Clinical Teaching: Facilitating Effective Strategies

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Objectives

• Define clinical teaching and describe role of clinical teachers and learners
• List and discuss stages of learning
• List and describe different teaching techniques
• Discuss different examples of teaching strategies
What is Clinical Teaching

- Clinical teaching is a form of interpersonal communication between a teacher and learner\(^1\)
- An exchange between student and teacher outside of traditional didactic scope
- Involves a patient scenario
- A student learns how to evaluate a patient
- May be inpatient or outpatient

1 Bradford LP. Adult Education 1958;8:135-145
What is Clinical Teaching

• Integrates past didactic learning, laboratory values, physical exam, patient needs, patient questions

• Uses subjective, objective data to make an assessment

• Based on medical/pharmacologic knowledge and objective data, formulates a plan

• Conveys the plan to the patient
Clinical Teaching

Patients

Learners

Clinical Teachers
Who Is Involved?

- Clinician teacher
- Adult learner
- The PATIENT!
- How does teaching and learning occur?
Clinician Teaching

• Medical educators think the teacher’s role is to “provide a lecture” to students and “be a reservoir of knowledge/skills that occasionally and unpredictably spills over its dam, letting information flow randomly down a canyon of learning.”

• Expertise alone is insufficient for good teaching.

1 Schwenk TL, Whitman N. The Physician as Teacher 1987. Williams & Wilkins
2 McKeachie WJ. http://www.crlt.umich.edu
An Early Example

Illustration of a botany discussion
Hortus Sanitatis, 1491
Clinical Teaching: My Experience

• Relevant background readings
• Orient students
  – Location, parking, etc.
  – EMR (passwords, etc.)
  – Forms
  – Explore language issues
• Review clerkship goals
  – Explore student individualized goals
  – Explain chart reviews, notes to be written, data-gathering forms
• Review different activities
  – Journal club
  – Case presentations
  – Topic presentations
  – Clinical challenges
Clinical Teaching: My Experience

- Explain the “workflow”
  - Individual clinic appointments, Shared Medical Appointments, “serendipitous” encounters
- Explain importance of “flexibility”
- Allow students time to become thoroughly acquainted with the EMR
- Assign a “patient” for EMR exploration and allow sufficient time for student to evaluate a patient
- Re-group to discuss the patient chart and what is clear/confusing
- Introduce different “tools” used in the practice site
- Allow for “student stages of confusion” and provide encouragement!
- Allow the student to “work up patients” before the appointments
- Prime the student using appropriate questions
- Model an encounter
- “DIVE-IN”
Clinical Teaching: My Experience

• After patient encounters, allow time to de-brief on what happened
• Reflect on what occurred during the patient visit
• Allow the student to write a note
• Evaluate the note and provide feedback and add/change
• Ask the student to reflect on what they learned and start “making a list” of learning points
• Ask the student how they might have done things differently
• Allow the student to develop increasing level of independence
• At the end of the clerkship, ask students to present a list of different concepts and specific things they learned
• Ask students to self-evaluate the experience
• Provide words of encouragement!
Let’s Look at Different Considerations
Adult Learning Theory

- Family of models from educational, developmental psychology that defines unique attributes/cognitive processes of adult learners
- Theory emphasizes:
  - Task relevance
  - Importance of active learner involvement in goal setting
  - Skill practice is an effective pedagogy

Laidley TL, Braddock CH: Advances in Health Sciences Education 2000;5:43-54
Adult Learning Theory

• Teaching is more effective when:
  – Educational needs are identified by learners
  – Learners are ready/motivated
  – Want to set their own goals, take responsibility for their own learning
  – Want to select educational content
  – Want to participate in decisions affecting their learning

Laidley TL, Braddock CH: Advances in Health Sciences Education 2000;5:43-54
Adult Learners

In Summary:

• Like to have input in how they are taught
• Must have active involvement
• Insist that what they are learning must be relevant and meaningful
• Need to have regular feedback
• Need time for reflection
What Are Barriers to Clinical Teaching?
Barriers to Clinical Teaching?

• Time
• Space
• Environment
• Balance patient care with taking the time to train students
• Patient care “challenges”
• Student learning individualization
• What constitutes effective teaching?
Effective Teaching

Teacher

• Assess student knowledge level
• Know the literature
• Provide feedback
• Teach at appropriate level
• BUT…lack instruction in educational methods

Student

• Teacher must be available
• Teacher must answer questions, provide information
• Must model good patient care
• Treat student as individual
• Encourage participation in learning activities
• Direct learning

Advances in Health Sciences Education 2000;5:43-54
One Teaching Model

• Orients student; establishes positive learning climate
• Elicits student ideas
• Assesses student’s conceptions; involves student in self-assessment
• Intervenes to correct knowledge gaps (confusion, errors)
• Collaborates with student on best teaching format
• Allows new knowledge application
• Reviews learning, encourages self-reflection

Hewson MG: J Gen Intern Med 1992;7:76-82
One Teaching Construct:
“See one”
“Do one”
“Teach one”
Teaching Issues?

• What if student doesn’t recognize his/her knowledge limitations?
• Or doesn’t formulate clear questions as to what they want to learn?
• Teacher must first assess the student
• First must understand the stages of learning
• Must assess the student’s current stage of learning
Stages of Learning

Awareness of what learners “know”

• Unconsciously incompetent
  – Learner doesn’t recognize what they don’t know

• Consciously incompetent
  – Learner recognizes they don’t have sufficient knowledge or skills; they are learning and practicing

• Consciously competent
  – Learner is aware, they have sufficient knowledge and skills but have to consciously think about what they are doing (“think hard”)

• Unconsciously competent
  – Learner is aware, have sufficient knowledge/skills and don’t have to think about what they are doing
Stages of Learning

Awareness

- Unconsciously Incompetent
- Consciously Incompetent

Learning

- Unconsciously Competent
- Consciously Competent

Practice

Med J Aust 2004;181:S327-328
Student

• KIA is a student that comes on service ready to take on the clinical world. On the first day she challenges everything you say, questions where the evidence is found, and comes across as though she should be in the “driver’s seat.” Her knowledge is sketchy at best.
In What Stage of Learning is KIA?
CC is a student that comes on service and can readily do physical assessment and evaluate a person with DM that has hypertension. They have to think about what the appropriate target BP is for their patient, based on age, co-morbidities, and labs. They take their time to make sure they can quote JNC8 guidelines as well as the ADA guidelines. His knowledge and skills are correct, but he has to think hard about the most appropriate course of action.
In What Stage of Learning is CC?
A Question for You

• At what “stage of learning” is the learner most likely to clearly and successfully teach a skill to others?
  – Unconsciously incompetent
  – Consciously incompetent
  – Consciously competent
  – Unconsciously competent
Teaching Skills: A 4-Step Approach

- Demonstration
  - *Teacher* demonstrates at normal speed, without commentary
- Deconstruction
  - *Teacher* demonstrates while describing steps
- Comprehension
  - Teacher demonstrates while *learner* describes steps
- Performance
  - *Learner* demonstrates while *learner* describes steps

Break Out in Small Groups: What Teaching Strategies Have You Used?
Effective Teaching

• Enthusiasm and enjoyment of teaching\(^1\)

• Best teachers\(^2,^3\)
  – Exhibit genuine interest in students
  – Ask questions frequently
  – Can multitask: diagnose patients *and* assess students
  – Serve as role models
  – Spend extra time with students

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1 J Med Educ 1978;53:808-815
2 Acad Med 1994;69:333-342
Use Examples From Your Practice Site to Teach
## Bloom’s Taxonomy of Educational Steps

<table>
<thead>
<tr>
<th>Category</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>In what class is metformin?</td>
</tr>
<tr>
<td>Comprehension</td>
<td>When should metformin be used?</td>
</tr>
<tr>
<td>Application</td>
<td>When should insulin be added? What is the starting dose?</td>
</tr>
<tr>
<td>Analysis</td>
<td>Why should the insulin dose be increased?</td>
</tr>
<tr>
<td>Synthesis</td>
<td>How would you explain that this person has worsening A1C?</td>
</tr>
<tr>
<td>Evaluation</td>
<td>What if the patient develops complications – what is the plan, and how will you explain it to the patient?</td>
</tr>
</tbody>
</table>

Teaching Strategies

Teaching Roles
• Leader
• Partner
• Observer
• Facilitator

Learner
• Initially dependent
• Interested
• Needs guidance, practice
• Becomes self-directed

Med J Aust 2004;180:527-528
Our Teaching Roles

• How many have served as a leader?
• How many have served as a partner?
• How many have served as an observer?
• How many have eventually become a facilitator?
Selecting A Teaching Method (Pharmacy Literature)

- Direct instruction
- Modeling
- Coaching
- Facilitating

Direct Instruction

Technique
• Direct learners to content specific to practice issues
• Teach how new content relates to other content
• Introduce new content in context of solving a direct patient care practice problem

Cognitive Approach
• Organize content for quick recall
• Provide reading material, guidelines
• Short lectures if necessary
• Builds foundation skills and knowledge

Modeling

**Technique**
- Teach strategies to help clarify problems
- Teach patterns that characterize different categories of patient care practice problems
- Explain out loud what you are thinking as you solve a problem

**Cognitive Approach**
- Define and classify problems
- Use guided discussions
- Provide interactive lectures
- Master problem-solving strategies

Coaching

**Technique**
- Give learners opportunity to practice solving direct patient care problems; also give strategy feedback
- Provide enough problem solving practice to build speed
- Ask learners to explain out loud what they are thinking as they problem solve

**Cognitive Approach**
- Master problem-solving strategies
- Case presentations
- Case-based teaching
- Role play (teacher may serve as “patient”)

Facilitating

**Technique**

- Teach learners to evaluate their own work and to think independently
- Learners “defend their plan”

**Cognitive Approach**

- Self-monitor quality of problem solving
- Teacher is “listening” more than “talking”

“Practical Tips”
Practical Tips

• The preceptor is the leader
• Prepare for the visit
  – Review the EMR together
  – Decide the number of patients for student to “see and work-up”
  – If possible, assign an appropriate amount of time to spend with the patient
  – Do the physical exam together

Practical Tips

• Direct instruction: “Priming” the learner

• Purpose: provide direction for the visit
  – Outline a specific plan
  – Example: New patient with “Type 2 DM”
    • What are important causes of diabetes?
    • What are symptoms, risk factors, physical signs?
  – Example: Patient with DM – Follow-Up
    • What complications do we need to think of?
    • What assessments should we do? (HCM)

Practical Tips

• Modeling
  – Purpose: beyond scope of learner’s practice
  – Teacher thinks out loud
  – Shares clinical insights/hunches
  – Points out controversies
  – Provides rationale for what to accomplish
  – Tell “learner” what specific technique to observe (ex: give bad news/confront an issue)
  – “Debrief”

Practical Tips

• One Teaching Point: The General Rule
  – Purpose: Establish a main “take home” point
  – The rule is brief; doesn’t include everything a teacher knows about the subject
  – Example: “confronting smoking cessation”
    • A couple of minutes of “advice”
    • Be direct about adverse consequences
    • Refer when appropriate
    • Show empathy
    • Set realistic goals
    • Arrange for follow up

One Minute Preceptor
or
Five-Step “Microskills” Model of Clinical Teaching
5-Step Microskills Model

Step 1
Get a commitment

Step 2
Probe for supporting evidence

Step 3
Teach general rules

Step 4
Reinforce what was done right

Step 5
Correct mistakes

J Am Board Fam Pract 1992;5:419-424
Step One

• Get a Commitment
  – “What do you think is going on with this patient?”
  – “Why do you think this patient has been nonadherent?”
  – “What lab tests do you feel are indicated?”
  – “What would you like to accomplish on this visit?”

J Am Board Fam Pract 1992;5:419-424
Step Two

• Probe for Supporting Evidence
  – “What were the major findings that led to your diagnosis?”
  – “Why did you choose that particular medication, given availability of many others?”
  – “What factors did you take into account when making your lifestyle recommendations?”
  – “What else did you consider?” “What kept you from that choice?”
Step Three

• Teach General Rules
  – “Patients with a UTI usually experience dysuria, polyuria, urinary urgency, and possibly discolored or dark urine. The U/A should show certain bacteria, white cells, nitrites, leukocyte esterases, and possibly red cells.”
Step Four

• Reinforce What Was Done Right
  – “You correctly considered medication costs in selecting a medication for diabetes. You also appropriately considered the patient’s age and active metabolites that may prolong half-life. That will certainly decrease the risk of hypoglycemia.”
Step Five

• Correct Mistakes
  
  – “You could be correct that this gentleman’s symptoms may be due to benign prostatic hyperplasia. However, without checking the urine for glycosuria, a finger stick to check for hyperglycemia, and an A1C to assess for chronic glucose elevation, you may have overlooked a possible diagnosis of type 2 diabetes.”

J Am Board Fam Pract 1992;5:419-424
5-Step Microskills Model

http://www.youtube.com/watch?v=P0XgABFzcgE
5-Step Microskills Model

www.youtube.com/watch?v=t9ytKlq8wL0
Thoughts?
5-Step Microskills Model

GOAL SETTING

Step 1
Get a commitment

Step 2
Probe for supporting evidence

Step 3
Teach general rules

Step 4
Reinforce what was done right

Step 5
Correct mistakes

REFLECT

J Am Board Fam Pract 1992;5:419-24
Other Models

**SNAPPS**¹
- Summarize briefly the history and findings
- Narrow the differential (2-3 relevant possibilities)
- Analyze the differential by comparing/contrasting possibilities
- Probe the preceptor about uncertainties, difficulties, alternatives
- Plan patient’s medical management
- Select case-related issue for self-directed learning

**SCAL**²
- Systematic
- Clinical
- Appraisal
- Learning
- Students actively learn by consulting with patients alone prior to seeing clinical teacher
  - Complete an appraisal form (problem list, differential, social issues, investigations, plan)
- Student observes consultation between patient and teacher; checks/completes form as to level of agreement/disagreement

¹ Acad Med 2003;78:893-898
² Med Educ 2002;36:1028-1034
Other Teaching Issues
Teaching “Don’ts”

• Don’t take over the case
  – Allow for “silent moments” to allow student to catch up
• Don’t lecture inappropriately
  – Allow students to follow up and research clinical concepts
• Challenge the learner, but don’t push the learner past their ability
Teaching “Don’ts”

• Don’t issue generalities:
  – “Good job!” – Be honest
  – “You need to work on communication skills”
    • Establish eye contact
    • During first few minutes, don’t take notes
    • Speak louder
    • Speak slowly
Providing Feedback

• It’s okay to say “I don’t know; let’s look this up”
• Be honest and fair
  – Must balance statements of learners’ strengths and weaknesses
    • “You have collected an amazing amount of information and I observed that you were able to organize the information quickly and thoughtfully”
    • “I would like you to work on editing the information/limiting length of your presentation to 2 minutes”
    • “This is what I would have done….”

Clinical Teaching in the 21st Century

• Consider unique characteristics of millennials
• Exciting opportunities to play a significant role in health care
  – Greater emphasis on safety, efficacy and economics
  – Emerging biotechnologies
• Incorporation of communication technologies
  – Blending of science, clinical care, communication and compassion
  – Informing and educating but promoting patient empowerment
Clinical Teaching in the 21st Century

• Next generation of health care professionals will bring new ideas and new ways to solve problems
  – Interprofessional education is an important modality
    • Different disciplines work on a case assignment
    • Use SBAR (Situation, Background, Assessment, Recommendation)
    • Pre-briefing; de-briefing
    • Reflections are key
    • Promotes “critical thinking” (ability to apply higher-order cognitive skills [conceptualization, analysis, evaluation], being deliberate about thinking that leads to ‘logical/appropriate action)\textsuperscript{1}
    • Health care teams of the future communicate across professional boundaries

Acad Med 2014;89:715-720
Conclusions

- Clinical teaching is a skill that must be practiced
- Students/residents are adult learners
- Patients are our best teachers
- *BUT…* We must learn from our students
- Remember to work/learn with other colleagues
- Maintain enthusiasm for patient care, teaching, and life-long learning
- Remember to “re-create!”