



Intercollegiate Committee for Basic Surgical
Examinations

2012/13 ANNUAL REPORT

MRCS

**The Membership Examination of the Surgical Royal
Colleges of Great Britain**

DO-HNS

**The Diploma of Otolaryngology – Head & Neck
Surgery**

August 2013

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The Intercollegiate Committee for Basic Surgical Examinations (ICBSE) would welcome comments on this Annual Report and ways in which it can be improved in future years. If you

have comments on this Report please send them to: The Chairman, ICBSE, c/o
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1. Introduction

This is the **sixth** Annual Report of the Intercollegiate Committee for Basic Surgical Examinations (ICBSE) and covers the period August 2012 to July 2013.

The purpose of the Annual Report is to provide a definitive source of information about the Membership Examination of the Surgical Royal Colleges of Great Britain (MRCS) and the Diploma of Otolaryngology – Head & Neck Surgery (DO-HNS) for all interested stakeholders including candidates, trainers, Assigned Educational Supervisors and the public.

The structure, standard and quality assurance of the MRCS and DO-HNS examinations are the responsibility of the ICBSE which has a number of specialist subgroups each responsible for a different aspect of the examination.

The purpose of ICBSE is as follows:

- To develop and oversee Intercollegiate Membership examinations for assessing the standards of trainees during and at the end point of Core Surgical Training;
- To develop and oversee the DO-HNS examination.

ICBSE's work may be classified into three activities:

- maintaining the quality and standard of the examinations within its remit;
- delivering incremental improvements in service standards;
- developing the examinations within its remit to meet internal and external requirements.

These three activities have equal priority.

2. The MRCS examination: purpose and structure

The Membership Examination of the Surgical Royal Colleges of Great Britain and in Ireland (MRCS) is designed for candidates in the generality part of their specialty training. It is a crucial milestone that must be achieved if trainees are to progress to specialty surgical training as defined by the surgical Specialty Advisory Committees (SACs). The purpose of the MRCS is to determine that trainees have acquired the knowledge, skills and attributes required for the completion of core training in surgery and, for trainees following the Intercollegiate Surgical Curriculum Programme, to determine their ability to progress to higher specialist training in surgery.

It is anticipated that on achievement of the intended outcomes of the curriculum the surgical trainee will be able to perform as a member of the team caring for surgical patients. He or she will be able to receive patients as emergencies, review patients in clinics and initiate management and diagnostic processes based on a reasonable differential diagnosis. He or she will be able to manage the peri-operative care of patients, recognise common complications and be able to deal with them or know to whom to refer them. The trainee will be a safe and useful assistant in the operating room and be able to perform some simple procedures under minimal supervision and perform more complex procedures under direct supervision.

The MRCS examination has two parts: Part A (written paper) and Part B Objective Structured Clinical Examination (OSCE).

2.1 Part A (written paper)

Part A of the MRCS is a machine-marked, written examination using multiple-choice Single Best Answer and Extended Matching items. It is a four hour examination consisting of two papers, each of two hours' duration, taken on the same day. The papers cover generic surgical sciences and applied knowledge, including the core knowledge required in all surgical specialties as follows:

Paper 1 - Applied Basic Science
Paper 2 - Principles of Surgery-in-General

The marks for both papers are combined to give a total mark for Part A. To achieve a pass the candidate is required to demonstrate a minimum level of knowledge in each of the two papers in addition to achieving or exceeding the pass mark set for the combined total mark for Part A.

2.2 Part B (OSCE)

The Part B (OSCE) integrates basic surgical scientific knowledge and its application to clinical surgery. The purpose of the OSCE is to build on the test of knowledge encompassed in the Part A examination and test how candidates integrate their knowledge and apply it in clinically appropriate contexts using a series of stations reflecting elements of day-to-day clinical practice.

3. The MRCS and the Intercollegiate Surgical Curriculum Programme (ISCP)

The MRCS examination is an integral part of the assessment system of the Intercollegiate Surgical Curriculum Programme (ISCP) <http://www.iscp.ac.uk>. Ten surgical specialties: cardiothoracic surgery; general surgery; neurosurgery; oral & maxillofacial surgery; otolaryngology; paediatric surgery; plastic surgery; urology; vascular; and trauma & orthopaedic surgery collaborate through the ISCP in developing a competence-based curriculum which defines the attributes required of a successful surgeon. The web-based ISCP curriculum and its assessment system, including the MRCS and DO-HNS, have been approved by GMC.

The MRCS content has been reviewed to ensure that it continues to articulate with the changes to ISCP. The MRCS content guide has been revised this year and continues to set out for candidates a comprehensive description of the breadth and depth of the knowledge, skills and attributes expected of them, and thus provides a framework around which a programme of preparation and revision can be structured. It also sets out the areas in which candidates will be examined. It has been formatted to maximise its accessibility to candidates and examiners and is available on the intercollegiate website http://www.intercollegiatemrcs.org.uk/new/guide_html

4. The MRCS Examination

4.1 Part A (written paper)

Based on the ISCP curriculum, a syllabus blueprint for the Part A examination sets out a broad specification for the numbers of questions on each topic to be included in each paper of the examination. It is not possible to sample the entire syllabus within a single Part A paper but the blueprint and specification ensures that the common and important content is routinely covered and that the entire syllabus is sampled over time.

Questions are coded according to the area of the syllabus to which they relate and are held in a computerised item bank. Groups of question writers are commissioned to produce new questions according to the agreed specification and, following editing and specialist review, these questions are added to the item bank. For each diet of the examination questions are selected from the bank using the examination blueprint and are compiled into a paper by the MCQ question paper group of the ICBSE.

Questions are carefully planned from the outset to be at an appropriate level of difficulty. The standard for the paper is originally set using a modification of the Angoff procedure where a group of 'judges' estimates the performance of a notional 'just good enough to pass' candidate. In order to ensure that standards are set at an appropriate and realistic level the judges include practising surgeons, specialist basic scientists, trainers, trainees and a patient representative.

A number of 'marker' questions taken from a previous examination are included in each Part A paper and are used to calibrate the standard and help to ensure that there is continuity of the standard of the examination over time.

Following each examination a standard setting meeting is held at which the performance of candidates on each question is scrutinised together with their performance on the test overall. A range of statistical measures is used to evaluate the reliability and facility of the examination and its individual questions. It is at this stage that candidate feedback on the examination is considered and taken into account when deciding whether or not to exclude a specific question from the overall examination outcome. Using the benchmark of the previously described Angoff exercise, the performance of candidates on the marker questions is reviewed together with other statistical data from the present and previous examinations to set the pass/fail cut-off mark.

Candidates are given their Part A score and the score required to pass the examination, thus giving them an indication of how far short of, or above, the required standard they are.

2012-13 Review of Activity

With effect from April 2013 the Principles of Surgery in General paper of the Intercollegiate MRCS Part A exam has included Single Best Answer (SBA) items as well as Extended Matching (EM) items.

The phasing of this is planned to be:

April 2013	up to 30 SBAs
September 2013	up to 30 SBAs
January 2014	up to 30 SBAs
April 2014	up to 60 SBAs
September 2014	up to 60 SBAs
January 2015	up to 60 SBAs

The two types of questions are in separate groups within the paper. The number of questions in the Principles of Surgery in General paper remains the same at 135 and there is no change in the time allowed for candidates to complete the paper.

This change has been made to further improve the reliability of the MRCS Part A examination.

For further information and examples of SBAs, please refer to:

http://www.intercollegiatemrcs.org.uk/new/pdf/part_a_sample_mcqs.pdf

Summary descriptive statistics: MRCS Part A (written paper)

	Total number sat	Passing % (and number)	Failing % (and number)	Pass mark %	Measure of reliability*	Measurement error** %
Sept 2012	1867	34.2 (638)	65.8 (1229)	68.9	0.95	2.70
January 2013	1315	42.0 (552)	58.0 (763)	69.4	0.94	2.66
April 2013	1718	36.9 (634)	63.1 (1084)	68.9	0.95	2.72

* An expression of the consistency and reproducibility (precision) of the examination. The measure used here is KR-20.

** Measurement error refers to the difference between the 'true' score and the score obtained in an assessment. Measurement error is present in all assessments but is minimised by good item design and test construction.

4.2 Part B (OSCE)

Scenarios and questions for the OSCE stations are written by a team of Broad Content Area (BCA) leads using detailed templates and a detailed writers' guide. Draft scenarios are scrutinised by a team of reviewers before being edited and approved for piloting. All scenarios are piloted either as an extra station in a 'live' examination or as part of a specially arranged event. Following further revision as necessary, these new scenarios are then added to the question bank.

Scenarios from the bank are then selected and grouped into examination 'circuits' so as to achieve the appropriate balance of content and challenge. The same circuits are used in each of the Colleges on the same day. Some scenarios in each circuit are changed every day.

At the end of each examination diet, the results of all candidates are combined and the pass/fail boundaries are agreed at a single standard setting meeting attended by representatives of each of the Colleges.

The MRCS Part B (OSCE) was introduced for first examination in October 2008 and revised with effect from May 2010.

ICBSE had continued to review and further develop the MRCS examination based on the evidence available. In December 2010 it established a working party to undertake a further review of the examination programmed to commence after three diets of the May 2010 revision; evidence for the proposed changes was based on six diets of the examination (May 2010 to February 2012).

This evidence indicated that the OSCE had an appropriate number of active stations (18) along with two preparation stations, and that this provides an adequate opportunity to sample a candidate's performance. The working party proposed a number of smaller changes which, together, represent a major change to the MRCS Part B (OSCE).

2012-13 Review of Activity

Review implementation

Following the successful submission of the major revision request to GMC in July 2012, (*referred to in last year's Annual Report*), the following changes were introduced to the Part B (OSCE) with effect from the February 2013 diet.

- Removal of the specialty choice element from the examination.
- Change to the weighting of content to reflect the curriculum more closely.
- Division of the examination into two broad content areas (BCAs) rather than the existing four. These would be regarded as independent assessments, each of which would require a pass with no internal compensation between them and no overall pass mark for the examination.
- Adjustment of station domain weightings so that mark schemes are more appropriate for the content being assessed.
- Adoption of a numerical mark scheme for all scenarios.
- Adoption of a three-category global rating scale (fail, borderline, pass) rather than the existing four.
- Adoption of the borderline regression method for standard setting in preference to the existing borderline groups method.
- Redesign of candidate feedback to improve clarity.
- Change to the number and type of examiners in some stations.
- Development of generic physical examination stations to increase the use of real patients in the examination.

MRCS examiners were specifically trained in the proposed changes and revised examiner briefing presentations were prepared.

Additional Lay Examiners were appointed and trained intercollegiately.

Ireland

The RCSI took part in the OSCE arrangements for the first time. Examiners were appointed and trained. Staff from Ireland visited the other Colleges to seek advice. All relevant intercollegiate documentation, (for example Application Forms), was amended to include reference to RCSI.

Standard Setting from February 2013

Each standard setting meeting continues to begin with an analysis of the level of discrimination and facility of each of the circuits and their constituent stations, including a review of candidate, examiner and Assessor feedback, to ensure consistency and comparability of demand.

Each candidate's performance on each of the examined stations continues to be assessed in two ways:

- a mark is awarded using a structured mark sheet containing assessment criteria for each content area and for each assessed domain;
- an holistic judgement is given using one of the categories: pass, borderline or fail. **This is a change from the previous arrangement of pass, borderline pass, borderline fail and fail.**

The following information is therefore available for each candidate:

- a total mark for each station;
- a category result for each station i.e. pass, borderline, fail;
- a total mark for the OSCE;
- a total mark for each of the now two combined BCAs, described by the shorthand, 'Knowledge' and 'Skills'.

Using the above information the *borderline regression* method of standard setting is used to determine the pass/fail boundary for the OSCE as a whole.

The review of the OSCE carried out in 2012 had concluded that using the borderline regression method and adding 0.5 Standard Error of Measurement (SEM) to each broad content area pass mark retained the previous rigour. This position had been accepted by the GMC, as was the recognition that the ICBSE would retain some flexibility in the multiple of the SEM to be used based on an evaluation of all of the available evidence.

The addition of 0.5 SEM to each broad content area would have resulted in a pass rate of 61.2% in February 2013. It was considered that such a pass rate was not in line with expectations based on previous pass rates and on the nature of the candidature for February 2013 in terms of place of qualification and stage of training. It was further recognised that the piloting in 2012 had been constrained by the need to work within the methodology then existing and that its conclusions should be viewed in the light of present evidence.

Accordingly it was agreed that 0.84 SEM would be added to each broad content area pass mark. This gave a pass rate of 56.5%. It was further agreed that the addition of 0.84 SEM should remain the default position until evidence suggested that it should be changed, and this figure was used again in May 2013, resulting in a pass rate of 58.5%.

To safeguard the interests of patients, and as a driver to learning, it is a requirement for passing the OSCE that in addition to achieving a pass mark in the OSCE overall, candidates must achieve a minimum level of competence in each broad content area.

Each candidate is given detailed feedback showing their mark on each broad content area (Knowledge and Skills) and for the OSCE overall.

Summary descriptive statistics: MRCS Part B (OSCE)

	Total number sat	Passing % (and number)	Failing % (and number)	Pass mark %	Measure of reliability*	Measurement error** %
October 2012	484	60.7 (294)	39.3 (190)	67.2	0.83	13.6
February 2013	379	56.5 (214)	43.5 (165)	Knowledge: 67.5 Skills: 65.5	Knowledge: 0.68 Skills: 0.76	Knowledge: 9.18 Skills: 10.94
May 2013	509	58.5 (298)	41.5 (211)	Knowledge: 67.5 Skills: 66.0	Knowledge: 0.72 Skills: 0.78	Knowledge: 8.44 Skills: 10.21

* An expression of the consistency and reproducibility (precision) of the examination. The measure used here is Cronbach's alpha.

** Measurement error refers to the difference between the 'true' score and the score obtained in an assessment. Measurement error is present in all assessments but is minimised by good item design and test construction.

5. The Diploma in Otolaryngology – Head & Neck Surgery (DO-HNS)

The Diploma in Otolaryngology – Head and Neck Surgery (DO-HNS) was established as an intercollegiate examination in April 2008. Its purpose is to test the breadth of knowledge, the clinical and communication skills and the professional attributes considered appropriate by the Colleges for a doctor intending to undertake practice within an otolaryngology department in a trainee position. It is also intended to provide a test for those who wish to practise within another medical specialty, but have an interest in the areas where that specialty interacts with the field of otolaryngology. It is also relevant for General Practitioners wishing to offer a service in minor ENT surgery.

The Intercollegiate DO-HNS examination has two parts:

Part 1 – Written Paper comprising Multiple True/False Questions and Extended Matching Questions in one paper to be completed in two hours.

Part 2 – Objective Structured Clinical Examination (OSCE) normally comprising approximately 25 bays normally of seven minutes' duration.

With effect from August 2011, trainees who have achieved a pass in Part A of the Intercollegiate MRCS examination *and* a pass in Part 2 of the Intercollegiate DO-HNS examination have been eligible to apply for MRCS (ENT) membership of one of the Royal Surgical Colleges.

Standard setting the DO-HNS examination

The DO-HNS standard setting procedure for the Part 1 written paper is very similar to that described above for the MRCS (see 4.1 above) and is based on an initial Angoff process, the use of marker questions and the scrutiny of individual items and statistics at a standard setting meeting.

The standard setting technique used in the OSCE to determine the pass mark is an Angoff process: all examiners determine a pass mark for each station based upon the minimum level of competence expected of an ENT trainee at the end of his/her CT2/ST2 post before entry to higher surgical training or just at the start of higher surgical training. Using this method, at least 12–15 examiners will ascribe a pass mark to each station. The marks are totalled and averaged and this then determines the region of the pass mark. The final pass mark is determined by inspection of the mark distribution around the Angoff pass mark.

2012-13 Review of Activity

Following the successful launching of the Part 2 OSCE in Dublin in My 2012, the Part continued its rotation around the Colleges with diets held in London (Oct 2012), Edinburgh (Feb 2013) and Glasgow (May 2013).

Some amendments were made to regulations. In particular there was a harmonisation of the number of attempts arrangements with MRCS and MRCS(ENT). It was also agreed to limit the number of attempts at Part 1 to 6 to match that regulation in MRCS. It was also agreed that Part 1 and Part 2 DO-HNS could be taken in any order so that those candidates who had benefited from achieving MRCS(ENT) and who now wished to add the DO-HNS would not be disadvantaged.

The syllabus Guide was also amended and updated during the year.

Summary descriptive statistics

DO-HNS Part 1 (written)

	Total number sat	Passing % (and number)	Failing % (and number)	Pass mark %	Measure of reliability*	Measurement error** %
August 2012	78	67.9 (53)	32.1 (25)	76.9	0.89	6.35
January 2013	38	71.1 (27)	28.9 (11)	79.1	0.95	6.10
March 2013	54	68.5 (37)	31.5 (17)	77.1	0.84	6.31

* An expression of the consistency and reproducibility (precision) of the examination. The measure used here is KR-20.

** Measurement error refers to the difference between the 'true' score and the score obtained in an assessment. Measurement error is present in all assessments but is minimised by good item design and test construction.

DO-HNS Part 2 (OSCE)

	Total number sat	Passing % (and number)	Failing % (and number)	Pass mark %	Measure of reliability*	Measurement error** %
October 2012	95	66.3 (63)	33.7 (32)	Day 1: 69.4 Day 2: 69.1	Day 1: 0.66 Day 2: 0.81	Day 1: 2.68 Day 2: 2.71
February 2013	72	69.4 (50)	30.6 (22)	Day 1: 71.4 Day 2: 70.7	Day 1: 0.82 Day 2: 0.71	Day 1: 2.74 Day 2: 2.67
May 2013	80	71.3 (57)	28.8 (23)	Day 1: 71.1 Day 2: 71.7	Day 1: 0.90 Day 2: 0.79	Day 1: 2.58 Day 2: 2.55

* An expression of the consistency and reproducibility (precision) of the examination. The measure used here is Cronbach's alpha.

** Measurement error refers to the difference between the 'true' score and the score obtained in an assessment. Measurement error is present in all assessments but is minimised by good item design and test construction.

6. Quality assurance

6.1 The role of the Internal Quality Assurance Committee (IQA)

The quality of the MRCS and DO-HNS examinations is monitored by the ICBSE's intercollegiate Internal Quality Assurance Committee (IQA). The IQA meets three times each year and receives, for each part of the examinations, the following information:

- overall pass rates and descriptive statistics for the latest diet and previous diets;
- pass/fail breakdown by candidates'
 - first language for the latest diet and previous diets;
 - gender for the latest diet and previous diets;
 - primary medical qualification for the latest diet and previous diets;

After each examination, every candidate is invited to complete an anonymous feedback questionnaire. Examiners are invited to complete similar questionnaires. The IQA receives and reviews the feedback from examiners and candidates and correlates them with the statistical information on the examination. IQA also receives a feedback report from the Assessors for each diet of examinations

In its interpretation of the data on the examination, the IQA is advised and assisted by an independent Educational Consultant who analyses the information and writes a brief report on each part of the examination, drawing any potential anomalies to the attention of the Committee for consideration and action.

The IQA Committee will refer matters which it considers to be in need of attention or further scrutiny to the appropriate subgroups of ICBSE. It also makes regular reports and recommendations to the ICBSE, which has overall responsibility for the MRCS and DO-HNS examinations.

6.2 Assessors

Independent Assessors, established by IQA in 2010/11, attend every diet of the MRCS Part B (OSCE) at each College. Their role is to:

- monitor, evaluate and provide feedback on the conduct and performance of examiners in all components of the MRCS to ensure that the highest possible standards of examining are achieved and maintained;
- act as guardians of standards for the intercollegiate examinations over time and across examination venues;
- enhance the professional experience of examiners by encouraging reflective practice;
- act as mentors for new examiners to help them build confidence and develop into the role;
- assist in the review of the assessments used to enhance the comparability, validity and reliability of the examinations.

2012-13 Review of IQA Activity

The Assessors terms of reference were reviewed and refined
A major contribution was made to the JSCM Equality and Diversity Policy consultation

The development of a process for providing detailed feedback to examiners has reached an advanced stage with a pilot phase being entered into incorporating the three 2013 diets the results of which will be reviewed in early 2014.