Royal College of Anaesthetists

Review of Final FRCA Examination 2017-2018

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Final Fellowship of the Royal College of Anaesthetists (FRCA)
Examination Report

Academic year Sept 2017 – Aug 2018

Outline

The aim of this document is to provide a summary of the Final Fellowship of the Royal College of Anaesthetists' examinations undertaken during the academic year September 2017 – August 2018. The purpose of this exam is to define a national minimum standard of knowledge and understanding that anaesthetists in training must possess in order to progress with their careers beyond a defined point in their training. It is taken when they begin to work with much more remote supervision so it is clear that it represents an important pillar of patient safety. It is hoped that the report will be of interest to the general public, candidates, examiners, examinations and other departments within the College and the General Medical Council.

The Final examination is in two parts:

1. the written examination
2. the structured oral examination.

Each will be considered separately as they are stand-alone examinations.

Three areas will be described for each examination type:

1. outcome statistics
2. an assessment of the utility of the examination
3. a brief overview of areas where we feel that candidate performance could be improved.

The Final examination is a national test of knowledge and judgement, as laid out in the basic and intermediate level training curricula agreed with the General Medical Council. Anaesthetists in training may not progress beyond the middle of specialist training year 5 without possession of this qualification (or equivalent).

1. The Final written examination

The Final written examination consists of two parts:

a) 90 question multiple choice question (MCQ) paper consisting of 60 five-part true/false questions and 30 single best answer questions

b) short answer question (SAQ) paper consisting of 12 questions, all of which must be attempted.

The exam was held twice in the 2017-18 academic year (September 2017 and March 2018) in several venues across the United Kingdom. The format of the examination has not changed significantly in the last five years. The composition of the MCQ and SAQ papers are mapped against the curriculum to ensure that as full a range as possible of the curriculum is sampled. The examination is passed or failed as a whole entity with marks attained from both parts of the examination being added together.

a) Outcome statistics

Academic Year	2013-14		2014-15		2015-2016		2016-2017		**2017-2018**	
Examination date	Sept 2013	March 2014	Sept 2014	March 2015	Sept 2015	March 2016	Sept 2016	March 2017	**Sept 2017**	**March 2018**
Number applicants	348	461	287	471	359	534	427	470	**422**	**428**
Withdrawals / non attendees	13	20	8	9	12	20	23	16	**18**	**13**
Attendees	335	441	279	462	347	514	404	454	**404**	**415**
Pass Rate: Number (%)	227 (68%)	305 (69%)	114 (41%)	193 (42%)	123 (35%)	271 (53%)	285 70.5%	283 62.3%	**75.0%**	**68.2%**
MCQ Internal consistency KR-20	0.80	0.82	0.79	0.80	0.80	0.77	0.77	0.66	**0.81**	**0.82**
SAQ Internal consistency Cronbach alpha	0.68	0.74	0.79	0.78	0.79	0.77	0.77	0.80	**0.86**	**0.82**

The improvement in the pass rate for the Final written examination seen since March 2016, continued in the 2017 – 2018 academic year. The pass rate of 75.0% in Sept 2017 was amongst the highest seen since the exam moved to its current format in September 2009. This is very encouraging and may reflect the fact that candidates now have until halfway through specialty training year 5 to complete the exam, and thus may feel less pressured to sit it sooner than they would like to. There is no evidence to suggest that the exam has become more or less difficult in this academic year as there have been no changes in the way the examination papers are constructed, in the sampling of questions across the curriculum or in the way the pass marks are calculated, and no significant change in the make-up of the Angoff reference group setting the pass mark. In addition, the statistical measures of internal consistency remain acceptable.

b) Examination utility

The utility of any formal assessment such as an examination can be assessed in terms of its reliability, cost and accessibility.

Reliability

The Final written examination is a high stakes examination requiring good reliability.
In order to achieve this, the MCQ paper is 3 hours long and consists of a large number of separate questions of varying type. The pass mark is criterion referenced and is set by a core group of examiners (the Angoff group) who use the Angoff technique to assign marks to each question based on what the borderline candidate would be expected to know. Questions are reviewed where there is marked variation in the Angoff scores assigned. One standard error of measurement (SEM) is then subtracted from the sum of the scores of all questions in order to

arrive at the pass mark. In addition, attempts are made to establish aspects of the reliability of the MCQ paper. The Kuder Richardson formula (KR-20) is calculated for each set of MCQ paper results. This is a measure of internal consistency (an aspect of reliability) for dichotomous data. KR-20 results for the MCQ papers in this academic year were 0.81 (September 2017) and 0.82 (March 2018). These values are satisfactory and in line with values of internal reliability of most recent MCQ papers.

Each question in the SAQ paper is marked out of a total of 20 marks by a single examiner marking against a model answer. Examiners are divided into six groups and each group is given 2 of the 12 questions to mark for all the candidates. The papers are divided up amongst the group such that each candidate has 6 examiners in total assessing separate parts of their paper. In order to provide a standardized approach all examiners marking a single pair of questions meet together to approve a model answer well in advance of the planned paper. Once candidates have sat the exam the examiners meet again and mark four specimen answer papers to ensure a standardized interpretation of the model answer. The pass mark for each individual question is set by the SAQ group but may be refined by the marking group prior to the exam sitting. The pass marks for the 12 questions are summed to give a total mark for the paper and this mark is then reduced by 1 x SEM to give the pass mark. The test of internal consistency used for this paper is the Cronbach alpha calculation (as the data is continuous rather than dichotomous). Results in the most recent examinations are shown in the table above. The values of Cronbach alpha are 0.86 (September 2017) and 0.82 (March 2018) which are excellent and even better than those in previous years.

Cost

The examination fees are set to reflect the costs incurred and not to provide an operational surplus to the College.

Accessibility

Anaesthesia is the largest hospital specialty, which means that each year there are a large number of candidates needing to take the examination in order to ensure their career progression. Adequate capacity already exists and all eligible candidates applying to take the written examination in 2017-18 were able to do so. The numbers sitting the examination have varied from 350 to 530 per sitting over the last decade. 819 candidates sat the written examination in 2017 – 2018, which is the third highest cohort on record.
The use of multiple examination halls across all four health jurisdictions supports ease of geographical access.

c) Areas of candidate performance where we feel improvements could be made

This year, for the first time, the results of the MCQ examination have been analysed to identify specific areas of the curriculum where a candidate may have less knowledge. This information has been provided to candidates with the letter informing them of their marks to help them to see where their future efforts should be concentrated.

The leads of the SAQ group produce a detailed report, freely available on the College website, describing performance at each SAQ paper sitting. Details of the pass rate for each individual question are included, and considerable detail is provided on the answers required. Candidates who failed the examination in this academic year, tended to produce poor answers in multiple different questions, and did not fail the examination because of a poor result in a single question area. Some were let down by not reading the question correctly, not paying attention to the distribution of marks, not spending enough time on the final questions and by illegible handwriting. All of these are recurring problems and probably represent poor time

management. This shows that it is very important to practise SAQs under exam conditions, which brings in the element of timing as well as knowledge. In previous academic years concern has been expressed about candidate performance in questions on the mandatory units of training. The picture was mixed this year with good performance in questions on these units in September but a dip again in March. Obstetrics continues to be an area where a large number of candidates struggle to produce good answers, perhaps because it is perceived as not needing the same amount of revision as other modules. An emerging theme is that candidates do poorly in advanced science related to clinical practice. It is important to remember that clinical science is not left behind at Primary FRCA and remains as relevant in the Final FRCA as it is in everyday practice.
Having said all of the above, the overall pass rates for the SAQ were 68.81% in September 2017 and 72.29% in March 2018 which are amongst the best in the last 5 years. Both represent a substantial improvement on the very low pass rates seen in 2014-15.

2. The Final structured oral examination

Candidates may only take the Final structured oral examination (SOE) once they have been successful at the Final written examination. In the academic year 2017-18, the oral examination consisted of two parts:

a) SOE 1 (clinical) consisting of a 40-minute review of one long clinical case and three short clinical cases

b) SOE 2 (applied science) consisting of a 30-minute review including sciences as applied to patient care (anatomy, physiology, pharmacology, physics and clinical measurement).

Although all questions are structured, the face to face nature of the examination allows exploration not only of knowledge, but also of the understanding and application of that knowledge. The examination is held twice per year approximately two months after the written examination to allow smooth progression through both parts of the Final examination.

a) Outcome statistics

Academic Year	2013-14		2014-15		2015-2016		2016-2017		**2017-2018**	
Examination Date	Dec 2013	June 2014	Dec 2014	June 2015	Dec 2015	June 2016	Dec 2016	June 2017	**Dec 2017**	**June 2018**
Candidates attending	351	384	243	267	214	319	374	389	**455**	**411**
Pass rate Number (%)	235 (67%)	261 (68%)	157 (65%)	170 (64%)	142 (66%)	225 (71%)	253 (67.6%)	246 (63.2%)	**294 (64.6%)**	**290 (70.6%)**

A total of 866 candidates sat the Final SOE in 2017-2018. This was the largest number of candidates seen in the last 5 years, with the next largest cohort being 763 in 2016-17. The average pass rate for the academic year was 67.6%, which is in line with average pass rates in the years since the new exam format was put in place.

b) Examination utility

It is important to ensure that the SOEs are a reliable and valid test of knowledge and understanding of the intermediate level training curriculum. The questions are constructed and reviewed by the SOE group and answer guidance is given. Marks given on the day are a matter of independent professional judgement by the 2 examiners conducting the SOE. However, during the academic year 71 individuals observed the SOEs, the majority being consultants in active clinical practice from across the UK. All were asked to provide written feedback on the content and conduct of the examinations they observed. During this year there was a uniformity of view that the clinical cases used were highly reflective of UK practice and were pitched at the correct level to effectively assess anaesthetists at the appropriate level of training. Overall these observers regarded the assessment as being valid and relevant.

All questions used in the SOEs are held in a computerized bank. Most have been used on a number of occasions with any individual candidate being exposed to at most one new question, without statistics relating to reliability and consistency from previous examinations. The SOE examination matrix is put together to provide a paper of approximately equal difficulty across the different days in an examination week, and also across different sittings of the examination.

Eleven new examiners joined the board of Final examiners at the start of the academic year, replacing a number of colleagues relinquishing their examining role at the end of their term of office. All had at least 2 years experience of examining for the Primary FRCA exam. A total of 75 examiners now make up the Final examiner board. The pairing of new examiners with experienced colleagues allows rapid assimilation to the professional standard expected. Rigorous audit of examiner performance identified no major cause for concern and feedback was given after audit was carried out to highlight areas of good performance and to show examiners where they might make improvements. In addition, all examiners who were new to the Final exam were appraised by senior office holders at the end of the examining week. A benchmarking exercise for examiners was carried out before the start of the first day to remind them of the standard required. It is our view that we therefore have evidence that the vast majority of examiners function appropriately in their role and that existing quality assurance processes allow us to identify and deal with any problems.

Trends in pass rates for the SOE by registered characteristics are the same as for the written examinations with higher pass rates for females, UK medical graduates, those employed in training posts, Primary FRCA holders and non-BME candidates.

Cost and accessibility

The fees for the Final SOE examination are set with the intention of covering costs but not providing an income for the College. All eligible candidates wishing to take this examination were accommodated during the two examination weeks. There were enough examiners to facilitate examining, resource development, audit and appraisal within the exam week.

c) Areas of candidate performance where we feel improvements could be made

Some examiners and visitors have expressed a modicum of concern regarding the apparent clinical inexperience of some of the candidates taking the Final FRCA examination. In answering questions which form core elements of the intermediate level training curriculum these candidates appear to have theoretical (book) knowledge without practical experience of the clinical situations in either a supervised or unsupervised capacity. It is partly for this reason that the block on progression in training without possession of the Final FRCA has been put back to halfway through year 5. It is hoped that candidates will feel less pressure to sit the exam too early in training to have gained adequate experience. However, the maintenance of a consistent pass rate in the SOEs suggests that the overall ability of candidates getting through to the SOE is unchanged from previous years.

Summary

In the 2017 – 2018 academic year, there was a continued improvement in the pass rates for the written component of the Final FRCA examination when compared to the recent past. This resulted in an increased number of candidates sitting the structured oral examination, approximately two thirds of whom were successful in obtaining the Diploma of Fellow of the Royal College of Anaesthetists.

It is important to remember that one of the prime roles of postgraduate examinations is to maintain standards in healthcare. Possession of the FRCA diploma permits trainees to work with reduced levels of clinical supervision. It is vital therefore that, in order to protect those requiring the services of an anaesthetist in the UK and further afield, the standard of knowledge required to pass the FRCA examination is not reduced, and the rigorous process of exam and examiner quality control is not compromised. For these reasons, amongst others, it is important to recognize the efforts of our fellow examiners, many of whom are finding it increasingly difficult to get time away from work to perform their examination duties.

Finally, we wish to acknowledge the hard work of the staff in the examinations department of the College without whom the Final FRCA examination would not be the smooth and efficient process that it is.

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