



The Mini Clinical Evaluation Exercise (mini-CEX)

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Overview

- Performance-based assessment (PBA) in medical education
- Attitudes and barriers to PBA
- mini-CEX assessment in undergraduate medical education

Reforms of postgraduate medical education in the UK



SCOTTISH EXECUTIVE

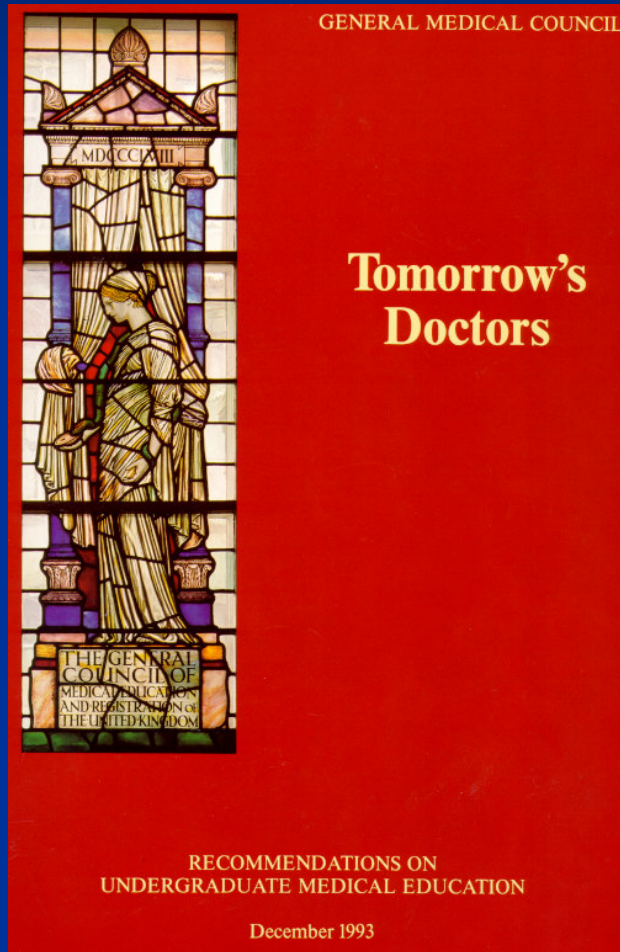


Modernising Medical Careers *The next steps*

The future shape of Foundation, Specialist
and General Practice Training Programmes

April 2004

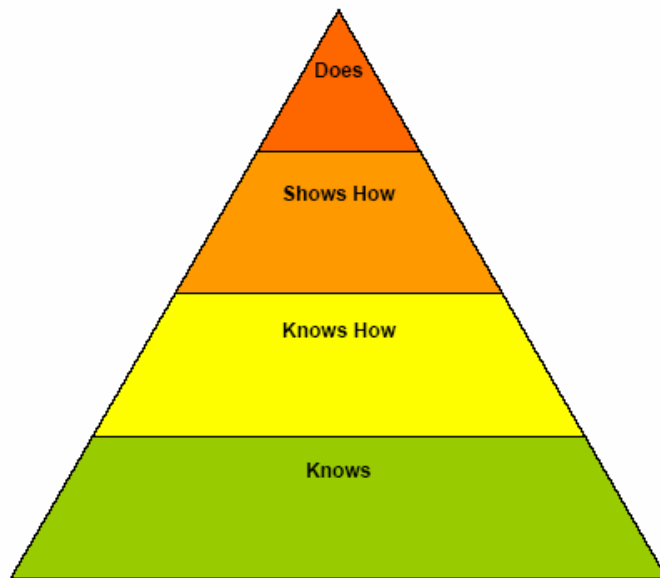
Undergraduate medical education



- Shift from knowledge-based to competency-based assessment.

Assessment of clinical competence

Miller's Pyramid



Does = Performance Based Testing eg; Mini-CEX, Multi-source Feedback

Shows How = Competency Based Testing eg; OSCE, SP testing

Knows How = Clinical Context Based Testing eg; PMPs, MEQ, EMQ

Knows = Factual Testing eg; MCQ, essay, oral

Performance-based assessment



Attitudes to Clinical Competence Assessments (CCA) – a survey

Table 2. Attitudes toward the roles of direct observation and feedback in undergraduate clinical competence assessments.

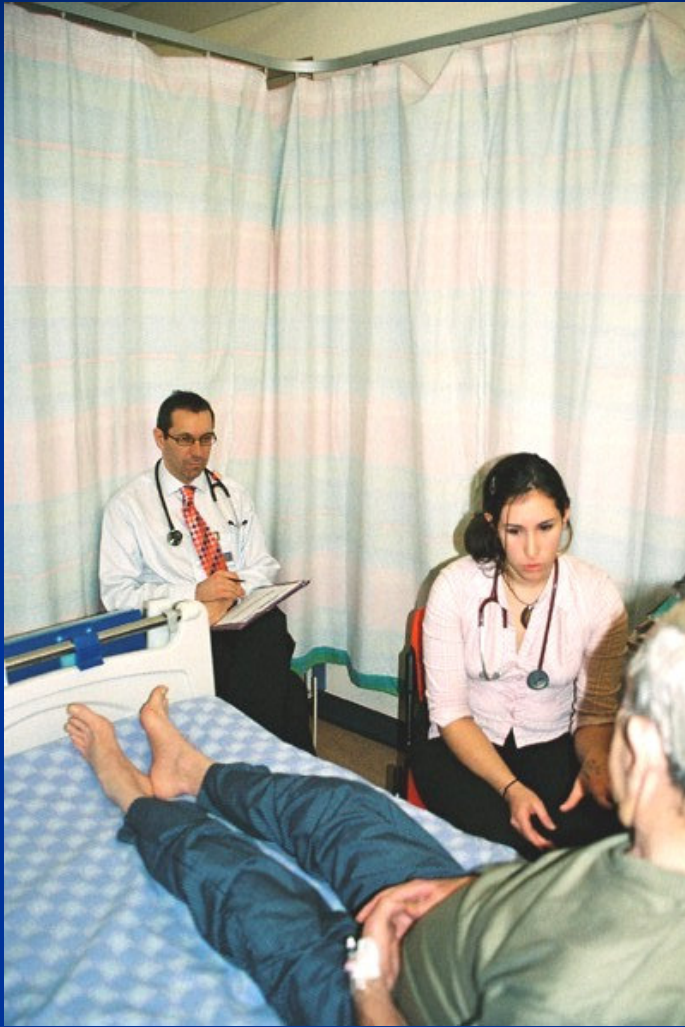
	Consultant Teachers (n=99)				Students (n=149)				
	SA	A	D	SD	SA	A	N	D	SD
Direct observation of students performing their clinical skills on a real patient should be an important feature of in-course assessment?	52 [52.5%]	46 [46.5%]	1 [1%]	0	78 [52%]	62 [42%]	7 [5%]	2 [1%]	0
Students receiving feedback on the strengths and weaknesses of their clinical skills should be an important feature of in-course assessment?	52 [52.5%]	46 [46.5%]	1 [1%]	0	94 [63%]	47 [32%]	6 [4%]	2 [1%]	0

(SA-strongly agree; A-agree; N-neither; D-disagree; SD-strongly disagree)

CCA – Further Experiences & Attitudes

- 75% of clinical teachers indicated that global judgement without direct observation was principal method of rating student
- Reflected in students' evaluation of assessment practice in Year 5
- 70% of students in favour of summative PBA strategy vs. 30% clinical teacher
- Majority of clinical teachers back a return to more formalised testing

Barriers to PBA



Clinical Teachers -

- Lack of time
- Large class sizes
- Inadequate resources
- Lack of educational training
- Conflicting priorities

Students -

- Reticence on the part of their teachers to engage in the assessment of observed practice
- Lack of commitment to standardising practice

Is PBA a lost cause?



“I think you have to be aware of the pressure on mainstream speciality consultants to provide teaching. I have seven students for a block of seven weeks four times per year and I am their tutor. This is on top of a full clinical workload. I struggle to find time to do what I do (and train our own juniors) so although what I say is desirable I don't think I can achieve it.”

mini-CEX

- Method for assessing clinical performance in the workplace developed by ABIM
- Viva examinations abandoned by ABIM in 1972 and replaced with the Clinical Evaluation Exercise (CEX).
- Mini-CEX superseded CEX in early to mid-90s

mini-CEX

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 _____

- Postgraduate tool
- Pocketsize cards
- 7 competency domains
- Nine point rating scale, 4 defined as marginal
- Snapshot of resident-patient interaction

mini-CEX

- Shown to be valid, reliable, feasible, acceptable and fair assessment in PG & UG practice in the USA.
- Reproducibility coefficient of 0.8 following 12 -14 assessments in PG and 8 in UG setting.
- Fewer assessments required to reliably identify those who are clearly competent or incompetent.

mini-CEX

Mini-CEX (Clinical Evaluation Exercise)

Mini-CEX is a 15 minute snapshot of doctor/patient interaction. It is designed to assess the clinical skills attitudes and behaviours of trainees essential to providing high quality care.

Trainees will be asked to undertake six observed encounters during the year with a different observer for each encounter. Each of these encounters should represent a different clinical problem and trainees should sample from each of the core problem groups identified in the F2 curriculum by the end of the year.

Immediate feedback will be provided after each encounter by the observer rating the trainee. Trainers and trainees will need to identify agree strengths, areas for development and an action plan for each encounter.

Assessors: These may be staff grades, experienced SpRs or consultants in a secondary care setting, or the GP trainer or other GPs in a primary care setting.

Number of assessments required per year: 4-6

Estimated time required: 20 minutes (15 min for assessment, 5 min for feedback)

- Training scenario for Mini-CEX Video
 - High Quality
 - Low Quality
- Training scenario for Mini-CEX Review Video

- Strongly recommended in assessment of medical interns, USA
- Adopted as a key element in the FP's assessment toolkit for Eng.& Wales

mini-CEX & undergraduate medical education in the UK

- University of Southampton Medical School, ASME 2005
- Evaluation of 2340 mini-CEX assessments in a single year
- Format derived from ABIM

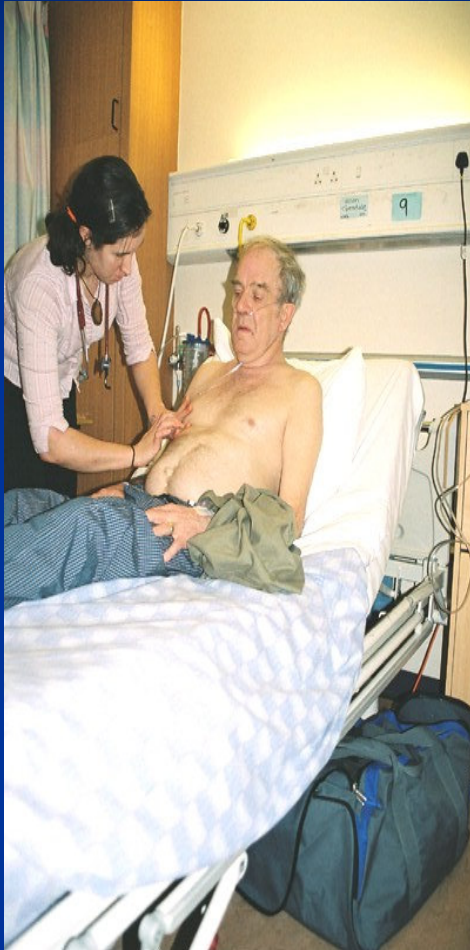
The positives

- Liked by students
- Easy for examiners to organise
- Driver for change & improvement
- Less disruptive to patients and their families
- Seen to be fair

The negatives

- Organisational problems in shorter attachments
- Less holistic than long cases
- Perception of lack of consistency in grading
- Students with good communication skills but poor overall clinical competence may be able to pass

mini-CEX pilot in Edinburgh



- 202 mini-CEX assessments on 94 students during acute medicine block
- Median no. of assessments per student - 2 (range 1-5)
- Median observation time – 5 minutes (range 2-90)
Median feedback time – 10 minutes (range 1-60)
- Assessor satisfaction – 119 ratings
Median value 8 on 10 point scale.
- Reduced tendency to grade towards middle

Student Experience



- 77% of students agreed or strongly agreed that mini-CEX is a fair means of assessment
- Median student satisfaction with mini-CEX format – 8 (on same 10 point scale)
- Difficult to arrange the time with busy medical staff to carry out mini-CEX assessments
- Recognise the unreliability of a judgement made on one or two assessments

Making mini-CEX work in undergraduate medical education



Undergraduate mini-Clinical Evaluation
Exercise Booklet
(mini-CEX)

Produced with the assistance of a Small Project Grant awarded
by The Edinburgh Fund

- Adapt mini-CEX methodology co-operatively
- Encourage integration of assessment
- Set achievable targets and consider weighting the burden of assessment to focus on borderline candidates

Making mini-CEX work in undergraduate medical education

Undergraduate Mini-Clinical Evaluation Exercise (Mini-CEX)

Please complete questions using a cross: ☒ Please use black ink and CAPITAL LETTERS

Student's Name:

Student's Surname:

Clinical Setting: A&E OPD In-patient Acute Admission Theatre

Clinical Problem: Category: CVS Resp GIT CNS Locontr Psych/Behav

Focus of clinical encounter: History Examn Diagnosis Management Explanation

Complexity of case: Low Average High Assessor's position: Cons. AS/StffG SpR

Please grade <u>ONE</u> of the following areas	Not Yet Competent	Minimally Competent	Competent	Highly Competent
1 History Taking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Clinical Examination Skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Clinical Judgement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Anything especially good?

Suggestions for development

Assessor satisfaction with Mini-CEX: LOW 1 2 3 4 5 6 7 8 9 10 HIGH

Assessors Signature:

Assessor's surname:

Time take for observation: (in minutes)

Time take for feedback: (in minutes)

Date:

Retain master copy for your own records. Hand in carbon copies to Module Organiser or Year 5 Secretary

Adapted with permission from American Board of Internal Medicine

- Undertake staff development and quality control
- Factor mini-CEX performance into summative assessment
- Involve senior training and non-training grade doctors in assessment
- Reward for excellence in teaching and assessment

Summary

- Students and consultant clinical teachers acknowledge the merits of PBA and related feedback but doubts persist
- mini-CEX is becoming established as a routine in postgraduate practice
- Experience suggests that mini-CEX testing is acceptable, fair and manageable
- Mini-CEX may offer sustainable means of achieving reliable PBA that is practical for clinicians and offers quality feedback to students