



European Diploma in Medical Genetics and Genomics (EDMGG)*

UEMS[†] Section of Medical Genetics
in collaboration with
the Branch of Medical Genetics and Genomics
of the European Board for Medical Genetics (EBMG)
& the European Society of Human Genetics (ESHG)

December 2018

The Rules, Description and Protocol of the
Inaugural EDMGG Examination
Scheduled for June 14, 2019
Gothenburg, Sweden

* *The specialty has different names in different countries, see EU document (EU) 2016/790, January 13 2016, and changes in attachment V, Directive 2005/36/EG. In this document, the specialty may be referred to as 'Clinical Genetics'.*

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1. GENERAL BACKGROUND

- 1.1 The European Diploma in Medical Genetics and Genomics (EDMGG) is a joint development of the UEMS Section of Medical Genetics and the European Board for Medical Genetics (EBMG), Branch of Medical Genetics and Genomics (BMGG). It is intended to be the main knowledge-based assessment tool for Clinical / Medical Genetics and Genomics training in Europe, with the aim of establishing standards in the specialty to world class levels throughout all European countries.
- 1.2 The examination is overseen and supervised by the Examination Committee for the EDMGG of the UEMS/EBMG and is also observed by representative(s) of the European Society of Human Genetics (ESHG), the EBMG, the umbrella organisation in Europe concerned with standards relating to the disciplines that jointly deliver medical genetic services throughout Europe, namely medical genetics and genomics, genetic nurse counselling, laboratory technicians, and laboratory genetics. The examination is also open to observation by UEMS officials as appropriate.
- 1.3 A pilot EDMGG examination took place in June 2018 as a satellite event of the European Human Genetics Conference in Milan; the outcomes were analysed and the processes evaluated. The first full inaugural examination will be held on June 14, 2019, as a satellite event of the European Human Genetics Conference in Gothenburg, Sweden. It will be open to candidates worldwide, including trainee and fully trained Clinical Geneticists. Those who are successful will be the first cohort to be awarded the EDMGG Certificate.
- 1.4 No post-nominals are awarded with the EDMGG, which is valid for life. It will be valid for practice only in countries where it is ratified as an official certificate for this purpose.
- 1.5 The UEMS promotes continuing good medical practice through Continuing Medical Education and Continuing Professional Development (CME / CPD) systems and certification. This is strongly recommended for active practitioners; indeed, in many countries it is mandatory through official bodies at national level, usually conducted by a recurring process of record review and appraisal.
- 1.6 CME / CPD will also be possible via the Registry system of the EBMG-BMGG. The system will be open to holders of national and/or EU specialty examinations/certificates, subject to approval of eligibility, and will be inclusive of Clinical Geneticists from nations that already have their own approved specialist CME systems, as well as those that do not.
- 1.7 It is planned to open the EDMGG application system no later than January 2019. The EBMG-BMGG CME system and associated Registry for Medical Genetics is under development and will open in 2019.

2. WHY TAKE A EUROPEAN EXAMINATION IN MEDICAL GENETICS AND GENOMICS?

- 2.1 The UEMS is striving to harmonise higher medical training across the nations of Europe in order to raise standards to world class levels equitably across its member states, and indeed beyond. This in turn is aimed at translation into the highest standards of health care service delivery equitably across European nation states.

- 2.2 In the field of Clinical / Medical / Human Genetics and Genomics, the EDMGG thus represents a significant step towards harmonisation of standards in this specialty across Europe, with the improvement and equitable provision of services which are currently very varied across Europe. It is anticipated this will contribute to the global mobility of specialists in Clinical / Medical / Human Genetics and Genomics.
- 2.3 To achieve a 'Pass' in the EDMGG examination is an indication that the candidate has a sufficient knowledge base to practice as a Clinical Geneticist. However, certification at this level does not, in itself, automatically qualify an individual to practice anywhere within the EU, or indeed elsewhere, as national criteria will also be applied country by country (where these criteria exist).
- 2.4 Recognition of the EDMGG throughout European nations will be sought by the UEMS and the EBMG, something which has been achieved for several other medical specialties. The aim is that certification will form a significant part of the candidate's fitness to practice, wherever they seek employment, recognising that it is primarily the knowledge base that is being assessed. Indeed, it is intended to be a mark of excellence in knowledge.
- 2.5 Taking and passing the examination should be an indication of commitment to life-long learning, combined with a continuing record of CME. Skills (*or* competences) and attitudes (*or* professionalism), the other essential components and qualities for fully trained practitioners, can only be adequately assessed through continuous clinic-based supervision and evaluation, together with evidence of ability to work collaboratively in teams. The oral part of this examination aims to partially assess some of these skills and attitudes.

3. ELIGIBILITY CRITERIA (EDMGG and CME)

- 3.1 Individuals are eligible to sit the EDMGG examination if they have a medical qualification (MD, or in some countries MB ChB/BS) and are professionally active in Clinical Genetics, either at training or senior level. The examination has been designed to be suitable for trainees in the late stages of their training, ie in the year prior to being appointed as a fully trained Clinical Geneticist. A list of eligible nations can be found at section 5.3.
- 3.2 Proof of eligibility should be provided with the application by attachment of a notarised copy of the specialist diploma / certificate (in the case of senior doctors) or sponsorship from the training centre (in the case of trainees). The sponsor, where possible, should be a recognised senior specialist in Clinical Genetics, or if this is not possible, a recognised head of the institution where the applicant is employed.
- 3.3 If the applicant comes from a country where Clinical Genetics is not a formally recognised specialty, the applicant should show credible and verifiable proof that they have fulfilled, or are engaged in, specialist training requirements according to the UEMS approved training programme (curriculum) in Clinical Genetics (<http://clinicalgenetics-uems.pte.hu/content/etr-specialty-medical-genetics>).
- 3.4 The same eligibility criteria will apply to registration for EBMG-BMGG CME in due course, for which registration fees will also be determined.

- 3.5 Any individual found to be canvassing Examination Committee members for confidential information relating to any aspect of the examination will be disqualified from sitting the examination, and may forfeit their Admission Fee if this has already been paid.
- 3.6 Any individual who has received the EDMGG Certificate but was found to have used any unfair means to achieve their result will have their certificate revoked.

4. APPLICATION FOR THE EXAMINATION

- 4.1 When applying to sit the EDMGG, candidates will declare their consent to taking the examination in the established format and structure, and acknowledge that cancellations are only possible in accordance with the rulings of the cancellation policy.
- 4.2 An application form must be completed and submitted (see link to secure server at the bottom) before the end of April 2019.
- 4.3 Personal details must be correctly submitted, including full name, as the data requested will be used for the certificates. The application must be accompanied by the corresponding examination fee, and the date of transfer to the UEMS Section of Clinical Genetics bank account will serve as the application date.
- 4.4 The Bank details are as follows:
- | | |
|-----------------|---|
| Account name: | UEMS /S. CLINICAL GENETICS |
| Account number: | 001-6762413-37 |
| IBAN code: | BE35 0016 7624 1337 EUR |
| BIC code: | GEBABEBB |
| Bank address: | BNP Paribas Fortis
Montagne du Parc 3
1000 Brussels |
- 4.5 In order to comply with Belgian Law, please follow this procedure regarding the title of transfer:
- i. Please include the title of transfer:
"EXAM – THE NAME OF EXAMINEE / CANDIDATE - COUNTRY"
 - ii. Please do not refer to 'payment' or 'invoice'
- 4.6 There is a reduced fee for candidates from low- and lower-middle income countries (see http://data.worldbank.org/about/country-and-lending-groups#Low_income) and for those who follow the early registration procedure.
- 4.7 Earlybird fee registration and reduced rate registration require a full application via the website before the respective dates stated below.
- 4.8 If a visa and/or a letter of invitation is required to enter Europe, the examination board should be informed after application for the examination has been completed. It is the candidate's responsibility to ensure there is sufficient time for their visa application to be processed when registering for the examination.

5. EXAMINATION ADMISSION FEES AND CATEGORIES (in EUR):

5.1 The admission fees for the first full examination are given below. They apply for 2019 and will be reviewed annually. The fee will vary according to the candidate's place of work. Additional fees may apply in the event of irregularities that require further administrative work.

5.2 In the event of cancellations before 28 days preceding the examination, an application for a subsequent examination will be possible for a reduced fee. Cancellations less than 28 days prior to the examination will not qualify for a reduced fee at a subsequent sitting.

5.3 Examination fee structure:

Admission Fees (in Euros)	Payment received before February 28th (Earlybird)	Reduced fees Payment received from March 1st – 31st	Regular fees Payment received from April 1st – 30th
Associate members from SMG (*Group 1)	350	400	450
Non European countries	400	450	500
Associate members from SMG (#Group 2) and low and lower middle income countries according to the link below	250	300	350

* *Group 1: EAN - Associate Member societies from Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Norway, Poland, Portugal, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, The Netherlands, Turkey, United Kingdom*

Group 2: EAN - Associate Member societies from Albania, Algeria, Armenia, Azerbaijan, Belarus, Bosnia & Herzegovina, Bulgaria, Egypt, FYRO Macedonia, Georgia, Jordan, Kazakhstan, Kyrgyzstan, Lebanon, Libya, Moldova, Montenegro, Morocco, Palestine, Romania, Serbia, Syria, Tunisia, Ukraine, Uzbekistan

(**SMG**: Section of Medical Genetics; **EAN**: European Area Nations)

6. THE EXAMINATION STRUCTURE AND CONTENT

6.1 The examination is primarily a knowledge-based assessment, based on the curriculum and syllabus (<http://clinicalgenetics-uems.pt.e.hu/content/etr-specialty-medical-genetics>), but also seeks to partially assess skills (competencies) and attitudes (professionalism) relevant for Clinical / Medical Genetics and Genomics in respect of clinical reasoning, problem-solving, and ethics. This is consistent with the roles promoted by UEMS, namely Medical Expert, Communicator, Scholar, Health Advocate and Professional.

6.2 The examination will consist of two distinct sections: **Multiple Choice Questions (MCQs)** and **Structured Oral Assessments (SOAs)**.

6.3 Candidates must attend all sections of the examination. Literature resources and access to the internet will neither be permitted nor provided for any part of the examination. The results of the two sections will be combined and converted to a final percentage score.

6.3 **MCQs: 100**

- i. 100 individual questions will test knowledge based on the EBMG-MD/UEMS SMG-Guidelines and the Syllabus in Clinical Genetics. The questions will be selected by the Examination Committee and assessed by independent reviewers two months before the examination. In this way *standard setting* of the MCQs will have been undertaken according to the Angoff rank ordering method. It is possible that this process will result in some final amendments to the MCQs.
- ii. The examination paper for the inaugural examination is expected to be a hard copy, paper document. It is likely that the answers will be logged by the candidates in digital format using an electronic device (more details will be provided).
- iii. The format of the MCQs is a brief scenario (usually *clinical*), with or without *laboratory data*, with five answers provided, one of which is the *best correct answer*.
- iv. Some answers are definitely wrong whilst some are correct but not as good an answer as the best correct one.
- v. The candidate should therefore select one of the five which they consider the best correct answer.
- vi. This is illustrated by the following example, and more sample questions are available at: <http://clinicalgenetics-uems.pt.e.hu/content/edmgg-exam-sample-documents>

#	A 39-year-old lady delivers a male child who is suspected to have Down syndrome.	
	What is the most likely genetic basis of Down syndrome ?	
	a.	47,XXY
	b.	Deletion 7q11.32
	c.	Pathogenic variant in <i>CDH7</i>
	d.	Trisomy 21
	e.	Unbalanced Robertsonian translocation 14:21

vii. Time allowed for 100 MCQs: 2½ hours.

viii. This part of the examination will comprise two-thirds of the overall mark.

6.4 **SOAs: 6**

- i. These will consist of 6 OSCE-style stations to be visited by all candidates, testing knowledge, interpretation of data, and attitudes.
- ii. At each station the candidate will be invited to read in silence a complex clinical scenario or set of data, which may include ethical issues, over a period of 3 minutes. They will then be asked a standardised set of questions over 8 minutes designed to assess clinical reasoning, problem solving, collaborative working and ethical insight. See link for example scenarios: <http://clinicalgenetics-uems.pt.ehu/content/edm-gg-exam-sample-documents>
- iii. Each station will have two examiners, at least one of whom will be independent, ie not a member of the Examination Committee.
- iv. Each candidate will be asked the set questions by one examiner while the other examiner takes notes. The two examiners will then independently score the candidate. The examiners may confer, and possibly adjust their score if persuaded by the arguments presented in the discussion. When the next candidate is questioned the examiners reverse the roles.
- v. The aims of this SOA format are to standardise the assessment process and eliminate presentation differences between candidates, based on potential language difficulties, for example. The examination will be conducted in English and allowance made for those candidates who lack fluency.
- vi. The following grid describes the the marking system and the domains to be assessed:

	(a) Understanding of Genomic Principles	(b) Using Genetic information for Patient management	(c) Identifying and managing Clinical Issues for patients	(d) Understanding ethical and legal considerations in patient care
Excellent				
Clear pass				
Borderline pass				
Borderline fail				
Clear fail				

- vii. For some topics not all domains (a) – (d) will apply.
- viii. Total time allowed per station: 12 minutes (includes rotation between stations).
- ix. This part of the examination will comprise one-third of the overall mark.

7. EXAMINATION VENUE AND SCHEDULE

7.1 The examination will take place in appropriate facilities without public access.

7.2 The schedule for the examination on June 14, 2019, will be as follows (subject to minor change):

09:00 – 09:20	Arrive and register for examination
09:30 – 12:00	MCQ paper
12:00 – 13:00	Break
13:00 – 14:30	SOAs – maximum of 3 sessions, each 90 minutes in total allowing for time between each session Each candidate is present for 72 minutes (6 stations of 11 minutes, one minute to rotate to the next)
14:30 – 16:00	
16:00 – 17:30	
17:30 – 20:00	Marking of candidates
21:00 – 21:30	Announcement of Results
Tuesday June 18, 2019 The Award of Certificates will take place at the Closing Ceremony of the European Human Genetics Conference	

8. EXAMINATION OUTCOME

- 8.1 In registering for the examination the candidate accepts that the result of the examination is final.
- 8.2 The pass mark will be calculated with help of an Angoff procedure as a control measurement, and possibly other statistical methods. External, independent assessors will be appointed to advise and oversee fairness in the final allocation of marks.
- 8.3 In order to achieve an overall pass, candidates should achieve a 'Pass' in both sections of the examination.
- 8.4 Feedback will be available for unsuccessful candidates and appealing the final decision is discouraged.
- 8.5 If a candidate does not achieve the pass mark, they may resit the examination at a later date, subject to payment of the corresponding Admission Fee.

9. APPEALS PROCESS

- 9.1 An Appeals Panel will be established under the umbrella of the UEMS, whose Chair will be independent of the Examiners and Examination Committee.
- 9.2 An appeal must be made in writing to the Chair of the Appeals Panel within 10 calendar days of the examination having been taken.
- 9.3 The Appeals Panel will seek to respond to the appeal within one calendar month of the appeal having been received.

10. THE EXAMINATION COMMITTEE

- 10.1 The remit of the committee is to design the examination, write and select questions, establish a standard setting process and quality control measures, identify examiners and independent assessors, and organise the examination itself.
- 10.2 The committee comprises 12-15 individuals, most of whom are national delegates to the UEMS Clinical Genetics Section. Some members have been invited to join because of their acknowledged expertise in examination methodology. At the time of writing 13 European nations are represented on the committee, covering regions north, south, east and west of the European continent. The large majority of members are experienced Clinical Geneticists, and in addition there is room on the committee for high achieving, committed colleagues who have recently completed their training.
- 10.3 Although committee members have written questions, they have spent much time refining MCQs submitted voluntarily from many sources, including beyond European borders.
- 10.4 All members of the committee have pledged confidentiality in relation to question material. If found to have divulged information inappropriately, ie broken confidentiality, their membership of the committee will be immediately terminated.

11. INDEPENDENT ASSESSORS

- 11.1 Experienced Clinical Geneticists, independent of the Examination Committee, have volunteered to undertake a review of the examination questions in advance of the examination itself, a process leading to an Angoff rank ordering evaluation.
- 11.2 These assessors have pledged their confidentiality in relation to all examination material in a similar process to that pledged by Examination Committee members.
- 11.3 Further Independent Assessors are being recruited for the purposes of scrutinising the examination matrices to ensure fairness in the final allocation of marks.
- 11.4 It is anticipated that one or more representatives of the EBMG, who are collaborators in the establishment and ongoing role of the examination for the promotion of quality in Medical Genetics services throughout Europe, will also be present as Independent Assessor(s) of the examination.

12. EXAMINERS

- 12.1 A panel of independent, external examiners is being recruited, principally to participate in the SOA section of the examination. It is intended that each SOA station will have a minimum of one external examiner.
- 12.2 Examiners will be appointed through a robust process of application and sponsorship.
- 12.3 Examiners will pledge confidentiality in all matters relating to sensitive examination material, in a process equivalent to that undertaken by Examination Committee members and Independent Assessors.