
Guidelines

Recommendations of the European Board for the Specialty Cardiology (EBSC) for education and training in basic cardiology in Europe

The Executive Committee of the European Board for the Specialty Cardiology

Introduction

History

In 1975, the European Community set up a statutory body, the Advisory Committee for Medical Training (ACMT) with the aim of helping to ensure a comparably demanding standard of medical training in the European Community. Each country has three representatives in the ACMT. It is in contact with the European Union Standing Committee of Doctors (Permanent Committee) established in 1959. Several organisations representing sectors of medical practice such as the European Union of Medical Specialists (UEMS) and the European Union of General Practitioners (UEMO) which are probably the two most important, are affiliated to this Committee. The UEMS seeks to co-ordinate the work and recommendations of the 28 recognized monospecialties which report to the Management Council of the UEMS.

Aim of the UEMS and EBSC

The long-term aim of the UEMS has been to harmonize and improve the quality of specialist medicine within the countries of the European Community, now European Union. The UEMS, which represents all medical specialists in the European Union, includes 28 recognized specialties, one of which is cardiology.

The cardiology section of the UEMS like the other sections, has delegates appointed by the national scientific and professional cardiological organisations of the 15 member states of the European Union as well as those of Norway and Switzerland, in accordance with the UEMS rules. Moreover, there are observers of other (Eastern) European countries. These latter countries have, however, no voting right but may participate in the discussions.

The specialty sections of the UEMS deliberate and make proposals on matters of concern to their

particular specialty and submit their recommendations to the Executive Committee of the UEMS.

One of the main fields of interest of the UEMS is the harmonization of the training of specialists in the member states. The activities of the UEMS in the area of training cover two fields. One is to influence the national medical authorities to develop procedures for high quality training; the other is to advise the European Union in formulation of its policy, especially regarding the European Union directives on health care. Although the European Union is not involved in health care in the member states, it is very interested in the free exchange of services including medical services. Therefore, the European Union is concerned to safeguard professional standards in the field of medicine.

In theory, free exchange of persons and services (goods and capital) within the European Union is guaranteed by the Treaty of Rome. Free exchange of persons and services within the medical profession was brought into effect by the Commission of the European Community in 1975. The directives have been consolidated in the Directive 93/16/44C of 5 April 1993.

In order to guarantee the highest standards of education, training and care in their specialty, the relevant UEMS sections may set up European boards for their respective specialty. The aim of these boards is to ensure that the training of specialists is on a high level by setting up and maintaining standards of training, by monitoring its content and the quality of the training centres. This will help the exchange of trainees between the European Union member states and the free movement and settlement of the specialists in the European Union. With this in mind, the European Board for the Specialty of Cardiology (EBSC) was created in 1992.

The objective of this report is to present the recommendations for qualified optimal post-graduate training in cardiology in the European Union. These recommendations may also be of value for other European countries not (yet) belonging to the European Union. It updates the earlier versions published by the Monospecialty Section Cardiology of the UEMS in 1979, 1989 and 1991.

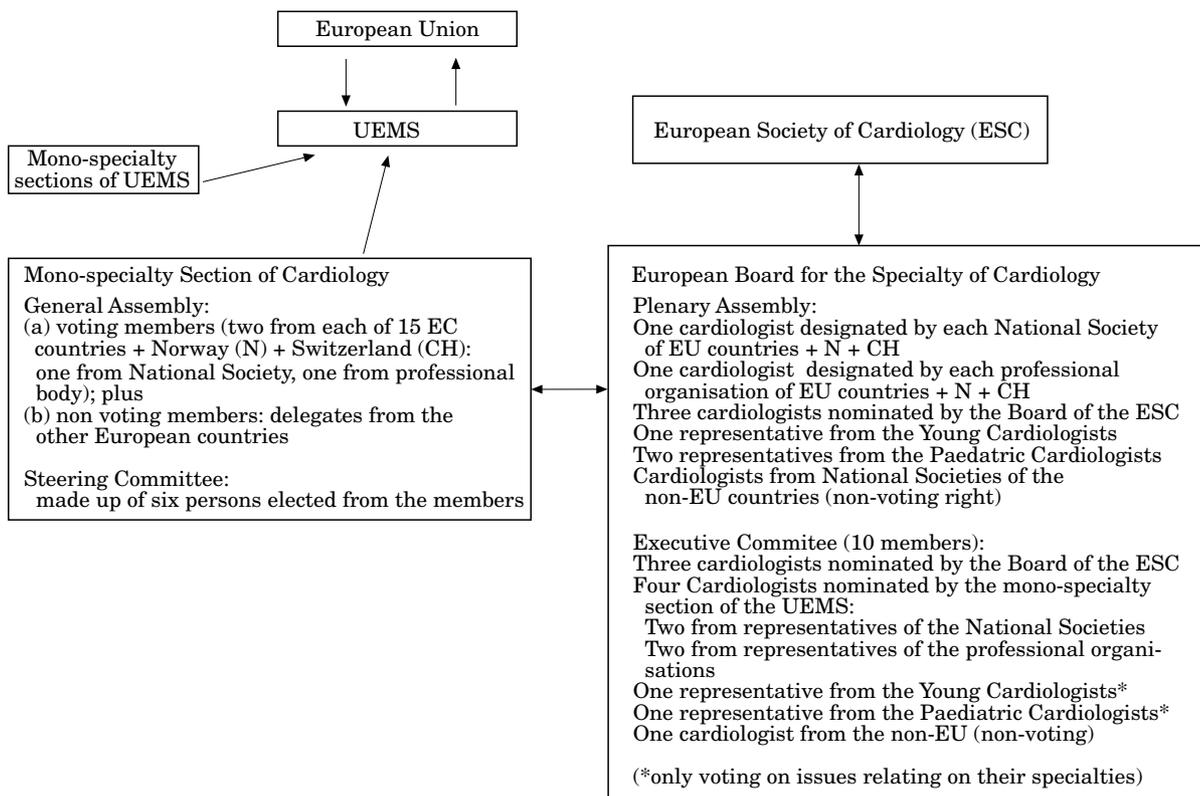


Figure 1 Relation between the EBSC, the UEMS and its Cardiology Section, and the ESC.

Relation between the EBSC, the UEMS and its Cardiology Section, and the ESC

The relation between these three organisations is summarized in Fig. 1.

Recommendations

Introduction

The object of this report is to present the summary of the recommendations made by the EBSC and the Cardiology Section of the UEMS for optimal post-graduate education and training in basic cardiology for adults and for an adequate structure of the training centres. Recommendations for paediatric cardiology have been published in a booklet edited by the Association of the European Paediatric Cardiologists (AEPC) and summarized in the *European Heart Journal* 1994; 15: 160–3.

The aim of these recommendations is to train cardiologists who are able to handle different cardiac disorders in an expert way. It is hoped that it shall provide the UEMS, the European Union officials as well as the national authorities concerned with the certification of the cardiologists, with useful information in terms of qualification requirements for licensing in cardiology. Besides optimalization of the training, its harmonization between the European Union (and

eventually other European countries) should make the exchange of cardiologists during, or after completion of, their training easier as well as their settlement in the European and especially European Union countries. Until these recommendations have been incorporated into national guidelines, there will be a flexible transition period for each national country during which time gradual changes will, we hope, occur from the existing training conditions to the new requirements.

Thus, whether the information contained in this report finds its way to the various national governments via the European Union Commission in Brussels or via the professional and scientific national organisations, the effect will, hopefully, be the same. In order to be recognized as specialist in the field of cardiology throughout Europe, the requirements as outlined in this report must be met. The EBSC as well as the Cardiology Section of the UEMS have not been in favour of a European examination, as has been proposed and implemented by other European Boards, for example those of urology and anaesthesiology.

The qualification criteria for achieving the status of 'European Cardiologist' will in no way replace the national requirements. Rather, it is an above-national privilege which demonstrates a high standard of qualification and which, because of its above-national characteristics, may help the efforts of the Harmonization Committee established a few years ago by the UEMS. It is by unifying these requirements that we can bring

European cardiology ahead, to compete with the challenges of the rest of the world.

General aspects of training in cardiology

1. Candidates for training in cardiology should be licensed physicians in a country of the European Union or they should have an equivalent qualification approved by the host country. It is the primary responsibility of each training institution to establish further criteria for entry into their training programme.
2. The minimum duration of training should be 6 years, consisting of a common trunk of general internal medicine (excluding cardiology) with a duration of at least 2 years. It should contain a further 3 years of basic training in cardiology and 1 flexible year which may be devoted to internal medicine or general cardiology, cardiovascular research, pharmacology, epidemiology, preventive medicine or rehabilitation, angiology and other related aspects of cardiovascular disease.
3. The content of each training programme should be under the surveillance of the National Boards. The medical knowledge that is required includes the basic sciences of anatomy, pathology, physiology, epidemiology and pharmacology as well as an understanding of aetiology, cardiovascular physiology, pathology and experience of general care of all cardiac disorders in adult patients (e.g. congenital, valvular, coronary, hypertensive, primary myocardial and pericardial diseases, diseases of the aorta and peripheral vessels, congestive heart failure, cardiac arrhythmias), and also of preventive and rehabilitative cardiology. The training programmes should include knowledge and practical experience of non-invasive techniques, management of rhythm disturbances including common pacing techniques, experience in managing patients in the cardiac intensive care unit as well as cardiac patients having non-cardiac surgery. Furthermore, it includes participation in, and knowledge of, the invasive and interventional techniques in cardiology in an approved institution.
4. There will be an annual assessment of the progress of the trainee as well as of the training process by the head of the training programme. The cardiologist in charge of training may seek advice from the National Board if a trainee is considered unsuitable for training. Each training programme should be assessed at least every 5 years by the National Board. The procedures used for this assessment process shall be monitored by the EBSC.
5. The EBSC will give recommendations for the adequate number of trainees in a programme in relation to the facilities (in terms of staff and equipment) available in a given training programme.
6. The EBSC will stimulate the exchange of trainees within the European Union and associated countries with approved training programmes. There shall be

recognition of period of training spent in recognized institutions in such countries.

Requirements for training institutions in cardiology

1. Training institutions should receive official recognition by their National Boards. The EBSC will receive a list of training institutions issued by the National Boards. If these meet the requirements set out by the EBSC, they shall be confirmed as a European Institution for Training in Cardiology.
2. The training institution should provide an optimal training climate. There should be opportunities for direct consultation with other specialty services. The institution should possess a library with bibliographic facilities and have access to major international journals related to internal medicine and cardiology as well as to relevant databases.

The training institution should have the following facilities as a minimum.

 - (i) A fully equipped out-patient department for cardiological patients, including emergencies, a sufficient number of beds for in-patients and for intensive care medicine. The intensive care unit should have at least six beds, fully equipped for electrocardiographic and haemodynamic monitoring, anti-bradycardiac pacing, cardioversion and defibrillation and preferably haemodynamic support devices (intra-aortic balloon pumps, haemofiltration, etc.) and a cardiac surgical programme.
 - (ii) Equipment should be available for all types of non-invasive investigation and procedures such as X-ray, electrocardiogram, exercise testing, long-term electrocardiogram, echocardiography including Doppler echocardiography, transoesophageal echocardiography (TEE) and stress echocardiography, pacemaker check-up and nuclear medicine facilities.
 - (iii) Facilities for invasive cardiological examinations including at least coronary angiography, left and right heart catheterization, electrophysiological studies.
 - (iv) A conference room for seminars and tutorial sessions.
 - (v) An adequate desk and office space for each trainee. The special category of institutions without the full range of cardiac facilities will only be recognized for limited periods of training.
3. The training institution shall set up a programme to assess the quality of training, subject to peer review.

Requirements for teachers within cardiology

1. The trainer must have access to the previously mentioned facilities. He/she should have been practising the specialty for at least 5 years. He/she should be a suitably qualified specialist with a commitment to training and be recognized by the National Board. He/she should have experience in research and post-graduate education.

There should also be a staff of well-qualified specialists who participate in the training programme and who can guarantee that the full range of cardiology is covered.

2. The head of training shall be responsible for a training programme for each trainee in accordance with national rules and the recommendations of the EBSC set up for training programmes in cardiology.

Requirements for training

1. In order to gain sufficient experience, the trainee should be involved in the management of an appropriate number of in-patients, day-care patients and out-patients (ambulatory). Trainees should also perform a sufficient number of technical procedures of sufficient diversity.

2. The trainee should have sufficient linguistic abilities to communicate with patients and colleagues in the country of training. He/she should be familiar with international literature.

3. The trainee should keep a personal logbook of his/her training activities and present this to the National Board before certification.

4. The success of training will be evaluated by national or local assessment.

Specific recommendations for training in basic cardiology

Training should take place in a full-time position for at least 1 year. The remaining training programme may take place in a part-time position which then will have to be correspondingly prolonged. Training should include a minimum of 1 year on a ward. During the 3 years of basic training in cardiology, the trainee shall participate in on-call duty services provided by the hospital.

The training department should have at least 500 in-hospital admissions for cardiovascular diseases per trainee/year and a corresponding number of out-patients.

1. Procedures to be performed by the trainee himself. For these procedures, the trainee will be responsible for performing the procedure, interpreting the results and giving a report, under supervision of an experienced cardiologist taking part in the training activities of his centre.

ECG: 1000.

Stress test (techniques): 300.

Holter: 200.

Echocardiography (including TTE, TEE, colour Doppler, stress echo, . . .): 500.

Pacemaker programming: 50.

Introduction of (temporary) pacemaker: 10 (in those countries where this technique is performed).

Introduction of floating catheters: 20.

2. In addition the trainee should gain experience and knowledge (indications, contra-indications, awareness of the complications and how to treat them, diagnostic, prognostic and therapeutic implications, . . .) in the following invasive procedures.

Right and left heart catheterization: 25

Coronary angiography and ventriculography: 300.

PTCA, atherectomy, stenting, . . . : 50.

Invasive electrophysiology: 25.

The trainee shall personally attend and participate in at least 150 of the invasive procedures mentioned above and participate in the discussion, interpretation and decision-making of all.

In addition participation and attendance is required at nuclear cardiology procedures with a total number of 50. Personal attendance is required in 10; for the other 40, the trainee will participate in the reading and decision-making.

All these procedures, as for all other accomplished or attended by the trainee, will be documented in the log book with the name of the supervisor. It should be noted that the above procedures are the minimum and apply to the total training period.

The specific recommendations shall be regularly updated and reviewed according to new developments in cardiology and at the demand of the members of the EBSC or of the cardiology section of the UEMS, taking into account suggestions made by the national societies or certification boards, the Board of the ESC and its working groups.

Central Monitoring Authority

1. The European Board for the Specialty of Cardiology (EBSC) will advise the national authorities who currently have the authority to recognize training centres and teachers as well as to certificate specialists.

2. From time to time, the EBSC will make recommendations for the minimum requirements for training in cardiology. These should be taken into account by the National Boards who are responsible for the recognition of training institutions and teachers.

3. The EBSC will make recommendations to the National Boards to ensure the quality of training. This may include visits to training institutions.

4. The EBSC will approve trainers and training centres provided that they meet the recommendations set up by the National Boards. Any candidate who has completed training at an approved training institution shall be eligible to receive the 'Diploma of European Cardiologist'.

5. Recommendations for manpower planning will be dealt with by a separate manpower committee instituted by the EBSC and the cardiology section of the UEMS.

Summary and conclusions

The Cardiology Monosection of the UEMS and the European Society of Cardiology have created a European Board for the Specialty of Cardiology whose task is to prove guidelines for training and training institutions. The recommendations are presented here and in summary require at least 3 years education and training in basic cardiology (after at least 2 years of a common trunk of general internal medicine) at an approved institution with adequate exposure to all aspects of adult cardiological practice.

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