CLINICAL TEACHING AND LEARNING 101

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INTRODUCTION

CLINICAL TEACHING AND LEARNING 101

Welcome to Clinical Teaching and Learning 101. This module will introduce you to clinical teaching and learning, and provide you with some tools to help you teach effectively.

This course is both for those who are just starting their role as a clinical teacher, and for more experienced clinical teachers who wish to discover new strategies to improve their teaching.

This module will cover the following topics:

- What is different about clinical teaching and learning?
- How will you benefit from teaching?
- What strategies can you use to teach effectively?

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UNDERSTANDING CLINICAL TEACHING

vignette

THINKING ABOUT THE CLINICAL TEACHING ENVIRONMENT

The clinical teaching environment presents a number of opportunities and challenges which are not found in the classroom. In the next slides, you will be presented with a typical clinical teaching encounter. A small team, consisting of a preceptor, a junior resident and two medical students, review a patient at the beginning of the academic year.

The vignette:

It is 9:30 am in the emergency department. A 60 year-old man with small cell lung carcinoma has been sent to the hospital emergency department by palliative home care owing to decreasing LOC and weakness.

The patient's condition is stable but he has a low serum sodium level of 124 mmol/L.

As you read through the dialogue on the next slide, consider the interaction and the environment in which it takes place.

vignette

Preceptor: So what are the possible causes of a low sodium? Anyone, anyone?

Student 1: Decreased intake?

Preceptor: Actually, no. Not deceased intake per se… (silence)

Preceptor: Anyone…causes of hyponatremia?

Student 2: How about increased intake of water?

Junior resident: Hypothyroidism…

Preceptor: Yes. Any other endocrine causes?

(silence)

Preceptor: Okay, how about Addison's disease?

Junior resident: Addison's disease? I think that can do it…

Student 1: Yes, and diabetes insipidus.

Junior resident: No, diabetes insipidus causes high sodium.

(silence)

Student 2: What about beer potomania?

And so on…..

WHAT DO YOU THINK?

> One who studies medicine without books sails an uncharted sea, but one who studies medicine without patients does not go to sea at all."
>
> — W. Osler

How appropriate is ***this interaction*** for the clinical teaching environment?

- Explain your answer.
- Then read on

WHAT THE CLINCAL TEACHING ENVIRONMENT PROVIDES THE LEARNER

The clinical teaching environment provides unique opportunities to demonstrate, observe, and assess the performance of skills and knowledge. Specifically, the clinic offers learners:

- an opportunity to *apply* knowledge, skills, and behaviors in authentic settings to authentic context-specific problems.
- an opportunity to develop clinical reasoning and decision making skills.
- an explicit approach to the uncertainty associated with clinical decision making
- "real-time" integration of key CanMEDS roles such as "communicator" and "collaborator" into their educational experience

“Do not waste the hours of daylight listening to that which you may read at night.”

— W. Osler

DIFFERENT PLACES, DIFFERENT APPROACHES

Compared to the average classroom, the clinic is a labile and fast-paced environment. As a result, there are differences between the kinds of teaching and learning that take place in the classroom and the clinic.

Below is a summary of some of the key differences.

	Classroom teaching	Clinical teaching
▪ What is being asked	▪ "What do you know?"	▪ "How do you apply it?"
▪ What the learner demonstrates	▪ Demonstrate knowledge and skills	▪ Problem solve in particular contexts
▪ What competence is assessed	▪ Comprehensiveness and accuracy of knowledge and skills	▪ Selective and context appropriate application of knowledge and skills
▪ The primary method of teaching	▪ Working from general principles to some examples	▪ Working from specific examples to general principles
▪ Method and site of learning	▪ Home work and white boards	▪ Bedside practice

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PREPARING TO SUCCEED

WHY SHOULD YOU TEACH?

Take a minute to think about your past experience with teaching and learning in the clinical environment, and consider why it could be beneficial for you to engage in clinical teaching.

- What can you expect to give ***and to gain*** from teaching?

- Jot down your thoughts below and then continue.

WHY CLINICIANS SHOULD TEACH

There are a number of good reasons why clinicians should be involved in clinical teaching. Here are just a few:

- Teaching is a core competency (CanMEDS Scholar role).

- Teaching others is a great test of your clinical skill and reasoning, and a deep form of learning. As Aristotle famously said, “teaching is the highest form of learning.”

- Teaching is fun and deeply rewarding.

More reading about this: Weinholtz, D., Edwards, J. C., & Mumford, L. M. (1992). *Teaching during rounds: A handbook for attending physicians and residents*. Baltimore: Johns Hopkins University Press.

IDENTIFY THE CHALLENGES

Regardless of your experience, teaching in the clinical environment presents numerous challenges. The clinical environment is labile, unpredictable, and time constrained. Because it involves patient care responsibility it requires immediacy of action and a need to simultaneously meet (and balance) teaching and clinical objectives. Learners often have multi-level, multi-disciplinary learning needs, and delegation of responsibility can be complex.

However, as you consider becoming engaged in clinical teaching, you may feel nervous about whether you are up to the task. After all, teaching adds a whole new level of challenge and responsibility to an already challenging job.

Think about any such concerns that you might have about your ability to teach, and then proceed.

“When I first started teaching, I found it overwhelming. I felt I had to teach everything at the same time. Eventually, I learned to look for small moments that provided an opportunity to improve on a key skill..”

COMMON CONCERNS ABOUT TEACHING

"I'm not an Expert"

Some clinicians who are new to clinical teaching feel they are unqualified to teach because they are not **experts** in the field being taught and "do not know enough to teach". Additionally we all dislike making mistakes, especially in front of an audience.

Of course it is important to possess up-to-date and valid clinical knowledge and skills if we wish to teach them. However, beyond the need for a basic mastery in a subject area, literature from multiple specialties consistently fails to rank medical expertise as a critical prerequisite for effective teaching. In fact it appears that "experts" need to deconstruct their skills to a mastery level to most effectively teach them.

Teaching will take too much time

Actually, there are a number of very effective teaching strategies that don't take much time, which you will learn about later in this module.

Students can't take feedback

It is possible give feedback and still be on speaking terms afterwards. Later in this module, you will be introduced to some ways that you can effectively communicate feedback to learners.

THE FOLLOWING ARE REQUIREMENTS TO BECOME A GOOD CLINICAL TEACHER:

- **Up-to-date clinical knowledge and skills.** As a clinical teacher, you must be able to competently demonstrate, explain and assess key clinical competencies.

- **An understanding of the nature and purpose of clinical teaching.** Clinical teaching requires an appreciation for the challenges and opportunities of the clinical environment, as well as the needs and abilities of adult learners.

- **A flexible and observant approach.** Rather than trying to teach everything, good clinical teachers seize upon teachable moments as they present themselves.

- **An effective "toolkit" of teaching skills and strategies.** In the remainder of this module, you will be introduced to a set of strategies that you can use to ensure that your teaching is effective.

THERE ARE TOOLS TO HELP

Clinical teaching is challenging, but the good news is there are some useful tools to make your job easier. In this presentation, we'll cover a general approach (the RES STAR Approach to Clinical Teaching) and three very useful teaching tools:

- One Minute Preceptor
- Active Observation
- Effective Questioning

Using this approach and basic tools every day will help you be an effective clinical teacher.

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FRAMING CLINICAL TEACHING

RES

FRAMING CLINICAL TEACHING: THE RES STAR APPROACH

The Royal College of Physicians and Surgeons of Canada has developed a framework that can be used to guide you in performing the necessary tasks of clinical teaching. The components parts which can be broken into two phases, can be remember with the acronym RES STAR.

RES	*Do this when you establish a new relationship with a learner:* 1. **R**ecognize – recognize the learner, they learning style and needs. 2. **E**xpectations – determine and agree on expectations. 3. **S**ituate – help situate the learner in the environment and their role.
STAR	*Do this whenever you teach:* 1. **S**et up the educational encounter. 2. **T**each or observe. 3. **A**ssess and give feedback. 4. **R**ole model and reflect on teaching.

RES

RECOGNIZE THE LEARNER

Start by recognizing the learner and understanding their:

- Name
- Background
- Program
- Level of training, experience, and needs

Recognizing the learner will help you and the learner make a teaching "contract". This contract is the mutually agreed upon method by which both learner and teacher will determine and produce the "best fit" of the learner's knowledge skills and learning goals and learning style, to the teacher's educational goals teaching methods and clinical context in which this will take place. Taking the time to make this step explicit to your learners will increase the usefulness and efficiency of your teaching and learning relationship.

More about teaching contracts later!

RES

EXPECTATIONS

Both learners and teachers should determine shared expectations to form an agreement on key points that outline how you will work together. This agreement will form your **learning contract.**

- What do you consider achievable goals and expectations?
- How and when you will work together ?
- What *can* be taught, learned, and assessed?
- What areas *will* be focused on — what are the learner's educational needs?
- How will you focus on these needs — what specific strategies will you employ?
- What degree of competence is expected?
- How and when assessment be done?
- How and when feedback will be given?

vignette

WHAT DO YOU EXPECT?

Read this dialog between a clinical preceptor and a new medical student who are on call together.What elements of an educational contract do you recognize? What might be missing? Use the tips on the preceding slides to help answer.

Preceptor: Hi. So it looks like we are on together today. I see you have your beeper and phone, and this is your second rotation this year. Do you know where everything is?

Student: Yes, thanks. The group orientation was pretty good. This the first time I have been on call though.

Preceptor: Well there is already one patient down in emergency that needs admission. Maybe I could just go over a few things before you start.

As you know, I or the senior resident will be asked to see people from emergency and depending on how sick they are we'll be calling you earlier or later on for you to see. One of us will go over each case with you when you are finished your history and physical, and have had a chance to make a summary.

vignette

Preeptor: Obviously if you have concerns or things change with regards to the patient status you can call any time but otherwise we'd like you to try and make a problem list and sketch out ideas about management before we review the case.

We will focus on what you think is going on and why you think so, so when presenting give the "bottom line at the top".

Don't worry — we will assess your database and reasoning as to why you think so.

We hope that you can perform your history and clinical exam in 45 minutes or so do you think you could do that?

Student: I think so. I will certainly call you if I am uncertain or have questions, or things change.

Also, if there aren't any patients needing admission, and the ward is quiet, could I just accompany you if you see consults that don't need admitting?

Preceptor: That sounds practical. So why don't you go down stairs now and see that patient- (Mr. X): she is in Z pod.

Student: Okay.

CAN YOU SEE THE EDUCATIONAL CONTRACT?

- What elements of an educational contract do you recognize?
- Consider what elements might be missing. Then proceed.

RES

SITUATE

New learners need you to introduce them into the unfamiliar and often complex learning environment of clinical care.

The first step in teaching is situating the learner to the environment in which they will be learning, and helping them understand their role.

For example

- Introduce the learner to the setting in which they will be learning [by doing X].
- Help the learner understand their role within the setting [by doing X].
- Explain the patient flow and work to be done [by doing X].

STAR

SETTING UP THE ENCOUNTER

Choose an appropriate setting to teach. This may require flexibility and opportunism to identify potential "teaching moments".

Make sure that you and the learner and know and agree on:

- What will be focused on (the task)
- How focus will be achieved (by outlining the scope, content, context, and priorities).
- The degree of competence or completion that will be expected.
- For example: "This next patient has dyspnea. They seem stable. You mentioned you wanted to practice your approach to this problem. After I introduce you why don't you take a directed history and physical examination to try to determine the cause, and we can review it in 30 minutes. When I come back, I will be asking you what you think is going on and to explain your reasoning as to why you think so, in the presence of the patient, and then we can review any pertinent physical findings.
- In the interim, call me if you are concerned or the patient's status deteriorates. Is that OK with you? Do you have any concerns or questions?"

STAR

TEACH OR OBSERVE

When to teach?

- Be flexible – choose an appropriate time to engage the learner.

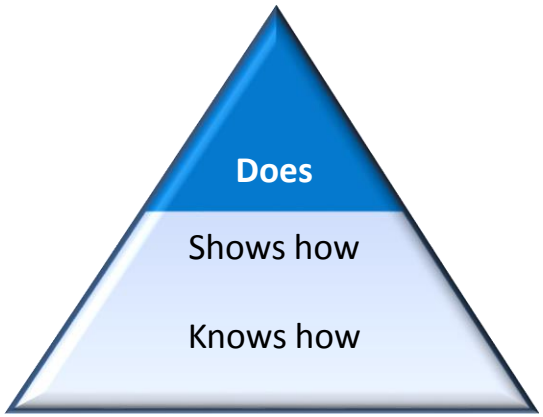
- Seek the teachable moment – and tailor teaching to your situation . For example, although you had planned to observe your learner doing the knee examination, the patient is tired and worried. It may be a better time to demonstrate or observe another CanMEDs role such as communication or advocacy. Remember that one of your most important roles is major roles is to choose what is best to focus on.

How to teach?

- Demonstrate
- Observe
- Ask questions (at an appropriate level)

What to teach?

- Knowledge, skills, and attitudes
- All CanMEDS Roles
- Tailor to the learner's level and learning needs
- Tailor to the context
- **Whenever possible focus on the "Do" of Miller's pyramid**



Miller's pyramid

STAR

ASSESS AND GIVE FEEDBACK

- Reinforce what was done well to ***consolidate*** **good performance**
- Identify what was not done well and discuss the means to ***improve*** **performance**
- Provide direction -“where to go next”
- Remember: supervise and keep everyone safe

THE TEACHING-LEARNING EVENT

Situate and setup

Focus on task

Appropriate to clinical context

Teach or Observe

Specific & appropriate strategies

How and when to do **assess** if it is working

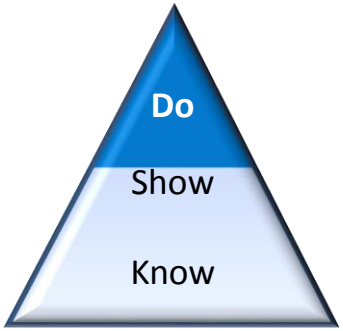
Assess

How and when to **discuss** if it's working

Feedback and linked teaching

Teaching points
Commit to improve performance

Linked teaching
Plans for improvement



STAR

ROLE MODEL AND REFLECTION

Although you may not always be aware of it, you are always modeling roles — and modeling has a profound effect on the consolidation or change in performance, attitudes and behaviors in others.

In our own clinical behaviors we demonstrate:

- Professionalism
- Intellectual honesty
- Approach to uncertainty
- Reflection on clinical performance and teaching
- Continuous improvement and deliberate practice
  - "How did that go?"
  - "What could be better?"

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TOOLS YOU CAN USE

WHAT METHOD WOULD YOU USE?

A student is on call with you.

She pages you to say she is finished doing the history and physical of a patient who is being admitted, and is “ready to discuss the case” with you.

Otherwise, all is quiet and you are available.

- What teaching method would you use to proceed?
- Think of educational principles to explain the appropriateness of your choice.

ONE MINUTE PRECEPTOR

The *One Minute Preceptor* is a “micro-skills” teaching framework that is useful when working with learners who have some reporter and interpreter skills. First introduced as the “Five-Step `Microskills' Model of Clinical Teaching” (Neher, Gordon, Meyer, & Stevens, 1992), the approach has become a widely established way of framing teaching moments in clinical settings.

The *One Minute Preceptor* can help you to:

- Elicit critical thinking from learners about the case, rather than a factual summary.
- Gain greater insight into a learner’s clinical reasoning.
- Prompt and structure your feedback on the learner’s performance.

On the next slide, you’ll be presented with a modified version of the framework.

ONE MINUTE PRECEPTOR (MODIFIED)

Skill	Learner activity	Preceptor action	Rationale
Get commitment	Performs clinical skill and awaits guidance	Observation	Promotes higher order thinking in learner and more useful assessment and feedback in teacher
Probe for understanding	Links commitment to underlying data, reasoning and evidence	Assesses learner's use of data, key features and reasoning to formulate problems and decisions	Promotes development of independent clinical reasoning skills
Teach general rules	What can be or was learned from the encounter	Key features, pearls and pitfalls of specific clinical encounter, targeted to level of understanding	Instruction more memorable and useful when attached to clinical context by general rule or guiding principle
Provide Consolidative feedback	Self-appraisal identifies success	Comment on specifics of the success and what effect it has	Explicit reinforcement consolidates and improves nascent skills
Provide Constructive feedback	Self-appraisal for omissions distortions or misunderstandings	Thereafter ASAP discuss how to avoid or correct in future	Unattended mistakes recur

Adapted from: Neher JO, Gordon KC, Meyer B, Stevens N. A five-step microskills model of clinical teaching. J Am Board Fam Prac. 1992;5:419-24

SCENARIO B

Later that evening, another patient arrives who is stable but is much more complicated. You wonder if the case may be “over the head” of the medical student who is working with you.

The student reminds you that they had asked to accompany you and would really like to be involved in seeing the case.

- What teaching method you would use to proceed?
- Think of reasons for your choice, and then see the next slide.

ACTIVE OBSERVATION

Active observation is a good introductory strategy for novice learners, when the complexities and required skills of the patient assessment are still too sophisticated for the learner.

During active observation, the learner sees the patient with the preceptor and is asked to observe the preceptor perform a clinical skill, which might include communication, history taking, physical examination, or other procedures.

Active observation allows the learner to see patients and observe overall approaches and cadences of clinical interaction, despite having limited clinical knowledge or skills.

Surveys of learners have shown that active observation learning experiences are very highly rated.

KEEPING IT ACTIVE: AN EXAMPLE

You can prevent active observation from turning into passive "shadowing" by taking the following steps:

- Describe the rationale for the observation, e.g. "Proper assessment of motor power is important in the examination for an upper motor neuron lesion."

- If not already in the room introduce the learner to the patient.

- Declare exactly what should be observed, e.g "Watch how I examine the motor power, especially comparing sides and flexor and extensor groups."

- Allow the learner opportunity to practice, e.g. "On the next patient, I want you to examine for the presence of an upper motor neuron lesion, with special attention to motor power."

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ASKING QUESTIONS

ASKING QUESTIONS

Asking questions is an important way of determining your learners' level of knowledge and skill. Without asking, you can only infer knowledge and skills in others.

Asking questions also helps shift the focus for learners from thinking about facts *(who and what)* to reasoning and problem-solving *(why and how).*

Different types of questions have different uses. You should choose your questioning method based on what learning it is that you wish to promote. Examples of the most common types of question are found on the next slide.

QUESTIONING

Type	Use	Example	Pro	Con
Convergent	Determining basic knowledge or level	List three causes of congestive heart failure.	Predictable	Teacher talks
Divergent	Stimulates: Interaction Discussion New approaches	Your colleague is uncertain whether the patient has congestive heart failure. What do you think?	Others engaged Redirects	Unpredictable
Probing	Explores reasoning	Can you explain why you think congestive heart failure is the most likely diagnosis?	Clarifies, validates Explores HOTS	Intrusive Challenging Critical

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GIVING FEEDBACK

FEEDBACK

Feedback is a critical component of the teaching-learning cycle, and for that matter deliberate practice. Without knowing outcomes of our performance it is not possible to continue what is successful and stop or correct what is not.

When done well, giving feedback provides external scaffolding to promote and guide the individual's process of self reflection.

vignette

GIVING FEEDBACK ON-CALL

It is evening on-call in the emergency department. A very flustered and obviously busy senior resident comes down to review the case with you and the student.

The senior asks the medical student to provide a summary of this patient who has a septic arthritis of the right knee.

At this point the senior briefly asks some questions of the patient and examines the knee and then you all step outside of the room.

vignette

Senior: “I‘d just like to give you a little feedback on your summary.”

Student: “Okay.”

Senior : “Your summary was alright, but I am a bit concerned about your reasoning skills…”

Student: Appears a bit taken aback.

Senior :“…you left out the fact that the person has obvious underlying rheumatoid arthritis, and you didn’t link the story with your conclusions very well.”

“For example, you didn’t mention any details about the results of the aspiration they did when the patient arrived.”

Senior: “Making summaries is useful for developing clinical reasoning skills. Also, you didn’t mentioned anything about management although in retrospect given your summary we would have to discuss it differently anyway.”

“It’s important for you to learn to take ownership of patients, and part of that is making a diagnosis and reasonably detailed management plan. I know it’s a lot of work but if you aren’t interested in doing that, then it really limits what we can do together. Okay?”

Student (quietly): “Okay”

Senior: “Well, anyway, I suggest we move on, as there a two new people the emergency doc has asked us to see. Look, generally you are doing very well, but you really need to work on your summary skills. Okay?”

Student: “Alright.”

WHAT DO YOU THINK?

How would you rate the quality of this feedback: good, satisfactory, unsatisfactory?

What could be improved? If you think it could be improved, how would you have done it differently?

TWO TYPES OF FEEDBACK

Broadly speaking, there are two types of feedback: summative and formative.

Summative feedback

- E.g. Your dinner guests compliment you on the soup you made.
- A summary judgment of performance.
- What most people think of as feedback.

Formative feedback

- E.g. Before your dinner guests arrive, you ask your spouse to taste your soup and tell you if there is enough seasoning.
- Provides interim information to improve or consolidate performance.
- An essential component of teaching.

HOW TO GIVE FEEDBACK

Feedback can inform the learner to start stop, continue, or change behavior. If done well all feedback is "positive"; only varying in whether it is consolidative or constructive.

Be objective and accurate. Base your feedback on observed behaviors rather than inferred beliefs or values.

- **Do:** "You did not allow time for the patient to ask questions at the end of the interview."

- **Don't:** You did not seem interested in what the patient thought about your treatment plan."

Be pertinent, consolidating, and constructive

- Focus feedback on mutually agreed upon objectives and goals.

- Consolidative feedback plays an important role in letting your learners know what they are doing well (continue), or have mastered a task. It is not only edifying-it frees the learner to concentrate on any other areas in need of improvement.

Keep it short and to the point

Keep observation periods short to allow for focused feedback.

- Smaller units of feedback, spread out over time are more valued than big infrequent chunks.

Give feedback that is actionable

- Constructive feedback should be specific and limited in amount, and focused on issues the person can control, with clear and useful instructions for improvement that are linked to enabling support.

- Giving too much information at a time may overwhelm the listener, who may then either disregard everything, or pull out the points that confirm their own impressions, rather than the ones you believe are most important and pertinent.

Feedback should be ongoing and frequent.

- The most common complaint about feedback is its absence. “If only someone had told me how I was doing!”
- Regular feedback creates an expectation of feedback which enhances receptivity and positive response in learning behaviors.
- Unexpected feedback, especially if it is not objective or actionable, is likely to produce a negative emotional response.
- Feedback should be as immediate as possible — especially after a critical incident has taken place.

When should you wait to give feedback?

- If appropriate, allow learners to complete their performance before delivering feedback.
- In an emergency or potentially embarrassing situation, postpone feedback for a suitable time.

A SCRIPT FOR GIVING FEEDBACK

1. Listen to self-evaluation first.

- If necessary, ask the learner to be specific, and balanced, outlining both what they thought went well and what did not. This serves to inform you of the learner's perception of their performance, and also promotes increasing their skill and judgment in self assessment.

2. Use this self evaluation to customize your feedback.

- Depending on the quality of the self-evaluation you may have much or little to do. Learners inexperienced in self assessment often generalize or polarize assessment of their performance, and may require considerable "scaffolding" with your feedback. With an experienced adult learner with good self evaluation skills, aside from agreeing with their assessment, your main task may be to help them link the assessment to action plans!

3. Discuss and validate what was done right and should be continued.

4. Discuss what needs starting, stopping or improving.

5. Decide what to do next time.

- There should always be a recognizable action outcome to the feedback given, be it continuance, starting, stopping, or changing of behaviors.

6. Provide clear and useful instructions and support for improvement

- "This is where "teaching pearls or general rules" are often discussed.

7. Summarize feedback and plan

- Whenever possible, this should be the ***learner's*** task. Communication is generally more difficult and less effective than we think it is! This is the means to ensure you both share the same understanding about the feedback and plans.

“We are what we repeatedly do. Excellence, then, is not an act but a habit.”

— Aristotle (384-322 BC)

8

SUMMARY

IN SUMMARY

Clinical teaching has unique opportunities and challenges and there are many reasons for you to become involved in clinical teaching. Although clinical teaching can be challenging, there a number of ways you can prepare yourself.

- Frame teaching encounters with the **"RES STAR"** approach.

In addition, there are some effective tools that you can use everyday:

- The One Minute Preceptor
- Active Observation
- Effective Questioning
- Effective Feedback

So go out and use these techniques to improve the effectiveness and enjoyment of your teaching!

ONE MINUTE PRECEPTOR (ORIGINAL)

1. Get a commitment

Ask the learner to verbally commit to an aspect of the case.

2. Probe for supporting evidence

Explore the basis for their answer.

3. Reinforce what was done well

Tell the learner what they have done well.

4. Give guidance about errors and omissions

Tell the learner what areas need improvement.

5. Teach a general principle

Find a teaching point that can be applied to other situations.

Adapted from: Neher JO, Gordon KC, Meyer B, Stevens N. A five-step microskills model of clinical teaching. J Am Board Fam Prac. 1992;5:419-24

CREDITS

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[See references]

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