Intercollegiate Committee for Basic Surgical Examinations

2016/17 ANNUAL REPORT

MRCS

The Membership Examination of the Surgical Royal Colleges of Great Britain and in Ireland

DO-HNS

The Diploma in Otolaryngology – Head & Neck Surgery

June 2017

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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 lsmith@icbse.org.uk

1.   Introduction

This is the **tenth** Annual Report of the Intercollegiate Committee for Basic Surgical Examinations (ICBSE) and covers the period August 2016 to July 2017.

The purpose of this 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 in Otolaryngology – Head & Neck Surgery (DO-HNS) for all interested stakeholders including candidates, trainers, Assigned Educational Supervisors and the general 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.

More recently, ICBSE has been heavily involved in innovative research around the MRCS including the effects of human factors on examiner performance, and the predictive validity of MRCS in higher surgical training. Prior to this, there was no published work in either of these areas for surgery examinations. Predictive validity work has been published for the medical (MRCP) and GP (MRCGP) examinations in the UK. The first Intercollegiate Research Fellow was appointed in July 2015, commencing in November 2015 for an 18-month period.

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 five-hour examination consisting of two papers, 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 (three-hour exam) – the anatomy content was increased from 45 to 75 questions in January 2017
> Paper 2 - Principles of Surgery-in-General (two-hour exam)

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 the General Medical Council (GMC).

The MRCS content has been reviewed to ensure that it continues to articulate with the changes to ISCP. The MRCS content guide 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 colleagues 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 colleagues 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. In addition, candidates are provided with their score in the main broad content areas (BCAs) along with the average score of all candidates in those BCAs within their cohort.

2016-17 Part A (written paper) Review of Activity

During 2015-16 extensive work was carried out by the Content Review Group to review the question bank and the format of the Part A (MCQ) examination. Whilst recognising that the Part A was a first class examination with a high reliability the review of the question bank allowed ICBSE to gauge the coverage of the exam against the curriculum.

The primary aim of this working group was to produce recommendations for a future test specification (blueprint) of the Part A examination, so that it adequately tests, and is clearly mapped to, the topics and skills defined within the ISCP core curriculum and MRCS Guide. As a result of the work carried out a number of recommendations were agreed by the GMC in 2015, most notably to change balance of the exam by increasing the Applied Basic Science section and extending the assessment time from four hours to five hours. In order to provide candidates with sufficient notice of the change in the test specification the agreed changes were not implemented until the January 2017 examination paper.

Due to the change in the test specification rolled out in January 2017, ICBSE carried out a modified Angoff exercise to set the standard for the new style Part A exam in November 2016. The Angoff process resulted in a notional pass mark being set at 71%.

A further step in the ever-evolving Part A paper was the submission, and subsequent agreement by the GMC in March 2017, to discontinue the extended matching questions within the MCQ paper. The Part A exam will now be entirely single best answer. Again, in order to provide candidates with sufficient notice of this small change in the assessment format it has been agreed not to implement the change until September 2018.

As a continuance of the wider ICBSE policy to expand the feedback provided to candidates, In 2016 the MRCS Part A candidates were provided with an indication as to how they performed by quartile range of the candidates within their cohort. This is addition to the previous feedback of providing the candidates score and the pass mark for both ABS and PoSG papers. From April 2017 candidates have been receiving a breakdown of their performance by broad content area plus an indication of their performance against other candidates within the same cohort.

From September 2016 Part A paper the MCQ Sub Group has been awarding an Intercollegiate Part A Prize recognising an exceptional candidate performance at each diet. The recipient has to be a first-time taker at the examination and achieve over an agreed mark to be eligible. In addition to recognising the highest scoring candidate(s), ICBSE have also been awarding certificates of achievement to those who achieve over the agreed mark but may not have achieved the highest score.

Summary descriptive statistics: MRCS Part A (written paper)

	Total number sat	Passing % (and number)	Failing % (and number)	Pass mark %	Measure of reliability*	Measurement error**
September 2016	2504	34.9 (873)	65.1 (1631)	69.5	0.95	7.14
January 2017	1658	34.4 (571)	65.6 (1087)	70.9	0.96	7.44
April 2017	1714	23.0 (428)	77.0 (1286)	70.6	0.95	7.64

* 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)

A team of Broad Content Area (BCA) specialists, headed by leads and deputies using detailed templates and following detailed writing guidance, writes scenarios and questions for the OSCE stations. Draft scenarios are scrutinised by a team of reviewers before being approved for piloting. All scenarios are piloted either as an unmarked 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. A number of different circuits are selected for use throughout the examination period, with the same circuit used in each of the Colleges on any given day. Each 'circuit' is taken by a statistically significant number of candidates for quality assurance purposes.

At the end of each examination diet, the results of all candidates in each 'circuit' 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 in October 2008 and has been revised over time, with the next major revision due to commence in 2017.

ICBSE continues to review and further develop the MRCS examination based on the evidence available. In December 2010 it established a working party to undertake a review of the examination programme 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, represented a major change to the MRCS Part B (OSCE) in 2013. ICBSE are proposing a future review of the MRCS Part B (OSCE) leading up to the fifth anniversary of the last major change.

2016-17 Part B (OSCE) Review of Activity

The ICBSE MRCS Part B (OSCE) activity during 2016-17 concentrated on the review of procedures and quality assurance of the exam, most notably in the areas below:

- A pilot study in to the remote monitoring of the MRCS Part B (OSCE) exam has been ongoing throughout the previous year and will continue in to 2017-18. It is hoped that the technology will allow for the quality assurance of the examiner performance by camera and prove to be less intrusive to candidates and less intimidating to examiners.

- Review of the quality assurance (QA) procedures for the examination material to ensure the exam is of the highest quality. This includes the continued analysis of OSCE scenarios metrics alongside qualitative feedback from candidates, examiner and assessors. The OSCE Sub Group have recently devised a RAG chart rating to correlate the statistical performance of the OSCE scenarios against the candidate, examiner and assessor feedback. This will facilitate the development of historical performance data for each scenario.

- ICBSE have formed a short-life working group to investigate the potential use of 3D anatomical models in the MRCS Part B (OSCE) exam. Discussions and further investigations will continue as there is a general feeling that 3D models can help alleviate the quality and availability problems that often affect the use of Prosections.

Standard Setting

Each standard setting meeting continues to begin with an analysis of the level of discrimination and facility of each of the OSCE 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 overall judgement is given using one of the categories: pass, borderline or 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 two combined BCAs, described by the shorthand, 'Knowledge' and 'Skills'.

The borderline regression method of standard setting is used to determine the contribution of each station to the pass mark. These contributions are summed to give a notional pass mark for each of Knowledge and Skills for each 'circuit'.

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 experience of the first examination conducted under the revised rules (that of February 2013) was that the addition of 0.5 SEM to each of Knowledge and Skills did not maintain the previous standard and it was agreed that the multiple to be used should be 0.84 SEM. 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 has been used in all subsequent examinations. It may be noted that, because both Knowledge and Skills have to be passed at the same sitting, the SEM for the OSCE as a whole may be considered to be in excess of the 1.0 value widely accepted as the desirable minimum.

To safeguard the interests of patients, and as a driver to learning, it is a GMC requirement for passing the OSCE that candidates must achieve a minimum level of competence in each broad content area at the same examination.

Since its inception, the MRCS Part B OSCE examination has used a single pass rule at each examination session, even though the form of the test (circuit) has not been identical on every day of that examination session. Parity of standards has been maintained through statistical methods and through the scrutiny by assessors.

To further enhance the standard setting process ICBSE, with GMC approval, agreed that a different pass mark should be generated (using the current borderline regression methodology) by circuit, rather than for the examination as a whole. This means that, though the pass mark will be similar for different circuits, it is unlikely to be identical. This will reflect the variation in the relative difficulties of the scenarios that make up any given circuit. The

consequences of doing so have been modelled and found to yield a very similar overall pass rate.

This current standard setting process for the MRCS Part B came in to effect as of October 2014 examination.

Each candidate is given detailed feedback showing their mark on each broad content area (Knowledge and Skills) and for the OSCE overall. However, as part of a wider ICBSE policy to expand the feedback provided to candidates, a phased approach to provide the MRCS Part B candidates with feedback by broad content area was developed during 2015-16. It is envisaged that ICBSE will be able to deliver the extended Part B (OSCE) feedback in the forthcoming year.

In addition, the OSCE Sub Group monitor and analyse the performance of the OSCE scenarios during the standard setting process. A chart has been developed which combines the written feedback and the scenario performance data. The resulting document enables the Sub Group to make an informed decision when agreeing the pass mark.

Summary descriptive statistics: MRCS Part B (OSCE)

	Total number sat	Passing % (and number)	Failing % (and number)	Pass mark % (range for all circuits)	Measure of reliability* (range for all circuits)	Measurement error** raw (range for all circuits)
October 2016	444	54.5 (242)	45.5 (202)	Knowledge: 66.9 - 68.1% Skills: 64.5 - 66%	Knowledge: 0.56 – 0.77 Skills: 0.73 – 0.81	Knowledge: 8.3 – 9.2 Skills: 8.6 – 9.8
February 2017	409	61.9 (253)	38.1 (154)	Knowledge: 68.1 – 69.4% Skills: 64.5 – 66%	Knowledge: 0.67 - 0.74 Skills: 0.73 - 0.78	Knowledge: 7.8 - 8.2 Skills: 9.1 - 10.3
May 2017	418	61.7 (258)	38.3 (160)	Knowledge: 66.9 – 68.1% Skills: 64 – 65%	Knowledge: 0.63 - 0.70 Skills: 0.73 - 0.79	Knowledge: 7.8 - 8.6 Skills: 9.2 - 9.8

* 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.

MRCS (ENT)

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.

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 (ENT) 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 otolaryngology.

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 ENT 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 3 procedures under minimal supervision and perform more complex procedures under direct supervision.

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 each.

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 and 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.

2016-17 DO-HNS Examination Review of Activity

During 2016-17 the Part 2 OSCE was held in England in October 2016, Edinburgh in February 2017 and Dublin in May 2017.

The DO-HNS examination continues to review its processes and has implemented a number of initiatives over the preceding year. Areas of development have included the inclusion of the DO-HNS examination in to the potential use of 3D anatomical models. The DO-HNS Part 2 exam has also utilised to good effect iPads to show clinical images.

The DO-HNS Sub Group continue to monitor the evolve the Part 1 and Part 2 question banks and held their two-day annual review meeting in March 2017.

A process for recording and monitoring the OSCE scenarios performance, similar to that being used for MRCS Part B (OSCE), has been agreed and will be reviewed whilst in its infancy. This process will allow the Sub group to monitor, review and improve the scenarios over time.

Summary descriptive statistics

DO-HNS Part 1 (written)

	Total number sat	Passing % (and number)	Failing % (and number)	Pass mark %	Measure of reliability*	Measurement error** % (raw)
Sep-16	30	70.0 (21)	30.0 (9)	73.1	0.91	2.16 (6.64)
Jan-17	22	72.7 (16)	26.3 (6)	74.8	0.98	2.21 (6.66)
Apr-17	30	73.3 (22)	26.7 (8)	69.4	0.94	2.26 (6.81)

* 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** % (raw)
Oct-16	89	66.29 (59)	33.71 (30)	Day 1: 69.5	Day 1: 0.60	Day 1: 2.46 (13.53)
				Day 2: 69.3	Day 2: 0.71	Day 2: 2.42 (13.30)
Feb-17	87		55.17 (48)	Day 1: 69.3	Day 1: 0.83	

		44.83 (39)		Day 2: 69.5	Day 2: 0.75	Day 1: 2.47 (13.58) Day 2: 2.48 (13.66)
May-17	75	60.00 (45)	40.00 (30)	Day 1: 69.8	Day 1: 0.76	Day 1: 2.45 (13.48)
				Day 2: 70.2	Day 2: 0.67	Day 2: 2.17 (11.96)

* 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, which provides feedback on the utilities along with the performance of the scenarios and examiners.

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.

It is also the remit of the IQA Committee to review and implement the JSCM Equality and Diversity policy.

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 and DO-HNS 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;
- provide feedback to examiners via the examiner's feedback reports issued after each diet;
- assist in the review of the assessments used to enhance the comparability, validity and reliability of the examinations.

Considerable activity has taken place throughout 2016-17 to pilot the potential remote monitoring of the MRCS Part B (OSCE) that would allow Assessors to monitor the examiners from a separate room by electronic tablet via a small security camera. It is hoped that the system will be less intimidating to the examiners and less obtrusive to the candidates. Two developmental pilots have taken place and further pilots are scheduled.

It has been recognised that greater pressures have been placed on the pool of Assessors with the phasing out of the OCC in January 2016 resulting in an increase in the number of overseas OSCE venues. Therefore, ICBSE have increased Assessor numbers since their implementation to reflect this.

2016-17 IQA Review of Activity

6.3   Equality & Diversity

Due to the introduction of the Joint Surgical Colleges Meeting (JSCM) Equality and Diversity Policy in July 2013, the ICBSE have undertaken and completed multiple Equality & Diversity work streams since 2013 to ensure all MRCS and DO-HNS processes match best practice wherever possible.

6.3.1   Equality & Diversity examiner training

ICBSE commissioned the development of an examination-specific training programme to enhance awareness of Equality and Diversity issues while examining. This will help to ensure that all candidates experience a fair examination and mitigate against the risk of any unintended bias within the examination. The two module programme was launched in May 2016 and all examiners, assessors, committee members and examinations staff are required to complete the training. ICBSE continue to monitor the completion of the training by the relevant stakeholders.

6.3.2   Review and improve the collection and monitoring of equal opportunities data

In addition to the ongoing analysis by the GMC of trainee examinations outcomes, ICBSE continue to review the processes for collecting and monitoring the Equal Opportunities (EO) data collected from the candidature and examiners. The reporting of the first set of enhanced EO data was included in the 2014-15 ICBSE Annual Report and continues to be monitored and published. A further set of enhanced data for 2017 is included in Appendix 1 below.

6.4   Review of the MRCS Part B (OSCE) Exam

The last major review of the MRCS Part B (OSCE) exam, carried out in 2011, resulted in a GMC Change Submission that took effect from February 2013. As part of this process the GMC stipulated that the MRCS Part B (OSCE) should remain constant for a period of five years to provide continuity to candidate preparation.

It was noted that the Content Review Group had carried out a similar review for the Part A (MCQ) Examination in 2015 culminating in a change to the Part A test specification which came in to effect in January 2017.

An intercollegiate Review panel met towards the end of the annual review period and three smaller working groups have been formed to review and propose changes to the in the following areas:

- Blueprinting
- Questions, exam format & standard setting
- Delivery, feedback & reporting

This review will continue in to 2017-18 with a view to submitting any proposed changes to the Regulator during 2018.

6.5 Research

6.5.1   Intercollegiate Research Fellow

The ICBSE, with the support from the four Surgical Royal Colleges, embarked on a process of improving the surgical research portfolio to match the activity of other postgraduate medical institutions. As such, an Intercollegiate Research Fellow was recruited in 2015 and has embarked on several research projects primarily looking at the predictive validity of the MRCS examination. The Fellow has constructed a database of MRCS Part A and B UK candidate activity from 2008 to the present including scores, number of attempts, pass rates, demographics, stage of training, medical school and Deanery. This has already been linked to ST3 national section and will shortly be correlated with FRCS outcomes. This MRCS and ST3 predictive validity work was presented at the ASGBI conference in May 2017.

A number of predictors had been identified for success at Part A, Part B and ST3 selection using this data and the British Journal of Surgery has recently accepted a manuscript on this extensive work which analysed over 900 candidates.

Following a short article that was published in BMJ Careers (February 2017) summarising the best times to sit the MRCS Part A and B a detailed paper with all the data and outcomes is being prepared and will be submitted to a leading surgical journal for publication. This work was also presented at ASGBI in May 2017. .It is likely that ICBSE will seek permission from JSCM to submit this work to both the Annals of the Royal College of Surgeons of England, and The Surgeon (journal of the Scottish and Irish Colleges).

Additionally we are investigating whether WBAs and DOPS at core trainee level predict success in the two technical stations of the MRCS – this could influence any future changes to the MRCS OSCE. 175,000 DOPS have been matched to candidates' results in the two technical stations and the results will be available in the next 2 months. Finally, ICBSE are looking at the predictive validity of MRCS in both ARCP and FRCS outcomes. These results will be also available in the coming year.

6.5.2 Examiner marking variance

An ICBSE study investigating the human factors effect that switching stations at lunchtime can have on examiners and their marking was published in the Journal of Surgical Education in July 2016 using over 18,000 candidate/examiner interactions.

In addition, ICBSE surveyed examiners across all four Surgical Colleges following the switching station work to see if examiner morale has improved since the original work identified an issue with human factors. It was found in a detailed study of 180 examiners that morale had improved and stress was reduced. The work has been published in the Journal of Surgical Education (July 2017).

The attitudes and morale of overseas-based examiners is also being investigated in a separate study and detailed statistics are awaited.

6.5.3 Effectiveness of MRCS Assessor System

Analysis was carried in early 2016 on the candidate feedback for the Part B (OSCE) exam to look at the effect Intercollegiate Assessors may have had on the examination by comparing feedback before and after the ICBSE assessors were introduced. Further analysis will take place in the forthcoming year.

6.5.4 Overseas examiner human factors

Following on from the ICBSE work on the effect of human factors in examiner performance this project has been extended to include overseas based examiners and the detailed statistical results are awaited.

Peter Brennan, ICBSE Chair
Lee Smith, ICBSE Manager
29 August 2017

PROTECTED CHARACTERISTICS: EXAMINERS/ASSESSORS AND CANDIDATES AT 25 MAY 2017

Candidate statistics: candidates in 2017 for each stage or type of exam

AGE PROFILE - EXAMINERS/ASSESSORS

	Edin	England	Glasgow	Ireland	TOTAL	%
30-39	<5	9	<5	9	24	1.6%
40-49	124	83	50	71	328	22.3%
50-59	280	180	76	60	596	40.6%
60-69	137	95	33	34	299	20.4%
70+	13	19	<5	7	43	2.9%
Unspecified	35	59	31	53	179	12.2%
Total	593	445	197	234	1469	

AGE PROFILE - CANDIDATES

	Edinburgh	England	Glasgow	Ireland	TOTAL	%
20-29	818	1472	61	368	2719	54.4%
30-39	680	953	42	326	2001	40.0%
40-49	94	109	8	36	247	4.9%
50-59	7	18	<5	6	31	0.6%
60-69	<5	<5	<5	<5	<5	0.0%
70+	<5	<5	<5	<5	0	0.0%
Unspecified	<5	<5	<5	<5	0	0.0%
Total	1601	2552	112	737	5002	

GENDER PROFILE - EXAMINERS/ASSESSORS

	Edin	England	Glasgow	Ireland	TOTAL	%
Female	63	71	25	46	205	14.0%
Male	529	373	172	188	1262	85.9%
Prefer not to say	<5	<5	<5	<5	<5	0.1%
Total	593	445	197	234	1469	

GENDER PROFILE - CANDIDATES

	Edinburgh	England	Glasgow	Ireland	TOTAL	%
Female	426	675	44	187	1332	26.6%
Male	1134	1616	63	549	3362	67.2%
Prefer not to say	5	<5	<5	<5	7	0.1%
Transgender	<5	16	<5	<5	7	0.1%
Unspecified	5	256	<5	<5	294	5.9%
Total	1601	2552	112	737	5002	

MARITAL STATUS PROFILE - EXAMINERS/ASSESSORS

	Edin.	England	Glasgow	Ireland	TOTAL	%
Civil Partnership	<5	<5	<5	<5	0	0.0%
Cohabiting	<5	<5	<5	<5	6	0.4%
Married	204	54	53	42	353	24.0%
Prefer not to say	<5	<5	5	<5	9	0.6%
Separated/Divorced	8	<5	<5	<5	16	1.1%
Single	13	7	<5	10	31	2.1%
Unspecified	364	379	133	176	1052	71.6%
Widowed	<5	<5	<5	<5	2	0.1%
Total	588	446	201	225	1469	

MARITAL STATUS PROFILE - CANDIDATES

	Edinburgh	England	Glasgow	Ireland	TOTAL	%
Civil Partnership	18	<5	<5	<5	19	0.4%
Cohabiting	26	62	<5	<5	120	2.4%
Married	495	374	33	17	919	18.4%
Prefer not to say	77	70	<5	<5	153	3.1%
Separated/Divorced	8	6	<5	<5	14	0.3%
Single	739	770	59	27	1595	31.9%
Unspecified	237	1269	13	689	2208	44.1%
Widowed	<5	<5	<5	<5	<5	0.0%
Total	1601	2552	112	737	5002	

SEXUAL ORIENTATION PROFILE - EXAMINERS/ASSESSORS

	Edin.	England	Glasgow	Ireland	TOTAL	%
Bisexual	<5	<5	<5	<5	8	0.5%
Heterosexual	336	174	95	131	736	50.1%
Homosexual	<5	<5	<5	<5	<5	0.1%
Prefer not to say	13	<5	6	<5	27	1.8%
Unspecified	241	264	94	96	695	47.3%
Total	593	445	197	234	1469	

SEXUAL ORIENTATION PROFILE - CANDIDATES

	Edinburgh	England	Glasgow	Ireland	TOTAL	%
Bisexual	40	20	<5	<5	63	1.3%
Heterosexual	1230	1539	96	33	2898	57.9%
Homosexual	<5	20	<5	<5	22	0.4%
Prefer not to say	237	139	10	7	393	7.9%
Unspecified	92	834	<5	696	1927	38.5%
Total	1601	2552	112	737	5002	

RELIGIOUS PROFILE - EXAMINERS/ASSESSORS

	Edin.	England	Glasgow	Ireland	TOTAL	%
Buddhist	22	<5	<5	7	**32**	2.2%
Christian	123	51	25	53	**252**	17.2%
Hindu	87	24	33	22	**166**	11.3%
Jewish	<5	<5	<5	<5	**<5**	0.2%
Muslim	59	48	22	39	**168**	11.4%
No religion	31	9	5	8	**53**	3.6%
Other	5	<5	8	<5	**20**	1.4%
Prefer not to say	6	<5	5	<5	**17**	1.2%
Sikh	<5	<5	<5	<5	**13**	0.9%
Unspecified	255	301	96	93	**745**	50.7%
Total	**593**	**445**	**197**	**234**	**1469**	

RELIGIOUS PROFILE - CANDIDATES

	Edinburgh	England	Glasgow	Ireland	TOTAL	%
Buddhist	124	29	2	<5	**158**	3.2%
Christian	284	408	27	<5	**721**	14.4%
Hindu	256	253	21	<5	**535**	10.7%
Jewish	<5	5	<5	<5	**7**	0.1%
Muslim	584	590	27	24	**1225**	24.5%
No religion	89	194	17	<5	**302**	6.0%
Other	71	73	<5	<5	**148**	3.0%
Prefer not to say	103	105	10	<5	**221**	4.4%
Sikh	8	14	<5	<5	**25**	0.5%
Unspecified	80	881	5	694	**1660**	33.2%
Total	**1601**	**2552**	**112**	**737**	**5002**	

DISABILITY PROFILE - EXAMINERS/ASSESSORS

	Edin.	England	Glasgow	Ireland	TOTAL	%
No	517	193	102	144	**956**	65.1%
Partial	<5	<5	<5	<5	**<5**	0.1%
Unspecified	70	249	93	88	**500**	34.0%
Yes	5	<5	<5	<5	**11**	0.7%
Total	**593**	**445**	**197**	**234**	**1469**	

DISABILITY PROFILE - CANDIDATES

	Edinburgh	England	Glasgow	Ireland	TOTAL	%
No	1556	1677	105	217	**3555**	71.1%
Partial	16	33	<5	<5	**52**	1.0%
Unspecified	11	812	<5	517	**1344**	26.9%
Yes	18	30	<5	<5	**51**	1.0%
Total	**1601**	**2552**	**112**	**737**	**5002**	

ETHNICITY - EXAMINERS AND ASSESSORS

With GMC/IMC Number	Edin.	England	Glasgow	Ireland	TOTAL	%
Asian or Asian British	148	51	63	22	**284**	29.2%
Black / African / Caribbean / Black British	10	<5	<5	<5	**16**	1.6%
Mixed / Multiple Ethnic Groups	21	7	<5	5	**36**	3.7%
Other Ethnic Group	25	16	<5	5	**48**	4.9%
Prefer not to say	<5	<5	<5	<5	**<5**	0.2%
Unspecified	77	139	51	34	**301**	31.0%
White	157	50	40	37	**284**	29.2%
Total	**439**	**265**	**161**	**106**	**971**	100.0%

No GMC/IMC Number	Edin.	England	Glasgow	Ireland	TOTAL	%
Asian or Asian British	55	25	8	28	**116**	23.3%
Black / African / Caribbean / Black Br.	7	<5	<5	<5	**10**	2.0%
Mixed / Multiple Ethnic Groups	20	<5	<5	12	**36**	7.2%
Other Ethnic Group	6	31	3	13	**53**	10.6%
Prefer not to say	<5	<5	<5	<5	**<5**	0.2%
Unspecified	43	86	11	52	**192**	38.6%
White	23	32	13	22	**90**	18.1%
Total	**154**	**180**	**36**	**128**	**498**	100.0%

ETHNICITY - CANDIDATES (calendar year 2017)

With GMC/IMC Number	Edinburgh	England	Glasgow	Ireland	TOTAL	%
Asian or Asian British	138	310	18	8	**474**	22.5%
Black / African / Caribbean / Black British	18	68	<5	<5	**89**	4.2%
Mixed / Multiple Ethnic Groups	23	123	12	<5	**159**	7.5%
Other Ethnic Group	34	79	<5	5	**118**	5.6%
Prefer not to say	28	43	<5	<5	**76**	3.6%
Unspecified	23	430	<5	20	**475**	22.5%
White	186	481	40	9	**716**	34.0%
Total	**450**	**1534**	**80**	**43**	**2107**	100.0%

No GMC/IMC Number	Edinburgh	England	Glasgow	Ireland	TOTAL	%
Asian or Asian British	589	274	21	36	**920**	31.8%
Black / African / Caribbean / Black Br.	37	14	<5	8	**61**	2.1%
Mixed / Multiple Ethnic Groups	74	38	<5	15	**127**	4.4%
Other Ethnic Group	152	265	8	24	**449**	15.5%
Prefer not to say	100	24	<5	5	**129**	4.5%
Unspecified	174	386	<5	603	**1164**	40.2%
White	25	17	<5	<5	**45**	1.6%
Total	**2293**	**1510**	**80**	**871**	**2895**	100.0%

All Examiners/Assessors	Edin.	England	Glasgow	Ireland	TOTAL	%	All Candidates	Edinburgh	England	Glasgow	Ireland	TOTAL	%
Asian or Asian British	203	76	71	50	**400**	27.2%	Asian or Asian British	727	584	39	44	**1394**	27.9%
Black / African / Caribbean / Black Br.	17	<5	<5	<5	**26**	1.8%	Black / African / Caribbean / Black Br.	55	82	<5	9	**150**	3.0%
Mixed / Multiple Ethnic Groups	41	10	<5	17	**72**	4.9%	Mixed / Multiple Ethnic Groups	97	161	12	16	**286**	5.7%
Other Ethnic Group	31	47	5	18	**101**	6.9%	Other Ethnic Group	186	344	10	27	**567**	11.3%
Prefer not to say	<5	<5	<5	<5	**<5**	0.2%	Prefer not to say	128	67	4	6	**205**	4.1%
Unspecified	120	225	62	86	**493**	33.6%	Unspecified	197	816	3	623	**1639**	32.8%
White	180	82	53	59	**374**	25.5%	White	211	498	40	12	**761**	15.2%
Total	**593**	**445**	**197**	**234**	**1469**	100.0%	Total	**1601**	**2552**	**112**	**737**	**5002**	100.0%