



# European Examination in General Cardiology

Status Report and Future  
Perspectives  
Robert Wright (UK)  
31st October 2015



# Rob Wright Background

- Interventional Cardiologist in Middlesbrough, UK
- Accredited in Cardiology and General Medicine
- MRCP(UK) examination
  - Involved since 1999 in writing MCQ questions
  - Chairman of Part 2 Standard Setting 2009
  - Chairman of Part 2 Examination Board 2015
- Cardiology Knowledge Based Examination
  - Involved since 2005 writing MCQs
  - Chairman of Standard Setting 2010
  - Member of UEMS EEGC Examination Board 2014

Why?

# Why?

- Who
- When
- Where
- How
- Where to

# EEGC - Why?

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- To assess acquisition of knowledge required to underpin clinical practice
- To test the application of knowledge and clinical reasoning – not simple recall of facts
- To base MCQs predominantly on core clinical presentations across the Curriculum

# EEGC - Core Values

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- Fair
- Relevant to Clinical Practice



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- Relevant to Clinical Practice
  
- Not a barrier to career progression
- Not a qualification in clinical competence
- A component of a broad-based overall assessment of ability

# EEGC – Reference Points

- ESC Guidelines
- ESC Textbook
- ESC Curriculum
  
- International Guidelines
- Core International Journals
- Core International Textbooks

# EEGC – Who?

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- Trainees who are in the 3rd year of a specialist Cardiology Training Programme
- In 2015, 276 candidates from 6 National Societies
- Greece      34
- Ireland      8
- Netherlands   57
- Portugal      11
- Spain        57
- UK            113

# EEGC – How Many?



# EEGC – When?

- Single sitting in June



# EEGC – Where?

- Pearson Vue Test Centres
- Computer delivered Exam

# EEGC – How?

- 120 MCQs
- Best of 5 answers
- Introduced with a question stem describing a clinical scenario

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- 120 MCQs
- Best of 5 answers
- Introduced with a question stem describing a clinical scenario
  
- 84 text only questions
- 24 questions with an image (12 ECG)
- 12 questions with a video

# EEGC – How?

- 120 MCQs – divided into 5 equal groups
- General Cardiology
- Ischaemic Heart Disease
- Non-Invasive Imaging
- Rhythm disorders
- Valvular and Myocardial Disease

# EEGC - 2015 Exam Process

- Question Writing Group
- Selection of Questions – February 13th
- Standard Setting meeting – March 12,13th
- Final Review and Proof Reading– May 13th
- Candidates took the test – June 18th
- Analysis of test results
- Agreeing a pass mark
- Distribution of exam results

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- Review at MCQ meeting (January / August)

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- Writing the MCQ and uploading online
- Review at MCQ meeting (January / August)
- Presented to 4-6 members of the group
  - Accept without modification
  - Accept with modification
  - Advise needs further work and then return
  - Reject
- Edited online within the Question Bank

# EEGC – Question Writing

## The question

- Is it clear and unambiguous?
- Does it address an important item of practice?



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## Image(s)

- The correct one for this question
- Good quality?

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## Answers

- Do the options relate to this question?
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- Are the options balanced?
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Does the question conform to the exam guide to style?

Is the language simple and comprehensible to those whose first language is not English?

# EEGC – Question Selection Group

- Before meeting allocated one of 5 Topic Areas and asked to select MCQs from Bank to cover the curriculum
- Meet at Schipol Airport and review 180 MCQs to select 150 MCQs to send to SSG
- Match the exam template and avoid overlap whilst assuring quality

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- Before meeting receive 150 MCQs
- Review MCQs and estimate the difficulty by considering how many borderline candidates will answer correctly
- Meet at Schipol and review 150 MCQs using pre-meeting scores to guide discussion
- Select final 120 MCQs to form EEGC

# EEGC – Standard Setting Group

- Is the answer key correct?
- Question valid?
- Question consistent and accurate?
- Any change in medical knowledge?
- Any change in guidelines?



# EEGC – Results Analysis

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- For candidates who are taking the exam as a trial or pilot study, or for whom the exam is not compulsory, we are not sure of:
  - How representative are the candidates
  - Degree of preparation
  - Attitude
  - Familiarity with format

# Raw Data Issues 2015

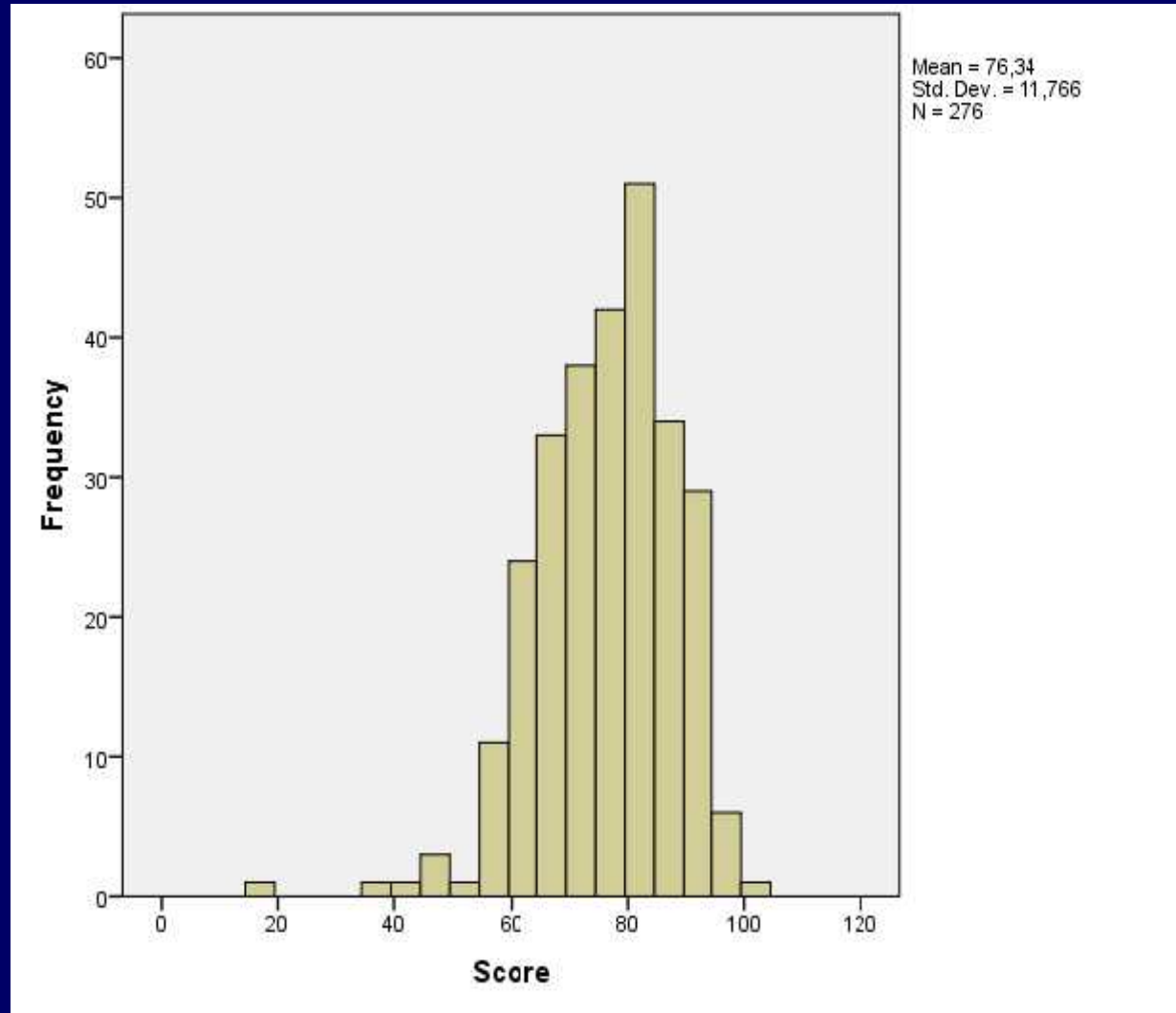
- None
- No problem with video or image display
- Some ID issues at PV
- 4 Disruptive candidates at Liverpool centre

# ESC KBA 2015

## Statistical Analysis

- 276 candidates
- 120 questions
- 2015 Mean (SD) 63.3% (10) range 14-84%
- Approximately normal distribution
- Cronbach Alpha 0.840 (0.841)

# All Candidates Score Distribution



# Review of Item Performance

- Question Difficulty
  - Percentage of candidates who answered correctly
- Item-Total Score Correlation
  - Correlation between correct/incorrect for this item against the score for the whole test

# Item Difficulty 2015

Item	Difficulty	
5674 (2012)	11.6	
4730 (2012/13)	18.8	
4406 (2013)	19.2	
5488 (unused)	24.3	
7800 (unused)	25.7	
8617 (unused)	27.2	

# Item Difficulty 2015

Item	Difficulty	
9425	91.3	
7726	91.7	
8441	92.0	
4721	92.4	
6194	93.8	
9070	94.9	
7783	95.3	
6024	97.5	
9216	97.5	



# -ve Item-Total Correlation 2015

Item	Correlation	Candidate Difficulty
4406*	-0.012	19.2
4730**	-0.106	18.8
5867*	-0.066	65.9
6194*	-0.02	93.8
6659	-0.086	54.3
8617	-0.033	27.2
8634	-0.043	43.1
8716	-0.02	42.0

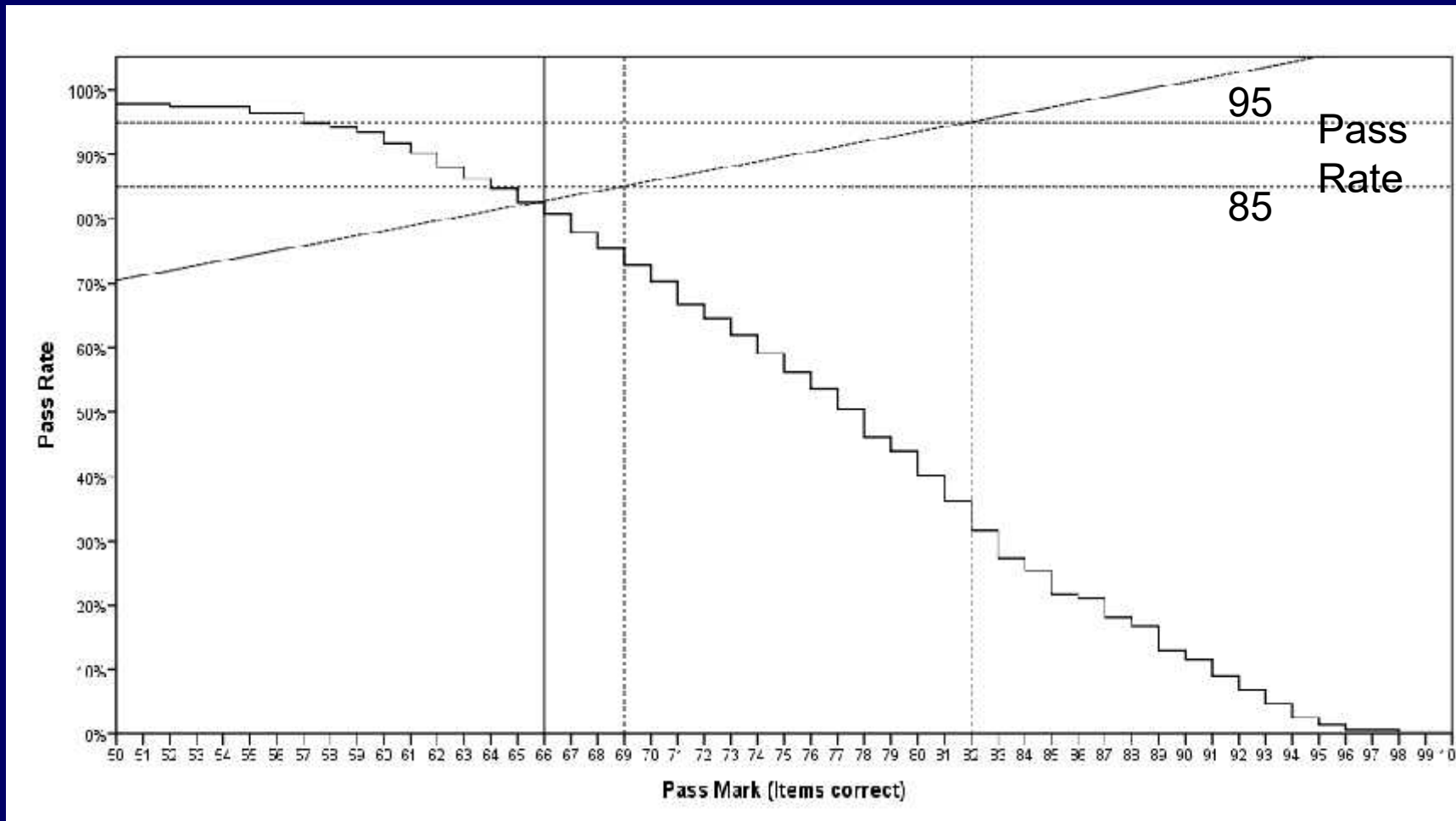
# WebConference Review June 30th

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- Reviewed all items with difficulty  $< 30\%$
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- 5 SSG members, J Chabaud, C Carrera
- Reviewed all items with difficulty  $< 30\%$
- Reviewed all items with negative correlation
- Answer key correct for all
- No questions removed from exam
- Suggest do not reuse 4406, 4730, 5674
- Review these items with question writers
- Further analysis should take place of Item Performance by different Societies

# Setting The Pass Mark 2015



# EEGC Examination Board

- 10th July Schiphol Airport
- Representatives from NS, ESC, UEMS-CS
- Presentation of statistical analysis
- Decision on pass mark

# 2015 EEGC Pass Mark

Raw Score	Pass Rate
66	83%
67	81%
68	78%
69	75%
70	73%
71	70%

# EEGC Interpretation

- The validity of results is influenced by
  - Candidates perception of the exam
  - National Society and Trainer perception
  - Input from all stakeholders
    - National Societies
    - Trainers
    - Trainees
  - Familiarity with exam format

# Expansion of Candidates

- When new groups join the examination
- Initial experience should be regarded as 'pilot' to allow calibration
- Involvement in exam process critical
- Emphasise importance of ESC guidelines
- Feedback to all exam groups



# EEGC 2015

## Conclusions

- The arrangements for exam delivery with Pearson Vue appear improved
- Video delivery problem free 2015
- Wide involvement needed from national societies in exam construction and standard setting to enhance validity
- Trainee representation is important

# EEGC 2015

## Results by Society

- Individual societies receive their own candidates data once we have agreed on a pass mark
- They can make analysis of scores by question topic

# EEGC - Prospects

- Expansion in 2016
- European Diploma in Cardiology

# EEGC - Challenges

- Ensuring involvement at all stages in the Exam Process from all participating NS

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- Ensuring involvement at all stages in the Exam Process from all participating NS
- Maintaining momentum in the expansion of the exam
- Ensuring and enhancing the Face Validity of the EEGC with trainees and trainers

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