1 Foreword

The FRCR examinations are one of the most visible and recognisable aspects of the College’s work and represent a very major activity for the College. They are the central pillars of the assessment of UK trainees and an important marker of quality for overseas doctors. Much work has been done by the examination boards, over a number of years, to develop the exams to ensure they are fair to candidates whilst maintaining standards. Postgraduate medical examinations have, however, been coming under increasing scrutiny and all examination providers are required to meet quality standards set by the General Medical Council.

In 2013 the College decided to commission a major independent review of all FRCR examinations in both faculties. The aim was to give us confidence that our examinations were fundamentally sound, highlight where we had any deficiencies and help us to make appropriate improvements. We were very pleased to appoint an extremely strong team with extensive experience and expertise in assessment theory and examinations, a good understanding of postgraduate medical education, and, importantly, the ability to offer practical, realistic advice.

The reviewers looked at a large array of documentation; undertook statistical analysis of detailed candidate and question level data; had meetings with staff, examiners and trainees; and observed examinations taking place.

The report highlights many areas of good and excellent practice and I commend all of our many question setters, committee and board members, examiners and staff for the professionalism and hard work that goes into this.

The report also identifies where improvements could be made with a set of recommendations — some general, some specific to individual components. These recommendations are addressed in this document.

More work is now needed to develop detailed plans and timescales. Some of the changes will need considerable consultation and planning and many will need GMC approval before they can be implemented.

Dr Giles Maskell
President
April 2015
2 Introduction

Following a tender process the review team was appointed in spring 2014 and started work in May. Analysis of documentation and data was carried out across the summer. They observed the final (2B) examinations in both faculties, and met examiners, in the autumn. A draft report was received in November and the final report in December 2014.

The Examinations Review report was discussed by the Fellowship Examination Boards (FEB) in January 2015. The FEB met as a joint board attended by the external reviewers in the morning, and as separate Clinical Oncology (CO) and Clinical Radiology (CR) boards in the afternoon. From these meetings summary lists of recommended actions were produced for consideration by the Specialty Training Boards for each faculty. The combined summary plan of actions was then approved by Council in March 2015.

This document lists each of the main recommendations of the review with the planned action. The recommendations are listed in the order in which they appear in the summary section starting on page 57 of the report.

We have now started the detailed planning needed. Some of the changes will need considerable consultation and planning and many will need GMC approval before they can be implemented.

In parallel with this work we have set up an automation project for Clinical Radiology FRCR which is intended to enable the image-based anatomy and 2B reporting examinations to be taken simultaneously in a number of different centres and, importantly, allow for standardisation of exam content for a cohort. We are aiming for this to be implemented in Autumn 2016.

3 Clinical Radiology First Part (CR1)

3.1 Development of a clear “purpose of assessment” statement as part of wider enhancements within FRCR CR

Each examination committee or board has been asked to produce a short statement describing the purpose of the test, the level of training of candidates and the application of results in order to justify the choice of assessment, test format and spread of the assessment sample. Once agreed by the RCR Specialty Training Boards these will be published on the RCR website in the second half of 2015.

3.2 Specific focus on test format for Physics component – move from T/F questions to SBA, and articulate if knowledge, or knowledge application test

A working group, comprising representatives from the examination committees/boards, Specialty Training Board and Junior Radiologists’ Forum, has been established to review the role of the physics syllabus and examination. The group will consider its placing, format and purpose prior to any consideration of a change of question format. The earliest possible curriculum change would be for submission to the GMC in 2016 and any change to examination content or format would not be earlier than 2017.

3.3 Requirement to deliver prospective examination blueprints for both components

In order to ensure good test design and defensibility, routine blueprinting of examinations (cross-matching questions to curriculum) is to be adopted.

For the Physics exam this will be considered as part of the wider review of the role of the syllabus and examination.

The Anatomy exam currently uses a two-dimensional blueprint based on modality and body system. From modality, a third of images are plain radiographs, a third are CT & MRI and a third are other (contrast studies, ultrasound mainly). From body system, examiners select a quarter MSK, a quarter head, neck and spine, a quarter chest and cardiovascular and a quarter abdomen & pelvis. The Anatomy Examination Committee will consider whether this would benefit from being further subdivided into more detailed components in line with the syllabus.
3.4 **Appropriate use of post hoc analysis to generate appropriate routine item level measures that are pertinent to the test format**

This recommendation addresses a weakness in our ability to analyse the Physics MCQs at the level of individual question performance because of the true/false format. No immediate action will be taken, pending the wider review of the physics syllabus and examination.

3.5 **Written articulation of the just passing candidate to assist new examiners, question writers and standard setters**

These will be developed alongside the "purpose of assessment" statements for internal use during standard setting from Autumn 2015.

3.6 **Currently no provision of feedback to candidates. Requirement to generate routine data to support candidates (whether pass or fail)**

Failing candidates are told their score and the pass mark. Passing candidates are just told that they have passed. From Autumn 2015 we will provide the same information to passing and failing candidates.

For Physics we will investigate the feasibility and value of providing a breakdown of performance by the seven main topic areas.

For Anatomy we will investigate the feasibility and value of providing a breakdown of performance as part of our automation project.

3.7 **Pan CR and CO recommendations at College level – strengthening remit of FEB, documentary and data governance enhancements**

The Fellowship Examination Boards (FEB) for CO and CR were established in 2012 to be responsible for ensuring that the all elements of the FRCR examination provide a coherent and appropriate assessment of the knowledge and skills defined in the training curricula. They have oversight of the individual committees responsible for each component examination and meet jointly once a year to share good practice and establish common RCR approaches across the specialties.

The Terms of Reference already give appropriate powers and membership (including lay members) to the FEBs. The need for the FEBs to hold individual examination committees to account will be emphasised.

The RCR Examinations Team will maintain a master list of documents and establish version control procedures by Summer 2015. Examiners have been made aware that the RCR Examinations Team must hold master copies of all documents and data.

Procedures for ensuring appropriate security of and consent for exam content will be reviewed by Autumn 2015.

4 **Clinical Radiology Final Part A (CR2A)**

4.1 **Development of a clear “purpose of assessment” statement as part of wider enhancements within FRCR CR**

See section 3.1 above.

4.2 **Specific focus on rationale of modular test format within assessment purpose statement**

The Fellowship Examination Board and Specialty Training Board are proposing to revert from six modular examinations taken over a two year period to a single synoptic test covering the core syllabus. We will be consulting on this with a view to proposing this change for GMC approval in 2015. A full implementation plan, including consideration of how the transition would be managed for current trainees, will be needed and the exam is unlikely to change before 2018.

4.3 **Requirement to deliver prospective examination blueprints.**

In order to ensure good test design and defensibility, routine blueprinting examinations (cross-matching questions to curriculum) is to be adopted. The 2A exams currently use a single dimension blueprint which defines the proportions of questions by sub-topic (e.g. Mediastinum within rCardiothoracic and Vascularl). We will consider building on this to adopt a two-dimensional blueprint as used in Clinical Oncology 2A exams, aiming for full implementation Spring 2016.
4.4 High failure rates merit investigation – candidate preparedness and adequacy of standard setting judgments are key factors for consideration.

Failure rates at 2A examinations have been discussed a number of times in recent years in Specialty Training Board meetings and in RCR meetings with heads of training. The view of STB is that pass rates have generally reflected the preparedness of candidates for the examinations. A number of reported factors could be having an effect such as candidates’ choice to attempt too many modules in a diet in order to “have a go” with little expectation of passing. Recent pass rates and these factors will be considered when developing proposals for restructuring the 2A examination.

4.5 Currently no provision of feedback to candidates. Requirement to generate routine data to support candidates (whether pass or fail)

Failing candidates are told their score and the pass mark. Passing candidates are just told that they have passed. From Autumn 2015 we will provide the same information to passing and failing candidates. Further categorisation of performance has not been considered practical with the current modular structure. Under the proposals to move to a single synoptic examination we would expect to provide feedback by the main subject areas as is currently done for the Clinical Oncology 2A examination.

4.6 Pan CR and CO recommendations at College level – strengthening remit of FEB, documentary and data governance enhancements

See section 3.7 above.

5 Clinical Radiology Final Part B (CR2B)

5.1 As part of wider CR review commentary, articulation of an externally facing “purpose of assessment” statement

See section 3.1 above.

5.2 Review of current oral examination format is urgently required to maintain CR2B currency. Scope to adopt similar model to CO2B whilst preserving oral format.

From Autumn 2015 we will initially introduce a proportion of standardised, centrally-agreed oral questions to be used by each pair of examiners for all candidates in a session.

5.3 Development of prospective blueprinting to map entirety of reporting and oral cases to ensure an appropriately sampled, broad scope assessment. More standardization of case selection across candidates desirable.

The automation project will allow for standardisation of the reporting and rapid reporting case selection across all candidates in a diet.

5.4 Currently no format to undertake detailed item level psychometric analysis – and low reliability of CR2B elements.

Expert advice on domain-based scoring has been taken and we are considering whether and how we can revise the scoring systems in all CR2B examination components in order to capture more data and thereby improve reliability and analysis.

5.5 Suggested emendation to scoring and standard setting mechanisms should permit generation of whole-test and item level data for analysis, and improve reliability.

See section 5.4 above.

5.6 Adoption of recognised criterion based standard setting for oral (e.g. Borderline or Angoff) dependant on cohort sizes. Separate criterion referenced standard setting for Reporting elements required.

Changes to standard setting will depend on the changes to scoring system and will only be practical when our automation project allows for standardisation of the reporting and rapid reporting case selection across all candidates in a diet.

We do not think that borderline or Angoff methods will be feasible for the oral component of the examination but we will take a decision on this as part of the revision of the scoring system. We will
articulate the way in which standard setting is currently built in to case selection and scoring by Autumn 2015.

5.7 Pan CR and CO recommendations at College level – strengthening remit of FEB, documentary and data governance enhancements

See section 3.7 above.

6 Clinical Oncology First Part (CO1)

6.1 Development of a clear “purpose of assessment” statement as part of wider enhancements within FRCR CO

See section 3.1 above.

6.2 Continued development of item bank to focus on knowledge application testing and enhanced clinical relevance

To be emphasised in training and guidance for question writers.

6.3 Routine prospective blueprinting of modular components to overarching framework (scope to adapt CO2A blueprint)

The report notes that questions are currently well categorised. In order to ensure good test design and defensibility, routine blueprinting of examinations (cross-matching questions to curriculum) is to be adopted. This will build on existing good practice in Clinical Oncology 2A exams and external expert advice, aiming for full implementation for Spring 2016.

6.4 High failure rates merit investigation – candidate preparedness and adequacy of standard setting judgments are key factors for consideration.

Failure rates at CO1 examinations have been discussed a number of times in recent years in Specialty Training Board meetings and in RCR meetings with heads of training. A review of the CO1 syllabus was carried out in 2012 and it was extensively revised to bring core teaching in line with current practice. An introductory aim was incorporated in respect of each of the four basic sciences modules to assist trainees in understanding the rationale for the knowledge required and the list of drugs expected to be covered during core clinical oncology training was made explicit. This 2012 curriculum was first applied to examinations held in Autumn 2014. We have been in discussion with the organisers of relevant CO courses to explore potential reasons for the relatively low pass rate at the first attempt at the FRCR exam from the perspective of the course organisers, and share good practice in education.

6.5 Consider offering routine feedback to all candidates (not just those who have failed)

Failing candidates are told their score, the pass mark and a breakdown of the questions that have answered incorrectly by syllabus section. Passing candidates were just told that they had passed. From Spring 2015 we have provided the same information to passing and failing candidates.

6.6 Written articulation of the just passing candidate to assist new examiners, question writers and standard setters. Scope to adapt processes used by CO2A

To be developed alongside the purpose of assessment statements for internal use during standard setting from Autumn 2015. To be discussed in each standard setting meeting.

6.7 Pan CR and CO recommendations at College level – strengthening remit of FEB, documentary and data governance enhancements

See section 3.7 above.

7 Clinical Oncology Final Part A (CO2A)

7.1 Development of a clear “purpose of assessment” statement as part of wider enhancements within FRCR CO

See section 3.1 above.

7.2 Consideration of more routine use of “anchor” items across papers to examine stability and cohort attainment
Expert opinion has been sought and we are developing a proposal to implement this by Spring 2016, with some anchor questions being re-used and analysed across (non-consecutive) diets.

7.3 Pan CR and CO recommendations at College level – strengthening remit of FEB, documentary and data governance enhancements

See section 3.7 above.

8 Clinical Oncology Final Part B (CO2B)

8.1 Development of a clear “purpose of assessment” statement as part of wider enhancements within FRCR CO. Specific focus for the CO2B to justify time allowances within stations and structured orals

See section 3.1 above in relation to “purpose of assessment” statements.

In 2014 candidates were permitted an additional two minutes (a 10% increase) per examiner pair for the oral component of the examination and examiners have subsequently monitored the time taken per question.

8.2 Development of prospective blueprinting to map entirety of clinical and oral cases to ensure an appropriately sampled, broad scope assessment.

In order to ensure good test design and defensibility, routine blueprinting of examinations (cross-matching questions to curriculum) is to be adopted for the oral examination. Blueprinting for the clinical exam is only practical at a very high level. This will build on existing good practice in Clinical Oncology 2A exams and external expert advice. This is ongoing from now, aiming for full implementation Spring 2016.

8.3 Currently no format to undertake detailed item level psychometric analysis – routine reliability measures are feasible to undertake (combining clinical and oral cases) and suggested emendation to scoring and standard setting mechanisms should permit generation of whole-test and item level data for analysis

We are considering whether and how we can revise the scoring system in the CO2B examination components in order to capture more data and thereby improve reliability and analysis. Some preliminary work has been done looking at defining the domains that might be scored. Further expert advice on domain-based scoring will be sought.

8.4 Adoption of recognised criterion based standard setting (e.g. Borderline or Angoff) dependent on cohort sizes.

We do not think that borderline or Angoff methods will be feasible for the 2B examination given the nature of the examination and the small candidate numbers. We will articulate the way in which standard setting is currently built in to case selection and scoring by Autumn 2015.

8.5 Pan CR and CO recommendations at College level – strengthening remit of FEB, documentary and data governance enhancements

See section 3.7 above.