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# **FRCA Examinations**

**2013-2014**

**Annual Statistical Report**

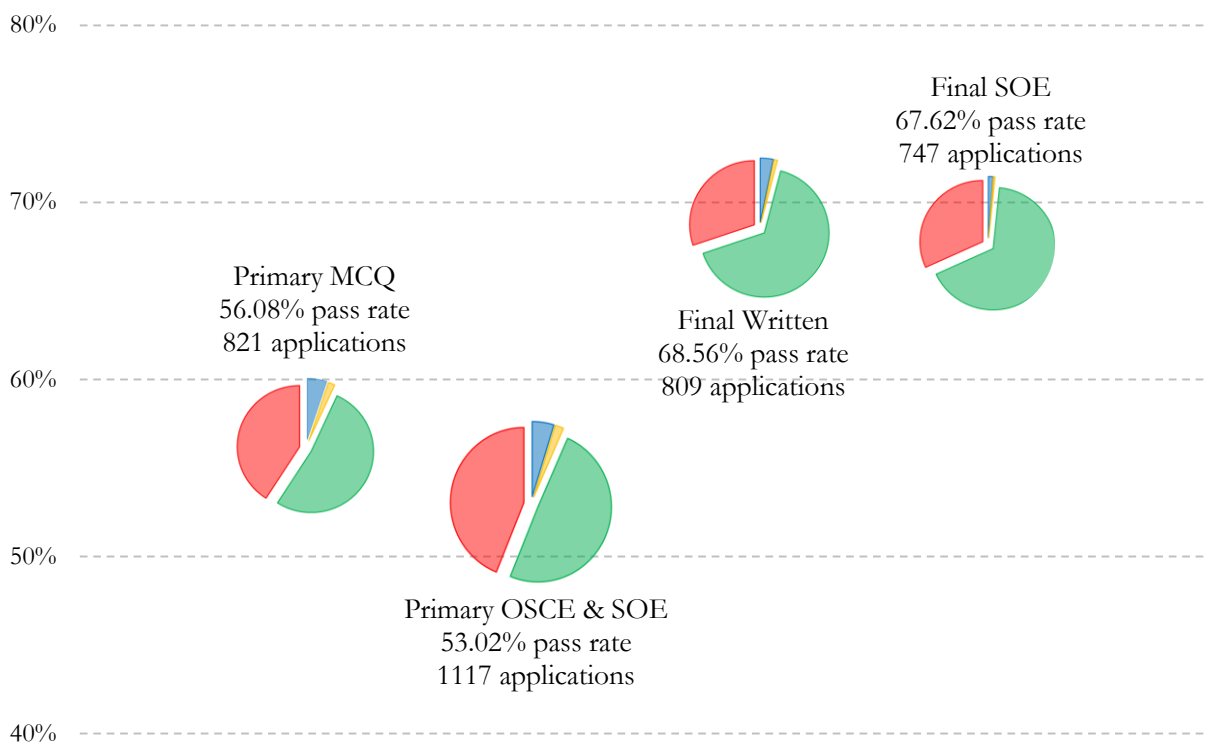
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# SUMMARY

The bubble chart below indicates the number of candidate attempts at each exam type through the size of the bubble and the pass rate by its position along the y-axis. The coloured sections of pie represent: green for passes; red for fails; blue for withdrawals; and, yellow for absentees.



The number of candidate attempts at the Primary MCQ was 765, a 23% drop on last year's figures; the 2013/14 pass rate was 56.1%, 1.7 percentage points higher. 1,043 candidate attempts were made at the Primary OSCE&SOE, an increase of 2.1% on last year's figures; the 2013/14 pass rate was 53.0%, 0.6 percentage points higher. Under the current rules candidates must sit both the OSCE and SOE components at their first attempt. If they pass one component but fail the other, they only have to re-sit the failed component. The pass rate for those sitting a single component was 78.3% for OSCE (down 5.6 percentage points) and 67.2% for SOE (up 7.8 percentage points); therefore, the chance of candidates passing with just one component outstanding is significantly higher.

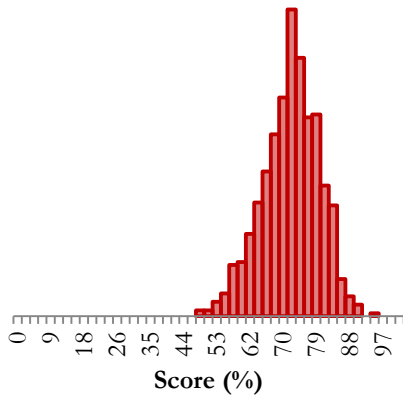
The Final examination is in two sections; Written (SAQ and MCQ) and SOE. There were 776 candidate attempts at the Final Written, a 5.7% decrease on last year's figures; 68.6% (532) passed, 12.3 percentage points more. There were 735 candidate attempts at the Final SOE examination, an increase of 11.8% on last year's figure; 497 candidates achieved the Fellowship in 2013/14, achieving a 67.6% pass rate, 3.5 percentage points higher than last year.

Overall, the number of individuals applying for all exams in 2013/14 was down from 2242 in 2012/13 to 1958 in 2013/14, a drop of 12.67%.

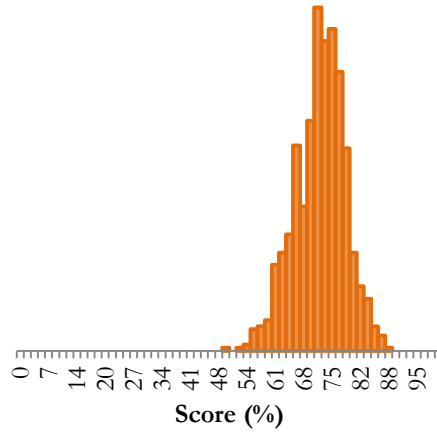
# COMPONENT BREAKDOWNS

## Histograms

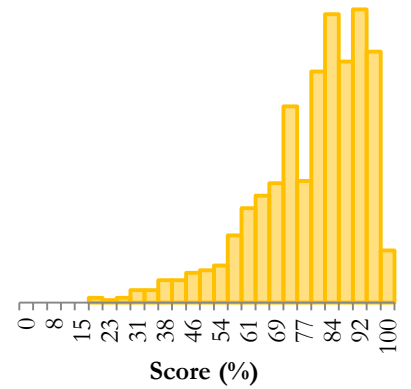
**Primary MCQ**



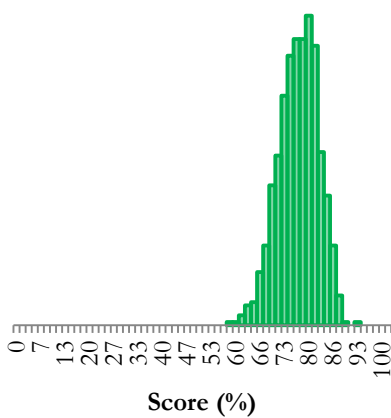
**Primary OSCE**



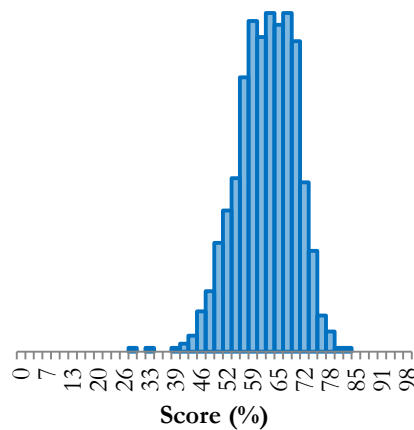
**Primary SOE**



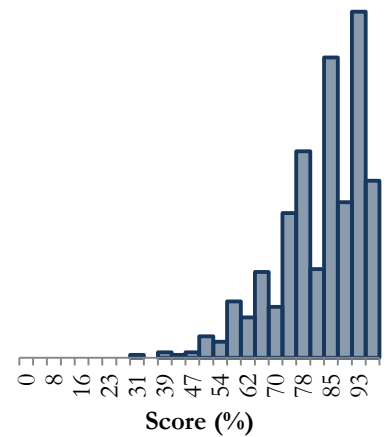
**Final MCQ**



**Final SAQ**

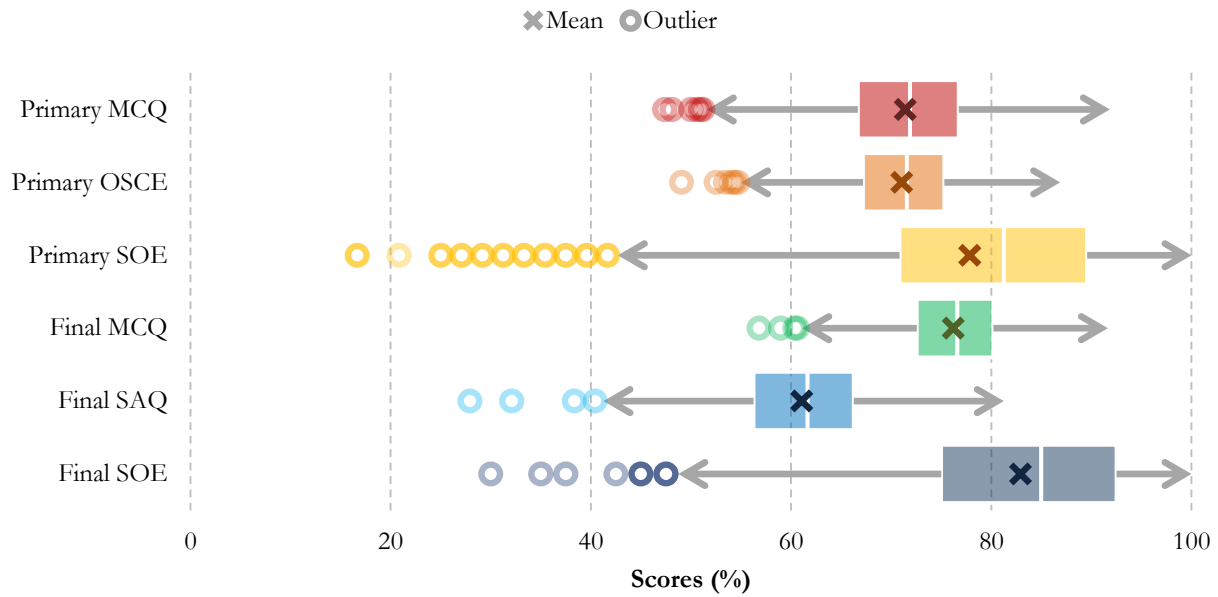


**Final SOE**



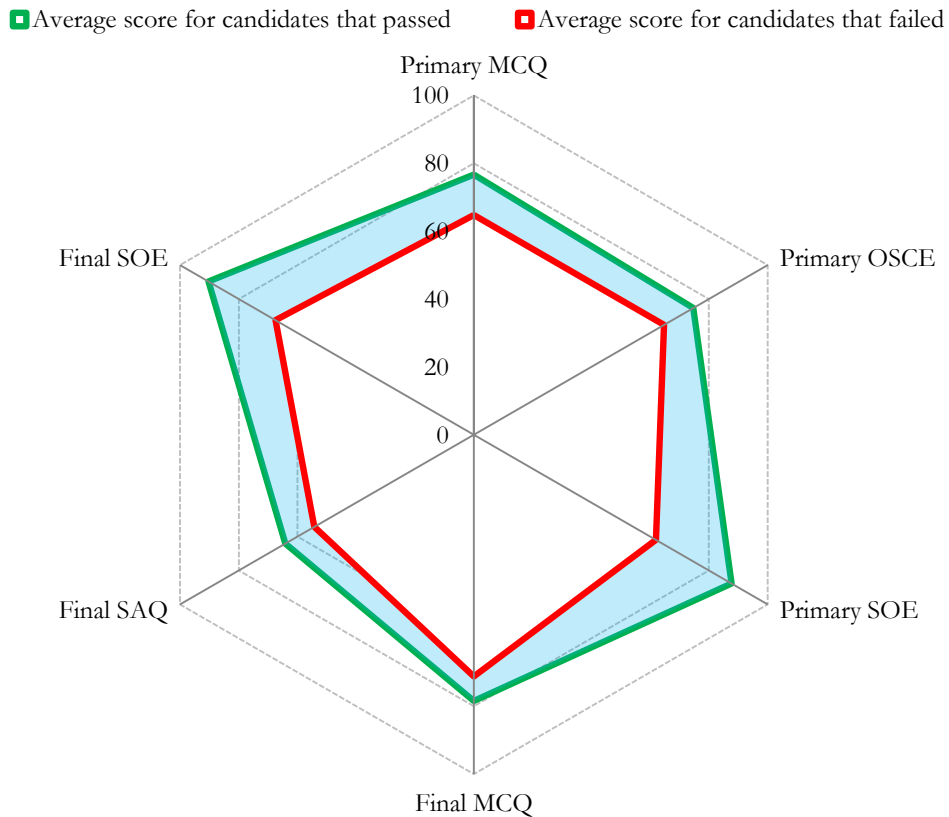
The histograms indicate that scores from each exam type are not normally distributed in any case, particularly the SOE exams which are strongly negatively skewed; however, they attract the broadest range of scores. The Histograms are based on percentage scores at each exam. The Final MCQ and SAQ are separate components of the Final Written examination, but are shown separately to reflect the different examination format.

## Boxplots



The box-plots give a more descriptive indication of the distribution of the scores than the histograms. The SOE exams have the greater number of low outlying scores which brings their mean score significantly below the median score; it should be noted that as the upper quartile of scores for the SOEs go up to 100% so there can't be any high outlying scores for these exams. Candidates in the SOEs who score 20 marks or less (maximum marks available are 40 marks for Final and 48 marks for Primary) will receive a letter, via their College Tutors from the Chairman of the relevant exam board, advising them of their reasons for poor performance and giving advice on how to prepare more fully for future sittings. All candidates receive a breakdown of scores for all examination components which allows sufficient feedback on performance in order to prepare for future examinations studies.

## Passing/Failing Mean Score Comparison



The chart above shows that candidates that failed at each exam type scored proportionately differing scores to candidates that passed in each of the named examination components; this indicates at the discriminative ability of each exam type. The greater the distance between the average score for candidates that have passed an exam type and the average score for those who have failed suggests that the exam is a more discriminating test of ability.

The Primary SOE can be considered as the most discriminating exam as it sees candidates that pass scoring an average of 25.7 percentage points more than candidates that fail; the Final MCQ can be considered the least discriminating with a difference of 7.2 percentage points. This is to be expected as unsuccessful candidates at Primary cannot progress to sit the Final.

# EDUCATION & TRAINING

## UK Graduates

The table below lists FRCA candidates who achieved their Medical qualification in the UK and indicates pass or fail for all FRCA examination attempts. The proportion indicates the percentage of candidates holding the relevant medical qualification against all recorded attempts.

UK Medical School	Pass	Fail	Pass Rate	Proportion
Brighton and Sussex Medical School	8	3	72.73%	0.42%
Exeter and Plymouth Universities	12	20	37.50%	1.22%
Hull and York Medical School	13	17	43.33%	1.14%
Leicester & Warwick	10	10	50.00%	0.76%
Queen's University of Belfast	42	28	60.00%	2.66%
Royal College of Physicians	0	2	0.00%	0.08%
University of Aberdeen	53	26	67.09%	3.00%
University of Birmingham	125	44	73.96%	6.43%
University of Brighton and University of Sussex	4	10	28.57%	0.53%
University Of Bristol	48	19	71.64%	2.55%
University of Cambridge	52	13	80.00%	2.47%
University of Dundee	40	22	64.52%	2.36%
University of East Anglia	11	12	47.83%	0.87%
University of Edinburgh	78	35	69.03%	4.30%
University of Glasgow	60	36	62.50%	3.65%
University of Leeds	70	39	64.22%	4.14%
University of Leicester	49	29	62.82%	2.97%
University of Liverpool	81	49	62.31%	4.94%
University of London	379	229	62.34%	23.12%
University of Manchester	104	85	55.03%	7.19%
University of Newcastle Upon Tyne	82	30	73.21%	4.26%
University of Nottingham	90	30	75.00%	4.56%
University of Oxford	45	7	86.54%	1.98%
University of Sheffield	63	44	58.88%	4.07%
University of Southampton	54	37	59.34%	3.46%
University of Wales	102	36	73.91%	5.25%
University of Warwick	20	17	54.05%	1.41%

## **Non-UK Graduates**

Candidates who graduated from outside of the UK attended 145 different universities. It would be impractical to list all 145 schools, but to give an illustration of how non-UK candidates performed in FRCA examinations we have listed the non-UK Medical Schools that recorded the eleven highest numbers of FRCA candidates. Further data on non-UK schools not listed can be obtained on request. The schools listed below accounted for 24% of the total non-UK graduates who sat FRCA examination in academic year 2013/14.

<b>Medical School</b>	<b>Pass</b>	<b>Fail</b>	<b>Pass Rate</b>	<b>Proportion</b>
Tamil Nadu Dr MGR Medical University; India	15	9	62.50%	4.18%
Rajiv Gandhi University of Health Sciences; India	10	11	47.62%	3.66%
University of Colombo; Sri Lanka	6	14	30.00%	3.48%
Ain Shams University; Egypt	9	9	50.00%	3.14%
Maharashtra University of Health Sciences; India	9	9	50.00%	3.14%
University of Mumbai; India	7	8	46.67%	2.61%
University of Calicut; India	8	7	53.33%	2.61%
University of Bangalore; India	11	4	73.33%	2.61%
University of Mysore; India	4	9	30.77%	2.26%
University of Calcutta; India	3	9	25.00%	2.09%
University of the Punjab; Pakistan	4	6	40.00%	1.74%

## **Primary/Exempting Qualifications**

The table below shows candidate attempts and pass rates in achieving the Fellowship (passing the Final SOE), in accordance with the Primary/exempting qualification they declared as part eligibility for the exam. As would be expected those candidates that achieved the FRCA Primary made up the majority of those at the Final exams. The FRCA Regulations presently accept 14 different exempting qualifications.

<b>Institution</b>	<b>Pass</b>	<b>Fail</b>	<b>Pass Rate</b>	<b>Proportion</b>
Doctor of Medicine (Anaesthesiology) of the University of Colombo, Sri Lanka	6	3	66.67%	1%
European Diploma in Anaesthesiology & Intensive Care	1	0	100%	0%
Fellowship in Anaesthesiology of the College of Physicians and Surgeons, Pakistan	1	2	33.33%	0%
Fellowship of the Faculty of College of Anaesthetists, Ireland	4	15	21.05%	3%
Membership or Primary of the Faculty of College of Anaesthetists, Ireland	27	49	35.53%	10%
Primary FRCA	458	169	73.05%	85%



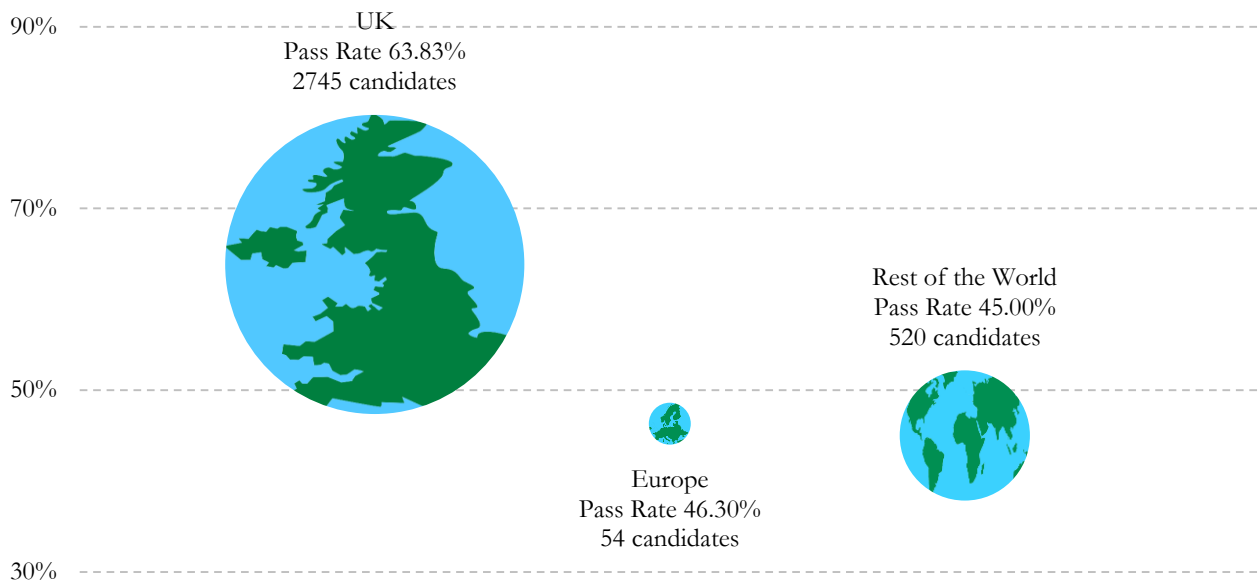
## Deaneries

The table below shows the number of UK graduate attempts, both passing and failing all FRCA examinations, and the pass rates for their deanery. The London Deanery is the most populous accounting for no less than 18% of candidate attempts. The most successful deanery was North of Scotland achieving a 85% overall pass rate.

Deanery	School	Pass	Fail	Pass Rate	Proportion	Primary MCQ	Primary OSCE & SOE	Final Written	Final SOE
<b>Defence (Tri Services)</b>	Anglia	1	1	50.00%	0.12%	100%	0.00%		
	South East Scotland	2	0	100%	0.12%			100%	100%
	Tri-Services	5	4	55.56%	0.53%		100%	66.67%	0.00%
	<i>sub-total</i>	8	5	61.54%	0.77%	100%	50.00%	71.43%	33.33%
<b>East Midlands Healthcare Workforce</b>	Leicester & East Midlands	36	33	52.17%	4.09%	47.37%	53.85%	56.25%	52.38%
	Nottingham & East Midlands	56	21	72.73%	4.56%	60.00%	72.00%	84.21%	72.22%
	<i>sub-total</i>	92	54	63.01%	8.65%	52.94%	65.79%	71.43%	61.54%
<b>East of England</b>	Anglia	118	81	59.30%	11.80%	56.25%	54.67%	86.96%	57.14%
<b>East of Scotland</b>	Tayside	17	12	58.62%	1.72%	25.00%	66.67%	62.50%	62.50%
<b>Kent, Surrey &amp; Sussex</b>	Kent, Surrey & Sussex	99	66	60.00%	9.78%	65.96%	47.83%	76.92%	65.22%
	Tri-Services	0	1	0.00%	0.06%				0.00%
	<i>sub-total</i>	99	67	59.64%	9.84%	65.96%	47.83%	76.92%	62.50%
<b>London</b>	Barts& The London	55	29	65.48%	4.98%	47.62%	68.75%	78.95%	67.86%
	Central London	92	32	74.19%	7.35%	85.71%	71.88%	71.43%	75.00%
	Imperial	80	30	72.73%	6.52%	90.00%	64.52%	63.33%	79.31%
	South Eastern	51	29	63.75%	4.74%	64.71%	64.00%	82.35%	47.62%
	St George's	36	18	66.67%	3.20%	40.00%	58.33%	88.24%	60.00%
	<i>sub-total</i>	314	138	69.47%	26.79%	68.83%	66.38%	74.40%	67.91%
<b>Mersey</b>	Mersey	75	45	62.50%	7.11%	65.52%	49.06%	77.27%	81.25%
<b>NHS West Midlands Workforce</b>	Birmingham	67	34	66.34%	5.99%	70.00%	57.58%	64.52%	77.78%
	Stoke on Trent	23	25	47.92%	2.85%	43.48%	54.55%	33.33%	80.00%
	Warwickshire	37	13	74.00%	2.96%	66.67%	45.45%	93.33%	80.00%
	<i>sub-total</i>	127	72	63.82%	11.80%	54.76%	54.55%	67.27%	78.72%
<b>North of Scotland</b>	North & North East Scotland	17	3	85.00%	1.19%	60.00%	83.33%	100%	100%
<b>North Western</b>	North West	106	68	60.92%	10.31%	54.55%	51.72%	80.49%	59.52%
<b>Northern</b>	Northern	84	30	73.68%	6.76%	66.67%	67.57%	80.00%	79.31%
<b>Northern Ireland Medical &amp; Dental Training Agency</b>	Northern Ireland	48	35	57.83%	4.92%	59.09%	52.00%	68.75%	55.00%
<b>Oxford</b>	Oxford	49	18	73.13%	3.97%	70.59%	63.16%	68.75%	93.33%
<b>Severn</b>	Bristol	69	15	82.14%	4.98%	100.00%	70.97%	82.35%	82.35%
<b>South East Scotland</b>	South East Scotland	44	22	66.67%	3.91%	64.29%	46.15%	75.00%	73.68%
<b>South West Peninsula</b>	South West	47	31	60.26%	4.62%	50.00%	53.57%	81.82%	73.33%
<b>Tri-Services</b>	Anglia	0	1	0.00%	0.06%			0.00%	
<b>Wales</b>	Welsh	85	53	61.59%	8.18%	64.58%	50.00%	84.21%	63.16%
<b>Wessex</b>	Wessex	67	39	63.21%	6.28%	42.42%	54.55%	80.77%	80.00%
<b>West of Scotland</b>	West of Scotland	102	57	64.15%	9.43%	46.34%	59.57%	79.49%	75.00%
<b>Yorkshire &amp; The Humber Postgraduate Deanery</b>	Hull, York& East Coast	16	19	45.71%	2.07%	40.00%	44.44%	100%	40.00%
	Leeds & Bradford	62	32	65.96%	5.57%	68.75%	56.76%	78.95%	68.18%
	Sheffield & South Yorkshire	41	26	61.19%	3.97%	53.33%	47.62%	93.33%	56.25%
	<i>sub-total</i>	119	77	60.71%	11.62%	56.10%	51.32%	86.11%	60.47%

## Performance by Area of Primary Medical Qualification

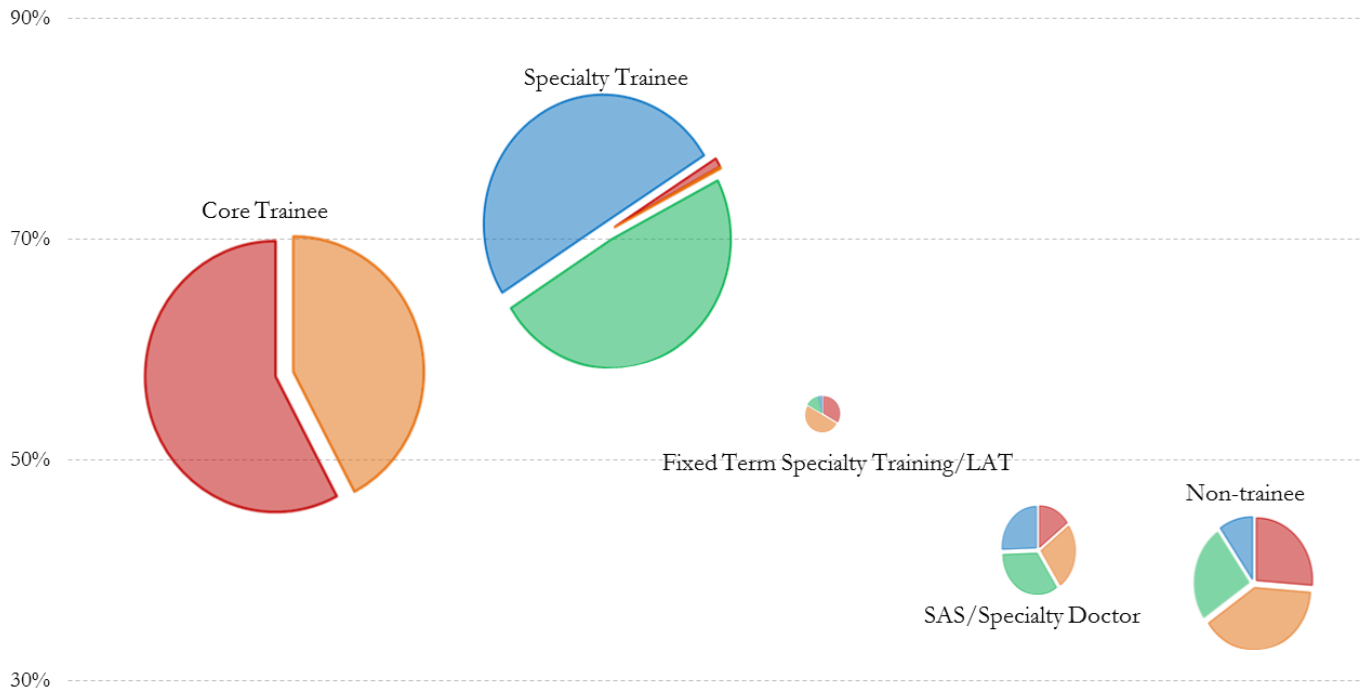
The bubble chart below indicates the number of candidate attempts at each exam type through the size of the bubble and the pass rate by its central point position along the y-axis.



The chart above shows that the group of candidates who achieved their primary medical qualification (PMQ) in the UK achieved the highest pass rate in all examination components of the FRCA. At 83% of all candidates, they also made up the vast majority of candidates sitting FRCA examinations. Candidates with PMQs from overseas performed less well, with those from Europe outperforming those from the rest of the world.

## Medical Grades

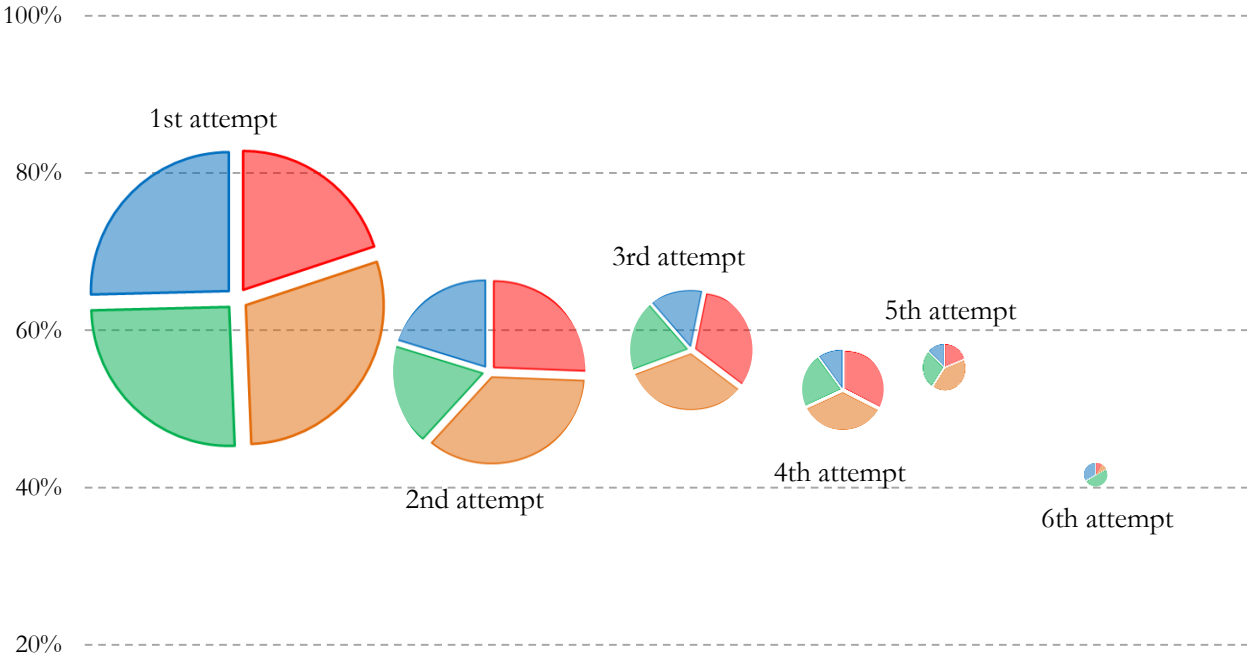
The bubble chart below indicates the number of candidates in the medical grades given below, in each exam component through the size of the bubble. The pass rate for each medical grade is indicated by the position of the central point of the bubble along the y-axis. The exam component colour key is: Red= Primary MCQ; Orange= Primary OSCE/SOE; Green= Final Written and Blue= Final SOE.



The FRCA forms part of CCT for Anaesthetic Trainees and therefore, trainees make up the majority of candidate attempts, accounting for 87% of candidate attempts. Trainees also performed better than non-trainees; the difference in pass rates between trainees and non trainees was highest in Final Written exams (37 percentage points) and lowest in the Final SOE (7 percentage points).

# NUMBER OF ATTEMPTS

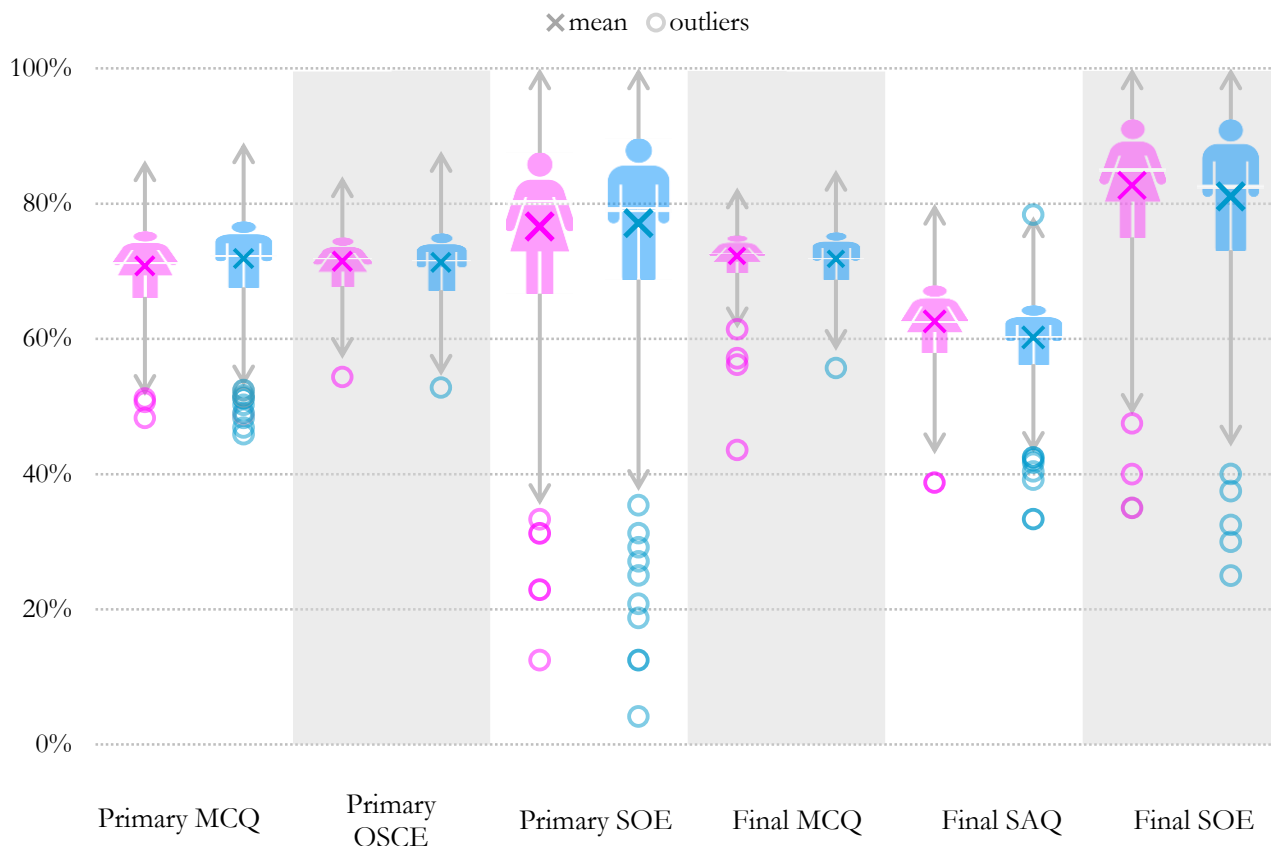
The bubble chart below indicates the number of candidate attempts at each exam type through the size of the bubble and the pass rate by its central point position along the y-axis. Within the individual pie charts: Red= Primary MCQ; Orange= Primary OSCE/SOE; Green= Final Written and Blue= Final SOE.



The majority of candidates at all exam types were on their first attempt, with the number of candidates decreasing as the number of attempts increased. The pass rates for candidates on their first attempt is higher than those on multiple attempts in each exam type except for the Primary OSCE & SOE; the difference in pass rates here is 4 percentage points in favour of those on multiple attempts. The exam with the biggest difference between the two groups is the Primary MCQ (18 percentage points), in favour of those on their first attempt.

# EQUAL OPPORTUNITIES

## Gender

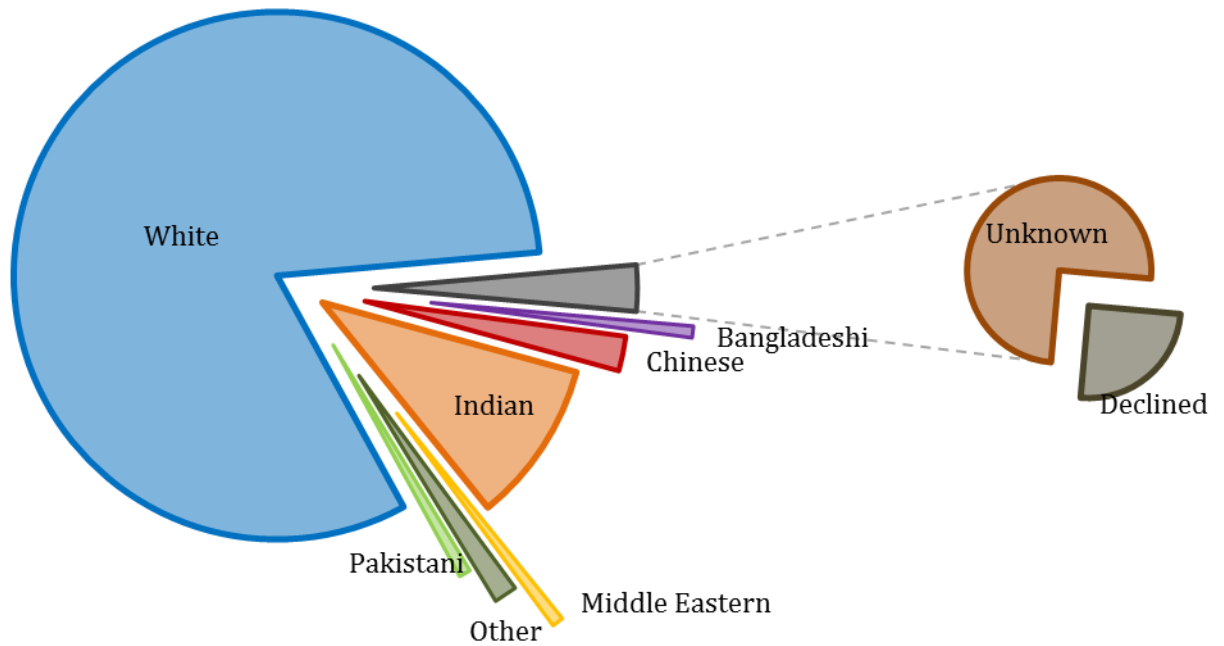


At all exams this year 54% of individuals were male and 46% female. Looking at the boxplots above, with the exception of the Primary MCQ and the Primary SOE, female candidates achieve higher mean scores.

The pass rates also reflect that female candidates performed better overall with male candidates only achieving higher pass rates in the Primary MCQ and Primary OSCE & SOE.

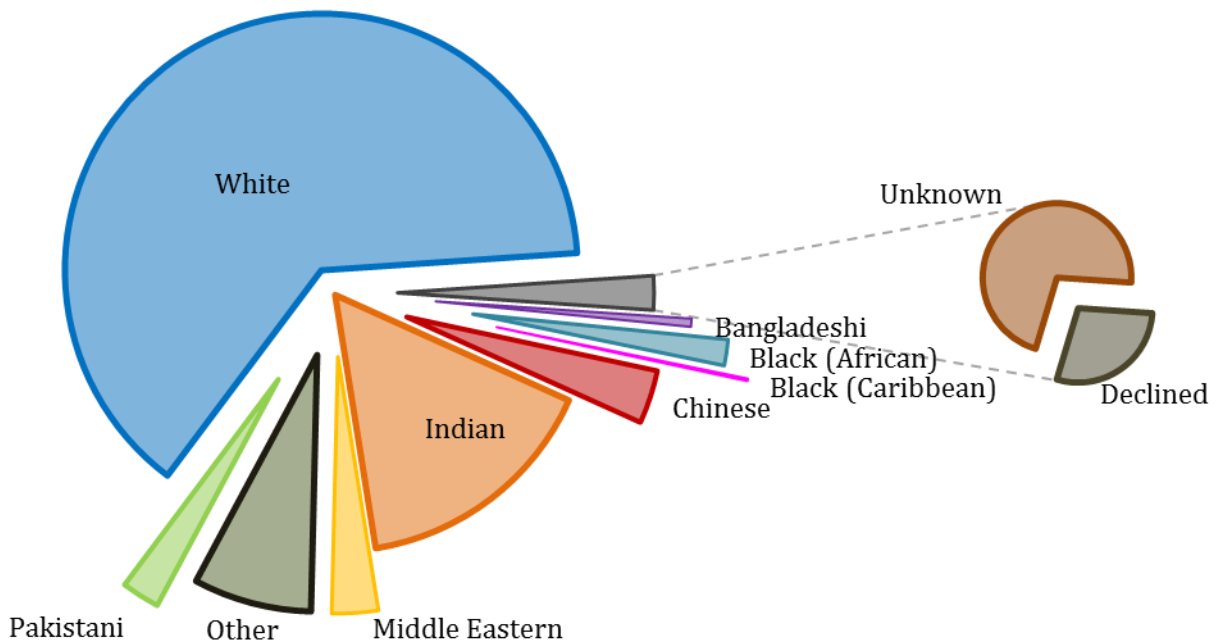
## Ethnicity

### Examiner Ethnicity Breakdown



These pie charts indicate that the make-up of the examiner cohort is not dissimilar to that of the candidate cohort. Although the ethnic mix of examiners is slightly less diverse than that of the candidates it is more diverse than national population figures (89% white, 11% ethnic minority - *Table EE1, Population Estimates by Ethnic Group Rel.8.0, Office for National Statistics, 2011*).

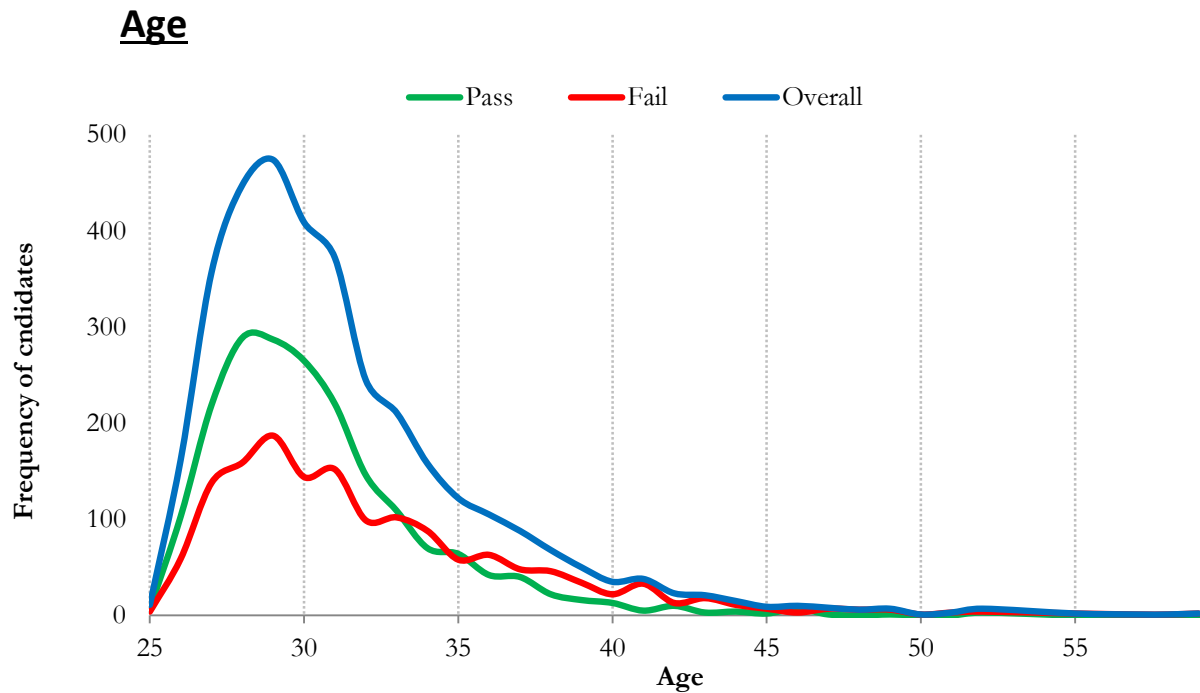
### Candidate Ethnicity breakdown



<b>Ethnic group</b>	<b>Pass</b>	<b>Fail</b>	<b>Pass rate</b>
Bangladeshi	8	11	42.11%
Black (African)	16	38	29.63%
Black (Caribbean)	3	3	50.00%
Chinese	71	54	56.80%
Indian	239	262	47.70%
Middle Eastern	36	58	38.30%
Pakistani	35	41	46.05%
Other	123	121	50.41%
White	1443	692	67.59%
Declined	15	9	62.50%
Unknown	22	19	53.66%

These are the overall pass rates for all of the ethnic groups, as used by the College during the 2013-14 year; these groups have been adjusted to match categories used by the Office of National Statistics for the future. The pass rates above should be read with care due to the small numbers involved in many of the groups and the numerous confounding factors described above, making comparisons unreliable. A larger longitudinal analysis of candidate performance is planned to further explore this data.

The College is keen to assist all candidates in their preparation and studies for FRCA Examinations and provides various candidate resources such as e-LA, Primary and Final Guide books, example questions and exam run through and SOE videos. Personal exam guidance interviews with an examiner are available to candidates who have failed an exam component.



The distribution of ages of those passing and failing the exam has a positive skew with an average age for those passing of 30.5 years and for those who failed at 32.3 years. The youngest candidates were 25 (7 out of the 11 of these passed; the oldest candidates were 59, but both of these failed (the oldest passing candidate was 52).

### Dyslexia and disability

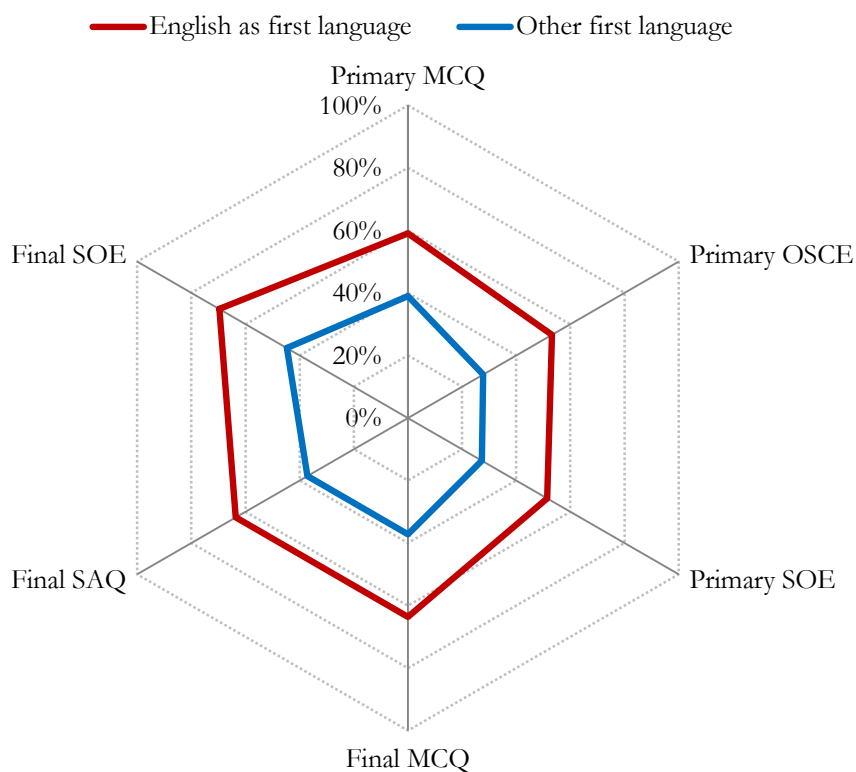
Over the course of the year there were too few disabled candidates to produce any meaningful analysis. Dyslexic provision is only available for written examinations and although there were only small numbers of dyslexic candidates attending exams, their performance is not dissimilar to the rest of the cohort.

		Dyslexic candidates	All other candidates
Primary MCQ	Pass	8	421
	Fail	4	332
	Pass rate	66.67%	55.91%
	Proportion	1.57%	98.43%
Final Written	Pass	10	522
	Fail	5	239
	Pass rate	66.67%	68.59%
	Proportion	1.93%	98.07%



## Language

In the chart below the solid lines represent the pass rates for each group and the dashed lines represent the mean scores.



As you can see, candidates who speak English as their first language perform better than those for whom English is not. In the chart above, we see the difference between the groups differs between exam type but the difference remains reasonably proportional.

Further discussion on the interference caused by language, in analysing performance by primary medical qualification, can be found on page 10.

All FRCA examinations are conducted in English. Where a candidate's first language is not English, other communication and written skills in English should be equivalent to a level which a doctor could successfully pass the PLAB test or at a level of approximately 7.5/9 across all bands of the IELTS.

# RELIABILITY

Reliability for OSCE and SOE exam types has not been reported by the College due to issues with small cohorts at each sitting. The College is developing models in Generalisability theory in order that this may be reported on in future; however, this is not yet available.

For written exams we have been able to calculate Cronbach's alpha and Kuder-Richardson 20 coefficients; these scores have been recorded since 2007 and have been plotted below. We can see that, in its current composition (i.e. including both MTFs and SBAs), the Primary MCQ has achieved very high coefficients that have remained reasonably stable. The Final MCQ, in its current composition, appears to be improving dramatically, according to the calculated (linear) trendline. The SAQ, however, appears to be falling, according to its trendline; this could well have been affected by a drop in reliability at the September 2013 sitting.

## Written Exam Reliability

