

Review of Final FRCA Examination 2021-2022

Dr Claire Mearns
Chair Final Exam

Dr Arun Krishnamurthy
Vice Chair Final Exam

October 2022

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

Academic year Sept 2021 – Aug 2022

Outline

The aim of this document is to provide a summary of the Final Fellowship of the Royal College of Anaesthetists' examination undertaken during the academic year September 2021 – August 2022. No reports have been published over the past 2 years due to constraints caused by the COVID pandemic. Different parts of this report may be relevant to different stakeholders but by producing a single report rather than multiple separate ones, we aim to provide a balanced overview. 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 purpose of the Final examination is to define a national minimum standard of knowledge and understanding that anaesthetists in training must possess to progress with their careers beyond a defined point in their training. It is taken when anaesthetists in training begin to work with much more remote supervision therefore it represents an important pillar of patient safety.

The Final examination is a national test of knowledge and judgement, as laid out in stage 1 and 2 of the training curriculum 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).

The Final examination is in two parts:

1. the written examination
2. the structured oral examination (SOE).

This report looks at each section of the exam separately as they are stand-alone examinations, and in terms of the following three areas:

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

1. The Final written examination

In academic year 21-22, the Final written examination consisted of two parts with the following configuration:

- a) A 90-item multiple choice question (MCQ) paper consisting of 45 five-part Multiple True False (MTF) questions and 45 Single Best Answer (SBA) questions.
- b) A constructed response question (CRQ) paper consisting of 12, multi-part questions.

The CRQ paper was introduced in September 2019, replacing the short answer question (SAQ) paper. The composition of the MCQ and CRQ 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 added together.

The exam was held twice in the academic year 2021-22 (September 2021 and March 2022) with candidates sitting the exam online via a system called *TestReach*.

Due to errors in the exam process, it was necessary to void the September 21 CRQ paper. The outcome from this sitting was therefore based on the results of the MCQ paper.

The pass rate for the Final written examination in September 2021 was 69.23% and 78.41% in March 2022. There is no evidence to suggest that the exam has become more or less difficult in this academic year. 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, who set the pass mark. In addition, the statistical measures of internal consistency remain acceptable.

Statistical information on the two sittings of the Final Written examination in academic year 2021-22 is shown in **table 1** with a comparison to the previous three years.

a) Table 1 - Outcome statistics for the Final Written examination

Academic Year	2018-2019		2019-2020		2020-2021		2021-2022	
	Sept 2018	Mar 2019	Sept 2019	Mar 2020	Sept 2020	Mar 2021	Sept 2021	Mar 2022
Number applicants	410	567	392	478	363	473	351	504
Withdrawals / non attendees	11	21	17	31	26	33	0	50
Attendees	399	546	375	447	337	440	351	454
Pass Rate: Number (%)	175 (43.86%)	362 (66.3%)	268 (71.47%)	328 (73.38%)	246 (73%)	273 (62.05%)	243 (69.23%)	356 (78.41%)

MCQ Internal consistency KR-20	0.88	0.71	0.68	0.80	0.83	0.80	0.74	0.80
CRQ (SAQ 18/19 only) Internal consistency Cronbach alpha	0.81	0.81	0.77	0.69	0.77	0.77		0.77

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-stake examination requiring good reliability. To achieve this, the MCQ paper is 3 hours long and comprises a large number of discrete questions. To establish aspects of the reliability, 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 0.74 (September 2021) and 0.80 (March 2022). These values are satisfactory and in line with values of internal reliability of recent MCQ papers.

The pass mark is criterion-referenced and is set by a core group of examiners (the Angoff group) who use the Angoff method to assign marks to each question based on what a minimally competent candidate would be expected to know. Where there is marked variation in the Angoff scores assigned, scores are reviewed against the question. One standard error of measurement (SEM) is subtracted from the sum of the scores of all questions to arrive at the pass mark.

Each question in the CRQ 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.

To ensure a standardised approach to the marking, all examiners marking a single pair of questions meet 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 standardised interpretation of the model answer. The pass mark for each individual question is set by the CRQ 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 one 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 **table 1 above**. The value of Cronbach alpha is 0.77 for the March 2022, which shows excellent consistency in the skills and knowledge being tested.

Cost

The examination fees are set to reflect the costs incurred and not to provide an operational surplus to the College. [Cost of training](#) is explained in full on the College website.

Accessibility

Anaesthesia is the largest hospital specialty which means that each year there are a large number of candidates who need to take this examination in order to ensure their career progression. Sufficient capacity exists in the Final written therefore all eligible candidates applying to take this exam in 2021-22 were able to do so. A range of reasonable adjustments are available to candidates such as increased time and rest breaks. The 'TestReach' platform also provides the ability to highlight, annotate and zoom in on items if required. Requests for reasonable adjustments are made on booking the exam and further information on this process is available on the [College website](#).

c) Areas of candidate performance where improvements could be made

Candidate examination results comprise the overall result and a breakdown of the marks. Information on performance against the curriculum also forms part of the feedback, which enables candidates to see where future study efforts should be concentrated.

The leads of the CRQ group produce a detailed report describing performance at each CRQ paper sitting, which is available on the [College website](#). Details of the pass rate for each individual question are included and 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 failing to answer the question asked, failing to prioritise answers, and demonstrating a poor knowledge of clinical sciences. All of these are recurring problems and probably represent poor time management. This shows that it is very important to practice CRQ questions under exam conditions, which brings in the element of timing as well as assessing knowledge.

In previous academic years, concern has been expressed about candidate performance in questions on the mandatory units of training. In the March 2022 paper, the questions on pain and obstetrics were answered poorly in what are considered to be fairly common topics. Obstetric anaesthesia 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. Candidates also need to remember that clinical science forms an important part of the syllabus and it is an area of the exam that is often underestimated. Having said all of the above, the overall pass rate for the CRQ was 73.3% in March 2022 and this compares similarly to the March 2021 paper, which had a pass rate of 73.2%.

2. The Final Structured Oral Examination (SOE)

Candidates may only take the Final Structured Oral Examination (SOE) once they have been successful at the Final written examination. The oral examination comprises two parts:

- a) SOE 1 (clinical anaesthesia with linked applied clinical science) consisting of 4 clinical short cases with linked applied clinical science. This SOE is in two parts, A and B, which are taken consecutively with candidates moving exam floors to sit the next part. Each part is 26 minutes in duration, comprising two clinical short cases with linked clinical science questions with 13 minutes devoted to each pair of questions.
- b) SOE 2 (clinical anaesthesia) consisting of a two-section clinical long case followed by two stand-alone clinical short cases taken in one sitting. This SOE is 36 minutes in duration,

comprising 10 minutes to view clinical material, 13 minutes devoted to a two-section clinical long case and 13 minutes devoted to two questions on clinical anaesthesia unrelated to the clinical long case.

All questions are structured but in a way that allows for exploration not only of knowledge but also of the understanding and application of that knowledge.

The examination is usually held twice a year approximately two months after the written examination to allow smooth progression through both parts of the Final examination.

In the academic year 2021-2022, the exam was delivered via an online system called 'Practique'. This system was acquired in 2020 during the COVID-19 pandemic to enable examination delivery to continue despite lockdowns, travel restrictions and social distancing. This system was effective in delivering the examination, however, it was not possible to examine as many candidates per exam diet as a face-to-face delivery due to the addition of extra time to resolve candidate and examiner connectivity issues. To address the reduced number of candidates in each diet, an extra exam diet was added in March 2022. The June 2022 SOE was the first face-to-face examination delivered for the Final FRCA since December 2019.

A total of 902 candidates sat the Final SOE in 2021-2022. The average pass rate for the academic year was 65.97%.

Statistical information on the three sittings of the Final SOE in academic year 2021-22 is shown in **table 2** with a comparison to the previous four years.

a) Table 2 – Outcome statistics for the SOE

Academic Year	2017-2018		2018-2019		2019-2020	2020-2021			2021-2022		
	Dec 2017	June 2018	Dec 2018	June 2019	Dec 2019	Dec 2020	Feb 2021	June 2021	Dec 2021	March 2022	June 2022
Candidates attending	455	411	315	413	405	313*	267*	426*	334*	244*	324
Pass rate Number (%)	294 (64.62%)	290 (70.56%)	240 (76.19%)	278 (67.31%)	275 (67.90%)	208 (66.45%)	177 (64.05%)	267 (62.68%)	231 (69.16%)	153 (62.70%)	214 (66.05%)

In academic year 2019-20, there was no June diet of the Final FRCA SOE due to the COVID19 pandemic.

*Exam diets from December 2020 until March 2022 were delivered online and as such an additional diet in Feb/Mar was included to boost candidate capacity.

b) Examination utility

It is important to ensure that the SOE is a reliable and valid test of knowledge and understanding of the Stage 2 (intermediate level) training curriculum. The questions are constructed and reviewed by the SOE group and detailed answer guidance is given. Marks given on the day are a matter of independent, professional judgement by the two examiners conducting the SOE.

During the academic year, six individuals observed the SOEs, the majority being consultants in active clinical practice from across the UK. This is a much smaller number than is typical as it was

difficult to incorporate observers into the online delivery satisfactorily. All visitors were asked to provide written feedback on the content and conduct of the examinations they observed. These independent observers commented on the consistency of marking by examiners, regardless of examining style, and considered the assessment valid and relevant.

To support the online delivery of the examination, detailed standard operating procedures on how to manage IT failure and loss of connection were developed. During the exam delivery, logs were kept detailing any connection or sound quality issues for candidates or examiners and the resolution that was put in place. An IT expert was on hand to support issues with connectivity or IT.

All questions used in the SOEs are held in a computerised bank. Most have been used on a number of occasions, with any individual candidate being exposed to at most one new question. 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.

A total of 82 examiners make up the Final examiner board. Eleven new examiners joined the board of Final examiners at the start of the academic year 2021-2022, replacing colleagues relinquishing their examining role at the end of their term of office. The pairing of new examiners with more experienced colleagues allows rapid assimilation to the professional standard expected. During the academic year 2021-22, a number of examiners who had recently retired from the process, came back to assist with the extra examining time needed for the additional exam diet in March 2022 and to replace examiners who were not able to assist due to COVID19 work pressures.

An audit of examiner performance was conducted where possible during this year of delivering online exams and identified no major cause for concern. Feedback was given after audit to highlight areas of good performance and to show examiners where they might make improvements. On-going audit of all examiners, but especially examiners new to the Final exam, usually takes place during the examination week; this is performed by senior examiners and where the exam is delivered in person, the audit is recorded, discussed with the individual examiner and reviewed by the Final Examinations Review Group. A benchmarking exercise is also carried out before the start of the first day of each exam diet to remind examiners of the standard required.

Examiner training, audit and appraisal, benchmarking activities, CPD, and exam-specific, annual equality and diversity modules help ensure that examiners function appropriately in their role alongside processes that allow us to identify and deal with any problems.

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. This is explained in detail in [Cost of Training](#).

The December 2021 diet was prioritised to those in training posts and reaching the end of their training eligibility (ST4/ST5). 66 candidates did not receive a place on this exam. No prioritisation was applied to the March 22 or June 22 exam diets. There were sufficient numbers of examiners to facilitate examining, resource development, and audit within each exam week.

c) Areas of candidate performance where improvements could be made

Some examiners and visitors have expressed a degree 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 stage 2 training curriculum, these candidates appear to have theoretical (book) knowledge without practical experience of the clinical situations in either a supervised or unsupervised capacity. This is clearly unsatisfactory and 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 and to attempt to gain a sufficiently broad experience in all aspects of anaesthesia before sitting the SOE. However, the maintenance of a consistent pass rate in the SOE suggests that the overall ability of candidates proceeding to sit the SOE is unchanged from previous years.

The delivery of an online examination was a challenge and candidate preparedness to sit an online exam varied, for example, some candidates had not followed the published advice on the IT set up and this affected their exam experience. Where possible, such examples were managed flexibly and provided the necessary IT support to sit their exam.

Summary

In the academic year 2021-2022, the usual two examination diets were extended to three, with the first two diets delivered online via the system 'Practique' (December 2021 and March 2022), and the last delivered face-to-face at the College (June 2022). All written components of the exam were delivered fully remotely via an online system called, 'TestReach'. During this year, candidates would likely have been working busy NHS shifts due to the COVID19 pandemic.

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 therefore vital 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.

