Using an assessment centre to select doctors for postgraduate training in obstetrics and gynaecology

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Key content:
- An assessment centre is a selection technique that contains multiple job-related assessments (e.g. group exercises, simulations, written exercises and interviews).
- Research shows that assessment centres are an excellent way of identifying the job applicants who are most likely to be successful in the job.
- In parts of the UK, assessment centres have been used to select doctors for training as general practitioners and have been shown to exhibit good predictive validity.
- We describe the design and implementation of an assessment centre for selecting doctors into the postgraduate training programme in obstetrics and gynaecology in the South Yorkshire and South Humber Deanery. This is the first time this has been attempted in the UK.

Learning objectives:
- Understand how an assessment centre is developed.
- Understand the rationale for the use of assessment centres in the selection process.
- Be in a position to set up an assessment centre for local recruitment.

Keywords assessment centre / competencies / selection

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Introduction
The interview is the mainstay of the selection process throughout most doctors' careers. Properly designed and executed interviews help employers to make reasonable selection decisions.1-4 Modernising Medical Careers, however, emphasises the importance of robust processes for selection from Foundation to Specialty training programmes and this is an important area of work for all Royal Colleges.4

Selection procedures can be significantly improved through the use of a combination of job-related selection methods in an assessment centre. 5,9 In the UK, competency-based assessment centres have been used to select trainee general practitioners and have shown good predictive validity. They reduce the number of 'failing' trainees and the need for remedial/targeted training.10 They have not yet been widely used to select doctors for postgraduate training in secondary care medicine. We report on the development and implementation of an assessment centre to select doctors for postgraduate training (senior house officer [SHO]/ST1) posts in obstetrics and gynaecology in the South Yorkshire and South Humber Deanery.

Reasons for using assessment centres in selection
An assessment centre contains a number of job-related assessments or exercises. These usually include a structured interview but can also include written exercises, group discussions and work-related simulations. The best assessment centres are competency-based.5,8 These are developed from a thorough analysis of the job for which candidates are being selected. The job analysis plays a crucial role in the development of an assessment centre: it identifies the knowledge, skills and abilities (that is, the competencies) that need to be elicited by the assessment centre exercises.9,10

Assessment centres exhibit excellent reliability and validity and provide a more thorough and less biased assessment of the candidate than do interviews.7 Interviews require candidates to provide self-reports of their qualities. Assessment centres require them to demonstrate their aptitude and attainment, usually to several different trained assessors. Candidates also appreciate assessment centres: they see them as exacting but fair.11,12 These benefits can offset the design and implementation costs of the assessment centre.12 This is especially true given the likely costs associated with poor selection in medicine.13

In this paper we describe a multi-method, multi-source job analysis that was carried out to identify the attributes that needed to be assessed during selection for training posts in obstetrics and gynaecology. We then report on the development and piloting of assessment centre exercises designed to assess these attributes. Finally, we describe the first implementation of an assessment centre for SHO/ST1 recruitment in obstetrics and gynaecology.

Job analysis in obstetrics and gynaecology
Three methods were initially used for job analysis.6,9 These were:

(i) observation of doctors' practice
(ii) the opinions of expert focus groups
(iii) patient interviews.

The observers, focus group facilitators and interviewers who conducted the analysis were all occupational psychologists from City University, London. This multi-source, multi-method job analysis was carried out using a similar methodology to that successfully used to analyse the work of general practitioners.7 Informed consent was obtained from all participants.

Observation of the practice of consultants (n = 4) was carried out over the course of several days. Randomly selected doctor–patient and doctor–support staff interactions were observed. Four focus groups were carried out: two with consultants (n = 5) and specialist registrars (n = 9), one with nurses (n = 6) and one with midwives (n = 6). All participants had a minimum of 1 year in grade. Thirty-four interviews were carried out with patients.

Three hundred and forty-seven descriptions of doctors' behaviour were collected from these three activities and were classified into competency groups by two independent pairs of occupational psychologists. This was the same technique as that used to identify competencies for general practitioners.4 Inter-coder reliability was acceptable (kappa 0.67). Fourteen competencies were identified (Table 1).

To validate the results of the job analysis, a questionnaire was then completed by a sample of 21 specialist registrars with a mean length of service of 2.81 years (SD 1.40) and 56 consultants with a mean length of service of 9.22 years (SD 6.88) from the Trent Region. In the questionnaire, the competencies and examples of their behavioural indicators were presented as in Table 1. Each participant was asked to rate the importance of each competency at SHO grade in obstetrics and gynaecology on a five-point scale (one for ‘little’ to five for ‘a lot’). It is acknowledged that the relative importance of the competencies will change as the doctor progresses through training.
The majority of competencies received mean ratings above the scale mid-point of 3 (Table 1). The competencies ‘teaching’ and ‘managing others’ received mean importance ratings below the scale mid-point and, therefore, the decision was taken that they would not be directly assessed at selection. The competencies receiving the highest mean ratings were those relating to professional integrity and interpersonal skills (empathy and sensitivity, communication skills, personal attributes and team work). ‘Clinical/technical knowledge and expertise’ was not rated highly but it should be noted that these are competencies for a doctor entering a training programme in the specialty.

Development and piloting of selection methods

The results of the job analysis indicated that candidates should be assessed in a variety of contexts: a group or team environment, a simulated consultation, a practical task, a task of prioritisation and critical appraisal of medical information. The South Yorkshire and South Humber Deanery’s programme director worked with several RCOG College Tutors to devise at least one assessment centre exercise for each of these areas.

Six exercises were trialled during this development work. The content of each was necessarily generic and suitable for a candidate leaving the F2 year. It also needed to be directly related to work carried out in obstetrics and gynaecology. The exercises were:

- a 30-minute small group (up to five participants) discussion of issues relating to practice in the specialty
- a 20-minute simulated consultation (which also required candidates to demonstrate their ability to carry out a simple clinical diagnostic test)
- a 30-minute written exercise requiring candidates to prioritise five tasks that presented themselves simultaneously
- a 25-minute written data interpretation exercise (used only in the second pilot to assess the competency ‘learning and personal development’)
- two practical tasks (lasting 30–45 minutes each) during which candidates were trained in surgical tasks and had their performance assessed before and after training. These were not used in the assessment centre that was eventually implemented (see Discussion and conclusions).
Two pilot assessment centres were carried out, to develop a combination of exercises that allowed for the assessment of all relevant competencies. Seven consultants in obstetrics and gynaecology and three occupational psychologists observed and recorded participants’ performance during the pilot assessment centres.

In the first pilot assessment centre (May 2004), seven current SHOs in the South Yorkshire and South Humber Deanery completed the exercises. Feedback from assessors and participants in this assessment centre was used to modify the exercises for trialling in a second pilot assessment centre (December 2004). This second assessment centre was carried out alongside the Deanery’s existing interview-based selection process. Twelve candidates for SHO posts volunteered to be participants for this assessment centre but their performance in the exercises was not used in the selection process.

Detailed written records were kept of participants’ performance during the exercises. The competencies assessed by each exercise were identified by categorising examples of behaviour in these written records within the competencies identified in the job analysis (see Table 2). These data were also used to identify the behavioural markers to be used in the scoring of the group exercise, the simulated consultation and the written prioritisation exercise (Figure 1).

Implementation of the assessment centre
Assessment centre exercises
The assessment centre consisted of five exercises (Table 2). A structured interview was developed to expand the competencies not adequately assessed by the other exercises. The combination of exercises allowed the more important competencies (Table 1) to be assessed more frequently (Table 2).

Assessment context
All NHS Trusts within the South Yorkshire and South Humber Deanery who were recruiting doctors for rotational career SHO training posts in obstetrics and gynaecology agreed to assess candidates through the assessment centre procedure in June 2005. Therefore, a single assessment centre replaced panel interviews that would have otherwise been carried out separately in five Trusts. Seven posts were available.

Assessor training
All eight assessors held consultant posts in obstetrics and gynaecology. Six were College Tutors and one was the Programme Director. Some of these

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<th>Exercise and summary of its content</th>
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<th>CS</th>
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<th>PIR</th>
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<tr>
<td><strong>Simulation of consultation (including carrying out simulated diagnostic test)</strong></td>
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<td>Consultation with a patient (played by trained medical actor)</td>
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<td>Candidate is required to explain an investigative procedure and deal with the patient’s questions/concerns</td>
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<td>The medical actor exhibits three emotions: fear, confusion and frustration</td>
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<td>The medical actor delivers a series of prescribed key statements to express these three emotions</td>
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<td>When the consultation finishes, the medical actor leaves the room and then the candidate completes the simulated diagnostic test on a mannequin</td>
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<td><strong>Written prioritisation exercise</strong></td>
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<td>Candidates are presented with five tasks to prioritise</td>
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<td>Tasks include administrative tasks, clinical tasks and discussions with colleagues</td>
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<td>The candidate is required to decide upon an order of priority for the tasks and to provide a rationale for the prioritisation</td>
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<td>Assessment is based on content of the rationale for the prioritisation of the tasks as well as ‘correctness’ of solution</td>
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<td><strong>Group discussion</strong></td>
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<td>A group of 3–4 candidates discusses 3–4 scenarios each</td>
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<td>requiring the identification and discussion of ethical issues</td>
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<td>Each candidate is allocated one of the cases to prepare for the discussion in the first five minutes of the exercise</td>
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<td>Candidates are required to discuss all scenarios in the time allowed</td>
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<td>Assessment is based on content of the discussion as much as it is on the ‘correctness’ of the agreed solutions</td>
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<td><strong>Structured interview</strong></td>
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<td>Standardised questions related to training in the specialty and the candidate’s aspirations</td>
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<td><strong>Data interpretation</strong></td>
<td>25 minutes</td>
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<td>Candidates are presented with an extract from a research paper</td>
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<td>This contains a summary of the aims of the research and two tables presenting the results of the data analysis conducted in the study. Candidates are asked ten questions about the meaning of the results of the data analysis</td>
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<td>Each question requires a short, factual answer</td>
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<td>Candidates are then required to use the information presented in the paper to decide whether they would change their practice based on the outcome of the study</td>
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Table 2
Exercises used in the assessment centre and the competency domains assessed by each of them (for explanation of abbreviations see Table 1).
assessors were familiar with the exercises and scoring processes because they had been involved in the pilot assessment centres or had been assessors in the general practitioner selection process in the South Yorkshire and South Humber Deanery. Other assessors received up to three hours of face-to-face training in the use of assessment materials (in small groups or individually) from an occupational psychologist (RR). The training focused on the proper use of materials and included guidance on how to make reliable and valid evaluations. All assessors were provided with a training manual to support their own self-directed learning.

Assessment centre logistics and evaluation of candidates
Sixteen candidates attended the assessment centre, which lasted 8.5 hours. The five assessments were run in parallel in five different rooms. The order of presentation of the exercises differed from candidate to candidate. Two consultants carried out the interview but all other exercises were assessed on a one candidate to one assessor basis. Each candidate was assessed by at least five different assessors during the day. Candidates’ performances in the interview, simulated consultation, written prioritisation exercise and group exercise were scored using the process described in Figure 1. The data interpretation exercise was marked by comparing the candidate’s response to a set of ‘correct’ answers agreed by two of the assessors.

For each candidate, all exercise scores were entered onto a separate scoring matrix. This matrix was similar to Table 2, with each tick being replaced by a score from one to four (see Figure 1). This matrix was used as a basis for the discussion of each candidate’s performance. Each candidate was discussed during a 90-minute closing session facilitated by the Programme Director. This discussion focused on two sets of information: the candidate’s performance in each exercise, and between-exercise consistencies and inconsistencies in the candidate’s competency scores. Once all candidates had been discussed, their exercise and competency scores were re-examined to identify the best seven candidates according to their performance across different exercises. When discussing whether to offer a candidate a job, only the Programme Director and assessors who had observed that candidate contributed to the decision-making process.

As each candidate has been assessed over several competencies the trainers will know the trainee’s strengths and weaknesses at the beginning of their training. For example, a trainee may be strong in interpersonal skills, exemplified by good communication skills and empathy, but be poor in technical abilities. This enables training to be targeted from the outset.

Candidates’ perceptions of the assessment process
After the assessment centre, candidates were asked to complete a questionnaire that asked them to compare the assessment centre to other selection processes they had experienced in their medical career. The majority gave favourable feedback. Candidates indicated that the assessment centre gave them either slightly more (n = 5), more (n = 7), or much more (n = 3) opportunity to demonstrate their abilities than other medical selection processes they had experienced. They indicated that the content of the selection centre was slightly more (n = 3), more (n = 10) and much more (n = 2) relevant to work in obstetrics and gynaecology. Eleven agreed and four strongly agreed with the statement ‘the content of the selection centre seemed appropriate’. Twelve agreed and four strongly agreed with the statement ‘Overall, I was given a good opportunity to show my skills’.

Discussion and conclusions
The job analysis presented in this paper suggests that a multi-method approach to selection is needed to assess fully the suitability of doctors for
specialist training in obstetrics and gynaecology. An assessment centre provides a greater breadth and depth of information about candidates than does a conventional interview. It also provides a way of assessing candidates’ aptitude for dealing with the different challenges presented to doctors working in the specialty.

The assessment of 16 candidates in one day shows that high-volume recruitment is possible using an assessment centre. Economies of scale were achieved by consolidating the recruitment processes for five NHS Trusts into one assessment centre. As assessors become skilled in more than one exercise, the candidate–assessor ratio can also be increased.

Assessment centres provide a wealth of information that can be used to guide the development of doctors as they begin their career in a specialty. For example, a candidate’s performance across an assessment centre may generally be strong but their conduct in a particular exercise may highlight that they have particular training needs. When providing feedback on the assessment centre, many candidates commented that the experience had helped them to learn something about their strengths and weaknesses.

Candidate perceptions of the fairness of the assessment centre were extremely positive. Previous research indicates that favourable perceptions of the selection process are linked to favourable perceptions of the recruiting organisation. Managing candidates’ perceptions of the process becomes especially important when strong candidates might be able to choose between more than one employing deanery.

During the development of the assessment centre we trialled a number of methods for assessing how easily candidates could be trained in practical skills. This proved problematic: we found it difficult to identify tasks directly relevant to the specialty on which candidates’ performances would not be influenced by their previous experience of surgical procedures. As a result, we are trialling assessments of practical abilities (hand–eye coordination and dexterity in a non–clinical setting) to assess their validity and utility. We would welcome any comments or suggestions on this aspect of our work.

Our experiences indicate that it is feasible to conduct an assessment centre for the SHO/ST1 recruitment process. It will take time to establish formally its predictive validity. What is already clear is that the method provides an in-depth analysis of candidates’ suitability for training posts. This may be particularly important with the introduction of the ‘run through grade’ as there may be only one opportunity to select candidates for specialty training.

Acknowledgements

The Ethics Committee of City University Psychology Department approved this work. Mr Tom Farrell contributed to the design of the assessment exercises. Ms Corina Voelklein helped to produce the assessment materials and administer the assessment centre. We would like to take this opportunity to thank the doctors who worked as assessors during the development and administration of the assessment centre and those candidates who volunteered during the piloting phase.

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**References**