Teaching Skills Summary

**Five-Step “Microskills”** (Neher et al., 1992)

1. Get a commitment
2. Probe for supporting evidence was done right
3. Teach general rules
4. Reinforce what
5. Correct mistakes

**Orienting Learners**

- Orientation to session (Their goals, then yours)
- Responsibilities (Patients, notes, call, feedback)
- Interaction (How to balance service vs. learning?)
- Education (Self-directed learning: How learn best?)
- Needs (Does learner have questions, concerns?)
- Timing of follow-up (When will you discuss next?)

**Giving Feedback**

- Inquiry (First, listen quietly to learner’s concerns.)
- Needs (What does learner need in this situation?)
- Specific feedback (Start with positives; self-feedback)
- Interchange (Balance team’s needs with learner’s.)
- Goals (Clarify any new goals you’ve mutually reached.)
- Help (Any serious problems requiring referral?)
- Timing of follow-up (When will you discuss next?)

**Teaching Procedures**

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<tr>
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* *Dunnington & DaRosa (2000); Edwards et al. (1988)
**Skeff, Stratos, Berman & Bergen (1992)

**Bedside Teaching** (of clinical skills)

- Briefing (Orient learner and patient to teaching session.)
- Expectations (Learner’s own goals for session)
- Demonstration (Quietly observe learner at work.)
- Specific feedback (How can learner improve skills?)
- Inclusion of microskills (Teach through questioning)
- Dbriefing (What did patient, learner think of session?)
- Education (What would learner prefer to read/do later?)

**Teaching Charting**

- Comments (Read note, write comments on copy.)
- Help (Establish mutual goals. Any special help needed?)
- Assessment of note (First learner’s, then yours)
- Resources (How can learner improve charting skills?)
- Timing of follow-up (When will you review more notes?)

**Work Rounds • Group Teaching**

- Learners (Introductions to establish learning climate)
- Microskills (Find and use teachable moments in rounds.)
- Needs (Briefly establish team’s mutual learning goals.)
- Organization (How best to structure rounds today)
- Presentations (Set guidelines for presenting patients.)
- Questions (Teach through questioning.)
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- R ecall questions (Knowledge of facts)**
- S ynthesis questions (Analysis of concepts)**
- T eaching (What would learners like to read/do later?)

**Giving Lectures**

- L earning objectives (Desired skills after session?)
- E valuation (Ask what learners know about topic.)
- C ontrol of session (AV materials, pace of talk)
- T alk (Eye contact, interactivity, personalization)
- U nderstanding questions (Analysis of concepts)**
- R etention questions (Knowledge of facts)**
- E ducation (What would learners like to read/do later?)

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Bringing Education & Service Together (BEST)  
Resident Physicians' Curriculum in Clinical Teaching Skills

Introduction
Bringing Education & Service Together (BEST) is an inter-disciplinary “service learning” project for primary care resident physicians at the University of California, Irvine (UCI) and the University of California, Los Angeles (UCLA). The project is sponsored by the Bureau of Health Professions (U.S. Public Health Service), the Robert Wood Johnson Foundation, and the Tamkin Foundation. The underlying concept of the BEST initiative is that primary care residents become better physicians by learning through service, including service to their learners through better teaching skills. Most important, through self-directed learning, participating residents will serve their own educational needs.

A multidisciplinary group of medical faculty at UCI and UCLA are undertaking a randomized, controlled trial of a comprehensive, longitudinal, interdisciplinary residents-as-teachers curriculum. The project seeks to address four specific aims:

1. To determine the specific learning needs of senior primary care residents for becoming better teachers, and to develop a curriculum to address these needs;
2. To undertake and evaluate a pilot study of a longitudinal residents-as-teachers curriculum;
3. To conduct a randomized, controlled, multicenter trial of a longitudinal residents-as-teachers curriculum; and
4. To disseminate the project’s curriculum to residents and faculty across the country and support future research with an interactive web site developed in conjunction with the AAMC’s Graduate Medical Education Section (www.residentteachers.com).

By the end of the project, a total of sixty senior residents from internal medicine, pediatrics and family medicine from UCI and UCLA will have been randomized to a six-month curriculum versus a control group.

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Learning Objectives
By the end of the curriculum, residents will be able to:

1. Explain the concept of the “teachable moment”.
2. Describe the role of the resident physician as team leader and manager.
3. Orient a medical student or intern to a new rotation.
4. List and use the five microskills of clinical teaching with learners of various skill levels.
5. Give skillful and constructive feedback to learners.
6. Run inpatient work rounds, incorporating teaching appropriate to each level of learner.
7. Give a medical student helpful, constructive feedback about charting.
8. Teach a learner how to perform a procedure.
9. Give an interactive mini-lecture for learners at various levels of training.
10. Provide helpful feedback for colleagues about their teaching skills.
The Five-Step “Microskills” Model of Clinical Teaching

**Step One: Get a Commitment**
- “What do you think is going on with this patient?”
- “What would you like to do?”
- Even a hunch or guess is better for learning than no commitment.

**Step Two: Probe for Supporting Evidence**
- “What led you to that diagnosis?”
- “Why did you choose that drug?”
- Helps preceptor identify what the learner does and does not know.
- Must not be unpleasant.

**Step Three: Teach General Rules**
- “If the patient has cellulitis, incision and drainage won’t help. That’s for an abscess, which you recognize by fluctuance.”
- Can skip if learner already knows general principles.

**Step Four: Reinforce What Was Done Right**
- “It was good that you considered the patient’s age when you prescribed that drug, because other drug classes can cause more side effects in the elderly.”
- Must reward specific competencies.

**Step Five: Correct Mistakes**
- “You could be right that you won’t harm the brachial artery when you draw that blood gas. But if you use the radial artery, you won’t risk cutting off the arterial supply to the whole arm.”
- Have them self-critique first.
- Be specific about what learner needs to correct.
- Best done in private if criticism is major.


**Formative Evaluation: Feedback “Sandwich”**

Specific positive feedback ➔ Constructive criticism ➔ Specific positive feedback

Feedback should be:
1. Constructive
2. Timely
3. Valid
4. Specific
5. Useful
The Resident as Team Leader

Learning objective:
At the end of this session, participating residents will be able to describe the role of the resident physician as team leader and manager.

Reflections for Resident Physician Leaders

- Resident physicians serve as key leaders in various settings, including being team leaders and managers on inpatient services.
- Resident team leaders are called upon to supervise patient care, set goals for their teams, coordinate tasks and workloads, resolve conflicts, communicate with attending physicians, and teach learners of various skill levels. (No wonder senior residents get tired!)
- Juggling all of these responsibilities can present major challenges, especially on busy clinical services. Senior residents may want to:
  1. Orient your learners early, explaining your expectations and your goals as the team leader.
  2. Set goals for the team and repeat them periodically, verifying learners’ understanding.
  3. Motivate learners through a learner-centered approach. (What will learners get out of being “team players”?)
  4. Regularly offer specific feedback about both positive and negative performance. To “catch people doing something right” can be a powerful strategy.
  5. Address conflicts proactively.
     - Is the conflict a problem?
     - If so, is it your responsibility to address this problem?
  6. Model life-long learning by showing how learners can set and meet their own learning goals. You are a key role model!

References:
Orienting Learners

Learning objective: At the end of this session, participating residents will be able to orient a medical student or intern to a new rotation.

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?

Introduction to Learning Theory

Concept:
Adult learners (and probably any other learners) learn best through interactive, learner-centered teaching focused on their self-defined learning goals.

1970s: Behavioral Learning Theories
- Learning defined as a change in observable behavior
Behavioral learning objectives
Student ratings of teachers became more popular.

1980s: Cognitive Learning Theories
- Learning defined as the active construction of meaning
- Teaching strategies focus on helping learners “encode” new knowledge within existing conceptual frameworks.

1990s: Social Learning Theories
- Learning defined as socialization into a new community of knowledge
- Teachers seek to promote a “learning culture” among students.
- Role modeling becomes particularly important in professional training.

21st Century: New Learning Theories?
Resident teachers and medical faculty can combine and expand learning theories from past decades to create new approaches to teaching and learning.

Reference:
Bringing Education & Service Together (BEST)

Resident Physicians’ Curriculum in Clinical Teaching Skills

Giving Feedback

Learning objective: At the end of this session, participating residents will be able to give skillful and constructive feedback to learners.

1. Evaluation of learners
   - Formative evaluation: guides learning
   - Summative evaluation: judges performance (e.g., for promotion)
   - Learner evaluation systems tend to drive curricula.
   - “Objectivity” is rarely possible.
   - Medical learners tend not to receive enough evaluation, especially formative evaluation.
   - Feedback is part of formative evaluation.

2. Pitfalls in evaluation
   - The error of leniency
   - The error of stringency
   - The error of central tendency
   - The halo effect

3. Learners in difficulty
   - We’re all “in difficulty” sometimes….
   - Learners’ problems can take many forms: temporary stressors, learning disabilities, drug or alcohol problems (common in physicians), attitudinal issues, knowledge or skill deficits.

4. “INSIGHT” model for feedback
   Inquiry
     - How does the learner think things are going?
     - Listen to the learner’s needs in detail. (Listening attentively and thoroughly before commenting may be all you need to do, especially for minor or temporary problems.)
   Needs
     - What does the learner feel s/he needs during this rotation? Ask the learner to define own learning needs.
     - Learners accept feedback better when they feel the teacher has first taken time to understand their concerns and perspectives.
   Specific feedback
     - Give your constructive feedback as specifically as you can.
     - Start with specific positive feedback, as is done with the “feedback sandwich” technique.
     - The more learner-centered the feedback, the better it will go.
     - Verify the learner’s understanding of the feedback you’ve given, and clarify anything that seems to need it.
   Interchange
     - How can you best balance the learner’s needs with the team’s needs?
     - You may need to “think outside the box” to reach a “win-win solution”.
   Goals
     - State any new goals you’ve just reached, or review existing goals.
     - Verify that you both understand and agree on these goals.
   Help
     - Do any serious problems merit a “learning consultation” (from a chief resident, an attending physician, a learning specialist, the employee assistance program, or others)?
   Timing of follow-up session
     - When would you and the learner like to meet again to go over how things are going?
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Teaching Procedures

**Learning objective:** At the end of this session, participating residents will be able to teach a learner how to perform a procedure.

Learners must go through **three phases of psychomotor skills development:**

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<td>How</td>
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1. **Cognitive phase:**
   - Learners first need to understand the “why” components of the procedure:
     - Why learn procedure?
     - Indications
     - Contraindications
     - Risks/complications
     - Benefits
     - Alternatives
   - Since learners prefer active learning, teach through questioning: Has the learner done procedure before? What does s/he recall about indications, risks, etc.?
   - Then address the “how” components: Demonstrate procedure step by step.
   - Ask for questions.
   - Ask learner to verbalize the steps.

2. **Developmental phase:**
   - Next, learners need to practice.
   - Have learner demonstrate procedure for you, explaining each step out loud.
   - Provide guidance for each step, both verbally and physically.
   - Evaluate learner’s proficiency: what did learner do right, wrong?
   - Ask learner to self-evaluate, then give specific feedback, starting with the positive aspects of the performance.
   - Does the learner have any questions, now that s/he has practiced the skills?

3. **Automated phase:**
   - Finally, learners begin achieving proficiency and are ready for independent performance.
   - Observe performance again, this time with minimal interruption.
   - Your can now teach the fine points.
   - Encourage self-directed learning: What are the learner’s future learning goals, and how does s/he want to achieve them? What have you read or done that helped you learn?
   - Arrange for a follow-up session.

**References:**
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Bedside Teaching

Learning objective: At the end of this session, participating residents will be able to conduct a teaching session at the bedside.

1. Benefits of bedside teaching

- Allows resident teacher to provide professional role modeling for junior medical learners.
- Can benefit the patient and family.
- Allows resident teacher to observe learner’s clinical skills and give immediate, direct feedback.
- Facilitates active, case-based learning.
- Can be used in almost any patient care setting – inpatient or outpatient.

2. The “BEDSIDE” approach to bedside teaching

Briefing
- Prepare the learner(s) before meeting with the patient: learners’ prior experience, problems requiring help?
- Prepare the patient and explain roles.

Expectations
- What are learner’s learning goals?
- Why learn this particular topic today?

Demonstration
- If your goal is observation and feedback, watch learner interact with the patient, keeping interruptions to a minimum.
- If your goal is to model clinical skills, let the learner(s) watch you interact with the patient at the bedside. Organize what you demonstrate to facilitate learning.
- Facilitate active learning through questioning: What “learning questions” will stimulate thinking while you assess knowledge base and technical skills?

Specific feedback
- Offer learner-centered feedback, starting with the positive aspects.
- Can you explain or show learner how to improve any clinical skills?

Inclusion of “microskills”
- Will Neher’s “five-step microskills model” work here? If so, include it:
  1. Get a commitment (a plan)
  2. Probe for supporting evidence
  3. Teach general rules
  4. Reinforce what was done right
  5. Correct mistakes

Debriefing
- Start with input from patient and learner.
- Any questions from learner or patient?
- You can also talk to learner alone, especially if your feedback is extensive.

Education
- What resources can the learner read or use to promote further learning?
Bedside psychomotor teaching

Learners must progress through four levels of understanding:

1. Unconscious incompetence
2. Conscious incompetence
3. Conscious competence
4. Unconscious competence

You can tailor teaching to each level:

To get to “conscious incompetence”…
- State the goals of the physical exam.
- Explain how to do it.
- Have learner explain each step of the exam.

To get to “conscious competence”…
- Observe learner practicing the exam.
- Allow self-feedback, then give your feedback.

To get to “unconscious competence”…
- Observe more practice in “real” situations.
- Refrain from interrupting while you observe.
- Tailor feedback to teaching the fine points.

References:
Teaching Charting

Learning objective: At the end of this session, participating residents will be able to give a medical student helpful, constructive feedback about charting.

1. Benefits of teaching charting
   • Many medical students may prefer to learn “hands on” clinical skills (history-taking, physical examination, charting, procedures) from resident physicians rather than from faculty.
   • Medical school provides numerous teachable moments for students to learn writing skills.
   • Once students become residents, they may be offered less feedback about charting, or they may be less inclined to use feedback that they are offered.

2. The “CHART” approach to giving feedback on learners’ written work

   Comments
   • Take as much time as you need to read the learner’s note and write comments on it. Include an adequate (but not overwhelming) level of detail.
   • Writing down your comments will help you organize your feedback and will later help the learner recall what you’ve said.

   Help
   • Establish mutual goals for this feedback session (first the learner’s, then yours).
   • Clarify that you will focus on learning about charting rather than clinical issues.
   • Which writing skills does the learner think may require extra help?

   Assessment
   • Now you can discuss your mutual assessment of the written work.
   • Start with the learner’s self-assessment.
   • Then give your assessment, balancing positive and negative attributes.
   • Organize your feedback into logical sections to make it easier to follow.
   • Involve the learner actively: can s/he learn from rewriting some text with you?

   Resources
   • Discuss learning resources the student can use to improve charting skills (texts, online resources, other teachers).
   • Which resources does the learner think would be best for his/her learning style?

   Timing of follow-up
   • When would the learner like to meet again to go over more written work?

References:
Learning objective: At the end of this session, participating residents will be able to lead inpatient work rounds, incorporating teaching appropriate to each learner’s level of training.

1. **Small-group teaching**
   - Small-group teaching may include inpatient rounds (work rounds, morning report) or other small-group settings (problem-based learning sessions, ambulatory rounds, other groups).
   - A distinguishing challenge of small-group teaching is that the teacher must facilitate learning for multiple learners at once. These learners may be from different training levels or from different disciplines.
   - Even when an attending physician is present, the senior resident can still take a leadership role during rounds.

2. **The “LMNOPQRST” approach to work rounds / group teaching**

   **Learners**
   - Who are all your learners for this small-group discussion?
   - Help create a positive learning climate by ensuring that everyone in the group knows each member’s name, discipline and training level.

   **Microskills**
   - As always, teach through questioning. The “five microskills” model by Neher et al. works well. (See “Questions” below.)

   **Needs**
   - Briefly establish learning goals for rounds, starting with the learners.
     - Is there anything they especially want to learn today?
     - What are your goals for them?

   **Organization**
   - How can you best organize rounds during the time you have?
   - Take into account the number of patients to discuss and any other scheduling factors (clinics, other time constraints) as well as your learning goals for the team.

   **Presentation**
   - When learners present their patients, have team listen without interruption.
   - You can set guidelines for the length and format of case presentations.
     - Tell learners what you expect to hear when they present new patients.
   - For ongoing patients, presenters can give a one-sentence case summary, followed by a summary of overnight progress and a review of the problem list with updates on management and disposition, including plans for the day.

   **Questions**
   - Use the five “microskills” to maximize “teachable moments” for each case:
     6. Get a commitment (a plan)
     7. Probe for supporting evidence
     8. Teach general rules
     9. Reinforce what was done right
     10. Correct mistakes
   - Make sure each team member participates in the discussion, gently prompting nonparticipants as needed.

→⪞ **Recall questions**
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- Lower-order questions test learners' recall of factual information (e.g., "What is Murphy's sign?").

  **Synthesis questions**
  - Higher-order questions go a step further and test learners' ability to synthesize and analyze information (e.g., "Given these physical findings, how would we now alter our differential diagnosis?").
  - Try to incorporate some of these "thinking questions" into rounds too.

**Teaching**
- Discuss resources for the team's further learning (texts, online resources, other teachers).
- Bringing in resources (e.g., articles) can be very helpful in encouraging ongoing learning.

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**References:**

Top
Giving Lectures

Learning objective: At the end of this session, participating residents will be able to give an interactive mini-lecture for learners at various levels of training.

1. Lectures
   • Lecturing is a familiar method of clinical teaching—and a difficult one to use well.
   • Throughout their careers, physicians may be asked to give lectures for learners, colleagues, patients, or others.
   • The challenge of lecturing is to make it interactive so attendees learn from it.
   • For resident teachers, lectures may range from brief talks (1-2 learners) to longer lectures (e.g., grand rounds).

2. The “LECTURE” approach to giving interactive presentations

   Learning objectives
   • In any teaching situation, it is important to clarify the goals of the session: the learners’ goals, then your goals.
   • For lectures, teachers explain goals in the form of behavioral learning objectives: the specific behaviors we expect attendees to be able to do after participating in the session.
   • Example: “After participating in this session, students will be able to describe one treatment strategy for acute low back strain.”
   • Clarify why the audience needs to hear about this topic.

   Evaluation
   • As always, teach through questioning: in this case, by taking time early in the session to evaluate your attendees’ prior experience and knowledge base for the topic you’ll be discussing.
   • If they just had a lecture last week on the same topic, you can adjust your talk to fill in gaps in their knowledge rather than repeating what they already know.
   • What are the attendees’ own learning goals for this session?
   • Establish a positive learning climate by giving attendees permission to reveal their limitations and learning needs.

   Control of session
   • As the teacher and leader, you control the teaching session, so don’t hesitate to take charge and make adjustments.
   • How can you best organize the session to achieve your learning objectives?
     • Before the talk, spend some time organizing your material.
   • Well-designed audiovisual materials (projected images, handouts, writing on board) are an evidence-based means of enhancing learning.¹ ²
   • Don’t forget that audiovisuals must be legible in order to be effective.
   • Pace your talk within the time you have. You don’t need to “cover” all material.

   Talk
   • During your talk, certain techniques will enhance your presentation:
     • Make your talk personal: Use humor if it comes naturally to you, or include a brief story.
     • Speak in your natural conversational style, rather than reading a “canned” script (which causes somnolence).
     • Move around and gesture in whatever way feels right, as long as you avoid letting anxiety cause you to pace or use repetitive gestures.
     • Avoid apologizing as you speak.
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- Look at each audience member rather than at the slides or board.

→ Understanding
  - Help attendees understand the topic by asking them to analyze and synthesize the material.3

→ Retention
  - Help attendees retain what they’ve learned by encouraging review of facts and concepts.3

Education
- Make at least brief mention of learning resources that attendees can use after the session (articles, online resources).
- As always, encourage self-directed learning: what would attendees like to do to enhance their own learning?

References:
2. Schwenk TL, Whitman N. Residents as Teachers: A Guide to Educational Practice. Salt Lake City: Department of Family and Preventive Medicine, University of Utah School of Medicine, 1993:84.
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Selected Bibliography:

This selected bibliography is not meant to serve as an exhaustive list of all of the excellent work available on clinical teaching, or even on clinical teaching for medical residents. See the Residents’ Teaching Skills Web Site (www.residentteachers.com) and other published bibliographies for many additional sources.


