Five Microskills for Clinical Teaching

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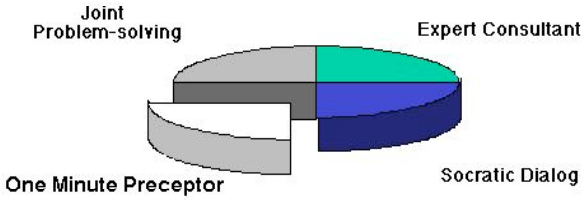
Most clinical teaching takes place in the context of busy clinical practice where time is at a premium. Microskills enable teachers to effectively assess, instruct, and give feedback more efficiently. This model is used when the teacher knows something about the case that the learner needs or wants to know.

Clinical teachers play several different professional roles: expert consultant, joint problem solver, Socratic teacher, and, when appropriate, the One Minute Preceptor.

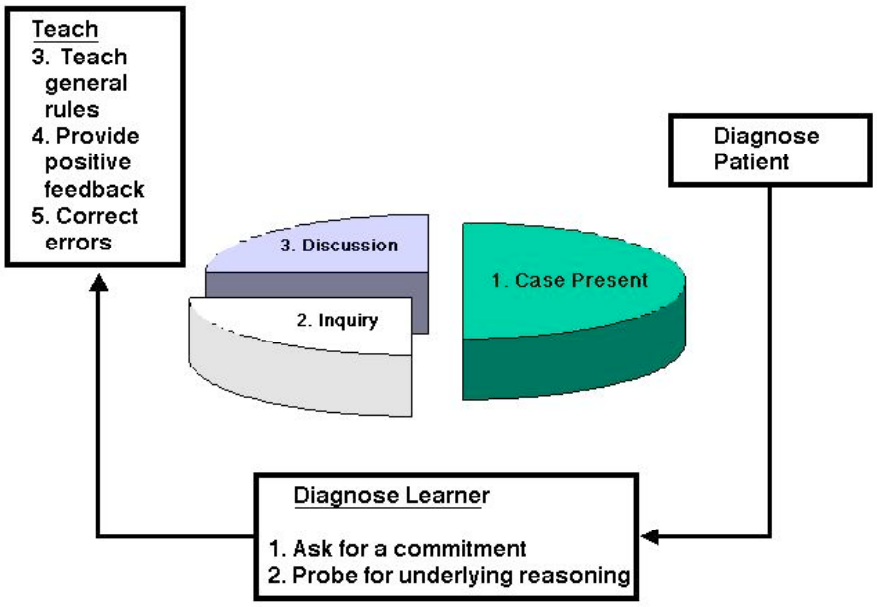


This program defines each component of the One Minute Preceptor and provides opportunities to practice five microskills for clinical teaching:

- Get a commitment
- Probe for supporting evidence
- Teach general rules
- Reinforce what was right
- Correct mistakes

This teaching model is described in: Neher, JO, Gordon, KC, Meyer, B, and Stevens, N. A Five-step "Microskills" Model of Clinical Teaching. Journal of the American Board of Family Practice. 5:419-424, 1992.

Teacher Reasoning During Case Presentations and Five Microskills for Clinical Teaching



During case presentations and discussions in ambulatory settings, residents spend 50% of the time presenting the case. Clinical teachers then ask questions (25% of time) and discuss the case (25% of time).

This process is mirrored in the minds of the preceptors. Clinical teachers first focus on diagnosing the patient's problem, then on diagnosing the learner's needs, and finally on providing targeted instruction.

The microskills in this program facilitate this instructional process. The first two microskills 1) Get a Commitment and 2) Probe for Underlying Reasoning diagnose learner knowledge and reasoning. The three microskills 3) Teach General Rules, 4) Reinforce What Was Right, and 5) Correct Mistakes, offer tailored instruction.

For more detailed information see Knudson et al. Analysis of Resident and Attending Physician Interactions in Family Medicine. Journal of Family Practice. 28 (6): 705-709, 1989. And Irby, D. How Attending Physicians Make Instructional Decisions When Conducting Teaching Rounds. Academic Medicine. 67 (10): 630-638, 1992.

Microskill 1: Get a Commitment

Cue: After presenting the facts of a case to you, the learner either stops to wait for your response or asks your guidance on how to proceed. In either case, the learner does not offer an opinion on the data presented. If you recognize the patient's problem, your immediate response is to want to tell the learner the answer.

Preceptor: Instead, you ask the learner to state what s/he thinks about the issue presented by the data. Issues may include coming up with more data, proposing a hypothesis or plan, developing a management plan, figuring out why the patient is non-compliant, deciding on whom to consult, etc.

Rationale: Asking learners how they interpret the data is the first step in diagnosing their learning needs. Without adequate information on the learner's knowledge, teaching might be misdirected and unhelpful. When encouraged to offer their suggestions, learners not only feel more of the responsibility for patient care but enjoy a more collaborative role in the resolution of the problem.

Examples

"What do you think is going on with this patient?"
"What other types of information do you feel are needed?"
"What would you like to accomplish in this visit?"
"Why do you think the patient has been non-compliant?"

Non-Examples

It is not offering your own opinion.
"This is obviously a case of pneumonia."
It is not asking for more data nor is it Socratically leading them to the right answer.
"Anything else?"
"Did you find out which symptom came first?"

Microskill 2: Probe For Supporting Evidence

Cue: When discussing a case, the learner has committed him/herself on the problem presented and looks to you to either confirm the opinion or suggest an alternative. You may or may not agree with the opinion and your instinct is to tell them outright what you think about the case.

Preceptor: Before offering your opinion, ask the learner for the evidence that he/she feels supports his/her opinion. A corollary approach is to ask what other choices were considered and what evidence supported or refuted those alternatives.

Rationale: Learners proceed with problem solving logically from their knowledge and data base. Asking them to reveal their thought processes allows you both to find out what they know and to identify where there are gaps. Without this information, you may assume they know more or less than they do, and risk targeting your instruction inefficiently.

Examples

"What were the major findings that led to your conclusion?"
"What else did you consider? What kept you from that choice?"
"What are the key features of this case?"
"What questions are arising in your mind?"

Non-Examples

It is not list making nor an oral examination/grilling about the problem.
"What are the possible causes of congestive heart failure?"
It is not a judgment on the student thinking.
"I don't think this is infectious mono. Don't you have any other ideas?"
It is not your own opinion on the case.
"This seems like a classic case of..."
It is not asking for more data about the case than was presented initially.
"What do you know about her previous childbirth?"

Microskill 3: Teach General Rules

Cue: You have ascertained from what the learner revealed that the case has teaching value, i.e., you know something about it which the learner needs or wants to know.

Preceptor: Provide general rules, concepts or considerations, and target them to the learner's level of understanding. A generalizable teaching point can be phrased as: "When this happens, do this..."

Rationale: Instruction is both more memorable and more transferable if it is offered as a general rule or a guiding metaphor. Learners value approaches that are stated as more standardized approaches for a class of problems or as key features of a particular diagnosis.

Targeting your instruction minimizes the risk of misjudging the learner's sophistication on the topic - resulting in either insulting or losing him/her, and wasting both of your time.

Examples

"If the patient only has cellulitis, incision and drainage is not possible. You have to wait until the area becomes fluctuant to drain it."
"Patients with cystitis usually experience pain with urination, increased frequency and urgency of urination, and they may see blood in the urine. The urinalysis should show bacteria and white blood cells, and may also have some rbc's."

Non-Examples

It is not the answer to a problem (although this may also be needed), rather it is an approach to solving it.
"In this case, it's a good idea to soak the affected area to relieve the tenderness rather than lancing it."
It is not an unsupported, idiosyncratic approach.
"I'm convinced the best treatment for diarrhea with salmonella enteritis is still a liquid or soft diet."

Microskill 4: Tell Them What They Did Right

Cue: The learner has handled a situation in a very effective manner that resulted in helping you, patients, or other colleagues. He/she may or may not realize that the action was effective and had a positive impact on others.

Preceptor: Take the first chance you find to comment on: 1) the specific good work and 2) the effect it had.

Rationale: Some good actions are pure luck, others are more deliberate. In either case, skills in learners are not well established and are, therefore, "vulnerable." Unless reinforced, competencies may never be firmly established.

Examples

"You didn't jump into solving her presenting problem but kept open until the patient revealed her real agenda for coming in today. In the long run, you saved yourself and the patient a lot of time and unnecessary expense by getting to the heart of her concerns first."
"Obviously you considered the patient's finances in your selection of a drug. Your sensitivity to this will certainly contribute to improving his compliance."

Non-Examples

It is not general praise.
"You are absolutely right. That was a wise decision."
"You did that IV preparation very well."

Microskill 5: Correct Mistakes

Cue: The learner's work has demonstrated mistakes (omissions, distortions, or misunderstandings) that have or will have an impact on the patient's care, the team's functioning, or the learner's own effectiveness.

Preceptor: As soon after the mistake as possible, find an appropriate time and place to discuss what was wrong and how to avoid or correct the error in the future. Allow the learner a chance to critique his/her performance first.

Rationale: Mistakes left unattended have a good chance of being repeated. By allowing the person the first chance to discuss what was wrong and what could be done differently in the future, you are in a better position to assess both their knowledge and standards.

Learners who are aware of their mistakes and know what to do differently in the future need only to be reinforced. Learners who are aware of their mistakes but unsure of how to avoid the situation in the future are very likely to be in a "teachable moment" (they are eager for and appreciate tips that will help them get out of or avoid the uncomfortable situation in the future).

Learners who are unaware that they made a mistake or are unwilling to admit the error are more troublesome. Obviously they have not seen that their action has an undesirable consequence. In order to maximize learning for them, detailing the negative effect as well as the correction are both essential for effective feedback.

Example

"You may be right that this child's symptoms are probably due to a viral upper respiratory infection. But you can't be sure it isn't otitis media unless you've examined the ears."

Non-Example

Avoid vague, judgmental statements.
"You did what?"

The Case of a Painful Ear

A new first year resident presents a case to you while you are attending in the ambulatory clinic. The resident appears to be bright and eager to learn. He says:

Resident: "I just saw a four year-old boy in the clinic with a complaint of ear pain and fever for the past 24 hours. He has a history of prior episodes of otitis media, usually occurring whenever he has an upper respiratory tract infection. For the past two days, he has had a runny nose and mild cough and yesterday, he began to have a low grade fever and complained that his right ear was hurting. His mother gave him Tylenol last night and when he got up this morning. He has no allergies to medication."

"On physical exam, he appeared in no acute distress and was alert and cooperative. His temperature was 38.5 C. His HEENT exam was remarkable for a snotty nose and I think his right tympanic membrane was red, but I'm not sure. It looked different from the left one. His throat was not infected. His neck was supple without adenopathy. His lungs were clear and his heart had no murmur. I didn't see any rashes or skin lesions."

Preceptor: "This is obviously a case of Otitis Media. Give the child amoxicillin and get him out of here."

<Stop>

Alternative Strategy

Same case presentation by the resident.

Preceptor: "What do you think is going on?"

Resident: "I think he has an upper respiratory infection, probably otitis media."

Preceptor: "What led you to that conclusion?"

Resident: "He has a history or repeated otitis media and currently has a fever, a painful right ear, and a runny nose."

Preceptor: "What would you like to do for him?"

Resident: "First, I would like you to confirm my findings on the right ear. If you concur about otitis media, then we should give him some antibiotics. Since he doesn't have any allergies to medications, I think amoxicillin is a reasonable choice."

Preceptor: "You did a good job of putting the history and physical exam findings together into a coherent whole. It does sound as if otitis media is the most likely problem. There is great variability in ear problems. The key features of otitis media that I look for in the physical exam are the appearance and mobility of the ear drum, landmarks, opacity

of the drum, and mucus discharge, and in the history are prior upper respiratory infections and past problems with the ears. This child would seem to fit these criteria."

"With the lack of allergies, amoxicillin is a logical choice for an antibiotic. I'll be glad to confirm your ear exam findings. Let's go and see the patient."

The Case of an Adolescent Girl

In ambulatory clinic, a third year medical student presents the following case to you. The student appears to be conscientious but somewhat insecure about her knowledge and skill in pediatrics. The student reports:

Student: "I just finished examining a 16 year-old girl. She has been complaining of pain when she urinates for the past few days. She has never had a urinary tract infection. She denies burning on urination, abdominal pain, fever or seeing blood in her urine. She says she thinks her last menstrual period was a couple of weeks ago. I don't know if she is sexually active. I wasn't sure if I was supposed to ask those kinds of questions. She is here with her mother.

"On physical exam, she looked well to me. She was afebrile and the rest of her vital signs were O.K. Her HEENT exam was normal. Her lungs were clear and her heart was regular without any murmurs. Her abdomen was soft and not tender and I didn't think her spleen or liver were enlarged. That's all I examined."

(Preceptor as Expert Consultant: "Get a urine and make sure she doesn't have a vaginal or meatal discharge.")

<Stop>

Preceptor: "What do you think is her problem?"
(Skill 1: Get a Commitment)

Student: "I am concerned that it might be a urinary tract infection."

Preceptor: "What do you see here that might indicate a urinary tract infection?"
(Skill 2: Probe for Underlying Reasoning)

Student: "She has pain on urination but not much of a problem with frequency or urgency of urination."

Preceptor: "The UTI is a logical possibility but we don't have adequate information to confirm the diagnosis. We need a more complete physical examination -- particularly of the lower abdomen and external genitalia. We also need a sexual history. Has she suddenly become sexually active?"

"You identified the most probable concern in this case but you need to complete the physical exam and get a sexual history. Without more information, we can't be sure of what we have."

"Do you want me to model how to take a sexual history and do a pelvic examination or would you like me to observe you do them?"

(Skills 3-5: Teach General Rules, Provide Positive Feedback, and Correct Errors)

Student: "I would really appreciate your demonstrating how to do them."

Preceptor: "O.K. Let's go and see the patient."

Microskill Precepting Simulations

Working in triads or small groups, each person will have the opportunity to play the student, the preceptor and the observer of the interaction.

Roles

Learner: Use one of the trigger cases at the end of this workbook. Remember that learners make mistakes and modify your presentations accordingly! Don't offer your ideas too freely, or the preceptor will be left with nothing to do.

Preceptor: Use as many of the microskills as you can - try for at least the first two (getting a commitment and probing for evidence). Remember that these skills are counter-intuitive and may not be part of your regular teaching scripts. Thus, you will need to be purposefully aware of the microskills as you practice them.

Observer: Take brief notes on the dialogue, cures and responses. What microskills are being used? What suggestions can you make for improvement?

Process

Choose roles.

Role play for 3 to 5 minutes.

After completing the simulation, allow the "preceptor" to critique him/herself, then the student, then the observer.

Practice Cases

Directions: The following case presentations provide the stimulus for a teaching simulation. One person should perform the role of the resident, another the preceptor, and the remainder observers. Preceptors should practice using as many of the five microskills as possible.

1. **Learner:** I just don't understand these electrolytes on my patient, Mr. T. He's the 36 year old man on 4 East with alcoholic hepatitis. His sodium is 133, potassium 2.9, Chloride 102, and bicarbonate 18. He looks O.K., but still has some nausea and a fever of 101.2. BP is 106/68, pulse 90. On exam he is jaundiced, and has mild RUQ tenderness but no rebound. His wbc is 16.8, unchanged from admission. Why do you think his potassium is so low? We've been putting some in his IV fluid.

2. **Learner:** I have a 57 year old male with a history of hypertension, one pack per day smoker who presents with dyspnea when climbing hills to work. Further questioning reveals a vague tightening in the anterior chest with exertion that the patient rates as 6/10. He first noted this 2 months ago, now occurring daily. He had a pain free, comfortable exam. BP 140/90, EKG normal. I'm wondering if we should admit him to the hospital.

3. **Learner:** I have a case of an 18 year-old G1P0 single, white female who presented for her regular prenatal appointment at 31 3/7 weeks gestation (by a 13-week ultrasound). She incidentally complained of a frontal headache and swelling in her ankles and hands. Her blood pressure was 180/100. Urine was 4+ SSA. She has 3+ edema, 3+ deep tendon reflexes, and her cervix was thick and closed.

4. **Learner:** I have a 35 year old female with two teenagers who reports being depressed and having suicidal ideations. The patient quit work three months ago to help her husband in his business and to assist in the home remodel. She began worrying about money and has lost sleep, appetite and energy.

5. **Learner:** I have a five-year-old boy with fever and ear pain for five days. His tympanic membrane are red. I'd like to treat him with amoxicillin and Actifed.

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