

Teaching Module

McGaw Medical Center of Northwestern
University

Residents as Teachers and Leaders (RATL)

Based on module produced for
Residents as Teachers Task Force of the
Alliance of Academic Internal Medicine
(AAIM)

Joyce Wipf, MD
University of Washington
Seattle, WA

Paul Aronowitz, MD
California Pacific Medical Center
San Francisco, CA

Acknowledgments to:
Doug Paauw, MD, University of Washington
Joseph Rencic, MD, Tufts University

Paul E. Méndez MD FACP
Assistant Dean for Clinical Curriculum
University of Miami Miller School of Medicine

Yvonne M. Diaz MD FACP
Internal Medicine Assoc Program Director
University of Miami Miller School of Medicine

Who was your favorite teacher?

Why?

What characteristics have your favorite teachers had in common?

Features of excellent teachers

- Enthusiastic
- Knowledgeable but not afraid to say, “I don’t know”
- Accessible
- Shows interest in the learner and his/her progress
- Actively involves the learner
- Helps the learner to expand skills
- Provides direction and feedback
- Role model
- Good bedside manner

What teaching opportunities have you had so far as an intern?

***Your last teaching encounter
with a student.....***

Why is intern/resident teaching important?

- Residents enjoy teaching and leading a team
- 20% of resident time spent in teaching activities¹
- One-third of medical student knowledge is attributable to housestaff teaching²
- Residents who teach retain more knowledge
- *“To teach is to learn twice”*

¹Greenberg LW et al. Med Ed 1984

²Bing-You RG, et al. Med Teach 1992

³Morrison, EH et al. Acad Med 2001

*How can you teach when you
don't have time?*

Case 1

- An unemployed 62 year old, alcoholic man is admitted from the ED for fever, cough productive of blood streaked sputum and a right upper lobe infiltrate —

-What brief teaching points could you make before the student sees the patient?

-How would you frame this case?

-What physical exam teaching could you do?

-What lab data would teach about?

Case 2

Go see Ms. Walker in the ER...and please take the MS3 with you....

- 42 year old woman with chief complaint of shortness of breath:
 - Poor dentition
 - Bibasilar rales
 - III/VI systolic murmur and ? Diastolic murmur at right and left upper sternal borders
 - Painful nodules on palmar aspects of 2 fingers
 - WBC 22,000; 22% bands
 - Chest Xray: Mild pulmonary vascular congestion

| ***What would you teach the student?***

Keep the Student Involved

- Let the student help you
- Get the student involved in the assessment
- Review physical exam findings at the bedside

Helping them learn better.....

- Teach your most important 1 or 2 PEARLS about each case
- Lean, clean pearls are the best!
 - Avoid overwhelming the student with too much information
 - KEEP IT RELEVANT AND TO THE POINT!
- Remember to repeat later or ask them what they remember
 - Repetition works

Teaching when admitting patients:

History

- Have the student assess the patient on his/her own or observe the student's H&P filling in the "holes" in the evaluation as necessary
 - Save your questions for the end

Tips for Teaching Students:

Physical exam

- Review physical exam findings to insure the student “observed” what you found

Tips for Teaching Students:

Assessment and Plan

- The assessment and plan is the most critical part of teaching about a new admission because it helps the student to learn how to reason clinically

Teaching with an Acute Patient

- Key Principles
 - Teach by example
 - Think aloud
 - Focus on practical teaching
 - Reading a chest x-ray or ECG
 - Reflection is critical!
 - Without this, the student is unlikely to learn

How would you handle this and still teach?

- The student is with you while you are rounding on a Saturday, post-call. You have tickets to go to a major league baseball game with your spouse at 3pm (since you know you'll be out by 1pm post-call) and you're tired.

A nurse approaches you to ask you to see one of your patients who is a 69 year old man admitted for cellulitis who has suddenly become tachypneic, tachycardic, lethargic, and hypoxic.

Role-Modeling

- *“This patient is very sick. I want you to observe how I handle this situation. Save any questions you have and I’ll answer them as soon as we stabilize the patient.”*
- By thinking aloud, you help the student to understand how you are making decisions

Teach During Downtime

- ECG completed, IVF started, respiratory in the room obtaining ABG
 - *“Let’s look at this ECG together while the RT does the ABG....”*

Reflection Period

- Patient is transferred to the ICU given his deterioration. He is on heparin, MICU team now on the case
 - *“That was a pretty intense situation. I made a lot of decisions quickly. Do you have any questions about my diagnostic or therapeutic approaches?”*
 - *“Did you understand what I meant when I said heparin would stop clot propagation? If we wanted to dissolve the clot, what medication would we need to use?”*

Tips for Teaching:
“Prime” the student

- Before seeing a patient, give the student a bit of information to help him/her focus and be more organized
- Example: *“We are going to see a patient with chest pain. What are common causes of chest pain in this age group?”*

Case 3

- It's been an unusually quiet call night so your resident decides to give the student a demented nursing home patient admitted for a urinary tract infection and a sodium=147. The patient probably didn't need hospitalization. She has moderate mitral regurgitation and chronic atrial fibrillation but nothing else.
- What would you teach the student?

Summary Tips for Being a Great R1 Teacher

Ask questions!!! Most students love to be queried if you are supportive and non-threatening in your questioning

Summary Tips for Being a Great R1 Teacher

- Balance lower order (facts) questions with higher order (analytic thinking)
 - Examples of “higher order” questions:
 - *What do you think is going on?*
 - *What do you want to do next for this patient?*
- questions!!! Most students love to be queried if you are supportive in your questioning*

Don't forget to provide feedback

- When to do it?
- How to do it?
- Why is it so hard?

Using “RIME” to Teach

RIME

- Reporter
- Interpreter
- Manager
- Educator

Observer

- Pre-reporter status
- Passively observes, but cannot meaningfully contribute to patient care activities
- Failing student

Reporter – M2 to M3

- Accurately gathers history and performs basic physical examination
- Clearly organizes and communicates data, orally and written
- Able to recognize normal from abnormal and identify a new problem
- Reliable: day-to-day, punctual, follows-up

Reporter

Resident – Let's go see our next patient, Ms. Gonzalez. She's our patient with breast cancer on chemotherapy who was admitted with neutropenic fever. How did she spend the night?

Student – She had a fever of 38.5.

[Pregnant pause – student with a deer-in-the-headlights look]

Resident – What other information would be important in a patient with a fever.

Student [a light goes off in his head] – She doesn't really have any complaints. She denies any chills, sweats, cough, diarrhea, abdominal pain, or burning on urination. Her blood pressure was 126/78 with a pulse of 84. She was a little warm to the touch. Her lungs were clear. Her labs this morning show her white count dropped to 2.1K.

Resident – What do you think is causing her fever?

Student – She has no symptoms of a cold or UTI or other infection. I'm not sure – it could be lots of things.

Interpreter – M3 to Intern

- Independent and critical thinking
- Prioritizes problems and Develops a Diff Dx
- Interprets follow-up test results
 - Higher level of knowledge
 - Skill in selecting data which support diagnosis
 - Applying test results to specific patients

Interpreter

Resident – Let's go see our next patient, Ms. Gonzalez. She's our patient with breast cancer on chemotherapy who was admitted with neutropenic fever. How did she spend the night?

Student – She had a fever of 38.5 last night. She's feeling fine except for a cough. In addition to her fever, she has some tenderness around the site of her central line, though it's not red or draining pus. The lungs are clear and the remainder of her exam was normal.

As you mentioned, she's neutropenic likely due to her chemo. Her white count is 2.1K with an ANC < 500. As such, this is a neutropenic fever. I think a pneumonia or a line infection could account for her fever as well, since both of these are common complications that arise in hospitalized patients.

Resident – How are you going to find out which it is?

Student – We ordered a CXR this morning before rounds, but it's not done yet. I guess we could draw blood cultures.

Resident – Do you want to start her on antibiotics?

Student – I guess so.

Resident – Which would you choose?

Student – Well, this would be a hospital-acquired pneumonia, so we need to consider pseudomonas and staph. And if it's a line infection, staph or strep are the common culprits. So an antibiotic that would cover these, but I'm not sure which one.

Manager – Sub-I to Resident

- Actively and directly involved in pt care
- Decides when action needs to be taken
 - Takes more knowledge, confidence, and judgment
- Proposes and selects among different diagnostic and therapeutic options
- Tailors the plan to the particular patient

Manager

Student – Ms. Gonzalez had a fever of 38.5 last night. She’s feeling fine except for a cough and some tenderness around the site of her central line, though it’s not red or draining pus. Otherwise her physical is unchanged from yesterday. Her white count is very low from her chemotherapy; it was 2.1K with an ANC < 500. I think a pneumonia or a line infection could account for her fever, both of these being common complications that arise in hospitalized patients.

I would order a chest xray to rule out a pneumonia and blood cultures both peripherally and from her line to see if she has a line infection. I would start her on Cefipime.

Resident – Good job. What organisms are you hoping to cover with the Cefipime?

Student – Cefipime is used for neutropenic fevers. It has good broad spectrum coverage.

Resident – True, but is it good for your other potential diagnoses? Will it cover pneumonia and line infections?

Student – It should. Well, line infections are frequently due to Staph. Maybe we should use Vancomycin.

Educator – Resident / Attending

- Insight to define important questions and independently seeks the answers
- Self-directed learning
- Shares leadership in educating the team
- Driven to find evidence on which to base clinical practice and has the skill to know whether it will stand up to scrutiny

Educator

Student – Ms. Gonzalez has a neutropenic fever likely from a line infection. After drawing cultures, ID recommended starting her on Cefepime. I questioned whether monotherapy was sufficient and looked it up. I found an article in Cancer from 2003 showing efficacy with monotherapy with Cefepime or Imipenen. They found a 75% response rate with Cefipime alone. However, they added Vanco if there was reason to suspect a gram-positive infection. The problem is that if we suspect Ms. Gonzalez has a line infection, maybe we should add Vanco. Should I call ID again?

Resident – Let me see the article. But from what you tell me, it sure sounds like it.

Using RIME as a teaching tool

- Easy to understand
- Identify present level and the level one should be striving for
- Facilitates giving specific feedback, providing the “next step” (action plan)

“Active Learning Credo”

Silberman, 1996 Active Learning 101 Strategies

- What I **hear**, I forget.
- What I hear & **see**, I remember a little.
- What I hear, see, & **ask questions about or discuss** with someone else, I begin to understand.
- What I hear, see, & **do**, I acquire as knowledge and skill.
- What I **teach** to another, I master.

Important: On completion of your review of the 5 modules, please log into New Innovations (NI) and complete the attestation form.

<https://www.new-innov.com/login/>