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Assuring the quality of an applied knowledge assessment for licensing (MRCGP) in UK general practice: happiness is not just a high alpha!

Paul Milne, Hilton Dixon, Carol Blow & A Niroshan Siriwardena

On behalf of the AKT Development Group

Promoting Excellence in Family Medicine

The AKT

- The Applied Knowledge Test (AKT) is a summative assessment of the knowledge base that underpins independent general practice within the United Kingdom.

- Candidates who pass this assessment will have demonstrated their competence in applying knowledge at a level which is sufficiently high for independent practice.

The MRCGP

→ **Applied Knowledge Test**

Timed multiple choice question paper.

→ **Workplace Based Assessment**

Portfolio based with variety of testing formats to test doctor in his/her place of work, doing what he/she *actually* does.

→ **Clinical Skills Assessment**

Clinical consulting skills examination, based on cases from general practice, with role players as 'patients', and experienced assessors.

Process of item production

- Group members
  - Active general practice
  - Person specification including sample items
  - Time commitment and role continuity
  - Individual support and feedback on group and item performance
- Item writing
  - To international standards
  - Referenced to high-quality evidence
  - Items peer-reviewed and refined
  - Question areas selected against curriculum blueprint

Item bank

- Platform: CERTS®
- Security
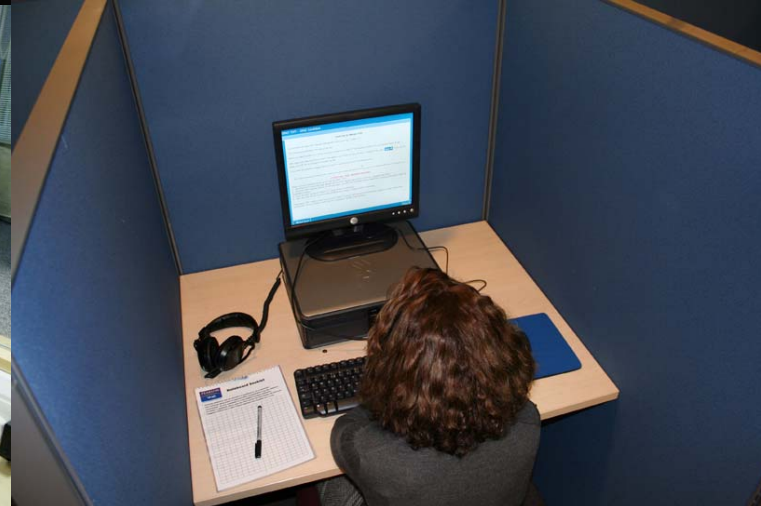- Knowledge bank manager
- Functionality
- Format

Test production of each AKT

- Selection grid -. 80% clinical medicine, 10% administration and 10% research and statistics
- Proofreading
- Clinical content and references
- Anchor items
- Item performance

Post - myocardial infarction

A 54-year-old man had a myocardial infarction three weeks ago, and attends surgery to obtain repeat prescriptions of his drugs. He is attending cardiac rehabilitation classes and has no current symptoms. He had an echocardiogram as an in-patient, which was normal. His blood pressure today is 131/81 and his pulse is 84/min and regular. His current medication is:

aspirin

bisoprolol

isosorbide mononitrate

simvastatin

Which is the SINGLE MOST appropriate ADDITIONAL medication for this patient? Select ONE option only

A   Amiodarone

B   Diltiazem

C   Ramipril

D   Spironolactone

E   Verapamil

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Eye problems
A 42 year old woman who has previously had treatment for cervical CIN 2 has had a lump affecting her left upper lid for three months. It is asymptomatic

Which is the SINGLE MOST likely diagnosis in this patient?
Select ONE option only

A. Entropion
B. Meibomian cyst
C. Metastatic deposit
D. Stye
E. Xanthelasma

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Drug dosage calculation

A three-year-old child has been diagnosed with generalised tonic-clonic epilepsy and the paediatric neurologist has recommended treatment with sodium valproate. The starting dose to be administered is 10 mg/kg twice daily. The child weighs 20kg and sodium valproate solution contains 200 mg/5 ml.

What VOLUME (in mls) of sodium valproate solution should be administered at EACH dose?

Give ONE numerical answer only

_____ mls

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Results handling and standard setting

- Raw data
- Post-test review of items
- Test information
- Reliability
- Candidate demographics
- Standard setting

Validity of the AKT

- ➜ Item writers
- ➜ International standard item formats
- ➜ Training/feedback
- ➜ Blueprint with curriculum
- ➜ Formal validation studies
- ➜ Complaints

Siriwardena AN, Dixon H, Blow C, Irish B, Milne P. Performance and views of examiners in the Applied Knowledge Test for the nMRCGP licensing examination. *British Journal of General Practice* 2009; **59**:110-113

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Reliability of old vs. new items

	Test reliability	Old questions		New questions	
		Actual	Predicted	Actual	Predicted
AKT 11	0.88	0.84 (112)	0.90 (200)	0.70 (88)	0.84 (200)
AKT 12	0.92	0.90 (129)	0.93 (200)	0.78 (71)	0.91 (200)
AKT 13	0.91	0.89 (141)	0.92 (200)	0.66 (59)	0.92 (200)

Predicted Cronbach's alpha using Spearman-Brown Prophecy Formula to adjust each to a length of 200 items

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Conclusion

The meticulous attention to detail through the construction of both items and the test itself helps provide assurance that the AKT is fit for purpose as a licensing examination and that candidates passing the test have the required knowledge for fitness to practice.

The use of non pre-trialled questions enables new guidance to be tested, does not significantly detract from the overall reliability of the test and supports their continued inclusion.

The AKT Development Group

- Carol Blow – *AKT Clinical Lead*
- Chris Elfes
- Paul Milne
- Kate Neden
- David Smalley
- Hilton Dixon
- James Larcombe
- Gordon McLeay
- Jo Richardson
- Niroshan Siriwardena
- *John Foulkes – Psychometric advisor*
- *Amanda Russell – Knowledge Test Manager*

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Thank you