factors:

1. **Ability** – does the learner have the knowledge and/or skill to perform a procedure or complete an assignment? In some situations, it is very possible that the learner has not been given the basic knowledge or shown how to perform a skill. You might be the first teacher to help them understand a concept or show the learner how to do something.
2. **Opportunity** – has the learner been given a chance to demonstrate their knowledge and/or skill? The learner may have the necessary knowledge and be ready to show what they know. However, if all they are allowed to do is stand in the corner and watch, you have no way of knowing if they have the skills or knowledge.
3. **Motivation** – does the learner show a desire or interest in learning? In some cases, the learner is not planning on pursuing a career in your specialty. However, there are many areas of your specialty that overlap with the learner's area of interest. This provides many topics for you to cover with the learner.

There are two aspects to motivation that a resident has some control over.

1. **Social** aspects – the external factors related to motivation and consist of the work environment, relationships, communications, and role modeling. Helping to create a positive work environment, developing professional relationships, and effective and consistent communications will provide the foundation for the learner to feel accepted and a part of your team. Role modeling, providing the kind of example you want the learner to emulate, also demonstrates your desire to help the learner develop.
2. **Psychological** aspects – the learner's internal factors related to motivation and consist of self-confidence, recognition, sense of accomplishment, and achievement. As the teacher, you have a definite impact on these factors. How often you recognize the learner for knowing certain information, giving the learner opportunities to try and accomplish new tasks, and nurturing the sense of achieving goals will greatly affect the amount of energy and effort the learner puts into learning.

Before you decide that there is something wrong with the learner or the learner is not doing very well in the rotation, stop and consider whether they have the ability, opportunity, and motivation to perform. Chances are, one of these three factors is missing.

Learning Styles

Learning styles are characteristic cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment. Styles can be described as follows:

Visual – this type of learner prefers “seeing” the information

- Teaching approach: use pictures, videos, slides, flow charts, use different colors, graphs, symbols, allow the learner to draw pictures, provide copy of notes

Aural – this type of learner prefers “hearing” the information

- Teaching approach: verbal presentation, discussion, conversation, allow use of tape recorder, use of stories, tutorials

Read/Write – this type of learner prefers “reading or writing” the information

- Teaching approach: create lists, provide notes, articles, references, textbooks, reports, manuals

Kinesthetic – this type of learner prefers “doing or touching” the information

- Teaching approach: labs, props, simulation, trial and error, hands-on, real-life examples, team learning

Multimodal – this type of learner prefers combinations of visual, aural, read/write and kinesthetic

- Teaching approach: use combinations of the approaches listed above

We tend to teach in the same way we learn, which is not necessarily the learning style of your learner. The challenge for teachers is to try multiple ways to transmit the information. If you prefer aural, try adding pictures; if you prefer read/write, combine simulations with supported research articles. The only way to reach multiple styles of learners is to utilize many different teaching approaches.

Principles of Adult Learning

Adult education literature supports the idea that teaching adults should be approached in a different way than teaching children and adolescents. There are a number of principles that have been associated with adult learning.

Principle	Application
Adults have accumulated a foundation of life experiences and knowledge	Connect life experiences and prior learning to new information
Adults are autonomous and self-directed	Involve participants in the learning process, serving as a facilitator and not just a supplier of facts
Adults are goal-oriented	Create educational programs that are organized with clearly defined elements, clearly showing how the program will help participants reach their goals
Adults are relevancy-oriented and practical	Help learners see a reason for learning something by making it applicable to their work or other responsibilities of value to them
Adults (all learners) need to be respected	Acknowledge the experiences that adult participants bring to the learning environment, allowing for opinions to be voiced freely
Adults are motivated to learn by both intrinsic and extrinsic motivation	Show learners how the learning will benefit them and create a comfortable and appropriately challenging learning environment
Adults learn best when they are active participants in the learning process	Limit lecturing and provide opportunities for sharing experiences, questions, and exercises that require participants to practice a skill or apply knowledge
Not all adults learn the same way	Accommodate different learning styles by offering a variety of training methods
Adults learn more effectively when given timely and appropriate feedback and reinforcement of learning	Provide opportunity for feedback from self, peers, and instructor
Adults learn better in an environment that is informal and personal	Promote group interaction

(Collins, 2004)

Teacher-Centered vs. Learner Centered Paradigms

Learner-centered medical education, wherein teachers are responsible to the needs of their trainees, makes sense intuitively and has been linked to improved academic performance, learner satisfaction, and the growth and development of medical learners.

Teacher-Centered	Learner-Centered
Knowledge is transmitted from teacher to students	Students construct knowledge through gathering and synthesizing information and integrating it with the general skills of inquiry, communication, critical thinking, problem solving and so on
Students passively receive information	Students are actively involved
Emphasis is on acquisition of knowledge outside the context in which it will be used	Emphasis is on using and communicating knowledge effectively to address enduring and emerging issues and problems in real-life contexts
Teacher's role is to be primary information giver and primary evaluator	Teacher's role is to coach and facilitate; teacher and students evaluate learning together
Teaching and assessing are separate	Teaching and assessing are intertwined
Assessment is used to monitor learning	Assessment is used to promote and diagnose learning
Emphasis is on right answers	Emphasis is on generating better questions and learning from errors
Desired learning is assessed indirectly through the use of objectively scored tests	Desired learning is assessed directly through papers, projects, performances, portfolios, and the like
Focus is on a single discipline	Approach is compatible with interdisciplinary investigation
Culture is competitive and individualistic	Culture is cooperative, collaborative, and supportive
Only students are viewed as learners	Teacher and students learn together

(Huba and Freed, 2000)

Generational Learners

Educators are faced with the challenge of adapting their teaching styles to accommodate a new generation of learners.

Baby boomers – born between 1946 and 1964

Generation Xers – born between 1965 and 1980

Millennials – born between 1981 and 2000

- Active information seeker and creator of information and knowledge
- Value openness of the online environment and communicate through numerous tools
- Move toward greater inclusion of diversity
- Assertive and confident
- Trying to push technology to its next level and figure out how to create a better world
- Curiosity, discovery, and exploration are key
- Views the world as 24/7 and demands real time and fast processing
- Fascination with new technologies
- Need for group activity
- Focus on grades
- Learning preferences
    - Teamwork
    - Technology, digital literacy
    - Structure
    - Entertainment and excitement
    - Experiential and engaging activities
    - Interactivity and collaboration

Digital Literacy

- Both information and multimedia literate
- Have the ability to read visual images and have visual spatial skills
- More comfortable in image-rich environments than with text

Experiential and Engaging

- Want to construct their knowledge
- Have a bias towards action
- Want to immediately engage in the process
- Like to express their views and incorporate their experiences into their learning

Generational Learners

Interactivity and Collaboration

- Learning is a social activity
- Prefers to work in teams and participate in peer interactions
- Traditional teaching paradigm of lecturing, asking students to read text, and giving a test is not valued

Immediacy, Connectivity and Communications

- Has little tolerance of delays
- Expect instant access and instant responses
- Multi-taskers and used to being bombarded by multiple processes
- Mobile nomads who are always connected

Strategies

- Role model the behaviors that you consider important
- Clarify expectations—both your own and the student's
- Utilize technology in multiple ways – as information resources, as teaching platforms, as communication tools
- Provide opportunities for teamwork
- Use simulation when possible
- Consider methods to develop collaboration among learners
- Be clear about how to communicate with each other and when are appropriate times/methods
- Give concrete, immediate feedback

(Skiba, 2006; Eckleberry-Hunt, 2011)

Active Listening

Active listening is a skill that can be acquired and developed with practice. However, active listening can be difficult to master and will, therefore, take time and patience. It requires fully concentrating on what is being said rather than just passively 'hearing' the message of the speaker. It involves listening with all senses. Below are steps that can be taken to convey active listening.

www.skillsyouneed.com

Physical Actions

- Face the speaker
- Maintain eye contact
- Lean towards the speaker
- Be attentive, but relaxed

Cognitive Actions

- Keep an open mind
- Try to mentally picture what the speaker is saying
- Don't interrupt and impose your solutions; don't prepare a rebuttal
- Avoid being distracted by environmental factors
- Pay attention to non-verbal cues/signals

Strategies

- Paraphrasing or Reflection - restating/repeating the message but with fewer words
- Clarifying - process of bringing vague material into sharper focus
- Questioning - asking relevant questions to better understand
- Summarizing - repeating back the main points and reiterating them in a logical and clear way using your own words
- Primary Empathy - reflection of content and feelings (you feel [*state feeling*] because [*state content*]…)
- Advance Empathy - reflection of content and feeling at a deeper level
- Feedback - nodding, facial expressions, verbal cues (uh huh, I see, etc.)

Learning Climate

The learning environment is the tone or atmosphere of the clinical teaching setting including whether it is stimulating and whether learners can comfortably identify and address their limitations.

Key components and specific teaching behaviors:

Stimulation

- Show enthusiasm for topic and learners
- Show interest through body language
- Use animated voice
- Provide conducive physical environment

Learner involvement

- Look at learners
- Listen to learners
- Encourage learners to participate
- Avoid monopolizing discussions

Respect/comfort

- Use learner's name
- Acknowledge learner's problems/situation
- Invite learners to express opinions
- State respect for divergent opinions
- Avoid ridicule, intimidation, or interruption

Admission of limitations

- Admit own errors or limitations
- Avoid being dogmatic
- Acknowledge limitations in learners
- Invite learners to bring up limitations
- Acknowledge limitations in content of medicine
- Acknowledge limitations in context of medical education

(Stanford University Faculty Development Program, 1989)

During the Rotation

Key Points

1. Get the team involved by asking questions and encourage participation.

2. Alert team members beforehand to medical skills or methods for managing patient care that you want to demonstrate.

3. Be open to “teachable moments”—subjects that can be explained at the moment or saved for later teaching sessions.

4. To help the learner understand your problem-solving process, think out loud (verbalize) your thoughts and decision-making approach.

5. Frequently provide feedback that is specific, purposeful, and well-timed.

Priming the Learner

It is not possible for you to teach learners about every possible patient. Briefly preparing learners for patient encounters allows for focusing on relevant information, saving time, and providing advanced organization. In order to be more efficient, focus on the following:

Problem Oriented Learning

- Approach a day's clinic with a common learning theme based on class of patients, patient issues, or process issues
- Examples of themes (developmental assessment, health behavior change, organized presentation, cost effective care)
- Supplement the learning through learner preparation and reflection on particular issue

Selecting Patients

- Review the day's schedule for types of patients
- Find out learner's prior experiences with different types of patients and assign patients who present new learning opportunities
- Establish goals regarding what the learner should focus on with new experiences
- Debrief at end of day about learner's experiences

Before entering the patient room, focus learning on:

- Tasks: What learner will do and for how long
- Resident Role: When and how resident will reconnect with learner
- Patient: If known, review any pertinent patient information and/or chief complaint
  - New patient (differential focus)
  - Return patient (health maintenance or management of chronic illness)
- Product: Clear description of what expected (e.g., patient note, 3 minute focused presentation)

Priming the Learner

B.I.D. Method

- **B**riefing
  - Short (2-3 minute) interaction at the scrub sink
    - The purpose of the interaction is to assess the needs of the learner
    - To cause the learner to assess her/his own learning needs
    - To jointly establish learning objectives to guide both learner and teacher
    - The teaching surgeon assists by prompting and guiding the formulation of the objectives
- **I**ntraoperative Teaching
  - Focus on one or two learning objectives from surgery
  - This ensures that the teaching is not simply a nonspecific flow of talk, but instead, discussion focused on mutually shared learning goals
- **D**ebriefing
  - Reflection
    - The teacher asks the learner to reflect on his/ her performance and attainment of stated objective
    - This allows the teacher to understand the perspective of the learner, and to diagnose any problems the learner is having with his perception of the encounter
    - Most importantly it requires the learner to assemble his/her own thoughts about what was learned during the encounter.
  - Rules
    - The learner should leave the encounter with some rule to guide future practice
    - Ideally, it is a rule the learner has formulated based on dialogue with the teacher
  - Reinforcement
    - The teacher should reinforce what was done right. The purpose for doing so is threefold:
      - First, the reinforcement phase again calls attention to learning objectives of the encounter
      - Second, learning to perform operations can be stressful and difficult, and providing reinforcement assists the learner in being able to maintain the effort necessary to persist
      - Third, and just as important, sometimes learners don't know that what they have done is worthy of replication
  - Correction
    - Correcting mistakes, especially mistakes in thinking, is a crucial part of the encounter.
    - This phase takes advantage of the reflection phase
    - The focus is on what led up to the mistake and how that chain of events can be avoided in the future
    - When the mistakes may prove embarrassing to the learner, they should be addressed apart from other operating room personnel.

(Roberts et.al, 2009)

Teachable Moments

Every case has a teaching point, and dozens of "teaching moments." These are opportune moments during daily routines that allow for educational instruction.

Guidelines:

- Requires the teacher to be observant and open to situations
- Best done as closely to the event as possible
- Involves being sensitive to both patient care issues as well as learner needs and issues
- Think out loud (openly discuss to the learner) as you problem-solve
- If time does not allow teaching, have the learner write down the topic on a 3x5 index card, PDA, or white board in your conference room so it can be used as a future topic for learning

Examples of Teachable Moments

- **Chart review** (e.g., Documenting tetanus prophylaxis in wound care—teach importance of documentation; teach indications for passive and active immunizations)
- **Presentations** (e.g., Disjointed presentations—teach organization of presentations; teach formal versus consultant presentation)
- **Patient Interactions** (e.g., Observing history-taking in difficult patient—teach bedside manner techniques; teach alternative sources of medical information)
- **Bedside teaching** (e.g., Observing physical examination—teach patient comfort measures; teach techniques to improve examination findings)
- **Management plans** (e.g., Stabilization of patient in acute respiratory distress—teach evaluation of the airway; management of patient in ventricular tachycardia—teach stable versus unstable VT; teach recognition of VT; teach differentiation of VT vs. aberrancy)

(Birnbaumer, D. 2004.)

Teachable Moments

Recommendations:

- Before you begin, consider what your goal is during the interaction with the learner. This will help you stay focused and keep the interaction brief. Is your goal:
  - Clarification of a procedure
  - Explain a diagnosis
  - Develop more differentials
  - Provide understanding about pharmacology
  - Show an easier way to do something
  - Investigate the learner's level of knowledge
  - Share some of your experiences
  - Prevent mistakes in the future
- Don't try to teach too many ideas/concepts at once
- Tailor the teaching to the situation
- Interpret the learner's readiness to absorb new material
- Don't try to find a teachable moment with every patient encounter
- Grab the opportunity—patients are your best source for teaching
- Keep the teaching short & simple—no long lectures or recitations
- Be creative in how you teach—use questions, change parameters about the patient's demographics, create a story around your topic, play twenty questions, etc.
- Reverse roles and have the learner be your teacher
- If you are conducting the education in the presence of the patient or family, be sure to inform them that your teaching may not directly relate to the patient

What not to do:

- Withhold teaching because you think you don't know everything about the topic. Your basic level of knowledge is typically well above the learners' level.
- Not conduct the teaching because you believe it has to be a formal presentation
- If you can't do the teaching at that moment, wait until a more appropriate time. Don't by-pass the teaching just because the situation isn't conducive to learning.

Small Group Teaching

Residents interact with one another, with faculty, and with learners in a number of groups from rounding to conferences. These small groups tend to be the nucleus of learning—learners observe and emulate resident behavior, get involved in discussions, and work with patients and other staff. Here are approaches to teaching in a small group:

1. Responsibilities of a facilitator

- Act in a **non-threatening** manner
- Make expectations clear, define the learning environment (supportive and non-threatening)
- Emphasize the process over the "right" answer
- Withhold your assumptions about what students do and do not know
- Make the patient real – how would the student talk to the patient?
- Don't fall into the trap of always being the "Answer Person"
- **Model** critical thinking by thinking out loud as you problem solve
- Encourage expansive thinking – don't just focus on one differential
- Let the group work and learn from mistakes
- Provide timely and appropriate **feedback** (see section on "Giving Feedback")

2. Questioning

- If possible, **plan** your questions ahead of time
- Use open-ended vs. closed ended questions
- Ask questions that maintain learner involvement
- Ask questions to help assess the learner's educational needs
- Emphasize questions beyond recall—investigating inference and evaluation (see section on "Asking the Right Question")

3. Power of 'Silence'

- Wait 3 – 5 seconds after asking the question
- Wait 3 – 5 seconds after a learner's response
- Waiting allows learners to give longer, more complex and correct answers
- More learners tend to respond; increased interactions

(Ferguson, K. 2006.)

Small Group Teaching

4. Responding to questions

- **Acknowledging** and reinforcing the response encourages participation
- Direct answering can discourage interaction and independent learning
- Redirecting and **guiding** encourages problem-solving process and allows for corrections
- **Avoid** "yes, but…" or "guess what I am thinking" type questions; replace the word 'but' with the word 'and'

Learning is enhanced when a small group:

- Has a non-threatening group climate
- Approaches learning as a team rather than as individual competitors
- Covers content adequately and efficiently
- Is attended by all students and a single faculty facilitator
- Has students and a faculty facilitator who are prepared
- Has active participation by all

Most small groups have learners at different knowledge levels. Ways in which you can effectively manage this include:

- Ask the most junior person a basic question. After it is answered, modify the question (change the age, gender, social background, etc.) and ask the next junior person. Increase the question's challenge as you move up the levels of learners
- Identify a topic, differential, medication, or other higher-level subject and then direct one of the junior residents to teach the students
- Create "knowledge" teams (split the group into smaller equal groups) and develop a knowledge masters competition
- Have a junior resident and new learner pair up and make a presentation about an interesting question, patient diagnosis, or other little known information
- Reverse roles where you are the new learner and another member of the group is the senior resident and have them ask questions or stimulate discussion

Asking the Right Questions

Questions serve two purposes: they stimulate knowledge and they guide problem-solving. Asking questions of a higher level requires the learner to recall what s/he already knows, make associations within the memory network, and apply the knowledge. This table provides categories of questions arranged from lower level to higher level. Each level has representative trigger words and sample questions.

Lower Level Questions ←			*→Higher Level Questions*		
CATEGORY	**RECALL**	**ANALYSIS**	**COMPARISON**	**INFERENCE**	**EVALUATION**
Description	Remembering or recognizing key facts, definitions, concepts	Understanding relationships between the whole and its component parts and between cause and effect	Explaining how things are similar and different. Comparisons may be either simple or complex	Reasoning inductively or deductively	Expressing and defending an opinion
Sample Trigger Words	Define List Libel Name When Identify Repeat Who What	Analyze Break down Relationship How it works How it's used Give an example	Compare Contrast Distinguish Alike Different	Hypothesize Synthesize Use evidence Apply a rule Generalize Create Predict	Judge Evaluate Best solution Justify Defend Critique
Sample Questions & Tasks	Define the word digestion. List the vital signs. What is a normal blood pressure? Name the amino acids.	In what sequence did the symptoms occur? How does a blood pressure cuff work?	In what ways are pneumonia and asthma alike? In what ways are they different?	What would happen if the patient lost 30 pounds?	What is the most cost-effective way to diagnose pulmonary emboli?
Higher level questions are best for assessing learner's complex thinking and decision making skills.					
Adapted from: Measuring Thinking Skills in the Classroom, Revised Edition by R.J. Stiggins, E. Rubel and E. Quellmalz, National Education Association, 1988.					

Managing Challenging Learners

Occasionally you will be challenged with a learner that, for many different reasons, will require special teaching skills. Preventing the problem before it occurs:

- Know the department/course objectives
- Orient the learner (see 'Beginning the Rotation' section)
- Set clear expectations and goals
- Determine the learner's goals and expectations
- Reassess objectives/goals/expectations during the rotation

Early Detection:

- Pay attention to your intuition (hunches/clues)
- Do something—don't wait
- Initiate assessment of problem early (i.e., use S.O.A.P. strategy)
    - **S**ubjective (chief complaint – slow, lazy, disruptive)
        - Get input from others and the learner
        - Understand these are impressions, not objective criteria
    - **O**bjective (define the specific behaviors)
        - Behavior – i.e., late three times
        - Attitude – i.e., spoke harshly to staff
        - Cognitive – i.e. unable to recall info on medication after having been asked to review it the previous day
    - **A**ssessment of the learner (differential diagnosis)
        - Cognitive – knowledge base is weak; not paying attention
        - Affective – expresses anxiety, fear, depression
        - Valuative – does not value this rotation/clerkship; differing personality traits: outgoing, reserved, timid
        - Environmental – inpatient/outpatient conflict, rural/urban area preference
        - Medical – substance abuse, medical illness, etc.
    - **P**lan (process for improvement/correction)
        - Gather more data
        - Intervene or refer to faculty/staff

"If your management approach isn't working – Seek Help"
(Haessig, C. 2001)

Managing Challenging Learners

Early signs of difficulty:

- *The disappearing act*: not answering pagers, disappearing between clinic and the ward, frequent lateness, excessive amounts of sick leave
- *Low work rate*: slowness at procedures, clerking, completing records and making decisions, coming early and staying late but still not getting a reasonable workload done
- *Ward rage*: aggressive or passive aggressive responses when decisions are questioned, shouting matches with colleagues or patients, disrespectful or dismissive speech and behavior towards other health professionals
- *Rigidity*: poor tolerance of ambiguity, inability to compromise, difficulty prioritizing, inappropriate or vexatious complaints
- *Bypass syndrome*: junior colleagues or nurses finding ways to avoid seeking their opinion or help
- *Career problems*: difficulty with exams, uncertainty about career choice, disillusionment with medicine
- *Insight failure*: rejection of constructive criticism, defensiveness, counter-challenge

(Cox et al, 2006)

Any difficult interaction with a learner has 3 component areas that need to be investigated:

➢ Learner
- Mental health
- Substance abuse
- Learning disability
- External pressures
- Unmotivated
- Unprofessional
- Skills deficit
- No insight

➢ Teacher
- Ineffective orientation
- Ineffective or no feedback
- Attitude/impression towards learner
- Fatigue/burnout/stress
- Time management
- Perception of teacher from learner

Managing Challenging Learners

- System
  - Limited time
  - Patient care
  - Definition of roles
  - Limited training for faculty
  - Little training in metacognition
  - High stakes work
  - Supportive environment
  - Lack of resources
  - Unclear or no rotation guidelines

Before concluding that the issue belongs to the learner, aspects of the teacher and the system may also need to be examined.

Diagnosing challenging learners

1. Cognitive
   a. Learning disability
   b. Poor fund of knowledge
   c. Poor procedural or clinical reasoning skills
   d. Poor metacognitive skills
2. Mental health
   a. Depression, anxiety, other
   b. ADHD
   c. Personality disorders
   d. Autism spectrum disorders
3. Substance abuse
4. Other medical problems
5. Not handling stressors well
   a. Work-related stress
   b. External stressors
6. Behavioral/professionalism
   a. Mama didn't teach him/her right

(Cox et al, 2006)

Managing Challenging Learners

Here are some examples that may occur during conferences or small group teaching and suggestions of ways to respond:

Rambling – wandering around and off the subject. Using far-fetched examples or analogies.

- Responses: refocus attention by restating relevant point; direct questions to individual/group that is back on the subject; ask how topic relates to current topic being discussed

Shyness or Silence – lack of participation.

- Responses: give strong positive reinforcement for any contribution; involve by directly asking him/her a question; make eye contact

Talkativeness – knowing everything, manipulation, chronic whining.

- Responses: acknowledge comments made; give limited time to express viewpoint or feelings, and then move on; break eye contact; discuss situation with her/him; say "That's an interesting point. Now let's see what other people think."

Sharpshooting – trying to shoot you down or trip you up.

- Responses: admit that you do not know the answer and redirect the question to the individual/group who asked it; acknowledge that this is a joint learning experience; ignore the behavior

Heckling/Arguing – disagreeing with everything you say; making personal attacks.

- Responses: redirect question to individual/group; recognize learner's feelings and move on; acknowledge positive points; say "It's looks like we disagree" and move on

Side Conversations – may be related to subject or personal; distracts learners and you.

- Responses: ask their opinion on topic being discussed; ask talkers if they would share their ideas; make eye contact; direct question to a learner nearby; as a last resort, stop and wait

(Adapted from: California Nurses Association, AIDS Train the Trainer Program for Health Care Providers.1988.)

Learners with these behaviors may benefit most from one-on-one feedback on how their behavior affects group dynamics and your ability to assess all learners' knowledge.

Managing Challenging Learners

The Slow Learner

- Typically has a good attitude
- Rapidly gains insight after feedback
- Reasons for slowness:
  - Unfamiliarity with the time expectations or limitations
  - Poor knowledge and/or skills for the role
  - Fear of failure
  - Avoiding new tasks
- Plan for improvement
  - Time problems – should be addressed directly with concrete examples
  - Knowledge problems – explanation of useful sources; opportunity for extra practice time
  - Failure problems – clear expectations and encouragement; reassurance that mistakes are expected; have learner think out loud to understand and correct thought process
  - Avoidance problems – should be addressed directly with clear explanation of expectations

Learner with Poor Interaction Skills

- Examples include unusually brusque, uncaring to patients and staff, unkind in comments or nonverbal expressions, outwardly condescending or insulting, or unacceptably familiar
- Plan for improvement
  - See if learner understands how he/she is being received (use data and/or concrete examples)
  - Make the learner aware of your view of the behavior
  - Set clear standards of acceptable rules of conduct
  - Share you challenges to meet such standards now or in past
  - Establish time to revisit these concerns and adhere to plan

The Unmotivated Learner

- Teacher must assess whether proper efforts have been made to provide relevant learning opportunities and clear directions as to expectations, responsibilities, and value of the information and experiences to be mastered
- Teacher must ascertain whether the lack of motivation is:
  - A long-standing concern – should student be in medicine?
  - An acute concern – extenuating circumstances (family, health, stress, etc.)?
  - Based on subject matter – not interested in specialty?
- Plan for improvement
  - Response by teacher depends on accurate diagnosis of reason
  - Uncovering reason may take time and empathy
  - Understanding the cause is vital to fashioning a response
  - Provide clear expectations and evaluate accurately as to effort and performance

(Mahan, 2007)

Teaching the Outstanding Medical Learner

Gifted learners have unique needs and will benefit from an individualized approach to maximize the benefit of their training. “Gifted” refers to the top 3% - 5% of individuals with respect to intellectual abilities. Gifted individuals are notable for the volume of information they can memorize, the speed with which they acquire new concepts, an insatiable curiosity, a keen intuition, and an ability to generate novel solutions and original ideas.

General approaches to teaching outstanding medical learners

- Acknowledge the learner is outstanding
  - Acknowledge their potential for high achievement
  - Encourage them to learn about the characteristics of gifted adults
  - Give permission to strive to achieve their full potential
- Challenge the learner
  - Resist the urge to praise rather than teach
  - Encourage the learner to explore complex questions more fully
- Take a collaborative teaching approach
  - Admit when you don’t know an answer
  - Role model lifelong learning skills by finding answers together
- Determine what interests the learner
  - Encourage exploration off the main path of learning
  - Insist that the prescribed curriculum is also covered thoroughly

Specific recommendations for teaching outstanding medical learners:

Teach beyond the immediate patient	Use clinical cases as starting points for building complex clinical scenarios that teach and challenge
Teach patient care principles	Teach about aspects of medical care that must be learned through experience rather than didactic learning
Invite the learner to educate others	Encourage further exploration in areas of interest and sharing this knowledge gained through talks or papers
Encourage personal development	Encourage exploration into teaching, research, leadership positions, or other avenues where the learner can use and develop their talents
Provide opportunities to work with other high achievers	Find appropriate mentors for the learner, if need be by using the “invisible college” and professional societies

(Seehusen & Miser, 2006)

Tips for Teaching on Busy Days

Pre-planning

1. Prior to the clinical experience, describe to the student the pressures you face.
2. Get to know your student's learning style and needs.
3. Review the cases for the day with the student and mutually decide where the best learning opportunities are likely to arise.
4. Have some other ideas in mind for times when you cannot teach for one reason or another. For example, student can listen in on triage phone calls, follow-up by phone with cases seen previously, go with another provider who likes to teach, spend time with the laboratory technician or pharmacist, or use the Internet to answer a question that had been unanswered from a previous discussion.
5. Set priorities for the student to accomplish and activities to complete by the end of the day.

Student time with patients

1. Work together with one patient to decrease the time spent and allow the student to see your assessment and care for efficiency. Have student do the history, and then you do the physical. Rotate tasks for the next patient.
2. Help the student recognize what to include in a focused history and examination for the presenting concern without going onto contextual or tangential issues.
3. Assign the student to patients whom you know like extra time.
4. Set a time limit on the student: "Get as much of the history as you can in 10 minutes and I will come in."
5. Schedule your patients in waves: two in time slot 1, one in time slot 2, and none in time slot 3. In the first time slot, you and the student start out in different rooms at the same time. You do a second case in time slot 2 while the student finishes his/her case and prepares to discuss it with you. Use the break in time slot 3 for completion of the student's case, charting, and preparation for the next wave. You will have kept your productivity numbers at three cases in three time slots.
6. Go into the patient's examination room with the student and chart the history and physical while the data are being collected by the student. Then reverse roles and have the student document while you gather the data.

Tips for Teaching on Busy Days

Case presentation time

1. Set a limit on length of presentation time. “Tell me the H&P, diagnosis and your plan in XX minutes.”
2. Ask the student to present while both of you are in the room with the patient. (Be careful if there is psychosocial information or other factors that should be communicated and discussed privately between you and the student first.)
3. Assign the student patients you know well, as this may speed evaluation of accuracy of student data. Also, give the student background on the patient to help focus the history more efficiently.

Finding discussion time

1. Ask the student to keep a file card handy to write down questions for discussion later. Follow up daily for 15 to 20 minutes.
2. Use travel time to and from clinic or to lunch to discuss cases. (Be careful what information you share in public areas.)
3. Set limits on time for encounters. “I can meet with you for 10 minutes now. You can have 5 minutes to ask me questions and then I want to give you some feedback on the patient we saw together this afternoon.”
4. Ask the student to look up information on three cases you saw during the day, but make it clear that you will ask for a report the next session on only one of the three cases.
5. Jot down patient care pearls that arise from various sources. Collect them on a list and share with the student.
6. Honor your appointments with students. Keep them brief but focused.
7. Expose students to the complete day. Take them to noon conferences, committee activities, and civic activities.

(Burns, et al., 2005)

Indicators the Student is Learning in a Clinical Setting

Behaviors that indicate the student is "getting it"

1. Presents thorough, focused history and physical
2. Consistently articulates sound decision making
3. Develops and implements reasonable plan
4. Connects with patient interpersonally in a caring manner
5. Is organized, independent, time efficient
6. Is self-confident but knows limits; asks for help
7. Has holistic view of care; includes health promotion and disease prevention
8. Provides concise charting and oral presentations

"Red flag" behaviors

1. Is hesitant, anxious, defensive, not collegial
2. Has uneasy rapport with patient and misses cues.
3. Presents less focused history and physical with excessive incomplete data
4. Performs physical examination poorly, inconsistently
5. Is unable to explain reasoning for diagnosis
6. Is unable to prioritize patient problems
7. Is unable to create plans independently
8. Misses health education and disease prevention opportunities in plan
9. Is unsure of tests to order
10. Is unable to provide clear charting and presentations

(Burns, et al., 2005)

Teaching in the Presence of the Patient

The challenge of simultaneously addressing the patient's emotional and physical needs and the learner's needs makes teaching with a patient a delicate exercise. Time constraints, concern for patient comfort, lack of experience and discomfort with teaching are potential obstacles. Learners feel that the bedside is an excellent place to learn a wide variety of skills and often value this teaching more highly than their teachers.

(Whitman, N. 1990.)

Considerations for teaching with a patient present include:

1. Before seeing the patient, cover **expectations** and goals. **Clarify** the roles and responsibilities of each learner for each interaction with a patient.
2. When possible, alert learners **beforehand** to behaviors that you want to demonstrate with the patient. If no forewarning can be given, be sure to address your behavior in follow-up discussions.
3. **Respect** the patient's dignity while teaching in their presence. Allow patient and family participation.
4. **Introduce** yourself and the learners to the patient. Explain to the patient that you will be teaching the learner(s) and that much of what you discuss may not directly apply to the patient.
5. When possible, **actively demonstrate** to the learner ways of discovering physical findings. Teaching psychomotor skills is particularly beneficial with a patient. Allow learners to get experience in taking medical histories and conducting examinations.
6. **Observe** the learner's efforts to discover findings; **reinforce** their efforts and engage them in non-threatening discussion about findings. Provide feedback (both positive and constructive) as necessary.
7. Because learners will be at **different levels of knowledge** and experience, it may not be necessary for all learners to visit all patients. Instead, have learners visit their own patients and selected patients from whom they might learn a great deal.
8. Base all teaching on **data** generated by or about the patient. Identify topics that can be used as teaching moments.
9. Be a **model** for professional behavior, demonstrating positive interpersonal and communication skills.
10. **Thank** the patient and family for their cooperation.

Once you are away from the patient:

1. Develop a **plan** for the patient's continued healthcare.

2. Bring **closure** to both patient management issues and the teaching process. **Clarify** responsibilities and actions regarding the interaction.
3. Provide **feedback** (both positive and constructive) as necessary.

(Lowry, G. 2006.)

P.I.R.P. Technique

Step 1: Prepare

1. Set general expectations to maintain a safe learning environment
2. Prime patient/family, staff, residents, and students
3. Select patients with potential teaching points
4. Prime learners before each encounter
    a. Expectations and/or goals
    b. Identify roles of team members

Step 2: In the Room

1. Review patient; anticipate teaching points
2. Focus teaching – 1 or 2 points
3. Use lay terms and include patient and family
4. Avoid embarrassing learners

Step 3: Reflect & Plan

1. Solicit feedback immediately
    a. How do you think (specific behavior and/or action) went?
    b. Anything we could do differently?
2. Give feedback immediately
3. Review each day and plan for the next

(Hanna, 2011)

Teaching in the presence of patients provides unique and valuable opportunities to integrate the knowledge and skills of medicine for the direct benefit of the patient. The teacher is able to role model skills and attitudes which are vital, but which are hard to communicate with words.

Teaching in the Presence of the Patient

Before Rounding Session:

- Prepare for patient cases before rounds
- Decide with team which patients are appropriate for bedside rounds
- Orient learners—ensure everyone knows what is expected of them
- Prepare patients prior to rounds, when possible
- Invite patient's nurse if feasible

During Rounding Session:

- Have patient's doctor (resident, student, etc.) introduce all members of the team
- Orient patient and learners—encourage patient to correct/contribute to details
- Position patient appropriately; position team around bedside
- Do not avoid sensitive material
- Allow interruptions by patient and learners
- Examine pertinent or illustrative parts−invite students to participate
- Discuss events, labs, assessment, plan
- Challenge intellectually with open-ended questions
- Use "teachable moments" when available
- Teach to all levels of learners and encourage all to participate
- "I don't know" is an appropriate answer
- Communicate and summarize plan for patient and team

After Rounding Session:

- Debrief sessions when appropriate
- Offer time to clarify questions or address remaining issues after session
- Offer feedback to reinforce positive skills demonstrated at bedside

(Gonzalo et al., 2010)

Observation

This process allows you to observe, first hand, the learner's level of performance without the commitment of large blocks of time. The advantage of this strategy is the opportunity it affords you to observe the clinical skills of the learner. The process is focused, time efficient, and reassuring to the patient. Furthermore, learners at all levels appreciate the opportunity to receive feedback, and this particular technique is well received by them.

The first step is to create a culture in which observation is understood, expected, non-threatening, and routine for everyone. It should be explained during the orientation that direct observation will be part of their rotation. Frequent short observations are usually better than one long observation. When observing, focus on specific skills and behaviors rather than a global assessment. Determine whether the purpose of the direct observation is for formative or summative purposes.

The two most common barriers are lack of time and training. Recent studies have revealed that direct observation of students does not increase preceptor time. (Walters, et al., 2008; Walters, et al., 2009) Without appropriate training, reviewers frequently miss errors that students make during observed physical examinations, inconsistently identify students' use of open-ended questions and empathy in medical interviews, and rate students' overall performance inconsistently.

(Hanson, et al., 2010)

The steps involved in successfully using this strategy are:

1. Explain the purpose of the observation to the learner
2. Explain how the observation will occur
3. Select one skill for observation
4. Inform the patient of what will take place
5. Observe for a brief period of time without interrupting
6. Leave the room and have the learner join you when finished with the patient

Observation

7. Provide immediate feedback on what you observed
8. Use the information gained to plan your teaching
9. Repeat the process observing other skills
10. Evaluate the learner's skills over time, using multiple, brief periods of observation

Another approach using this technique is to identify what skills you want to observe with each learner over a period of time. For example, you might want to observe communication skills, collecting part of a history, performing part of a physical exam, dealing with challenging patients, explaining the diagnosis, or delivering bad news. This series of observations becomes excellent information for providing feedback and evaluating the learner at the end of your time together.

(Alguire et. al, 2001)

To make the direct observation process useful to learners, observers must be able to provide meaningful feedback. (see section on *Giving Feedback*) An action plan that characterizes steps the learner can take to improve is crucial to the effectiveness of feedback. An effective action plan is measureable, specific, and behavioral. The learner should have the potential to accomplish the plan in a reasonable timeframe.

(Hauer, et al., 2011)

Evidence-Based Medicine

Evidence-Based Medicine is best defined as a process used to solve patient management problems. Practicing in an evidence-based fashion necessitates a willingness to acknowledge what is unknown and then pursue best available evidence from clinical research to inform clinical decision-making for individual patients. Specific skills are needed to:

1. Deal with ruminating uncertainty and translate it into specific clinical questions
2. Align questions with the most effective and efficient information sources
3. Critically assess the validity and importance of 'best available evidence'
4. Thoughtfully and judiciously apply the evidence to patient care

EBM is not just about statistics or critical appraisal or memorizing guidelines. EBM can come alive as a teaching opportunity at any step within your effort to practice in an explicit evidence-based fashion. Below are a few suggestions to consider as you take advantage of these engaging, relevant, and patient-centered opportunities:

To Teach EBM, You MUST USE IT in Your Own Clinical Practice

This common sense point is often forgotten. Your confidence will grow as you pursue your own learning issues that are tied to the care of your patients. This repetitive process – and the answers you find – will help you build a growing cache of evidence-based answers for recurring issues. You'll also become familiar with where your learners might stumble or get stuck in solving a given problem … these can actually yield very engaging opportunities to teach them how to get unstuck.

Assess Your Learner's EBM Readiness

Your enthusiasm to teach EBM may not be matched by your learner's ability to swallow what you present. Quickly assess what their day is like and where they are with their EBM skills so that you can judiciously choose what & when to teach.

Diagnose Both the Patient and the Learner

This involves listening carefully during the case presentation, attending first to what's wrong with the patient, and then concentrating on how well the learner understands the patient's illness. Doing this well helps you focus teaching with evidence on the relevant clinical needs of the patient and the learning needs of your resident.

Evidence-Based Medicine

Find and Build Their Questions from the Case

Start with the main decision being made and consider what knowledge you and the resident most need to make that decision wisely. Knowledge needs often remain muddled in a silent ruminating stage. Help the resident articulate them, often by initially labeling the type of issue (e.g. differential diagnosis or therapy) with which they are wrestling. Then together you can sculpt a well-built clinical question by delving deeper into more specifics like which patients, which interventions, which outcomes, etc.

Select Which Clinical Question(s) to Pursue

We usually have more questions than time, so don't let your clinical learners feel paralyzed by all that they don't know. Help them choose wisely which ones to answer. Select the issue that is most relevant to this patient and this learner now, considering also what is most urgent, interesting, feasible to answer, and/or likely to recur.

Match Questions to Specific Information Resources

Since many learners haven't been exposed yet to which resources have the highest yield for various types of questions, try doing this step out loud and coaching them through it.

Cultivate Curiosity by Showing Your Own and Celebrate It in Others

Saying "I don't know" and then pursuing and sharing what you've learned are powerful examples for your residents. Be explicit as you articulate your own uncertainty and questions … and your enthusiasm will become contagious.

Balance EBM Excursions with Teaching Other Doctoring Skills

Remember that your residents need background knowledge, clinical skills, and EBM. Address them all and they will respect you as a clinically relevant teacher.

Bite Off Less than You Can Chew

Accept that time limitations exist. It's OK – and advisable – to teach digestible slices of evidence-based teaching. Modulate your teaching plans based on the learner's needs/receptivity as well as based on their clinical load.

Evidence-Based Medicine

Use Pre-Appraised Evidence Resources

These include electronic synopses of evidence like ACP Journal Club, Clinical Evidence, and Evidence-Based On-Call which are feasible to obtain and use quickly at the point of care. Also systematic reviews and other syntheses like well-constructed practice guidelines typically have already appraised available evidence.

Emphasize Interpreting & Applying Evidence in Decision-Making

Help your residents get to this "pay-off" or learning reward as often as possible. Explicitly role model how you are integrating the evidence alongside other important aspects of your clinical decisions.

Put It in 'English'

Jargon terms can be stumbling blocks for our clinical learners. Try to explain the concept first, and then label it with the term afterward. Also help learners translate study results into meaningful 'English' statements for their colleagues and patients.

Go Fishin' in Lakes You Know are Stocked … and also in New Lakes

You'll gain confidence quickly if you engage residents in issues about which you already know that high-quality evidence exists. And – as with your own clinical practice – don't forget to role-model the process of identifying and filling new knowledge gaps about problems for which you don't know if helpful evidence exists.

Exploit the Learning Opportunity … NOT the Learner

As you encourage your residents to show you their knowledge gaps, don't leave them feeling that you're just 'whacking the gopher'. Make sure you share the responsibility for tracking down and reporting back with the best evidence.

Be Fearless!

"Just Do It!" Accept that you must start weaving a more evidence-based approach into your clinical teaching well before you've mastered your own EBM skills. Just Start somewhere … and then build your knowledge, skills, and confidence from there.

(Wilson, 2009)

Rounding with Attending

When rounding with staff or faculty, residents can assist with teaching. A resident can:

- Prompt learners to give answers and responses
- Elaborate on what the staff or faculty physician is explaining or demonstrating
- Elicit teaching from the staff or faculty physician

(Weinholtz, D. et al., 1992.)

Considerations for the resident when rounding with faculty:

- Before rounding, **discuss** with the staff or faculty physician how you can support teaching the learner
- Before rounding, clarify learning **objectives** and the role of students and junior residents
- Be **active**—observe learner behavior, ask questions, look for teachable moments, support the staff or faculty
- Avoid standing around the bedside; get the **team involved** by asking questions and participating
- Use **silence** effectively; avoid answering too many questions
- Identify topics that can be used as **teachable moments**
- Diplomatically give learners **cues** to remember knowledge but do not camouflage a learner's deficiencies
- Check to see if the learner has any **questions**
- Ensure learners understand their **responsibility** for following up with recommendations by the staff or faculty

A large amount of information is exchanged, usually in the hallway before and after visiting the patient. Make sure the learner records any pertinent data, acknowledges the next steps and follows up.

For more guidelines on rounding, see Appendix C.

Multiple Levels of Learners

What strategies can be used to effectively engage and teach multiple levels of learners during teaching rounds? Here are 5 common approaches.

1. Learner-centered education – centers teaching on learners' interests, stage of learning and learners' strengths and areas for improvement.

A. Assess learners' interests: ask learners what they are and are not comfortable with and about topics they are interested in learning.

B. Assess learners' knowledge: gather information about learners' knowledge and skills.

C. Learner-appropriate questioning and teaching: question to learners' specific level of experience; use more complex questions for higher-level learners.

D. Feedback: consistent, individualized feedback to learners about performance, progress and areas for improvement.

E. Generalizing/integrating information: use information that pertains to a specific patient and discuss how it applies to multiple patients and specialties

2. Interaction among learners – fostering communication/interaction among team members

A. Developmental questioning: directs questions about knowledge, diagnosis and/or treatment to the lowest level of learner first, then moves 'up the ladder' asking progressively higher levels of learners the same question to reach a correct answer (knowledge) and/or review the positives and negatives of diagnostic reasoning or decision making.

B. Collaborative problem solving: have team members of different levels work out problems together.

C. Residents and Fellows as teachers: have residents and/or fellows explain information to other learners; direct learners' questions to residents and/or fellows.

3. Dedicated teaching time – explicit blocking of time strictly for teaching, before or after rounds

A. Clinical scenarios: create scenarios in which learners are questioned and encouraged to discuss.

B. Learning issue reports: learners research a topic identified during rounds and give short presentation at subsequent teaching sessions.

C. Literature reading: distribute literature in preparation for a specific teaching session or short discussion.

D. Burst teaching: teaching in bursts (10 minutes or less) that is clearly set aside for learning during rounds, as opposed to teaching steadily throughout rounds.

4. Making it real to learners – accurately simulating what it will be like in the "real world" of patient care for learners

A. Accountability: convey that learners are responsible for the care of their patients including being accountable for learning information applicable to these patients.

B. Learners lead rounds/interaction with patient: resident more of a facilitator than the primary leader.

C. Learners take part in procedures: encourage learners to take active part and provide opportunities to demonstrate knowledge and skills.

D. Putting learners 'on the spot': expect learners to commit to answering questions and making decisions in relation to the patients they are seeing.

E. Acting as team member rather than leader: eliminating the hierarchy of the group and considering everyone a colleague.

5. Role modeling – act as a role model for learners by demonstrating skills, decision making and reasoning

A. Interactively modeling clinical reasoning and decision making: instead of just answering learners' questions, walk learners through the thought process of finding the right answer—a.k.a. thinking out loud.

B. Skills demonstration: learners observe interaction with patient and then debrief; demonstrate physical exam skills.

C. Past experiences: describe experiences with past patients and the relevance to current patients.

D. Cooperation among fields: demonstrate or discuss use of consultation and other disciplines in management of a patient and highlight the cooperation of multiple health care fields.

(Rosenbaum, 2011)

Technique	Description	Suggested applications	Examples
Broadening	Change the specifics of the case to make more challenging or interesting	Differential diagnosis	What is the patient were 18 years old instead of 5 years? How would that change your differential diagnosis? Your management? Prognosis?
Targeting	Target medical knowledge or management questions at specific team members based on the difficulty (or content) of the question	Cases with interesting/ relevant basic science and clinical reasoning: basic science to M3s/ M4s; clinical reasoning to residents/fellows	M3: What is the most common cause of community acquired pneumonia? M4/Intern: What is the first line of treatment for CAP? Resident: What are admission criteria for pneumonia and possible complications of the infection?
Novelty	Offer new data from literature	Controversial topics; common topics with new guidelines	The new pneumonia guidelines suggest that we don't need to get a blood culture for every patient with CAP.
Up the ladder	Ask the same question of each learner starting with most junior and proceeding to most senior	Differential diagnosis; treatment	(To M3): In this patient with lobar pneumonia, what antibiotics would you like to start? (to Intern): Okay, what do you think? (to Senior): Anything to add?
Student as teacher	Have one or more senior learners teach a more junior one	Physical exam at bedside	(Intern): Could you show (M3) how you evaluate for tactile fremitus in this patient?

Source: Certain LK, Guarino AJ, Greenwald JL. Effective multilevel teaching techniques on attending rounds: A pilot study and systematic review of the literature. Medical Teacher. 2011;33:e644–e650.

Microskills Teaching

Microskills, or the one-minute preceptor, facilitates the instructional process by enabling teachers to effectively assess, instruct, and give feedback efficiently. Microskills are most useful in situations with only a few minutes available for teaching (rounds, ambulatory teaching).

1. Get a commitment. Ask learners to make a hypothesis about what might be happening with the patient and explain why that is the most likely diagnosis. Examples: *What other information do you think we need? What do you think is going on with this patient? What would you like to accomplish in this visit?*

2. Probe for supporting evidence. Before offering your opinion, ask learners for evidence to support her/his hypothesis. Examples: *What were the major findings that led to your diagnosis? What facts in this case do not support your conclusion? What else did you consider? What kept you from that choice?*

3. Teach general rules. Learners often remember general principles in the context of a particular patient, so the extent that a given patient is typical or atypical can be an important teaching point. Examples: *When this happens, do X." "When a patient only has cellulitis, you have to wait until the infected area becomes fluctuant to drain it."*

4. Tell them what they did right. Be specific and let the learner know what effect his/her actions had on the patient or the treatment plan. Examples: *"Specifically, you did an excellent job of…which results in this outcome." "You didn't immediately jump into solving the patient's problem but kept your mind open until they revealed their real agenda for coming in today."*

5. Correct mistakes. As soon after the mistake as possible, but in an appropriate time and place, let the learners know what was wrong and how to avoid or correct the error in the future. Example: *"Next time this happens, try this."*

(Neher, J. 1992)

General pointers:

- Use the model to diagnose the learner
- What is the *level* of knowledge and skill?
- What does the learner *need* to know?
- You cannot teach everything in one case
- Take advantage of teachable moment
- Brief, simple, focused, recallable
- You may not be ample to implement all 5 steps every time

Teaching Psychomotor Skills

A psychomotor skill is movement resulting from or connected with mental processes in which the eye, mind, and hand must work together. Learning physical skills requires the relevant movement to be assembled, component by component, using feedback to shape and polish them into a smooth action. There are three stages of learning a psychomotor skill:

Cognitive – identify and develop component parts and form a mental picture

Associative or developmental – link parts into smooth action through practice and feedback

Autonomous or automated – skill becomes automatic or second nature

Teacher's Role:

- Cognitive
  - Introduce purpose and guidelines
  - Familiarize learners with equipment
  - Demonstrate sequential steps, explain how each is correctly performed
  - Solicit questions
  - Focus on especially important or difficult steps
  - Encourage mental rehearsal of skill

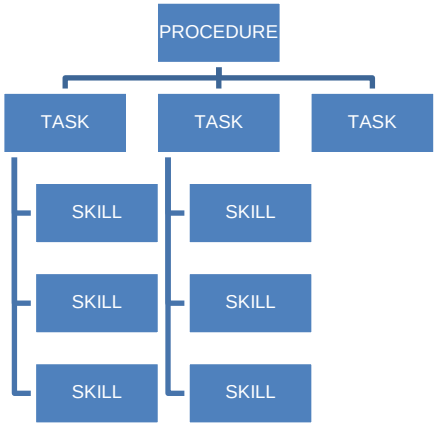
- Developmental
  - Give specific instructions for practice
  - Verbally and physically guide initial attempts
  - Ask learner to verbalize what s/he is doing
  - Allow time for practice (uninterrupted?)
  - Observe and verify proficiency
  - Ask for questions

- Automated
  - Provide opportunities for practice under ordinary conditions with a range of patients
  - Observe performance and offer feedback
  - Encourage learner self-assessment

(Ferguson, 2008)

Teaching Psychomotor Skills

Instead of teaching the entire skill at one time, it may be more efficient to break the **procedure** into different **tasks** and further divide each task into specific **skills**.



For example, the procedure is to intubate a patient. The tasks might be preparation, insertion, and follow-up. Skills that might fit in the preparation task include preparation of equipment (proper dosages, equipment within easy reach, no broken/used equipment, etc.) and preparation of the patient (explanation of procedure, consent signed, positioned on table, insertion of IV med lines, etc.).

Different approaches to practicing the skill:

- **Distributed** in which rest and practice time are equal vs. **Massed** in which there is very little rest time
- **Random** in which tasks are ordered unsystematically vs. **Blocked** where like tasks are grouped together
- **Whole** in which the skill is demonstrated and practiced from beginning to end vs. **Part** where the procedure is broken up into smaller components

As the teacher, you need to establish clear standards for effective performance. This can be accomplished by:

- Conducting a skill analysis to identify and order essential/critical steps
- Create a skills checklist
- Assess needs of learners

Interactive Lecturing

Interactive lecturing implies active involvement and participation by the audience so that students are no longer passive in the learning process. (see section on "Large Group Presentation" for additional information)

Goals of effective teaching

- Attract attention
- Maintain attention
- Promote learning

Methods for attracting attention

- Stories/anecdotes – relating stories or anecdotes that are directly related to the topic will catch the audience's attention
- Problem – beginning with a problem and using the lecture information to solve it keeps the audience focused
- Test question – showing how the material will be used in testing is effective
- Humor – as long as the humor is appropriate for the audience
- Startling fact – facts, figures, data are ways to "wake up" the audience
- Surveying student knowledge – making sure the information is relevant to the topic and the audience indicates the importance of the material

Methods for maintaining attention

- Organizing the material, presenting the organization, reinforcing the organization during the lecture, and summarizing using the organization help keep the audience on track with your presentation
- The adult attention span = 10-20 minutes under same stimulus; change the stimulus often using a variety of techniques:
    - Video
    - Demonstration
    - Role play
    - Small groups or partnering

Methods for promoting learning

- Pausing after a general topic allows the audience to check and/or correct their notes, gives an opportunity for questions, indicates a change between topics
- Limit content to 50% new information
- Limit content to 2-3 main points
- Select content based on what you want them to remember

(Rosenbaum, 2008)

Interactive Lecturing

General strategies to help make the lecture more interactive:

Be willing to take risks and overcome your fears

- Be cognizant of your fears
- Maintain your sense of humor
- Be prepared for the unexpected

Prepare and practice

- Practicing will assist with effective time management
- Preparation will improve and focus management of content
- Preparing and practicing will identify ways to increase audience participation
- Decreased nervousness

Be clear in your objectives and cut down on your material.

- Remember that less is more; consider your three most important points
- Do not try to cover every topic in detail
- Provide readings and handouts to supplement the material
- Ensure your lecture in point of fact covers your objectives

Prepare students for their role in interactive lectures

- Set rules at the beginning
- Outline how your session will be conducted
- Clearly indicate when you want audience participation

Remain flexible

- Don’t try to incorporate all methods for interactive lecturing at one time
- Focus on a couple of techniques and ones that you are comfortable with
- Realize that everything will not go according to your plan
- Be prepared to modify/change your approach or information if your audience appears to be totally lost

(Steinart & Snell, 1999)

Knowledge Probe

Posing questions at the start of a lecture is a good way to stimulate thinking about the content you will cover for the day; it primes the mind to apply concepts. Prepare 2-3 short answer questions or 5 multiple-choice questions from the lecture content. Have the students work in pairs or individually to answer the questions, have them save their answers. The questions can be readdressed in a mid-lecture or end-of-lecture activity (case that applies the concepts) to help students see how their knowledge and understanding has increased.

Think-Pair-Share

Pose a question/problem. Students spend 1-2 minutes thinking about the problem alone then discuss problem in pairs. Pairs are asked to report to the entire class. Works well in large and small classroom settings at any time during the class. Effective way to involve learners, especially those apprehensive about speaking up in class. Provides instructor with feedback on what learners have/have not grasped.

Pause and Clarify

Ask learners to discuss idea with neighbor. Pause lecture for 2 minutes while learners chat with neighbors about their respective understanding of key or difficult conceptual content. Aim is for each student to clarity their own understanding by comparing their perspective with that of their partner. Works best when teacher asks question requiring application of understanding, rather than simply recall of information.

Quick Think

Every 15 minutes or so, insert a "quick think" exercise to increase attention, interest, and learning. Participation options vary: students can record their responses individually and then explain their answers to a neighbor, they can verbally generate an answer with a neighbor, or they can be asked to silently think about a possible response. Provide feedback so that students can hear or share correct or possible answers. Some examples include: select the best answer, correct the error, complete a sentence starter, compare or contrast, support a statement, re-order the steps, reach a conclusion, paraphrase the idea.

Mini-Case

Begin the lecture with a realistic case involving the concepts that will be discussed that day. Include a brief question that requires the application of key concepts. Students will each work on the question then report their answers when called upon. Mini-cases are more effective when students are presented the case beforehand (in notes, at the end of previous session or as pre-class material).

Socratic Questioning
Query students in a manner that helps them uncover answers. Ask learners about thought process, probe assumptions, and ask for evidence. Can be used in large and small classes, but learning climate guidelines must be established: respect all around; non-judgmental attitudes.

Minute Writes
Pose a question about a course concept; ask learners to write a response in 1-2 minutes. Collect responses & without revealing names, share sample response & give feedback. Works in large or small settings; effective technique for determining learner progress – understanding course material, reaction to course material.

Muddiest Point
As with "Minute Writes," students are given a couple of minutes to write the "muddiest point" or most confusing concept to understand. Can provide clarification in real time or through email/online discussion.

Critical Thinking Activity
Provide a small group breakout session designed around a thought provoking question/case that concerns the material just presented and/or builds upon concepts presented in previous lectures. After breakout, select a student from a group to respond to the question or task. Then ask others to participate by adding to the case. Finish session by providing a summary.

Jigsaw Learning Activity
Jigsaw learning requires that students become experts in a subject area and then teach that topic to peers who have become experts in other topics. Steps:
(1) Divide class into small groups of 4 to 6 students
(2) Assign each group a subject area to learn
(3) Rearrange groups so that there is 1 expert in each group
(4) Experts reciprocally teach their peers

Compiled by Lynne Robins, PhD: lynner@uw.edu, Department of Biomedical Informatics & Medical Education, University of Washington

Conference Rooms

The conference room, the hallway, and the bedside are three locations where most teaching occurs during rounds. Faculty members, in particular, are likely to allocate more of their time to hallway and conference room sessions. Residents can do quite a lot of teaching in the conference room as they conduct “sit-down” rounds or at special times set aside for teaching and learning. The teacher must fulfill two roles simultaneously—diagnosing the patient’s condition and the learner’s abilities. The conference room is perhaps the best place to focus on clinical problem solving.

Recommendations:

- While rounding, assign a scribe to **record any questions** that cannot be answered. Transfer these questions to the whiteboard for future learning.
- **Limit interruptions** of the case presentation by learners and house staff, reserving the majority of questions and comments until after the presentation is completed.
- Take **two columns of notes** during presentation—one for the patient’s issues and the other for the learner’s issues
- After case presentation, **actively engage in discussions**, using probing questions to assess understanding and to provoke thought.
- Frequently **use illustrative devices** (e.g., chalkboard, x-ray, EKG strip, etc.) to emphasize important information and make abstract points more concrete.
- Ask the staff or faculty physician to occasionally deliver **brief talks** on pertinent topics from her/his subspecialty area or on general topics in which the faculty or staff is particularly well versed.
- Provide team members with **relevant readings** or references and encourage team members to share information obtained through their readings and consultations.
- It is important to **validate learner’s contributions**, even if the learner’s comments would lead the discussion in another direction.
- Help participants **explore differences** in opinion with openness and curiosity.
- Allows the teacher to **role model** the use of additional sources of information.

(Weinholtz, D. et.al. 1992.)

Giving Feedback

Feedback should:

- Be undertaken with the teacher and learner working as allies, with common goals
- Begin with learner self-assessment
- Be timely and sensitive to space
- Delivered in a conversational tone of voice
- Be regulated in quantity and limited to behaviors that are remediable
- Deal with decisions and actions, rather than assumed intentions or interpretations
- End with an action plan and follow-up steps

(Ende, J. 1983.)

Focus:

- **Specific** behavior(s) rather than general that are amenable to change
- **Descriptive** rather than judgmental (e.g., “You have been late 3 times this week” rather than “You are always late.”)
- **Purposeful** to help the individual consider changing behavior by providing information about how s/he affects others
- **Balance** of effective and ineffective behaviors
- **Respectful** of the needs of both the giver and receiver (e.g., “It is important to me that you respond within the hour when Dr. X requests a consultation because I have worked for months to encourage her to better utilize our services.”)
- **Explore** alternatives and selection of the most appropriate action
- **Verified** with the learner to insure clear communication. (e.g., “I want to check that we have both arrived at the same conclusions about how you will remedy this situation. Please reiterate for me the steps you will take.”)
- Provide information that is of **value** to the learner

(Ferguson, K. and Rosenbaum, M. 2006)

Intention	Technique	Example of Behavior
Orientation and Climate: prepare person for session	Inform person ahead of time. Select appropriate time and location. Provide relaxed, respectful atmosphere. Explain / negotiate agenda.	Let's make an appointment to review your performance. What are your goals for this rotation / clerkship? Remember the stated expectations for this procedure?
Elicitation: ask person for self – assessment	Ask what was done well and what could be improved. Ask how person felt. Use open – ended questions.	How do you think it went? What was done well? What could be improved?
Diagnosis and Feedback: decide where person needs to improve and how much feedback is appropriate; give reinforcing and corrective feedback	Offer your response to observations of specific behaviors, approach, or style. Give your reasons in the context of well – defined shared goals.	When you did/said…, I was… (pleased, relieved, concerned, annoyed, upset), because…
Improvement Plan: develop specific strategies for improvement	Invite person's suggestions. Give your suggestions. Suggest articles, consultations. Teach (discuss, demonstrate, coach).	What could you do differently? This is my suggestion… Where will you get help? Let's reframe this problem. Let's talk about this.
Application: apply strategies to real situation	Apply planned improvements to current or future problems.	What will you do next time? Show me!
Review: check person understands and agrees with what has been discussed and negotiated	Person reviews his / her behaviors needing change. Specify consequences.	What do you do well? What changes will you make? By when? What if you don't?

Receiving Feedback

Being able to receive feedback is just as critical as being able to provide effective feedback. When receiving feedback, keep the following in mind:

- Will the feedback help you obtain your goal?
- Listen to all the information – don't interrupt
- Don't defend, contradict, argue, or interrogate the person giving you feedback
- Ask for clarification if needed
- Accept the feedback as one bit of data; it will take a lot of bits to understand the full picture
- You do not have to immediately try to change your behaviors
- Consider how this information fits with other information you have received

Soliciting Feedback

Many of us expect feedback to be given and wait for it instead of actively requesting feedback. Consider these guidelines when soliciting feedback:

- Request feedback early and as close to the event as possible
- Highlight exactly what you are looking for – be specific in your request (don't just say "give me some feedback")
- Choose specific people (respected, trusted) to give you feedback
- Make sure it is directly related to your goals
- Use helpful opening phrases (i.e., "I think I missed the patient's reaction. What do you think?")
- Ask for recommendations but you do not have to act on any of them
- Never openly compare the feedback given to you by different sources
- Thank them for their information
- Decide what you want to do with the input
- Consider it one data point or one puzzle piece; complete the picture before making behavioral changes

Daily Debriefing

During the day, it may not be possible to work with the learner and follow-up on their learning and experiences. Reconnecting with the learner at the end of the day will be a way to synthesize the day's learning experiences. This also helps to promote continued learning.

Recommendations for debriefing:

- Have the learner self-reflect on the day's experiences
  - Identify one new bit of information gained from the day
  - What was the most difficult experience today?
  - What medical knowledge do you consider weak/needs improvement?
  - Given the condition of one patient, what would you do differently if they were older? younger? different gender? allergic to medication?
  - Instruct the learner to teach you about a diagnosis or differential
  - What topic/information could they present in a brief presentation the next day?

- If there are groups of learners:
  - Assign small groups to research a topic related to one of their patient experiences
  - Have small group teach the others what they learned from a patient encounter
  - Have the group identify common themes from the day's activities

- Other opportunities for debriefing:
  - After leaving rounds, ask the learner about one thing they learned or have a question about
  - After leaving Grand Rounds, ask the learner to identify one thing they learned from the session
  - After leaving M&M, question the learner about the focus of the session
  - After observing an interaction with a family, question the learner about how they would handle a similar/different situation

After the Rotation

Key Points

1. Schedule time with the learner to discuss your evaluation. Try to avoid interruptions during the discussion.

2. The evaluation should be conducted in a conversational tone.

3. Review the goals and expectations as determined at the beginning of the rotation.

4. Suggestions for improvement should be given verbally during the rotation. There should be no surprises during the evaluation. This does not allow the learner an opportunity to work on improvements. Any performance issue should have been addressed during the rotation.

5. After the rotation, take time to reflect on your teaching skills and methods. Identify one aspect you want to work on with the next learner.

Evaluating Teaching

For many teachers, reflection after teaching provides the impetus for change and improvement. Assessing what went well and what went wrong are key steps in this self-evaluation process. Excellent teachers use this information to make their teaching more effective and relevant for the learner. Less effective teachers never change or even consider the need to change.

Questions to ask yourself:

- What are common errors and how can I address these in my teaching?
- In what areas have students shown particular strengths, weaknesses, interests and why might this be so?
- What misconceptions are evident in students' work and how can I address these in my teaching?
- What levels of intellectual achievement are revealed in students' work? For example, do they simply appear to rote learn or is there evidence of analysis and critical thinking?
- What feedback will I give students and how will I do this?

This process of questioning and thinking about one's teaching is a fertile way of developing an understanding of student learning so that you can modify teaching and provide additional assistance to students if this is indicated.

(Newble & Cannon, 2001)

Teaching failures will occur; they are an integral part of the process. However, when confronted with failure, there are several things you can do. First, be realistic; even the best of teachers have bad days when nothing seems to work. Second, keep your "antennae" out to recognize the parts that were and were not successful. If you are lucky, you can ask for and receive useful feedback; however, this often will not occur, so you must personally observe what engages the learner and adjust your teaching accordingly.

(Alguire, et. al, 2001)

Evaluating Learners

Evaluation should be an ongoing process during a rotation to help learners improve their skills and behaviors. It is part of the learning process and can help build the learner's confidence. Guidelines for evaluating student learning:

Prior to the meeting:

- Know precisely what is required/expected of the learner at this level/time of education
- Gather data about the learner's knowledge/attitude/skills from faculty, peers and direct observation
- Compare the required/expected competencies and the learner's performance
- Document progress to date and create a plan for continued growth

During the meeting:

- Conduct evaluation sessions in a private, relaxed, and supportive atmosphere
- Outline an agenda for the session
- Allow the learner to discuss his/her experience or performance first
- Be a good listener
- Share your information; link to the learner's goals
- Comments should be constructive and non-judgmental. Example areas for comment on learner evaluations include:
    - Attendance
    - Attitude toward rotation
    - Evidence of collateral reading
    - Assessment of knowledge base
        - Thoroughness and accuracy of assessments
    - Interpersonal manner with patients, families, staff, peers, residents, and attendings
    - Professionalism (acting with integrity, respect, and compassion)
- Compare your assessment with the learner's and discuss
- Follow feedback guidelines to ensure specific, descriptive and purposeful information
- Establish follow-up plans
- Summarize

Evaluating Learners

Anyone who evaluates another person's performance is prone to make one or more rating errors. There are many reasons for this occurrence (don't understand the rating form, not taking time to consider, not aware of rating items, lazy scoring, etc.). Being aware of common rating errors will help reduce their impact. (Alguire, et.al, 2001)

The "Halo/Horn" Effect

- When we consider a person good (or bad) in one category, we are likely to make a similar evaluation in other categories.
- We assume that because people are good at doing A they will be good at doing B, C and D (or the reverse—because they are bad at doing A they will be bad at doing B, C and D)….
- Halo effects happen especially if the perceiver does not have enough information about all traits, so that she/he makes assumptions based on one or two prominent traits
- Correcting Error: make an effort to observe all categories, not rate on your expectations, or use 'not observed' instead of rating the item

Restriction of Range

- The tendency to circle the same numerical rating for all competencies
- Not making full use of the evaluation range
- Rating all "3" so as to be non-committal; lazy rating
- Correcting Error: take time to consider each characteristic individually and rate it independently

Rating Non-Performance Attributes

- Allowing actions unrelated to the category to influence the rating
- Considering attributes such as personality, gender, ethnicity, religious beliefs, or origins to decide ratings instead of actual performance
- Correcting Error: focus on competencies and disregard non-performance attributes

Recency Error

- Evaluation is based on most recent events in memory
- Inability to remember events over the entire period of observation
- Correcting Error: use index cards to jot down both positive and negative actions and performance; keep in a file for use at evaluation time

Hidden Curriculum

In addition to the intentional teaching of knowledge and skills to trainees and protégés is the unintended, often unrealized transmission of implicit beliefs, attitudes, and behaviors through a process called the hidden curriculum.

Three levels of teaching:

- Formal – formulaic or planned instruction such as a classroom or skills lab
- Informal – opportunistic or unplanned instruction being offered when appropriate learning opportunities arise such as the clinical setting
- Hidden – unintended transmissions of implicit social and cultural rules and regulations such as beliefs and attitudes

The hidden curriculum is a function not only of the institution's implicitly held values, but perhaps more so of the individuals by whom the trainee is surrounded personally. There is a disconnect between what we formally teach medical students and residents in lectures and syllabi and how things really operate in clinical settings, most often related to the attitudes and behaviors of attendings and residents in informal teaching situations.

"Thus, we are teaching far more than we know. Every word we speak, every action we perform, every time we choose not to speak or act, every smile, every curse, every sigh, is a lesson in the hidden curriculum."

(Grofton & Regehr, 2006)

Awareness of a resident's part in the hidden curriculum:

- Role modeling – learners are constantly observing your behavior. How you respond or don't respond in a situation, whether you take time to teach, or your acknowledgement or lack of the learner's presence provides many hidden messages.
- Cultural diversity – how you react to patients from any particular background, whether you treat genders equally, or how you use questions to uncover information also reinforce learning and contribute to the hidden curriculum.
- Attitude – do you consider the presence of a learner an obligation or an opportunity? Learners can quickly sense how important they are under your direction. Do you know their first name? Do you use it frequently? Asking or not asking what the learner's goals are indicates your attitude as well.

Additional Teaching Opportunities

Key Points

1. Determine the type of audience you will be presenting to and organize your presentation accordingly.

2. The presentation should have a logical beginning, middle, and ending containing information that people need.

3. Practice your presentation with emphasis on timing, identifying key points, and developing smooth transitions. Have a peer or coach provide feedback on your presentation beforehand.

4. If you are using electronic equipment (laptop, projector, sound), test the equipment before your presentation. If necessary, provide backup.

5. If the presentation uses visual aids, make sure the material is readable, color coordinated, and uses a minimum of special effects.

6. Be confident and visualize success!

Teaching Patients

The biggest mistake health care providers make is that they try to teach patients everything they know. You cannot teach ten years of learning in ten minutes and it really doesn't pay to overwhelm someone who just found out they are going to live the rest of their life with a chronic disease. So think about what they really need to learn.

The "Do-Know-Deficit"

- *What do they have to do?* (i.e., take medication, change a dressing, etc.)
- *What do they need to know in order to do it?* (i.e., side effects of the medication, aseptic technique, etc.)
- *What do they already know?* Ask them. Have them show you, Validate that it's correct.

Teach the deficit. Please give the patient the respect they deserve and find out what they already know. Do not waste their time and yours by teaching them something they already know.

Now what are the components?

- Needs to know. What are the survival skills, basic safety issues, i.e. medications, treatments, etc? In diabetes, it's the four Ms: meal planning, medications, monitoring and movement. The rest can come later
- Wants to know. They have things they want to know and you need to address that or they won't hear anything else you have to say. So ask, "What questions do you have?"
- Nice to know. These are the fun things but not really necessary at this time. Sometimes we teach a subject because we like these topics. If the patient doesn't need it, don't waste their time.

(Kanzer-Lewis, 2008)

Teaching Patients

Common Teaching Mistakes

- Ignoring the restrictions of the patient's environment
- Failing to accept that patients have the right to change their mind
- Using medical jargon
- Failing to negotiate goals
- Duplicating teaching that other team members have done
- Overloading the patient with information
- Choosing the wrong time for teaching
- Not evaluating what the patient has learned
- Not reviewing educational media or relying exclusively on media

The bottom line is that patients control what they do with the health teaching you provide. Your responsibility is to assist patients in achieving and maintaining health by sharing knowledge, helping with the practical problems of carrying out instructions, and supporting patients as they integrate new knowledge and skills.

- The first step is to make sure that health care instructions are understandable and compatible with patient goals.

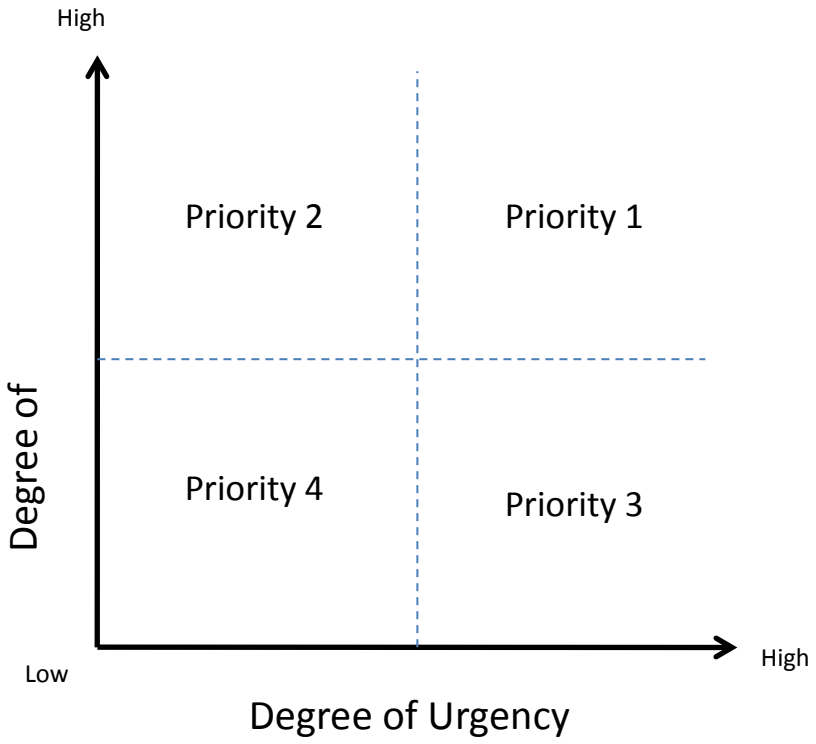
- The next step is to include the patient as a partner in the process rather than as a passive recipient of health teaching.

- The third step is to view the patient teaching as a process that requires a strong interpersonal relationship with the patient and his or her family.

The key to effective health teaching is to develop an equal partnership that enables patients and families to manage health care problems with skill and confidence.

Time Management

The key to time management is prioritizing tasks according to their relative importance and their urgency. Importance is defined internally, by the learners themselves, indicating tasks that are considered mission-critical in advancing patient care and learning. Urgency is defined externally, by other peoples' agendas.



Priority 1: Important and Urgent

- Focus first on tasks that are important (advancing patient care) and urgent (the needs of other team members caring for the patient)

Priority 2: Important but not Urgent

- Focus on all requested tasks and then prioritize them not on the basis of who wants it done first (urgency) but according to what is most important for the patient

Priority 3: Urgent but not Important

- Focus on the needs of other team members and/or personal needs related to work, professional development, and patient care

Priority 4: Not Important or Urgent

- Focus on all the leftover tasks that can be attempted in the remaining time

Learning to separate urgent from important tasks will be difficult at first. All team members should be encouraged to ask for a second opinion if they do not know how to prioritize tasks.

(Wiese, 2010)

Time Management

These are ways you can control time wasters more effectively:

- Taming the telephone
  - Plan time for phone calls and “batch them” together so that you are not constantly interrupted
  - Make your calls brief; and enlist help, either by asking someone else to screen and delegate your calls, or to make certain calls on your behalf
  - Accept the fact that time on the telephone is an important component of your work; adjust your expectations

- Controlling email and the Internet
  - Limit the time you spend on the computer
  - Don’t use email to replace social discourse
  - Control your “impulse” to check the computer frequently
  - Once you have found the information, resist the urge to continue looking for more data

- Dealing with interruptions
  - Monitor your interruptions so that you get a better sense of what they are and when they occur
  - Delegate more responsibilities to others
  - Establishing your hours of availability and “blocking out” protected time

- Managing paper
  - Handle a piece of paper only once
  - Set aside time for handling paperwork and reading
  - Establish a good filing system and when in doubt, throw it out

- Avoiding perfectionism
  - Consider the cost and consequences of your perfectionism and dare to be average
  - Learn to accept anxiety that results from “loose ends” and imperfection
  - Stop anticipating failure before something has happened
  - Estimate how much time a project is worth and stick to your estimate
  - Try to do something “imperfect” on purpose

- Overcoming procrastination
  - Analyze why you procrastinate
  - Consider the cost of your procrastination
  - Break large tasks into smaller, more manageable tasks
  - Set deadlines that you have to follow
  - Force yourself to do high priority tasks when you are energetic

(Steinert, 2000)

Time Management

We often find ourselves with small windows of time between larger tasks. Usually we are waiting for something, or there has been a last-minute change to a previously scheduled activity. In the following table, we suggest ways to maximize small bits of time.

Amount of Time	Activity/Task
1-2 minutes	• Relax, take a few deep breaths, close your eyes • Use the washroom • Get a drink of water • Answer an email or two • Tidy your desktop • Tidy up wherever you are • Review your agenda
3-5 minutes	• Go outside for a few minutes for some fresh air • Get a hot drink • Have a snack • Triage and answer a few emails • Delete some emails • Revise the to-do list of the day or consider the next day's list • Respond to a message • Scan a journal (titles only) • Tidy your space
5-10 minutes	• Complete a short task • Return a phone call • Read one article • Tidy a desk drawer or clean out a folder • Clean out your wallet • Triage your inbox
10-15 minutes	• See one more patient • Read one article • Look up one topic online • Triage and answer messages or emails • Plan out a future activity

(Patel & Puddester, 2012)

Grand Rounds

These are formal meetings dedicated to continuing education of physicians. Their frequency tends to vary but typically conducted weekly. These meetings may include topics such as clinical case presentations, lectures from visiting faculty, educational training sessions, presentations of current research, morbidity and mortality lectures, and interactions with patients for educational purposes.

Residents may be involved with Grand Rounds in two ways:

1. As the Presenter:

- If you will be making a formal presentation, review the section “Large Group Presentations” and “Visual Presentations.”

2. With Learner(s) after the presentation:

- Review with learners the information presented. Use the section “Asking the Right Questions” to investigate higher level learning.
- Identify two pieces of information that you learned to turn into “Teachable Moments.”
- Randomly designate learners to research a component of the presentation and make an oral report to your team.
- If possible, have the presenter make brief additional comments to your team during conference.
- Discuss with learners how the information might be applicable in their medical career.

Teaching in the Operating Room

Teaching in the OR provides a unique and challenging opportunity for teaching. The approach to teaching encompasses helping the learner develop complex thinking skills as well as acquiring new knowledge. It requires balancing the need to impart scientific knowledge, challenge assumptions, guide experiential learning and, at the same time, ensure patient care and safety.

(Cleave-Hogg & Benedict, 1997)

To have a truly effective learning experience, students need to learn:

A. To negotiate the **physical environment** of the OR; to learn the protocols, to familiarize themselves with the working culture; to learn to cope with the emotional impact and tensions that may arise

B. To have a clear sense of the **learning objectives**, while attending to the formal assessment requires set by the department

C. To negotiate the **social relations** of work; to find a legitimate role to play in order to participate

(Lyon, 2004)

Components for an effective learning experience in the OR:

- Identify the learner's basic level of knowledge
- Help the learner develop a learning plan or identify goals
- Clarify your expectations and those of the learner
- Provide a basic orientation to the room—location & name of equipment, introductions to staff, common procedures/guidelines, what to do in case of emergencies
- Identify the best ways & times to asks questions
- Provide information about the social dynamics surrounding the attending—how to respond when asked a question, how to provide equipment, where to observe from
- For any teachable moment, have a focus or goal as to what you are trying to teach
- Use low and high level questions to expand cognitive development (see section on Asking the Right Questions)
- Provide immediate and honest feedback in a constructive manner
- Recognize the learner's efforts to be productive and learn new knowledge

The most valuable learning experiences occur when the learner is engaged by getting involved, standing scrubbed in and feeling a part of the social and physical environment.

Teaching in the Operating Room

The challenges for teaching in the operating room lie in three domains:

Managing the Demands of the Working Environment

- Students have to learn to negotiate the physical environment of the OR as a workplace, to learn the protocols, familiarize themselves with the culture, and cope with the emotional impact of surgery
- The surgical procedure, its type, rarity, complexity, and progress determine the timing of all events
- Particularly complex procedures require intense concentration and offer little opportunity for teaching during the procedure
- Teaching material cannot be distilled easily to extract only the most interesting, useful or critical bits

Managing the Educational Tasks, Determining the Learning Objectives and Relevance

- Students who have a clearer idea of the practical relevance of learning in the OR found the time in OR more useful
- Teachers and students should clearly identify objectives related to the day's schedule or types of patients or types of procedures
- The OR presents an opportunity to learn in a particular way that helps understanding, with integration, and with retention of knowledge

Managing Learning and the Social Relations of Work in the OR

- There are multiple levels of learners in the OR at any given time
- Students find they have to promote themselves to earn their place on the team
- Students are observing all team members and looking to the physician as the role model for team leadership
- Establishing credibility, negotiating a role to play, participating in the team, and having that participation supported and acknowledged as legitimate is crucial to student learning

(Lyon, 2003)

Large Group Presentations

Presentations are a way of communicating ideas and information to a group. A good presentation has:

1. **Content** – it contains information that people need.
   a. Know your audience – expected numbers; level of education and interest in subject; diversity; challenging or passive.
   b. Proofread all printed material – have a peer or friend review the material.
   c. Clarify the topic for your presentation – what should you cover; are there specific learning areas; suggestions to make the presentation more interesting.

2. **Structure** – it has a logical beginning, middle, and end. It must be sequenced and paced so that the audience can understand it.
   a. Clearly identify the objectives (3-5) at the beginning of the session.
   b. Keep to the time schedule—but don't rush.
   c. Keep your opening simple and exciting. Most audiences give you only 30-120 seconds to convince them they want to listen to you.
   d. Present your material in a well-organized manner, yet be flexible to adjust to your audience – make your organization transparent.
   e. At the completion, review the objectives of your presentation.
   f. Depending on the audience, you may have to build in time for questions and answers.

3. **Packaging** – it must be well prepared.
   a. Test all audiovisual equipment. Do not rely on technology to work. Carry backup files.
   b. Make your presentation interactive and break up the long talk by posing questions or using small groups.
   c. Handouts can supplement the presentation, but don't read them.
   d. Don't be too gimmicky with computer graphics and pictures.
   e. Don't read your slides—face the audience and talk to them.
   f. Timing of your presentation (early morning, after lunch, end of day)

Large Group Presentations

4. **Human Element** – a good presentation will be remembered much more than a good report because it has a person attached to it.

   a. The voice is probably the most valuable tool of the presenter—use it effectively and creatively
      i. Talk slowly to emphasize a point
      ii. Vary your voice tone throughout the talk
      iii. Alternate the speed of your words for emphasis

   b. Your body communicates different impressions to the audience. People not only listen to you, they also watch you.
      i. Standing behind the podium places a barrier between you and the audience—not connected to the audience; gripping the podium may indicate nervousness
      ii. Open arms and palms towards the audience indicates openness; crossed arms indicates defensiveness
      iii. Facial expressions (smiling, frowning, looking down, making faces) are effective if used appropriately
      iv. Walking away from your notes indicates confidence
      v. Occasionally making eye contact with different areas of the audience keeps you connected
      vi. Appropriate dress for the occasion helps you connect with the audience

   c. Do not criticize or allow criticism of participants

   d. Maintain confidentiality—do not use names of actual people in stories or references that can identify someone

   e. Talk to your audience, not at them. Use a conversational tone and not a parent – child lecturing approach

   f. Deal with passive audiences:
      i. Use interactive exercises
      ii. Use small group discussions
      iii. Ask questions and reward answers (recognition)
      iv. Ask the audience for their input and knowledge of the topic

Most of all, ENJOY the time in front of your audience. It will be reflected back to you through participation and good reviews.

(Clark, D. 2000.)

Top Ten Tips for Talks

10. Meet the Needs of the Audience

The most important thing a speaker can do is to determine what the audience wants to know or needs to know about the topic being presented.

9. Understand Your Own Goals for the Presentation

Lecturers should be clear in their own minds about exactly what they hope to accomplish during their presentation.

8. Hook Them Early

Answer the questions like what it's about, who should care, and what's in it for me at the beginning of the presentation.

7. Keep It Lean (and Interesting)

Cut down the information that you present and keep your key messages simple. The body should emphasize only a limited number of points.

6. Finish Strongly

Have a strong closing. The audience remembers your summary better than any other part of the presentation.

5. Mind the Clock

There is little more upsetting to an audience than speakers who exceed the allotted time for their presentation.

4. Concentrate on Delivery

Your delivery will make the difference between a memorable or forgettable presentation. Arrive early to set up the area and equipment. Use pauses for emphasis. Speak clearly and comfortably (slow down if needed). Cut down on filler words (um, ah, like)

3. Don't Just Talk, Perform

Smile; tell stories; show pictures that are connected to your topic. Show your enthusiasm. Use humor if you are comfortable and it is appropriate.

2. Learn How to Handle Nervousness

See next page for suggestions

1. Practice, Practice, Practice

Rehearsing allows for time management, concentrating on delivery, and clarifying rough spots before the true presentation.

(Skeff & Stratos, 2010)

Overcoming Nervousness

People are sometimes nervous because they fear being in the spotlight or that they will perform badly. They may be afraid of their listeners. They may think their ideas aren't good enough, or that they are personally not good enough. People tend to be anxious about the unknown, and this fear may generate those feelings of nervousness that are so common among us all. Such fears can be valuable to a speaker who knows how to channel them constructively. There are twelve things you can do to channel any feelings of fear and nervousness that you might experience:

- Keep your fear to yourself – believe the audience wants you to succeed
- Visualize yourself being successful
- Practice body motions that will reinforce your topics
- Remember a good feeling
- Know and understand your listeners
- Check out all the arrangements carefully
- Talk only about things you know and care about
- Practice before a mirror and/or another person
- Remind yourself that nervousness is normal
- Pause briefly before you start
- Use your audience (i.e., make eye contact; look for nodding heads-agreeing with you)
- Give yourself permission to make mistakes

(Speeches 101: Handling Nervousness. 2004.)

Visual Presentations

Graphics provide ways to engage your audience as they:

- Show structure and function
- Graphically represent data
- Illustrate a process
- Provide a framework for the presentation
- Clarify concepts with pictures
- Can be used to surprise or shock the audience

Density & Legibility

- 10 lines and 10 words per line for overhead transparencies
- Use a simple style of lettering (Arial, Times New Roman, Verdana, Lucinda Sans)
- Limit use of *italics*, underlining, **bold** and CAPITALIZATION
- Use special effects sparingly (shadowing, 3-D)
- Use 4 – 5 colors maximum
- Increase color contrast with color hue and brightness

Keep it Simple

- Effective slides emphasize and illustrate what the speaker says
- Slides present information succinctly
- Slides present information that is self-explanatory

Layout

- Use horizontal (landscape) slides rather than vertical (portrait)
- Try to be consistent where you place information on the slide
    - Titles, bullets, logos, etc. should have a designated spot
- May be formal and balanced (entries centered/left-justified) or informal (entries off-centered yet balanced)

Color

- Use contrasting colors for text and background (light/dark)
- Use 4 – 5 colors per slide and be consistent
- Highlight important information with contrasting color
- Light-colored lettering or lines on dark background often preferred

Visual Presentations

Text

- About 7 lines per slide with about 8 words each for text slides
- Font size should be at least 18
- Use an active "voice" that emphasizes key words or phrases (present or future tense, i.e. is, are, will, 'ing)
- Avoid decorative or ornamental styles of font (*Lucinda Calligraphy*, Mistral, **Broadway**)
- Spacing between lines should be about equal to the height of a capital letter or 1 ½ lines
- Punctuation is often unnecessary to end a line of text
- ALL UPPER CASE LETTERING IS MORE DIFFICULT TO READ

☆ A test for **legibility**: When you display the slide on your monitor, can you read it from 6 feet away?

Illustrations

- Charts and graphs must be simpler than those on a printed page
- Eliminate non-essential grid lines and frames that may clutter the image
- Make sure the illustration fills the slide reasonably well
- 3-D and shadow effects add interest but also make the visual more complex – use sparingly
- On line graphs, try to limit the number of lines to 4; assign highest contrast color to the line you want the audience to focus on
- On bar graphs, try to limit the number of bars to 6 – 8; if appropriate, arrange in ascending or descending order
- On pie charts, limit to 2 pies per slide; label slices on the outside of pie
- Keep images simple

Slide Shows

- Keep animation and transitions simple
- Animations/transitions may act differently on different computers
- Use simple "appear" or "uncover"
- Test your slide show before your presentation on the system you will use
- Carry backup files and copies

(Lenoch, S. 2006.)

Teaching: Next Steps

Key Points

1. Conduct a self-assessment of your teaching skills.

2. Attend classes or training sessions focused on improving teaching skills.

3. Ask a peer or faculty member to observe your teaching session and give you feedback.

4. Videotape your teaching session and review for areas of improvement.

5. Participate in an Observed Structured Teaching Exercise (OSTE) and discuss the results with a teaching expert.

6. Observe teachers that have been recognized for teaching excellence.

Suggestions for Continued Improvement

Here are suggestions for continuing to develop your teaching skills:

- Conduct a self-assessment of your teaching skills (see next page). Items that you rank 50% and below offer opportunities for continued improvement.
- Ask a peer or faculty member to observe one of your teaching sessions and provide you with feedback. You can also request one-on-one coaching from a Teaching Skills Consultant, 335-9910.
- Attend educational programs provided by the hospital focused on teaching skills.
- Videotape one of your teaching sessions; conduct a self-assessment; ask a teaching scholar or teaching expert to review the session with you. Contact the Office of Consultation and Research in Medical Education (OCRME), 335-8901, or www.medicine.uiowa.edu/ocrme for more information about teaching scholars and videotaping.
- Investigate additional resources related to teaching skills. The resource section at the end of this handbook offers articles, books, and websites with more information related to resident teaching skills.
- Participate in an Observed Structured Teaching Examination (OSTE). This consists of videotaping several teaching interactions such as reviewing an H&P with a medical student or making a short presentation. After the session, feedback is provided by the receiver of your teaching, self-assessment of the videotape, and assessments from teaching experts. Contact OCRME, 335-8901, for more information.
- Continue to challenge yourself to improve methods for teaching and interacting with learners.

Teaching Skills Self-Assessment

During my educational interactions with learners, I…	*(Percentage of time for occurrence)* <25%	25-50%	50-75%	>75%	N/A
1. convey my expectations with regard to learning, performance and behavior.					
2. discuss with the learner her/his goals during the rotation.					
3. demonstrate my interest in teaching and allot time for it.					
4. create a positive and supportive learning environment.					
5. show support and respect for learners.					
6. choose appropriate methods for learning the material.					
7. ask questions that encourage learners to think about the medical issue.					
8. give frequent and constructive feedback.					
9. provide opportunity for learners to observe and participate in clinically relevant procedures.					
10. engage learners in discussions about medical issues.					
11. clearly communicate information about the student's performance during the rotation.					
12. feel comfortable with stating "I'm not sure" to the learner when I don't know the answer.					
13. coach learners through new procedures instead of doing them myself.					
14. actively listen to the learner when they are presenting information.					
15. ask the learner for feedback on my teaching skills and abilities.					

Area(s) of effectiveness with regard to my teaching include:

_____

_____

Area(s) for improvement with regard to my teaching include:

_____

_____

(Pettit, J. 2006.)

Coaching

Peer coaching focuses on learning that includes physicians working together to learn models of teaching. It has been described as a structured process by which trained faculty voluntarily assist each other in enhancing their teaching repertoires within an atmosphere of collegial trust and candor. A peer coach can concentrate on improving teaching performance.

The Peer Coaching process consists of three phases:

1. Planning conference – sharing ideas, goals, and plans; clarifying each other's roles; what part of teaching will be examined; how will it be evaluated; schedules for observing the teaching

2. Observation – arrange teaching environment; inform patients and others as necessary; coach observes from unobtrusive place; collection of data (time measurement, teaching assessment instrument, etc.)

3. Reflection & Follow-up – teacher shares impression of session; reflects on original goals and thinks about future improvements; coach provides constructive feedback on what went well, what needed improvement, and suggestions for next steps; both agree on future plans and goals

Benefits of peer coaching:

A. Viable tool for professional development
B. Improvements to different aspects of teaching
C. Heightened awareness of importance of teaching
D. Greater willingness to guide learners through decision-making process rather than making all clinical decisions
E. Self-analysis becomes more routine
F. Greater tendency to seek feedback from learners

(Hekelman, FP. et. al., 1994)

Peer coaching contributes to physicians' professional development by encouraging reflection time and learning. Peer coaching affords positive impact to those who coach in addition to those who receive the coaching. Although peer coaching is labor-intensive and time-consuming, both coaches and peers consider it worth the effort.

Coaching

Planning Conference

PEER	COACH
Shares ideas and tentative plans	Listens to ideas and plans
Uses Coaching Plan template	Uses Coaching Plan template
	Asks clarifying questions: o What is the purpose of the session? o Rephrase my understanding of the session—is that correct? o What is my role as coach? o What in particular would you like me to observe?
Shares goals of observation o Assists in selection of data collection techniques	Develops plan for data collection o How will you know you are successful?
Informs coach when to observe	Schedules dates/times

Observation

PEER	COACH
Arranges environment for coaching to occur	
Tells student/resident/patient what is occurring and gets approval to be observed	Places self in unobtrusive location to observe
Performs education/activity	Collects data via multiple methods (if possible)

Reflection & Follow-Up

PEER	COACH
Shares impressions of the session	Listens to impressions of the session o Did the session go as expected? o How did your expectations of the session compare to the reality?
Reviews/reflects on data; refers to original goals of session Thinks ahead to next session	Shares collected data (if possible) o What worked well? What was effective? o What would you do again? o What would you do differently or eliminate?
Listens to Coach's impressions/suggestions	Shares impressions/suggestions o This is what I noticed… o Have you thought about…? o Have you tried…?
Agrees on next steps and selects new goals, if necessary o Reviews/modifies Coaching Plan	Next steps o What are your next steps? o How helpful was this?

Mentoring

A mentor is somebody, usually older and more experienced, who advises and guides a younger, less experienced person. A relationship with a mentor can impact life-long learning and career development. The physician mentor will provide both support and challenge for the protégé. Steps in seeking a mentor:

1. Getting ready – clarify your values; identify your work style and habits; identify knowledge and skill gaps; list specific opportunities sought — e.g. grant writing, presentation; write down goals: 3 months, 1 year, 5 year

2. Finding a mentor . . . or two – meet with people you know; get recommendations; ask people you meet with who else they recommend; be persistent; find multiple mentors, both junior and senior people

3. Things to look for in a mentor – is available and accessible; provides opportunities and encourages protégé to take risks; helps protégé develop own agenda; has prior mentoring experience

4. The first meeting – tell your mentor how he or she has already helped you; share your background, values, and needs; send a thank-you note after the meeting

5. Cultivating the mentor–protégé relationship – agree on structure and objectives of relationship; plan and set the meeting agendas; ask questions; actively listen; follow through on assigned tasks; ask for feedback; manage up
    - Set goals and expectations
    - Be responsive and flexible
    - Direct the flow of information
    - Follow a regular meeting schedule with agenda

6. Separation – talk about when the relationship should end; talk with your mentor about next steps; talk about future mentors

(Zerzan, 2009)

Mentoring

If you are asked to become a mentor for a junior, here are guidelines that will help you develop a strong and lasting relationship with your protégé:

1. Mentors need clear expectations of their roles and enhanced listening and feedback skills. Mentors need a clear understanding of the goals and expectations of the protégé. To discover the goals, mentors need to ask open-ended questions and actively listen to the responses. The mentor has to feel comfortable in giving constructive feedback and honest opinions to the protégé. Likewise, the protégé has to feel that the mentor's focus is to assist in their life-long development.
2. Mentors need to support their mentees, but challenge them too. A mentor can provide support through professional connections, expertise, and knowledge of organizational systems. However, the mentor is not a "fix-it" person; the protégé needs to take responsibility for her/his development, too. A mentor can push the protégé to think in news ways or consider approaches not tried before.
3. Mentors need to be aware of professional boundaries. Even though this is a close professional relationship, there must be boundaries for expectations and actions. A mentor cannot be expected to be available any time; a protégé should not be expected to reimburse the mentor for his/her time; meetings should be arranged at mutually agreeable dates/times. These boundaries need to be discussed at the beginning of the mentoring process.
4. Mentoring needs protected time. A chance meeting in the hallway is not the time to discuss a mentoring issue. A consistent date/time and location will help to make the mentoring process more genuine. Instead of the mentor's office, it may be more appropriate to meet away from work in a location where the discussions will not be interrupted.
5. Topics that can and cannot be discussed should be clarified. Not all topics may be appropriate. It is best to stay focused on the goals and expectations of the relationship. A clear understanding of these will prevent miscommunications in the future.
6. Identify indicators of growth and improvement. There is a reason for developing this strong relationship. Both mentor and protégé need to identify how progress is being made and/or if it is time to end the relationship and move on. Meeting just to meet is not advantageous to either person.
7. Allow time for the mentoring relationship to grow. Mentoring is a long-term experience. It cannot be developed and cultured after a couple of sessions. It takes work and effort from both the mentor and protégé to make it successful. Be patient and willing to make it a success.

Teaching Resources

Key Points

1. There are many on-line resources available for improving teaching skills.

2. There are resources and support through the Office of Consultation and Research in Medical Education.

3. The best way to improve your teaching skills is to ask for feedback from faculty, peers, students, and observers.

Resources

Articles

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Busari JO; Prince KJAH; Scherpbier AJJA; Van Der Vleuten CPM; Essed GGM. How residents perceive their teaching role in the clinical setting: a qualitative study. *Med Teacher* 2002; 24:57-61. [perceived benefits of teaching and the role of residents in the teaching process]

Busari JO; Scherpbier AJ. Why residents should teach: A literature review. *J Postgrad Med* 2004 Mar; 50:205-210. [evidence that teaching influenced the perceived professional competency of physicians positively]

Edwards, Paul N. *How to Give an Academic Talk: Changing the Culture of Public Speaking in the Humanities*. 2004; School of Information University of Michigan. [guidelines for speaking in academia]

Gunderman, R. et al. Teaching the Teachers. *Radiol* 2002; 222:599-603. [rationale, curriculum and methods for teaching teachers]

Hafler, Janet P. Residents as Teachers: A Process for Training and Development. *J Nutr* 2003;133:544S-546S. [addresses how residents can learn to be effective teachers without taxing an already-overloaded schedule]

Harden RM; Crosby J. AMEE Guide No. 20: The good teacher is more than a lecturer—the twelve roles of the teacher. *Med Teacher* 2000; 22:334-347. [this guide looks at teaching and what it involves]

Hesketh EA; Laidlaw JM. Developing the teaching instinct: Feedback. *Med Teacher* 2002; 24:245-248. [beginning of a series of short educational programs covering a range of teaching topics]

Lake FR. Teaching on the run tips: doctors as teachers. *Med J Aust* 2004; 180: 415-416. [beginning of a series of practical teaching tips]

Post RE; Auattlebaum G; Benich JJ. Residents-as-Teachers Curricula: A Critical Review. *Acad Med* 2009; 84:374-380. [to provide an updated systematic review of the literature on curricula to determine the most evidence-based curricula and evaluation strategy]

Ramani, Subha. Twelve tips to improve bedside teaching. *Med Teacher* 2003; 25:112–115. [detailed description of teaching strategies that could facilitate a return to the bedside for clinical teaching]

Reznick RK; MacRae H. Teaching Surgical Skills —Changes in the Wind. *N Engl J Med* 2006; 355:2664-9. [new training techniques based on established theories of the ways in which motor skills are acquired and expertise is developed]

Rittenberger, Jon and Pacella, Charissa. The Resident as a “Bedside Teacher.” Newsletter of the Society for Academic Emergency Medicine. 2005; 17:16-17. [an educational framework for resident teachers and specific suggestions to improve bedside teaching interactions]

Wamsley MA, Julian KA, Wipf JE. A literature review of "resident-as-teacher" curricula: do teaching courses make a difference? *J Gen Intern Med* 2004; 19:574-81. [to examine the evaluation methods of resident teaching courses and to estimate the effectiveness of these teaching courses]

Books

Alguire PC; DeWitt DE; Pinsky LE; Ferenchick GS. *Teaching in Your Office: A Guide to Instructing Medical Students and Residents*. 2001: American College of Physicians.

Bain, Ken. *What the best college teachers do*. 2004: Harvard University Press. [collective scholarship on some of the best teachers in the United States]

Edwards, Janine C.; Friedland, Joan A.; and Bing-You, Robert. *Residents’ Teaching Skills*. 2002: Springer Series on Medical Education. [practical guidance to plan, organize, and run a teaching skills program for medical residents]

Newble D; Cannon R. *A Handbook for Medical Teachers, 4th Edition*. 2001: Kluwer Academic Publishers.

Weinholtz, Donn and Edwards, Janine. *Teaching During Rounds: A Handbook for Attending Physicians and Residents*. 1992: The John Hopkins University Press. [a compact, practical handbook designed to help attending physicians and residents improve their teaching skills]

Whitman, Neal. *Creative Medical Teaching*. 1990: University of Utah School of Medicine. [provides brief comments on scores of topics presented in alphabetical order]

Websites

A Berkeley Compendium of Suggestions for Teaching with Excellence, Barbara Gross Davis, Lynn Wood, Robert C. Wilson: http://teaching.berkeley.edu/compendium/ [Presented as a series of suggestions for improving teaching]

Alliance for Academic Internal Medicine http://www.im.org/toolbox/curriculum/residentsasteachers/Pages/default.aspx [modules with practical and efficient strategies to help residents become more effective teachers in the course of their normal work duties]

Allyn & Bacon Communication Studies Website http://www.abacon.com/commstudies/ [modules on small group communication, interpersonal communication, public speaking, teaching resources, and references]]

Association of Professors of Obstetrics and Gynecology: http://www.apgo.org/getinfo/teaching-tips.cfm [This page offers tips to help medical educators in their teaching endeavors]

Bringing Education & Service Together (BEST), Clinical Teaching Skills Curricula, University of Southern California: http://residentteachers.usc.edu [clinical teaching skills curricula]

Center for Teaching Excellence, University of Medicine & Dentistry of New Jersey: http://cte.umdnj.edu/clinical_education/clined_tips.cfm [clinical education tips & tutorials]

Designing Effective Visuals: on-line tutorials intended to aid the user in effective scientific communication, Kansas University Medical Center: http://www.kumc.edu/SAH/OTEd/jradel/Effective_visuals/VisStrt.html [on-line tutorials intended to aid the user in effective scientific communication]

Handbook for Teaching Assistants, The University of Iowa, 2002. http://centeach.uiowa.edu/library/handbook/documents/TAHandbook-9thEdition.pdf [teaching handbook and resource for new and continuing teachers]

Large Lectures & Technology, The University of Iowa. http://its.uiowa.edu/instruction/lectures/index.shtml. [offers strategies to enhance active learning, ideas to streamline large-lecture instruction, suggestions for effectively incorporating teaching technologies, and tips about using ICON as both a course management and a teaching tool in the context of large lectures]

New York Macy Initiative on Health Communication Faculty Development. http://nyumacy.med.nyu.edu/facultydev/index.html [topics include managing difficult patient situations, conducting a videotape review, feedback, microskills, and small group]

Office of Consultation and Research in Medical Education (OCRME), The University of Iowa. http://www.medicine.uiowa.edu/ocrme/ [links research with educational practice through its work with faculty, staff, and students]

Psychiatric Residents as Teachers: A Practical Guide, American Psychiatric Association: http://www.psych.org/MainMenu/EducationCareerDevelopment/ResidentsMembersinTraining/residentasteacher.aspx [designed to help psychiatry residents become better teachers]

Resident as teacher: developing skills for bedside teaching on ward rounds, Thomas Jefferson University: http://jdc.jefferson.edu/resteach/ [series of vignettes]

Resources and Information for Residents Who Teach, Florida State University College of Medicine: http://med.fsu.edu/index.cfm?page=facultyDevelopment.residentsWhoTeach [skills enhancement, planning, teaching strategies, evaluation and additional resources]

Strategies in Clinical Teaching, The University of Kansas School of Medicine: http://wichita.kumc.edu/strategies/index.html [description and procedures for teaching in a busy practice, microskills, observation & feedback, bedside teaching, evidence-based medicine, and the 10 minute talk]

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Appendix A: The 10 Equations

Equation 1: Alveolar gas equation $PAo_2 = (760 - 47)\ Fio_2 - Paco_2(1.25)$
Equation 2: Fick's law of diffusion of a gas across a membrane $\text{Diffusion} = \frac{\text{Pressure gradient x area}}{\text{Wall thickness}}$
Equation 3: Delivery of oxygen DO_2 = Cardiac output (hemoglobin x Sat%)
Equation 4: Ohm's law: hemodynamics Mean arterial pressure = cardiac output x systemic vascular resistance
Equation 5: Cardiac output Cardiac output = stroke volume x heart rate
Equation 6: Stroke volume Stroke volume = preload x contractility
Equation 7: How much is enough? Balancing oxygen demand with oxygen supply Metabolic needs of tissue = CO x (arterial content of O_2 – venous content of O_2)
Equation 8: Excessive CO2 $Paco_2 = CO_2$ produced – minute ventilation Minute ventilation = respiratory rate x tidal volume (1 – deadspace %)
Equation 9: How do I approach fluid where fluid should not be? (Starling's law of fluid across a membrane) Fluid flow = $K[P_{in} - P_{out}) - (Onc_{in} - Onc_{out})]$
Equation 10: How does the body handle fluid in all of its chambers? $\text{Wall tension} = \frac{\text{Pressure x radius}^4}{\text{Wall thickness}}$

Fio_2 = fraction of inspired oxygen; K = permeability of the membrane; Onc = oncotic pressure; P = hydrostatic pressure; $Paco_2$ = partial pressure of arterial carbon dioxide; PAo_2 = partial pressure of oxygen in the alveoli

(Wiese, 2010)

Appendix B: Six Mistakes to Avoid in Teaching Medical Students

Adapted from: Jerry Short, PhD, Associate Dean, University of Virginia School of Medicine

Mistake 1: Just ask, "Do you understand?"

- Some residents end a teaching session by asking students, "Do you understand?"
- Most students, no matter how confused, will answer, "Yes"
- A better way to end a teaching session is to ask the students to demonstrate that they understand

Mistake 2: Criticize personality, not behavior

- It's easier for most students to change their behavior than their personality
- Therefore, give specific feedback about what students can change
    - Poor: You're too shy. (Personality)
    - Better: Try to ask one question after the lecture today. (Behavior)

Student's Personality Trait	Student's Behavior
Lazy	Not here when needed
Unmotivated	Does not volunteer when asked
Incompetent	Does not know subject
Passive aggressive	Does not carry out assigned tasks
Defensive	Does not accept criticism

Mistake 3: No objective

- If you don't know where you want to go, it's hard to get there
- Begin a teaching session by telling the students what they are going to learn
- Do this for every teaching session, whether it's a brief teaching moment of for a one-hour lesson

Six Mistakes to Avoid in Teaching Medical Students

Mistake 4: Just talk to the student when you teach

- Most students prefer active learning over passive listening
- You can teach and test in the same lesson
- Follow the 3 minute rule: Don't talk for more than 3 minutes without asking the student to do something
-

Mistake 5: Don't find time to teach

- Some students complain that some residents never have time to teach them
- Some students praise residents who are always teaching while they work
- Try to make sure that every contact you have with a student includes a teaching moment

Mistake 6: Be bored with teaching

- If a resident is unenthusiastic about teaching, the student will know it
- Boredom is catching—so is enthusiasm!
- The good teacher is often a good actor—fake enthusiasm if you don't feel it; it may even help you feel enthusiasm
- Which would you prefer? An instructor who talks in a monotone or one who is animated?

Appendix C: The 7 Habits of Highly Effective Rounding

Habit 1: Be Proactive - the guiding principle is to anticipate needs and problems so they can be addressed before getting worse. This requires proactive engagement from every member of the team, including attending physicians, residents, students, nurses, family, and patient.

Habit 2: Begin with the End in Mind

Leaders on rounds should have at least a general familiarity with each patient's condition prior to rounds, allowing them to guide learners and families. The plan should include setting a target for when rounds will conclude and the time available for each patient encounter.

Habit 3: Put First Things First

The leader should prioritize the order of patients during rounds by seeing patients who are waiting for the team's action first. This allows team members to initiate important decisions sooner and thereby improve patient throughput and quality of care.

Habit 4: Think Win-Win

In order to optimize both the learner's educational experience and the patient's quality of care, leaders should seek mutually beneficial "win-win" solutions as an effective strategy to balance competing priorities.

Habit 5: Seek First to Understand, Then to Be Understood

After setting the tone and time frame for the patient encounter, the leader should remain quiet while the team presents the case. Any questions should be succinct to gain better understanding as well as demonstrate the leader's interest and engagement in the presentation.

Habit 6: Synergize

Improved patient health depends on active participation by all team members. When the leader invites and explicitly acknowledges input, it creates a positive feedback loop, encouraging future team participation and thereby improving the level of care.

Habit 7: Sharpen the Saw

The leader should explicitly set aside time daily or weekly to debrief with the team to discuss how rounds went and how they can be improved, which should include requesting feedback about the leader's own organization of the process.

(Handel & Steckler, 2013)

Notes to Self:

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