

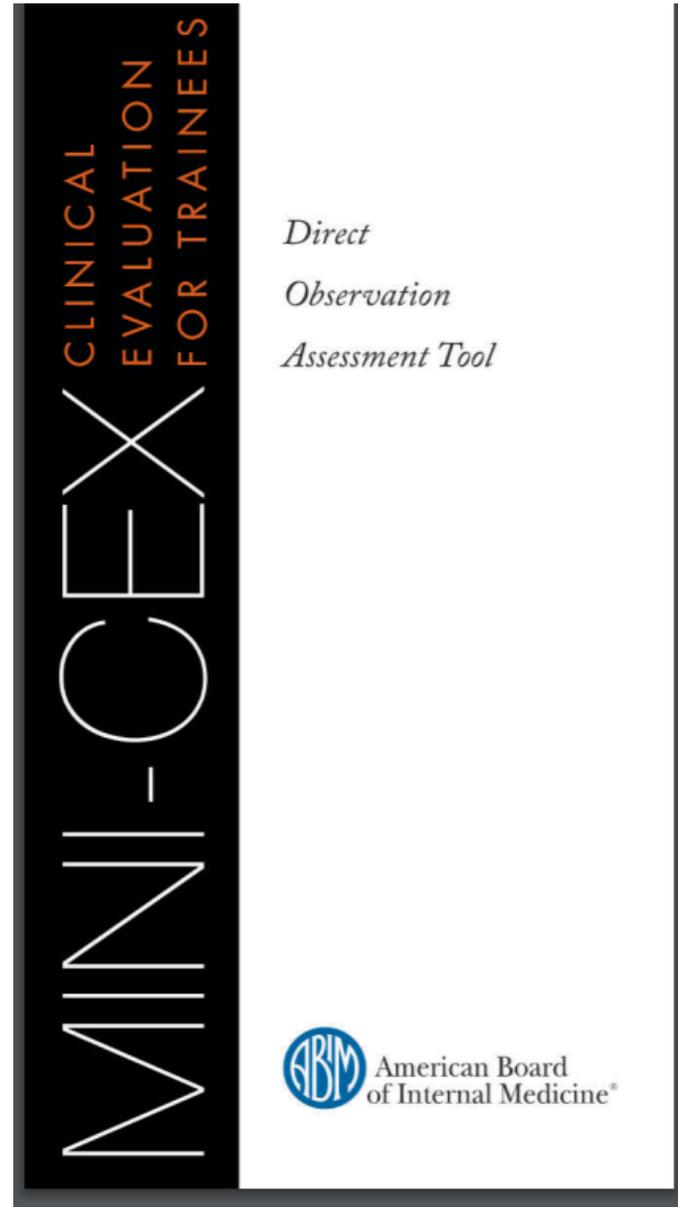
# Mini-CEX Workshop

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# Roadmap

Introductions

Overview of session

Overview of assessment

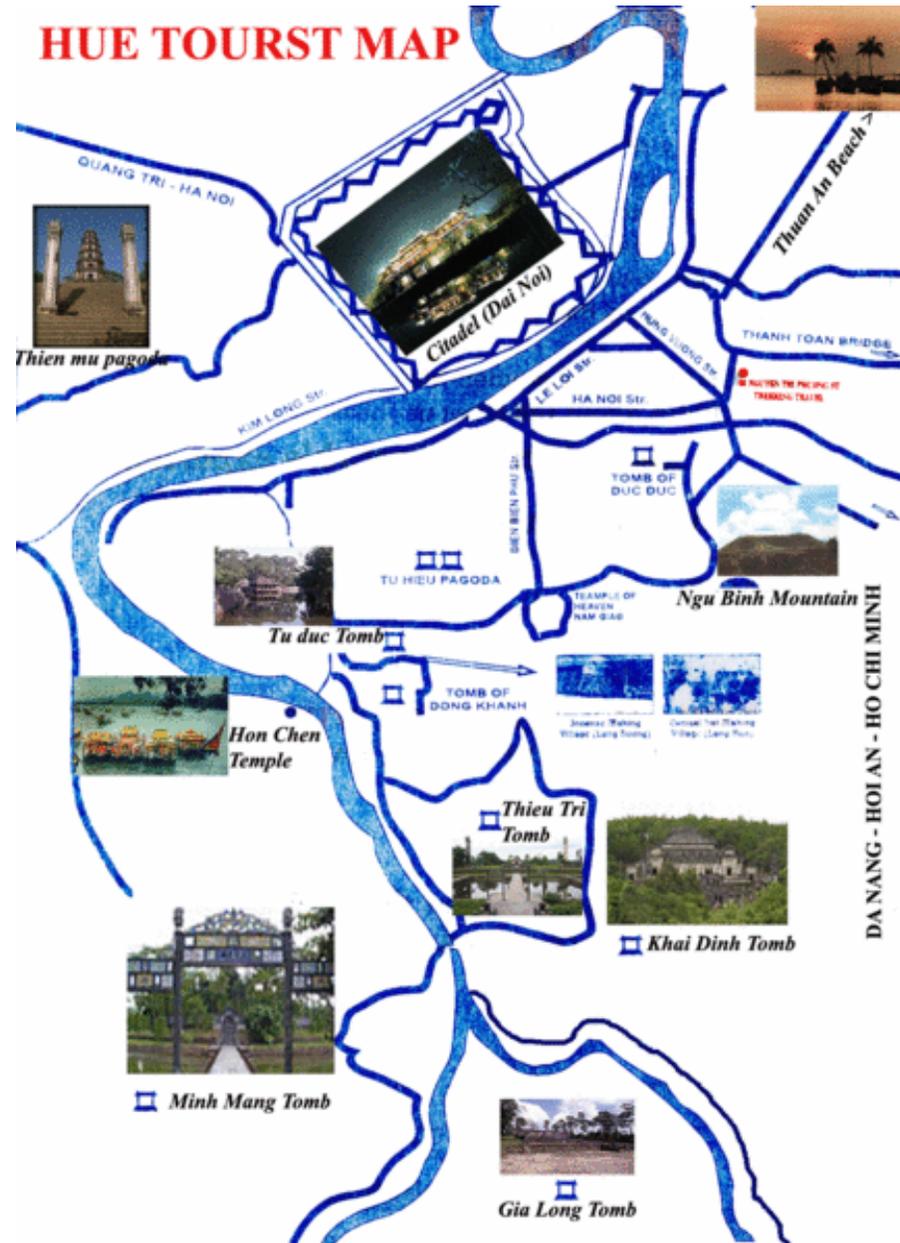
The Mini-CEX

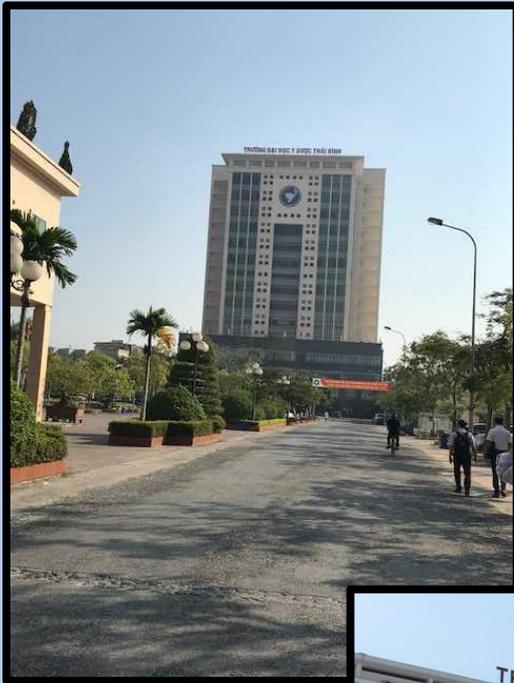
Demonstration

Workshop

De-brief

Bringing the Mini-CEX to your institutions





What challenges do you have implementing assessment at your schools?

A quick overview of assessment

*Medical schools should design and implement strategies to assess students' achievement of expected clinical skills outcomes.*

Association of American Medical Colleges Recommendations for Clinical Skills Curricula for Undergraduate Medical Education, 2008

Why do we assess students?

# Why do we assess students?

- To measure expected progress of student learning
- To identify students who are having difficulties and ensure timely response
- To measure the effectiveness of our teaching programs
- To meet our mission as educational institutions
  - To meet consistent standards within and across institutions
  - To produce highly competent, highly effective health professionals who will serve the people, the nation and the world
- To contribute to students' education
  - Builds self-awareness
  - Builds confidence
- To identify high-achieving students

# Linking assessment to developmental curriculum

- Pangaro
  - The learner's developing clinical role
- Miller
  - Type of learning demonstrated
- Dreyfus
  - Level of skill performance

Table 2: Clinical Learning Models

Clinical Learning Role <i>Pangaro</i>	Type of Demonstrated Learning <i>Miller</i>	Levels of Skill Performance <i>Dreyfus</i>
Reporter Interpreter Manager Educator	Knows Knows How Shows How Does	Novice Advanced beginner Competent Proficient Expert Master

# Combining models to assess learner's developmental level

Figure 1: Categories of Skill Development

	Novice	Advanced Beginner	Competent	Proficient	Expert	Master
Educator						
Manager						
Interpreter		A				
Reporter	B	C				

■ Knows   ■ Knows How   ■ Shows   ■ Does

# Assessing assessment tools – van der Vleuten framework

- Validity
- Reliability
- Educational impact
- Acceptability
- Cost

van der Vleuten, CPM. The assessment of professional competence: developments, research and practical implications. *Adv Health Sci Educ.* 1996;1(1):41–67.

# Assessment in the context of educational principles

- Science- and evidence- based
- Informed by learning objectives
- Consistent with student development
- Consistent, fair and appropriate
- Actionable findings

# Mini-CEX – the Mini-Clinical Evaluation EXercise

## What is it?

- a 10-20 minute clinical observation of a real learner-patient interaction
- ideally followed by feedback to learner and learning plan
- ideally carried out frequently – once per rotation by trained observer

## Who?

- Clinical faculty
- Core faculty
- Chief or senior residents

## Where?

- Out-patient clinic
- In-patient services (CCU/ICU, general medical floor)
- Emergency department

## Clinical Skills Evaluated

- Medical interviewing skills
- Physical examination skills
- Humanistic qualities/professionalism
- Clinical judgment/reasoning
- Counseling skills
- Organization/efficiency
- Overall Clinical competence

CLINICAL  
EVALUATION  
FOR TRAINEES

MINI-CEX

*Direct  
Observation  
Assessment Tool*

American Board of Internal Medicine®

**Mini-Clinical Evaluation Exercise (CEX)**

Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

Resident: \_\_\_\_\_  R-1  R-2  R-3

Patient Problem/Dx: \_\_\_\_\_

Setting:  Ambulatory  In-patient  ED  Other \_\_\_\_\_

Patient: Age: \_\_\_\_\_ Sex: \_\_\_\_\_  New  Follow-up

Complexity:  Low  Moderate  High

Focus:  Data Gathering  Diagnosis  Therapy  Counseling

1. Medical Interviewing Skills ( <input type="radio"/> Not observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR
2. Physical Examination Skills ( <input type="radio"/> Not observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR
3. Humanistic Qualities/Professionalism		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR
4. Clinical Judgment ( <input type="radio"/> Not observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR
5. Counseling Skills ( <input type="radio"/> Not observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR
6. Organization/Efficiency ( <input type="radio"/> Not observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR
7. Overall Clinical Competence ( <input type="radio"/> Not observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

Mini-CEX Time: Observing: \_\_\_\_\_ Mins Providing Feedback: \_\_\_\_\_ Mins

Evaluator Satisfaction with Mini-CEX  
LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX  
LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments: \_\_\_\_\_  
\_\_\_\_\_

Resident Signature \_\_\_\_\_ Evaluator Signature \_\_\_\_\_

# Using the rating scale

## Rating Scale

The Mini-CEX utilizes a nine-point rating scale:

1 through 3 is unsatisfactory

4 through 6 is satisfactory

7 through 9 is superior

## Strategies for using the Rating Scale

2-step: determine if performance is unsatisfactory, satisfactory or superior; then determine score within the category

Mini-CEX as formative assessment for documenting progress

May reduce scale to:

1 – unsatisfactory

2-4 – satisfactory

5 – superior

If satisfactory, determine if student is progressing appropriately from 2-4

**Mini-Clinical Evaluation Exercise (CEX)**

Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_  
Resident: \_\_\_\_\_  R-1  R-2  R-3  
Patient Problem/Dx: \_\_\_\_\_  
Setting:  Ambulatory  In-patient  ED  Other \_\_\_\_\_  
Patient: Age: \_\_\_\_\_ Sex: \_\_\_\_\_  New  Follow-up  
Complexity:  Low  Moderate  High  
Focus:  Data Gathering  Diagnosis  Therapy  Counseling

1. Medical Interviewing Skills ( Not observed)  
1 2 3 | 4 5 6 | 7 8 9  
UNSATISFACTORY | SATISFACTORY | SUPERIOR

---

2. Physical Examination Skills ( Not observed)  
1 2 3 | 4 5 6 | 7 8 9  
UNSATISFACTORY | SATISFACTORY | SUPERIOR

---

3. Humanistic Qualities/Professionalism  
1 2 3 | 4 5 6 | 7 8 9  
UNSATISFACTORY | SATISFACTORY | SUPERIOR

---

4. Clinical Judgment ( Not observed)  
1 2 3 | 4 5 6 | 7 8 9  
UNSATISFACTORY | SATISFACTORY | SUPERIOR

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5. Counseling Skills ( Not observed)  
1 2 3 | 4 5 6 | 7 8 9  
UNSATISFACTORY | SATISFACTORY | SUPERIOR

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6. Organization/Efficiency ( Not observed)  
1 2 3 | 4 5 6 | 7 8 9  
UNSATISFACTORY | SATISFACTORY | SUPERIOR

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7. Overall Clinical Competence ( Not observed)  
1 2 3 | 4 5 6 | 7 8 9  
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Mini-CEX Time: Observing: \_\_\_\_\_ Mins Providing Feedback: \_\_\_\_\_ Mins

Evaluator Satisfaction with Mini-CEX  
LOW 1 2 3 4 5 6 7 8 9 HIGH

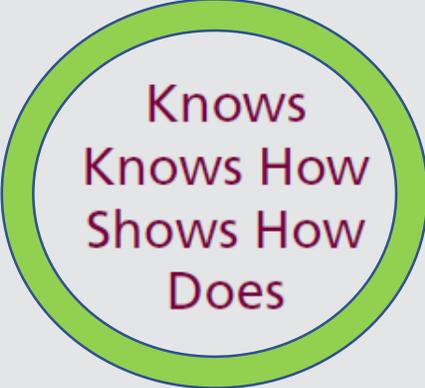
Resident Satisfaction with Mini-CEX  
LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Resident Signature \_\_\_\_\_ Evaluator Signature \_\_\_\_\_

# What is the mini-CEX

Table 2: Clinical Learning Models

<b>Clinical Learning Role</b> <i>Pangaro</i>	<b>Type of Demonstrated Learning</b> <i>Miller</i>	<b>Levels of Skill Performance</b> <i>Dreyfus</i>
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# Evidence

- Validity and reliability
  - Multiple domains
  - Multiple disciplines
- Feasible and acceptable in undergraduate and graduate medical education
- Limitations
  - May not discern highest achieving learners
  - Learners may perceive conflict between learning and judgment/grading
  - Best for formative assessment/assessment of progress rather than summative assessment

# Demonstration of the Mini-CEX

## SCENARIO:

**The patient** is a 68 year old woman with a history of rheumatoid arthritis, hypertension and type 2 diabetes. She has had both rheumatoid arthritis and hypertension for many years, and has consistently taken medications and followed recommendations for these conditions. She was diagnosed with type 2 diabetes 4 years ago. She has been much less consistent in addressing this condition. The background story is that she is extremely fearful of diabetes as she has had multiple relatives who have had experienced kidney damage and other serious consequences. On some level, she believes that these consequences are inevitable – and therefore finds it difficult to motivate herself to follow her physician’s recommendations.

**Today’s visit** follows a recent emergency room visit in which she was found to have elevated glucose levels and glycosylated hemoglobin. Her most recent visit was nearly 1 year ago.

**Setting the stage.** In order to prepare your student for what you are hoping to accomplish during this visit, you ask that she ask if the patient has any acute or urgent concerns, ask briefly about her arthritis and hypertension, and then focus on diabetes. You want your student to learn about the patient’s barriers to taking care of her diabetes.

## WHERE?

Family medicine clinic

## CLINICAL SKILLS EVALUATED? (ALL COMPONENTS OF Mini-CEX)

- Medical interviewing skills
- Physical examination skills
- Humanistic qualities/professionalism
- Clinical judgment/reasoning
- Counseling skills
- Organization/efficiency
- Overall Clinical competence

De-brief

# Workshop – trying out the Mini-CEX

- Form groups of 3
- You will rotate through 3 roles
  - Learner – late year 4 student
  - Teacher – clinical faculty member
  - Observer
- Because of time limit, each cycle will focus on several, but not all clinical skills of the Mini-CEX

# Case 1

**SCENARIO:** A 42 year old woman presents to the emergency room with swelling in her lips, peri-orbital areas and generalized itch. She is not in acute distress.

**WHERE?:** Emergency room

**TEACHER:** Recognizing that the patient is not in danger, you direct the student to interview and examine the patient and to come up with a differential diagnosis

**Mini-CEX focus:** Medical interviewing skills, physical examination skills, clinical judgment and reasoning.

# Case 2

**SCENARIO:** A 25 year old woman presents with amenorrhea. Her last menstrual period was 3 months ago. She believes she is pregnant. She smokes 10 cigarettes a day and drinks alcohol socially. She is not taking prenatal vitamins. This does not have a steady partner. This was not a planned pregnancy but she plans to continue with the pregnancy.

**WHERE:** a prenatal clinic

**TEACHER:** You have interviewed and examined the patient along with the student. You ask the medical student to learn more about the patient's social history and circumstances and to counsel the patient regarding behavioral risks. You observe her as she conducts the social history and as she counsels the patient about healthy pregnancies and behavioral risks.

**Mini-CEX focus:** Medical interviewing skills, humanistic qualities and professionalism, counseling skills.

# CASE 3

**SCENARIO:** An 8 year old boy is about to be discharged from the hospital after an extended hospitalization for acute asthma exacerbation. During the hospitalization it became clear that the parents did not understand how to administer their child's medications correctly. It also became clear that the father and grandfather both smoke cigarettes at home.

**WHERE:** pediatric in-patient ward

**TEACHER:** This student has been involved with the patient and family throughout the admission. You ask her to explain their son's illness in clear language, the purpose and use of each asthma inhaler and the risk of passive exposure to tobacco smoke. You observe her as she speaks with the patient and his parents.

**Mini-CEX focus:** medical interviewing (communication) skills, humanistic qualities and professionalism, counseling skills.

# Applying the Mini-CEX in your settings

- Mini-CEX as part of overall assessment framework
- Faculty development
- Details of implementation
  - Focused or complete Mini-CEX?
  - Scheduling
  - Quality control and improvement

# Teaching the Mini-CEX to faculty

- 2 hour initial training
- Frequent application
- Periodic observation of faculty
- Additional training in providing feedback

Next steps



# Selected references

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