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

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

<table>
<thead>
<tr>
<th></th>
<th>Consultant Teachers (n=99)</th>
<th>Students (n=149)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
<td>A</td>
</tr>
<tr>
<td>Direct observation of students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>performing their clinical skills on</td>
<td>52</td>
<td>46</td>
</tr>
<tr>
<td>a real patient should be an</td>
<td>[52.5%]</td>
<td>[46.5%]</td>
</tr>
<tr>
<td>important feature of in-course</td>
<td></td>
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<tr>
<td>assessment?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students receiving feedback on</td>
<td></td>
<td></td>
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<tr>
<td>the strengths and weaknesses of</td>
<td>52</td>
<td>46</td>
</tr>
<tr>
<td>their clinical skills should be an</td>
<td>[52.5%]</td>
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<tr>
<td>assessment?</td>
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(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**

- 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

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

- **FY doctors expected to undertake 4 mini-CEX assessments in FY 1 & 6 in FY 2**

- **Implemented on basis of published evidence relating to practice in USA & experience of pilot schemes**

- **Limited experience in undergraduate circles**

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

<table>
<thead>
<tr>
<th>Doctor's Surname</th>
<th>Forename</th>
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</table>

**GMC NUMBER MUST BE COMPLETED**

<table>
<thead>
<tr>
<th>GMC Number</th>
<th>ABE</th>
<th>OPD</th>
<th>In-patient</th>
<th>Acute Admission</th>
<th>GP Surgery</th>
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</tbody>
</table>

**Clinical setting:**

- **Trauma/Ortho:**
- **Resp:**
- **CVS:**
- **Gastro:**
- **Neuro:**
- **Psych/Behav:**
- **Other:**

**Clinical problem category:**

- **New:**
- **FU:**
- **Focus of clinical encounter:**
- **History:**
- **Diagnosis:**
- **Management:**
- **Explanation:**

**Number of previous mini-CEXs observed by assessor with this problem:**

<table>
<thead>
<tr>
<th>Low</th>
<th>Average</th>
<th>High</th>
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**Number of times patient seen before by trainer:**

- **0:**
- **1-4:**
- **5-9:**
- **>10:**

**Complexity of case:**

**Please grade the following areas using the scale below:**

<table>
<thead>
<tr>
<th>Area</th>
<th>Below expectations for F1 completion</th>
<th>Borderline for F1 completion</th>
<th>Meets expectations for F1 completion</th>
<th>Above expectations for F1 completion</th>
<th>U/C*</th>
</tr>
</thead>
<tbody>
<tr>
<td>History Taking</td>
<td></td>
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<td></td>
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<tr>
<td>Physical Examination</td>
<td></td>
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<tr>
<td>Communication Skills</td>
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<td></td>
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<tr>
<td>Clinical Judgement</td>
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<tr>
<td>Professional</td>
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<tr>
<td>Organisation/Efficiency</td>
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<tr>
<td>Overall clinical care</td>
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</table>

**Agreed action:**

- Trainee satisfaction with mini-CEX
- Assessor satisfaction with mini-CEX
- What training have you had in the use of this assessment tool?

**Assessor's Signature:**

**Assessor's Forename:**

**Assessor's GMC Number:**

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*U/C Please mark this if you have not observed the behaviour and therefore feel unable to comment.

**Anything especially good?**

**Suggestions for development**

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Acknowledgements: Adapted with permission from American Board of Internal Medicine.
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

- 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

- 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.