

Exam Reviews Executive Summary

Executive summary

The Royal College of Anaesthetists and the Faculties of Intensive Care and Pain Medicine are committed to delivering fair, robust and high-quality examinations that are aligned with GMC standards and best contemporary practice and that uphold and improve standards of patient care.

Two reviews of examinations delivered by the College were completed during the period January 2020 to July 2022. The first was an internal review with the scope to look at all aspects of the FRCA examination against current best practice in postgraduate medical assessment. For example, the purpose and role of the examination within the assessment strategy for the training programme leading to CCT in Anaesthesia, validity of the current components of this exam, fairness, statistical reporting, lay involvement, use of technology, and candidate communication and feedback. This review was started in January 2020, postponed due to the pandemic and restarted in 2021. The second was an independent review commissioned by the College as a consequence of issues in the delivery of the Final FRCA Written examination in September 2021. It was extended to the Faculties of Intensive Care Medicine and Pain Medicine to incorporate a review of the low pass rate in the FFICM OSCE in October 2021.

A summary of recommendations from each review is located at **Appendix A** (Internal review of FRCA examinations) and **Appendix B** (Independent review of the assessment processes of the Royal College of Anaesthetists).

Leadership of the reviews

The internal review was undertaken by the Examinations Review Group (ERG), which was formed for this purpose. The ERG's remit was to review the FRCA examination and included representation from each part of the exam, Primary and Final, Anaesthetists in Training, lay and external representation. The ERG met on a series of occasions, the first of which considered the purpose of the FRCA examination, with subsequent meetings focusing on each component of the exam, standard setting methods and delivery mechanisms.

The independent review was undertaken by Professor John McLachlan, Professor of Medical Education at the University of Central Lancashire. This review was carried out through a series of interviews with key RCoA and Faculty members, examiners from each exam board, contributions from past candidates, and doctors in training (both anaesthetists and intensivists). Surveys were also circulated to relevant stakeholders to gather views and feed back into the review process. Extensive documentation was made available for review, along with previous Public Sector Equality Duty (PSED) surveys of examiners and outputs from a series of listening events. A rapid review of relevant literature was also conducted.

Review findings and recommendations

In both internal and independent reviews, the authors emphasise the need for change to be guided by what is currently best practice in assessment and best for each medical speciality. This guidance should therefore underpin all recommendations taken forward from these reviews.

Modality, structure and content of assessment – In comparing and contrasting the outcomes of each review, it is clear that there is much parity in the recommendations provided. For example, both internal and independent reviews make recommendations for the removal of the assessment of pure knowledge from clinical exams such as the OSCE and SOE; the independent review found ‘knowledge’ to be assessed across all components of the examinations despite some of the assessment formats being inappropriate for reliable assessment of this domain. In addition, the reviews recommended that the ‘knowledge’ components of the SOE be moved to the written papers and that the clinical reasoning skills components of the SOE be placed within the format of the OSCE. How these changes may be applied across the examinations will require further consideration.

Standard setting – The reviews cited strongly the need to review, improve and homogenise standard setting methods across exams, and to consider the practice of removing one standard error of measurement (SEM) from the cut score of written exams, for which the College and Faculties are outliers among other Royal Colleges and providers of postgraduate assessment. Removing the use of multiple true false questions from the MCQ examinations was also recommended, although this has been completed in the FFICM MCQ and the FRCA is in the final stages of this transition.

Purpose of the examinations – The independent review recognised that the FRCA and Faculty exams have different purposes and audiences but emphasised frequently a need for consistency of best practice in methodology and process and a need for a unified approach to the use of, and training in, standard setting across all assessments delivered by the RCoA. The internal review, the scope of which was limited to the FRCA, also signified the need to align standard setting methods and exam processes of the Primary and Final components of that exam. Unification of exams was cited as an essential means of preventing error, reducing workload on the exams team and in turn providing time to reflect on and develop the exams, and enabling robust, defensible arguments for all parts of these assessments, which disparity undermines.

Exam governance – The independent review recommended clear lines of governance and accountability across College and Faculty assessment processes and for the expertise of the exams team to be engaged and able to inform all stages of the assessment process. An in-house review of exams governance conducted prior to the internal FRCA review also cited the need for greater involvement of the exams team and for such staff to be members of a newly formed Examinations Development and Assurance Group (EDAG), which will assure the development, strategic direction and quality of the FRCA and Faculty exams and lead on the alignment of exam processes. The independent review supports this view with a recommendation for the Head of Examinations, or colleagues to whom responsibility is delegated, to be a full member of all relevant assessment committees in a decision-making role on a par with other committee members. In addition, candidates and doctors in training should also have representation in an advisory capacity on all RCoA and Faculty committees engaged in assessment.

Culture and conduct – The independent review made recommendations for: examiner training, building a culture of continuous reflection and improvement, for EDI concerns to be addressed through examiner recruitment, appointment of EDI representation, and employment of Equality Impact Assessments for significant planned changes in the RCoA assessment processes.

Candidate engagement – The independent review captured significant insight into how assessments are perceived by the key stakeholder, the exam candidate. It cited “serious divisions” between the College and candidates that manifest as suspicion or resentment of College actions and communication. However, no evidence of uncaring or dismissive attitudes to candidates could be found during interviews with staff, examiners and College officers. In interviewing these groups, it was clear that they perceived the challenge of responding to delivering assessment in a pandemic was not understood and as a consequence felt that unfair levels of criticism had been received when issues had arisen. Both the review process and the subsequent engagement period with candidates and representative groups has driven the College and Faculties to prioritise the support, engagement and communications to candidates and doctors in training about the examinations.

Candidates interviewed as part of the independent review reported the significant impact of the assessments on their lives. These candidates cited profound distress from assessment failure and the significant disruption assessment had on major life events and general personal and family stress. Candidates further cited the impact of financial stress from exams and the small number of diets per year, which hampered training progression and prevented them from managing the process of not passing the examination discreetly without their peers knowing their outcomes. Preparation materials and feedback to candidates who failed an exam were also noted as areas requiring review. Recommendations have therefore been made to help alleviate some of these concerns and create better understanding between the College and these key stakeholders.

Communication – The independent review noted that communication from the RCoA and Faculties was generally perceived as poor by candidates, with examples given of late notification of important events and information that was delayed and unclear.

Exam incidents – In reviewing the incidents that occurred within exams in the autumn of 2021, in particular the character count issue affecting the Final FRCA CRQ and the low pass rate in the FFICM OSCE, the independent review considered potentially contributing factors such as work pressures, the context of the new circumstances presented by the pandemic, and underlying structural problems in the exam, the exact nature of which could not have been foreseen. These structural issues remain and therefore recommendations are made to reduce risk in this area, for example, the use of technology to reduce the large number of manual tasks and enable efficient data retrieval and analysis. The review emphasised the difficulty faced by the relatively small number of people delivering these exams in the examinations team. The review recognised the good work and resilience of the examinations team during the pandemic and that many of the examination sittings had been delivered successfully using novel processes, suppliers and technology.

Data and infrastructure – The independent review placed much emphasis on the need for greater data collection and research to support exam delivery and design, such as studies on the impact of gender, ethnicity and educational background on exams, and concurrent, predictive and construct validity studies to find out to what extent performance in these exams represents actual ability in the workplace. This question is intrinsically linked to what candidates feel is a disparity between their ability as anaesthetists/intensivists and performance in the exam. The internal review also made recommendations for research into the attainment gap of those with a primary medical qualification in the UK with protected characteristics and the need for a significant data collection project to make this viable.

The College has developed a provisional, prioritised implementation plan for the recommendations, which will be overseen by the newly formed Examinations Development and Assurance Group (EDAG).

Appendix A

Summary list of recommendations from the internal review of FRCA examinations

Recommendation 1

The Group agreed that external input and challenge of the FRCA Examination and its processes was a positive thing and examiners and the examination as a whole have benefitted hugely from exposure to training programmes delivered by the Health Professional Assessment Consultancy (HPAC). Moving forward, the FRCA Examination should ensure that there is externality included within the development of the examination in order that it continues its journey towards best practice in medical education and assessment.

Recommendation 2

The Review Group agreed to establish improved core examination documents, the examination syllabuses, blueprints, test specifications, to ensure that questions are appropriately set and derived from the curriculum. These documents will also help demonstrate and guide stakeholders to the appropriate level of depth and breadth that the examination tests.

Recommendation 3

The Group were in agreement that the current Primary and Final SBA and CRQ formats should continue. The CRQ is only used in the Final exam and this should not change. More consideration of VSA questions was required and this will form part of the discussion around the final format of the MCQ examinations in 2023.

Recommendation 4

The OSCE should remain a fundamental clinical component in the Primary examination to assess performance in a simulated environment appropriate to the new stage 1 of training.

Recommendation 5

The kiosk stations should be removed as these stations do not represent a true OSCE assessment. The contents of these stations could be converted into SBA questions in the Primary MCQ examination and data interpretation questions in the OSCE.

Recommendation 6

The OSCE should be updated and reformed to reflect an authentic OSCE assessment as defined by the Academy of Medical Royal Colleges and the General Medical Council, for example, a reduction in assessed stations and an increase in station duration that is in line with the constructs being assessed.

Recommendation 7

The OSCE should have a clearly defined set of areas of practice that it assesses and a separate test specification that supports the sampling of examination content against the curriculum.

Recommendation 8

The removal of the Primary SOE component from the FRCA and for the materials from the SOE to be converted into SBA questions and OSCE questions. The Primary MCQ may need to extend the range of SBA questions to ensure that the appropriate content continues to be assessed across the FRCA.

Recommendation 9

The Final SOE in the FRCA exams strategy to be retained as a valid mode to assess knowledge, understanding and clinical decision making.

Recommendation 10

A new and appropriate method of standard setting for the Final SOE Examination should be investigated with a view to being developed, piloted and implemented in the exam.

Recommendation 11

A review of the standard setting methods in the OSCE and Final SOE components of the examination, with the view of making recommendations for the most appropriate standard setting methods for the respective examinations.

Recommendation 12

Further modelling should be undertaken on the performance of borderline candidates in the written exams and subsequent clinical exams.

Recommendation 13

The FRCA should move to a position where no or one SEM is added to the pass mark at the point of transitioning to an SBA paper in 2023.

Recommendation 14

A group to be formed with the express aim of aligning standard setting methods and item analysis processes between the Primary and Final MCQ examinations.

Recommendation 15

To retain a remote, online delivery with live proctoring for written exams.

Recommendation 16

To recommend a return to face-to-face delivery for clinical exams.

Recommendation 17

To undertake a careful review of the link between the curriculum and blueprint as part of a validity study of the FRCA examination.

Recommendation 18

Once changes to the exams have been made, the College should investigate best practice for analysing inter and intra-rater reliability for its particular exams.

Recommendation 19

Research to be undertaken into the attainment gap of those with a primary medical qualification in the UK with protected characteristics. A data collection project will be first required to ensure sufficient data is available on which to base a meaningful conclusion.

Appendix B

Summary list of recommendations from the independent review of the assessment processes of the Royal College of Anaesthetists

Recommendation 1

If a marked discrepancy from previous results is observed without an identifiable causative factor, the Hofstee compromise method be employed as the primary standard setting approach.

Recommendation 2

The Head of Examinations or colleagues to which they delegate responsibility, should be a full member of all relevant assessment committees, including Faculty bodies, in a decision-making role on a par with other committee members.

Recommendation 3

Candidate and doctors in training representation in an advisory capacity on all RCoA committees engaged in assessment be assured, and that these representatives have a key role in supporting communication with candidates.

Recommendation 4

Clear lines of governance and accountability should exist across all the College and Faculty assessment processes.

Recommendation 5

Identification of best assessment practice on issues such as standard setting, item writing, and item banking should be followed by the application of these practices consistently across all the assessments run under the aegis of the RCoA.

Recommendation 6

A clear statement of the intended purpose of the assessment be drawn up for all the assessments, and that the results of benchmarking by doctors in practice at various levels be used to inform the standard setting procedures.

Recommendation 7

The written components of all RCoA assessments are based on Single Best Answer MCQs, rather than Multiple True False or Constructed Response Questions, as soon as possible.

Recommendation 8

The 'knowledge' stations and components currently present in the OSCE be moved to the written papers.

Recommendation 9

The examiner guides for the OSCE encourage the exercise of judgement within the context of the marks scheme in interpreting candidate responses when they are clearly on the right lines.

Recommendation 10

(a) the 'knowledge' components of the SOE be moved to the written papers and (b) the clinical reasoning skills components of the SOE be placed within the format of the OSCE.

Recommendation 11

Commercial assessment platforms are kept under constant review, with a short- to medium-term view to implementing a single platform across all assessments delivered by the RCoA team. This will empower the collection and analysis of both biometric and psychometric data.

Recommendation 12

Common style guides for MCQs and OSCEs be introduced across all assessments delivered by the RCoA team.

Recommendation 13

Common high quality training materials and approaches be employed across all assessments delivered by the RCoA team, and that a culture of continuous reflection and improvement be maintained.

Recommendation 14

Inclusive recruitment of examiners should continue to be promoted by the College, as a personal, professional and societal benefit, and that the requirements for becoming eligible to be an examiner are reviewed with a view to inclusion.

Recommendation 15

A unified approach to the use of, and training in, standard setting be employed across all the assessments delivered by the RCoA team.

Recommendation 16

The practice of subtracting a Standard Error of Measurement should cease, and guessing corrections be employed consistently across the RCoA exams, and should cease as soon as MTFs have been phased out in favour of SBAs.

Recommendation 17

The Hofstee Compromise Method be used to standard set assessments while the recommended changes to the RCoA assessment structures are taking place in order to ensure there are no inappropriate swings in pass/fail rates resulting from these changes.

Recommendation 18

Professional psychometric capability be added to the College to support the Exam Team and exams committees.

Recommendation 19

The impact of gender, ethnicity and educational background on exam performance in the RCoA exams be explored through a research study, with findings incorporated into the ongoing assessment design process.

Recommendation 20

A concurrent validity study be conducted to compare performance in the workplace as estimated by trainers and supervisors with performance in the RCoA assessments, with findings incorporated into the ongoing assessment design process.

Recommendation 21

A predictive validity study be conducted to compare performance in the workplace as estimated by trainers and supervisors with performance in the RCoA assessments, with findings incorporated into the ongoing assessment design process.

Recommendation 22

A construct validity study be conducted to compare performance of candidates with colleagues at different stages of their professional careers, with findings incorporated into the ongoing assessment design process.

Recommendation 23

An Equality, Diversity and Inclusion Lead be appointed to lead on EDI issues across the College and Faculties.

Recommendation 24

Equality Impact Assessments be conducted with regard to significant planned changes in the RCoA assessment processes.

Recommendation 25

Formal assessment communication channels in the College are used solely for assessment purposes.

Recommendation 26

Examiner training explicitly reinforces the requirement for professional communication during examinations and the risks that arise from unprofessional behaviour, and that the Codes of Conduct form a key part of this training.

Recommendation 27

The mentoring of new examiners continues, and that examiner training includes discussion of the importance of avoiding a hierarchical approach and language in exam discussions.

Recommendation 28

Efforts to increase the diversity of the examiner pool, especially in senior positions, continue and are extended.

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