Modern and Traditional Strategies of Clinical Teaching

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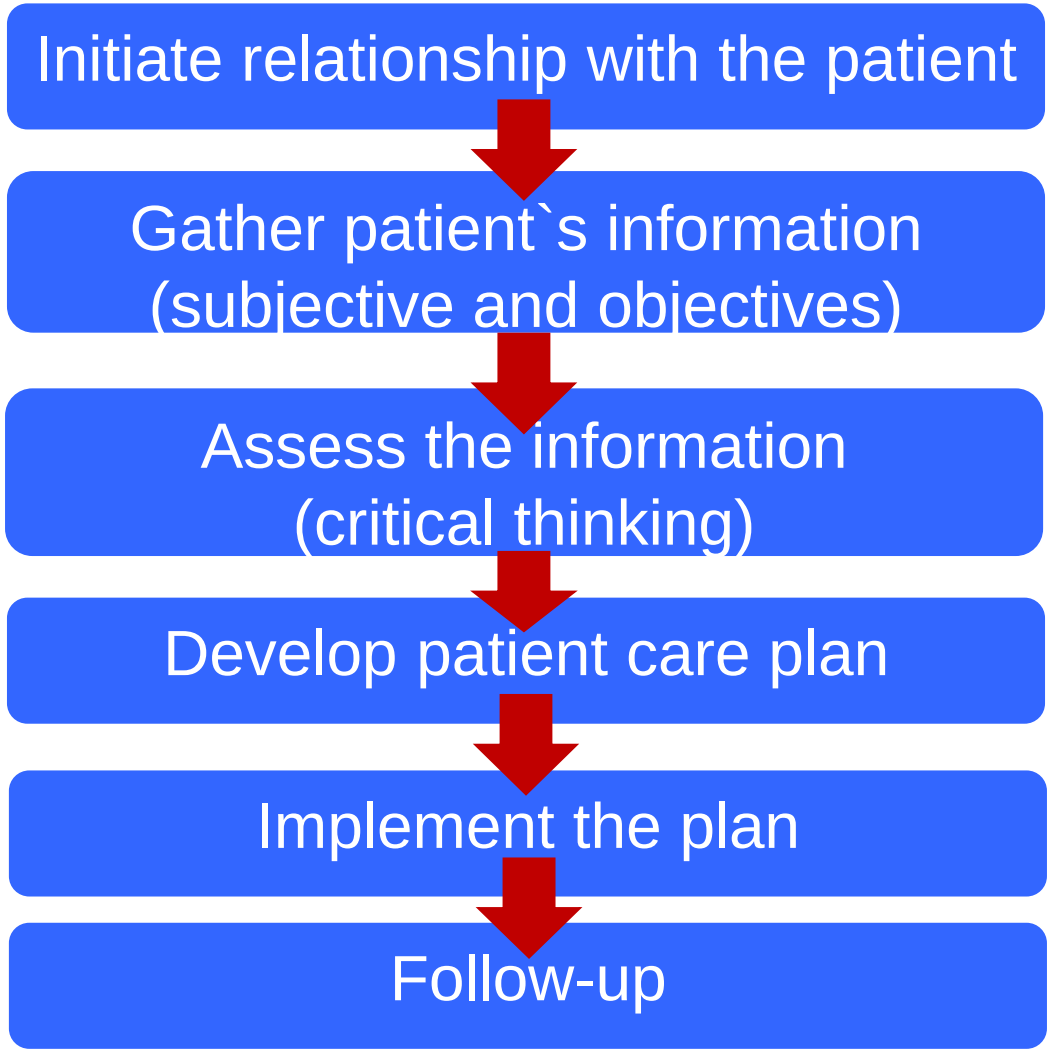
The process of patient care



WHAT IS THE PHARMACIST ROLE IN THIS PROCESS?

Global competency framework for Pharmacists

1. Pharmaceutical Public Health Competencies
2. Pharmaceutical Care competencies
3. Organisation and Management Competencies
4. Professional / Personal Competencies

FIP.A GLOBAL COMPETENCY FRAMEWORK.2012

Pharmaceutical Care competencies

1. Assessment of medicines
2. Compounding of medicines
3. Dispensing of medicines
4. Medicines
5. Monitor medicines therapy
6. Patient consultation and diagnosis

Pharmaceutical Care competencies

2.6 Patient consultation and diagnosis	2.6.1 Apply first aid and act upon arranging follow-up care
	2.6.2 Appropriately refer
	2.6.3 Assess and diagnose based on objective and subjective measures
	2.6.4 Discuss and agree with the patients the appropriate use of medicines, taking into account patients' preferences
	2.6.5 Document any intervention (e.g. document allergies, medicines and food, in patient medicines history)
	2.6.6 Obtain, reconcile, review, maintain and update relevant patient medication and diseases history

FIP.A GLOBAL COMPETENCY FRAMEWORK.2012

What are the clinical skills needed by pharmacist in order to provide a patient-centered pharmaceutical care?

- **Patient assessment skills** (information gathering):
  - **Subjective information:**
    - Obtain health and medication history in various scenarios.
  - **Objective information:**
    - From physical examination
    - From results of investigation
- **Information assessment skills** (information analysis to develop a D/D)
- **Communication skills**

Clinical examination

- Although the need for hands-on proficiency in specific physical assessment skills varies according to the type of patient care setting, all pharmacists need a basic understanding of these skills.
- Although the practice settings requiring proficiency in a broad range of physical assessment skills are currently relatively few in number, the need for these skills continues to grow as pharmacists assume more direct patient care responsibilities.
- Pharmacists in some clinical settings (e.g., ambulatory care clinics) routinely assess patient response to medication regimens themselves using a variety of physical assessment skills.

Further readings about clinical skills for pharmacist

- FIP.A GLOBAL COMPETENCY FRAMEWORK.2012
- Karen J. Tietze. Clinical skills for pharmacist: A patient-focused approach. 2012. 3rd edition
- Rhonda M. Jones. Patient Assessment in Pharmacy Practice 3rd edition.
- Richard N. Harrier, David A Apgar, Robert Boyce, Stephan Foster. Patient assessment in pharmacy. 2015.

Clinical teaching

- **What is clinical teaching?**
  - Clinical teaching is teaching which takes place in a clinical context (setting).
- **What is bedside teaching?**
  - Teaching in the **presence** of the patient.
- Traditionally clinical teaching = bedside teaching
- **Why do we do clinical teaching?**
  - To produce practitioners who are **clinically competent**" (Sloan *et al.*, 1995, p. 605)

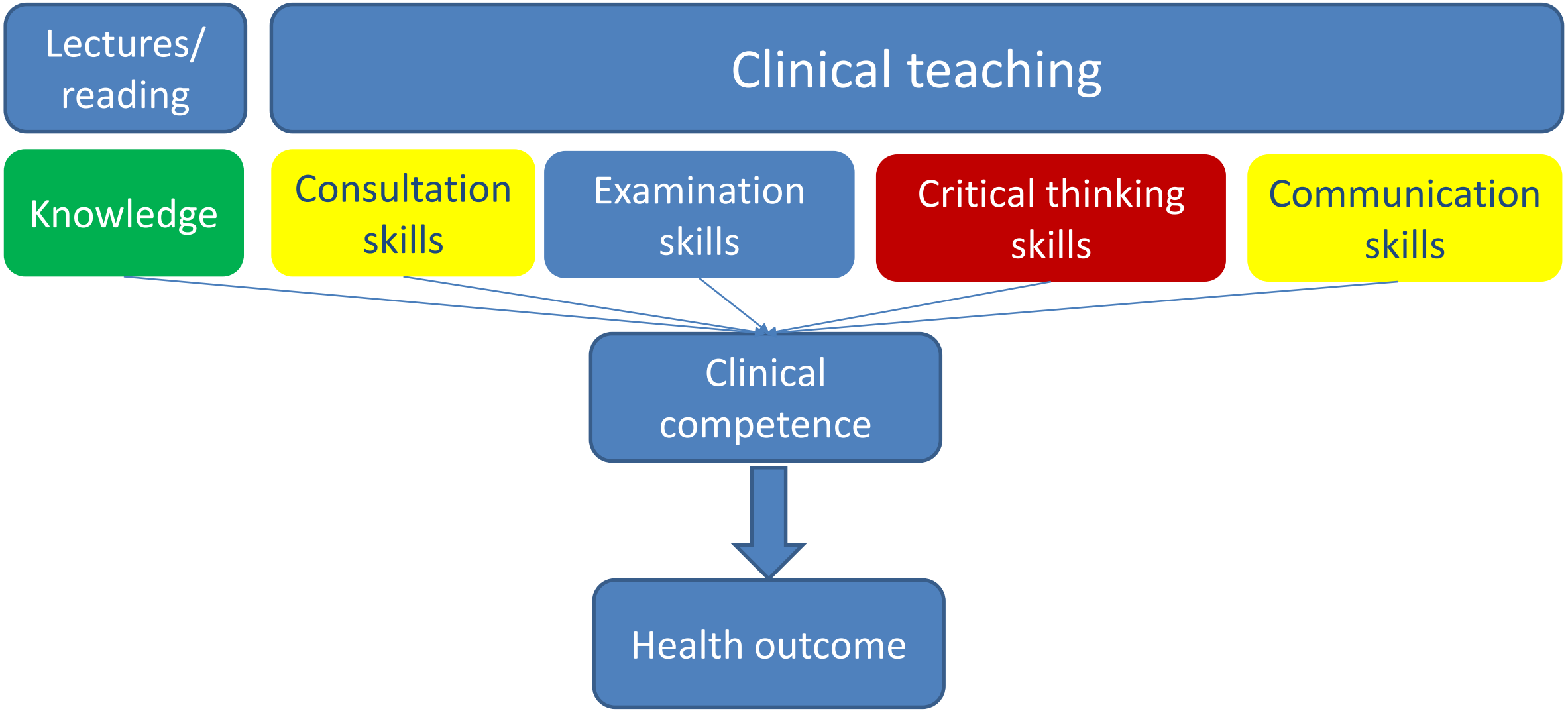
- **What do competent doctors do?**
  - **Diagnose and treat human disease, injuries, pain or other conditions.**
  - **Proper treatment is totally dependent on proper diagnosis.**
- **How do doctors diagnose diseases?**
  - Physicians makes diagnosis in two ways:
    - **Pattern recognition in easy cases "Aunt Minnie" (needs experience)**
    - **Hypothesis testing in difficult cases**

What do competent doctors need to make a diagnosis?

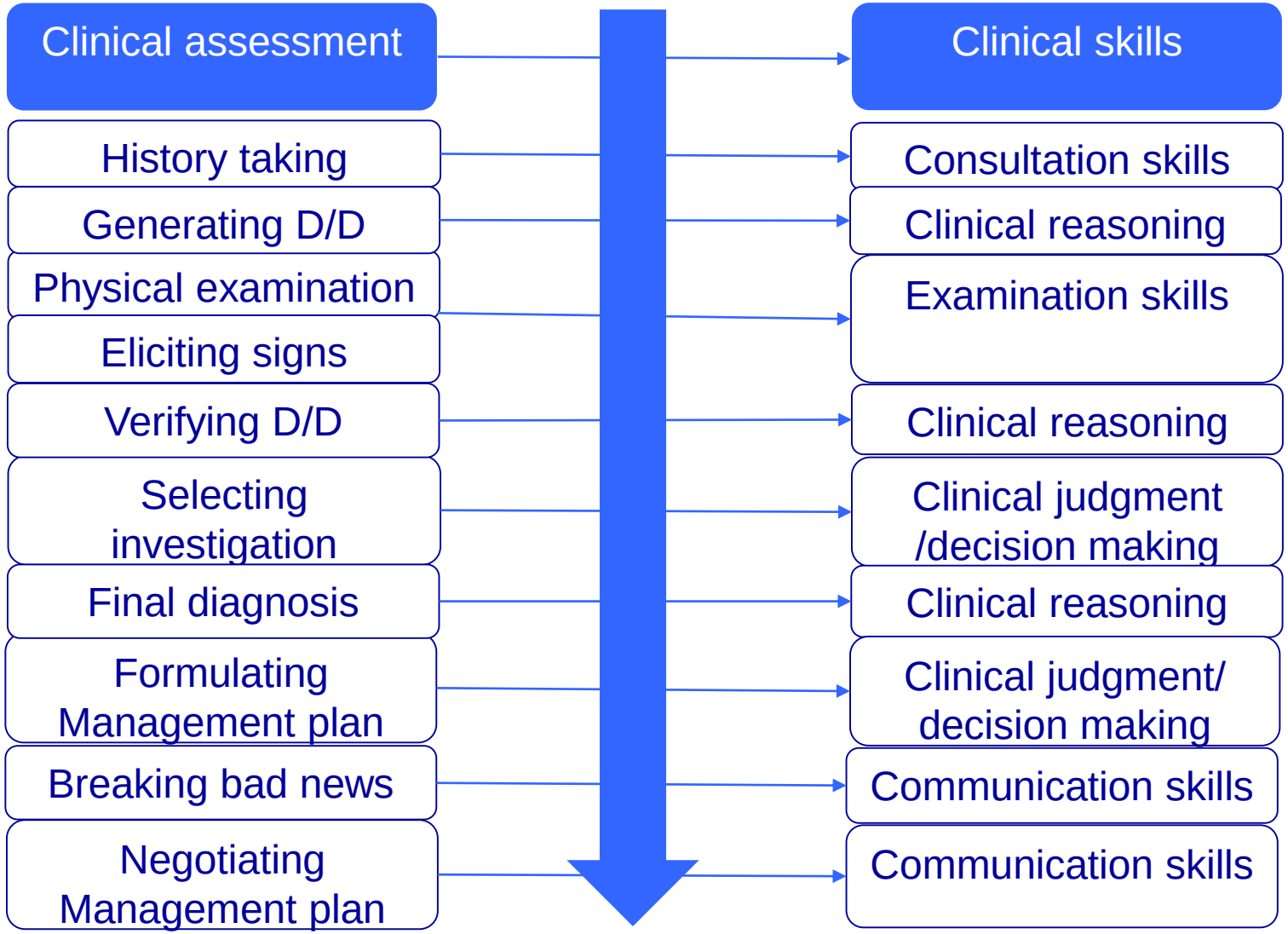
1. **Clinical knowledge**
2. **Clinical Information:**
   - Gathered through history, examination, investigation
3. **Critical thinking:**
   - a process of actively and skillfully hypothesizing, analyzing, and/or evaluating information in order to reach to belief and action.
     [Michael Scriven & Richard Paul, presented at the 8th Annual International Conference on Critical Thinking and Education Reform, Summer 1987.]

- If information are deficient / not processed properly either you will not reach a diagnosis or you will reach to a wrong diagnosis.

The components of clinical competency



What are the needed clinical skills to diagnose and manage a patient?



Components of a clinical teaching session

- 4th year students
- 5th year students
- Interne
- Residents
- Specialist

Student

Skill

- < 50% of clinical teachers are being considered effective teachers
- > 30% of students reported mistreatment by their tutors. [Harth et al-1992]

Teacher

Teaching materials

Real Patients
Patient partners
Simulated patients
Models
Simulators
Hybrid simulation
Video clips
Paper case vignettes

- In-patient setting
- Out-patient setting
- On call setting
- Home visit setting
- Clinical skills laboratory

Teaching setting (context)

1-Real Patients

- Patients are usually happy to take part in teaching sessions [Lynöe *etal*, 1998]
- **Advantages:**
  - Provide the opportunity for candidates to examine for actual clinical features.
- **Disadvantages:**
  - Potential to cause discomfort to a patient after being repeatedly examined by a large cohort of students (e.g. knee examination in a patient who has osteoarthritis).
  - Ethical issues
  - Students can learn from some patients more than others.

- **Patient for teaching should:**
  - Match the specific teaching objectives
  - Be Friendly
  - Be Available
  - Be Welling to talk/to be examined by students: Always obtain an informed consent.
- **What is patient partner?**

2- Simulated patients

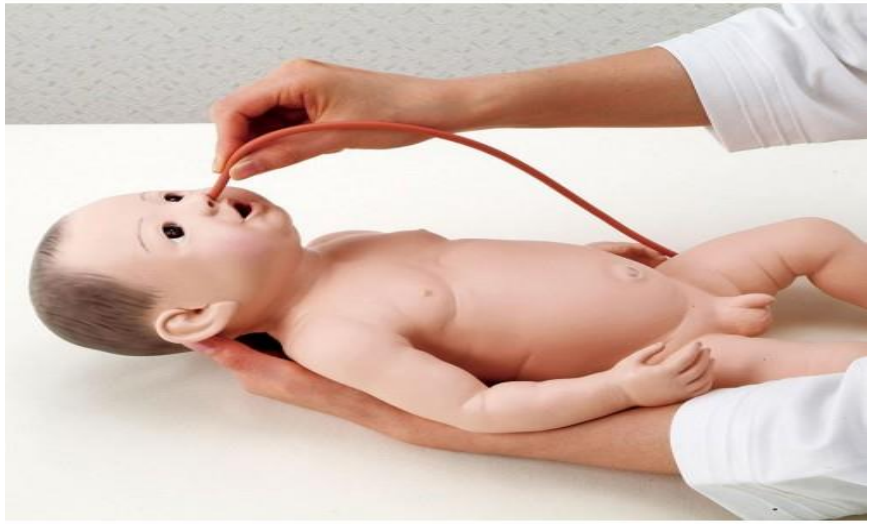
- Medical schools are increasingly engaging standardized patients as a means of teaching clinical skills.
- They can be used to teach different skills:
  - Eliciting the clinical history
  - Communication skills
  - Performing physical examination
  - Eliciting clinical findings:
    - Simulated patients can mimic certain clinical signs (e.g. a visual field defect or ‘tenderness’).

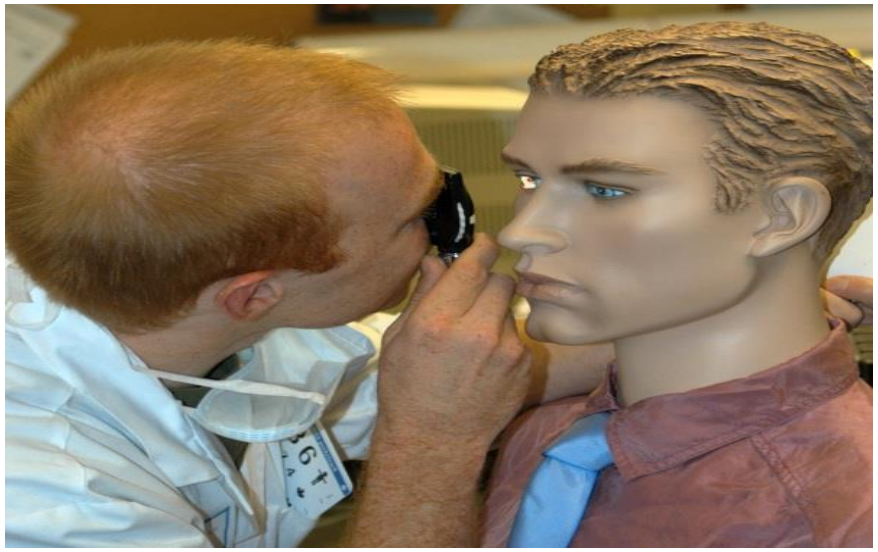
3-Models/Manikins

Bench models can save time, money and resources as well as providing increased patient safety.

Useful for teaching:

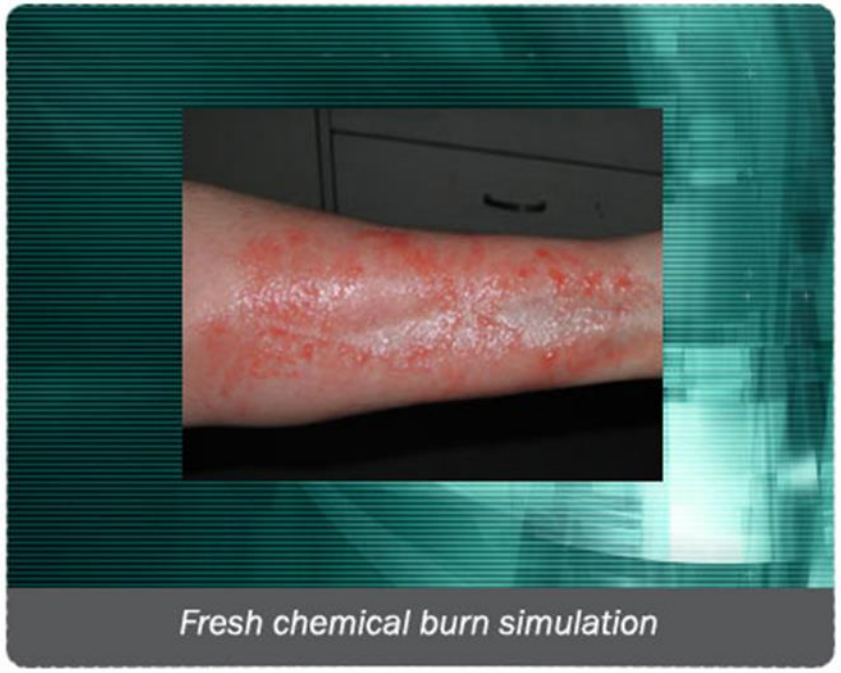
- Examination skills
- Clinical signs
- Clinical procedures





4-Simulators

- High fidelity transfer tattoos of skin lesions
- Learners seem to value high fidelity simulation over low fidelity,
- Evidence suggest that low fidelity can be just as effective.

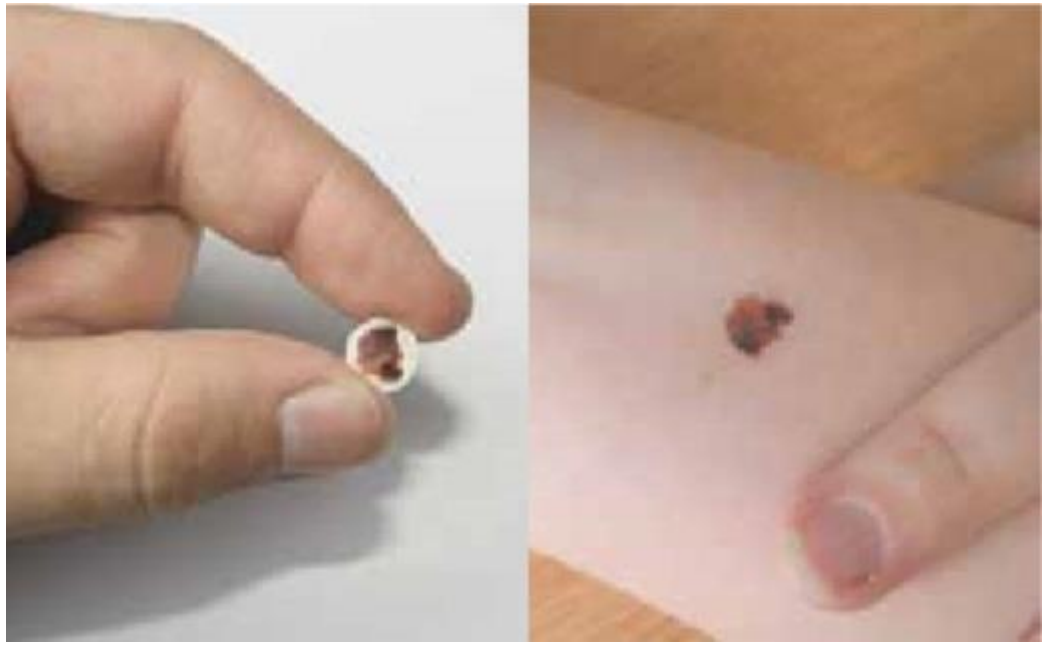


Fresh chemical burn simulation

Simulated Cleaned Road Scrape

Hybrid simulation/Part-task simulation

Malignant melanoma

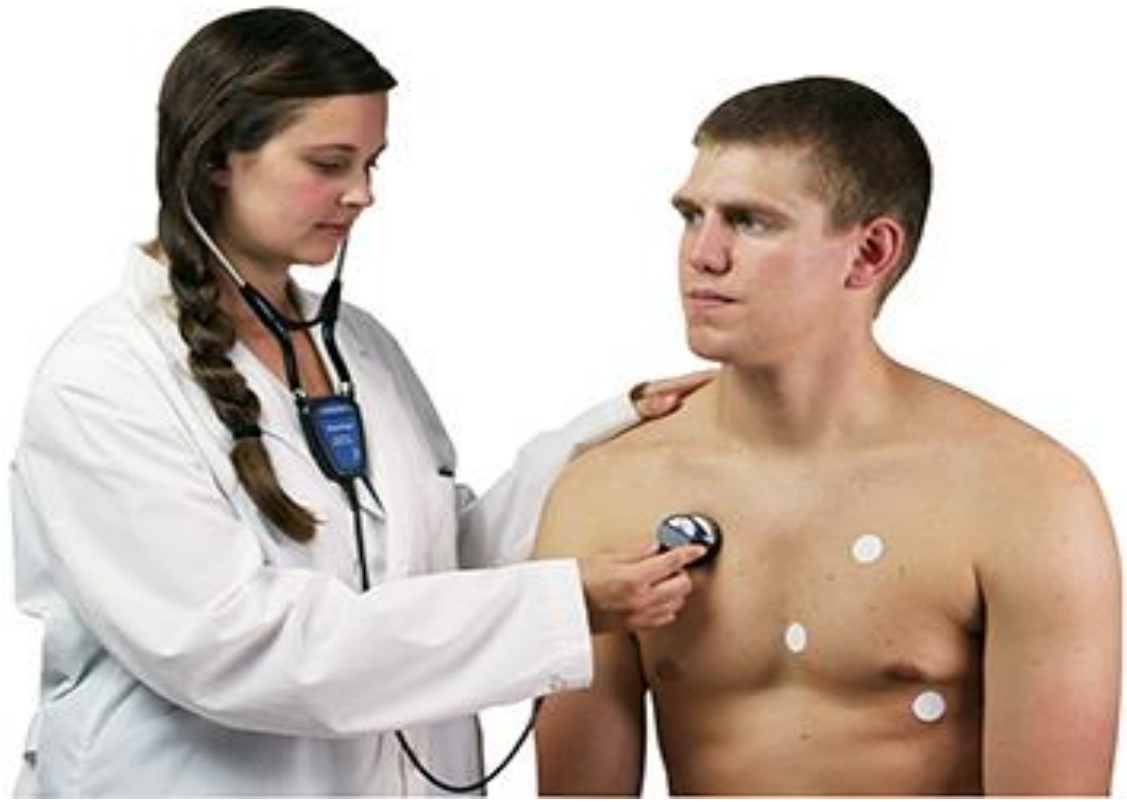


Hybrid simulation

- A venipuncture manikin arm is attached to a simulated patient.
- Obtain a venous blood sample from the manikin arm + interact and explain the procedure to the simulated patient

Hybrid simulation

- The Ventriloscope® is an electronic stethoscope that can realistically and consistently simulate ‘abnormal’ auscultatory findings.



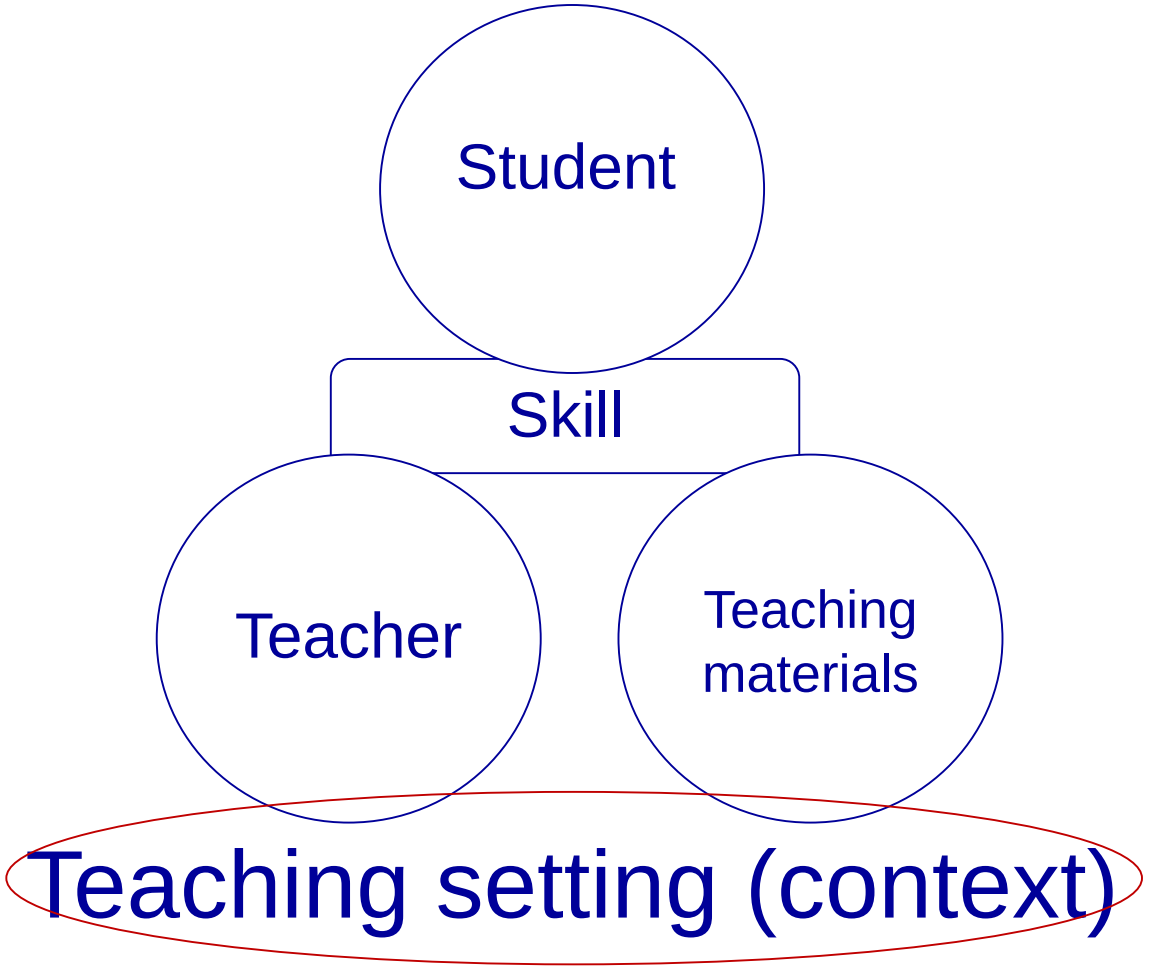
5-Videos

- Using video clips to demonstrate clinical skills is called computer assisted learning (CAL).
- **Advantages:**
  - Personalize learning
  - Convenient and flexible
  - Significantly enhance learning,
  - Reduce the teaching burden on clinical staff for the teaching of basic skills.
  - Decrease temporal and geographical restrains
  - Reduce the needs to use human subjects
  - Reduce the costs on long run

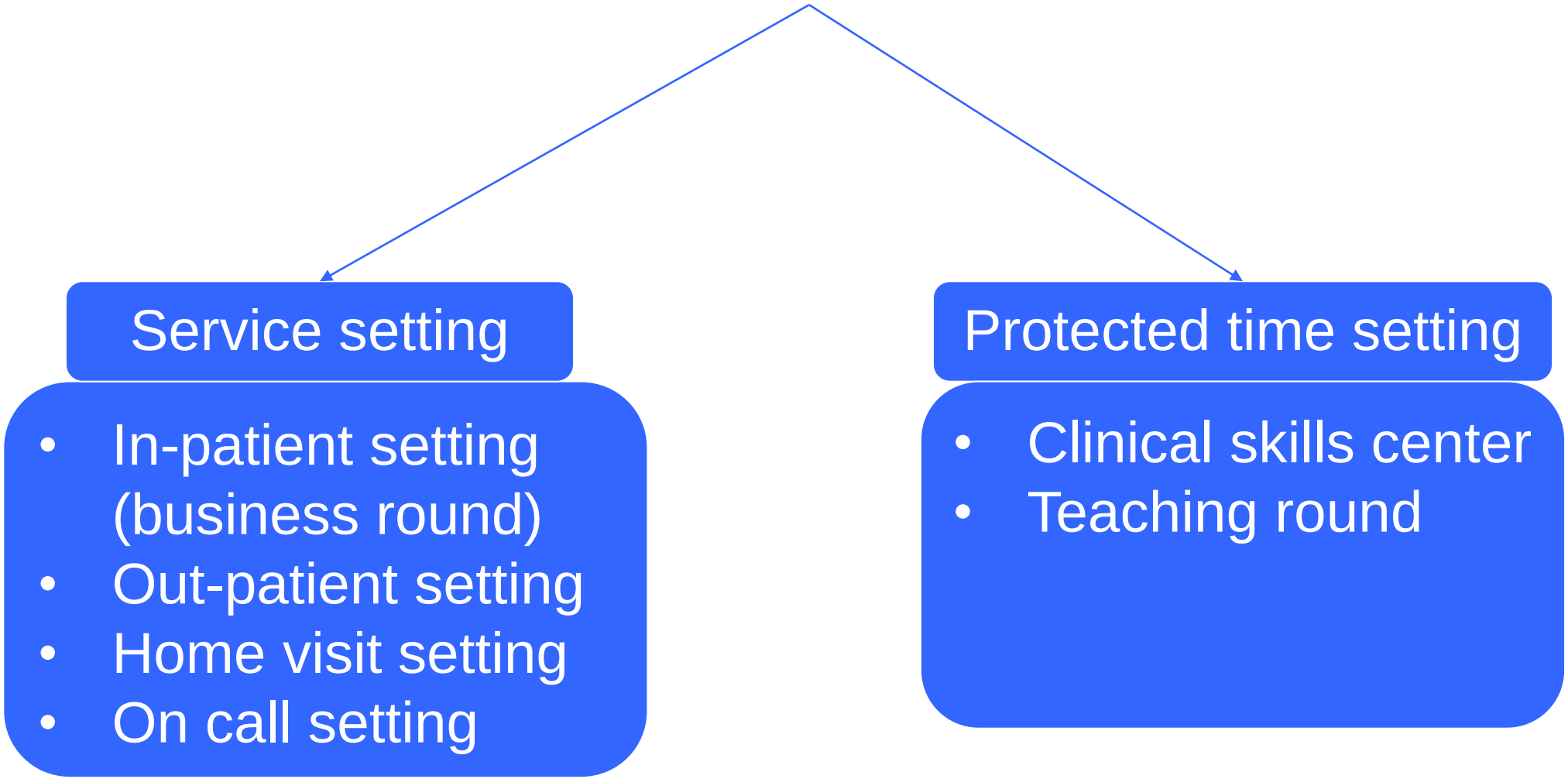
6-Case vignettes

- Can be used as materials for problem based learning
- Most useful to teach:
  - Clinical reasoning and clinical judgment

Components of a clinical teaching session



Teaching settings



Service setting

- **Advantages:**
  - Realistic: learning occur in real context
  - Role modeling
- **Disadvantages:**
  - Difficult to manage clinical and teaching agendas at the same time.

In-patient setting

- The student observes the “real work” of the clinical team directly.
- **Disadvantages:**
  - Changes in the service provision have meant that patients are only admitted when they are actually ill and discharged rapidly to follow up care in the community.
  - This meant that:
    - Fewer patients in the hospital
    - Many are too ill for students to clerk

Teaching in theater

- This can be very exciting to the students as students can assist in an operation so they can feel a valued part of the team.
- Theater is a place where students:
  - Can learn about surgery
  - Can learn about anesthesia techniques
  - Can revise anatomy
  - Can practice IV lines.
- Surgeons can talk to students before the list and during the operation.
- Anesthetist can teach while patient on table

Outpatient setting

- Until recently the majority of student learning took place at wards.
- **Advantages:**
  - Overcome the obstacles of in-patient setting
  - Increases student exposure to clinical materials (Malley etal,1999)
- **Disadvantages:**
  - Not suitable for large numbers
  - Can be unpredictable
  - May lack continuity
  - Students rarely examine the patient
  - Little time for discussion and feedback

Teaching in the Clinic

Remember that “less is more” so do not attempt in-depth teaching on every patient, you will be stressed and run late. (Irby,1995)

On-call setting

- ‘On-call at night’ experiences have been highly valued. However, the recent study evaluating this, questions both the level of experience gained and the overall value of such experiences. More data would be required in this area.
- **Advantages:**
  - Students find the A&E environment motivating
  - Students learn how make clinical assessment & judgment in emergency situations.
  - Students learn how to manage time efficiently and how to prioritize
  - Students do some part of the real work
  - Student can see some of the complex situations that can arise on “acute wards”.
- **Disadvantages:**
  - Not suitable for large groups
  - Many hospitals have no facilities for students to stay overnight
  - Tutor might not be a good model
  - Some organizational issues

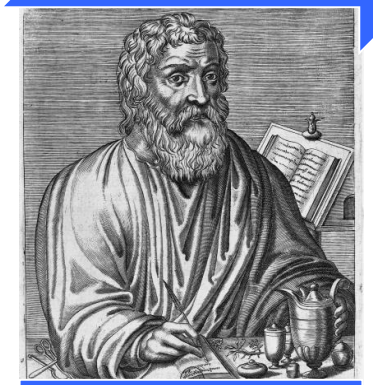
Clinical skills Center

- **Advantages:**
  - Overcome the obstacle of shortage of suitable cases for teaching.
  - Effective teaching without taxing patient care. (Hao et al., 2002, p. 152).
  - Relatively low cost of establishing and maintaining the skills laboratory
  - **Useful for teaching:**
    - History taking
    - Communication skills
    - Physical examination
    - Eliciting signs,
    - Hand-on training for procedures.
- **Disadvantages:**
  - Artificial environment

Teaching methods

History of clinical teaching

460-370 BC



Hippocratic method

1614-1672

Sylvius started teaching on rounds [Whitman, 1990]

1849-1920

Osler stressed the importance of bedside teaching [Whitman, 1990]

1960s

75% of the teaching was at bedside [Reichsman F et al.1964]

1978

16% of the teaching was at bedside [Collins GF.1978]

Now

Much less [LaCombe, 1997]

Teaching models

Traditional clinical teaching

- **Teaching setting:**
  - Hospital-based (in-patient based bedside teaching)
- Non-structured
- Ad hoc in nature

Modern clinical teaching

- **Teaching setting:**
  - Ambulatory care teaching
  - Clinical skills laboratory
- Using Structured methods
- Systematic

Teaching methods

Patient-based methods

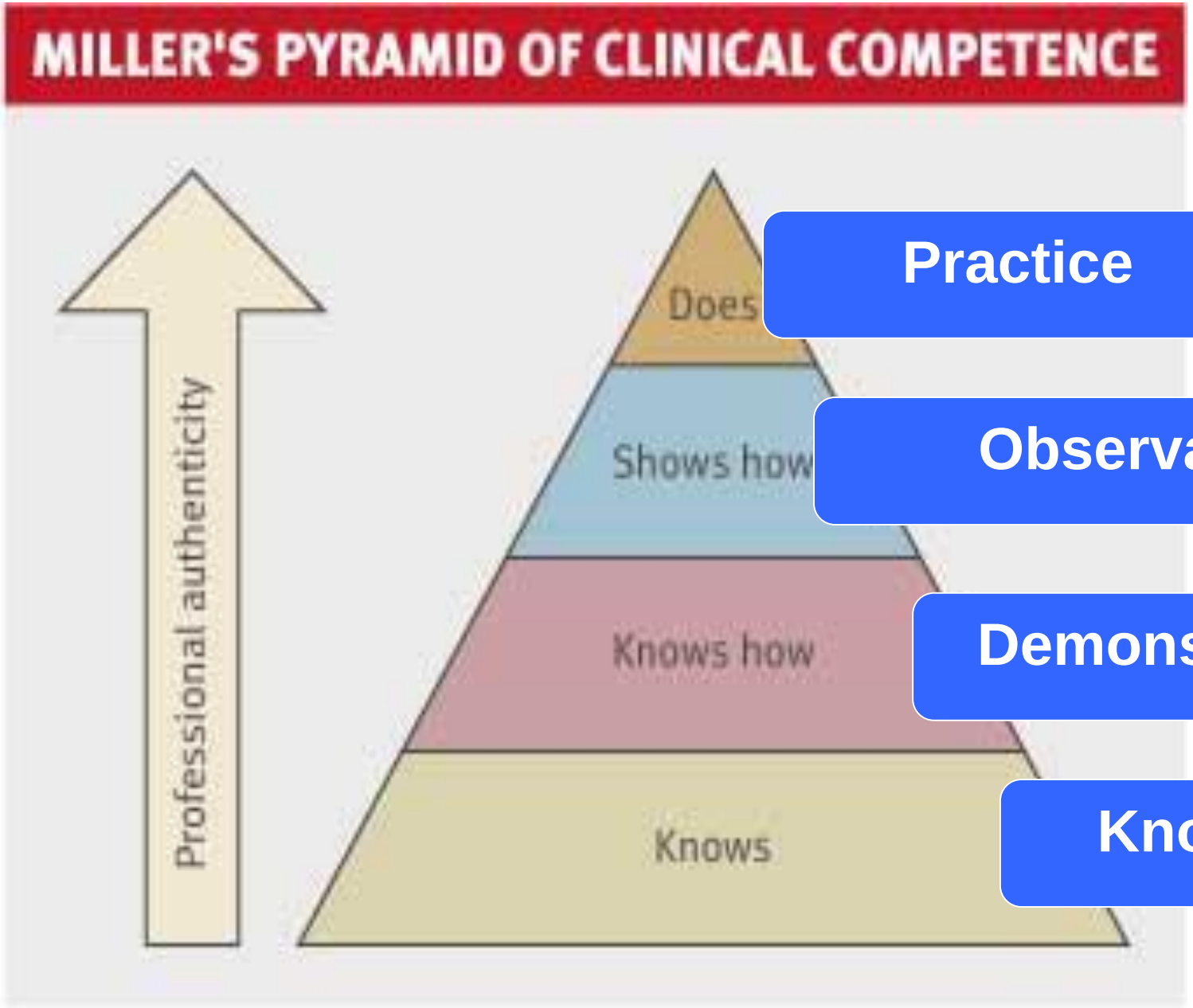
1. Instruction
2. Direct observation
3. Role modeling/Shadowing/ mentorship/ apprenticeship /internship
4. Reporting back
5. Patient centered model
6. Video interviews
7. Case conference
8. Demonstration

Non patient-based methods

1. Problem based learning
2. Experiential methods
    1. Hands-on Training Model
    2. Computer Assisted Learning (video demonstration)
    3. Simulation/Standardised Patients

What is the best teaching method?

- There is no single “best way” to teach medical students and residents.
- Teaching is a very personal experience and we each develop our own style and favorite techniques.
- **The method used or teaching depends on:**
  - The intended learning outcome (the targeted skill)
  - Teaching setting and Available time (in-patient/out-patient/CSL)
  - Students level and number



Practice

Observation

Demonstration

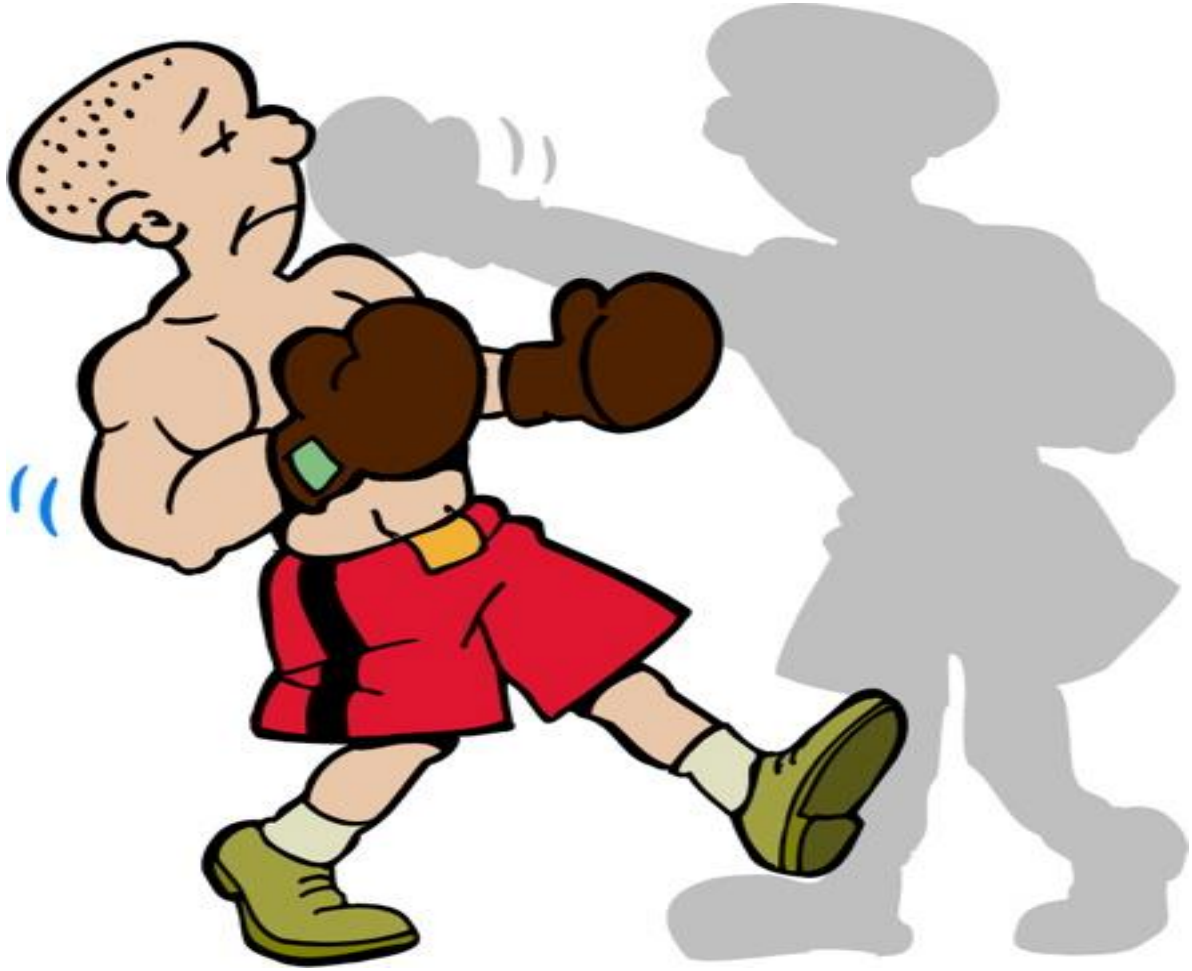
Knowledge

Traditional bedside teaching methods

- **Advantages of bedside teaching:**
  - Students acquire skills in history taking
  - Students acquire skills in physical examination
  - Students acquire skills in making diagnosis.
  - **Clinical ethics can best be taught there** [Siegler M. A legacy of Osier: teaching clinical ethics at the bedside. JAMA. 1978;329:951-6].
- **Disadvantages of bedside teaching:**
  1. Its ad hoc nature
  2. Decline in availability of clinical material (patients)
  3. Cannot cover whole curriculum
  4. Poorly supervised and variable delivery
  5. Conflicting pressures of teaching and service delivery [Doshi M., Brown N. Whys and hows of patient-based teaching Advances in Psychiatric Treatment (2005) 11: 223-231]

1-Shadowing (role modeling)

- **It is most useful for:**
  - Ethics
  - Communication skills.



- **Advantages:**
  - Students learn:
    - from a senior clinician
    - the behavior of consultations with patients
    - the attitude to the patient,
    - the professional approach,
    - handling of difficult situations (breaking bad news, dealing with an angry relative or a tearful patient)
    - the negotiation of treatment plans.
- **Disadvantages:**
  - A passive process
  - Should the senior clinician not have a professional approach then the students' learning might be misguided.

2-Demonstration (see one)

- The learner must see a “gold standard” demonstration of the skill or procedure in order to learn it visually.
- Some experts recommend at least two demonstrations – one done “silently” and the second accompanied by a detailed description of each stage in the process.
- **It is most useful for:**
  - Examination skills
  - Procedures

3-Direct observation (do one)

- The trainer sits in on the trainee's interview with a patient to observe the trainee on a set task (e.g. conducting thyroid examination). It is less appropriate for teaching clinical judgment or problem-solving.
- For the first attempt (perhaps more), observe and coach your learner.
- Immediately after the interview, the trainer gives feedback on the trainee's performance.
- Mini-Clinical Evaluation Exercise (Mini- CEX) can be used.
- **It is most useful for:**
  - History taking
  - Physical examination

Four steps methods of Walker and Peyton

Demonstration

Stage 1

Demonstration of the skill at normal speed, with little or no explanation.

Deconstruction

Stage 2

Repetition of the skill with full explanation, encouraging the learner to ask questions.

Formulation

Stage 3

The demonstrator performs the skill for a third time, with the learner providing the explanation of each step and being questioned on key issues. The demonstrator provides necessary corrections. This step may need to be repeated several times until the demonstrator is satisfied that the learner fully understands the skill.

Performance

Stage 4

The learner now carries out the skill under close supervision describing each step before it is taken.

Adapted from Peyton 1998:174-77

4-Reporting back teaching

- The student sees a patient alone and summarizes the case.
- The student report back to the trainer, presenting his findings, his views on the diagnosis (problem-solving) and the appropriate management (judgment).
- Then he is given constructive feedback by the trainer.
- **It is most useful for teaching:**
  - Clinical reasoning
  - Clinical judgment

5-Patient-centered model

- Students are allocated certain patients to follow during their admission
- Students should be encouraged:
  - To clerk patients when they are admitted
  - Follow them daily
  - Take the responsibility of presenting them to the team during ward round.
  - To read about their case
- **Advantage:**
  - Active learning

6-Video interviews

- The student interviews and reviews performance later with the trainee.
- **Advantages:**
  - Gives a unique perspective for self-evaluation.
  - **a useful way of learning:**
    - Consultation skills (history taking).
    - Communication skills.
- **Disadvantages:**
  - Video interviewing is difficult due to issues of confidentiality and consent.

7-Case conference

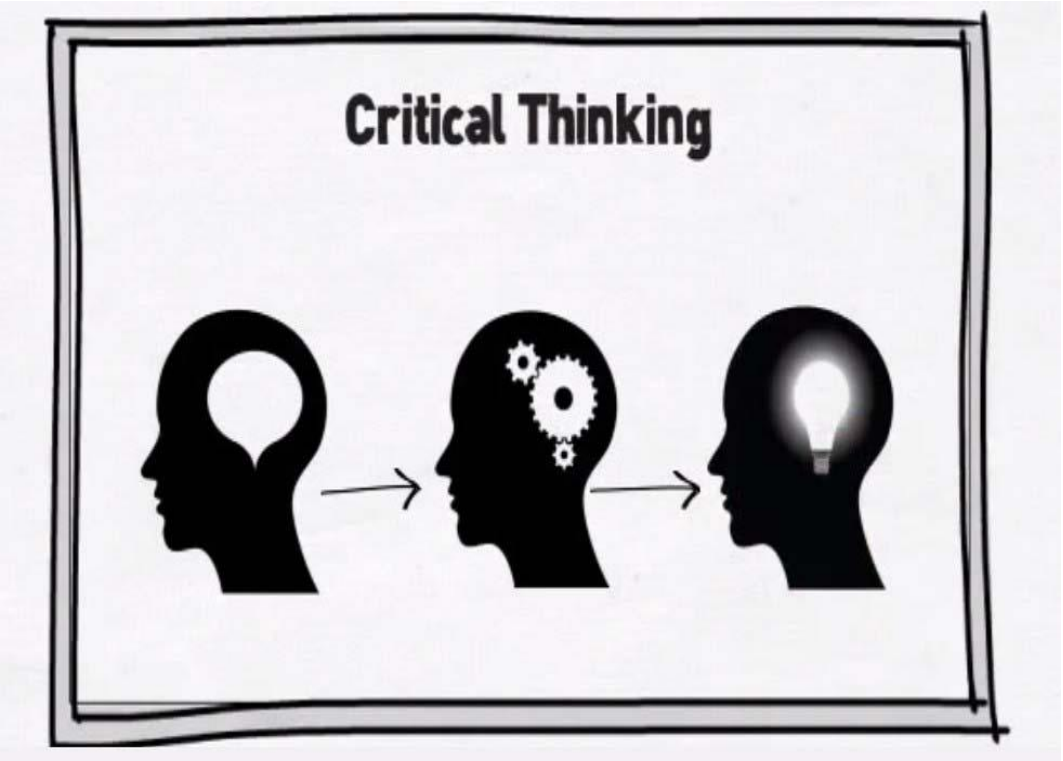
- A case is presented to a wider (sometimes multiprofessional) audience and interesting or challenging aspects are discussed.
- **Advantages:**
  - Comfortable/Quiet
  - Confidential
  - Time efficient
  - Good for clinical problem solving (clinical reasoning & clinical judgment)
- **Disadvantages:**
  - No patient contact
  - Relies on presentation/chart

7-Case conference

- **Advantages:**
  - Comfortable/Quiet
  - Confidential
  - Time efficient
  - Good for clinical problem solving (clinical reasoning & clinical judgment)

8-Instruction

- **Involves:**
  - Probing the learners with questions
  - Engaging all learners
  - Capturing teachable moments.
- **Most useful for:**
  - Clinical reasoning
  - Clinical decision-making.
- **Techniques:**
  - One-Minute Preceptor
  - SNAPPS
  - Both techniques are suitable for out-patient teaching



One-Minute preceptor

- Preceptor driven and requires no orientation for the trainee.

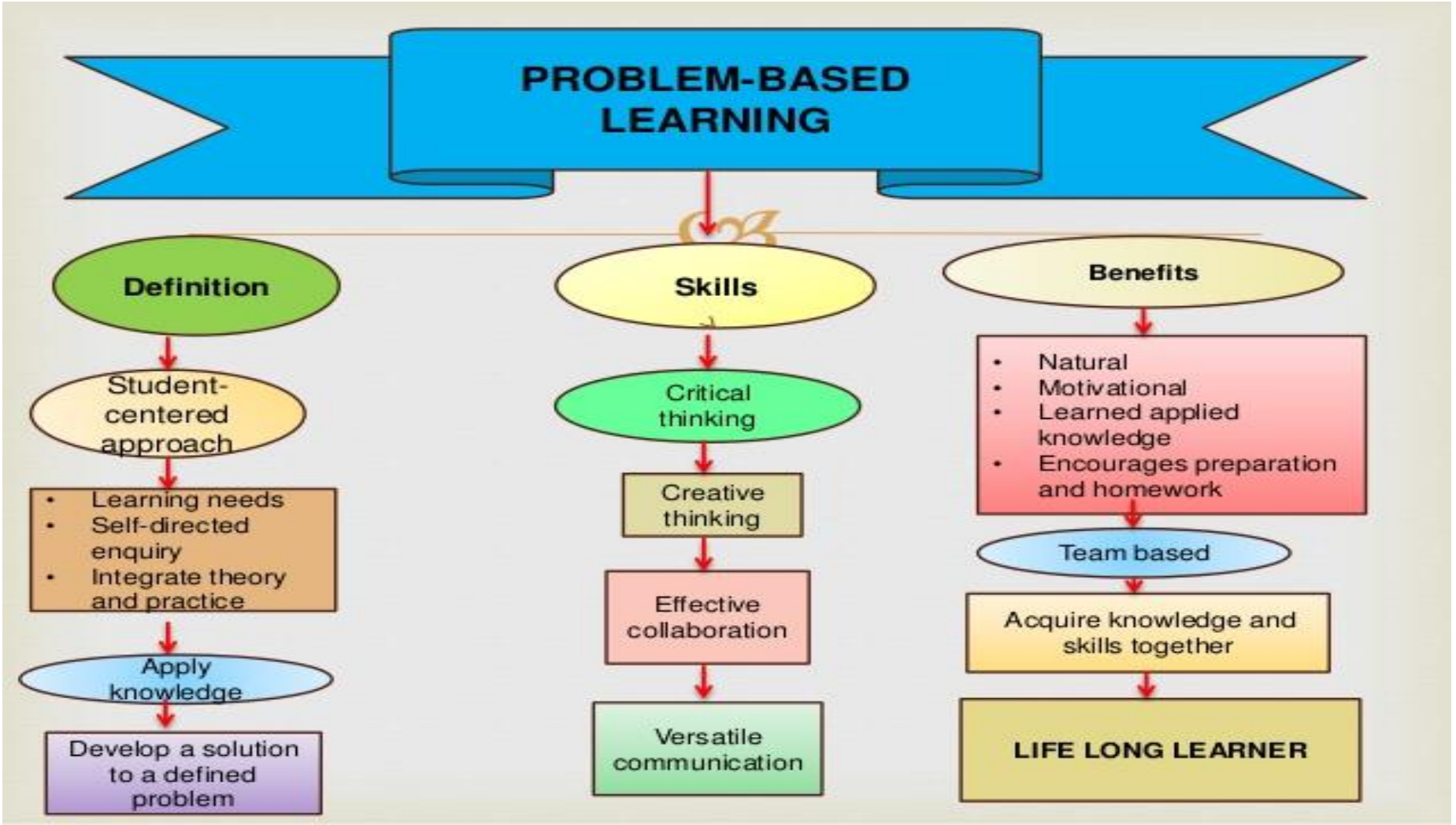
1. Get a commitment from the trainee stating the diagnosis or plan;
2. Probe the trainee to present supporting evidence;
3. Teach some general rules or “take-home points” that are learning issues from the case that can be applied to other cases;
4. Reinforce what the trainee has done well;
5. Provide constructive feedback.

SNAPPS

- Learner driven:

1. **Summarize:** condense facts
2. **Narrow:** the differential diagnosis to 2-3
3. **Analyze:** the differential diagnosis
4. **Probe:** the preceptor asks certain question, queries
5. **Plan:** develop management plan
6. **Select:** specific case for review-self-directed learning

9- Problem based learning



Teaching methods

		Teaching method			
	Clinical skill	In-patient	Out-patient	Seminar room	CSL
1	History taking	• Demonstration • Observation • Shadowing	• Demonstration • Observation • Shadowing	• Demonstration (CAL)	• Demonstration (SP/CAL) • Observation (SP) • Video interview
2	Physical examination	• Demonstration • Observation • Shadowing	• Demonstration • Observation • Shadowing	• Demonstration (CAL)	• Demonstration (SP/models/CAL) • Observation (SP/models)
3	Critical thinking	• Instruction • Reporting back	• Instruction • Reporting back	• Case conference	• PBL using case vignettes
4	Communication skills	• Demonstration • Observation • Shadowing	• Demonstration • Observation • Shadowing	• Demonstration (CAL)	• Demonstration (SP/CAL) • Observation (SP) • Video interview
5	Procedures	• Demonstration • Observation • Shadowing	• Demonstration • Observation • Shadowing	• Demonstration (CAL)	• Demonstration (models/CAL) • Observation (models)

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