



Assessment During Postgraduate Clinical Education

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Overview

- Assessment during postgraduate education
 - Differences, challenges, opportunities
- Workplace assessment
 - Examples from the UK Foundation Programme
 - Why it is good for learning
 - Why it is good for assessment
- Challenges

Postgraduate Setting: Differences

- Compared to undergraduate training
 - Curriculum is less structured and trainees have more responsibility
 - Assessment needs to
 - Pose a broader range of patient problems
 - More complex and acute care
 - Multi-system disease
 - More procedures
 - Support the assessment of integrated skills

Postgraduate Setting: Differences

- Compared to practice
 - Trainees are not yet completely responsible for patients and differentiation within specialty has not yet occurred
 - Assessment needs to
 - Focus on the potential to practice, not actual practice
 - Support the educational enterprise



Postgraduate Setting: Challenges

- Difficult to develop tests locally
 - Small numbers of trainees and faculty
 - Resources are fragmented across specialty
 - Assessment expertise is rare
- Difficult to simulate at the level of the trainees
 - Content and skills are too sophisticated



Postgraduate Setting: Opportunities

- Routine interactions between trainees and patients
 - Clinical material is readily available
- Routine interactions between trainees and the health care team
 - Sources of information on performance
 - Serve both education and assessment
- Workplace-based assessment capitalizes on these interactions



Foundation Programme

- Description
 - Two-year planned program of general training
 - Bridge between medical school and specialist/general training
 - Comprises
 - Series of placements in a variety of specialties and healthcare settings
 - Formal teaching sessions (emphasizes patient safety and accountability)
 - Supervised audit project (FY2)



Foundation Programme

- Features

- Trainees take responsibility for their own learning
- Competence is assessed throughout
- Need for CPD is instilled

- Outcomes

- Successful completion of the first year leads to full GMC registration
- Successful completion of the second year indicates professional accountability and readiness for specialist training



Foundation Programme

- Competencies
 - Good clinical care
 - Maintaining Good Medical Practice
 - Partnership with patients
 - Working with colleagues and in teams
 - Assuring and improving the quality of care
 - Teaching and training
 - Probity
 - Health



Foundation Programme

- Syllabus available
 - For each competence
 - Subjects
 - Knowledge
 - Skills
 - Attitudes

- Example
 - Partnership with patients
 - Breaking bad news...
 - Bereavement process...
 - Encourage questions...
 - Empathy, honesty, sensitivity...

Assessment in the Programme

- Purpose
 - Determine fitness to progress to next stage of training
 - Identify trainees in difficulty
 - Provide focused feedback consistent with CQI
 - Meet needs for accountability
- Four Methods
 - mini-Clinical Evaluation Exercise (mCEX)
 - Directly Observed Procedures (DOP)
 - Case-Based Discussion (CbD)
 - Peer Assessment (mini-PAT)
- Refined versions of traditional measures



Description of mCEX

- Process
 - Assessor observes a trainee with a patient
 - Trainee performs a focused clinical task
 - Assessor rates Hx, PE, Comm, CJ, Prof, Org/Eff and provides feedback
- Takes 15-20 minutes
- 6 assessments/year



Description of DOPs

- Process
 - Assessor observes a trainee with a patient
 - Trainee performs a procedure
 - Assessor rates Prep, Sedation, Asepsis, Technical Skill, etc. and provides feedback
- Takes 15-20 minutes
- 6 assessments/year



Description of CbD

- Chart Stimulated Recall
- Process
 - Trainee picks 2 case records
 - Assessor selects one
 - Discussion centered on the trainee's notes
 - Assessor rates Diag, Treat, Planning, Prof, etc.
- Takes 15-20 minutes
- 6 assessments/year



Description of mini-PAT

- Process
 - Trainee nominates 8 assessors and self-rates
 - Web-based (now)
 - Assesses clinical and generic skills
 - Collated centrally
 - Trainee given self-ratings, assessor ratings, national mean ratings, and comments
- 2 assessments per year

Results

For FY1 from Davies, Archer, Southgate, & Norcini
(*Medical Education*, 2009)

	mCEX	CbD	DOPS
Encounters	19102	18710	22700
Trainees	3592	3595	3640
Encounters/trainee	5.3	5.2	6.2
Assessors	8728	9125	8701
Encounters/assessor	2.2	2.1	2.6

Results

Median time in minutes, satisfaction, and unsatisfactory performances

	mCEX	CbD	DOPS
Observation Time	15	15	10
Feedback Time	10	10	5
Assessor Satisfaction (1-10)	7.1 (1.8)	7.3 (1.7)	7.3 (2.0)
Unsatisfactory Encounters	1.1%	2.7%	1.9%

Mini-PAT

	Round 1	Round 2 (Paper)
Assessments	7733	6252
Trainees	2444	1842
Assessments/ Trainee	3.2 (1-8)	3.6 (1-10)
Assessors	5997	4935
Assessments/ Assessor	1.3 (1-6)	1.4 (1-7)
Trainee Mean (SD)	4.6 (.5)	4.7 (.5)



Mini-PAT

- Median time to complete the form is 7 minutes
- 9.2% of all mini-PAT assessments were less than 4 (does not meet expectations)
- Assessor position
 - Consultant 29%
 - SASG 3%
 - Spr 21%
 - SHO 28%
 - Nurse .1%
 - Allied Health .1%
 - GP 1.5%
 - PHRO 15%
 - Other 2.3%

Mini-PAT: Ratings by Questions



- Lowest ratings for
 - “Ability to diagnose patient problems”
 - “Ability to formulate management plan”
- Highest ratings for
 - “Accessibility/reliability”
 - “Verbal communication with colleagues”
 - “Respect for patients”
 - “Communication with patients”



Why are Workplace Methods Good for Assessment?

Validity

Validity is the degree to which the inferences based on scores are correct



Validity

- Methods allow assessment of the right content
 - Competencies include clinical skills, communication, teamwork
 - Focus on the process of care which is aligned with the apprenticeship model
 - Adapt to different patient conditions and sites of care
- Methods are based on judgments of skilled clinician-educator
- There is significant research support

Validity

- mCEX scores for PG trainees
 - In-training exams and monthly evaluations (Durning et al., 2002)
 - Performance with SPs (Boulet et al., 2002)
 - Scripted videos (Holmboe et al., 2003)
 - RCPSC oral exam (Hatala et al., 2006)
- CbD scores for practicing doctors
 - Correlated with oral and written certifying exams and considered most valid (Maatsch et al., 1983)
 - Separated 'referred' doctors from volunteers (Norman et al., 1989)



Validity

- Peer assessment
 - Certified internists had higher ratings than non-certified internists (Ramsey et al., 1989)
 - Peer assessments were correlated with written exam scores (Ramsey et al., 1993)
 - Cognitive/clinical skills (.5-.6)
 - Professionalism (<.15)



Why are Workplace Methods Good for Assessment?

Reliability

If an assessment is repeated with the same trainees, they should get the same results



Reliability: Stimulus

- Physician performance varies considerably from patient to patient
 - The trainee must be observed with several patients



Reliability: Observers

- Examiners differ in stringency
 - The trainee must be evaluated by different examiners



Reliability: Dimensions of the Encounter

Different dimensions of the encounter can be judged

Asking too few questions per encounter yields unreliable results

Asking too many adds little and discourages participation



Reliability: Results

- Peer assessment
 - 5-10 peers
 - 5+/- questions per dimension
- mCEX
 - 4-10 encounters-observers
 - 5+/- questions per dimension
- CbD
 - 5-8 charts-observers
 - 5+/- questions per dimension
- Procedural skills
 - Research needed
 - 4-10 encounters-observers
 - 5+/- questions per dimension

Why are Workplace Methods Good for Learning?

- There is a lack of formative assessment and feedback in workplace
 - Medical students
 - Structured observation done for only 7-23% of students (Kassebaum & Eaglen, 1999)
 - Only 28% of IM clerkships include formative assessment strategy (Kogan & Hauer, 2006)
 - Postgraduate trainees
 - 82% were observed only once (Day et al., 1990)
 - 80% observed never or infrequently (Isaacson et al., 1995)

Why are Workplace Methods Good for Learning?

- Feedback is critical to learning and has a significant influence on achievement
 - General education (Hattie, 1999)
 - Meta-analysis of 12 meta-analyses
 - Feedback is among the largest influences on achievement (ES=.79)
 - Medical education (Veloski et al., 2006)
 - Feedback alone effective is effective in 71% of studies

Why are Workplace Methods Good for Learning?

	Massed Training	Spaced Training
Sessions	Few, Intense	Many, Spread out
Speed	Faster	
Confidence	Higher	
Satisfaction	Greater	
Retention		Longer
Performance		Better

From K. Eva

Why are Workplace Methods Good for Learning?

- Retrieval of information or a performance enhances learning
- Students read a passage (Karpicke & Roediger, *Science*, 2008)
 - Group 1 took three tests on the passage (recalling all they could each time)
 - Group 2 re-read the passage carefully three times for the upcoming test
 - Results
 - On a test given shortly afterwards, Group 2 recalled more
 - Cramming worked
 - On a test one week later, Group 1 did better

Why are Workplace Methods Good for Learning?

- Workplace assessment
 - Provides trainees feedback and feedback is critical to learning
 - Occurs periodically
 - Spaced training produces better retention and performance than massed training
 - Assessment enhances learning more than just study by requiring rehearsal and retrieval



Challenges

- Not many trainees will be considered unsatisfactory
 - There remains a need for national assessment, perhaps near the end of specialist training



Challenges

- Another assessment process is needed for unsatisfactory trainees
 - Traditional measures are appropriate
 - Knowledge test
 - Clinical skills exam (OSCE)
 - Rules out false negatives
 - Provide diagnostic feedback



Challenges

- Trainees have some control over who examines them and indirectly over the content of the assessment
 - The assessment might be biased in their favor



Challenges

- Standards across programmes will not be equivalent
 - Results will not be useful for national ranking of trainees
 - Centralization and data-sharing across programs helps



Challenges

- A large scale faculty development effort is needed
 - Good model (Holmboe, Hawkins, Huot, 2004)
 - Behavioral observation
 - Performance dimension training
 - Frame of reference training
 - Practice



Summary

- Assessment during postgraduate education poses unique challenges and opportunities
- Workplace assessment has advantages for learning and assessment
- Significant challenges remain