



UEMS-CESMA GUIDELINE FOR THE ORGANISATION OF EUROPEAN POSTGRADUATE MEDICAL ASSESSMENTS

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INTRODUCTION

The *Council for European Medical Specialist Assessments* (UEMS-CESMA) is an advisory body of the *European Union of Medical Specialists* (UEMS) created in 2007 with an aim to provide recommendation and advice on the organisation of European examinations for medical specialists at the European level.

It was initially known as the “*Glasgow group*” referring to the first meeting convened in Glasgow. Thereafter it was named the *Council for European Specialist Medical Examinations* (CESME). This name was finally changed to the *Council for European Specialist Medical Assessment* (UEMS-CESMA) when it was formally adopted under the umbrella of the UEMS.

Main role of UEMS-CESMA

The main role of the *Council for European Medical Specialist Assessments* is to:

- Promote harmonisation of European Board assessments;
- Provide guidelines to the Boards on the conduct of assessments;
- Encourage acceptance of Board assessments as a quality mark;
- Offer an alternative to national assessments, if required.

UEMS-CESMA adopted in Glasgow a declaration setting the basic rules governing European assessments. The following UEMS Specialist Sections signed the “Glasgow Declaration”:

- Neurosurgery;
- Nuclear Medicine;
- Orthopaedics and Traumatology;
- Paediatric Surgery;



- Pathology;
- Plastic, Reconstructive and Aesthetic Surgery;
- Pneumology;
- Urology; and
- Vascular Surgery.

History of European postgraduate medical assessments

In 1984 the first *European Diploma Assessment* was established. This was the *European Diploma of Anaesthesiology* (EDA). Today, more than 30 disciplines organise European post-graduate medical assessments:

- Allergology and Clinical Immunology;
- Anesthesiology;
- Angiology;
- Cardiology
- Coloproctology;
- Dermatology and Venereology;
- Emergency Medicine;
- Endocrine Surgery;
- ENT, ORL and Head and Neck Surgery;
- Gastroenterology
- Hand Surgery;
- Intensive Care Medicine;
- Internal Medicine;
- Neurology;
- Neurosurgery;
- Nuclear Medicine;
- Ophthalmology;
- Oral and Maxillofacial Surgery;
- Orthopaedics and Traumatology;
- Pathology;
- Paediatric surgery;
- Physical and Rehabilitation Medicine;
- Plastic Surgery;
- Respiratory Medicine;



- Surgery (General Surgery);
- Surgical Oncology;
- Thoracic and Cardiovascular surgery;
- Thoracic Surgery;
- Transplantation;
- Trauma Surgery;
- Urology;
- Vascular Surgery.

While the European assessments organised under the *European Union of Medical Specialists aegis* are not to be considered as formally registrable specialist qualifications, their quality and recognition have increased significantly. As a result, some countries recognise European assessments as (part of or equivalent to) their national examination.

Need for guidance documents

As there are many European medical specialties within the UEMS organising a European postgraduate medical assessment, their diversity as demonstrated at UEMS-CESMA meetings highlighted the need for harmonisation of their organisational aspects. The aim is to provide these guidelines to assist the examination boards/committees for the various European postgraduate medical assessments with a common framework for their assessments.

Expected outcome

In providing these guidelines, UEMS-CESMA aims to assist the societies and boards organising European examinations by:

- Increasing their recognition;
- Reinforcing their corporate identity within the UEMS;
- Improving their quality and accountability.



PART I. GENERAL PRINCIPLES FOR EUROPEAN POSTGRADUATE MEDICAL ASSESSMENTS

Status of European postgraduate medical assessments

European postgraduate medical assessments are to be considered as a **quality mark** unless otherwise recognised by a **national competent authority (NCA)**. Unless full NCA recognition has been obtained, the European postgraduate medical assessments will be considered complementary to the national examination.

European postgraduate medical assessments will facilitate mobility of medical practitioners throughout the European Union (EU) by assessing specialist knowledge at an agreed EU standard. Furthermore, the European examinations will enable benchmarking of candidates against their European colleagues in other EU countries.

However, passing a European postgraduate medical assessment will **NOT** imply a licence to practise. It is only the NCA that will be able to provide such a licence. Nevertheless, where full NCA recognition of a qualification applies, the European postgraduate medical assessments may provide a means for the NCA to determine eligibility for a licence to practise.



Purpose of assessment

The purpose of assessment of a European examination must be defined clearly by the organising board or society. In general UEMS-CESMA advises that the purpose of such an examination should be a fairly complete assessment of the competence of medical specialists in respect of relevant knowledge and judgement. As part of this, several aspects of training need to be covered, i.e. knowledge, skills and attitude [1-4].

Different assessment formats are available to assess these different aspects of training, e.g. multiple-choice questions (MCQs), (structured) oral assessments (*viva voce*), situational judgement testing (SJT), and objective structured clinical examinations (OSCE) among others.

For the assessment of the knowledge aspect MCQs and structured oral assessments can be considered valid options, while oral assessments (whether structured or not), SJT and OSCE will be more appropriate for the evaluation of skills and attitude. UEMS-CESMA advises as a minimum a knowledge assessment, although evaluation of skills and attitude are also strongly encouraged.

Guiding principles

Steering Committee

The *Council for European Specialist Medical Assessments* strongly advises that the organisation of a European postgraduate medical assessment is developed by a *Steering Committee* composed of not only medical specialists (clinical experts), but also of educational and assessment experts, to ensure that not only the clinical validity of the assessment can be guaranteed, but also the educational methodology underpinning it.



Commitment and time frame

Setting-up an examination from scratch will need high personal commitment of all of the *Steering Committee* members, taking much time and energy. UEMS-CESMA advises the *Steering Committee* members to develop a detailed protocol for the set-up of a new European postgraduate medical assessment, in which a detailed time schedule is included (experience from commencing other European postgraduate medical assessments has shown that in general a period of two years is necessary for the development process).

Assessment rules

The *Council for European Specialist Medical Assessments* (UEMS-CESMA) advises clearly describing in detail all rules applicable to the assessments. Although the following list of items to be covered within these assessment rules is not exhaustive, including at least the following aspects is strongly recommended:

- detailed specification of the eligibility criteria;
- availability of a curriculum, syllabus and/or training course(s);
- detailed description of the assessment method(s) used;
- detailed description of the score calculation procedure;
- detailed description of the pass-fail decision criteria;
- detailed description of the appeal procedure.

It is very important that these assessment rules are communicated to all potential candidates prior to their registration. Amendment of the applicable assessment rules should not occur in the period between the commencement of registration of candidates and the actual examination(s).

Number of permitted attempts by candidates

The *Council for European Specialist Medical Assessments* (UEMS-CESMA) advises including a specific paragraph in the regulations on the maximum number of attempts by a candidate. This should be specified in the eligibility criteria.



Although boards and societies responsible for the organisation of such assessments may choose to permit an unlimited number of attempts by candidates, UEMS-CESMA advises (for the benefit of the candidates as well as for the credibility of the assessment) limiting the number of attempts to three times (which is also considered the maximum). Any limit on the permitted number of attempts at a particular examination should apply only to assessments undertaken for credit, not for formative purposes.

Should boards or societies organise different components of their assessments on separate occasions (or for entirely separate examinations), candidates should only be eligible to sit a maximum of two different examination components (or separate assessments) within any 12 month period.

Assessment venue

For the organisation of examinations, a suitable venue is essential. Special attention needs to be paid to the security issues of the venue, not only in respect of standard precautions such as fire, but also in terms of security of the examination materials.

Should the number of candidates exceed the capacity of a single venue, the *Steering Committee* may utilise multiple venues (preferably simultaneously, in the interest of uniformity of candidate experience), including the use of individual computer-based assessment terminals.

For practical reasons, the *Steering Committee* may decide to organise an examination alongside a scientific or medical conference. However, when opting for this strategy, UEMS-CESMA strongly recommends scheduling it either before or after the conference, for reasons of practicality for both examiners and candidates.

Duration of assessment

Performed properly, the reliability of an assessment tends to correlate closely with its duration. Consequently UEMS-CESMA advises a duration no longer than that sufficient for



reliability, to limit the levels of stress experienced by the participants (organisers, examiners and candidates) and the costs. The organisation of examinations may be either in one or more parts.

When only one part is organised, as a minimum the assessment of knowledge [1-4] (see Purpose of assessment above) should be covered. However, evaluation of “higher order” thinking, skills and attitude [1-4], should be included.

When multiple parts are organised (either synchronously or on different occasions), the assessments should be organised on a maximum of two (consecutive) days for any individual candidate, in order to minimise stress and cost.

When multiple-choice questions (MCQs) are used to assess knowledge, duration should be no longer than three consecutive hours. If more time is required, UEMS-CESMA advises an interval between two separate MCQ sessions.

When assessment formats other than MCQs are used, UEMS-CESMA advises a duration of at least 1 hour in total. For oral assessment of candidates, UEMS-CESMA strongly advises supplying the examiners with a pre-defined set of questions (preferably structured), allowing room for further questions if felt necessary, in order to achieve an objective assessment of the candidates. The duration of each part of an examination should be sufficient to ensure validity of the assessment across all candidates.

Archiving

UEMS-CESMA advises the *Steering Committee* to document clearly all aspects of the (practical) organisation of European postgraduate medical assessments, and keep archives of these documents (electronically wherever practical) for a period of **at least** five years.

A permanent electronic and properly secured database of the successful candidates should be maintained by the *Steering Committee*. The minimum information to be included within this database comprises: full name, country, date and place of the assessment.



Assessment fees

Although the *Steering Committee* may determine the assessment fees individually, UEMS-CESMA advises endeavouring to harmonise the assessment fees across the different medical specialties. An acceptable assessment fee should aim to cover the costs of providing the assessment and aim not to significantly disadvantage candidates.

Assessment size

UEMS-CESMA has chosen to classify examinations by candidate numbers:

- small-scale assessments: up to 50 candidates;
- medium-scale assessments: between 51 and 150 candidates;
- large-scale assessments: more than 150 candidates.

It is important to realize that the guidelines for quality management (Part III) and good practice (Part IV) will be fully compatible with large-scale assessments only, while some aspects of these guidelines will be less applicable to the small-scale or medium-scale examinations.



PART II. ORGANISATION OF EUROPEAN POSTGRADUATE MEDICAL ASSESSMENTS

Before the assessment

The *Council for European Specialist Medical Assessments* (UEMS-CESMA) reminds the boards and societies responsible for the organisation of European postgraduate examinations to consider the following aspects prior to commencing assessments:

- establishing a *Steering Committee*;
- preparing a detailed protocol including a timeframe;
- producing a curriculum, or syllabus for candidates and examiners;
- determining the format of the assessment;
- setting eligibility criteria (e.g. evaluation of the level of training required);
- communicating assessment rules;
- providing timely notification of examination venue and timing;
- selecting (and where necessary, training) the panel of examiners.

More details on these aspects can be found in Part I of this document. Concerning the examiner selection criteria for European postgraduate medical assessments, a specific document with guidelines has been issued by UEMS-CESMA.



During the assessment

UEMS-CESMA advises the examination *committee* to make proper provision for the following aspects at the time of the assessment:

- registration of candidates and examiners (security);
- availability of sufficient examination papers and answer sheets for paper-based examinations;
- availability of appropriate resources (tablets, computers, mark sheets, scanners, candidate time schedules, etc.);
- availability of sufficient personnel for the supervision and organisation of the assessment (security);
- availability of resources to allow reliable score calculation (either on-site in case of immediate dissemination of the results or off-site in other cases);
- availability of resources to allow reliable pass-mark setting (unless set prior to the assessment).

After the assessment

Once the European postgraduate medical assessment has taken place, UEMS-CESMA advises that the following actions be undertaken:

- dissemination of pass-fail results to the candidates;
- counselling of failed candidates;
- primary statistical validity analysis of the assessment questions;
- secondary clinical validity analysis of the assessment questions;
- performing SWOT-analysis (strengths, weaknesses, opportunities, threats) of the assessment for continuous quality improvement.



PART III. QUALITY MANAGEMENT OF EUROPEAN POSTGRADUATE MEDICAL ASSESSMENTS

Detailed protocol

As part of establishing a European postgraduate medical assessment, a detailed protocol needs to be written by the *Steering Committee*. All technical and practical aspects relating to the organisation of the assessment need to be recorded in this protocol, including specification of the different timelines used. Important documents related to this detailed protocol are:

- the assessment rules;
- the syllabus and curriculum for candidates;
- contents of any relevant training courses.

No deviation from a published protocol, except where necessary urgently to safeguard provision of an examination, is allowed in the period between the opening of registration for the candidates and the actual examination date.

The detailed protocol needs to be made available by the *Examination Board/Committee* to all those involved in the (practical) organisation of the examination. In the event of appraisal of the examination by UEMS-CESMA, this document should be made available to the visiting team.



Curriculum, syllabus and training courses

It is important that candidates for an examination have free access to the regulations, as well as to the curriculum/syllabus, and information on any appropriate educational resources.

With the detailed descriptions of the curriculum/syllabus, the scope of the examination should be clear to candidates. Quality management of such examinations includes ensuring an appropriate distribution of questions according to perceived importance of individual components of the curriculum/syllabus.

Objective score calculation

UEMS-CESMA advises the *Steering Committee* to use electronic score calculation, either by paper-based assessment (utilising optical scanning of answer sheets), or directly by computer-based assessments.

It is important that the score calculation rules are clearly described in the assessment rules to ensure that candidates are fully informed of the scoring system in advance.

Statistical validity and clinical validity analysis

The multiple-choice question (MCQ) assessment format has several advantages. Besides being a fairly robust and highly objective method to assess the level of knowledge of candidates, this format has the advantage of easy statistical analysis. The following statistical parameters are traditionally calculated when performing the primary statistical validity analysis of questions:

- level of difficulty of the questions;
- degree of discriminative power of the questions;



- general reliability (internal consistency) of the assessment.

Some general remarks concerning the statistical analysis procedures follow. Statistical analysis can provide information on the mathematical validity of the questions. However, secondary analysis on the clinical validity of the assessment questions is equally important. This clinical validity analysis is performed by medical experts, mapping the results of the primary statistical validity analysis to the examination questions used. Some questions may show poor primary statistical validity results without presenting any concerns in terms of clinical validity of the questions.

The reliability of the statistical analysis procedure will increase with the number of questions and with the number of candidates. Therefore, the primary statistical validity analysis may present more difficulties when small-scale (or even medium-sized) assessments are concerned.

Primary statistical validity analysis is not necessarily restricted to the MCQ assessment format only, but can also be applied to alternative examination formats.

SWOT analysis

Comparison of the detailed protocol for the organisation of an individual examination with the recommendations above will reveal the strengths, weaknesses, opportunities and threats posed. Consequently UEMS-CESMA advises the *Steering Committee* to implement a SWOT analysis of the assessment on an annual basis. Performing this analysis year after year will ensure a thorough quality management system of the assessment and will yield a continuous cycle of quality improvement.



Selection of examination questions and examiners

Essential components of the quality management system of European postgraduate medical assessments include accurate selection of examination questions and expert examiners. Because they are pivotal in examination delivery, they are each the subject of a separate document, as listed below.

UEMS-CESMA appraisal

The *Council for European Specialist Medical Assessments* (UEMS-CESMA) aims to stimulate the *Boards* and Sections responsible for organising the different European postgraduate medical examinations to apply for UEMS-CESMA appraisal. This external auditing system of the assessment will, in parallel with the internal quality management system, contribute to the continuous quality improvement programme of the examinations.



PART IV. GOOD PRACTICE

UEMS-CESMA Guidelines

European boards and sections organising European postgraduate medical assessments are strongly advised by the UEMS-CESMA to adopt the guidelines presented here and in the related documents listed below, as this will increase the perceived level of quality of the assessment. The *Steering Committees* are further advised to establish a quality management system of the sort proposed in the section above.

Security

Security is an important aspect to ensure when organising European postgraduate medical assessments. Care must be taken to prevent assessment questions being leaked prior to, during or after the exam. Different security measures will need to be taken according to the format of the examination (paper-based assessment, computer- or tablet-based assessment, oral assessment, etc.). Furthermore, security is mandatory for candidate registration (e.g. confirming the identity of candidates throughout the assessment process, the more so for the larger examinations). Furthermore, security measures are essential to safeguard the process of score calculation and decisions on the pass-fail standard.



Dissemination of results

The European postgraduate medical assessments do not grant a licence to practise (cf. Introduction). The *Steering Committee* is free to decide to what level of detail the technical results of the assessment will be disseminated to the candidates. As a minimum a pass-fail status must be assigned for each candidate and communicated reliably.

UEMS-CESMA strongly advises the examination *Steering Committees* to disseminate the results ideally within one week after the assessment taking place, as the longer the interval between the assessment and the dissemination of the results, the more concerns may be raised concerning their validity (among both the candidates and the examiners).

However, the primary responsibility of the *Steering Committee* is to ensure that the results are accurate. Should erroneous results be disseminated, it could have catastrophic consequences.

Counselling for failed candidates

Besides the pass-fail status of candidates, UEMS-CESMA recommends more detailed feedback or counselling for failed candidates, in order to provide these candidates more insights into the details of their assessment. This is more important in the case of oral examinations, and may forestall an appeal against the examination process or outcome.

In some cases, on-site counselling with face-to-face contact with the failed candidates has proven beneficial. However, there are risks to this immediate approach, due to the potential emotional impact of failure in what may be regarded by the candidate as a “high stakes” examination. In all cases, UEMS-CESMA highly recommends the *Steering Committee* of a European postgraduate medical assessment to provide the detailed results to all failed candidates within a period of one month after the assessment or release of results.



RELATED DOCUMENTS

- Tenore A., Mathysen D.G.P., Mills P., Westwood M., Rouffet J.B., Papalois V., Sparrow O., Goldik Z. (2015). A guide to successfully writing MCQs: Executive summary. UEMS-CESMA Publication (2nd edition)
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