

## Introduction

This Report relates to the formal MRCGP assessments conducted in the academical year 2016-17. It presents the statistics that summarise the outcomes of all the diets of the MRCGP examinations during that period – the Applied Knowledge Test (AKT) and the Clinical Skills Assessment (CSA) – three diets of the AKT and seven of the CSA.

The Report first presents an updated summary of both of these assessment modalities and their standard-setting procedures, to orient new readers. Full background information on the MRCGP, the AKT and the CSA (also the largely formative Workplace-Based Assessment component) may be found on the College's website.

There then follows a set of tables, first for the AKT and then for the CSA. These provide information on the candidature and the attempts at the test, for each of them:

- Candidate Demographics: Place of Primary Medical Qualification, Training Deanery, UK Medical School
- Main Results: Overall and by Exam Diet, Year of Training and Attempt; Candidates with Disabilities (candidates on all attempts)
- Results by Individual Demographics incl. UK Medical School and Country of Primary Medical Qualification (candidates on first attempt)
- Overview of Results by LETB/Training Deanery

And in addition:

- AKT mean sub-component scores, by candidate year of training; correlations between these
- CSA feedback statements for all candidates: aggregate summaries by place of PMQ

Further data are then provided on AKT/CSA correlations and test quality.

The report is descriptive and non-discursive. Data are presented without psychometric comment other than that which follows and at the end of the report, reviewing test accuracy and reliability. Candidates self-report their demographic variables. The 'attempt' is from the College's records.

The content of the Report has been developed following comments from members of the College's Assessment and Curriculum Development Committee, including the Deanery/LETB representatives.

### Please Note:

**a)** Probably associated with changes in the mechanisms for soliciting the data from candidates, **there are large numbers of candidates for whom there are no data available on sex and ethnicity, especially regarding the AKT.** Where potential inferences from the tables might be more than usually misleading, this is highlighted.

**b) Confounding of variables:** as in previous years, there are many significant performance differences between sub-groups. But variables may well be confounded with others, to potential confusion of the unwary.

**c)** As increasing use is made by both overseas and UK candidates of **medical schools in countries other than those of domicile**, 'country of primary medical qualification' should not be equated with 'country of origin/secondary education'. This applies particularly to medical qualifications from certain Caribbean and central- and eastern-European countries. Data from the GMC's PLAB office show that British nationals can be the third commonest group (by nationality) to sit the PLAB assessments.

### Acknowledgements:

I thank the two Clinical Assessment Leads (Carol Blow, AKT & Nicki Williams CSA) for their support in preparing this report. I am also grateful to the Chief Examiner, MeiLing Denney, for her instructions and advice.

Richard Wakeford  
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# 1: Summary of the Assessments and their Standard-Setting Procedures

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## The MRCGP and its Function

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The MRCGP comprises three sets of assessment procedures whose combined summative function is to assure the Deaneries/LETBs, the College and the GMC of the competence of exiting trainee General Practitioners (GPs) across a broad and carefully-defined three-year (occasionally, four) full-time training curriculum. Satisfactory completion of the three assessment components of the MRCGP renders a trainee (GP Specialist Registrar) eligible to apply both for a Certificate of Completion of Training (CCT) from the GMC (and thus to proceed with her or his career) and for Membership of the Royal College (which will *inter alia* support the doctor's continuing professional development and probable re-validation).

The MRCGP's three assessment components are the following, each of which must be completed to an agreed standard:

- a. **Applied Knowledge Test** (*multi-choice computer-presented 'paper', available in test centres throughout the UK*)
- b. **Clinical Skills Assessment** (*an integrated test of clinical and consulting skills, the RCGP assessment centre, Euston*)
- c. **Workplace-based Assessments** (*delivered throughout the three-year training programme by Clinical Supervisors, Educational Supervisors and others*)

The curriculum, the training and the assessments are based on medical practice in the UK National Health Service. Entry to the assessments is only available to doctors undergoing GP training within the UK state health care system or within six months thereafter (though GP 'returners' may take the AKT). Accordingly, no candidates based in other countries take these assessments, as happens in certain other Royal Colleges' examinations. This has implications for the level of the assessments' quality statistics (reliability and accuracy). The College has other arrangements to support GPs practising in other countries and who seek affiliation or Membership through the quite separate 'MRCGP [International]' assessment route, see the College website.

Note that the workplace-based assessments, being essentially formative, with candidate performance and development on them being reviewed towards a determination of progression annually by the Deaneries and not the College, are not covered by this report. Please also note that the report, for convenience of comprehension, reports on the 'Stages' of training as 'Years': for most trainees, the two are operationally synonymous, but for part-time trainees or those provided with additional training, of course, the 'Stages' will be longer.

## The Applied Knowledge Test

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The multi-choice **Applied Knowledge Test** is a 3-hr 10-minute 200-item computer-delivered and marked assessment which is available to trainees in the ST2, ST3 and additional 4th years. Offered three times a year, the AKT is delivered by computer in professional testing centres around the UK run by Pearson VUE.

The test's 200 items are in four formats: single best answer (including images and graphics), extended matching questions, completion of tables/algorithms, and a small number of free text answers. A test specification is used to ensure adequate sampling across the curriculum. 80% of the items are on clinical medicine, and research/evidence-based practice and legal/ethical/administration issues are each represented by 10% of the questions. Irrespective of the question format, candidates are awarded one mark for each item answered correctly. Marks are deducted neither for incorrect answers nor for failure to answer.

The standard for the AKT is set using a modification of the Angoff procedure, where a group of 'judges' periodically estimates the performance of a notional 'just good enough to pass' candidate on each test item. The standard takes account of the 'guessing factor' always present in multi-choice tests. In order to ensure that standards are set at appropriate and realistic levels, a patient representative, newly-qualified GPs, and representatives of bodies with a stake in the outcome of the examination (including the training community) are invited to act either as judges or observers, as appropriate, in the standard-setting process. This standard is maintained between 'Angoffs' by the use of test equating, using sets of items with known performance characteristics.

A 'just passing score' is accordingly determined for the test as a whole, and a statistical review may – rarely – cause the removal of one or two poorly-performing test items on any diet. The measurement error of the resultant test is then calculated, and a passing standard ('pass-mark') set, taking account of this measurement error, as is usual in high stakes testing. The accuracy of the AKT is regularly estimated by calculating Cronbach's *alpha* (reliability), together with the measurement error. Candidates are then provided with their results, and their scores on the test as a whole and on its three sub-sections.

It should be noted that, as the pass-mark varies slightly between diets because of small changes in the overall difficulty of the paper, raw or percentage scores need to be adjusted to a common pass-mark (here, zero) to permit comparability. This adjusted mark is called the Scaled Mark.

## The Clinical Skills Assessment

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The **Clinical Skills Assessment** is an OSCE-style assessment using simulated patients or role players that may not be taken before the normal final year of training (Year 3 = ST3). The CSA comprises 13 cases or 'stations' and is delivered in a purpose-built assessment centre in the College's headquarters building in Euston. Up to (and normally) three circuits run simultaneously.

A case is depicted by a role player, and candidate performance assessed by an examiner who accompanies the role player for the day. Each case lasts 10 minutes (plus two minutes marking/changeover time). Candidates have their own 'consulting room', and the role players move around the circuits' consulting rooms like patients, accompanied by their examiner.

Cases, written by dedicated writers who are practising GPs, present typical clinical scenarios that a UK GP will encounter. Cases are written to represent the diversity of the whole UK population. Each case is mapped on to the curriculum with intended learning outcomes, and a blueprint is used to guide case selection—a complex procedure as the cases necessarily change each day for reasons of security and fairness, yet each day's 'palette' must meet the blueprint's specifications and be equivalently challenging.

The standard-setting method used is the borderline group method, as recommended to the College by the Regulator (the General Medical Council). Each case is graded on three domains: Data Gathering, Technical and Assessment Skills; Clinical Management Skills; and Interpersonal Skills. Each domain is graded as: Clear Fail – Fail – Pass – Clear Pass. For standard-setting purposes only, the examiners also provide a grade to indicate their judgement on that case – in particular if they felt that overall the candidate's performance was borderline.

The domain grades awarded on a case are given a numerical equivalent (zero to three, respectively) and combined to provide a case score: these are summated over the 13 cases to give a final score (which will be between zero and 117). The "cut score" – the half-way point between pass and fail – is established by the normal borderline group method. The final pass score is an adjustment of that score to take account of measurement error, as in the AKT, with the level being confirmed by an adjudicating group which includes recently-qualified GPs, lay representatives, and key stakeholders from the training community.

The overall standard of the assessment is set by ensuring both that the cases are at an appropriate level of difficulty and challenge and that the examiners are adjudging passing performance on any case at the same, agreed level – appropriate for independent and safe practice as a GP in the NHS. A variety of critical support mechanisms are in place: calibration exercises at the beginning of each day of the CSA; initial and on-going quality assurance and training of examiners; and an annual two-day examiners training conference to calibrate the whole panel regularly and maintain process validity.

The reliability of the CSA is estimated by calculating Cronbach's alpha using the numerical scores and accuracy calculated by the Standard Error of Measurement (SEm). Because of daily case and examiner differences, these statistics require to be estimated separately each day, thus on a maximum of 78 candidates. And because of varying candidate numbers and daily variations in the range of candidate ability, the statistics vary, too.

Throughout this report, CSA outcomes used include the result (pass/fail) and scores adjusted to a common pass mark (zero), again referred to as the scaled mark.

## 2: General Notes on the Tables and Statistics

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### General Notes: Conventions in the Charts and Tables

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Tables are accompanied where possible by charts, to assist those who prefer visual summaries of data.

With data protection issues in mind, tables containing personal data have generally been adjusted so as to report results only on 5+ individuals. Where such considerations apply, the symbol  is entered in the table and charts are greyed-out. This also explains the occasional missing entry in error bar charts: the bar would relate to  $N < 5$ .

The colour convention adopted for the charts is as follows:

**BARS** etc representing **passing** candidates: **BLUE**

**BARS** etc representing **failing** candidates: **RED**

Charts which do not distinguish between passing and failing candidates: **GREY**

Charts unrelated to candidate performance: **GREEN**

A **DOTTED RED LINE** on a histogram denotes the passing standard

A **DOTTED GREEN LINE** on a histogram denotes the mean score for the group whose performance is represented

Certain histograms show contrasting distributions of candidates where numbers in a single group are small. To permit visibility of these small groups, the Y-axes of the histograms have been presented in a log, as opposed to a linear, scale. The relevant charts have a small label to alert the reader, as shown here.

**NB Log Scale !**

Certain tables contain data customarily also supplied to the GMC, and these are separated out into UK, EEA (plus Switzerland: i.e. those countries whose nationals presently have the right to work in the UK), and 'rest of the world' graduates (RoW). Elsewhere, the two last groups (EEA and RoW) are conflated into a single group – International Medical Graduates or 'IMGs'; this is due to a similarity in performance between the EEA and RoW groups, small numbers in the former, and increasing practical overlap of the two groups with British and non-EEA students taking EEA qualifications.

### Note regarding the Interpretation of the AKT statistics

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Some candidates appear twice (383) or three times (31) within this annual database on the AKT, because of retakes. Except in the Summary of Demographic Information, the statistics "for all candidates" aggregate all 3428 candidates' 3842 attempts in this period. However, where the tables present comparisons between candidates on the basis of demographic variables (gender, ethnicity, the origin of candidates' primary medical qualifications, training deanery), they mostly do so on the basis of 'first attempts' only: otherwise re-sitters will bias the results. The groups upon which each table is based are made clear in its heading.

### Note regarding the Interpretation of the CSA statistics

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Two databases were constructed for the annual examination period: one is candidate-based, including all information about a candidate-attempt at the examination, and is designed to provide generic reporting functionality towards requirements such as this report; the other is candidate-consultation based, and intended to provide QA and developmental information regarding the cases and the examiners: it has been used here to provide the information on 'feedback statements' in the final table of the report and summaries of overall case performance. Some candidates appear twice (444) or three times (49) within this database on the CSA, because of retakes. Except in the demographic Information, the statistics "for all candidates" aggregate all 3068 candidates' 3561 attempts in this period.

### Data Inconsistencies: Caution

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Minor data inconsistencies result from a variety of causes, inevitably in an undertaking of this complexity that combines 'examination' data with background information from a number of databases. For example:

- Most of the candidates' personal background data is self-reported on registration for assessments. It is thus subject to entry error and omissions
- For the same reason, also due to changes in College practice in soliciting the information, certain data can be missing: most notably, 668 AKT candidate-attempts have no ethnicity data and 529 AKT candidate-attempts have no data on candidate sex; and 124 CSA candidate-attempts have no record for candidate ethnicity
- Candidates' circumstances change – for example, they may move from one training region to another, within the year, or between part-time and full-time training

### 3: AKT Statistics

#### A: Summary of Candidate Demographics

3428 candidates made a total of 3842 attempts at the AKT during 2016-17. The tables below show the origin of the 3428 candidates, by UK medical school or non-UK country of primary medical qualification—and the percentage from each out of the total of that part of the candidature.

Overleaf, the background demographic characteristics of the 3428 are shown, by training LETB/Deanery. Subsequent tables report on attempts.

##### 1. Source of Candidates' Primary Medical Qualification

| All Graduates                |             |              |
|------------------------------|-------------|--------------|
| Group                        | N           | %            |
| EEA Graduates                | 142         | 4.1          |
| Graduates from Rest of World | 590         | 17.2         |
| UK Graduates                 | 2696        | 78.7         |
| <b>Total</b>                 | <b>3428</b> | <b>100.0</b> |

| EEA Graduates                  |            |              |
|--------------------------------|------------|--------------|
| Country of PMQ                 | N          | %            |
| Czech Republic                 | 38         | 26.8         |
| Hungary                        | 5          | 3.5          |
| Ireland                        | 24         | 16.9         |
| Malta                          | 5          | 3.5          |
| Poland                         | 22         | 15.5         |
| Romania                        | 19         | 13.4         |
| Slovakia                       | 5          | 3.5          |
| Other EEA Countries (< 5 each) | 24         | 16.8         |
| <b>Total</b>                   | <b>142</b> | <b>100.0</b> |

| Graduates from the Rest of the World |            |              |
|--------------------------------------|------------|--------------|
| Country of PMQ                       | N          | %            |
| Pakistan                             | 153        | 25.9         |
| Nigeria                              | 119        | 20.2         |
| India                                | 96         | 16.3         |
| Bangladesh                           | 27         | 4.6          |
| Iraq                                 | 26         | 4.4          |
| Sudan                                | 19         | 3.2          |
| Nepal                                | 17         | 2.9          |
| Ukraine                              | 15         | 2.5          |
| Egypt                                | 13         | 2.2          |
| Russia                               | 10         | 1.7          |
| South Africa                         | 10         | 1.7          |
| China                                | 9          | 1.5          |
| Iran                                 | 8          | 1.4          |
| Grenada                              | 6          | 1.0          |
| Philippines                          | 6          | 1.0          |
| Ghana                                | 5          | 0.8          |
| Sri Lanka                            | 5          | 0.8          |
| Other Countries (< 5 each)           | 46         | 8.1          |
| <b>Total</b>                         | <b>590</b> | <b>100.0</b> |

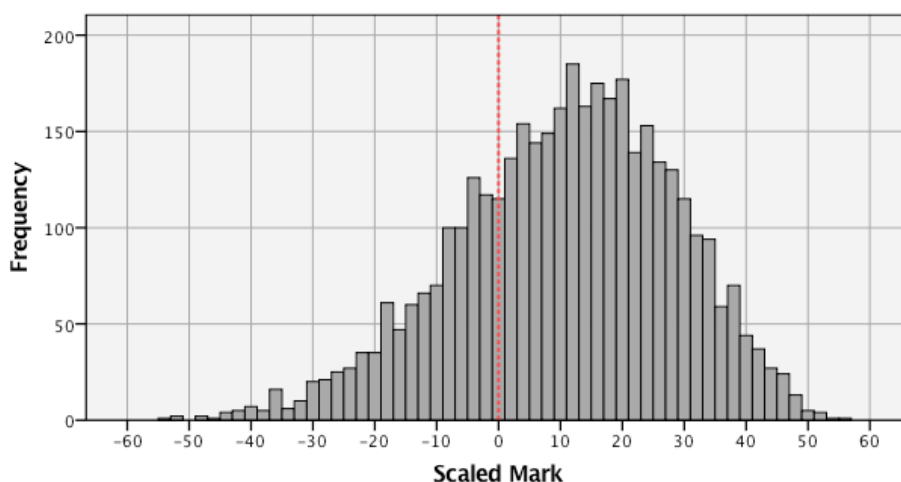
| Graduates of UK Medical Schools |             |              |
|---------------------------------|-------------|--------------|
| Medical School                  | N           | %            |
| Aberdeen                        | 81          | 3.0          |
| Belfast                         | 57          | 2.1          |
| Birmingham                      | 148         | 5.5          |
| Brighton and Sussex             | 46          | 1.7          |
| Bristol                         | 64          | 2.4          |
| Cambridge                       | 36          | 1.3          |
| Dundee                          | 59          | 2.2          |
| Edinburgh                       | 68          | 2.5          |
| Glasgow                         | 88          | 3.3          |
| Hull York                       | 68          | 2.5          |
| Keele                           | 45          | 1.7          |
| Leeds                           | 98          | 3.6          |
| Leicester                       | 101         | 3.7          |
| Liverpool                       | 135         | 5.0          |
| London - Barts & the London     | 170         | 6.3          |
| London - Imperial College       | 101         | 3.7          |
| London - King's College         | 175         | 6.5          |
| London - St George's            | 105         | 3.9          |
| London - UCL                    | 99          | 3.7          |
| Manchester                      | 157         | 5.8          |
| Newcastle                       | 122         | 4.5          |
| Norwich / UEA                   | 64          | 2.4          |
| Nottingham                      | 101         | 3.7          |
| Oxford                          | 30          | 1.1          |
| Peninsula                       | 78          | 2.9          |
| Sheffield                       | 83          | 3.1          |
| Southampton                     | 96          | 3.6          |
| Wales (inc Cardiff & Swansea)   | 157         | 5.8          |
| Warwick                         | 64          | 2.4          |
| <b>Total</b>                    | <b>2696</b> | <b>100.0</b> |

## 2. AKT Candidates' Place of PMQ, by Training LETB / Deanery

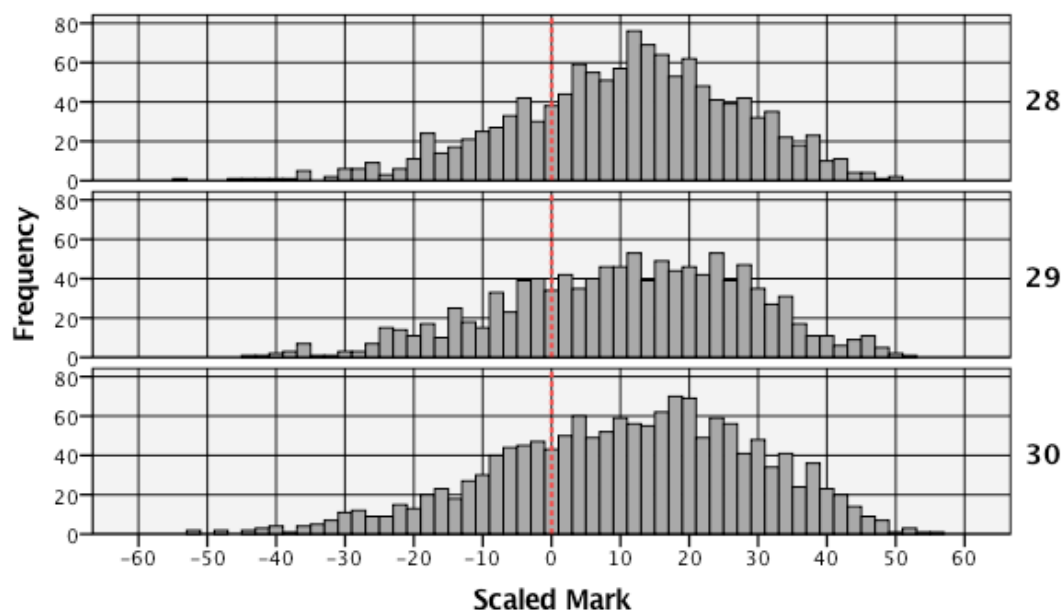
| Deanery / LETB         | Source of PMQ |       |        | Total  |
|------------------------|---------------|-------|--------|--------|
|                        | EEA           | RoW   | UK     |        |
| Armed Forces (Defence) | 0             | 0     | 28     | 28     |
|                        | 0.0%          | 0.0%  | 100.0% | 100.0% |
| East Midlands          | 9             | 54    | 142    | 205    |
|                        | 4.4%          | 26.3% | 69.3%  | 100.0% |
| East of England        | 29            | 90    | 212    | 331    |
|                        | 8.8%          | 27.2% | 64.0%  | 100.0% |
| East Scotland          | ✱             | ✱     | 23     | 28     |
|                        | ✱             | ✱     | 82.1%  | 100.0% |
| Kent, Surrey, Sussex   | 19            | 56    | 177    | 252    |
|                        | 7.5%          | 22.2% | 70.2%  | 100.0% |
| London                 | ✱             | 7     | 427    | 438    |
|                        | ✱             | 1.6%  | 97.5%  | 100.0% |
| North Scotland         | ✱             | ✱     | 52     | 56     |
|                        | ✱             | ✱     | 92.9%  | 100.0% |
| North Western          | 17            | 96    | 314    | 427    |
|                        | 4.0%          | 22.5% | 73.5%  | 100.0% |
| Northern               | 12            | 35    | 92     | 139    |
|                        | 8.6%          | 25.2% | 66.2%  | 100.0% |
| Northern Ireland       | ✱             | ✱     | 55     | 56     |
|                        | ✱             | ✱     | 98.2%  | 100.0% |
| Oxford                 | ✱             | 5     | 117    | 126    |
|                        | ✱             | 4.0%  | 92.9%  | 100.0% |
| Severn                 | ✱             | ✱     | 142    | 150    |
|                        | ✱             | ✱     | 94.7%  | 100.0% |
| South East Scotland    | ✱             | ✱     | 63     | 65     |
|                        | ✱             | ✱     | 96.9%  | 100.0% |
| South West Peninsula   | ✱             | 5     | 99     | 108    |
|                        | ✱             | 4.6%  | 91.7%  | 100.0% |
| Wales                  | ✱             | 10    | 106    | 120    |
|                        | ✱             | 8.3%  | 88.3%  | 100.0% |
| Wessex                 | ✱             | 20    | 118    | 141    |
|                        | ✱             | 14.2% | 83.7%  | 100.0% |
| West Midlands          | 18            | 128   | 208    | 354    |
|                        | 5.1%          | 36.2% | 58.8%  | 100.0% |
| West Scotland          | ✱             | 24    | 128    | 155    |
|                        | ✱             | 15.5% | 82.6%  | 100.0% |
| Yorkshire & Humber     | 7             | 49    | 193    | 249    |
|                        | 2.8%          | 19.7% | 77.5%  | 100.0% |
| Total                  | 142           | 590   | 2696   | 3428   |
|                        | 4.1%          | 17.2% | 78.6%  | 100.0% |

## B: Main Results: Overall, & by Exam Diet, Stage & Attempt (All Candidates)

### 1. AKT Result & Scores (scaled; pass mark = 0), overall and by exam diet (all candidates)



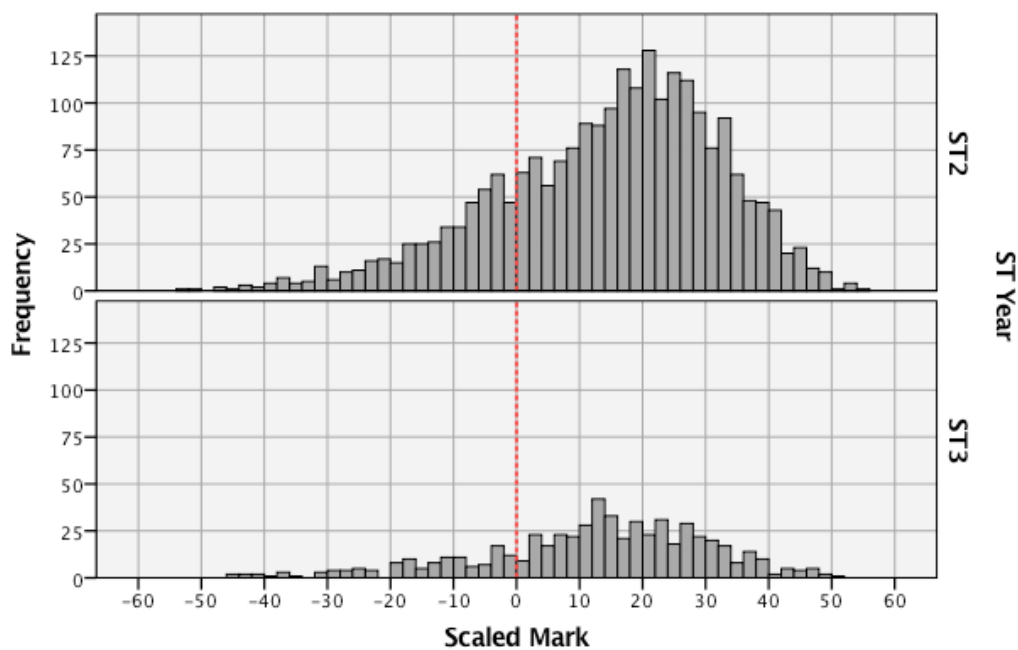
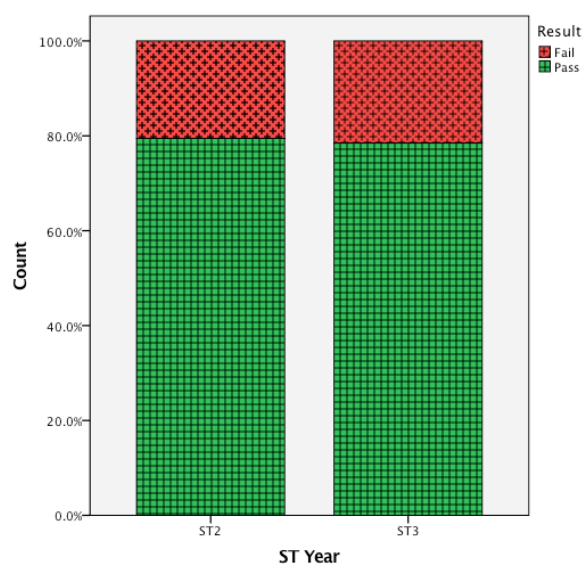
| AKT                     | Result        |               | Total N | Scaled Mark |      |      |      |
|-------------------------|---------------|---------------|---------|-------------|------|------|------|
|                         | Fail          | Pass          |         | Min.        | Max. | Mean | SD   |
| 28 - 30<br>(Whole year) | 1028<br>26.8% | 2814<br>73.2% | 3842    | -54         | 55   | 10.2 | 17.8 |



| AKT<br>Diet            | Result       |               | Total N | Scaled Mark |      |      |      |
|------------------------|--------------|---------------|---------|-------------|------|------|------|
|                        | Fail         | Pass          |         | Min.        | Max. | Mean | SD   |
| AKT 28<br>October 2016 | 308<br>24.7% | 939<br>75.3%  | 1247    | -54         | 50   | 10.0 | 16.4 |
| AKT 29<br>January 2017 | 305<br>27.5% | 805<br>72.5%  | 1110    | -44         | 52   | 10.1 | 17.8 |
| AKT 30<br>April 2017   | 415<br>27.9% | 1070<br>72.1% | 1485    | -53         | 55   | 10.4 | 18.8 |

## 2. AKT Result and scores, by Stage (Year) of Training (candidates on first attempt)

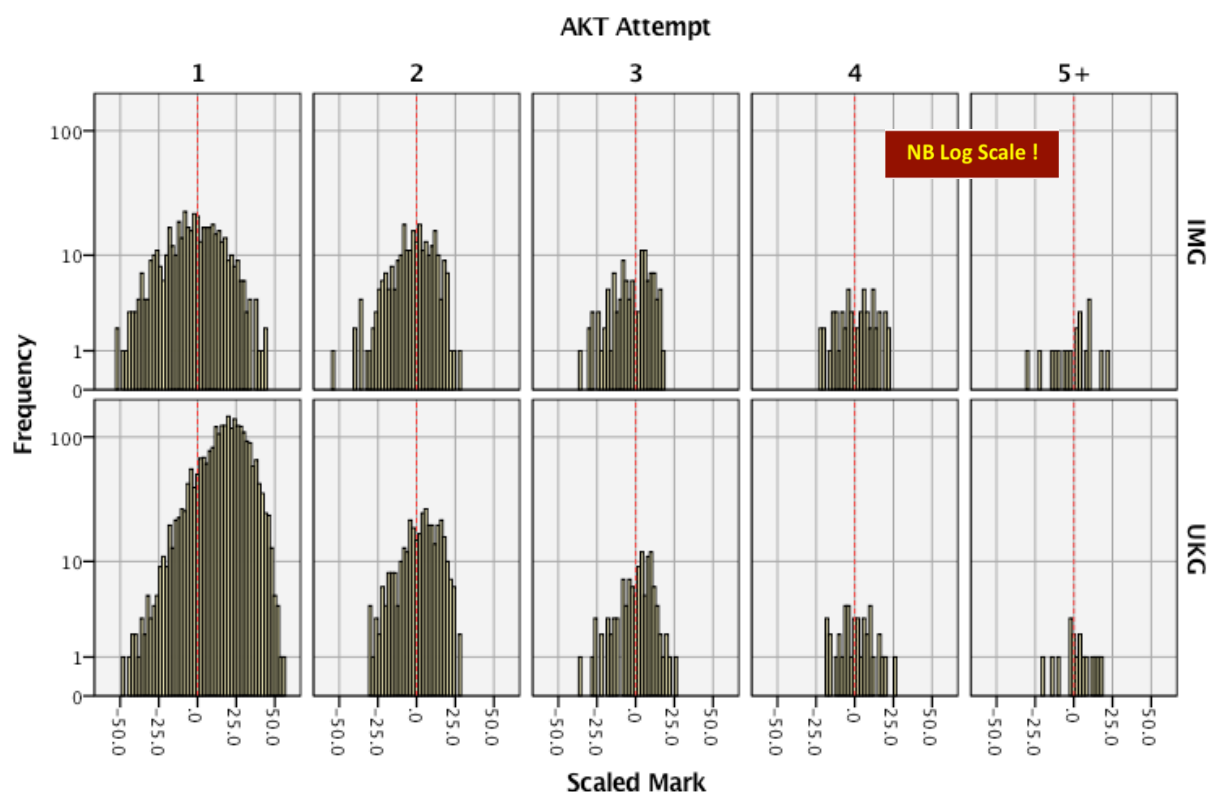
| Training Year | Result |       | Total N | Scaled Mark |      |      |      |
|---------------|--------|-------|---------|-------------|------|------|------|
|               | Fail   | Pass  |         | Min.        | Max. | Mean | SD   |
| ST 2          | 472    | 1827  | 2299    | -53         | 55   | 14.0 | 17.9 |
|               | 20.5%  | 79.5% |         |             |      |      |      |
| ST 3          | 126    | 459   | 585     | -46         | 50   | 11.9 | 18.0 |
|               | 21.5%  | 78.5% |         |             |      |      |      |



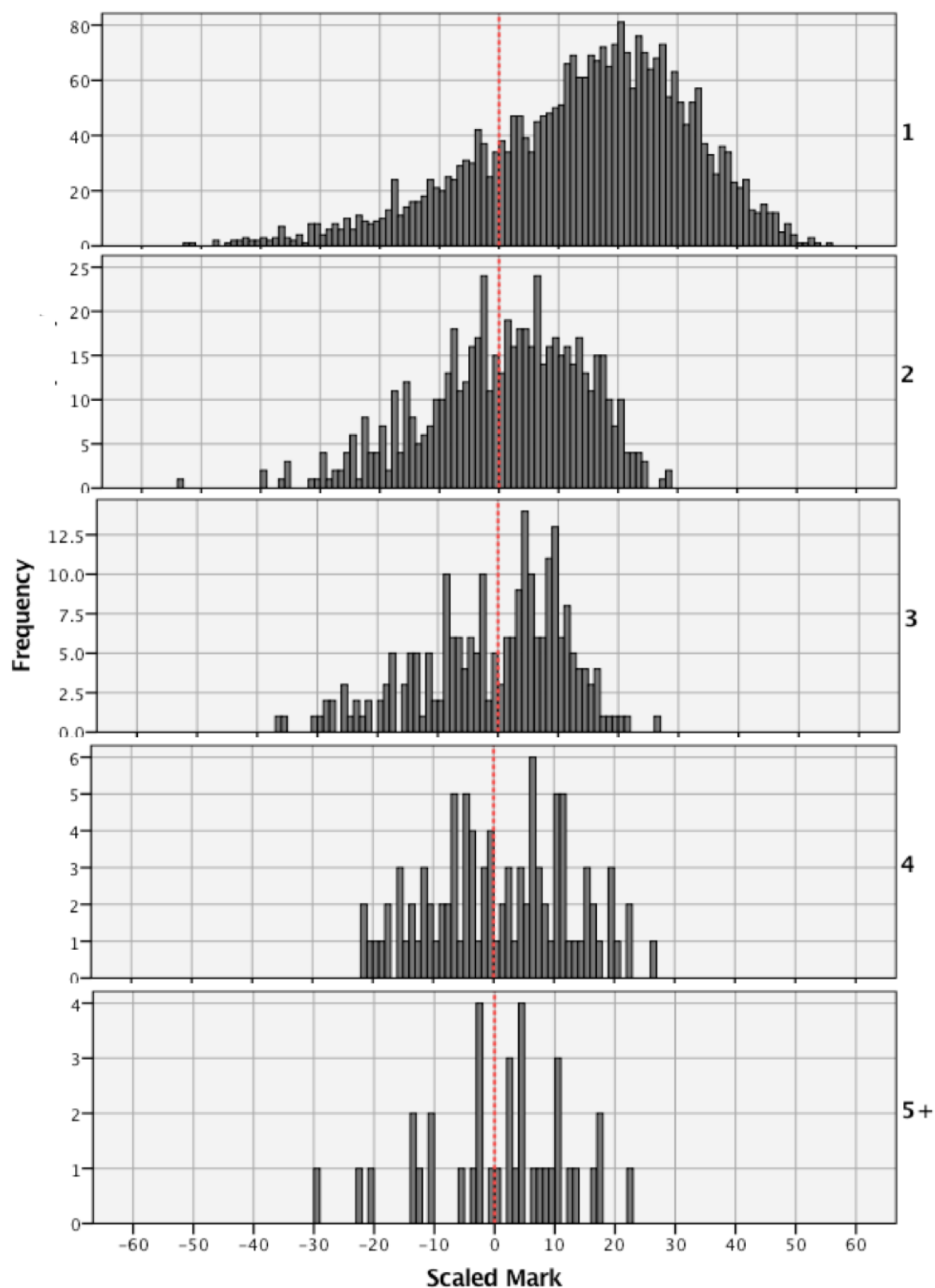
3. Result and scores, by attempt at the AKT: all graduates, and separated by source of primary medical qualification, UK/non-UK (all candidates)

| Attempt | UKG   |       |         | IMG   |       |         | All Candidates |       |         |
|---------|-------|-------|---------|-------|-------|---------|----------------|-------|---------|
|         | Fail  | Pass  | Total N | Fail  | Pass  | Total N | Fail           | Pass  | Total N |
|         | N/%   | N/%   |         | N/%   | N/%   |         | N/%            | N/%   |         |
| 1       | 343   | 2065  | 2408    | 255   | 221   | 476     | 598            | 2286  | 2884    |
|         | 14.2% | 85.8% | 100.0%  | 53.6% | 46.4% | 100.0%  | 20.7%          | 79.3% | 100.0%  |
| 2       | 132   | 210   | 342     | 132   | 122   | 254     | 264            | 332   | 596     |
|         | 38.6% | 61.4% | 100.0%  | 52.0% | 48.0% | 100.0%  | 44.3%          | 55.7% | 100.0%  |
| 3       | 45    | 68    | 113     | 59    | 56    | 115     | 104            | 124   | 228     |
|         | 39.8% | 60.2% | 100.0%  | 51.3% | 48.7% | 100.0%  | 45.6%          | 54.4% | 100.0%  |
| 4       | 20    | 20    | 40      | 27    | 30    | 57      | 47             | 50    | 97      |
|         | 50.0% | 50.0% | 100.0%  | 47.4% | 52.6% | 100.0%  | 48.5%          | 51.5% | 100.0%  |
| 5+      | 7     | 10    | 17      | 8     | 12    | 20      | 15             | 22    | 37      |
|         | 41.2% | 58.8% | 100.0%  | 40.0% | 60.0% | 100.0%  | 40.5%          | 59.5% | 100.0%  |
| All     | 547   | 2373  | 2920    | 481   | 441   | 922     | 1028           | 2814  | 3842    |
|         | 18.7% | 81.3% | 100.0%  | 52.2% | 47.8% | 100.0%  | 26.8%          | 73.2% | 100.0%  |

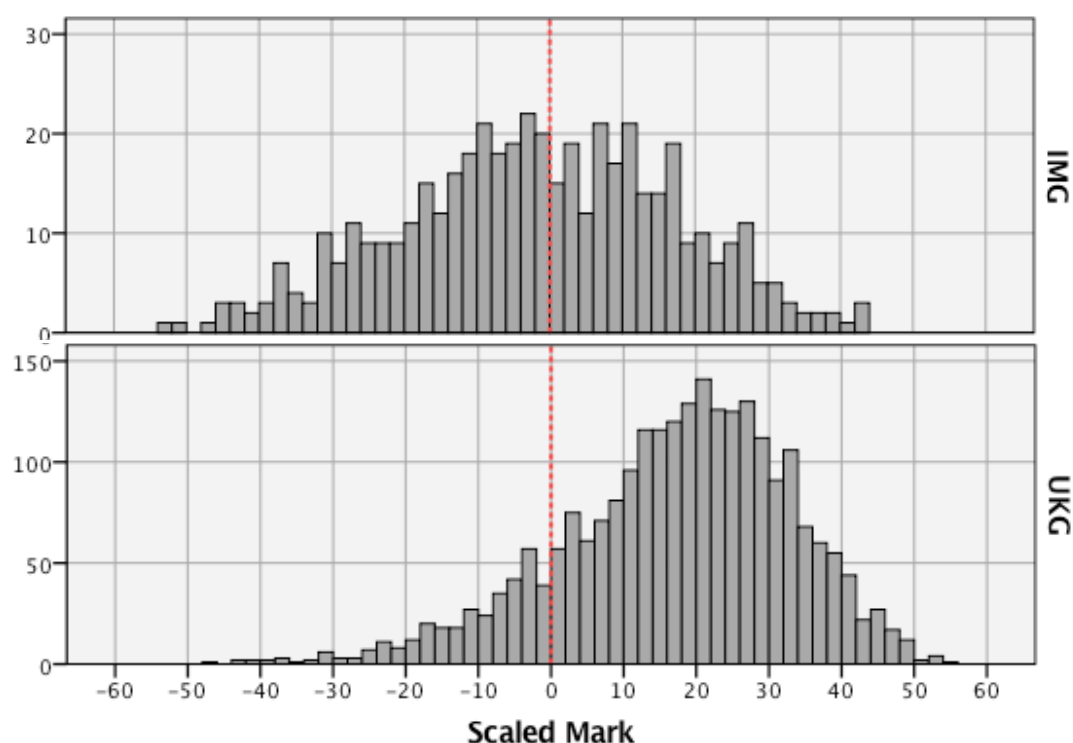
| Attempt | UK or Non-UK Graduate | N    | Min. | Max. | Mean  | SD    |
|---------|-----------------------|------|------|------|-------|-------|
| 1       | IMG                   | 476  | -53  | 43   | -2.32 | 18.91 |
|         | UKG                   | 2408 | -48  | 55   | 16.71 | 15.93 |
| 2       | IMG                   | 254  | -54  | 27   | -2.54 | 13.83 |
|         | UKG                   | 342  | -31  | 28   | 2.38  | 12.38 |
| 3       | IMG                   | 115  | -37  | 18   | -2.76 | 12.53 |
|         | UKG                   | 113  | -36  | 26   | 0.38  | 11.47 |
| 4       | IMG                   | 57   | -22  | 22   | 0.93  | 11.91 |
|         | UKG                   | 40   | -19  | 26   | 0.15  | 11.15 |
| 5+      | IMG                   | 20   | -30  | 22   | -0.15 | 13.06 |
|         | UKG                   | 17   | -21  | 17   | 1.47  | 10.39 |



Score on AKT by attempt – vertically scaled to show contrast



4. Score on AKT on first attempt (linear Y scale) by source of PMQ, UK and non-UK Graduates compared – vertically scaled to show contrast



5. Candidates with Disabilities: prevalence by attempt and source of PMQ; outcomes

UK Equality Legislation supports examination candidates with disabilities in requesting 'reasonable accommodations' in regard to their disabilities, without affecting the standard of the examination. The tables below record the prevalence of such candidates in attempts at the AKT in 2016-17, together with the results of the assessments. Specific Learning Disability (SLD) is the disability most frequently reported. Disabilities other than SLD have been merged for reasons of small numbers and personal confidentiality, the commonest ones being 'other disability', physical disability, hearing impairment, and multiple disabilities. Note, importantly, that SLD may not be diagnosed until a second or later attempt at the assessment.

There were 290 disabled candidate-attempts at the AKT (see first, blue, table below), representing 7.5% of attempts. (Last year it was 5.6%.) The second, green table shows the outcomes for these candidates. The overall number of successful attempts by candidates with disabilities was 167, or 58%.

| Candidates with Disabilities: Numbers Sitting |             |     |     |    |    |       |
|-----------------------------------------------|-------------|-----|-----|----|----|-------|
| Disability                                    | AKT Attempt |     |     |    |    | Total |
|                                               | 1           | 2   | 3   | 4  | 5+ |       |
| Specific learning difficulty                  | 110         | 39  | 39  | 27 | 18 | 233   |
| Other (or multiple) Disabilities              | 35          | 8   | 8   | ⊕  | ⊕  | 57    |
| All Disabilities                              | 145         | 47  | 47  | 27 | 18 | 290   |
| No Disabilities                               | 2739        | 549 | 181 | 67 | 16 | 3552  |
| All Candidates                                | 2884        | 596 | 228 | 97 | 37 | 3842  |

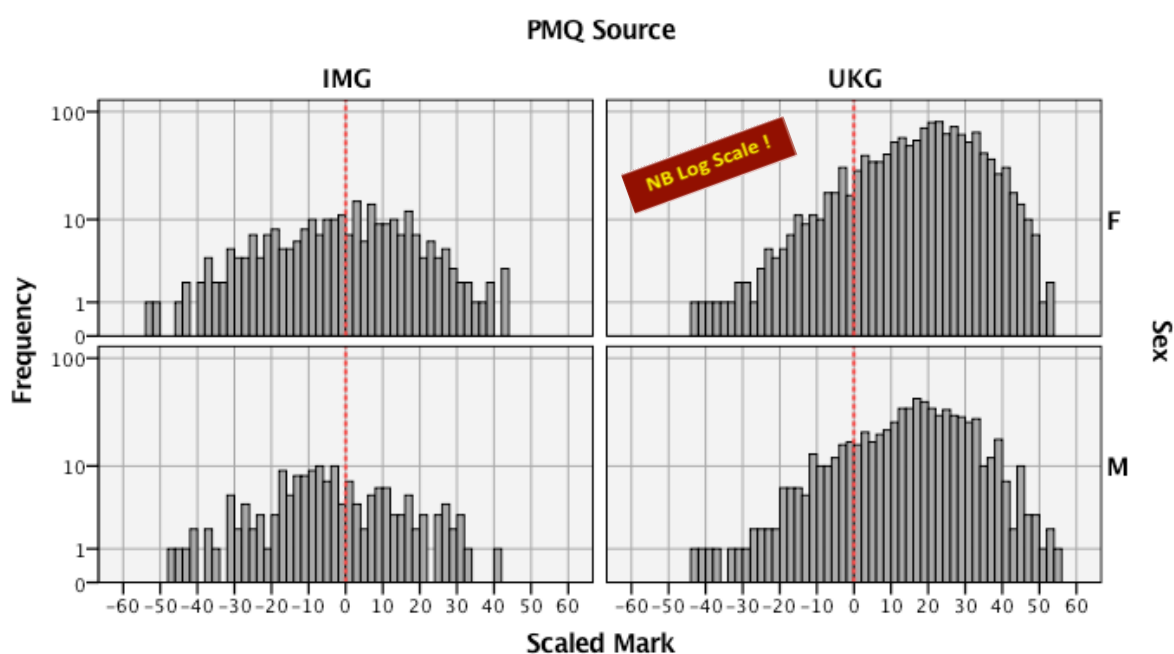
| Candidates with Disabilities: Pass Rates (%) |             |       |       |       |       |       |
|----------------------------------------------|-------------|-------|-------|-------|-------|-------|
| Disability                                   | AKT Attempt |       |       |       |       | Total |
|                                              | 1           | 2     | 3     | 4     | 5+    |       |
| Specific learning difficulty                 | 77.3%       | 35.9% | 41.0% | 40.7% | 55.6% | 58.4% |
| Other (or multiple) Disabilities             | 54.3%       | 37.5% | 50.0% | ⊕     | ⊕     | 54.4% |
| All Disabilities                             | 71.7%       | 36.2% | 42.6% | 46.7% | 57.1% | 57.6% |
| No Disabilities                              | 79.7%       | 57.4% | 57.5% | 53.7% | 62.5% | 74.5% |
| All Candidates                               | 79.3%       | 55.7% | 54.4% | 51.5% | 59.5% | 73.2% |

## C: Results by Individual Demographics (Candidates on first attempt, only)

### 1. AKT Result and scores by candidate sex, and within source of PMQ (1<sup>st</sup> attempt)

*Note that information on candidate sex was not available for 17.6% of this group: extreme caution should be observed when interpreting the data on this page*

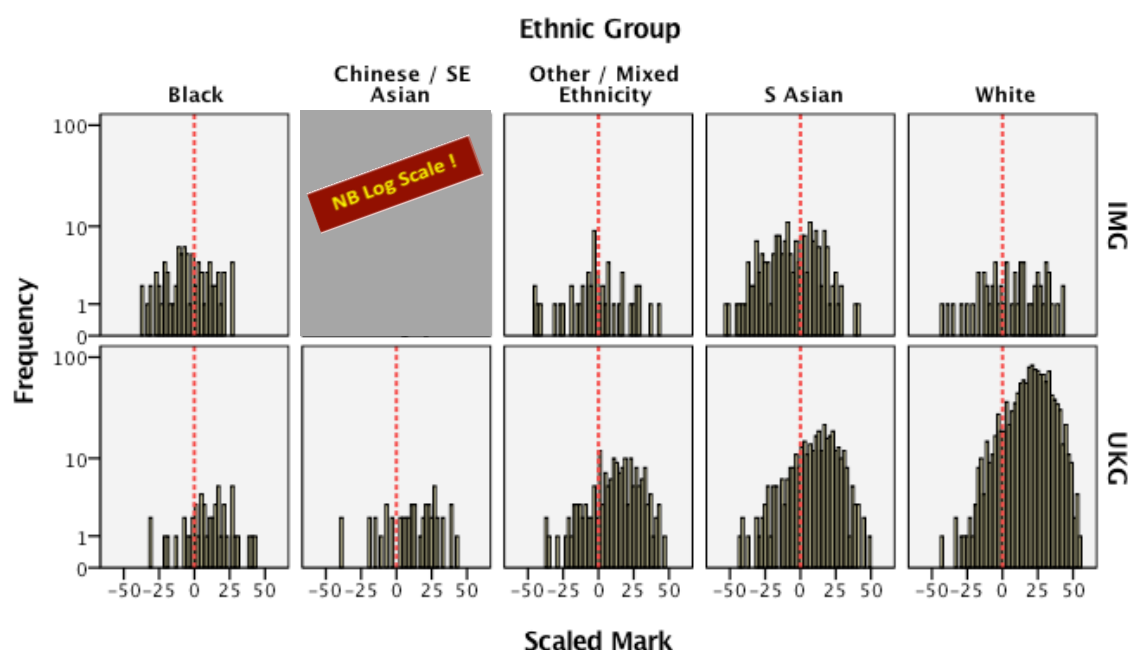
| <b>Result by Candidate Sex and Source of PMQ</b><br>(Information re. sex unavailable on 507 candidates on first attempt) |        |           |          |             |      |       |       |
|--------------------------------------------------------------------------------------------------------------------------|--------|-----------|----------|-------------|------|-------|-------|
| Source of PMQ                                                                                                            | Sex    | Pass Rate | N Cands. | Scaled Mark |      |       |       |
|                                                                                                                          |        |           |          | Min.        | Max. | Mean  | SD    |
| IMG                                                                                                                      | Female | 50.6%     | 255      | -53         | 43   | -1.36 | 19.29 |
|                                                                                                                          | Male   | 38.0%     | 158      | -48         | 40   | -4.47 | 18.03 |
|                                                                                                                          | Total  | 43.8%     | 413      | -53         | 43   | -2.55 | 18.85 |
| UKG                                                                                                                      | Female | 87.6%     | 1292     | -44         | 53   | 17.94 | 15.63 |
|                                                                                                                          | Male   | 82.7%     | 672      | -43         | 55   | 15.12 | 16.29 |
|                                                                                                                          | Total  | 85.9%     | 1964     | -44         | 55   | 16.98 | 15.91 |
| Total                                                                                                                    | Female | 81.5%     | 1547     | -53         | 53   | 14.76 | 17.79 |
|                                                                                                                          | Male   | 74.2%     | 830      | -48         | 55   | 11.39 | 18.32 |
|                                                                                                                          | Total  | 79.0%     | 2377     | -53         | 55   | 13.58 | 18.04 |



2. AKT Result by classified candidate ethnicity, and separated by source of primary medical qualification; scaled mark by ethnicity (1<sup>st</sup> attempt)

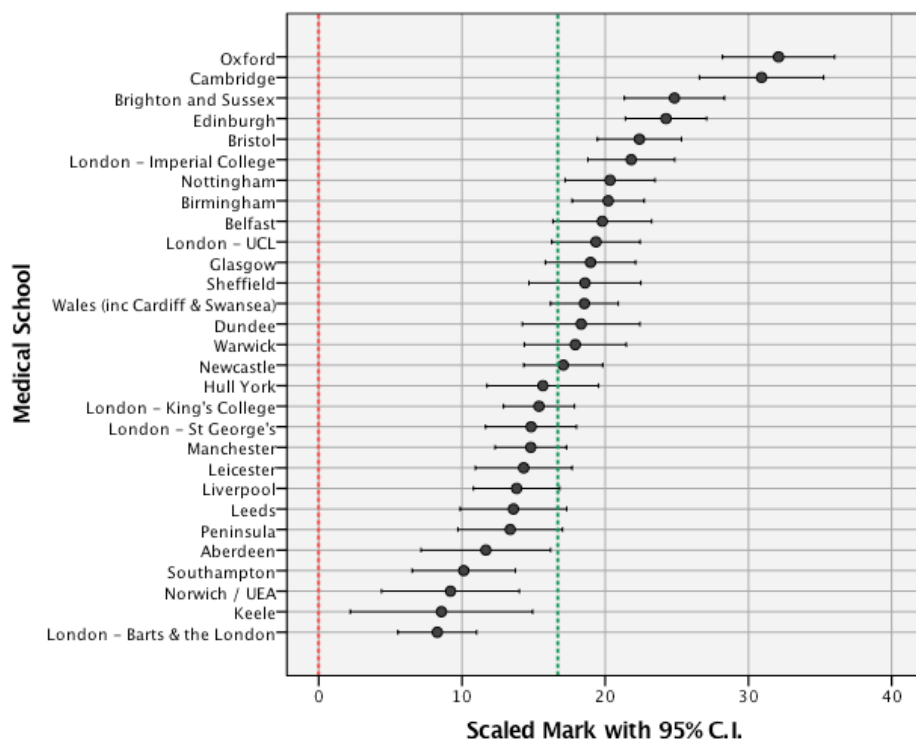
*Note that information on candidate ethnicity was not available for 21.3% of this group: extreme caution should be observed when interpreting the data on this page*

| <b>Result by Candidate Ethnicity and Source of PMQ</b><br>(Information re. ethnicity unavailable on 614 candidates on first attempt) |                         |           |          |             |      |       |       |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------|----------|-------------|------|-------|-------|
| Source of PMQ                                                                                                                        | Ethnic Group            | Pass Rate | N Cands. | Scaled Mark |      |       |       |
|                                                                                                                                      |                         |           |          | Min.        | Max. | Mean  | SD    |
| IMG                                                                                                                                  | Black                   | 41.2%     | 85       | -37         | 27   | -3.73 | 16.06 |
|                                                                                                                                      | Chinese / SE Asian      | ★         | ★        | ★           | ★    | ★     | ★     |
|                                                                                                                                      | Other / Mixed Ethnicity | 39.3%     | 56       | -46         | 42   | -2.43 | 19.61 |
|                                                                                                                                      | S Asian                 | 44.3%     | 183      | -53         | 40   | -5.38 | 18.65 |
|                                                                                                                                      | All BME                 | 43.1%     | 327      | -53         | 42   | -4.30 | 18.15 |
|                                                                                                                                      | White                   | 61.9%     | 63       | -44         | 43   | 6.54  | 20.89 |
| UKG                                                                                                                                  | Black                   | 76.6%     | 47       | -32         | 42   | 9.96  | 16.97 |
|                                                                                                                                      | Chinese / SE Asian      | 76.0%     | 50       | -40         | 43   | 11.28 | 19.04 |
|                                                                                                                                      | Other / Mixed Ethnicity | 82.3%     | 164      | -37         | 47   | 12.97 | 16.92 |
|                                                                                                                                      | S Asian                 | 76.9%     | 333      | -43         | 48   | 10.21 | 16.68 |
|                                                                                                                                      | All BME                 | 78.3%     | 594      | -43         | 48   | 11.04 | 16.98 |
|                                                                                                                                      | White                   | 89.7%     | 1286     | -44         | 55   | 19.77 | 14.77 |
| All                                                                                                                                  | Black                   | 53.8%     | 132      | -37         | 42   | 1.14  | 17.60 |
|                                                                                                                                      | Chinese / SE Asian      | 77.4%     | 53       | -40         | 43   | 11.23 | 18.57 |
|                                                                                                                                      | Other / Mixed Ethnicity | 71.4%     | 220      | -46         | 47   | 9.05  | 18.83 |
|                                                                                                                                      | S Asian                 | 65.3%     | 516      | -53         | 48   | 4.68  | 18.92 |
|                                                                                                                                      | All BME                 | 65.8%     | 921      | -53         | 48   | 5.59  | 18.88 |
|                                                                                                                                      | White                   | 88.4%     | 1349     | -44         | 55   | 19.15 | 15.36 |



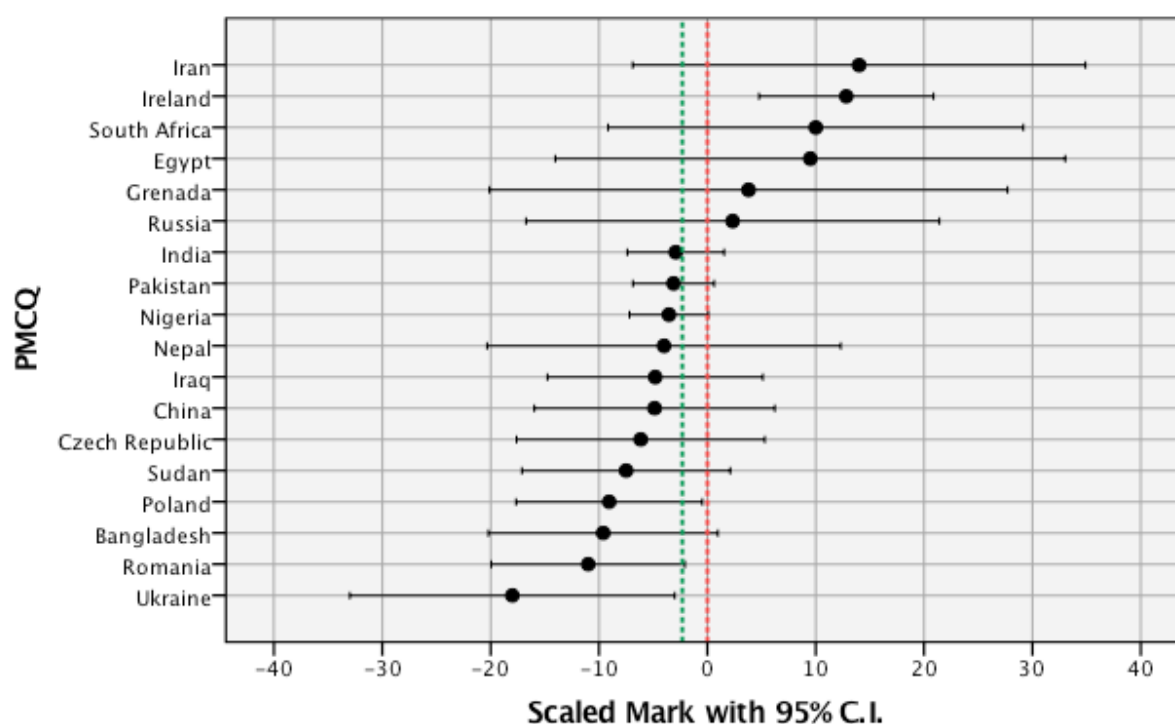
### 3. AKT Result and Scores by PMQ (medical school; country) on 1<sup>st</sup> attempt

#### UK Graduates



| Performance by UK Medical School |         |             |     |       |       |        |        |
|----------------------------------|---------|-------------|-----|-------|-------|--------|--------|
| Medical School                   | N Cands | Scaled Mark |     |       |       | Result |        |
|                                  |         | Min         | Max | Mean  | SD    | Fail   | Pass   |
| Aberdeen                         | 75      | -48         | 44  | 11.67 | 19.65 | 24.0%  | 76.0%  |
| Belfast                          | 54      | -10         | 51  | 19.80 | 12.62 | 3.7%   | 96.3%  |
| Birmingham                       | 128     | -23         | 48  | 20.21 | 14.43 | 10.2%  | 89.8%  |
| Brighton and Sussex              | 42      | -7          | 46  | 24.83 | 11.22 | 4.8%   | 95.2%  |
| Bristol                          | 62      | -5          | 52  | 22.39 | 11.59 | 4.8%   | 95.2%  |
| Cambridge                        | 35      | -5          | 50  | 30.91 | 12.62 | 2.9%   | 97.1%  |
| Dundee                           | 53      | -19         | 49  | 18.32 | 14.90 | 13.2%  | 86.8%  |
| Edinburgh                        | 65      | -13         | 45  | 24.25 | 11.45 | 1.5%   | 98.5%  |
| Glasgow                          | 74      | -33         | 47  | 18.97 | 13.59 | 9.5%   | 90.5%  |
| Hull York                        | 63      | -37         | 45  | 15.65 | 15.46 | 12.7%  | 87.3%  |
| Keele                            | 37      | -32         | 40  | 8.57  | 19.11 | 27.0%  | 73.0%  |
| Leeds                            | 81      | -24         | 45  | 13.59 | 16.83 | 23.5%  | 76.5%  |
| Leicester                        | 90      | -37         | 48  | 14.31 | 16.14 | 15.6%  | 84.4%  |
| Liverpool                        | 114     | -42         | 49  | 13.82 | 16.24 | 20.2%  | 79.8%  |
| London - Barts & the London      | 147     | -41         | 48  | 8.28  | 16.89 | 28.6%  | 71.4%  |
| London - Imperial College        | 93      | -21         | 46  | 21.82 | 14.72 | 7.5%   | 92.5%  |
| London - King's College          | 156     | -40         | 46  | 15.38 | 15.67 | 14.7%  | 85.3%  |
| London - St George's             | 87      | -27         | 47  | 14.83 | 14.91 | 14.9%  | 85.1%  |
| London - UCL                     | 93      | -29         | 52  | 19.35 | 14.97 | 6.5%   | 93.5%  |
| Manchester                       | 134     | -25         | 46  | 14.81 | 14.60 | 14.2%  | 85.8%  |
| Newcastle                        | 113     | -24         | 43  | 17.07 | 14.84 | 15.0%  | 85.0%  |
| Norwich / UEA                    | 55      | -43         | 45  | 9.20  | 17.80 | 25.5%  | 74.5%  |
| Nottingham                       | 94      | -18         | 46  | 20.34 | 15.36 | 10.6%  | 89.4%  |
| Oxford                           | 30      | 9           | 49  | 32.10 | 10.48 | -      | 100.0% |
| Peninsula                        | 68      | -29         | 45  | 13.37 | 15.10 | 20.6%  | 79.4%  |
| Sheffield                        | 75      | -31         | 55  | 18.59 | 16.96 | 16.0%  | 84.0%  |
| Southampton                      | 82      | -24         | 53  | 10.12 | 16.41 | 23.2%  | 76.8%  |
| Wales (inc Cardiff & Swansea)    | 151     | -25         | 48  | 18.54 | 14.71 | 9.9%   | 90.1%  |
| Warwick                          | 57      | -14         | 52  | 17.91 | 13.45 | 7.0%   | 93.0%  |

## Non-UK Graduates – Countries with 5+ Candidates, on First Attempt

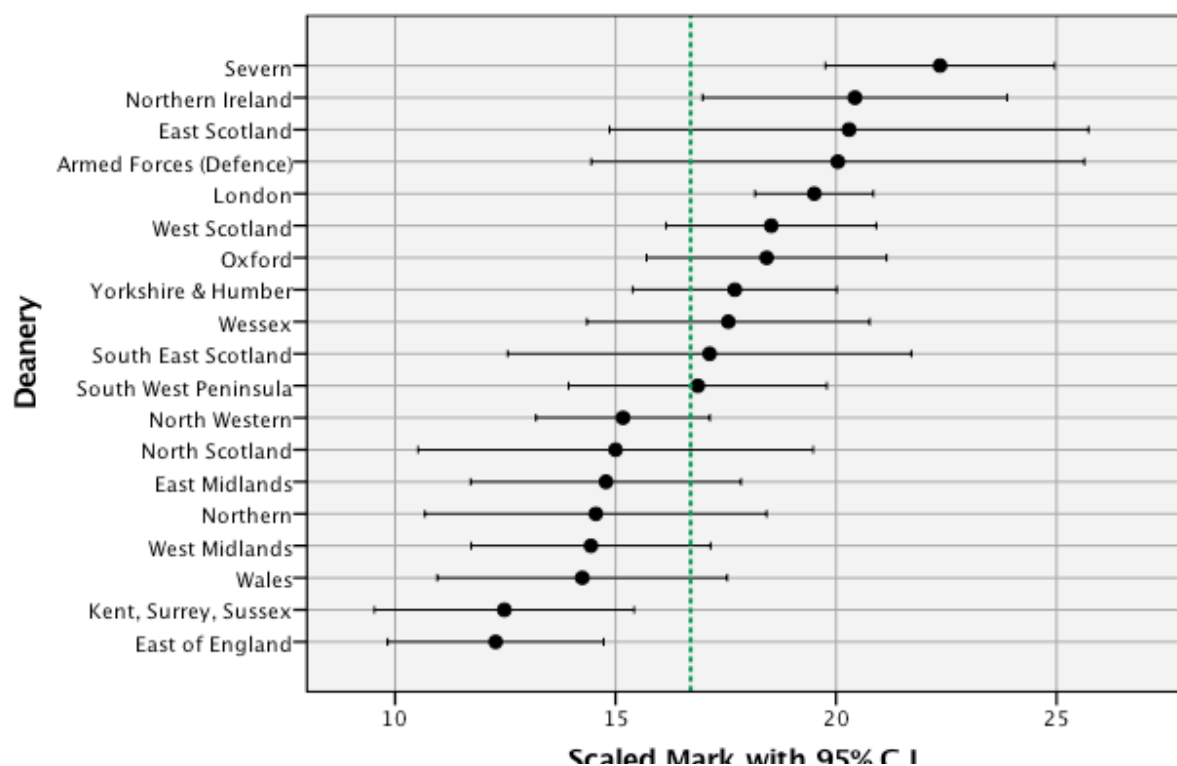


| Performance by non-UK Country of PMQ |         |             |     |        |       |        |       |
|--------------------------------------|---------|-------------|-----|--------|-------|--------|-------|
| PMQ Country                          | N Cands | Scaled Mark |     |        |       | Result |       |
|                                      |         | Min         | Max | Mean   | SD    | Fail   | Pass  |
| Bangladesh                           | 13      | -52         | 11  | -9.62  | 17.53 | 61.5%  | 38.5% |
| China                                | 8       | -29         | 7   | -4.88  | 13.27 | 37.5%  | 62.5% |
| Czech Republic                       | 20      | -48         | 33  | -6.15  | 24.50 | 55.0%  | 45.0% |
| Egypt                                | 6       | -19         | 29  | 9.50   | 22.43 | 33.3%  | 66.7% |
| Grenada                              | 5       | -27         | 24  | 3.80   | 19.25 | 20.0%  | 80.0% |
| India                                | 65      | -53         | 38  | -2.92  | 18.05 | 50.8%  | 49.2% |
| Iran                                 | 5       | -3          | 37  | 14.00  | 16.82 | 40.0%  | 60.0% |
| Iraq                                 | 16      | -43         | 31  | -4.81  | 18.65 | 62.5%  | 37.5% |
| Ireland                              | 22      | -27         | 38  | 12.82  | 18.15 | 31.8%  | 68.2% |
| Nepal                                | 10      | -45         | 26  | -4.00  | 22.82 | 60.0%  | 40.0% |
| Nigeria                              | 75      | -37         | 27  | -3.55  | 15.78 | 58.7%  | 41.3% |
| Pakistan                             | 101     | -41         | 40  | -3.13  | 19.01 | 52.5%  | 47.5% |
| Poland                               | 15      | -38         | 27  | -9.07  | 15.52 | 80.0%  | 20.0% |
| Romania                              | 12      | -31         | 22  | -11.00 | 14.07 | 83.3%  | 16.7% |
| Russia                               | 6       | -18         | 30  | 2.33   | 18.17 | 33.3%  | 66.7% |
| South Africa                         | 8       | -37         | 31  | 10.00  | 22.92 | 25.0%  | 75.0% |
| Sudan                                | 12      | -24         | 15  | -7.50  | 15.15 | 66.7%  | 33.3% |
| Ukraine                              | 9       | -44         | 14  | -18.00 | 19.51 | 77.8%  | 22.2% |

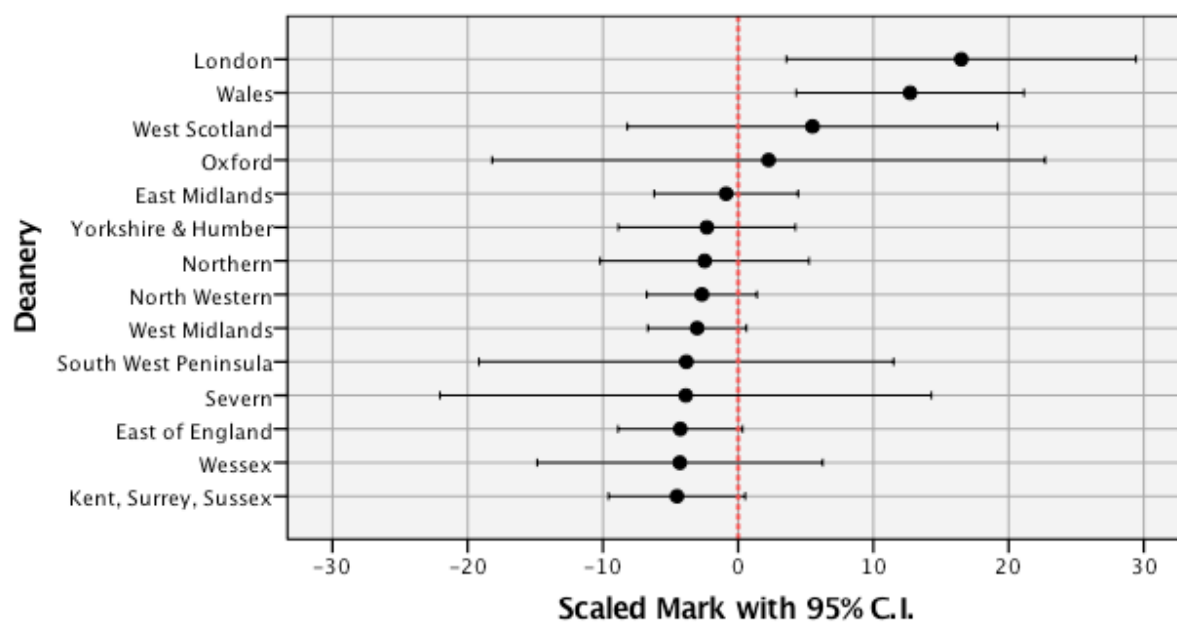
## D: Results by Training Deanery

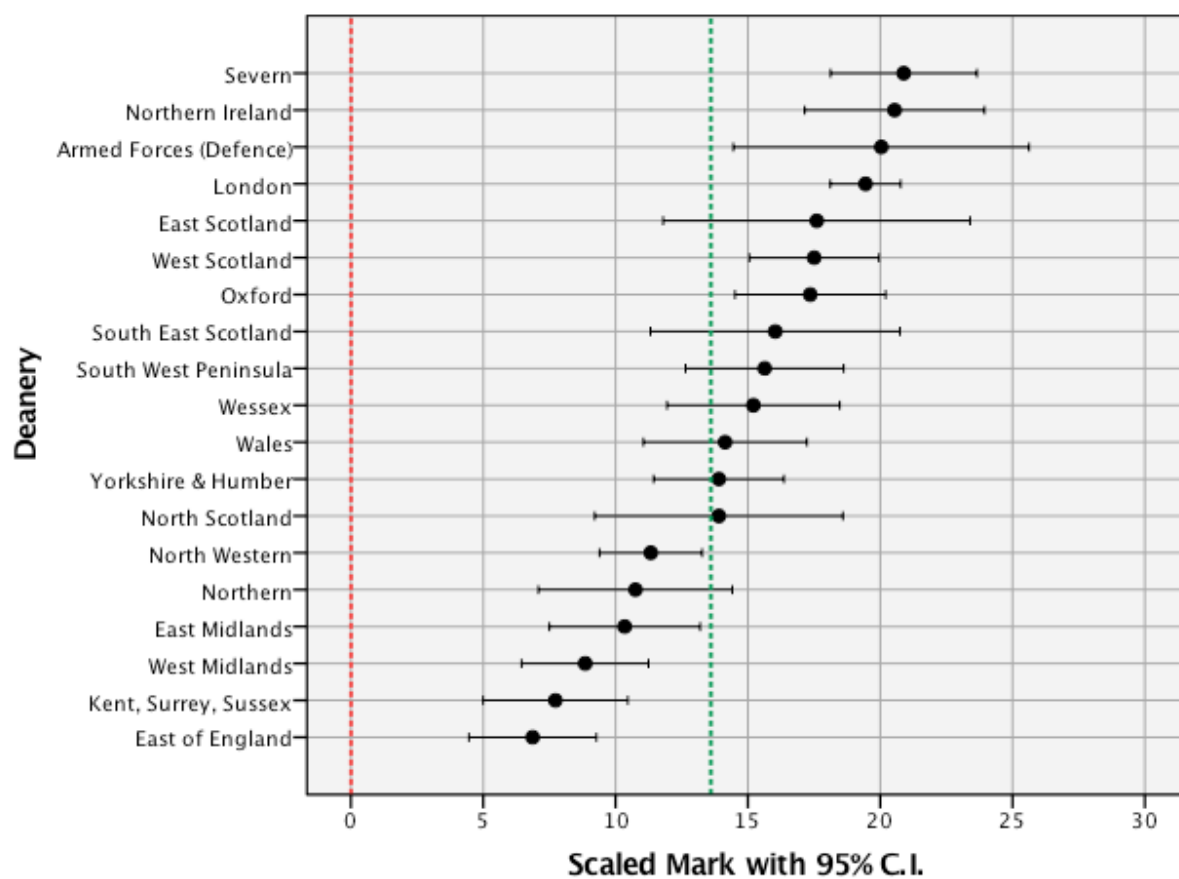
### 1. Error bar graphs of mean Candidate Scores by Deanery, by source of PMQ

#### UK Graduates, First Attempt



#### Non-UK Graduates, First Attempt

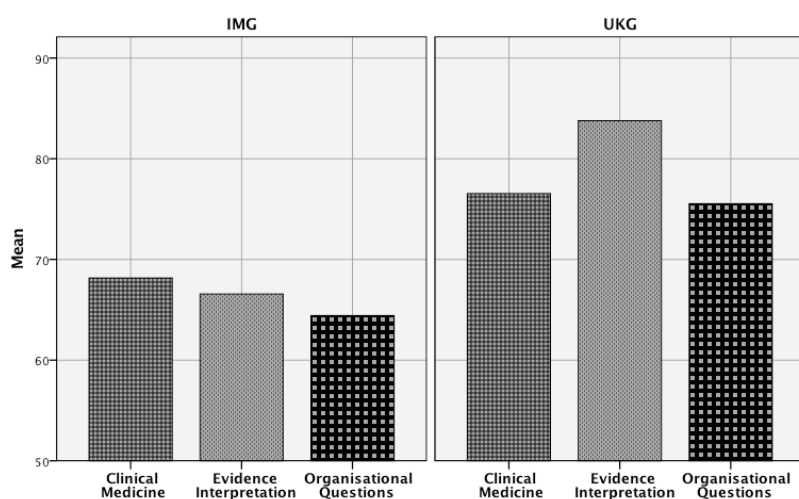




## E: Analyses of AKT sub-Scores

### 1. Overall pattern of scores, UK graduates and IMGs compared on first attempt; descriptive statistics of the three scores, place of PMQ and training year compared

| Candidate Group | Question Group           | N Cands. | Descriptive Statistics |        |       |       |
|-----------------|--------------------------|----------|------------------------|--------|-------|-------|
|                 |                          |          | Min.                   | Max.   | Mean  | SD    |
| IMG             | Clinical Medicine        | 476      | 41.88                  | 91.88  | 68.16 | 10.12 |
|                 | Evidence Interpretation  | 476      | 20.00                  | 100.00 | 66.58 | 16.52 |
|                 | Organisational Questions | 476      | 31.58                  | 100.00 | 64.42 | 11.99 |
| UKG             | Clinical_Medicine        | 2408     | 43.13                  | 96.88  | 76.54 | 8.52  |
|                 | Evidence_Interpretation  | 2408     | 30.00                  | 100.00 | 83.78 | 11.86 |
|                 | Organisational_Questions | 2408     | 30.00                  | 100.00 | 75.53 | 11.17 |
| ST 2            | Clinical_Medicine        | 2299     | 41.88                  | 96.88  | 75.28 | 9.35  |
|                 | Evidence_Interpretation  | 2299     | 20.00                  | 100.00 | 82.02 | 13.84 |
|                 | Organisational_Questions | 2299     | 31.58                  | 100.00 | 74.03 | 11.97 |
| ST 3            | Clinical_Medicine        | 585      | 44.38                  | 94.38  | 74.63 | 9.30  |
|                 | Evidence_Interpretation  | 585      | 25.00                  | 100.00 | 76.69 | 15.07 |
|                 | Organisational_Questions | 585      | 30.00                  | 100.00 | 72.41 | 12.19 |



### 2. Correlations between AKT section scores and total score: all candidates

| Inter-Section Correlations -- All Candidates |                   |                         |                          |             |
|----------------------------------------------|-------------------|-------------------------|--------------------------|-------------|
|                                              | Clinical Medicine | Evidence Interpretation | Organisational Questions | Total Score |
| Clinical Medicine (80% of items)             | 1.000             | 0.457                   | 0.489                    | 0.977       |
| Evidence Interpretation (10% of items)       |                   | 1.000                   | 0.461                    | 0.608       |
| Organisational Questions (10% of items)      |                   |                         | 1.000                    | 0.617       |
| Total Score                                  |                   |                         |                          | 1.000       |

N = 3842 All correlations significant at the 0.001 level (1-tailed)

## 4: CSA Statistics

### A: Summary of Candidate Demographics

3068 candidates made a total of 3561 attempts at the CSA during 2016-17. The tables below show the origin of the 3068 candidates, by UK medical school or non-UK country of primary medical qualification—and the percentage from each out of the total of that part of the candidature. On the following page, the background demographic characteristics of the 3068 are shown, by training Deanery. Other tables report on the 3561 attempts.

#### 1. Source of Primary Medical Qualification

| All Graduates: UK, EEA or Rest of the World |             |              |
|---------------------------------------------|-------------|--------------|
| Group                                       | N           | %            |
| EEA Graduates                               | 109         | 3.6          |
| Graduates from Rest of World                | 484         | 15.8         |
| UK Graduates                                | 2475        | 80.7         |
| <b>Total</b>                                | <b>3068</b> | <b>100.0</b> |

| EEA Graduates              |            |              |
|----------------------------|------------|--------------|
| Country of PMQ             | N          | %            |
| Czech Republic             | 31         | 28.4         |
| Hungary                    | 5          | 4.6          |
| Ireland                    | 18         | 16.5         |
| Poland                     | 21         | 19.3         |
| Romania                    | 10         | 9.2          |
| Other Countries (< 5 each) | 24         | 21.9         |
| <b>Total</b>               | <b>109</b> | <b>100.0</b> |

| Graduates from the Rest of the World |            |              |
|--------------------------------------|------------|--------------|
| Country of PMQ                       | N          | %            |
| Bangladesh                           | 21         | 4.3          |
| Egypt                                | 10         | 2.1          |
| India                                | 89         | 18.4         |
| Iran                                 | 7          | 1.4          |
| Iraq                                 | 19         | 3.9          |
| Nepal                                | 15         | 3.1          |
| Nigeria                              | 103        | 21.3         |
| Pakistan                             | 126        | 26.0         |
| Philippines                          | 5          | 1.0          |
| Russia                               | 9          | 1.9          |
| South Africa                         | 8          | 1.7          |
| Sri Lanka                            | 8          | 1.7          |
| Sudan                                | 10         | 2.1          |
| Ukraine                              | 10         | 2.1          |
| Other Countries (< 5 each)           | 44         | 8.8          |
| <b>Total</b>                         | <b>484</b> | <b>100.0</b> |

| Graduates of UK Medical Schools |             |              |
|---------------------------------|-------------|--------------|
| Medical School                  | N           | %            |
| Aberdeen                        | 66          | 2.7          |
| Belfast                         | 49          | 2.0          |
| Birmingham                      | 171         | 6.9          |
| Brighton and Sussex             | 35          | 1.4          |
| Bristol                         | 91          | 3.7          |
| Cambridge                       | 33          | 1.3          |
| Dundee                          | 50          | 2.0          |
| Edinburgh                       | 68          | 2.7          |
| Glasgow                         | 73          | 2.9          |
| Hull York                       | 62          | 2.5          |
| Keele                           | 21          | 0.8          |
| Leeds                           | 84          | 3.4          |
| Leicester                       | 83          | 3.4          |
| Liverpool                       | 123         | 5.0          |
| London - Barts & the London     | 121         | 4.9          |
| London - Imperial College       | 99          | 4.0          |
| London - King's College         | 138         | 5.6          |
| London - St George's            | 100         | 4.0          |
| London - University College     | 90          | 3.6          |
| Manchester                      | 175         | 7.1          |
| Newcastle                       | 122         | 4.9          |
| Norwich / UEA                   | 53          | 2.1          |
| Nottingham                      | 102         | 4.1          |
| Oxford                          | 27          | 1.1          |
| Peninsula                       | 61          | 2.5          |
| Sheffield                       | 92          | 3.7          |
| Southampton                     | 101         | 4.1          |
| Wales (inc Cardiff & Swansea)   | 106         | 4.3          |
| Warwick                         | 79          | 3.2          |
| <b>Total</b>                    | <b>2475</b> | <b>100.0</b> |

## 2. CSA Candidates' Place of PMQ, by Training Deanery/LETB

| Deanery / LETB         | Source of PMQ: UK, EEA, Rest of World |       |        | Total  |
|------------------------|---------------------------------------|-------|--------|--------|
|                        | EEA                                   | RoW   | UK     |        |
| Armed Forces (Defence) | 0                                     | 0     | 16     | 16     |
|                        | 0                                     | 0     | 100.0% | 100.0% |
| East Midlands          | 6                                     | 50    | 113    | 169    |
|                        | 3.6%                                  | 29.6% | 66.9%  | 100.0% |
| East of England        | 22                                    | 54    | 193    | 269    |
|                        | 8.2%                                  | 20.1% | 71.7%  | 100.0% |
| East Scotland          | ✱                                     | ✱     | 24     | 27     |
|                        | ✱                                     | ✱     | 88.9%  | 100.0% |
| Kent, Surrey, Sussex   | 10                                    | 33    | 191    | 234    |
|                        | 4.3%                                  | 14.1% | 81.6%  | 100.0% |
| London                 | ✱                                     | 9     | 381    | 392    |
|                        | ✱                                     | 2.3%  | 97.2%  | 100.0% |
| North Scotland         | ✱                                     | 8     | 38     | 49     |
|                        | ✱                                     | 16.3% | 77.6%  | 100.0% |
| North Western          | 14                                    | 85    | 270    | 369    |
|                        | 3.8%                                  | 23.0% | 73.2%  | 100.0% |
| Northern               | 9                                     | 45    | 90     | 144    |
|                        | 6.3%                                  | 31.3% | 62.5%  | 100.0% |
| Northern Ireland       | ✱                                     | ✱     | 54     | 56     |
|                        | ✱                                     | ✱     | 96.4%  | 100.0% |
| Oxford                 | 5                                     | 8     | 86     | 99     |
|                        | 5.1%                                  | 8.1%  | 86.9%  | 100.0% |
| Severn                 | ✱                                     | ✱     | 140    | 144    |
|                        | ✱                                     | ✱     | 97.2%  | 100.0% |
| South East Scotland    | ✱                                     | ✱     | 59     | 60     |
|                        | ✱                                     | ✱     | 98.3%  | 100.0% |
| South West Peninsula   | 6                                     | 8     | 77     | 91     |
|                        | 6.6%                                  | 8.8%  | 84.6%  | 100.0% |
| Wales                  | ✱                                     | 13    | 97     | 114    |
|                        | ✱                                     | 0.114 | 85.1%  | 100.0% |
| Wessex                 | ✱                                     | 9     | 111    | 123    |
|                        | ✱                                     | 0.073 | 90.2%  | 100.0% |
| West Midlands          | 11                                    | 100   | 229    | 340    |
|                        | 3.2%                                  | 29.4% | 67.4%  | 100.0% |
| West Scotland          | ✱                                     | 24    | 103    | 129    |
|                        | ✱                                     | 0.186 | 79.8%  | 100.0% |
| Yorkshire & Humber     | 7                                     | 33    | 203    | 243    |
|                        | 2.9%                                  | 13.6% | 83.5%  | 100.0% |
| Total                  | 109                                   | 484   | 2475   | 3068   |
|                        | 3.6%                                  | 15.8% | 80.7%  | 100.0% |

## B: Main Results: Overall, and by Exam Diet and Attempt (All Candidates)

### 1. CSA Result and scores, overall and by Diet (all candidates/attempts)

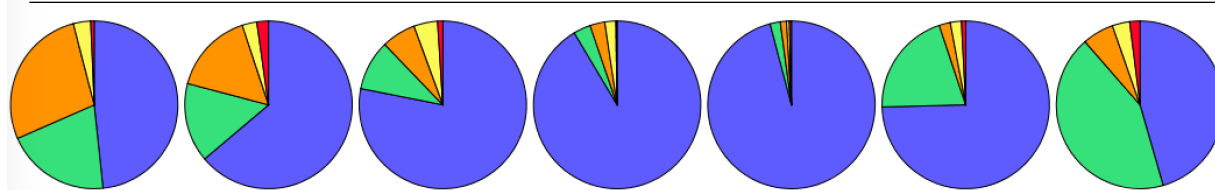
#### Candidates

| Candidate Attempt | Exam Diet: N & % of all candidates on diet |          |          |          |          |          |          | All Diets |
|-------------------|--------------------------------------------|----------|----------|----------|----------|----------|----------|-----------|
|                   | Oct 2016                                   | Nov 2016 | Dec 2016 | Feb 2017 | Mar 2017 | Apr 2017 | May 2017 |           |
| 1                 | 72                                         | 113      | 307      | 768      | 1028     | 276      | 255      | 2819      |
|                   | 48.3%                                      | 63.8%    | 78.1%    | 91.4%    | 95.9%    | 74.6%    | 45.5%    | 79.2%     |
| 2                 | 30                                         | 27       | 38       | 28       | 21       | 75       | 241      | 460       |
|                   | 20.1%                                      | 15.3%    | 9.7%     | 3.3%     | 2.0%     | 20.3%    | 43.0%    | 12.9%     |
| 3                 | 41                                         | 28       | 26       | 24       | 13       | 8        | 34       | 174       |
|                   | 27.5%                                      | 15.8%    | 6.6%     | 2.9%     | 1.2%     | 2.2%     | 6.1%     | 4.9%      |
| 4                 | 5                                          | 5        | 18       | 18       | 6        | 8        | 19       | 79        |
|                   | 3.4%                                       | 2.8%     | 4.6%     | 2.1%     | 0.6%     | 2.2%     | 3.4%     | 2.2%      |
| 5+                | 1                                          | 4        | 4        | 2        | 4        | 3        | 11       | 29        |
|                   | 0.7%                                       | 2.3%     | 1.0%     | 0.2%     | 0.4%     | 0.8%     | 2.0%     | 0.8%      |
| All Attempts      | 149                                        | 177      | 393      | 840      | 1072     | 370      | 560      | 3561      |
|                   | 100.0%                                     | 100.0%   | 100.0%   | 100.0%   | 100.0%   | 100.0%   | 100.0%   | 100.0%    |

#### Attempt

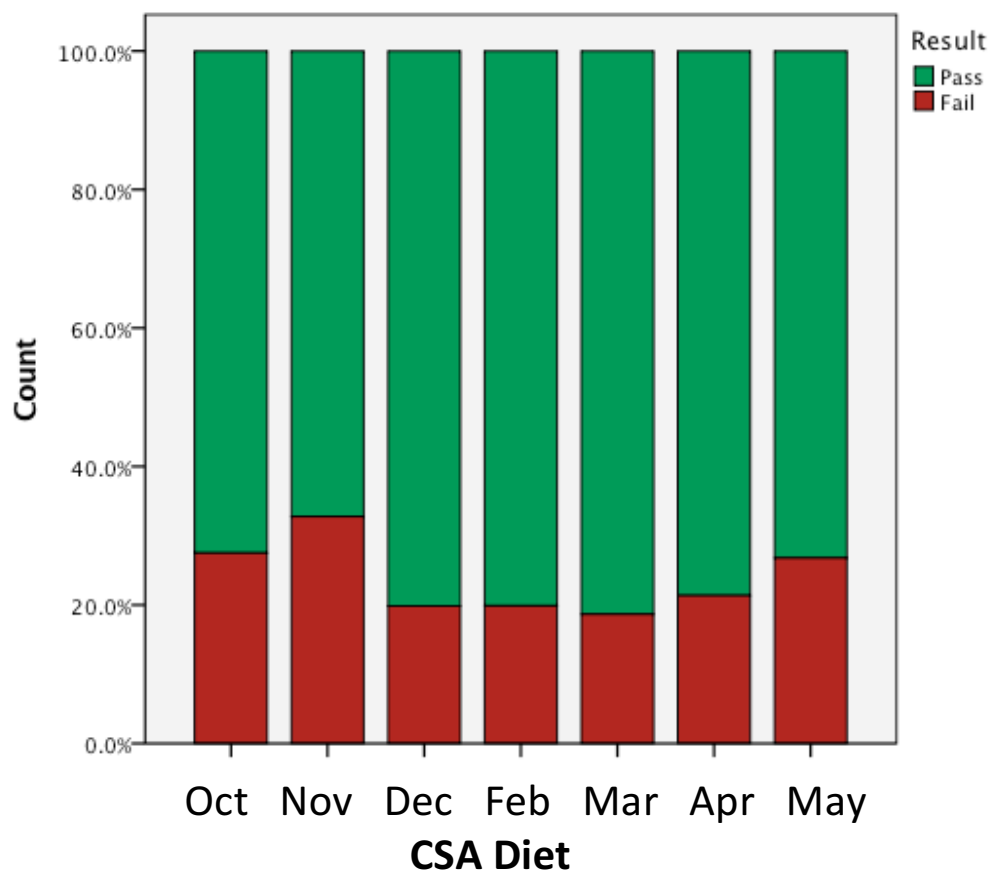


Oct 2016   Nov 2016   Dec 2016   Feb 2017   Mar 2017   Apr 2017   May 2017

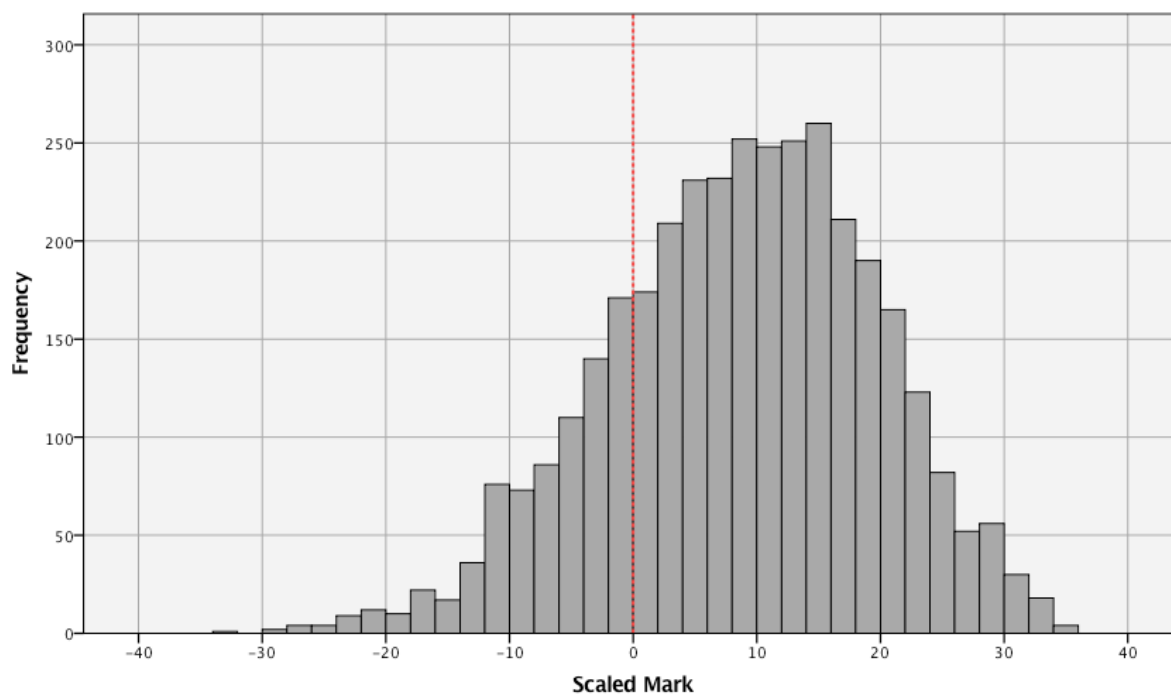


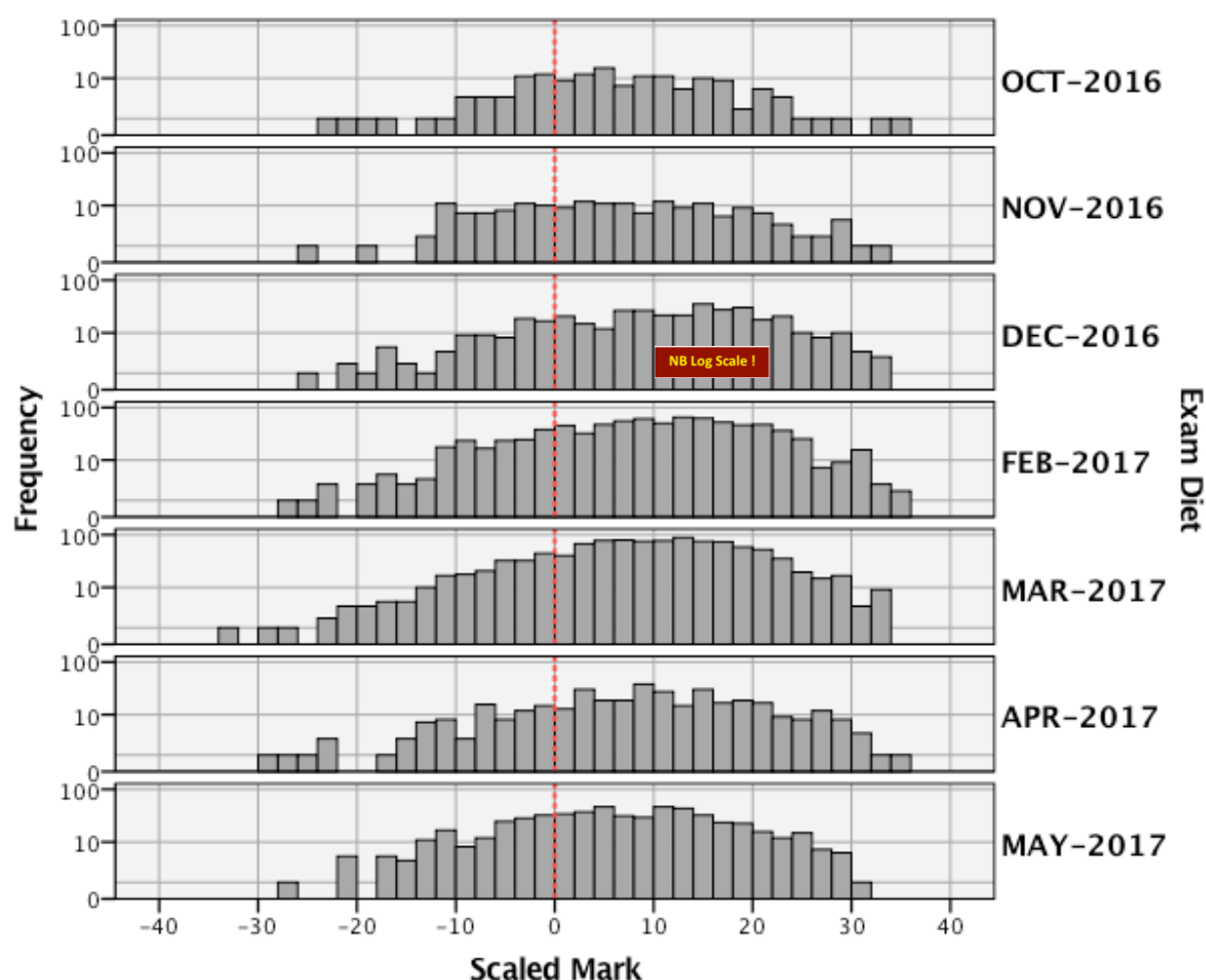
#### Results

| Results Overall and by Diet: All Candidates |         |           |             |     |      |       |
|---------------------------------------------|---------|-----------|-------------|-----|------|-------|
| CSA Diet                                    | N Cands | Pass Rate | Scaled Mark |     |      |       |
|                                             |         | %         | Min         | Max | Mean | SD    |
| October 2016                                | 149     | 72.5%     | -23         | 35  | 5.89 | 10.30 |
| November 2016                               | 177     | 67.2%     | -26         | 33  | 5.68 | 11.41 |
| December 2016                               | 393     | 80.2%     | -26         | 33  | 9.68 | 11.21 |
| February 2017                               | 840     | 80.1%     | -28         | 35  | 9.03 | 10.93 |
| March 2017                                  | 1072    | 81.3%     | -33         | 33  | 8.59 | 10.49 |
| April 2017                                  | 370     | 78.6%     | -30         | 35  | 8.11 | 11.52 |
| May 2017                                    | 560     | 73.2%     | -28         | 31  | 6.03 | 10.56 |
| All Diets                                   | 3561    | 78.3%     | -33         | 35  | 8.10 | 10.91 |



#### All Candidates; and by Diet

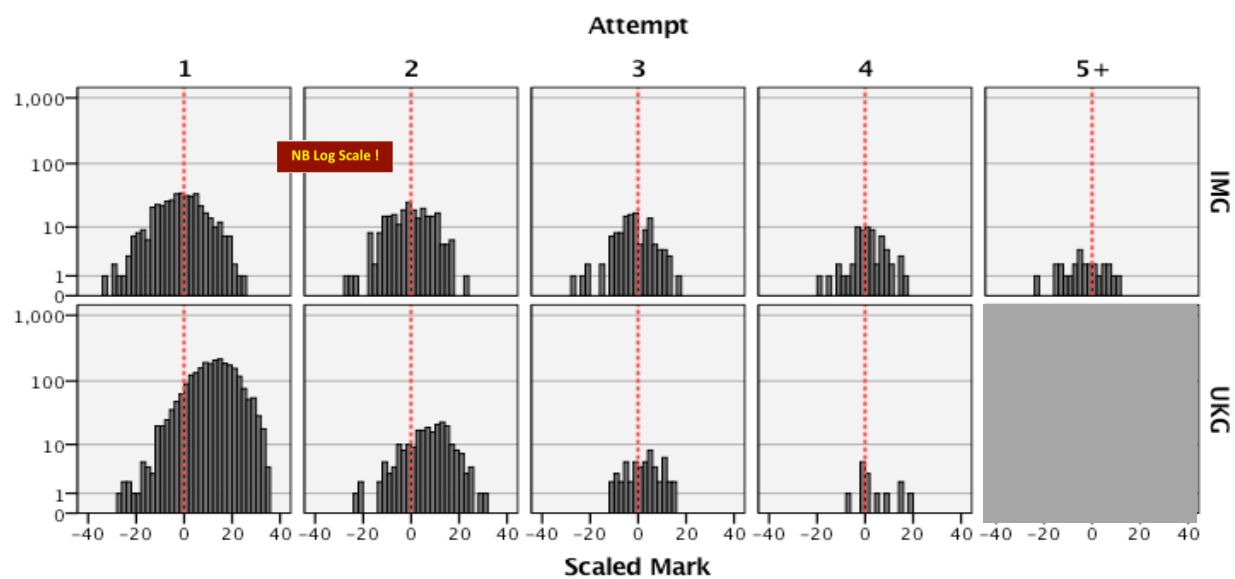




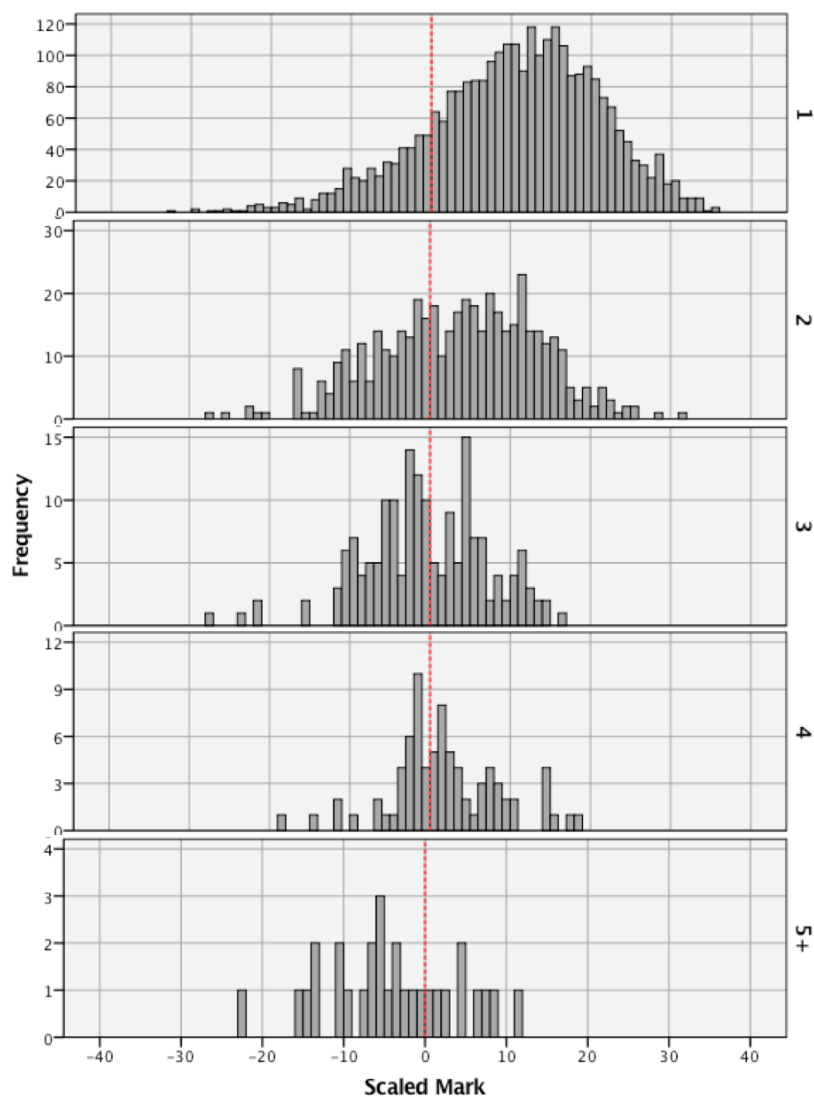
## 2. Result and scores, by attempt at the CSA: all graduates, and separated by source of primary medical qualification, UK/non-UK (all candidates)

### Candidates' results and scores by attempt, by source of PMQ

| Attempt | UK or Non-UK Graduate | No. of Candidates | Pass Rate | Scaled Mark |     |      |      |
|---------|-----------------------|-------------------|-----------|-------------|-----|------|------|
|         |                       |                   |           | Min         | Max | Mean | SD   |
| 1       | IMG                   | 416               | 45.7%     | -33         | 25  | -1.8 | 10.0 |
|         | UKG                   | 2403              | 90.4%     | -27         | 35  | 11.8 | 9.4  |
| 2       | IMG                   | 239               | 49.0%     | -28         | 22  | -0.7 | 9.0  |
|         | UKG                   | 221               | 79.6%     | -23         | 31  | 7.1  | 9.3  |
| 3       | IMG                   | 122               | 36.9%     | -28         | 16  | -2.2 | 7.6  |
|         | UKG                   | 52                | 63.5%     | -11         | 14  | 1.9  | 7.0  |
| 4       | IMG                   | 65                | 58.5%     | -19         | 17  | 0.9  | 6.8  |
|         | UKG                   | 14                | 57.1%     | -7          | 18  | 3.3  | 7.5  |
| 5+      | IMG                   | 26                | 34.6%     | -23         | 11  | -4.2 | 8.4  |
|         | UKG                   | 3                 | ★         | ★           | ★   | ★    | ★    |



All Candidates: score on CSA by attempt – vertically scaled to show contrast



### 3. Candidates with Disabilities: prevalence by PMQ and by attempt; outcomes

UK Equality Legislation supports examination candidates with disabilities in requesting 'reasonable accommodations' in regard to their disabilities, without affecting the standard of the examination. The tables below record the prevalence of such candidates in attempts at the CSA in 2016-17, together with the results of the assessments. Specific Learning Disability (SLD) is the disability most frequently reported. Disabilities other than SLD have been merged for reasons of small numbers and personal confidentiality, the commonest ones being 'other disabilities' and hearing impairment. Please bear in mind the earlier warning about possible confounding of background variables.

Note, importantly, that SLD may not be diagnosed until a second or later attempt at the assessment.

There were 237 disabled candidate-attempts at the CSA (see first, blue, table below), representing 6.7% of attempts (last year it was 6.0%). The second, green table shows the outcomes for these candidates

The overall number of successful attempts by candidates with disabilities was 151, a pass rate of 64%.

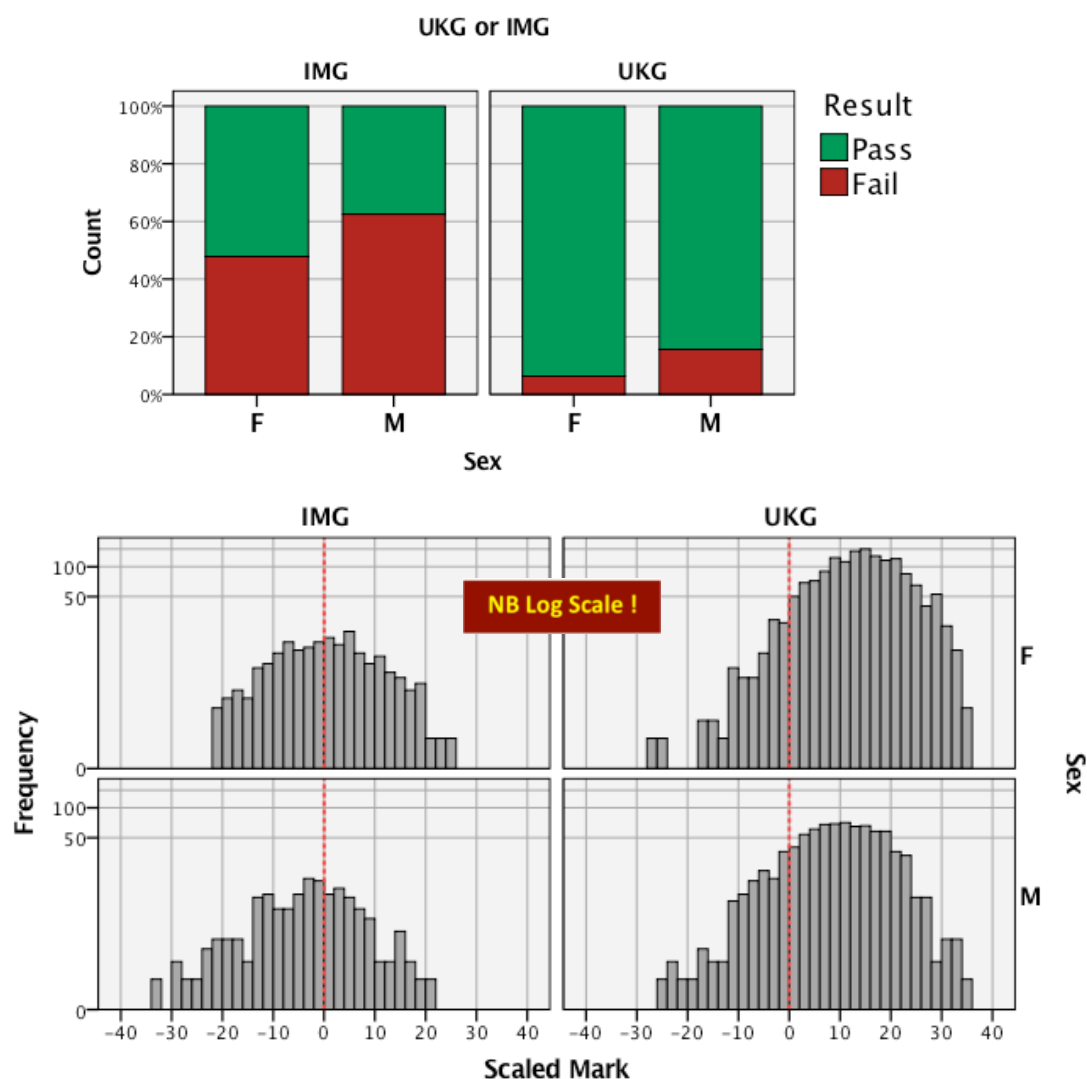
| Candidates with Disabilities: Numbers Sitting |             |     |     |    |    |       |
|-----------------------------------------------|-------------|-----|-----|----|----|-------|
| Disability                                    | CSA Attempt |     |     |    |    | Total |
|                                               | 1           | 2   | 3   | 4  | 5+ |       |
| Specific Learning Disability                  | 113         | 27  | 22  | 12 | 4  | 178   |
| Other (or multiple) Disabilities              | 34          | 9   | 10  | ★  | ★  | 59    |
| All Disabilities                              | 147         | 36  | 32  | 12 | ★  | 237   |
| No Disabilities                               | 2672        | 424 | 142 | 64 | 22 | 3324  |
| All Candidates                                | 2819        | 460 | 174 | 79 | 29 | 3561  |

| Candidates with Disabilities: Pass Rates (%) |             |       |       |        |       |       |
|----------------------------------------------|-------------|-------|-------|--------|-------|-------|
| Disability                                   | CSA Attempt |       |       |        |       | Total |
|                                              | 1           | 2     | 3     | 4      | 5+    |       |
| Specific Learning Disability                 | 77.9%       | 40.7% | 36.4% | 50.0%  | 50.0% | 64.6% |
| Other (or multiple) Disabilities             | 67.6%       | 55.6% | 50.0% | ★      | ★     | 61.0% |
| All Disabilities                             | 76.2%       | 50.0% | 50.0% | 108.3% | ★     | 63.7% |
| No Disabilities                              | 84.2%       | 65.3% | 45.8% | 57.8%  | 31.8% | 79.3% |
| All Candidates                               | 83.8%       | 63.7% | 44.8% | 58.2%  | 31.0% | 78.3% |

## C: Results by Individual Demographics (Candidates on first attempt, only)

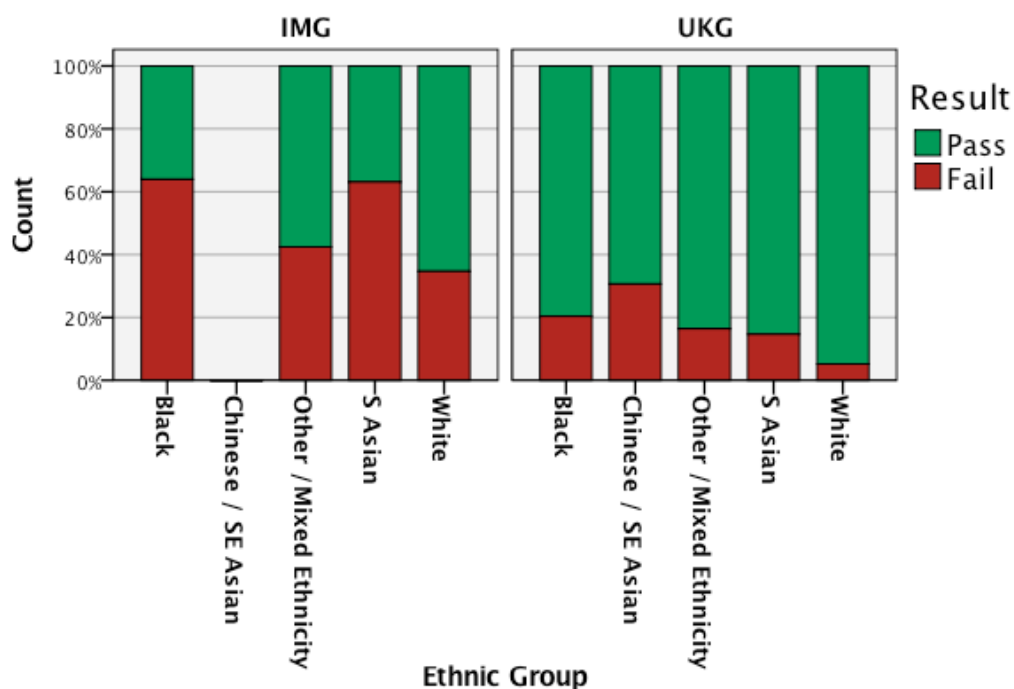
### 1. Result and scores by candidate sex, within source of PMQ, and within UK Medical School

| PMQ Group       | Performance by Candidate Sex |         |           |             |     |       |       |
|-----------------|------------------------------|---------|-----------|-------------|-----|-------|-------|
|                 | Group                        | N Cands | Pass Rate | Scaled Mark |     |       |       |
|                 |                              |         |           | Min         | Max | Mean  | SD    |
| Non-UK Graduate | Female                       | 232     | 52.2%     | -22         | 25  | -0.12 | 9.74  |
|                 | Male                         | 184     | 37.5%     | -33         | 20  | -3.80 | 10.01 |
|                 | All                          | 416     | 45.7%     | -33         | 25  | -1.75 | 10.02 |
| UK Graduate     | Female                       | 1557    | 93.6%     | -27         | 35  | 13.36 | 9.02  |
|                 | Male                         | 846     | 84.4%     | -25         | 35  | 8.95  | 9.50  |
|                 | All                          | 2403    | 90.4%     | -27         | 35  | 11.81 | 9.43  |
| All Graduates   | Female                       | 1789    | 88.3%     | -27         | 35  | 11.61 | 10.18 |
|                 | Male                         | 1030    | 76.0%     | -33         | 35  | 6.67  | 10.76 |
|                 | All                          | 2819    | 83.8%     | -33         | 35  | 9.81  | 10.66 |



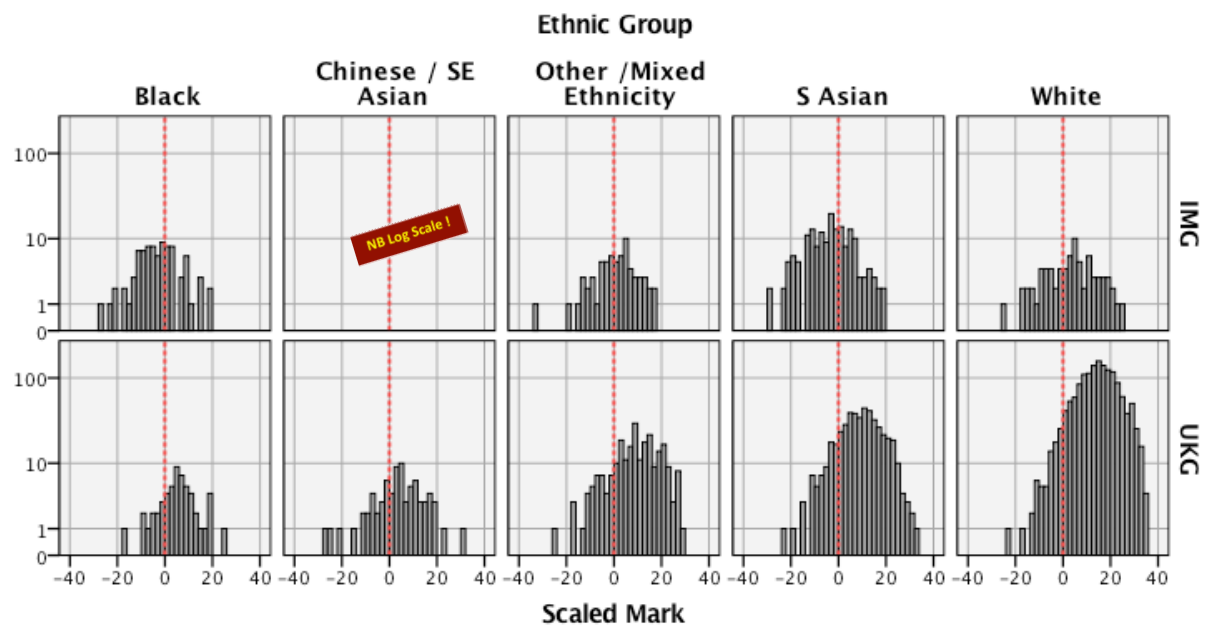
2. Result by classified candidate ethnicity, and separated by source of primary medical qualification, UK/non-UK graduates (1<sup>st</sup> attempt)

Note that 94 candidates did not provide information about their ethnicity



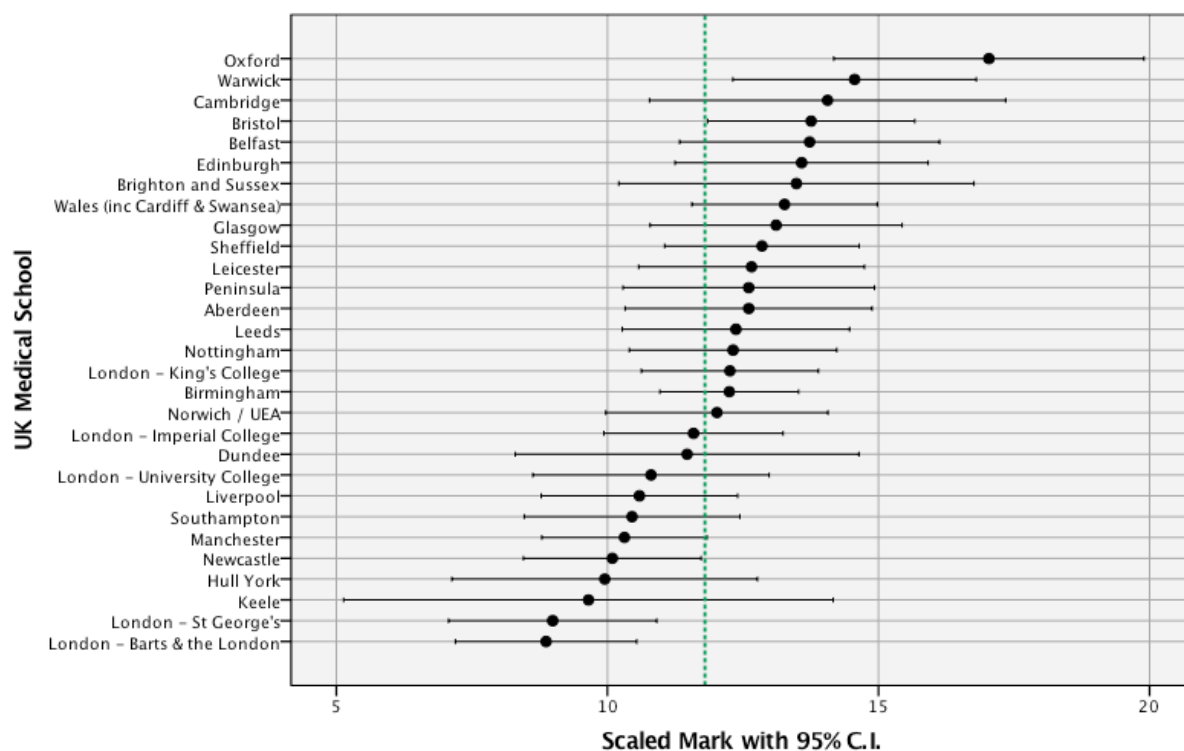
| PMQ Group     | Performance by Ethnic Group |         |               |             |     |      |        |
|---------------|-----------------------------|---------|---------------|-------------|-----|------|--------|
|               | Ethnic Group                | N Cands | Pass Rate (%) | Scaled Mark |     |      |        |
|               |                             |         |               | Min         | Max | Mean | SD     |
| IMG           | Black                       | 86      | 36.0%         | -28         | 18  | -3.4 | 9.2    |
|               | Chinese / SE Asian          | 0       | -             | -           | -   | -    | -      |
|               | Mixed / Other Ethnicity     | 66      | 57.6%         | -33         | 17  | 0.3  | 9.1    |
|               | S Asian                     | 168     | 36.9%         | -30         | 19  | -3.8 | 9.8    |
|               | All BME                     | 320     | 40.9%         | -33         | 19  | -2.9 | 9.6    |
|               | White                       | 75      | 65.3%         | -26         | 25  | 2.9  | 10.7   |
| UKG           | Black                       | 54      | 79.6%         | -17         | 25  | 5.0  | 7.9    |
|               | Chinese / SE Asian          | 75      | 69.3          | -27         | 31  | 3.35 | 10.482 |
|               | Mixed / Other Ethnicity     | 237     | 83.5%         | -26         | 28  | 8.8  | 10.0   |
|               | S Asian                     | 463     | 85.3%         | -23         | 32  | 8.9  | 9.1    |
|               | All BME                     | 829     | 83.0%         | -27         | 32  | 8.1  | 9.6    |
|               | White                       | 1501    | 94.8%         | -23         | 35  | 14.0 | 8.6    |
| All Graduates | Black                       | 140     | 52.9%         | -28         | 25  | -0.2 | 9.6    |
|               | Chinese / SE Asian          | 75      | 69.3%         | -27         | 31  | 3.4  | 10.5   |
|               | Mixed / Other Ethnicity     | 303     | 77.9%         | -33         | 28  | 7.0  | 10.4   |
|               | S Asian                     | 631     | 72.4%         | -30         | 32  | 5.5  | 10.8   |
|               | All BME                     | 1149    | 71.3%         | -33         | 32  | 5.1  | 10.8   |
|               | White                       | 1576    | 93.4%         | -26         | 35  | 13.5 | 9.1    |

94 candidates on first attempt withheld ethnicity information



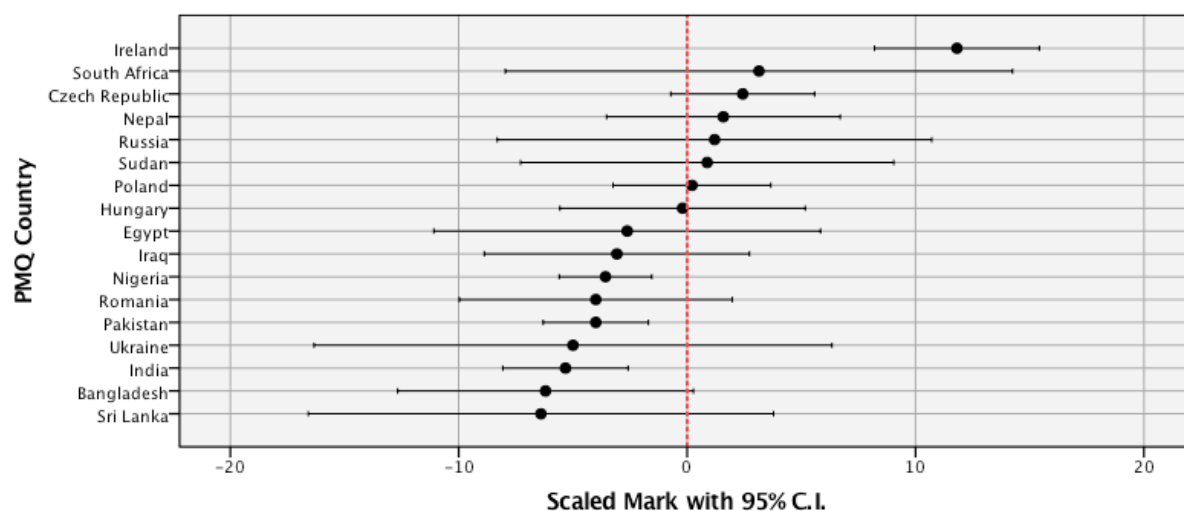
### 3. CSA Result and Scores by PMQ - UK medical school and IMG Country (1<sup>st</sup> attempt)

#### UK Graduates (by medical school)



| Performance by UK Medical School |         |               |             |     |       |       |
|----------------------------------|---------|---------------|-------------|-----|-------|-------|
| Medical School                   | N Cands | Pass Rate (%) | Scaled Mark |     |       |       |
|                                  |         |               | Min         | Max | Mean  | SD    |
| Aberdeen                         | 66      | 90.9%         | -11         | 32  | 12.61 | 9.27  |
| Belfast                          | 48      | 93.8%         | -12         | 28  | 13.73 | 8.26  |
| Birmingham                       | 165     | 92.7%         | -11         | 33  | 12.25 | 8.32  |
| Brighton and Sussex              | 35      | 91.4%         | -6          | 35  | 13.49 | 9.54  |
| Bristol                          | 91      | 93.4%         | -12         | 31  | 13.76 | 9.17  |
| Cambridge                        | 33      | 90.9%         | -9          | 33  | 14.06 | 9.26  |
| Dundee                           | 49      | 87.8%         | -17         | 28  | 11.47 | 11.04 |
| Edinburgh                        | 67      | 89.6%         | -15         | 30  | 13.58 | 9.57  |
| Glasgow                          | 72      | 88.9%         | -25         | 33  | 13.11 | 9.89  |
| Hull York                        | 60      | 83.3%         | -18         | 35  | 9.95  | 10.92 |
| Keele                            | 20      | 80.0%         | -9          | 25  | 9.65  | 9.65  |
| Leeds                            | 81      | 97.5%         | -26         | 33  | 12.37 | 9.48  |
| Leicester                        | 82      | 91.5%         | -10         | 32  | 12.66 | 9.48  |
| Liverpool                        | 117     | 88.0%         | -11         | 32  | 10.59 | 9.89  |
| London - Barts & the London      | 114     | 85.1%         | -12         | 29  | 8.87  | 9.01  |
| London - Imperial College        | 97      | 92.8%         | -17         | 31  | 11.59 | 8.21  |
| London - King's College          | 131     | 89.3%         | -8          | 33  | 12.26 | 9.45  |
| London - St George's             | 96      | 88.5%         | -17         | 32  | 8.99  | 9.48  |
| London - University College      | 87      | 87.4%         | -17         | 32  | 10.80 | 10.23 |
| Manchester                       | 169     | 87.6%         | -27         | 33  | 10.31 | 10.04 |
| Newcastle                        | 121     | 88.4%         | -12         | 32  | 10.09 | 9.10  |
| Norwich / UEA                    | 51      | 94.1%         | -4          | 31  | 12.02 | 7.29  |
| Nottingham                       | 101     | 90.1%         | -23         | 30  | 12.32 | 9.70  |
| Oxford                           | 27      | 100.0%        | 0           | 29  | 17.04 | 7.24  |
| Peninsula                        | 61      | 93.4%         | -7          | 32  | 12.61 | 9.06  |
| Sheffield                        | 87      | 94.3%         | -6          | 32  | 12.85 | 8.41  |
| Southampton                      | 97      | 85.6%         | -19         | 35  | 10.45 | 9.87  |
| Wales (inc Cardiff & Swansea)    | 101     | 93.1%         | -11         | 32  | 13.27 | 8.67  |
| Warwick                          | 77      | 97.4%         | -23         | 34  | 14.56 | 9.89  |

**Non-UK Graduates (by country; data only shown for countries with  $\geq 5$  candidates: 1<sup>st</sup> attempt)**

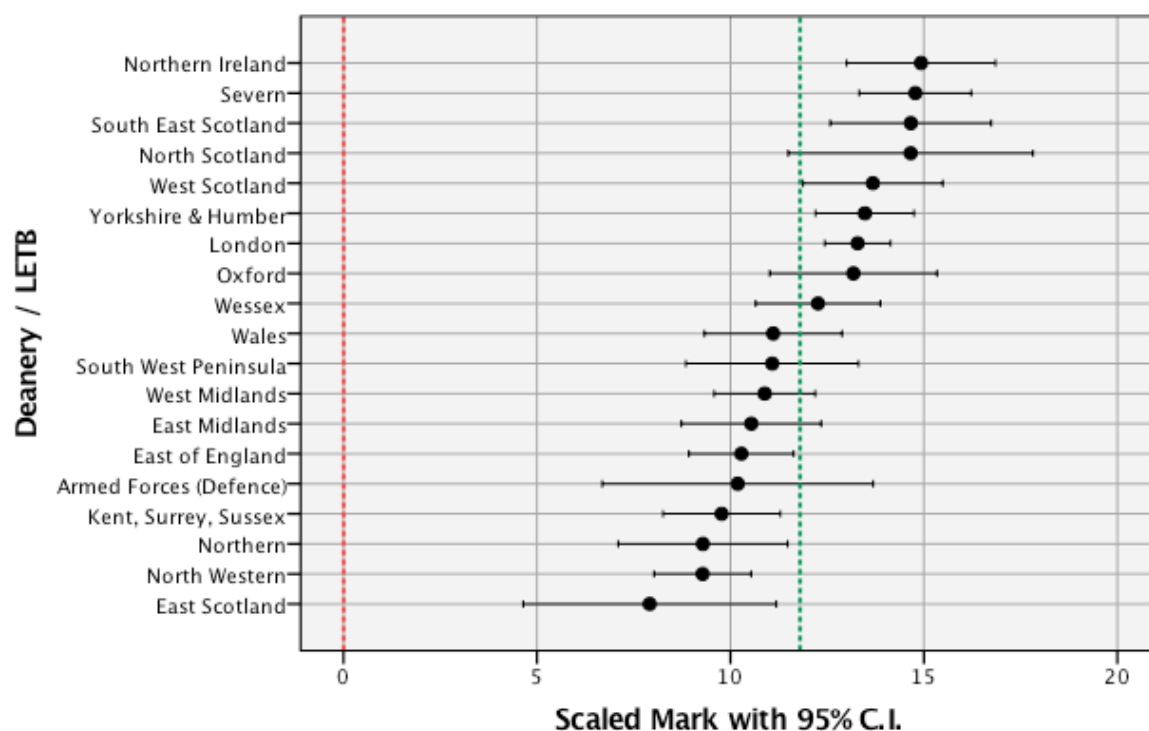


| Performance by Non-UK Graduates by Country of PMQ |         |               |             |     |       |       |
|---------------------------------------------------|---------|---------------|-------------|-----|-------|-------|
| Country of PMQ                                    | N Cands | Pass Rate (%) | Scaled Mark |     |       |       |
|                                                   |         |               | Min         | Max | Mean  | SD    |
| Bangladesh                                        | 10      | 30.0%         | -23         | 8   | -6.20 | 9.05  |
| Czech Republic                                    | 30      | 70.0%         | -14         | 17  | 2.43  | 8.43  |
| Egypt                                             | 8       | 50.0%         | -19         | 12  | -2.63 | 10.13 |
| Hungary                                           | 5       | 60.0%         | -7          | 4   | -0.20 | 4.32  |
| India                                             | 52      | 30.8%         | -30         | 16  | -5.33 | 9.85  |
| Iraq                                              | 13      | 46.2%         | -26         | 10  | -3.08 | 9.60  |
| Ireland                                           | 16      | 93.8%         | -3          | 25  | 11.81 | 6.78  |
| Nepal                                             | 12      | 66.7%         | -14         | 18  | 1.58  | 8.05  |
| Nigeria                                           | 73      | 35.6%         | -28         | 18  | -3.58 | 8.69  |
| Pakistan                                          | 78      | 37.2%         | -30         | 19  | -4.00 | 10.23 |
| Poland                                            | 19      | 52.6%         | -12         | 15  | 0.21  | 7.17  |
| Romania                                           | 8       | 50.0%         | -14         | 5   | -4.00 | 7.15  |
| Russia                                            | 5       | 60.0%         | -8          | 12  | 1.20  | 7.66  |
| South Africa                                      | 7       | 42.9%         | -9          | 20  | 3.14  | 12.01 |
| Sri Lanka                                         | 5       | 20.0%         | -16         | 3   | -6.40 | 8.20  |
| Sudan                                             | 8       | 50.0%         | -11         | 15  | 0.88  | 9.78  |
| Ukraine                                           | 7       | 42.9%         | -17         | 10  | -5.00 | 12.26 |

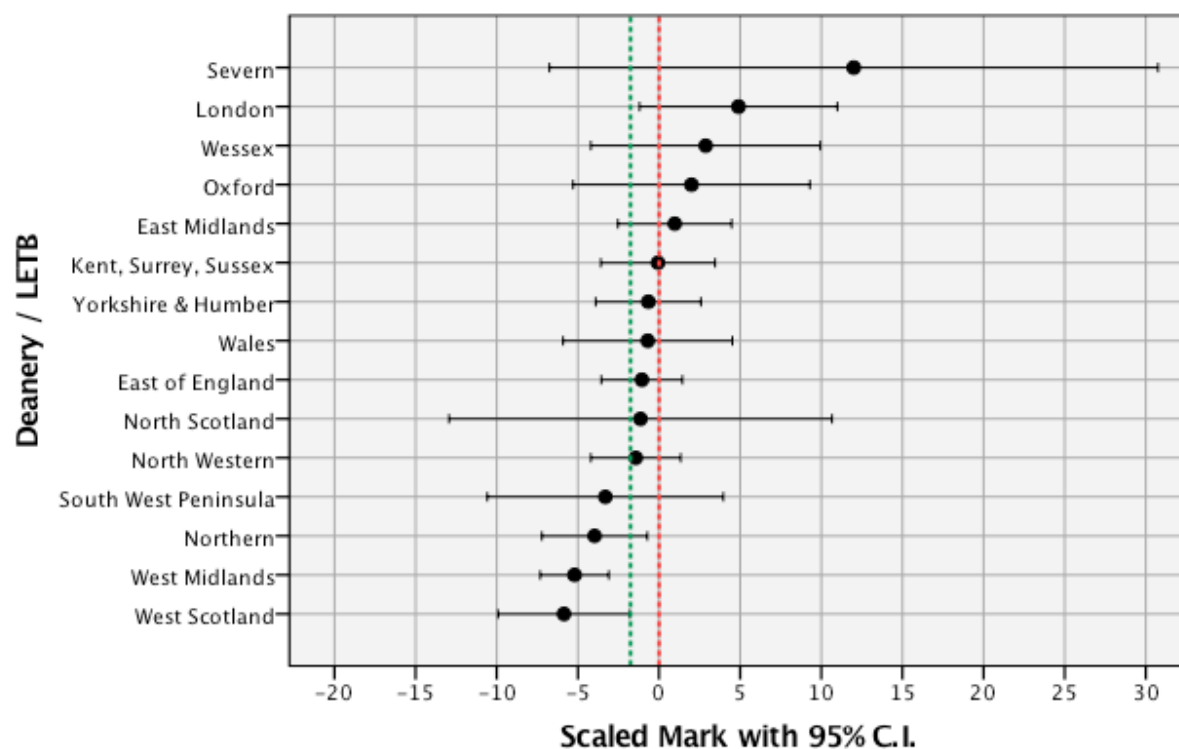
## D: Performance by Training Deanery/LETB

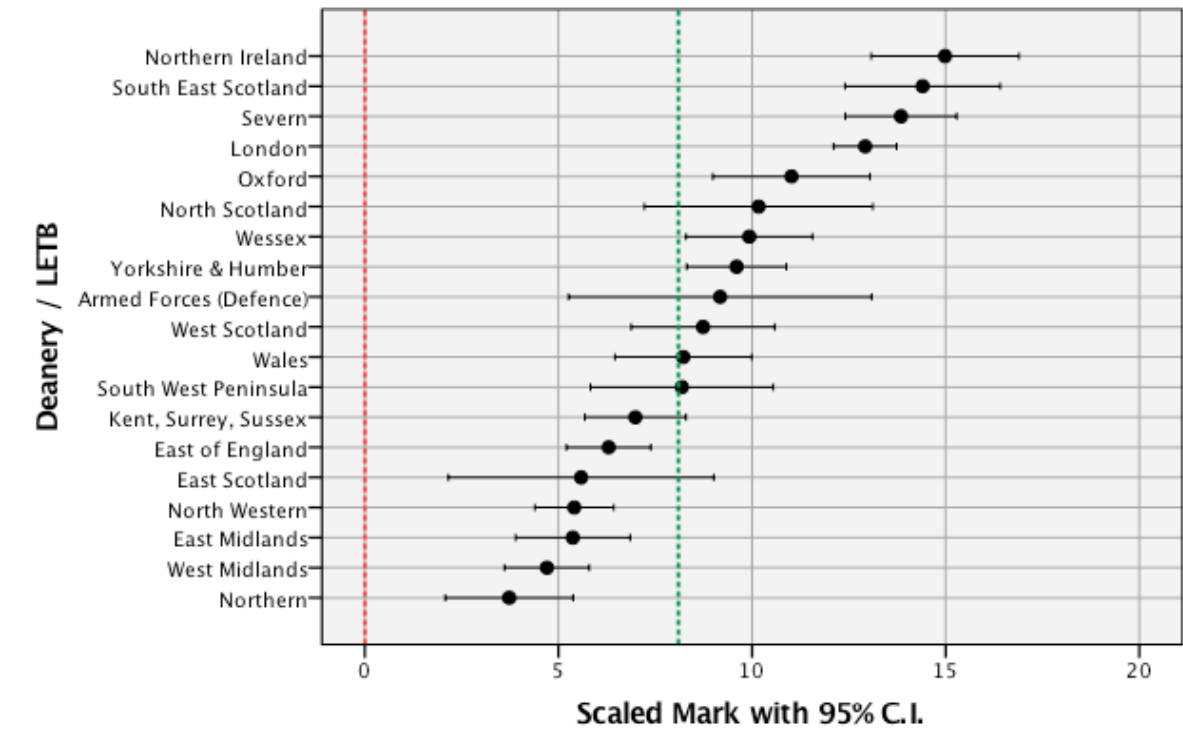
### 1. Error bar graphs of Candidate Scores by Deanery, overall, and for first attempts by source of PMQ

#### UK Graduates, First Attempt



#### Non-UK Graduates, First Attempt





## E: Summary of CSA Feedback Statements

The table gives the prevalence of the numbered feedback statements given by examiners to individual candidates' case performances, by the main two candidate PMQ groups.

The first column of figures shows the percentage of the total of all cases on any *failed* attempt which attracted that feedback comment: the feedback comments have then been sorted in order of prevalence for this group and those applying to 10% or more of failed candidates are highlighted.

The second column of figures shows the percentage of the total of all cases on *all* attempts which attracted that feedback comment.

| <b>UK Graduates</b>                                                                                                                 | <b>Failing Candidates only: percentage of all cases seen</b> | <b>All Candidates: percentage of all cases seen</b> |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------|
| <b>07: Does not develop a management plan reflecting knowledge of current best practice</b>                                         | <b>22%</b>                                                   | 7%                                                  |
| <b>02: Does not recognise the issues or priorities in the consultation</b>                                                          | <b>18%</b>                                                   | 9%                                                  |
| <b>06: Does not make the correct working diagnosis or identify an appropriate range of differential possibilities</b>               | <b>12%</b>                                                   | 12%                                                 |
| <b>04: Does not identify abnormal findings or results or fails to recognise their implications</b>                                  | <b>12%</b>                                                   | 6%                                                  |
| <b>08: Does not show appropriate use of resources, including aspects of budgetary governance</b>                                    | <b>12%</b>                                                   | 3%                                                  |
| <b>10: Does not demonstrate an awareness of management of risk or make the patient aware of relative risks of different options</b> | <b>11%</b>                                                   | 7%                                                  |
| <b>15: Does not develop a shared management plan, demonstrating an ability to work in partnership with the patient</b>              | <b>10%</b>                                                   | 5%                                                  |
| 16: Does not use language and/or explanations that are relevant and understandable to the patient                                   | 9%                                                           | 3%                                                  |
| 13: Poor active listening skills and use of cues. Consulting may appear formulaic, and lacks fluency                                | 9%                                                           | 3%                                                  |
| 12: Does not appear to develop rapport or show awareness of patient's agenda, health beliefs and preferences                        | 8%                                                           | 3%                                                  |
| 01: Disorganised / unstructured consultation                                                                                        | 8%                                                           | 3%                                                  |
| 03: Shows poor time management                                                                                                      | 8%                                                           | 5%                                                  |
| 05: Does not undertake physical examination competently, or use instruments proficiently                                            | 8%                                                           | 5%                                                  |
| 14: Does not identify or use appropriate psychological or social information to place the problem in context                        | 7%                                                           | 3%                                                  |
| 09: Does not make adequate arrangements for follow-up and safety-netting                                                            | 5%                                                           | 1%                                                  |
| 11: Does not attempt to promote good health at opportune times in the consultation                                                  | 2%                                                           | 1%                                                  |

| <b>Non-UK Graduates</b>                                                                                                      | <b>Failing Candidates only: percentage of all cases seen</b> | <b>All Candidates: percentage of all cases seen</b> |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------|
| 07: Does not develop a management plan reflecting knowledge of current best practice                                         | 23%                                                          | 9%                                                  |
| 02: Does not recognise the issues or priorities in the consultation                                                          | 17%                                                          | 14%                                                 |
| 13: Poor active listening skills and use of cues. Consulting may appear formulaic, and lacks fluency                         | 13%                                                          | 10%                                                 |
| 15: Does not develop a shared management plan, demonstrating an ability to work in partnership with the patient              | 13%                                                          | 10%                                                 |
| 16: Does not use language and/or explanations that are relevant and understandable to the patient                            | 13%                                                          | 10%                                                 |
| 10: Does not demonstrate an awareness of management of risk or make the patient aware of relative risks of different options | 12%                                                          | 10%                                                 |
| 08: Does not show appropriate use of resources, including aspects of budgetary governance                                    | 11%                                                          | 5%                                                  |
| 06: Does not make the correct working diagnosis or identify an appropriate range of differential possibilities               | 11%                                                          | 19%                                                 |
| 01: Disorganised / unstructured consultation                                                                                 | 10%                                                          | 7%                                                  |
| 04: Does not identify abnormal findings or results or fails to recognise their implications                                  | 10%                                                          | 8%                                                  |
| 03: Shows poor time management                                                                                               | 10%                                                          | 9%                                                  |
| 12: Does not appear to develop rapport or show awareness of patient's agenda, health beliefs and preferences                 | 9%                                                           | 7%                                                  |
| 05: Does not undertake physical examination competently, or use instruments proficiently                                     | 8%                                                           | 7%                                                  |
| 09: Does not make adequate arrangements for follow-up and safety-netting                                                     | 6%                                                           | 1%                                                  |
| 14: Does not identify or use appropriate psychological or social information to place the problem in context                 | 6%                                                           | 4%                                                  |
| 11: Does not attempt to promote good health at opportune times in the consultation                                           | 2%                                                           | 1%                                                  |

## 5: Overview, Inter-component Statistics, and Test Quality Statistics

### Overview of pass-rates in AKT and CSA by Protected Characteristics and source of PMQ

The following table summarises data from elsewhere in this report, bringing together crude pass rates of AKT and CSA candidates on their first attempt by 'protected characteristics' (as defined by the Equality Act (2010) and as then collected by the RCGP), also by source of their primary medical qualification. Please recall an earlier warning that many of these variables are confounded.

| Candidate Performance 2016-2017 on First Attempt by<br>'Protected Characteristics' (also whether UK or International Graduate)<br><i>Cells with high proportions (5%+) of missing data highlighted in red</i> |               |                   |                |                   |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|----------------|-------------------|----------------|
| Candidate<br>Characteristic                                                                                                                                                                                   |               | AKT               |                | CSA               |                |
|                                                                                                                                                                                                               |               | Number<br>Sitting | Pass Rate<br>% | Number<br>Sitting | Pass Rate<br>% |
| Sex*                                                                                                                                                                                                          | Male          | 830               | 74.2%          | 1030              | 76.0%          |
|                                                                                                                                                                                                               | Female        | 1547              | 81.5%          | 1789              | 88.3%          |
| Race**                                                                                                                                                                                                        | BME           | 921               | 65.8%          | 1149              | 71.3%          |
|                                                                                                                                                                                                               | White         | 1349              | 88.4%          | 1576              | 93.4%          |
| Race***<br>(UK Graduates only)                                                                                                                                                                                | BME           | 594               | 78.3%          | 829               | 83.0%          |
|                                                                                                                                                                                                               | White         | 1286              | 89.7%          | 1501              | 94.8%          |
| PMQ Source                                                                                                                                                                                                    | UK Graduate   | 2408              | 85.8%          | 2403              | 90.4%          |
|                                                                                                                                                                                                               | IMG           | 476               | 46.4%          | 416               | 45.7%          |
| Disability                                                                                                                                                                                                    | Reported****  | 145               | 71.7%          | 147               | 76.2%          |
|                                                                                                                                                                                                               | None reported | 2739              | 79.7%          | 2672              | 84.2%          |
| All Candidates                                                                                                                                                                                                |               | 2884              | 79.3%          | 2819              | 83.8%          |

\* AKT: 507 (17.6%) - no information (CSA: information complete)

\*\* AKT: 614 (21.3%) CSA: 94 (3.3%) - no information

\*\*\* AKT: 528 (21.9%) - no information CSA: 73 (3.0%) - no information

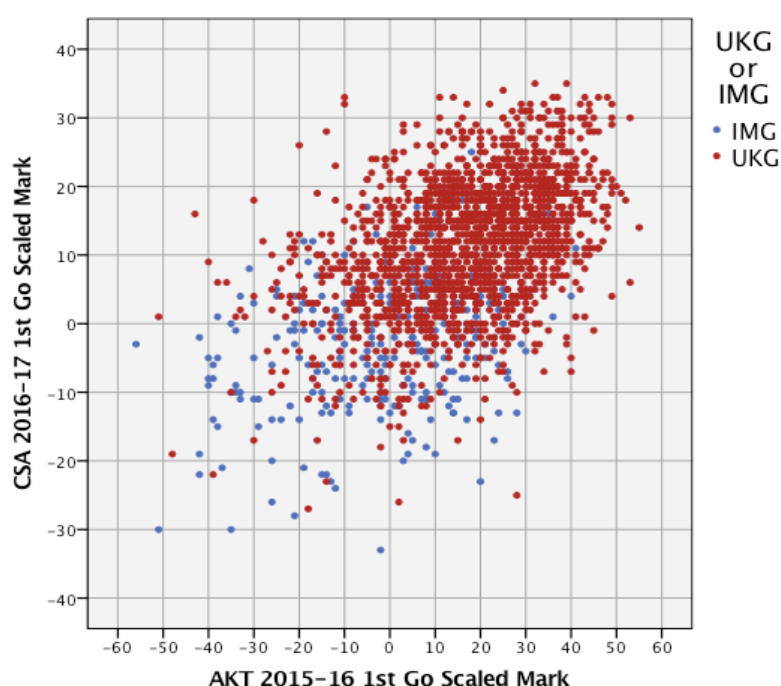
\*\*\*\* SLD has highest prevalence = 74.5% of all in AKT, 76.9% of all in CSA

### Inter-component Statistics

Currently it is only possible to make comparisons between the performance of candidates between the AKT and the CSA, as the Workplace-Based Assessment data are not readily accessible for comparative analysis. Most candidates make their first attempt at the AKT in ST2 and at the CSA at some point in ST3.

The accompanying scatterplot shows the most recent analysis from these datasets showing the relationship between the AKT and CSA scores of 2819 candidates taking each component for the first time, the AKT in 2015-16 and the CSA in 2016-2017. Overall, the correlation between the two is 0.51 (cf last three years 0.52, 0.52 and 0.53), this suggesting shared variance of 26%.

The chart contrasts UK and non-UK graduates' performance: the relationship between the two scores is not greatly dissimilar for the two groups: UKG  $r = 0.43$ ,  $r^2 = 0.18$ ; IMG  $r = .37$ ,  $r^2 = 0.14$ .



## Test Quality Information: AKT

For the diets of the AKT, the reliability, as evidenced by the alpha co-efficient, and the accuracy, indicated by the measurement error estimate, or SEM, is straightforwardly calculated. Occasionally, underperforming items need to be removed from the calculated scores. The current year's quality statistics – similar to all those of recent years – are shown in the accompanying table.

| AKT Delivery | No of Items scored | Alpha | SEm  |
|--------------|--------------------|-------|------|
| October 2016 | 200                | 0.88  | 2.8% |
| January 2017 | 200                | 0.90  | 2.8% |
| April 2017   | 199                | 0.91  | 2.9% |

These psychometric quality indicators continue to describe a multi-choice assessment which is performing to an excellent standard.

## Test Quality Information: CSA

Estimating and representing the reliability of a clinical test of the form of the CSA is more difficult using classical psychometric test theory. In a multi-choice test such as the AKT, all the candidates have to respond to all the test items, which are exactly the same for everyone (1000+ candidates/diet). The 'items' (stations or cases) in the CSA are only the same for a day at a time (max 78 candidates), and indeed there are different sets of examiners on each of the three circuits—so there is only exact comparability for 26 candidates. This is of course not at all unusual in a high stakes clinical test, where a variety of imperatives conflict—eg item consistency vs test security and fairness. The number taking the CSA moreover varies considerably between diets.

Thus the quality of the CSA is monitored qualitatively as well as quantitatively, the latter at a number of levels of detail with different objectives—but with reliability and fairness always foremost in mind. Qualitative monitoring involves 1¼-hour-long examiner, role-player and case standardization sessions at the beginning of each day, and examiner performance monitoring, quality assurance and training.

Reliability (eg an alpha coefficient) is explored with reference to both days and circuits, towards case, palette and examiner monitoring and development. Daily alpha coefficients—probably something which it is fair to assess, combining circuits across examiners—give a reasonable indication of reliability, but they are also very dependent on the variance in candidate ability. And analyses show that the range and variance in ability of candidate groups can vary greatly day on day, despite administrative measures towards harmonisation: here, ability can be estimated not just from a rather self-fulfilling analysis of CSA performance, but by looking at predictive surrogates (eg degree origin) and correlates (eg AKT performance). Finally, the alpha coefficient is estimated on the basis of scores which have relatively limited variance (0.9 on a case, currently), tending to minimise the values. As a result, the test measurement error, indicated by the standard error of measurement, may be a more appropriate overall indicator of quality. That said, current and recent quality statistics – alpha and the SEM – appear in the accompanying table.

| Year      | No of Cases (stations) in CSA | Alpha: range across days | Average alpha across days | SEm: range across days | Average SEM across days |
|-----------|-------------------------------|--------------------------|---------------------------|------------------------|-------------------------|
| 2010-2011 | 13                            | 0.64 – 0.86              | 0.77                      | 5.1 % - 5.4 %          | 5.2%                    |
| 2011-2012 | 13                            | 0.64 – 0.86              | 0.77                      | 4.5 % - 5.6 %          | 5.1%                    |
| 2012-2013 | 13                            | 0.64 – 0.87              | 0.78                      | 4.3 % - 5.4 %          | 5.0%                    |
| 2013-2014 | 13                            | 0.56 – 0.85              | 0.74                      | 4.4 % - 5.6 %          | 4.9%                    |
| 2014-2015 | 13                            | 0.55 – 0.85              | 0.72                      | 4.4% - 5.2%            | 4.8%                    |
| 2015-2016 | 13                            | 0.55 – 0.82              | 0.72                      | 4.4% - 5.4%            | 4.7%                    |
| 2016-2017 | 13                            | 0.49 – 0.86              | 0.71                      | 4.51 - 5.16%           | 4.8%                    |

\* \* \*