TEACHER'S GUIDE

Resident Teaching Development Program

MOUNT SINAI
SCHOOL OF
MEDICINE

Institute for Medical Education
Mount Sinai School of Medicine

Teacher's Guide and Teach the Teacher Course developed by:
Lisa Bensinger MD and Yasmin Meah MD

Resident Teaching Development Program developed by:
Lisa Bensinger MD, Yasmin Meah MD, Todd Simon MD

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Introduction

The Resident Teaching Development Program (RTDP) was created to provide introductory teaching skills instruction to residents in any specialty. Our goal was to improve the quality of clinical teaching at Mount Sinai Hospital and its affiliates. Given that residents do the majority of teaching to students and junior residents, we decided to devote our efforts towards enhancing our residents' teaching skills. The Teach the Teacher program trains faculty to facilitate, implement and sustain the RTDP in their own departments. This teacher's guide was developed to help faculty facilitators in this process.

This teacher's guide is exactly that – a guide. It is not a script and is not written in stone. We suggest that you try to maintain the core concepts and content but we encourage you to adapt this curriculum to your program, institution, residents, and personal teaching style. It will likely be easier to do this once you are more comfortable with the content. Until then, feel free to use the suggestions for wording, sequencing and timing of the curriculum that are provided in the teacher's guide.

As you gain expertise, please let us know if you have suggestions for improvement of this curriculum or the teacher's guide.

Resident Teaching Development Program

Goals of the Program:

1. To empower residents in their roles as teachers and team leaders (improve their confidence, enhance their excitement about teaching, and further their sense of responsibility for their learners).
2. To increase residents' awareness of medical students' perspective as learners.
3. To provide residents with basic adult learning theory and practical teaching skills relevant to the settings in which they teach.
4. To increase residents' awareness of the need to identify their goals for their learners and to provide them with formative feedback, and to give them practical techniques for providing that feedback.
5. To increase residents' awareness of the positive and negative power of role modeling and provide them with skills to effectively use modeling as a teaching tool.
6. To improve clinical teaching by residents at Mount Sinai Hospital and its affiliate hospitals as measured by teaching evaluations from interns, students, and faculty.

Objectives (Means):

1. Identify their role models (teachers) and their characteristics.
2. Discuss their experiences and attitudes as teachers thus far.
3. Identify the difficulties medical students face as learners on the wards.
4. Identify the essential knowledge, skills, and attitudes a student on their team should learn during a rotation and use that information to set goals for their learners. (each resident writes this on a worksheet)
5. Identify the difficulties they face as residents and teachers and brainstorm solutions.
6. Review basic adult learning principles and how each can be used to maximize the teaching experience for the students, interns, and peers.
7. Learn practical teaching techniques for teaching on the wards or outpatient setting.
8. Practice using the microskills and purposeful questioning.
9. Review the barriers and solutions to effective feedback and practice giving feedback in a role play scenario.

Sample Outline for 1 day Course (7.5 hours total with 2 breaks and teaching during lunch)

TEACHING SKILLS FOR RESIDENTS

Resident Teaching Development Program in Pediatrics

Thursday, December 11, 2003

9:00-9:30am — *Pre-course Questionnaire*
Personal Teaching Reminder

9:30-10:00am — ***Introduction*** (30 min)
- Characteristics of the best teachers
- Goals and Agenda for the day

10:00-11:00am — *Setting Goals and Expectations* (1 hour)
- Purpose and Utility
- Techniques
- RIME

11:00-11:15am — ***Break***

11:15-12:30pm — *Teaching Theory and Techniques Part I* (Part I&II 3 hrs)
- Adult Learning Theory (30 min)
- Diagnosing Your Learner/RIME (15 min)
- Questioning as a Teaching Tool (30 min)

12:30-1:00pm — ***Grab Some Pizza***

1:00-2:45pm — *Teaching Theory and Techniques Part II with Lunch*
- Barriers & Solutions to Teaching on the wards (45 min)
- Tips for Teaching with Limited Time (30 min)
- The 5 Microskills of Clinical Teaching (30 min)

2:45-3:00pm — ***Break***

3:00-4:00pm — *Giving Feedback* (1 hour)
- Relevance and utility of effective feedback
- Basic principles of giving feedback
- Practice giving feedback

4:00-4:30 — *Wrap Up*
Complete Personal Teaching Reminder
Complete Course Evaluation and Post-Course Questionnaire

AV Needs: Flip Chart or White Board, Markers, TV/VCR, Name Tags

MODULE 1
Introduction and Setting Goals and Expectations

1 hour, 30 minutes

I. <u>Introduction</u> (*30 minutes*)

Goals:

- Establish the learning climate and group expectations (interactive discussion, invite questioning, etc.)
- Give residents a chance to reflect upon diversity of qualities that their best teachers embodied and therefore, help the residents feel empowered to model these qualities

Objectives (Means):

- Introduce everyone in the group
- Clearly state the goals for day, agenda, and expectations
- Best Teacher exercise

Outline:

- Each resident should complete a **<u>Personal Teaching Reminder</u>** before you even begin with introductions. They fill out the top portion only. You will be discussing their responses during your introduction. Each person should also have a name tag unless you know all of their names. Try to address residents by name during discussions.

- **<u>Introduce yourself and the group</u>**. As you introduce yourself you may want to make one or more of the following points to make yourself accessible and encourage participation:
    - I am not teaching you today as a master teacher. I am bringing to this course some of the learning I have had in my own education and experience, but each of you also brings your learning and experience. So while I'm teaching this course today, I really view all of us as teachers in this enterprise, continually working to improve ourselves.
    - I am in this with you – teaching on the wards and in the outpatient clinics. So please feel free to ask questions, to question me, to offer your experiences and thoughts to the discussion today.

- **<u>Icebreaker: Best Teacher Ever</u>**
  Go around the room and ask each resident who they chose as their "best teacher ever" and then let them explain why. What were the qualities that made that teacher the best in his/her mind? You will write these qualities on the board in a list. There are many points you can make about good teaching using this exercise. Once the list is complete, you may choose one or more of the following point to make:
    - "Knowledge" will only be listed once (or not at all). There are probably 2 reasons for this. One reason is that it is the ability to transfer knowledge that is more valued by students than the knowledge itself. (You can be a brilliant scientist and not be able to teach). The second is that it is these other qualities that are often most important and respected by students (enthusiasm, dedication, etc). Realizing this can decrease their anxiety because residents (and attendings) often feel that they have to know everything to be a good teacher.

- We can also learn from this list that we, as teachers, can do almost all of these things. We can choose to work on the qualities that fit with our personality and our goals.
- The variety of qualities demonstrates that there are many different qualities that make a good teacher. This course is not going to teach residents to be these teachers or to be different teachers. You ARE going to give residents a chance to think about their goals as a teacher and provide them some new skills to build on current skills so that they can expand their teaching repertoires.

- **Goals and Agenda for the Day**

  Read the objectives for the day out loud:

1. To empower residents in their roles as teachers and team leaders (improve their confidence, enhance their excitement about teaching, and further their sense of responsibility for their learners).
2. To increase residents' awareness of medical students' perspective as learners.
3. To provide residents with basic adult learning theory and practical teaching skills relevant to the settings in which they teach.
4. To increase residents' awareness of the need to identify their goals for their learners and to provide them with formative feedback, and to give them practical techniques for providing that feedback.
5. To increase residents' awareness of the positive and negative power of role modeling and provide them with skills to effectively use modeling as a teaching tool.
6. To improve clinical teaching by residents at Mount Sinai Hospital and its affiliate hospitals as measured by teaching evaluations from interns, students, and faculty.

- To achieve these goals you want to set some ground rules and define some terms. **Explain the language of the day**: We will be using the terms student and learner interchangeably to mean anyone you teach – student, intern, co-resident.

- The residents now have the chance to spend a day thinking just about teaching. Despite how hard they work on the wards, they will actually be tired at the end of the day. They will be doing a lot of thinking and learning about new topics and will be sitting in the same seats all day. You may want to let them know this and give them permission to get up and go the bathroom when they need to or stretch, etc.

- Also, many of the teaching topics in the course are taught best when discussed. Encourage the residents to **bring their experiences and thoughts to the discussions** and to ask questions.

- You are going to be **modeling the sequence of the day after a teaching session or ward rotation: setting goals, teaching, evaluation, feedback** in that order. This is a structure the residents might want to think about as they plan your teaching sessions. Setting goals for their learners, teaching content, evaluating whether they taught it effectively and then providing feedback to their students.

- **Review each resident's Goals for the day** (from the personal teaching reminder). Write them on the board and let them know that you will return to these goals at the end and try to address all of them by the end of day. [Doing this models what you will be asking them to do with their learners.]

II. <u>Setting Goals</u> (*1 hour*)

Goals of the Session:

- ❖ To increase residents' awareness of the need to identify their goals for their learners
- ❖ Give residents techniques for goal setting
- ❖ Introduce the RIME schema as a means of setting milestones for learners

Objectives of the session (Means):

- ❖ Ask residents to explain the utility of setting goals for learners (relevance)
- ❖ Ask residents to explain the utility of asking learners to set goals for themselves
- ❖ Explain the utility of using goals as a basis for feedback
- ❖ As a group, residents will define the essential knowledge, skills, and attitudes a student on their team should learn during a rotation and use that information to set goals for their learners. (using worksheet)
- ❖ Define types of goals: educational and functional
- ❖ Define RIME categories
- ❖ Have residents insert the goals they just established for their students into the RIME schema

Outline for the session:

- This section is about **"*What do I want my students to learn and why?*"** For example we'll think about what to teach and ask ourselves: "what would be good for these guys to learn? It would be good for them to learn about treatment of CHF". Vs. "What do they actually need to learn?" Maybe they just learned about CHF but don't know how to assess the patient and then actually implement those treatments when someone is acutely hypoxic?

- Deciding what you're going to teach is fundamental to teaching and learning. This "lesson plan" starts with the teacher, either consciously or not, setting goals for his/her learners. Ask the residents: ***Why is it so important for your students and interns*** *for you to establish goals for them?* (Write their answers on the board). The more concrete you are from the beginning the learner will know what to expect, where he/she should end up. ***Can you think of why setting goals for your learners might be helpful to YOU as their teacher?*** Answers residents may give: 1. Gives me a roadmap to direct my teaching. 2. When I have goals I can evaluate whether they have been reached. If not mentioned, explain that it is also easy to evaluate and to give feedback when you have benchmarks (goals) to use. Feedback needs to be based on a predetermined expectations and goals to have credibility.

- (See Handout) Restate the process of setting goals: To set goals we first have to figure out what our goals are for our learners, then tell them clearly and specifically what they are so that they know where to focus and study. Let them know why these goals are important. Then we might want to find out what goals they have for themselves.

- Ask the residents to reflect on the process of goal setting in this course. You just asked them to set some goals for themselves using the Personal Teaching Reminder. Ask: *When we asked you about the one thing that you wanted to learn about teaching today, how did that affect your perception of me and what to expect from the rest of the day?* Possible answers:

It's a partnership, I had to think about my goals for myself, I felt you valued my opinion, I had a goal that you didn't have for me. If you partner with your learners on goals then you partner with them on feedback and whole learning process.

- Discuss the purpose of having learners set goals for themselves. Ask: *Can you think of a scenario where you may have a goal for your intern and they don't agree with that goal?* One example: Maybe you want your intern to look up one question very briefly each night that you're on call. He may think you're crazy for adding to his work unless you explain why. You know that very soon he will be running a team and will have to know where to find information quickly in the middle of the night and you want him to get some practice in a safe setting. Point: You may need to explain the relevance of your goals.

- ***Videotape Scenario***
  Goal is to have residents identify the benefit of setting goals and expectations for the student and the resident. Possible questions to ask after the video:

  - *What do you think the resident's goals were for the student?*
  - *What is the benefit to the student in learning to present quickly?*
  - *What is the disconnect between the resident and the student?*
  - *How could the resident use goal setting to help the student give a presentation?*
  - *How could setting goals and expectations with this student help the resident?*
  - *Can you give an example of a conversation they might have had in a better scenario.*

- Define goals as either functional goals (expectations for functioning on a team) or educational goals (include attitudinal goals – professionalism with peers and patients, enthusiasm, etc). This is a good place to describe the "hidden curriculum." *What is that you Really want them to do but are never spoken?* (hidden curriculum – make that explicit too – ex: go to all procedures, it shows interest and enthusiasm which affects your grade)

- Ask the residents to define the educational goals for a third year clerk during their rotation in that specialty. Use third year students as an example. What are the residents' goals for their 3rd year students? By the end of this rotation my student/intern should be able to… (they can write the groups answers on their worksheets) Require that their answers are specific. What is the behavior that you will observe that tells you the student is accomplishing the goal. The goals might include knowledge, skills and attitudes.

- To increase residents' awareness of medical students' perspective as learners, ask them to take the role of the student. *If you were a 3rd year MS starting on your ward team in July, what questions would you have? What barriers might the students face in trying to accomplish your goals set for them?*

- **REVIEW KEY POINTS ABOUT SETTING GOALS AGAIN: DEFINE YOUR GOALS (KSA), STATE YOUR GOALS (BE SPECIFIC AND CLEAR (CONCRETE), STATE THE RELEVANCE OF THE GOALS), ASK LEARNERS FOR THEIR GOALS.**

- **Refer to Handout. Introduce RIME** (see handout descriptions of each stage: Reporter, Interpreter, Manager, Educator)
  An easy to way conceptualize milestones for your learners, means of setting milestones, framework to identify where your learner is at on the continuum of clinical learning (on the road to becoming an independently practicing physician). Have them answer: *Where do the goals defined in the last exercise fit into the RIME schema?* Possible answers: giving good presentations falls under Reporter, creating appropriate differential diagnoses falls under Interpreter skills, etc.

  Setting expectations for the students' rotation defines what they need to learn in that fixed period of time to help them move along the continuum. RIME shows you the whole continuum so that you can see where you're working with the student (reporter/interpreter) and where you should be aiming. You will be revisiting RIME multiple times during the day.

Material from this section adapted from multiple sources – see bibliography. Some material adapted from the Stanford Faculty Development Program in Clinical Teaching. RIME was developed by Lou Pangaro, M.D. – USUHS.

MODULE 2
Teaching Theory and Techniques
3 hours

I. <u>Principles of Adult Learning Theory</u> (*30 minutes*)

Goals of the Session:
- ❖ Review basic adult learning principles and how each can be used to maximize the teaching experience for the students, interns, and peers.
- ❖ Explain the importance of five basic principles of adult learning to increasing their flexibility as teachers

Objectives of the session (Means):
- ❖ Explain the relevance of understanding adult learning theory
- ❖ Ask residents to brainstorm about what settings they learn best in and extract adult learning principles from their answers
- ❖ Review the 5 basic principles of adult learning and provide examples

Outline for the session:

- The entire curriculum today has, at its heart, the theories behind how adults learn best. Explain that there are a multitude of theories out there – the session today is built around the theories espoused by Knowles, a modern theorist whose adult learning principles guide the format of most effective teaching interactions. Explain the importance of reviewing the very basic principles of adult learning:

  1. **An understanding of adult learning theory will allow us to enhance our teaching.** We can apply these principles to everyday teaching and therefore, enhance learning.

     [Learning really only occurs when a ***behavior is changed***—in other words, a person can ***know*** a subject in theory alone, such as suturing or principles of history taking, but if they cannot ***apply*** the knowledge—in other words, carry out the deed effectively when it is appropriate—then they haven't really ***learned*** the subject.]

  2. **An understanding of adult learning theory will allow us to understand why the techniques** being taught during this day-long session are deemed **effective** techniques in teaching our students.

  3. **An understanding of adult-learning theory will also allow us to understand this relatively new trend in medical education of LEARNER-CENTERED teaching that is largely replacing more traditional methods otherwise known as TEACHER-CENTERED teaching.** Medical schools today are largely overhauling their traditional lecture-based curricula in favor of more problem-based small group seminars, for instance. Teacher-centered teaching marks the "old style" of simple transmission of knowledge where traditionally a lecturer delivers hoards of information with little

consideration given to the relevance of the material to the student's needs or experiences or current level of understanding. What this results in is a classroom of bored or lost students who either try or not try to forge some relevance to their own experiences. Learner-centered teaching, on the other hand, attempts to incorporate the learners into the process of teaching, by drawing upon their experiences, needs and internal motivations for learning a subject, thus making the subject more relevant and hence, more likely to be LEARNED.

- ***(Exercise)*** Draw on the residents' experiences as learners. Example: *Try to think back to your training and really think about an actual experience with a teacher, whether a resident or attending, that made you learn a skill or subject well—whether it was a manual skill like suturing or performing an LP, a conceptual skill such as coming up with a prioritized differential diagnosis on abdominal pain, or a communicative skill, such as speaking to a family member about end-of-life care for a dying patient. Think about the aspects of the situation that encouraged your learning of the subject. I can guarantee that you will come up with most of the principles of adult learning through this simple exercise.*
  Put the residents responses on the board as a list. The list will comprise many of the aspects of adult learning. You may need to extract the theory from some of the comments and others may not be relevant.

- Modern day adult learning theory was elucidated by Malcolm Knowles in 1968 and has since stood up as the principle facets of andragogy—a set of assumptions about how adults learn.

  Refer to Handout
  The five assumptions of Knowles Adult Learning Theory, ie WHEN DO ADULTS LEARN BEST?:

  CONCRETE EXAMPLES ARE PROVIDED TO SHOW HOW EACH PRINCIPLE CAN BE INCORPORATED INTO EVERYDAY TEACHING. REVIEW THE EXAMPLES AND, IF YOU HAVE TIME, ASK THE GROUP TO COME UP WITH A FEW OF THEIR OWN.

  1. **WHEN INSTRUCTION IS RELEVANT** *i.e. patient-centered*
     Adults need to know why they should learn something in order to learn it effectively. They want to know the reason they need to learn something or how it will ultimately benefit them in their life or as medical trainees, with patient care. Children on the other hand, soak up information to a large part, regardless of need. So making the teaching relevant, ie tying it to a case or a problem that they may or may not have encountered with the express goal of helping them see how to avoid an error, for instance, will reinforce the learning much more effectively.

2. **WHEN INSTRUCTION IS PROBLEM-CENTERED** *i.e the road to the diagnosis is more important than the "right" diagnosis itself.*

   Adults love to problem-solve. In other words, they learn best thinking through problems rather than having the answers spoon-fed to them. Thus presenting trainees with problem situations whether real or theoretical and having them think through the solutions with only some guidance from the teacher, reinforces the skill and ultimately creates a more self-directed, independent learner—in other words, a student who will want to read deeper, and when faced with a similar situation will feel more confident in his abilities to solve the problem.

3. **WHEN INSTRUCTION IS CONDUCTED IN A SAFE LEARNING ENVIRONMENT THAT ENCOURAGES A PROCESSING AND VERBALIZATION OF THOUGHT** *i.e. the student feels comfortable*

   "Adults resent and resist situations in which they feel others are imposing their wills on them" (Knowles, Elwood and Swanson, 1998). In other words, adults require some autonomy in problem solving and ultimately making decisions – CREATING A SAFE LEARNING ENVIRONMENT, where the learner feels comfortable and non-threatened when venturing a question or response to his teacher is thus a necessary attribute of an effective teaching interaction. It allows for responsibility of learning to lie with the learner, not solely with the teacher. This is in contrast to a spoon-feeding of information.

4. **WHEN INSTRUCTION DRAWS IS EXPERIENCE ORIENTED**
   Adults need to connect new learning to their lifetime of knowledge and experiences. Past experiences are relevant to the understanding of future problems.

   By drawing from the trainees experiences to reinforce a concept, the student is more likely to walk away from the interaction more fulfilled, more apt to read further on the subject and more likely to remember the situation when it re-emerges in similar form.

5. **WHEN FEEDBACK IS PROVIDED**
   Learner needs to know whether they are learning correctly so that they can succeed. Adults learn skills best when provided with expectations of what they should attempt to achieve and then on-going feedback about how well they are achieving such goals. When expectations are not laid out, students are often not sure what skills they must learn, on a rotation, for instance. When feedback is not provided, students often feel lost in their skills and are unsure how to improve since the "diagnosis" of their performance has never been laid out.

6. **LEARNING IS ACTIVE**
   The most permanent type of learning occurs when learners are involved in their own learning process. You can see that active learning is integral to all of the principles of adult learning mentioned above.

Adapted from Knowles, Malcolm S., Elwood F Holton III and Ricahr A. Swanson. 1998. The Adult Learner. Houston: Gulf Publishing.

- Let the residents know that you will referring back to these principles throughout the course so that they can see why certain teaching techniques are effective.

II. <u>Diagnosing Your Learner/RIME</u> (*15 minutes*)

Goals of the Session:

- ❖ To give residents a clear framework (RIME) in which to categorize their learners
- ❖ To help residents use RIME to create productive teaching and learning experiences for their learners

Objectives of the session (Means):

- ❖ Discuss the relevance of "diagnosing your learner"
- ❖ Have residents practice "diagnosing" using RIME (video)
- ❖ Explain the need to ask questions to diagnose learners accurately

Outline for the session:

- You have already introduced the RIME schema as a means of setting milestones (goals) for learners. RIME can also been seen as a means of "diagnosing your learner." The purpose here being to get a sense of where your learner is at in the continuum and thus at what level you should be aiming your teaching.

- Residents are doing this "diagnosing" subconsciously all of the time but using RIME can help give them a place to actually categorize the learner. Each time you listen to a case presentation you are making a dual diagnosis: you are diagnosing the patient and you are diagnosing your learner. Ask: *Why is it important to diagnose your learner?* Likely answer: So you can figure out what they need to learn. If you think about it, this is making the residents' teaching much more **efficient** and **meaningful**.

- You may even want to ask the residents what it feels like when someone is teaching beyond their level (above their heads) or below their level. They will probably tell you that they tune out and in the end, learn very little. So the teaching interaction is much less productive for both the teacher and the learner.

- Remind the group of the categories (may want to write R, I, M, E on the board again) then ask them to practice diagnosing a learner – play RIME Part I

- ***<u>Videotape Scenario</u>***
  Show Part I:
  Goal is for residents to realize that they usually have to ask questions to figure out what "category" the learner fits into AND to realize that it may be easy to "misdiagnose" their learner if they don't ask questions.

  - ➢ *How would you diagnose this third year medical student?* (many will likely say she is a reporter because she ended with a question).
  - ➢ *Why did you diagnose her as….?*
  - ➢ *Can you think of a situation in which a student knows what to do but doesn't admit it?* Possible answers: the attending/resident doesn't usually let the student make

decisions so it's easier to just ask what the teacher wants to do. Or, the student is intimidated to offer her opinion, etc.

- *Does anyone think she might be an interpreter?* (If everyone in the group thinks she's a reporter)
- *How could you really figure it out?* Ask questions! The group may have already figured this out by now.
- *What types of questions could help you?* What do you think is going on? Why do you think that? Etc

Show Part II:
This clip shows a resident assuming that the student didn't know the answer to her question and makes the diagnostic decisions for her. We still don't know where she fits into RIME b/c he doesn't ask any questions.

- *Do you know where she fits into RIME yet?*
- *Do you think she learned anything from the resident?* She may have learned if he was teaching her something she didn't know. Although, based on adult learning theory adults learn best when they problem solve so she may have more lasting learning if she does some of the reasoning on her own. So we still don't know what she knows AND she didn't get to do any of the thinking.

So you need to be careful to use diagnosing your learners to help the learner – not to pigeonhole them. We want to use the information we get to encourage them to move to the next level. For example: to help them improve their reporting skills or to push them to interpret.

- Give the group some positive feedback around their use of questioning. They are already using questions in a purposeful way. You are now going to show them that questions can be incredibly valuable to them as teachers and give them some new ways of using questions.

RIME was developed by Lou Pangaro, M.D. – USUHS

III. <u>Questioning as a Teaching Tool</u> (*30 minutes*)
(notes to teacher in italics)

Goals of the Session:

- ❖ Increase residents' awareness of the different types of questions teachers can use to evaluate and teach
- ❖ Improve residents' versatility in their use of questions – match the type of question to its purpose

Objectives of the session (Means):

- ❖ Review the utility of questions (group discussion)
- ❖ Explain the different types of questions
- ❖ Introduce the added layers of open and closed questions and that all questions can assess either knowledge, skills, or attitudes
- ❖ Discuss the relevance of categorizing questions – to match the question you ask as a teacher to your purpose
- ❖ Give the residents a chance to practice categorizing questions and modifying questions using a video example

Outline for the session:

- Establish the relevance of questioning to teachers. Ask: *We ask a lot of questions in Medicine – Why?*
  Possible answers: To evaluate what learners know, to help them to think analytically, to model the need for questioning and self-evaluation in the practice of medicine.

- To accomplish these goals we ask many different kinds of questions. And, there are different questions that serve different purposes.

Refer to the handout. Describe the types of questions using examples: (feel free to let the residents come up with more examples than are listed here)

1. RECALL QUESTIONS

Recall questions are used when you want the learner to recall facts (scientific, medical, patient information, skills). Students or interns who are just beginning to develop clinical reasoning skills (in a particular field) may initially only be able to answer recall questions. Although knowing the answers to these types of questions is often critical, we should challenge them to analyze, synthesize and apply as well.

Educational literature has shown that recall questions are the most commonly used form of questions by teachers.

Example: What are the 3 most common causes of cholecystitis?
Explain the correct way to examine the abdomen?

2. **ANALYSIS/SYNTHESIS QUESTIONS**
Analysis and synthesis questions require the learner to demonstrate understanding of a topic versus being able to simply present a list of facts. The learner is able create a context into which the individual pieces of data fit. They must apply deductive reasoning and logic to answer these questions.
These questions can be used to assess the learner's knowledge, skills or attitudes. .

Example: How can we discriminate between the diagnostic possibilities we just listed?
What factors are influencing your choice of diagnoses?
How do the patient's various symptoms relate to each other?

3. **APPLICATION**
You are asking the learner to apply what they know (information or understanding) to a specific patient. You can ask them to apply their knowledge, skills, or attitudes to the management plan, diagnosis, procedure, etc. of a particular patient. **Application questions can be recall-application or analysis/synthesis-application questions.**

Example: How will you treat this patient's pain? (*knowledge, analysis/synthesis*)
How will you know when you have confirmed your diagnosis?(*K,analysis/synthesis*)
Can you show me the techniques you would use to examine this patient for ascites? (*skill, recall*)

	General Medicine	Application
Recall		
Analysis/Synthesis		

Give the group the following examples:

1. *Recall-Gen Med: At what Bilirubin level do you see jaundice?*
2. *Recall-Application: What is this patient's bilirubin level?*
3. *Analysis/Synthesis-Gen Med: How aspects of the history and physical help you differentiate between CHF and pneumonia? Closed question ex: Is there ever a situation when you wouldn't give a patient with CHF lasix?*
4. *Analysis/Synthesis-Application: How do you treat this patient with Stage IV CHF and aortic stenosis?*

Ask – What different information about your learner does a general question give you than an application question? Answer: Whether the learner has a knowledge of the general data and application shows whether he/she can adapt that knowledge to a particular patient with specific variables influencing the clinical picture..

Have the group categorize the above questions into the appropriate part of the table below. Ask them to come up with 1 example each of a general medicine recall and an analysis/synthesis question. This gives them practice in categorizing the questions.

4. **SELF ASSESSMENT**
   Self assessment questions require learners to assess themselves at every level: Their basic knowledge, their ability to synthesize data (for diagnosis or plan), their ability to apply knowledge, their technical skills and their attitudes.

   These questions give teachers valuable information about learners' ability to self assess but are often underutilized. Self Assessment is a critical skill for lifelong learning and for good clinical care. It is also central to the ACGME competency of "practice based learning."

   Example: Do you think you have enough experience to deal with this patient? (K)
   Do you think you understand the pathophysiologic mechanisms of DKA? (K)
   How would you handle this same scenario if presented with it again? (K)
   What parts of this procedure do you think you have trouble with? (S)
   Is there anything more that you think you need to learn to manage this patient?(K)
   Do you think your feelings about alcoholism are affecting your treatment of this patient? (A)

Ask the residents to come up with an self assessment attitude example.

All types of questions can assess either Knowledge, Skills or Attitudes. All questions can be open or closed ended.

Ask: So why is it helpful for us, as teachers, to categorize the questions that we ask? (Either rhetorical or can ask the group)

Answer: 1. Allows us to match the type of question to our goal: What is it that we want to know about this learner? His knowledge base about a specific disease, its treatment, prognosis, etc; His ability to synthesize the pertinent information in a history and physical; His ability to generate a succinct and reasonable ddx (in general or for this patient or for this disease); his attitude towards patients with drug addiction; his ability to self-assess his knowledge gaps or skill deficiencies; his skill in performing a procedure. 2. Allows us to see whether we are concentrating on one area of questioning and thus, limiting our information about the learner. Also, if we are only asking recall questions we may be inhibiting the learner's active involvement in the learning process and diagnosis/management of the patient.

Key point about all types of questions:

1. Remember to wait for the answers to your questions. Try 5 seconds.
2. Try not to ask a question that require a yes or no answer. If you do, you may need to ask some probing questions – How did you come to that conclusion?
3. Encourage resident to resident (or student to student) interaction. What do you think about Dan's idea?
4. Don't overuse any one technique, including questioning.

Videotape Scenario

Before showing the video ask the residents to pay close attention to the questions that the resident uses – you'll be discussing the types of questions afterwards. Show the video once through so that they understand the whole scenario then show it again and stop after each question to categorize the question and find out what we learned about the intern.

After each question on the video, ask the group:

1. *What did you learn about the intern based on this question?*
   - What do her vitals look like? *Recall-Application*
   - How do you know this isn't cardiac? *Analysis/Synthesis-Application*
   - What cardiac risk factors Does she have? *Recall-Application*
   - How comfortable do you feel working up post-op chest pain? *Self-Assessment Knowledge and/or skill*

2. *What might the teacher have learned by asking a general medical question instead?*
3. *Is there anything about this intern's attitude that you want to know about? If so, what question would you have asked.*
4. *Do you think the residents questions helped the intern think analytically about the case? Why or why not?*

The video is a means for the group to practice categorizing questions and also shows them the utility of varying the types of questions asked. Different questions give you different information. Also, analysis/synthesis questions require more critical thinking/reasoning on the part of the learner so we want to include them when possible.

Adapted from the Stanford Faculty Development Program, Leland Stanford University, 1998

IV. <u>Barriers and Solutions to Teaching on the Wards</u> (*45 minutes)*

Goals of the Session:

- To help residents find practical solutions for teaching in busy inpatient settings

Objectives of the session (Means):

- Residents will brainstorm about the difficulties they face as residents and teachers.
- Residents will identify practical solutions to these difficulties
- Provide residents with suggestions/solutions

Outline for the session:

You want this session to really be driven by the residents. They should express their own fears, concerns and barriers with teaching then develop their own solutions. The idea is that if come up with the solutions themselves, they are more likely to try them out and be successful.

- Ask the residents to brainstorm about "Why is it difficult to teach on the wards." Write their answers on the board. Time will be mentioned many times so that will likely be number one. Encourage them to really think about other reasons. For example, insecurity about their knowledge base, constant interruptions, lack of motivation on the part of the residents or students.
- Go down their list and for each "barrier" listed ask the residents to come up with a few solutions. You can add to them but try to draw the solutions from them first.

V. Tips for Teaching with Limited Time *(30 minutes)*

Goals of the Session:
- ❖ Provide residents with practical methods for teaching with limited time

Objectives of the session (Means):
- ❖ Review the following teaching techniques – lecture format
- ❖ Explain the relevance of each technique for teaching in a busy setting

Outline for the session:

First refer back to the list of solutions the residents generated in the last exercise for teaching with limited time. They may have already mentioned some of the techniques you are about to present. Give them positive feedback about the ideas they generated and let them know you are going to be giving them a few more ideas.

1. **Orient your students and interns on the first day**
   This doesn't sound like a teaching with limited time tip. But a little up front time commitment will save you a lot of time later. Explain the basics of the daily schedule, introduce them to nurses, etc., and set expectations so that know from the beginning what's expected.

2. **Ask higher level (teaching) questions –** require your learners to reason. Takes only the extra time for the learner to answer a more difficult question.

3. **Wait time**
   Sounds like you're adding time to the teaching moment but you're not. If you cut your learner off, you may end up teaching him/her something they could have figured out on their own given a couple more seconds. There have been studies looking at the average time a teacher waits for the answer to his/her question. How long do you think we wait? 1 sec. It's also been shown that people need at least 3 seconds to really process information and answer and even more if the question requires complex reasoning. Try waiting 5 seconds the next time you ask a question. Count it out and see how it feels. It might feel uncomfortable at first but you will be helping your students think independently if you give them a few more seconds.

4. **Think and reason aloud** – This opens up a black box for learners, especially for students. How do you, as residents, make your diagnostic and management decisions. Have you ever been unsure about what to do and took a few seconds to decide while the team is silent. Why not show them your reasoning process? It takes no extra time and is invaluable.
   - "I'm debating whether we should cath this patient or treat him with medical management. His angina is stable and relatively well controlled on meds, but the stress test suggests the area of ischemia may be larger than we thought."
   - In contrast to: "Let's call cardiology to cath him."

5. **Use teachable moments**
   There are teaching opportunities everywhere, look for them. For example: If a question comes up or a you see a difficult case, take advantage of it with a brief teaching moment. Ask a provocative question, give a microlecture, assign reading. Teaching does not equal lecturing, it happens very effectively in short segments.

6. **Prime the next task**
   Priming helps learners to think prospectively about what they are going to find. Great for bedside teaching.
   - With what we know, what do expect to find on the abdominal exam?
   - Given our leading diagnosis, what do expect to find on the pelvic exam?
     You don't have to answer the question. Try just going into the room and having a member of the team demonstrate the exam technique.

7. **Use Modeling**
   You are teaching constantly because students, interns and residents are watching everything you do and say. So why not use this to your advantage to teach them by example. Model an exam skill (explain out loud what you are doing). Model interacting with patients: "I'd like you to observe how I present bad news to this family." Model self directed learning. Easy to do, much more effective means of teaching than shadowing (truly passive), and takes no extra time. Don't forget that true modeling requires that you point out what you are trying to show the learner – "Watch how I….."

8. **Extend the case**
   This technique teaches the learner to anticipate the course of a disease or the complications of a treatment. It illustrates how the context changes the diagnostic possibilities and teaches reasoning. This draws on the learning theory that adults like to problem solve. Examples:
   - What if the patient's creatinine was 3 instead of 1?
   - What if the patient was 60 instead of 20?
   - What if you start treatment and the patient starts seizing?

9. **Clarify or frame the clinical question for the learner or the group**
   If the team or the learner is struggling for direction, you don't have to let them flounder. Reorient them by clarifying the clinical question for them and move on from there.
   - So we have an elderly patient with fever, abdominal pain, and diarrhea. What is our ddx?
   - So given the patient's findings on history, exam and xray, the question is: Can we empirically treat for CAP or do we need to rule out post-obstructive pneumonia?

10. **Encourage self directed learning and model it**
    You can come back to the question after gathering data and you don't have to do all of the work. Teach learners how to identify their own learning needs and find information.
    - What do we need to look up to answer this question?
    - Let's consult renal? What is the question we want them to help us answer?

    Then you need to model it. Otherwise, you're saying that it's important for you but not for me. Show them that you do this and it's something they will be doing for the rest of their career.

11. Center the learning around the learner's needs

Take a few moments to diagnose the learner. It will make the teaching moment much more productive. What if you don't know what he/she knows about PUD and you give him a lecture on the ddx to consider. You then find out he knew all of that but did not know the best work up. You just wasted your time.

12. Create a productive teaching and learning environment

No learning will occur if the learners don't feel comfortable to express their opinions, be wrong in front of their colleagues. They can't stretch themselves if they feel guarded. This takes no extra time. Some of the examples sound very obvious but when you're stressed and tired it can be easy to forget the basics. Examples:

- Introduce yourself
- Be available and approachable
- Encourage questions and independent thinking
- Clarify your expectations
- Your energy and enthusiasm should be sincere & consistent

13. Use Teaching Aids

Good for priming or focusing the learner (Example: Bright Futures is used in Pediatrics – read the section on the toddler history and exam before going in the room). You can also use it as an adjunct to your teaching moments – if the info is in there you don't need to do all of the work.

You don't have to go out and try to do all of these things tomorrow. In fact, you shouldn't. We're just trying to help you add to your teaching repertoire and you should incorporate what works for you. Try one technique next week and see how it goes. If it works, great, you have a new tool. If not, scrap it and try another. Find what works for you.

14. Use The 5 Microskills (see next session)

Materials in this section were adapted from multiple sources (see bibliography) including Richardson WS and Smith LG. Effective Work Rounds: The Three Function Approach. APDIM Chief Resident's Manual. 1993: p. 51-55.

VI. Microskills of Clinical Teaching *(30 minutes)*

Goals of the Session:

- ❖ To teach the 5 Microskills of Clinical Teaching as a practical means of teaching one on one in a limited amount of time

Objectives of the session (Means):

- ❖ Link RIME and the microskills
- ❖ Review the 5 Microskills and show the videotape as an example of how a resident can use this technique
- ❖ Using roleplays, have residents practice using the Microskills

Outline for the session:

- You just gave them some teaching techniques to use when time is limited and the Microskills is one last very practical skill to use when they're on the run in a 1:1 teaching encounter. This is why it's also called the one minute preceptor. This technique is separated from the rest because it takes a little longer to teach.

- Remind the group about the questions they wanted to ask the student in the video to "diagnose" her: What do you think is going on? Etc. They were actually doing to the first two steps of the microskills.

- **Refer to handout**. Read the rest of the microskills: Get a commitment, Probe for supporting evidence, Teach a general rule, Give positive (specific) feedback, Correct mistakes. Read the examples for each. Also, the first 2 steps allow the teacher to diagnose the learner.

- They are probably already doing the first 3 steps naturally in many situations and it is often the last 2 that we, as teachers, leave out. The idea is that these 5 steps are the fundamental pieces of a meaningful teaching encounter and that they can be done quickly. It takes only a couple of minutes longer than the example they saw earlier where the resident did all the talking. Watch Part III of the video together where the resident uses the microskills.

- ***Videotape Scenario***
  Show RIME/Microskills Part III:
  Goal is for residents to see an example of someone using the microskills in a realistic time pressured setting.
  ➢ *Did the resident do all 5 microskills?* (You may want to state each microskill and ask the group how he did it). He does them a little out of order which doesn't matter. What is important is that the first 2 come before the last 3.

- *How would you diagnose the student now?* They will probably say she is an early Interpreter now that her thought process is revealed. We learned much more about her ability after asking questions.

- ***Role Play***

  Give the residents a chance to practice using the microskills using the role play scenarios. If they practice this new technique now they will be more likely to try it out in real life.

  You can do this in a couple of ways. 2 people can role play in front of the whole group or they can break up into groups of 3 (teacher, student, observer) where the observer gives feedback afterwards. Give them a chance to try 2-3 of the roleplays depending on time.

  Common mistakes the residents make when practicing this technique is to keep cycling through steps 1 and 2, and maybe 3. This makes the teaching encounter go on for a long time and they miss the last two steps. Remind them that it really is ok to have a short, yet meaningful teaching encounter. They can make a quick point (teaching pearl) and move on. They do not have to teach everything there is to learn about the case in that moment. In fact, this is what often inhibits residents from using teachable moments because it feels overwhelming when they feel they need to teach it all.

- Invite questions. Find out if the residents feel comfortable trying this technique on the wards now. If not, address any problems.

- They have now learned many different teaching techniques. Again, encourage them to try one or two and see how they work. Hopefully, they will find a few new techniques that they find successful with their learners.

Materials in this section were mainly adapted from Neher JO, Gordon CC, Meyer B, Stevens N. A Five-Step "Microskills" Model of Clinical Teaching. Journal of the American Board of Family Practice. 1992 and from the Instructor's Guide for Teaching Residents to Teach. Gary Dunnington, MD and Debra DaRosa, PhD. Association for Surgical Education.

MODULE 3
Giving Feedback and Wrap Up
1 hour

I. Giving Feedback

- ❖ To have residents understand the different goals of feedback and evaluation.
- ❖ To gear residents with effective strategies at giving feedback
- ❖ To increase residents' comfort level in giving feedback
- ❖ To increase residents awareness of the necessity of giving feedback

Objectives of the session (Means):

- ❖ Utilize the video clip to draw on effective and ineffective strategies at giving feedback.
- ❖ Have residents think about the reasons why feedback and evaluation are different in more than just a semantic way.
- ❖ Allow residents to vocalize impediments to feedback based on personal experiences both as receivers and givers of feedback.
- ❖ Draw from residents the absolute necessity of giving feedback to their interns and medical students
- ❖ Instruct on effective strategies on giving feedback and pointers on what phrases to avoid.
- ❖ Have residents exercise the learned strategies through a role play.

Outline for the session:

- ***Videotape Scenario***. Consider opening the session with the video clip to spur discussion. Following the video clip create 2 lists entitled "good aspects of the interaction" "poor aspects of the interaction." You may also want to ask the residents to discuss what they think were going on in the minds of the resident and student. (keep these answers on the board and refer back to them later)

- Attempt to draw from the residents the necessity of giving feedback and consider reinforcing the complaint by students (based on several studies) the major deficit in their education being the lack of feedback

- Attempt to draw from the residents what they think the difference is between **feedback and evaluation** and reinforce that these are concepts that are commonly confused but have different implications. Consider the following definitions:

  FEEDBACK: ***purpose*** is improvement of the student; it is ideally provided throughout the rotation and in a more formal session at the middle of the rotation so that improvement or lack of improvement is witnessed. Substance for feedback is drawn from expectations laid out at the beginning of the rotation in a transparent well vocalized format.

EVALUATION: purpose is a grade; it is given at the end of a rotation and based on a final assessment of the student's performance throughout the month. It is also based on how well the student achieved the resident's expectations. Prescriptions for improvement may be inserted but will likely not be witnessed by the evaluator but rather to be used by the administration and/or future teachers of the student.

- *If feedback is so important, why don't we do it? What prevents us from giving feedback?* Attempt to draw from residents' barriers to feedback based on their collective experiences as both receivers and givers of feedback. Create a list on the board of "Barriers."

Examples that residents often list:

- Takes time and effort
- Difficult to give negative feedback – don't want to hurt someone's feelings, don't want them to dislike me, sometimes the intern and/or student is my friend, I don't want to be the only one who has ever given this feedback to the student/intern
- I don't feel like I know them well enough to judge their performance
- I don't know the goals of the rotation and don't want to tell them conflicting information
- In some cases the feedback won't make a difference

- Create a second list of "Solutions". For each barrier have the group generate ways to overcome the barriers. *What suggestions would you give a friend who came to you with that problem?*

- Recap the session with pointers on effective feedback restating what may have been said. Consider summarizing effective techniques for feedback as the following:

- Feedback should be **based on goals** laid out early on in the rotation—not just perceived expectations, but well vocalized expectations.

- Feedback should be an **ongoing** event that is based on **first-hand**, witnessed events or data, such as a write-up, a patient interaction, etc.

- Feedback "sessions" should be **expected by the student and the teacher**—it should be scheduled at the beginning of the rotation for sometime around the midpoint of the rotation. If not labeled as a "feedback session" a student will likely walk away from the rotation believing they never received formal feedback—it needs to be spelled out for them!

- **State the purpose of the session and your role as their ally**. One strategy in opening the session is to state at the outset that the purpose of the session is to improve the skills of the trainee to make him a more effective clinician. *Example: I want you to be the best intern/3rd year med student, etc.* Another opening strategy is to ask the trainee to begin by stating how well he believes he is accomplishing his goals for the rotation and where he thinks he might be still struggling. Both strategies increase the sense of and alliance between teacher and student.

- **Use objective language and be specific**. "You are doing a great job… you really write great write-ups" or conversely "your write ups aren't so hot"… "your history taking skills could be better." These comments alone will not help the learner improve. Focus on the behavior rather than the person and use extremely specific, descriptive examples oof the problems and effective performance that you have seen

  For instance –

  "One thing I've noticed with the chief complaints in your write-ups is that they often don't address the actual symptoms that the patient is presenting with but rather focus on the first thing that spills out of the patient's mouth—for instance, for Mr. P who presented with complaints of dizziness your chief complaint was " my cardiologist told me to come in". Chief complaints really should focus on symptoms not why the patient thinks he is here to see you, so it means using a bit of interpretation on your part to construct a chief complaint."

- **Refer back to the video**. Ask for one or two things this resident could have done to give more effective feedback. Ask the residents how goal setting would have changed the interaction.

- End the session with a role play to give them a chance to apply what they have learned (you are making learning active and experience oriented). There are two roles: a resident and a student. You can ask for 2 volunteers to do the role play in front of the group. If no one volunteers you can assign roles. Tell the residents that the role play only lasts 3 minutes. Ask the person playing the resident role to think of one or two feedback techniques that he/she would like to try in the role play. He/she should use the role play to try out this new technique. **The goal is not to conduct the perfect feedback session, it is to try a new technique in a safe, risk free environment to see how it works.** Encourage them to try something they think is tough or wouldn't usually do.

  After 3 minutes stop the role play. Ask the resident (teacher) first – how did the role play feel (realistic)? Did he/she think the new technique was effective? If so, ask the learner if he/she thought it was effective. If not, was there anything he/she could do differently to improve? You can then ask the student the same question. Give the teacher positive feedback and encouragement. Acknowledge that it's difficult to try new techniques and may take time until it feels comfortable. At some point you may want to ask the teacher if goal setting (at the beginning of the rotation) would have changed the interaction.

  - Questions? Do they feel more comfortable about giving feedback in the future?

You (as the facilitator) have now set your goals for your learners, taught content, evaluated their learning (knowledge, skills and attitudes) and hopefully, gave some feedback today.

Materials in this section were adapted from multiple sources – see bibliography.

II. <u>Wrap Up</u> (*30 minutes*)

- Ask residents to complete the personal teaching reminder and course evaluations. If you have time you may want to ask residents to share their personal goals (if they are comfortable doing so). Let them know that you will send them back the reminder in 3-4 months.
- Invite Questions
- Readdress Residents goals from the beginning. Did you address each person's goal for the day. If not, you can spend a couple of minutes discussing it now, offer for that person to stay after and discuss it or offer a helpful reference.
- Collect Course Evaluation, Completed Personal Teaching Reminder, Questionnaire, SFDP 26.

Take a few minutes by yourself afterwards to complete your questionnaire (your evaluation of the course today and your own teaching).

Some Tips For Facilitating the Sessions

1. Don't forget to model what you're teaching. If you don't know the answer to a question you can be honest about it. You can also ask if anyone in the group has any ideas and you might be surprised by the great ideas that will be generated by your residents.

2. Many of the examples used in the teacher's guide are Internal Medicine examples. We encourage you to come up with your own. You can also ask the group to give another example relevant to their own specialty. This process requires them to reformulate material (promotes understanding and retention) and gives it more relevance.

3. Try not to be too prescriptive. Your goal isn't to change the residents but to enhance their teaching. They will likely be more receptive to change if it does not feel forced upon them. Wording is important here. Avoid terms such as "should" and "must." Try using phrases such as "consider," "you could try…" and "here's a suggestion…"

4. Don't forget to wait for answers to your questions. It's easy to jump in and answer questions yourself or ask a new questions, especially when the material is new to you. It may take time to get comfortable using "wait time" but you will probably see that it improves the learning climate and allows the residents to lead the discussion.

5. Have fun and make the material your own.