MRCGP
Applied Knowledge Test (AKT) – FAQs on Standard setting

How are the questions selected?
There is a bank of over 3000 questions which cover the topics specified in the curriculum, which is available on the website. The AKT Content Guide, also on the website, lists the topics which could be tested in the AKT, although it is not an exhaustive list. For each AKT, the 200 questions are selected to reflect the breadth of the curriculum in the proportions as follows:

Clinical medicine 80%
Critical appraisal and evidence-based practice 10%
Organisational, ethical and regulatory frameworks 10%

How was the pass mark set originally?
The pass mark for the first AKT, administered in October 2007, was set using Angoff’s methodology, the most widely-used approach to standard-setting for multiple-choice tests. As well as MRCGP CSA and AKT examiners, representatives of the Deaneries, the BMA, trainers, trainees, newly qualified GPs, and lay and patient representatives took part in the judging. After detailed instructions and examples of scoring, each participant individually judged all of the 200 questions in the AKT and scored the likelihood of the “just passing candidate” getting it correct. The scores were collated and a mean score calculated with one standard error of measurement added.

How is the standard maintained from one session to the next?
The standard is maintained by the technique of linear equating. A certain number of questions appear in more than one version of the test. By monitoring the performance of these questions it is possible to gauge whether the other questions are easier or more difficult than those in other versions of the AKT, and an adjustment can be made to the pass mark in order to keep the standard constant.

Have you repeated your original standard-setting exercise?
We plan to repeat the Angoff procedure (see How was the pass mark set originally?) at least once every three years, and more frequently if circumstances change. The second such meeting was held in November 2009, two years after the original meeting and the standard applied to AKT 8 (January 2010). This took account of changes in the pattern of candidates sitting the AKT. For example, in October 2007 many of the candidates were using the AKT to complete the old-style modular MRCGP; by October 2009 such candidates had become very few in number. It was also recognised that the pattern of entry to GP training had changed with the adoption of a more rigorous selection process.

The Angoff procedure has been repeated after 3 years for AKT 17 (January 2013), and again for AKT 22 (October 2014) when the length of time allowed for the test was increased and a calculator was made available. The next standard setting meeting is scheduled for AKT 25 (October 2015).

Why does the pass mark vary from session to session?
Although efforts are made to compose different versions of the AKT which are of equal
standard - for example, by having the same number of questions on a given topic - in practice it is unlikely that any two sets of 200 questions will be equally difficult. To preserve the standard, the pass mark is raised for easier examinations and lowered for more demanding ones, using the technique of linear equating.

**Do you pass a fixed proportion of the candidates?**
No. Because the pass mark for the examination is determined before the actual results for a given AKT are known, the proportion of passing candidates is not predetermined. In principle, therefore, all the candidates, or none of them, could be successful.

**What quality control procedures do you have?**
After each session of the AKT the performance of each question is reviewed by an independent statistician who refers to the examiners any questions which fall outside agreed parameters. Those questions are discussed by the examiners under "examination conditions": that is, they do not know the intended answer. Depending on their decision, questions which do not pass the quality control checks may be discounted from the total score. This has happened occasionally, but does not happen frequently, and typically at most one of the 200 questions is suppressed.

Before questions are used in the AKT, they are scrutinised for accuracy and checked for ambiguities, but sometimes guidelines and evidence change shortly before they are used. The quality control check ensures that these rare occurrences are identified and dealt with.

**How confident are you that the AKT is an accurate measure?**
The accuracy of an examination is tested by estimating its reliability. This is expressed as a coefficient, on a scale from 0 to 1, with a value of 0.8 widely accepted as the minimum desirable. The AKT consistently shows values close to 0.9 as estimated by Cronbach's alpha coefficient.
When the standard is set, account is taken of the inherent error of measurement, which becomes smaller as the test reliability increases.

Updated April 2015