PUTTING THE FUN BACK INTO BEDSIDE TEACHING: PT06

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Ohio State University

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Overall goals:
1. Improve faculty knowledge of effective bedside teaching skills
2. Increase faculty comfort at the bedside
3. Demonstrating innovative approaches to bedside teaching

Learning Objectives:
After completing this workshop, participants will be able to:
1. Identify barriers to BT and generate solutions.
2. Identify various themes that can be emphasized at the bedside (physical exam skills, humanistic skills, link clinical signs with history of medicine etc).
3. Generate solutions for problems occurring during bedside teaching sessions.
4. Practise and observe different strategies for bedside teaching in small groups.
5. Discuss tips and techniques to make bedside learning fun for teachers and learners.
**AGENDA**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Time</th>
<th>Faculty</th>
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<tbody>
<tr>
<td>Introduction, agenda, goals</td>
<td>10 min</td>
<td>Subha Ramani</td>
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<tr>
<td><strong>Videotape:</strong></td>
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<tr>
<td>Vanishing rounds</td>
<td>20 min</td>
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<tr>
<td>and brainstorming of barriers</td>
<td>15 min</td>
<td>Subha Ramani</td>
</tr>
<tr>
<td><strong>Barriers to bedside teaching and strategies:</strong></td>
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<tr>
<td>Patient related barriers</td>
<td>5 min</td>
<td>Jack Ende</td>
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<tr>
<td>Process and logistics</td>
<td>5 min</td>
<td>Kurt Kroenke</td>
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<tr>
<td>Learner related barriers</td>
<td>5 min</td>
<td>Catherine Lucey</td>
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<tr>
<td>Teacher related barriers</td>
<td>5 min</td>
<td>Linda Pinsky</td>
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<tr>
<td><strong>Small group stations</strong></td>
<td>80 min</td>
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<tr>
<td>Use of technology in bedside teaching</td>
<td>20 min</td>
<td>Lucey and Pinsky</td>
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<tr>
<td>Incorporating an evidence based approach to bedside teaching</td>
<td>20 min</td>
<td>Ende</td>
</tr>
<tr>
<td>Teaching a focused physical exam</td>
<td>20 min</td>
<td>Kroenke</td>
</tr>
<tr>
<td>Teaching a humanistic approach at the bedside</td>
<td>20 min</td>
<td>Ramani</td>
</tr>
<tr>
<td><strong>BREAK</strong></td>
<td>10 min</td>
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<tr>
<td><strong>Tips and tools for fun at the bedside</strong></td>
<td>30 min</td>
<td>All</td>
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<tr>
<td>Buzz group discussions</td>
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<tr>
<td>Audience brainstorming</td>
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<tr>
<td><strong>Conclusion</strong></td>
<td>10 min</td>
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**Background:**

Bedside teaching is an essential method of clinical teaching. There are many skills that cannot be taught in a classroom and require the presence of a patient, real or simulated. Although many clinical teachers find this an intimidating mode of teaching that bares their own deficiencies, they need to realize that all of them possess a wide range of clinical skills that they can teach their junior and far less experienced trainees. Some common sense strategies combined with faculty development programs at individual institutions can overcome some of this insecurity and promote bedside rounds which can be educational and fun for teachers and learners alike. Teachers face challenges in 2 major domains:

- **Clinical domain:**
  - Am I up to date?
  - How can I compete with the senior resident's knowledge of the latest cardiovascular drugs when he or she has just completed a month in the coronary care unit?
  - Two months of ward attending per year are not enough to know a lot of inpatient medicine.

- **Teaching domain:**
  - Can I teach this large, heterogeneous group of learners?
  - How can I teach these learners who are always busy and harried?
  - Can I teach something valuable at the bedside?

Teachers may overcome above challenges by simplifying the roles of the patient, teacher, and trainee at the bedside:

- **Role of the patient**
  - Selectivity: not all the team patients need to be seen by the entire team for educational purposes.
  - Some bedside teaching can occur in settings outside of attending rounds, such as resident work rounds or with individual learners.
  - Of those patients identified for bedside teaching, some may be seen by that attending accompanied by a few, rather than all, learners.

- **Role of the attending:**
  - Lunar model: The attending does not always have to be the dominant discussant. They can be the moon orbiting around the learners who are planets, all orbiting around the patient who is the sun.
  - Good teachers know when to hang back and be silent, when to watch and wonder at what is taking place all around them. They can push and pull when necessary—just like midwives—but they know that they are not always called upon to perform.

- **Role of the Trainee: Levels of Self-Directed Learning**
  - Level 1: The attending gives an assignment: "Why don't you look up the differential diagnosis of hyponatremia?"
  - Level 2: The learner is given more discretion and offered a menu: "The key problems in this patient are anemia, jaundice, and hyponatremia. Which one would you like to look up and report back to us about?"
Level 3: The learner is encouraged to identify his or her own educational goals: "What do you find most interesting in this case? Why not read up on this and report back?"

Level 4: SDL becomes autonomous when the trainees themselves discover learning gaps, finds information, and reports back to the group and/or applies it to the patient.

Some other issues for teachers to consider

- How will the hospitalist movement influence inpatient medical education?
- What is the optimal balance of inpatient and ambulatory education?
- Should there be a critical evaluation of the format and teaching aims of work rounds, morning report, and noon conferences?
- Should teachers engage in educational experimentation?

In Sir William Osler’s words, “To study the phenomenon of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all”. (Osler, 1903)

BARRIERS AND TEACHER INSECURITIES

Barriers to bedside teaching and teacher insecurities are reviewed below and tips and techniques to increase teacher confidence and transform into a fun and stimulating encounter are described.

Individual Barriers to Bedside Teaching Based on Responses from Four Focus Groups Drawn from Internal Medicine Faculty and Chief Residents, Boston University School of Medicine Affiliated Hospitals, May 1998

<table>
<thead>
<tr>
<th>Category</th>
<th>Barrier</th>
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<tbody>
<tr>
<td>Teacher-related</td>
<td>Declining bedside teaching skills in current generation of teachers compared with past teachers</td>
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<tr>
<td></td>
<td>Inexperience with bedside teaching</td>
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<td></td>
<td>Performance pressure which is mostly self-imposed: the belief that one cannot achieve superior standards set by past master clinicians</td>
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<td>Lack of control (thin-ice syndrome): bedside sessions are often unpredictable and one cannot always be prepared for every situation</td>
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<td>Difficulty in engaging all team members: a team is composed of different levels of learners</td>
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<td>Lack of motivated teachers: teachers themselves not</td>
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</table>
believing that bedside teaching is worthwhile

View held by some that bedside teaching should be done by more junior educators such as residents or chief residents

<table>
<thead>
<tr>
<th>Teaching-climate–related</th>
<th>Time constraints: most faculty have numerous responsibilities (clinical or research) and often do not have dedicated time to teach</th>
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<tbody>
<tr>
<td></td>
<td>Lack of faculty training in bedside skills</td>
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<td>Lack of rewards for teaching (as perceived by faculty)</td>
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<td></td>
<td>Lack of teaching role models in faculty's own training</td>
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<tr>
<th>System-related</th>
<th>Interruptions (phone calls, visitors, pages)</th>
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<tr>
<td></td>
<td>Short patient stays</td>
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<td></td>
<td>Too much technology: overabundance of data leading to discussion of the data rather than the patient, compounded by a belief that technology can provide all the answers</td>
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<table>
<thead>
<tr>
<th>Patient-related (as perceived by teachers and learners)</th>
<th>Perceived patient discomfort: faculty and learners believe that patients are not comfortable being discussed by a large team</th>
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<tbody>
<tr>
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<td>Ill patient: patient too medically unstable to cooperate with thorough history taking or additional physical exam</td>
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<td>Absent patient: patient having procedures at a time dedicated to teaching rounds</td>
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<td></td>
<td>Patient misinterpretation of discussion: during discussion of differential diagnoses or prognosis, especially when too much medical jargon is used.</td>
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<td>Patient privacy issues: belief that patients are concerned about discussion of their illness and other confidential data within earshot of other patients</td>
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<td>Uncooperative/angry patient</td>
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<thead>
<tr>
<th>Miscellaneous</th>
<th>Large crowd in small room</th>
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<td></td>
<td>No blackboard or x-ray view boxes for discussion</td>
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</tbody>
</table>
Inability to refer to textbook
Teacher and learner hesitation in discussing differential diagnoses
Fear of undermining housestaff
Learner fatigue

STRATEGIES FOR EFFECTIVE BEDSIDE TEACHING


12 simple tips to bedside teaching

Tip 1: Preparation
- Familiarize yourself with the clinical curriculum to be taught.
- Investigate the knowledge and the clinical skill levels of the learners. This is best done by allowing learners to present their learning objectives during orientation and observing their skills in person.
- Physical diagnosis is a skill you can learn through study and practice
  - Steve McGee- Evidence Based Physical Diagnosis
  - Rational clinical examination series JAMA (see page 25)
  - Multimedia resources (CD-ROMS, tapes, videos) (see page 14)
- If at all possible, see the patient first yourself to familiarize yourself with possible teaching agendas and techniques.
Tip 2: Planning

Key planning questions for teachers:

- What do you hope to accomplish?
- What is your point of view?
- How will your learners be engaged?
- How will you meet the needs of each learner?
- How will rounds be organized?
- Are your rounds successful?
- How will you make the time?

Tip 3: Orientation

- Obtain objectives of learners
  - “How should we spend our time with this patient?”
  - “Would you prefer that I observe you or would you like me to role model this encounter?”
- Orient the learners to the objectives of the exercise.
- Coach for success
  - Let’s review how we are going to deliver bad news
  - Consider role play preparation for high stakes patient encounters (dealing with a patient known to be angry; delivering serious news)
- Assign roles to each of the team members thus engaging everyone.
  - Consider assigning some to do sequential aspects of the history, some to watch the patient’s reactions; some to gather global diet on the patient
- Establish team ground rules.
  - Encourage team to not answer other’s questions (remind them of the value of wait time for complex questions)
  - Remind them the importance of maintaining the primacy of the patient-primary doctor relationship.

Tip 4: Introduction

- Introduce yourselves to the patient.
- Orient the patients about what is being planned during the bedside encounter. Eg: Patients need to be told that the encounter is primarily intended for teaching and that certain theoretical discussions may not be applicable to their illness.

Tip 5: Interaction

- Role-model physician-patient interactions.
- Teach professionalism and a humanistic bedside manner.

Tip 6: Observation

- Do not feel the need to put on a show at the bedside: teachers do not need to dominate the bedside encounter.
- Observing the trainees’ interaction with the patient at the bedside can be very illuminating. In addition to observing physical diagnosis maneuvers, the bedside is a good place to observe doctor-patient relationship skills.
How does the patient react to their presence? (do they seem happy to see them? Do they recognize their doctor?)

- How comfortable does the resident seem with the patient?
- What kind of body language are they using and what does that convey to the patient?
- What language is used to discuss concepts?
- Is negotiation evident?
- If this is a new patient to them, how are their rapport building skills?

Use your observations to help teachers plan their future teaching rounds.

**Tip 7: Instruction**

- **Question wisely**
  - Avoid asking the trainees impossible questions and “read my mind” types of questions.
  - Avoid asking questions of junior learners when a senior learner has missed the question.
- Correct gently (remember the patient must have faith in their doctor!)
  - “Let me show you an alternate approach to feeling the liver edge” rather than “your hands are in the wrong place”
  - “I always find this part of the exam difficult to interpret” to compensate for a trainees misguided efforts
  - “this is a controversial subject and there are many ways in medicine to skin a cat” to compensate for misstatements by trainees.
  - You may need to reinforce at a later, more private time, if the error was egregious
- **Role model discovery**
  - Admitting one’s own lack of knowledge might set the tone for trainees admitting their limitations and a willingness to ask questions.
  - Emphasize that you are willing to learn from the trainees as well as the patient.
- Avoid lectures at the bedside—instead, use the bedside for the types of teaching that can only be done at the bedside (Demonstration of clinical and relationship skills).
- Teach professionalism, observation. (see page 27 for other techniques)
  - Demonstrate respect for the learner and their relationship with the patient
  - Demonstrate respect for the patient
- Keep all learners engaged to avoid boredom.
- Capture unanticipated teachable moments, both positive and negative.
  - Deal with strong emotions rather than plowing ahead with the lesson plan

**Tip 8: Summarization**

- Summarize what was taught during that encounter.
- Patients also need a summary of the discussion, what applies and what does not apply to their illness and management.

**Tip 9: Debriefing**
• Leave time for questions, clarifications, assigning further readings etc.

**Tip 10: Feedback**
- Find out from learners what went well and what did not.
- Get suggestions from learners for your next exercise.
- Give positive and constructive feedback to learners based on your observations.

**Tip 11: Reflection**
- Think about the bedside encounter.
- Evaluate what went well and what went badly.
- Decide what you would do the next time.

**Tip 12: Preparation for the next encounter**
- Start your preparation for the next encounter with insights from your reflection phase.
Strategies for Increasing and Improving Bedside Teaching Based on Responses from Four Focus Groups Drawn from Internal Medicine Faculty and Chief Residents, Boston University School of Medicine Affiliated Hospitals, May 1998

<table>
<thead>
<tr>
<th>Timing</th>
<th>Things to Do</th>
<th>Detailed description</th>
</tr>
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<tbody>
<tr>
<td><strong>Before rounds</strong></td>
<td>Prepare</td>
<td>Formulate goals for each session, read before rounds</td>
</tr>
<tr>
<td></td>
<td>Orient: Learners</td>
<td>Learners need to be aware of the goals of the teacher: demonstration of physical findings, communicating with a difficult patient, modeling professional behavior, etc.</td>
</tr>
<tr>
<td></td>
<td>Patients</td>
<td>Bedside rounds need to be fit into the patient's schedule and the patient needs to be oriented to the purpose of the rounds</td>
</tr>
<tr>
<td><strong>During rounds</strong></td>
<td>Establish environment</td>
<td>A comfortable environment, where learners can ask questions without restraint and say &quot;I don't know&quot; without feeling humiliated.</td>
</tr>
<tr>
<td></td>
<td>Respect: Learners</td>
<td>Treat students and residents with respect; defer to them as a primary caregiver for the patient; challenge intellectually without humiliating</td>
</tr>
<tr>
<td></td>
<td>Patients</td>
<td>Treat patient as a human being, not object of teaching exercise; be sensitive to how the disease has affected the patient's life</td>
</tr>
<tr>
<td></td>
<td>Engage everyone</td>
<td>Teaching to be catered to all levels of learners and everyone encouraged to participate</td>
</tr>
<tr>
<td></td>
<td>Involve patient</td>
<td>Patient encouraged to correct and contribute to details of history, ask questions about management and prognosis; medical jargon explained in lay terms</td>
</tr>
<tr>
<td></td>
<td>Match teacher–learner goals</td>
<td>Teachers should find out what learners would like out of the session and cater to their needs and deficiencies</td>
</tr>
<tr>
<td><strong>After rounds</strong></td>
<td>Debrief</td>
<td>At the end of the session, learners should have time to ask questions, get and give feedback; teachers should ascertain that session was mutually beneficial.</td>
</tr>
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ADDITIONAL STRATEGIES

**Innovative techniques in bedside teaching:**
- Use technological aid to supplement what is taught at the bedside.
- Teach physical diagnosis using an evidence based approach.
Emphasize humanism and professionalism in a physician-patient encounter: there is no better venue to role-model these elements. (see page 27)

Teach how to conduct a quick and focused physical exam in 5 minutes and apply the information to patient care.

**Tackling learners’ anxiety**
- Establish a comfortable learning climate for the learner, the patient and yourself
- Consider directed demonstrations
- Reassure learner that you will try not to embarrass anyone, including the patient and the patient’s physician (the learner.)
- Maintain the learner patient relationship; refer the patient’s questions to the learner
- Prime the learner ahead to address deficiencies before seeing the patient.
- Make gentle corrections when necessary

**Correcting learners’ mistakes:**
- Mistakes will happen : Discuss ahead
- Decide what to do if correction needed in room
  - Normalize differences between MD’s
  - Frame issue for learner and patient
- Promote learner self-discovery
- Reflect with learner afterwards

**Bedside teaching on the fly:**
- Establish a positive learning climate- respect, admission of limitations
- Communicate goals
- Leadership style: democratic, “midwife” style
- Set roles for all team members
- Pick teaching points ahead of time
- Observe learners approaching their patients  Be prepared to grab the “unexpected teachable moment”
- Do not teach too much, no time for didactics at the bedside
- Demonstrate your thinking and reasoning
- Don’t expect too much of yourself every time
- Set time for timely feedback
1. TEACHING FOCUSED PHYSICAL EXAM: POINTERS

Ken Cox, from the School of Medical Education, University of New South Wales, wrote in the Medical Teacher, Vol. 20, No. 1, 1998 an article titled “How well do you demonstrate physical signs?” There are many simple techniques teachers can use to teach focused physical examination at the bedside.

Demonstration of physical signs at the bedside

**Patient**
- introduction of self
- explanation of what will happen
- position patient, light, screens
- inspect surface, anatomical landmarks

**Sequence**
- the order of the steps of the ‘drill’
- priorities about which steps are critical
- check list on whether all were done

**Skilled actions**
- skills with each action
- sensing the evidence accurately
- optimizing performance in speed and efficiency

**Imagery**
- mental picture of organs being examined
- ‘visualization’ of pathological changes

**Conscious concentration on the experience**
- focused awareness
- shutting off other sensory channels (sitting down, shutting eyes)

**Building confidence**
- positive feedback on sound performance
- guided practice, increasing responsibility

**Building ‘intuition’**
- encouraging ‘insights’ by linking sensory perception
- with verbal explanation
- fostering ‘clinical memory’ of ‘what it feels like’
- assisting connections to ‘clinical knowledge’

**Ensuring success**
- checking perception and interpretation of sign
- requiring persistence until certain
Common areas of difficulty noted during such training sessions have been:

- Lack of clarity in description of what to look at and what to look for;
- Lack of thoroughness and exactness in both explanation and demonstration;
- Limited ability to use all the senses of touch, sight, smell and hearing; and
- Inability to communicate these to the student;
- Talking too much, allowing too little time for student practice of the skill;
- Too little time for the student to get the `feel’ of the clinical feature;
- Failure to check that the student had learned accurately;
- Learning to balance concern for the patient with concern for the student.
2. USING TECHNOLOGY TO SUPPLEMENT BEDSIDE TEACHING

Guidelines on the use of technology for bedside teaching.

We are living in a time of great technologic resources. You can use multimedia products in two ways:

1. To improve the teacher’s and learners’ skills through self study
2. To coach your residents during attending rounds.

In traditional medical education, students are taught physical examination techniques. However, unless they have had the opportunity to view abnormal exams as well as normal exams (and importantly, someone was there to tell them what was normal or abnormal!); they may have had little exposure to physical diagnosis. In addition, some of their teachers may not have had exposure to good techniques and abnormals.

Residents and students will appreciate someone taking time to break the complex task of physical diagnosis into manageable bits of cognitive and psychomotor skills. You can use these multimedia tools to do so, thus “setting your residents up to succeed” at the bedside.

Rather than throwing them in cold to demonstrate their skills, take 15 minutes in the conference room and refresh (or develop!) their skills. Then, go to the bedside to apply what you have learned.

Example I:

**Bedside identification of extra heart sounds**

**Tool:** Criley’s Beyond Heart Sounds

**Techniques:**
Use the Sound Builder Segment of the CD to demonstrate:

**Nature of the sounds**

**Teaching points for you to make:**
- S1 and S2s are valve closure sounds. As such, they are snappy, like a door shutting. Look at the graphic representation of the S1 and S2 on the Sound builder—it is a sharp line.
- S3 and S4s are ventricular non-compliance sounds. As such, they are more of a rumbling or a shuddering—not nearly as crisp or clear.

**Demonstration:**
- Have the residents first listen to each of the sounds while looking at the picture.
- Then, have them listen with eyes closed and see if they can identify the sound by the characteristic of the sounds (you can just play an S2 if you like and just play an S3)
Timing of the sounds

Teaching points for you to make:

• Split heart sounds follow their main counterpart relatively quickly: Again, use the graphics on the Sound builder to show how close the two sounds of a split S2 are and then have the residents listen with their eyes open to the timing of the sounds.

• An S3 gallop is a mid diastolic sound. It occurs much later after the S2 than would a split S2. While you can talk about milliseconds, it is meaningless without the pictorial representation.

Demonstration:

• Again, have the residents look and listen, then listen alone to work on a comparison between the timing of the S2 split and the S2 S3 complex.

• Inspiratory variation can be demonstrated on some of the cases.

Conclusion of the lesson: A Systematic Approach to listening for heart sounds

• Listen carefully during several inspiration and expiration cycles to identify how many sounds are present.

• If all of the sounds have the same character (pitch and crispness), then you are dealing with split heart sounds and not gallops.

• If one of the sounds is different than the others from a pitch and crispness criteria, then you are dealing with a gallop. Recognizing that a wide space exists between the sounds is also useful.

Now go to the bedside and have them work through the process with the patient.
It is helpful (but not necessary) for you to have examined the patient first so that you can identify useful findings.

Explain to the patient that physical diagnosis is a difficult art that many physicians never fully master. Your team has accepted the challenge to improve their skills. Patients will generally be thrilled to participate in this activity.

Example II:

Search for Abnormal Neurologic Findings in a patient with a history of falling

Tool: NeuroLogic website (see Below)
http://medstat.med.utah.edu/neurologicexam/home_exam.html
Module: Use the coordination exam component to review normal and abnormal cerebellar findings.

Teaching Points:

- Use the anatomy section to review the neuroanatomy (briefly!) and particularly the pearls and traps sections
- Then move to the normal videos and use them to demonstrate techniques.
- Finally move to the abnormal videos and again, compare technique and what abnormal looks like.
  - I have found the pen and cap technique for past pointing to be very useful.
  - (I particularly enjoy the abnormal patient’s t-shirt which reads “ataxia is not a foreign car”).

Demonstration:
In the patient’s room, have different members of the group search for different findings. You might assign tasks before the instruction module.

General Websites for Physical Diagnosis:

http://depts.washington.edu/physdx/
This is the public website for the University of Washington’s excellent advanced physical diagnosis course. It contains evidence based information; good instructions and useful videoclips, photos and sound recordings.

http://medicine.osu.edu/exam/
This is the demonstration website for this excellent physical diagnosis website. The multimedia techniques and graphics are excellent.

http://www.meddean.luc.edu/lumen/gme.htm
This is the Loyola University website for graduate medical education. Bookmark this site as it is not easy to find under the search engines and the url is not intuitive! The pulmonary site is particularly good, as is the human cross sections tutorial which compares surface anatomy with CT slices (not physical diagnosis but it helps on rounds anyway!).

Cardiac Physical Diagnosis

Beyond Heart Sounds: The Interactive Cardiac Exam. Vol 1
J. Michael Criley
www.Medtech.com or www.medicalamazon.com

This is the second CD produced by this UCLA professor. Its best features include:
- a sound builder module which allows you to see and hear heart sounds alone and in combination
- A peel away view of chest anatomy from surface landmarks to the posterior aspects of the heart (useful for explaining why the AS murmurs sound loudest in the second intercostals space); and
- Many case tutorials to allow the individual to practice their skills

Cost: approximately $125.00

Web based resources
FamilyPractice.com
http://www.familypractice.com/heartlab/heartlab.htm

This is a nice and easily accessible website which has recordings of a variety of normal and abnormal cardiac sounds in their Heart Lab: Cardiac Auscultation Simulator. It also has unknown cases to review. Small figures at the top of the page indicate under which conditions the various murmurs or gallops are accentuated, but do not demonstrate the accentuation.

The site can be a little slow.

Auscultation Assistant: UCLA
http://www.wilkes.med.ucla.edu/intro.html

A basic website for heart sounds. The sound recordings are short, thus more difficult to teach from.

Pulmonary Physical Diagnosis
Loyola University Medical Education Network (LUMEN)
Advanced Physical Diagnosis: Arcot J. Chandrasekhar, MD, FRCP, FACP, FCCP
http://www.lumen.luc.edu/lumen/MedEd/medicine/pulmonar/apd/apd_f.htm

A good website which catalogues normal and abnormal pulmonary sounds. A great place to go if your learners have never heard egophony or a pulmonary rub. The only drawback is that it is a little hard to compare normal to abnormal sounds given the set up of the website.

Neurologic Physical Diagnosis
http://medstat.med.utah.edu/neurologicexam/home_exam.html
Larsen PD and Stensaas SS. NeuroLogic exam: an anatomic approach
This is a fantastic website with videos demonstrating normal and abnormal exams of the nervous system.

http://cim.ucdavis.edu/eyes/version15/eyesim.html
This is an extremely cool website which houses an eyemovement simulator. Your mouse moves the eyes and you can choose which lesions (12 muscles, 6 nerves) to add to the eyes. Requires a macromedia shockwave plug in.

http://courses.temple.edu/neuroanatomy/lab/index.htm
This website from Temple University has a series of film clips demonstrating different aspects of the neurologic exam. It is a useful site for technique review. Abnormal findings are described but not demonstrated.

Dermatology Physical Diagnosis

http://www.vh.org/adult/provider/dermatology/PietteDermatology/BasicDermatology.html
A website constructed by Walter Piette, MD from the University of Iowa for Virtual Hospital (www.vh.org). It is organized around different rash and lesion presentations. For some of the presentations, a tutorial in diagnosis is offered (for example, purpura).

Communication and History Taking Skills


Provides guidelines and demonstrations for basic to difficult communication scenarios. Has topical modules on breaking bad news, palliative care and end of life issues and genetic testing and counseling. This could be used to coach residents prior to working with the real patient.
3. USING AN EVIDENCE BASED APPROACH TO PHYSICAL DIAGNOSIS: CLINICAL EXAMPLES

**Does this patient have aortic stenosis?**
72 year old man with dyspnea

- H/O CHF
- Gradually ↑ DOE

**Exam:**
- BP 134/70  P 90
- Carotid pulse brisk
- JVP flat
- PMI mildly enlarged & sustained
- RRR nl S1 S2 No S3 +S4
- 2/6 mid-peaking systolic murmur LUSB radiating to carotids

**Is this patient’s dyspnea due to severe aortic stenosis?**

**Pulsus Parvus et Tardus**
- “Weak and Delayed”
- Clinical significance: Aortic stenosis
- Pathophysiology:
  - It takes longer for L ventricular systolic pressure to overcome the fixed resistance of the valve
  - LV outflow is limited by the stenosis
- Sensitivity 72%, specificity 98%

<table>
<thead>
<tr>
<th>Finding</th>
<th>LR+</th>
<th>LR-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prolonged carotid upstroke</td>
<td>40.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Prolonged murmur</td>
<td>43.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Late peaking murmur</td>
<td>43.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Radiation to R carotid</td>
<td>1.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Decreased or absent A2</td>
<td>43.2</td>
<td>0.6</td>
</tr>
<tr>
<td>S4</td>
<td>1.74</td>
<td>0.2</td>
</tr>
</tbody>
</table>
### LRs = Diagnostic Weights

<table>
<thead>
<tr>
<th>Likelihood Ratio</th>
<th>Change in probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Values greater than 1</td>
<td>10  +45%</td>
</tr>
<tr>
<td>INCREASE probability of disease</td>
<td>5  +30%</td>
</tr>
<tr>
<td></td>
<td>2  +15%</td>
</tr>
<tr>
<td>1.0</td>
<td>0</td>
</tr>
<tr>
<td>Values between 0 and 1</td>
<td>0.5  -15%</td>
</tr>
<tr>
<td>DECREASE probability of disease</td>
<td>0.2  -30%</td>
</tr>
<tr>
<td></td>
<td>0.1  -45%</td>
</tr>
</tbody>
</table>

From Steve McGee, Evidence Based Physical Diagnosis

### Bayes Theorem:

- Pre-test probability = 0.24 or 24%

- LR+ Radiation = 1.3 \(\sim\) NS
- LR+ S4 = 1.75 \(\sim\) +15%
- LR- Pulsus tardus = 0.2 \(\sim\) -30%
- LR- Diminished A2 = 0.2 \(\sim\) -30%

Post-test probability = 24 + 15 - 30 - 30 = \(\sim\)0%
Does this patient have pneumonia?

JAMA, Volume 278(17) 5 November 1997 pp 1440-1445

Does This Patient Have Community-Acquired Pneumonia?: Diagnosing Pneumonia by History and Physical Examination

[The Rational Clinical Examination]

Metlay, Joshua P. MD, PhD; Kapoor, Wishwa N. MD, MPH; Fine, Michael J. MD, MSc

From the General Internal Medicine Unit, Department of Medicine, Massachusetts General Hospital and Harvard Medical School, Boston (Dr Metlay), and the Division of General Internal Medicine, Department of Medicine, Center for Research on Health Care, University of Pittsburgh, Pittsburgh, Pa (Drs Kapoor and Fine). Dr Metlay is now with the Division of General Internal Medicine, Department of Medicine, University of Pennsylvania Medical Center, Philadelphia.

<table>
<thead>
<tr>
<th>Physical Examination Finding</th>
<th>Agreement, %†</th>
<th>κ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tachypnea</td>
<td>63</td>
<td>0.25</td>
</tr>
<tr>
<td>Reduced chest movement</td>
<td>70</td>
<td>0.38</td>
</tr>
<tr>
<td>Increased tactile fremitus</td>
<td>85</td>
<td>0.01</td>
</tr>
<tr>
<td>Dullness to percussion</td>
<td>77</td>
<td>0.52</td>
</tr>
<tr>
<td>Decreased breath sounds</td>
<td>...‡</td>
<td>0.43</td>
</tr>
<tr>
<td>Wheezes</td>
<td>79</td>
<td>0.51</td>
</tr>
<tr>
<td>Crackles</td>
<td>72</td>
<td>0.41</td>
</tr>
<tr>
<td>Bronchial breath sounds</td>
<td>...‡</td>
<td>0.32</td>
</tr>
<tr>
<td>Whispered pectoriloquy</td>
<td>...‡</td>
<td>0.11</td>
</tr>
</tbody>
</table>

*Adapted from Spiteri et al.23
†Calculated based on data provided in Table 1 of Spiteri et al.23
‡Mean pair agreement rates were not calculated for the signs for which 2 or more physicians in a group failed to report the presence or absence of the sign.

Table 1.-Precision of Physical Examination Findings in Examination of the Chest

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Pneumonia</th>
<th>No Pneumonia</th>
<th>P value</th>
<th>Sensitivity</th>
<th>Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyspnea</td>
<td>65</td>
<td>48</td>
<td>&lt;0.01</td>
<td>65</td>
<td>52</td>
</tr>
<tr>
<td>Chills</td>
<td>62</td>
<td>47</td>
<td>&lt;0.025</td>
<td>62</td>
<td>53</td>
</tr>
<tr>
<td>Myalgias</td>
<td>48</td>
<td>40</td>
<td>NS</td>
<td>48</td>
<td>60</td>
</tr>
<tr>
<td>Hemoptysis</td>
<td>19</td>
<td>11</td>
<td>NS</td>
<td>19</td>
<td>89</td>
</tr>
<tr>
<td>Feverish</td>
<td>66</td>
<td>63</td>
<td>NS</td>
<td>66</td>
<td>37</td>
</tr>
<tr>
<td>Chest Pain</td>
<td>60</td>
<td>53</td>
<td>NS</td>
<td>60</td>
<td>47</td>
</tr>
<tr>
<td>Earache</td>
<td>11</td>
<td>17</td>
<td>NS</td>
<td>11</td>
<td>83</td>
</tr>
<tr>
<td>Sore throat</td>
<td>36</td>
<td>36</td>
<td>NS</td>
<td>36</td>
<td>64</td>
</tr>
<tr>
<td>Rhinitis</td>
<td>32</td>
<td>36</td>
<td>NS</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>Sputum</td>
<td>73</td>
<td>72</td>
<td>NS</td>
<td>73</td>
<td>28</td>
</tr>
<tr>
<td>Cough</td>
<td>86</td>
<td>87</td>
<td>NS</td>
<td>86</td>
<td>13</td>
</tr>
<tr>
<td>Signs</td>
<td>Pneumonia</td>
<td>No Pneumonia</td>
<td>P value</td>
<td>Sensitivity</td>
<td>Specificity</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------</td>
<td>--------------</td>
<td>---------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>R&gt;30/min</td>
<td>31</td>
<td>12</td>
<td>&lt;0.001</td>
<td>31</td>
<td>88</td>
</tr>
<tr>
<td>Decreased BS</td>
<td>34</td>
<td>15</td>
<td>&lt;0.001</td>
<td>34</td>
<td>85</td>
</tr>
<tr>
<td>Resp. Distress</td>
<td>19</td>
<td>6</td>
<td>&lt;0.001</td>
<td>19</td>
<td>95</td>
</tr>
<tr>
<td>P&gt;100/min</td>
<td>50</td>
<td>32</td>
<td>&lt;0.005</td>
<td>0</td>
<td>68</td>
</tr>
<tr>
<td>T&gt;37.8</td>
<td>69</td>
<td>51</td>
<td>&lt;0.005</td>
<td>69</td>
<td>49</td>
</tr>
<tr>
<td>Toxic</td>
<td>14</td>
<td>5</td>
<td>&lt;0.01</td>
<td>14</td>
<td>95</td>
</tr>
<tr>
<td>P&gt;120/min</td>
<td>21</td>
<td>11</td>
<td>&lt;0.025</td>
<td>21</td>
<td>89</td>
</tr>
<tr>
<td>R&gt;20/min</td>
<td>75</td>
<td>61</td>
<td>&lt;0.025</td>
<td>75</td>
<td>39</td>
</tr>
<tr>
<td>Rales</td>
<td>36</td>
<td>23</td>
<td>&lt;0.05</td>
<td>36</td>
<td>77</td>
</tr>
<tr>
<td>Ronchi</td>
<td>34</td>
<td>22</td>
<td>&lt;0.05</td>
<td>34</td>
<td>78</td>
</tr>
<tr>
<td>T&gt;38.9</td>
<td>28</td>
<td>18</td>
<td>NS</td>
<td>28</td>
<td>82</td>
</tr>
<tr>
<td>Percussion</td>
<td>13</td>
<td>6</td>
<td>NS</td>
<td>13</td>
<td>94</td>
</tr>
<tr>
<td>P&gt;80/min</td>
<td>85</td>
<td>79</td>
<td>NS</td>
<td>85</td>
<td>21</td>
</tr>
<tr>
<td>Wheezes</td>
<td>22</td>
<td>25</td>
<td>NS</td>
<td>22</td>
<td>75</td>
</tr>
<tr>
<td>Egophony</td>
<td>8</td>
<td>4</td>
<td>NS</td>
<td>8</td>
<td>96</td>
</tr>
<tr>
<td>R&gt;40/min</td>
<td>5</td>
<td>3</td>
<td>NS</td>
<td>5</td>
<td>97</td>
</tr>
<tr>
<td>Rub</td>
<td>1</td>
<td>4</td>
<td>NS</td>
<td>17</td>
<td>96</td>
</tr>
<tr>
<td>Altered MS</td>
<td>13</td>
<td>9</td>
<td>NS</td>
<td>13</td>
<td>91</td>
</tr>
<tr>
<td>Fremitus</td>
<td>1</td>
<td>1</td>
<td>NS</td>
<td>1</td>
<td>99</td>
</tr>
<tr>
<td>T&gt;40</td>
<td>1</td>
<td>6</td>
<td>NS</td>
<td>3</td>
<td>94</td>
</tr>
</tbody>
</table>
Diehr et al\textsuperscript{26}

Add points when present\textsuperscript{†}:

- Rhinorrhea \(-2\) points
- Sore throat \(-1\) point
- Night sweats \(1\) point
- Myalgias \(1\) point
- Sputum all day \(1\) point
- Respiratory rate \(>25\) breaths/min \(2\) points
- Temperature \(\geq 37.8^{\circ}\text{C} (100^{\circ}\text{F})\) \(2\) points

Singal et al\textsuperscript{28}

Probability\(=1/(1+e^{-Y})\)\textsuperscript{‡}

\(Y=-3.095+\text{1.214 (cough)}\)
\(+\text{1.007 (fever)}\)
\(+\text{0.823 (crackles)}\)

Each variable=1 if present

Heckerling et al\textsuperscript{29}

Determine the number of findings present\textsuperscript{§}:

- Absence of asthma
- Temperature \(>37.8^{\circ}\text{C} (100^{\circ}\text{F})\)
- Heart rate \(>100\) beats/min
- Decreased breath sounds
- Crackles

*Adapted from Emerman et al.\textsuperscript{33}

\textsuperscript{†}For example, a threshold score of \(-1\) (ie, all patients with scores \(\geq -1\) are considered to have pneumonia), yields a positive likelihood ratio (LR\textsuperscript{+})=1.5 and negative likelihood ratio (LR\textsuperscript{-})=0.22, a threshold score of \(+1\) yields a LR\textsuperscript{+}=5.0 and LR\textsuperscript{-}=0.47, and a threshold score of \(+3\) yields a LR\textsuperscript{+}=14.0 and LR\textsuperscript{-}=0.82, based on the original study data.\textsuperscript{26}

\textsuperscript{‡}First calculate \(Y\) and then calculate the predicted probability of pneumonia.

\textsuperscript{§}For example, based on a prevalence of pneumonia of 5\%, the presence of 0, 1, 2, 3, 4, or 5 findings yields probabilities of pneumonia of \(<1\%\), 1\%, 3\%, 10\%, 25\%, and 50\%, respectively, based on a nomogram provided by Heckerling et al.\textsuperscript{29}
Evidence Based Bibliography: compilation courtesy of Linda Pinsky, MD

http://badgett.uthscsa.edu/sgim/clinexam.html

19. Cook DJ, Simel DL. Simel DL and Rennie D, eds. Does this patient have abnormal
4. TEACHING THE HUMAN DIMENSION OF PATIENT CARE

Questions for teachers:

1. What can we do at the bedside to promote the teaching of the human dimension of patient care?
2. Is role-modeling sufficient?
3. Can you give examples of effective approaches that have worked for you?
4. How does one evaluate humanism and professionalism?

Definition:
American Academy on Physician and Patient, 1998: Physician’s attitudes and actions that demonstrate interest in and respect for the patient and that address the patient’s concerns and values. These generally are related to patients’ psychological, social and spiritual domains.

ABIM / ACGME criteria:
- Altruism
- Respect for other people
- Additional humanistic qualities
- Honor, integrity, ethical and moral standards
- Accountability
- Excellence
- Duty / advocacy

Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Residents are expected to:

- demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supercedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and on-going professional development
- demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices
- demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities

Examples of unprofessional behaviors:
- Deficiencies in conscientiousness
- Abdication of responsibility
- Fabrication
- Expressions of personality problems
- Poor relationships with the medical team
How to teach humanism at the bedside

Table 1. Educational Strategies

<table>
<thead>
<tr>
<th>Establish a Climate of Humanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involve the learners in the process of clarifying the mission, goals, and ground rules for the clinical experience that embody humanistic values.</td>
</tr>
<tr>
<td>Encourage presentations that integrate relevant psychosocial as well as biomedical information and management strategies.</td>
</tr>
<tr>
<td>Move clinical round discussions to the bedside (in most cases), and encourage presentations that recognize the presence of the patient.</td>
</tr>
<tr>
<td>Get to know learners as persons and address their individual and human needs.</td>
</tr>
<tr>
<td>Promote a cooperative, respectful, and supportive, as opposed to a competitive, learning environment, where team members are encouraged to admit their mistakes and to communicate rather than hide their learning needs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recognize and Use Seminal Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giving bad news: recognizing, eliciting, clarifying, and dealing with feelings, concerns, or expectations.</td>
</tr>
<tr>
<td>Focusing attention on the use of excellent communication skills or the use of dehumanizing language.</td>
</tr>
<tr>
<td>Assisting a patient at a time of transition.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Role Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate desirable skills or behaviors.</td>
</tr>
<tr>
<td>Comment on what you have done.</td>
</tr>
<tr>
<td>Explain what you have done.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Actively Engage the Learner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involve learners in tasks that require humanistic skills, such as eliciting the concerns of patients.</td>
</tr>
<tr>
<td>Ask questions and encourage learners to reflect on and to discuss what they have done or on what they have observed.</td>
</tr>
<tr>
<td>Provide feedback to learners on what they have done.</td>
</tr>
<tr>
<td>Engage the learners in projects that are likely to include the human dimensions of care, such as defining the team’s mission.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Be Practical and Relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respect the limitations of time and resources.</td>
</tr>
<tr>
<td>Make a humanistic approach integral and relevant to patient care.</td>
</tr>
<tr>
<td>Focus on humanistic behaviors that are likely to improve outcomes.</td>
</tr>
<tr>
<td>Focus on communication skills and management strategies that are feasible for the learner and are generally applicable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Use Ongoing and Multiple Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforce and build on previous learning.</td>
</tr>
<tr>
<td>Address differences in individual learning preferences.</td>
</tr>
</tbody>
</table>

Table 2. Educational Content

<table>
<thead>
<tr>
<th>Social Amenities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greeting the patient</td>
</tr>
<tr>
<td>Explaining roles</td>
</tr>
<tr>
<td>Introducing team members</td>
</tr>
<tr>
<td>Asking patient’s permission when appropriate</td>
</tr>
<tr>
<td>Attending to the patient’s privacy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Verbal Communication Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gathering information using open-ended and closed questions, active listening, and obtaining psychosocial information</td>
</tr>
<tr>
<td>Eliciting, clarifying, and attending to patients’ emotions, beliefs, concerns, and expectations</td>
</tr>
<tr>
<td>Providing patient education and facilitating behavioral change</td>
</tr>
<tr>
<td>Timing</td>
</tr>
<tr>
<td>Tone and pace of voice</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nonverbal Communication Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position, such as maintaining appropriate eye contact, placing oneself at the same level as patient, and including patient in circle during rounds</td>
</tr>
<tr>
<td>Facial expressions</td>
</tr>
<tr>
<td>Touch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Observational Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient’s verbal and nonverbal communications and communication styles</td>
</tr>
<tr>
<td>Patient’s dress and surroundings</td>
</tr>
<tr>
<td>Patient’s family and social interactions</td>
</tr>
<tr>
<td>Colleague’s communication and decision making skills</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Humanistic Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending to the patient with respect as a unique individual</td>
</tr>
<tr>
<td>Providing care in the context of the patient’s values, beliefs, history, needs, abilities, culture, and social network</td>
</tr>
<tr>
<td>Providing care in the context of what is meaningful for the patient</td>
</tr>
<tr>
<td>Giving bad news</td>
</tr>
<tr>
<td>Providing humane care at the time of transitions, such as loss of functional status</td>
</tr>
<tr>
<td>Providing care at the end of life</td>
</tr>
<tr>
<td>Releasing suffering</td>
</tr>
<tr>
<td>Being honest and genuine on how one portrays oneself to the patient</td>
</tr>
</tbody>
</table>
Assessment of humanistic behavior: some examples

Seven Basic Professional Traits and Their Observable Noncognitive Behaviors, Used in the Evaluation of Students at the University of New Mexico School of Medicine

<table>
<thead>
<tr>
<th>Reliability and responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can be depended upon to do his or her duty</td>
</tr>
<tr>
<td>Follows through on tasks he or she agreed to perform</td>
</tr>
<tr>
<td>Arrives on time for class, clinic, rounds, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Honesty and integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adheres to professional and/or ethical standards</td>
</tr>
<tr>
<td>Is honest</td>
</tr>
<tr>
<td>Corrects errors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behaves respectfully</td>
</tr>
<tr>
<td>Accepts blame for failure</td>
</tr>
<tr>
<td>Makes inappropriate demands</td>
</tr>
<tr>
<td>Is abusive and critical during times of stress</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Critique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accepts criticism</td>
</tr>
<tr>
<td>Looks at self objectively</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Respect for patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintains patient’s confidentiality</td>
</tr>
<tr>
<td>Demonstrates empathetic behavior</td>
</tr>
<tr>
<td>Is patient with patient and family</td>
</tr>
<tr>
<td>Is sensitive to patient’s immediate physical and/or emotional needs</td>
</tr>
<tr>
<td>Is not racist</td>
</tr>
<tr>
<td>Is considerate to patients</td>
</tr>
<tr>
<td>Addresses patients appropriately</td>
</tr>
</tbody>
</table>
Humanism Scale

1. Cooperates with medical colleagues
2. Cooperates with paramedical staff
3. Has a good physician-patient relationship
4. Renders comfort and empathy
5. Involves patients in decisions
6. Considers patients’ concerns
7. Puts patients at ease and renders comfort
8. Admits one’s own errors

Ratings were made on a 9-point continuum from outstanding to unsatisfactory.

Physicians’ Humanistic Behaviors Questionnaire*

This doctor:
1. Follows through on problems.
2. is truthful and honest with me without avoiding the issues.
3. Is in a hurry.
4. Expresses concern for my feelings and needs, not just my physical status.
5. Comforts or reassures me and my family
6. Asks how I am doing.
7. Keeps his or her promises to me.
8. Pays attention to concerns or requests that I feel are important.
9. Explains and clarifies information for me.
10. Answers my questions.
11. Makes uncaring remarks or does things I find offensive.
13. Uses terms that I can understand.
14. Includes me in decisions and choices about my care.
15. Arranges for adequate privacy when examining or talking with me.
16. Has a neat, clean, well-groomed appearance.
17. Is short-tempered or abrupt with me or my family.
18. Makes changes in my treatment without telling me.
19. Doesn’t rush or spend too little time with me.
20. Asks if I need anything or what he or she can do for me.
21. Asks how I want to be addressed, then greets me in that way.
22. Seems knowledgeable and concerned about me and my case.
23. Asks questions about my symptoms.
24. Treats me with too intimate or personal a manner.
25. Asks me how I feel about my problems.

Responses were on a 5-point scale (1=strongly disagree to 5=strongly agree).
Negative items: scoring reversed.

TIPS TO INJECT FUN INTO BEDSIDE TEACHING:

- Let the trainees take charge and be a midwife.
- Play games- quiz, jeopardy, puzzles.
- Give learners carrots when the job is well done- lunch, donuts, sweets etc.
- A physical diagnosis race- which learner will elicit the physical finding the quickest.
- Divide the learners into teams and pit them against each other, but not allowing destructive one-upmanship.
- Schedule physical diagnosis only or history only rounds for teaching purposes.
- Read about small group facilitation skills, there is a lot of literature about methods to observe and facilitate and various fun techniques that can be adapted to the bedside.

ADDITIONAL ISSUES IN BEDSIDE TEACHING

Unique issues in outpatient “bedside” teaching:

I. Barriers to outpatient teaching in the presence of the patient
   A. Time constraints of current medical practice environments
      1. Outpatient visit average ~ 15 minutes and hospital encounters increasingly shorter length of stay
      2. Increased productivity demands on attending physicians limits time for teaching with patients
   B. Faculty lack confidence in their bedside diagnostic skills, in part from their having trained in an era that de-emphasized this skills or lacked role models in clinical diagnosis
      1. Study of faculty records of 249 patients- 50 re-examined; all 50 had new or different findings (Goetzl EJ, Cohen P, Downing E, Erat K,
C. Learners not liking physical diagnosis teaching
   1. Impatience or boredom
   2. Fear of being embarrassed in front of the patient by unexpected findings or by questions for which they do not have an answer

D. Concerns for patients attitude towards teaching in the room
E. Unpredictability of bedside teaching
F. Unavailability of patients with bedtime findings

II. Possible solutions to barriers
A. Brainstorm solutions today as a group
B. Tips excerpted form the experience of others:
   1. Physical diagnosis is a skill you can learn through study and practice.
   2. Establish a comfortable learning climate for the leaner, the patient and yourself
   3. Include the patient in the interaction. Be reassured that patients like bedside teaching.
   4. Maintain the learner patient relationship; refer the patient’s questions to the learner.
   5. Make gentle corrections when necessary.
   6. Do not try to teach all of physical diagnosis- pick one or two pearls to teach.
   7. Almost no physical exam finding is too mundane for teaching. Include chronic findings
   8. Prime the learner ahead to address deficiencies before seeing the patient. (“Classic findings in psoriasis include….”)
   9. Consider directed demonstrations (“Listen for a systolic murmur with the bell of your stethoscope with the patient in the left lateral position.”)
   10. Validate that the history and physical examination finding might have changed from when the learner examined the patient.
   11. Discuss that learning form the patient is a helpful and valid part of learning medicine.
   12. Avoid asking impossible questions or questions merely to display your own intelligence.
13. Reassure learner that you will try not to embarrass anyone, including the patient and the patient’s physician (the learner.)

14. Teach history taking and doctor-patient communication.

15. Teach professionalism. “Make the students proud of themselves, have them respect each other and teach them to respect the patient.”

16. Teach observation.

17. Learn when to say “I don’t know.”

18. Teach learners to teach each other.

19. Use standardized patients, Objective Structured Clinical Examination (OSCE), mini-CEX, videotaped encounters; audio or videotapes, CD-ROMS, and web based material on physical diagnosis.

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Attending Rounds Revisited

Kurt Kroenke (President’s Column, SGIM Forum, October 2001)

In a few days, I begin a month of attending on the general medicine wards. Although I first started teaching on inpatient services in 1980, twenty-two years has not eradicated the feelings of anxiety and sub-competence that resurface each time I get behind the wheel with a new team of housestaff and students. Part of my insecurity is clinical: Am I up to date? How can I compete with the senior resident’s knowledge of the latest cardiovascular drugs or fifth-generation cephalosporins, especially when he or she has just completed a month in the coronary care unit or an infectious diseases elective, or has career plans for one of these subspecialty fellowships? I am not a hospitalist, and the two months of ward attending per year may be just enough to remind me of the many things I do not know.

The other aspect of my insecurity relates to teaching. After all, when knowledge is my primary deficit, I can ask another team member who might know, or I can curbside a consultant or use one of the increasing number of resources that provide rapid, often electronic retrieval of medical information. A bigger concern is the nagging question: Can I teach this large, heterogeneous, and harried group of learners something valuable? Nearly a decade ago, I reflected on some practical aspects of inpatient teaching.\(^1\) Revisiting this earlier essay, I realize that changes in the 1990’s mandate a fresh look. Ende has discussed some of these changes.\(^2\) I would like to comment on three themes that impact on the role of the patient, the attending, and the trainee.

**Bedside Teaching: Role of the Patient**

Triangulation is an essential component of clinical teaching – bringing together the three parties of patient, learner and teacher. Reviewed in detailed elsewhere,\(^3\) bedside teaching as currently practiced must be reconciled with a number of modern exigencies. Hospital stays are shorter, making it difficult for the entire team to round together on some of the patients discharged within 24 to 48 hours. Second, increased documentation requirements for attending physicians add up to an extra couple hours of attending time per day, and diminished time for teaching.\(^4\) Third, the past decade has witnessed a more enlightened and humane approach to the resident’s work week. Mandatory days off mean that nearly every day at least one team member is not present for attending rounds, and a shorter workday requires that the remaining team members must complete their tasks in an abbreviated amount of time.

Given these 21\(^{st}\) century constraints, how does one incorporate bedside teaching into the attending’s repertoire? The principal mechanism is selectivity. For reimbursement, medicolegal and patient-centered reasons, the attending must see all patients, but for educational purposes, this does not mean all patients must be seen together as a team. Not every admitted patient has equivalent teaching value. Second, of those patients identified for bedside teaching, some may be seen by the attending with a few rather than all learners (e.g., the intern and student caring for that patient). Third, some bedside teaching can occur in settings outside of attending rounds, such as resident work rounds, newly admitted patients being seen together by an intern and student, special student rounds with the attending once or twice a week, or "on your own" (e.g., “This patient has a large liver; go back later today and do an abdominal exam”). Finally, different
attendings may have different teaching strengths. While one may be a superlative bedside teacher, another may be more gifted in small group case discussions or mini-talks. Rounds should seldom be devoid of patient visits, but the balance of teaching between the bedside and other venues can vary with the teacher, the number and types of patients on one’s service, and learner needs.

The Lunar Model: Role of the Attending

There are four factors that put the role of the inpatient attending into proper perspective. First, there is the “2% rule”. This presumes that that the minimal “clinical track” of undergraduate and graduate medical education is five years, that is, the third and fourth years of medical school followed by a three-year primary residency. That means that a one-month rotation with a faculty member represents only 1/60th, or less than 2%, of a learner’s clinical training. Second, there is the “educational package” nature of clinical training. Attending rounds is only one component, complemented by (and competing for limited time with) morning report, noon conferences, the teaching provided by subspecialty fellows and faculty through formal and curbside consultations, and self-directed learning. Third, inpatient teaching is ideally “team teaching”. Years ago it was estimated that over half of inpatient teaching was provided by housestaff rather than the attending, in settings such as work rounds, the evaluation of new admissions, and the innumerable questions generated over the course of a day. Fourth, self-directed learning is an increasingly important aspect of clinical training.

While these four factors may have a humbling effect by appearing to circumscribe the role of the attending as the sole or principal educator, they also can be liberating. I am less a parent ultimately responsible for what the trainee grows up to be, and more of one role model among many. In my brief 4 weeks, I can ask some questions, see some patients with the team, teach or demonstrate a few pearls, provide a little feedback, and convey my own philosophy or values. Different learners will sample differentially from me and their numerous other clinical teachers. I am one slice in their journey, a cross-sectional experience in their longitudinal medical education.

This has led me to a lunar rather than solar model of attending. In the latter, the attending is the central figure around which most teaching and much learning revolves. The lunar model positions each patient as the sun, each learner a heliocentric planet, and the attending as a moon orbiting around the learner and, in turn, the patient. Thomas Szasz wrote: “Only the weak can teach. There is an inverse relationship between power and learning. One who comes into too much power ceases to be a teacher and becomes instead a leader.” Restraint may in fact be desirable. This does not mean we are unavailable to learners, remote from patients and family, or unaware of countless clinical decisions. It does mean there are clear boundaries to what can be expected of us in a single month as educators, and much of the learning happens elsewhere in the learners’ universe. In the words of William Ayers:

Good teachers, like good midwives, empower. . . . Good teachers know when to hang back and be silent, when to watch and wonder at what is taking place all around them. They can push and pull when necessary -- just like midwives -- but they know that they are not always called upon to perform. Sometimes the
performance must be elsewhere, sometimes the teacher can feel privileged just to be present at the drama happening nearby.

Self-Directed Learning: Role of the Trainee

A student (and resident) corollary of the lunar model of attending is an increased responsibility for self-directed learning (SDL). This is not intended to let the attending off the hook but rather to empower the trainee for lifelong learning. It has been estimated that the half-life of medical knowledge is 5 years, and that 75% of what a physician must know in practice during a career is acquired following formal graduate medical education. The explosion in new medical knowledge, the emphasis on evidence-based clinical decision making and the rapid availability of “just in time” information through various electronic resources all makes the acquisition of these skills essential and hospital training an ideal venue for reinforcing SDL.

As far back as 1932, the Association of American Medical Colleges noted that: “Medicine must be learned by the student because only a fraction of it can be taught by the faculty.” More recently, Neil Whitman, a well-known medical educator, wrote that: “Medical teachers should consider that there may not be a universal structure behind ‘knowledge’, but rather a temporary consensus arrived at by the medical community.”

There are progressive levels of SDL. The attending may simply make an assignment: “Why don’t you look up the differential diagnosis of hyponatremia?” Giving the learner more discretion, the attending may offer a menu: “The key problems in this patient are anemia, jaundice, and hyponatremia. Which one would you like to look up and report back to us?” A third stage of SDL is when the learner is encouraged to identify his or her own educational goals with an open-ended question like: “What do you find most interesting (or bothersome) in this case? Why not read up on this and report back?” Finally, SDL becomes autonomous when, without prompting, the trainee discovers a learning gap, finds information, and reports back to the group and/or applies it to the patient.

I have only touched upon three themes that make us reconsider the optimal approach to ward attending at the beginning of the 21st century. Other salient issues have not been addressed. For example, how will the hospitalist movement influence inpatient medical education? What is the optimal balance of inpatient and ambulatory education? Should there be a critical evaluation of the format and teaching aims of work rounds, morning report, and noon conferences? Some institutions are testing more radical departures from traditional models of attending than I’ve suggested in this column. Reinventing attending rounds, however, may be a process we should periodically welcome. Robert Magnan encourages educational experimentation:

Just as Heraclitus observed that we can't step in the same stream twice, we can't teach the same class twice. Sometimes our strategies and techniques work wonderfully. And sometimes the same strategies and techniques miss. We usually search for something different when things don't work. But we should also try other ways when we're successful. Why? To avoid tunnel vision and narrow tracks and old routines. And so we never forget that we can't teach the same class twice. Try something different!
Each month we teach on the inpatient service is distinct. In fact, every session of rounds is unique. We can not attend the same way twice, and external forces are only part of the reason. The permutations of patients, learners, attending physicians, and their day to day circumstances are innumerable. This variability and complexity is at once the characteristic challenge and the greatest reward for attending on the wards.

References