



Outline of Cardiology Training

Chapter 6

Article 1

CENTRAL MONITORING AUTHORITY for CARDIOLOGY at EU LEVEL

- 1.1. The central monitoring authority for the specialty will be the **European Board for the Specialty of Cardiology (EBSC)**, which has been constituted from members of the UEMS Cardiology Section and the European Society of Cardiology (ESC). It is chaired by a representative of the UEMS Cardiology Section. It includes representatives of the AEPC and of the non-EC countries and representative of PWG (cardiologists in training).
- 1.2. When necessary or at the request of the UEMS, the EBSC will make recommendations for the minimum (but also optimal) requirement for training in cardiology. When important modifications are proposed, these should be sent - after acceptance by the UEMS Cardiology Section and by the executive structures of the UEMS - to the scientific and professional organisations with the aim to incorporate these modifications by the National Boards into the regulations for recognition of training institutions and teachers.
- 1.3. The EBSC will make recommendations to the National Boards to assure the quality of training. This may include a programme for site inspections of training institutions
- 1.4. Responsibility for recognition and regulation of training institutions and trainers rests with National Training Boards. Applicants for the Diploma of European Cardiologist from the EBSC will be asked to confirm that all or part of their training has taken place in an approved training centre.
- 1.5. The EBSC will conduct surveys of training systems throughout Europe, establish a system of regular liaison between directors of National Training (where they exist), and request notification when significant changes to training systems is undertaken.
- 1.6. Recommendations for manpower planning will be dealt with by a separate manpower committee comprising members of the EBSC and the UEMS Cardiology Section.



Article 2

GENERAL ASPECTS of TRAINING in the SPECIALTY

2.1 Candidates for training in the specialty should be physicians licensed in a country of the EU 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.

2.2 The minimum duration of training in cardiology will be 6 years following registration as a medical doctor, consisting of a common trunk of general internal medicine (excluding cardiology) with duration of at least 2 years. It further contains 3 years of basic training in cardiology and one flexible year which may be devoted to internal medicine, cardiovascular research, cardiovascular pharmacology, cardiovascular epidemiology, cardiovascular preventive medicine or rehabilitation, angiology or general cardiology or other related aspects of cardiovascular disease. It is the strong recommendation of the EBSC that postgraduate training lasts for a minimum of 6 years. Nevertheless, candidates whose national training programmes comprise 5 rather than 6 years may be eligible for the Diploma of European Cardiology, if they can demonstrate that following a minimum of 2 years of general training (common trunk) and 3 years of cardiology training, they have continued to train in post (as a recognised national specialist) for a minimum of one further year.

2.3 The content of each training programme should be under the surveillance of the National Boards (ref. C4 Charter). The medical knowledge that is required includes the basic sciences of anatomy, pathology, physiology 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, cardiopulmonary disease), as well as in preventive and rehabilitative cardiology.

The training programmes should include theoretical knowledge and practical experience of the 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 and cardiac surgery. A minimum period of six months in a centre performing cardiac surgery is required. Furthermore it must include knowledge, observation and participation in cardiac catheterisation, coronary angiography, and percutaneous intervention and basic electrophysiological techniques and anti-arrhythmia device use in an approved institution.

2.4 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 head of the training may seek advice from the National Board if a trainee is considered unsuitable for training. If the National Board deems it appropriate, the success of training should undergo independent evaluation.



Each training programme should be assessed at least every 5 years by the National Board. The EBSC will monitor the system of training programme appraisal in each country.

- 2.5 The EBSC will give recommendations for the appropriate number of trainees in a programme in relation to the facilities (in terms of staff and equipment available in a given training programme).
- 2.6 The EBSC will stimulate the exchange of trainees between European Union and associated countries with approved training programmes. There will be recognition of periods of training spent in recognised institutions in such countries.
- 2.7 Candidates who have trained outside Europe are eligible and may be considered for election as a European Cardiologist if (1) they are registered as a national specialist in a European country and (2) their training complies with the minimum requirements as laid-down in this Chapter. It should be noted that registration as a national specialist in a European Country is a prerequisite, but is not in itself sufficient to acquire the Diploma of European Cardiologist.
- 2.8 The European Cardiologist would normally be regarded as the competent expert in managing the cardiovascular conditions referred to in article 2.3.

Article 3

REQUIREMENTS for TRAINING INSTITUTIONS

- 3.1 Training institutions should receive official recognition by their National Boards as being eligible to provide training either complete or in part (ref. C4 Charter). The EBSC will receive a list of training institutions issued by the National Boards.
- 3.2 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.
- 3.3 The training institution will set up a programme to assess the quality of training subject to peer review.

The training institution or combination of institutions making up any given training programme should have the following facilities as a minimum:

- a. A fully equipped out-patient department for cardiology patients, including emergencies, a sufficient number of beds for in-patients and for intensive care medicine. The intensive care unit should have at least 6 beds, fully equipped for electrocardiography and haemodynamic monitoring, anti-bradycardiac pacing, cardioversion and defibrillation and preferably



haemodynamic support devices (intra-aortic balloon pumps, haemofiltration etc.). The programme must include an institution with a cardiac surgical programme.

- b. Equipment should be available for all types of non-invasive investigation and procedures such as X-ray, ECG, exercise testing, long-term ECG, echocardiography including Doppler echocardiography and trans oesophageal echocardiography (TEE), pacemaker check-up and nuclear medicine facilities.
- c. Facilities for invasive cardiology examinations including coronary angiography, cardiac catheterisation and electrophysiological studies.
- d. A conference room for seminars and tutorial sessions
- e. An adequate desk and office space for each trainee.

The special category of institutions without the full range of cardiac facilities will only be recognised for limited periods of training.

Article 4

REQUIREMENTS for TRAINERS within CARDIOLOGY

4.1 The trainer must have access to the previously mentioned facilities. He/she should have been practicing the specialty for at least 5 years before appointment. He/she should be a suitably qualified specialist with a commitment to training and be recognised by the National Board. He/she should have experience in research and postgraduate education.

There should 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.

There should be a minimum number of senior trained specialists in the unit to ensure adequate protected teaching time and continuity of training.

4.2 A National Director of training/Chairman of the national training board should devise and ensure that the curriculum complies with the minimum requirements of the EBSC. The local director of training will be responsible for a training programme for each trainee in accordance with national rules and the recommendations of the EBSC for training programmes in cardiology



Article 5

REQUIREMENTS for TRAINING

5.1 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 practical procedures of sufficient diversity.

5.2 The trainee should have sufficient linguistic abilities to communicate with patients and colleagues in the country of training. He/she should be taught how to analyse, interpret and utilise medical literature.

5.3 The trainee must keep a personal log-book of his/her training activities and present this before certification by the National Board.

5.4 The success of training can be evaluated by a national or local assessment as specified before (2.4.).

5.5 Specifications of training:

Training should place in a full-time position for at least one year. The remaining training programme may take place in a part-time position which then will have to be correspondingly prolonged.

Practical participation in the clinical management of inpatients, including the coronary care unit and provision of cardiac consultations for other services, should constitute a minimum of one year of training, preferably in the first or second year.

Supervised involvement in the management of outpatients, including new and return cases, should be undertaken at least once a week, for at least one year of training.

The trainee should have an on-call commitment for Cardiology (rather than General Internal Medicine or unselected medical emergencies) of at least 100 nights during cardiology training.

The training programme must include a structured training session of two hours per week.

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

5.6 It is recognized that determination of core competencies is a complex process, involving much more than a simple count of procedures encountered or performed by the trainee. Nevertheless confirmation of specific experience contributes usefully to the evaluation process and is required.



The number and degree of participation in performing the following procedures should be documented by the trainees in their log-books. Minimum numbers and degree of participation recommended for the European Cardiology Diploma are indicated (assistance – A; interpret – I; perform – P)

ECG	1000	I
Ambulatory ECG	200	I
Exercise ECG testing	300	P/I
Echo-Doppler studies	350	P/I
Transoesophageal echos	50	A20/P30
Nuclear studies	50	A, I
MRI	20	A, I
Anti-arrhythmia device programming	50	A/P
Pacemaker implantation	50	A/P
ICD implantation	20	A
Coronary and LV angiography	300	A200/P100
Temporary pacemaker implantation	25	A/P
Electrophysiological studies	50	A
Percutaneous Intervention	100	A