



Recommendations on sub-speciality accreditation in cardiology

The Coordination Task Force on Sub-speciality Accreditation of the European Board for the Speciality of Cardiology

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Received 2 June 2007; accepted 14 June 2007; online publish-ahead-of-print 3 August 2007

KEYWORDS Accreditation; Cardiology sub-speciality; Quality standards

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Preamble

The purpose of the European Board for the Speciality of Cardiology (EBSC) Coordination Task Force on Sub-speciality Accreditation in Cardiology is to make recommendations on Sub-speciality Accreditation within Cardiology. EBSC aims to harmonize the process of accreditation of sub-specialities and thereby to provide uniformity of accreditation standards throughout cardiology. Certification in cardiology, for instance, the EBSC Diploma of European Cardiologist, is essential before an individual applies for sub-speciality accreditation.

European accreditation standards within sub-specialities should be clearly defined, thereby assuring patients and other doctors the competence and skills of the accredited sub-specialists. This is increasingly important in times of developing mobility of doctors and patients in Europe in agreement with the basic EU principles of free movement.

The process of sub-speciality accreditation of physicians in Europe has already been initiated by a number of sub-specialities. Those initiatives are based on similar principles and include theoretical (knowledge assessment) and practical (log books) assessments of the training and expertise in the field. These initiatives so far have not followed any specific configuration, mainly because no recommendations have yet been established by authorized scientific or

regulatory bodies. It is the aim of this document to provide such a guideline.

It is important that European accreditation of General Cardiology and sub-specialities is compatible with existing national accreditation systems. European accreditation aims to develop, enhance, and harmonize national assessment and assurance of competence. It is therefore foreseen that, in future, national accreditation systems will develop into a European accreditation system, as defined by the EBSC. Standardization of the process will foster future compatibility of accreditation systems within cardiology at European and national level. This document should be used as a template for future national/international accreditations.

Introduction

The European Board for the Speciality of Cardiology

The European Board for the Speciality of Cardiology (EBSC) was set up in 1992 by the Union Européennes des Médecins Spécialistes-Cardiology Section (UEMS-CS), in cooperation with the ESC (*Figures 1 and 2*).¹ Its purpose is to guarantee the highest standards of care in the speciality of Cardiology in Europe, by ensuring that training of specialists is raised to an appropriate level. This aim is reached by the following means:

- recommendations for the setting and maintaining of standards of training
- recommendations for the quality of training
- recommendations for setting of standards of training institutions
- monitoring of the content and quality of the training institutions
- recommendations for the quality of trainers
- evaluation of training in the EC member states

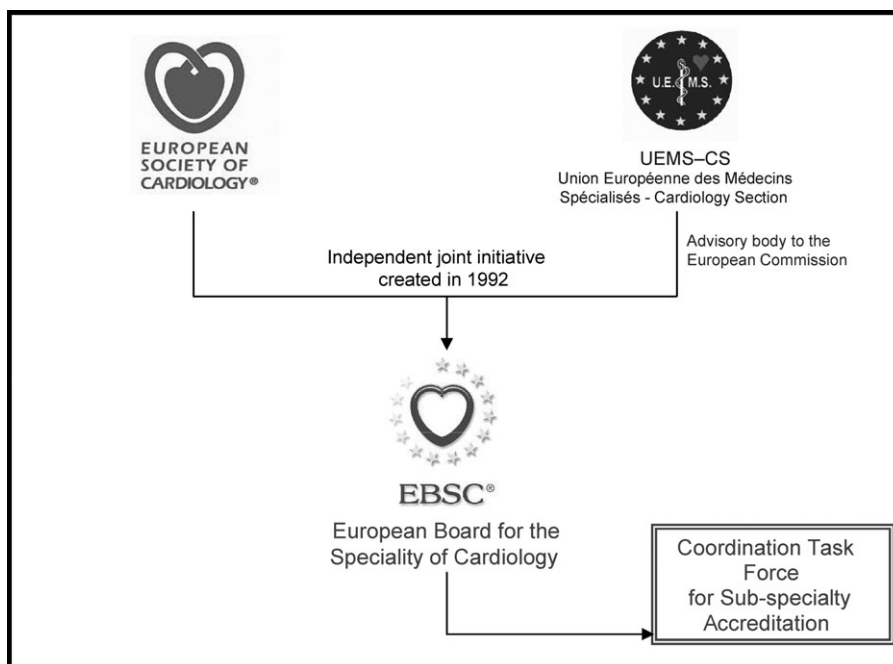


Figure 1 European Board for the Speciality of Cardiology. See online Supplementary material for a colour version of this figure.

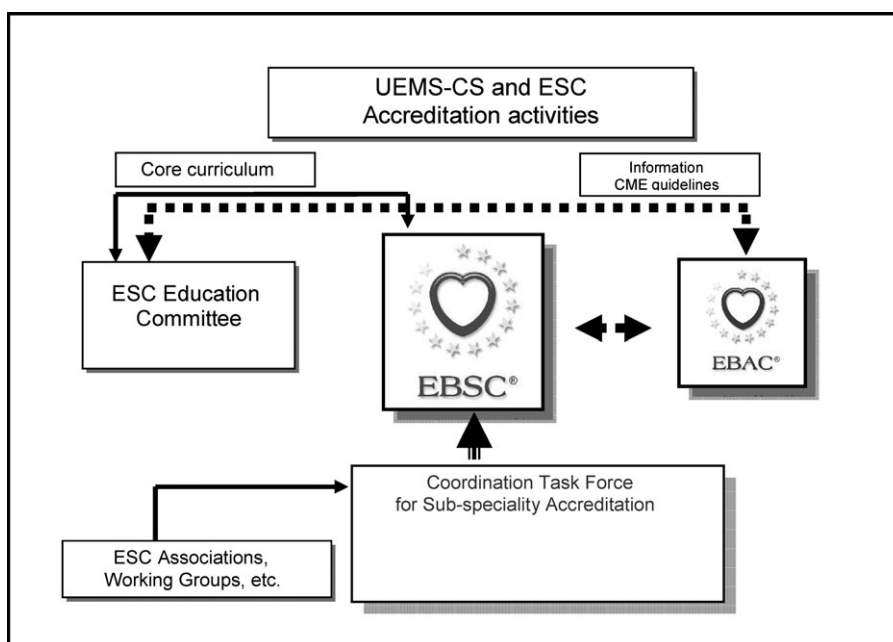


Figure 2 Accreditation activities of the Union Européenne des Médecins Spécialistes-Cardiology Section and the European Society of Cardiology. EBSC, European Board for the Speciality of Cardiology. See online Supplementary material for a colour version of this figure.

- recommendations for harmonizing cardiology standards in the EC member states,

thus facilitating the exchange of trainees between the EC member states and the free movement of cardiologists within Europe.

The EBSC also sets the requirements for and delivers the Diploma of European Cardiologist.

EBSC Coordination Task Force on Sub-speciality Accreditation

The EBSC has set up a Coordination Task Force on Sub-speciality Accreditation to recommend standards in sub-speciality accreditation. This Task Force is represented in the EBSC by the Task Force Chairperson.

The EBSC Coordination Task Force on Sub-speciality Accreditation (EBSC-TF) consists of experts from associations or working groups who were interested in the process of developing accreditation of individuals for their area of expertise.

Its role is two-fold:

- to define and promote sub-speciality accreditation standards, requirements, and procedures and
- to advise the EBSC on the development and status of sub-speciality accreditation and contribute to the overall coherence of accreditation within the speciality of cardiology.

Scope of the EBSC guidelines for sub-speciality accreditation in cardiology

The purpose of this document is to provide information and recommendations on how the sub-speciality should be recognized and the accreditation process within cardiology

organized, conducted, and delivered and should be considered as a minimum guideline for accreditation (Table 1).

This document has been prepared by the members of the Task Force and approved by the EBSC Board.

Adoption of these accreditation procedures involves approval and implementation of accreditation procedures.

EBSC recognized sub-speciality accreditation in cardiology

Definition of a sub-speciality in cardiology

A sub-speciality in cardiology is a field of knowledge, skills, and procedures in a specific area of the speciality of cardiology that:

- goes beyond the basic requirements of general cardiology
- is proposed by the experts in the field (e.g. working groups or associations) to the EBSC and must be approved by the EBSC. EBSC itself informs the ESC and UEMS-CS of the decision. In case of conflict, an appeal can be forwarded to both the ESC and the UEMS-CS
- follows the general cardiology speciality training and requires specific additional knowledge and training.

In addition to sub-speciality accreditation, there is a need for Accreditation of Expertise or Clinical Competence if accreditation in certain skills is considered necessary in a certain area of expertise. Different specific expertise of physicians, nurses, and technicians (not necessarily but not excluding cardiologists) could in this way be recognized. Also, Accreditation or Certifications of Expertise may be considered in specific circumstances.

Table 1 Minimum guidelines for sub-speciality accreditation

Definition of sub-speciality and accreditation certificate
Which sub-specialities can set up an accreditation process
Relations to National Accreditation. Cooperation/ communication/awareness/national sub-speciality
Recommendations on sub-speciality accreditation in cardiology
Sub-speciality training
Sub-speciality training curriculum and syllabus
Trainees: who can apply for sub-speciality accreditation
Training facilities: accreditation/standards of training centres and courses
Trainers: qualifications and duties
Assessment of individuals: accreditation process
Independent Accreditation Committee
Definition of Accreditation Committee
(i) Assessment of Knowledge Board
(ii) Practical Skills Assessment Board
Recruitment of training supervisors and accreditation assessors
Accreditation process
Assessment methods, knowledge, skills, and attitude
Assessment of Knowledge, knowledge, multiple choice questions
Practical assessment (log book)
Skills (at least, certification of attitude by trainees)
Audit and validation of experience (validation of logbooks)
Guidelines for candidates
Complain procedure
Diplomas
For sub-speciality certification in cardiology
For certification in Assessment of Knowledge
For single specific skills
Quality controls (control of the application process, etc.)
Budget
Archiving/record keeping of accreditation awarded
Re-accreditations/re-certifications

Relations to national accreditation

The objective of the EBSC is to harmonize curricula and assessment for sub-speciality accreditation. EBSC will seek to work with National Authorities in delivering this objective.

EBSC recommendations on sub-speciality accreditation in cardiology

1. Sub-speciality training

Sub-speciality training must follow an EBSC accredited programme, with specified educational contents approved by the sub-speciality working group or association, in accordance with UEMS-CS, ESC, and EBSC recommendations, in an accredited training institution, by accredited teachers and attendance at EBAC accredited courses.

The relevant sub-speciality group or association recommends successful candidates for EBSC certification.

1.1. Sub-speciality training curriculum and syllabus

Both sub-speciality training and the accreditation processes should be based on a published curriculum. The purpose of a sub-speciality training curriculum is to define an approved

educational process. It includes a formal education plan intended to bring expected learning outcomes. It should include the rationale, aims, and objectives, expected learning outcomes, education content, teaching and learning strategies, and assessment procedures. The syllabus is a part of the curriculum and is a listing of subject matters to be covered in a training programme.

1.2. Trainees

Trainees should have completed general Cardiology, in accordance with the ESC Core Curriculum² including a common trunk of at least 2 years internal medicine, prior to starting sub-speciality training.

Trainees should be exposed to both apprenticeship and formal learning methods. The duration and frequency of training should be defined by the sub-speciality curriculum. Trainees will be required to provide documentation of attendance at EBAC accredited formal training programmes. Copies should be maintained in the records of the trainee (e.g. electronic logbook).

Similarly, accreditation will be considered for those professionals who hold a Cardiology Specialist qualification issued by a non-European country, always provided that the same is shown to be equivalent to a European qualification.

1.3. Training facilities: accreditation standards of training centres

Training centres must perform the numbers of Assessments of Knowledge/procedures, must fulfil the minimum requirements set by the sub-speciality curriculum, and must be nationally recognized for consistent quality and high standard of patient care.

At least two accredited professionals in the field of the sub-speciality involved must be available to provide training for the fellows attending the programme and must agree to confirm the skills reached at the end of the training. One of these individuals must be an accredited trainer. Specific targets to define the minimum experience and workload per centre and operator should be set in each sub-speciality curriculum. The involvement of the National Societies coordinating the specific activities is highly encouraged to identify and audit the training centres.

Accreditation in a sub-speciality requires the trainee to study in a centre recognized and accredited by the EBSC for sub-speciality training. These centres must comply with the following requirements:

- (i) must be recognized by the national regulatory authorities
- (ii) must be within a Cardiology Service
- (iii) must be under the direction of a professional who has EBSC sub-speciality accreditation
- (iv) must be able to offer minimum capacity for training which will be evaluated by the Accreditation Committee in accordance with the following recommendations:

- (1) *Patient care capacity.* Have a staffing level which includes at least two professionals that hold sub-speciality accreditation and that perform more than the minimum number of procedures set by the sub-speciality curriculum.

- (2) *Training capacity.* Be within a National Accredited Cardiology Service.
- (3) *Research capacity.* Maintain a minimum level of scientific activity and interest in the sub-speciality field which is represented by presentations at related scientific EBAC accredited activities and/or publications in peer review journals.

Additionally, Non-European centres that do not comply with the second requisite may obtain Accredited Training Centre status if they have or, will acquire, training capacity as recognized by the EBSC—the Sub-speciality Accreditation Committee. Exceptionally, Accredited Training Centre recognition will be awarded in the case of foreign centres that do not have a relevant competent accrediting organization in that country. The evaluation and accreditation of centres in the former and latter categories will be carried out individually by the Accreditation Committee and always according to the documentation supplied by the applicant centre to demonstrate their training capacity.

Similarly, those centres that comply with all the above-mentioned requisites, with the exception of accreditation of their professionals (given that this was not available), may apply for accreditation for training imparted during the 3 years prior to the implementation of the Accreditation System provided that these obtain accreditation as professionals during the first 3 years following implementation of the Accreditation System.

1.4. Trainers: Programme Director

The Training Programme Director should have substantial documented experience in sub-speciality-related clinical procedures and teaching in accordance with the criteria of the sub-speciality and EBSC. They should be accredited in the sub-speciality or be able to satisfy EBSC by a combination of evidence of national standing, log books of patient care, and documented experience in research and education.

The Programme Director should ensure that the trainee has access to and appropriately shares his time between the procedures defined in the sub-speciality training Curriculum and service duties.

The Programme Director must also ensure that the trainee attends formal learning courses and other forms of learning such as research and/or educational activities of the department, as defined in the sub-speciality training Curriculum.

2. Assessment of individuals

2.1. Accreditation process

The sub-speciality accreditation process will be the responsibility of an independent Accreditation Committee, promoted by, but run independently by, the relevant sub-speciality.

The accreditation process must be recognized by the EBSC.

The individual successful candidate will be accredited by the EBSC upon recommendation by the relevant working group or association of the ESC. EBSC has the right to verify candidates. The curriculum should have been approved by the ESC Education and the EBSC. The training centre should be approved by EBSC and formal training courses by EBAC. Sub-speciality accreditation diplomas are

issued by the EBSC, and the process of sending the certificates will be done by the sub-speciality groups.

A central database should be set up and run by the EBSC for the different sub-specialities.

2.1.1. Accreditation Committee

The Accreditation Committee is directly responsible for the quality of the accreditation process and for the implementation of accreditation procedures.

Members of the Accreditation Committee should be appointed by and accountable to the Board/Nucleus of the relevant sub-speciality. They should be appropriately qualified and widely representative of all stakeholders including representation from the EBSC. That term of office for the committee members should be established; the recommended term is of 4 years.

The Accreditation Committee should appoint members and supervise the work of two associated Boards:

- (i) the Knowledge Assessment Board
- (ii) the Practical Skills Assessment Board

2.1.2. Assessment methods

It is recommended that a variety of assessment methods should be used to ascertain the knowledge, skills, and attitude of the candidate. The assessment methods should not be used in isolation but as complementary techniques, including:

- (i) appraisal from the Training Programme Director;
- (ii) procedural logbook;
- (iii) documentation confirming participation of the trainee in EBAC accredited formal training courses;
- (iv) Assessment of Knowledge;
- (v) Directly Observed Procedural Skills Assessment (DOPS).³ DOPS is an established assessment method, which must be employed at regular intervals during the 2-year programme. Ideally, this should be performed by an experienced, independent trainer who observes the trainee performing a clinical procedure. In practice, it is expected that the assessor will come from within the training centre;
- (vi) Assessment of professionalism (A 360-appraisal);⁴

Sub-specialities will be encouraged to develop an electronic mechanism to accumulate the above information.

2.1.3. Assessment of Knowledge

Assessment of Knowledge is the simplest way of ensuring that trainees possess the knowledge base for their chosen sub-speciality.

Assessment of Knowledge can be either summative or formative. Summative Assessment of Knowledge: pass marks are set rather low as the outcome is pass or fail. Formative Assessment of Knowledge: pass marks are set higher as the outcome is to pinpoint areas of improvement and not to pass or fail candidates. The Assessment of Knowledge is designed to preserve learning and education as well as to protect patients.

The Assessment of Knowledge should ensure that:

- (i) the range of the sub-speciality is tested (and may include simple questions to confirm a knowledge of core material relating to patient safety)

- (ii) candidates are reliably identified as being above or below the standard required and not necessarily to further competitively categorize candidates
- (iii) pass mark correlates with a level of knowledge accepted by the Accreditation Committee as being appropriate to an accredited sub-specialist
- (iv) consistency between successive cohorts of candidates.

The Assessment of Knowledge should consist of two parts, both in the multiple choice question (MCQ) format. It is recommended that every question has multiple answers.

The first section will test theoretical knowledge, covering all items included in the syllabus by using minimal 100 MCQs.

The second section should use several clinical cases to appraise practical experience.

The Knowledge Assessment Board. The Assessment of Knowledge should be organized and supervised by the Knowledge Assessment Board reporting directly to the Accreditation Committee.

The Knowledge Assessment Board should assure the preparation of the Assessment of Knowledge content (questions) according to standard procedures, assuring their validity and quality.

The Chairperson may appoint external experts/specialists representing ESC member countries who will cooperate with the Knowledge Assessment Board in definition of questions.

The Knowledge Assessment Board should be responsible for the following theoretical issues and logistics of the exam:

Theoretical issues. Sub-specialities will be responsible for the content of questions. The format of questions and the approval of questions pertain to EBAC and EBSC.

Logistics of the exam. Provided that sub-specialities will be encouraged to develop electronic/on-line mechanisms, knowledge assessment should be web-based and ought to be arranged so that individual candidates are presented with the questions in different orders.

2.1.4. Practical assessment (logbook)

Trainees will maintain a continuous record (logbook) of performed clinical procedures. If possible, the format of the logbook should follow the international standards/recommendations.

The procedure logbook should be in English (although it may include a translation to the local language) and should include the diagnosis of the patient, the indication of the procedure, date, results of the procedure, complications of the procedure, and comments of the training Programme Director. The procedures logbook should be signed off by a Programme Director. It is recommended to use electronic formats of logbooks, whenever possible. The EBSC will develop an electronic logbook with major input from the sub-specialities.

The Practical Skills Assessment Board. The review of submitted logbooks (records of clinical procedures and other learning activities) should be organized and supervised by the Practical Skills Assessment Board, reporting directly to the Accreditation Committee.

The Practical Skills Assessment Board should assure the transparency and correctness of the logbook review process, according to the adopted review guidelines and procedures.

The Chairperson may appoint external experts/specialists representing ESC member countries who will support the Practical Skills Assessment Board in the review process.

2.1.5. Language(s) for sub-speciality accreditation evaluations (Assessment of Knowledge and Practical Skills Assessment)

All information regarding the accreditation process and the Assessment of Knowledge should be in English, although an authorized translation to local languages is recommended and should be done by the national cardiac societies.

Careful consideration should be given in providing a glossary of key terms and other information in multiple

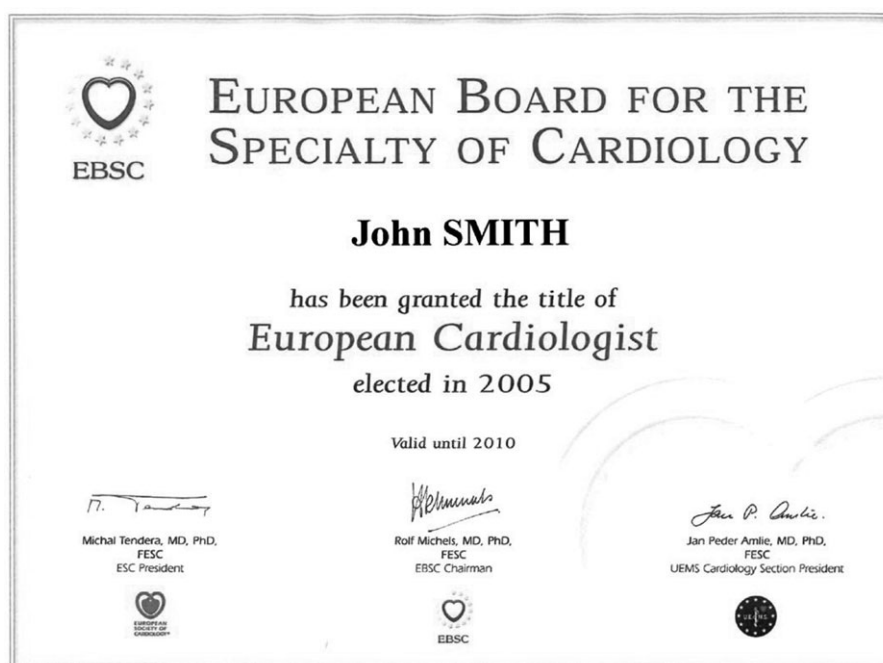


Figure 3 Diploma of European Cardiologist. See online Supplementary material for a colour version of this figure.

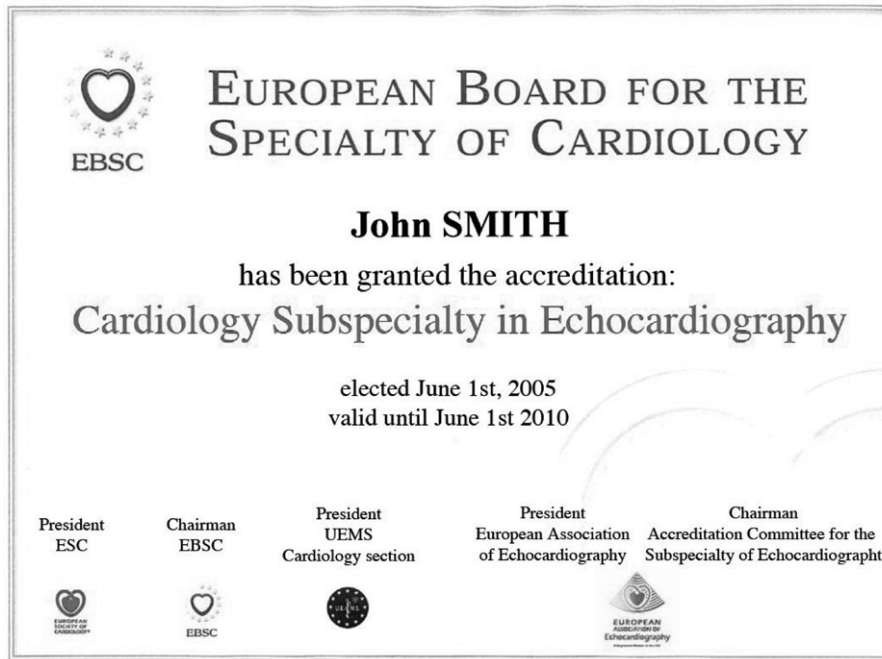


Figure 4 Sub-specialty of cardiology diploma. See online Supplementary material for a colour version of this figure.

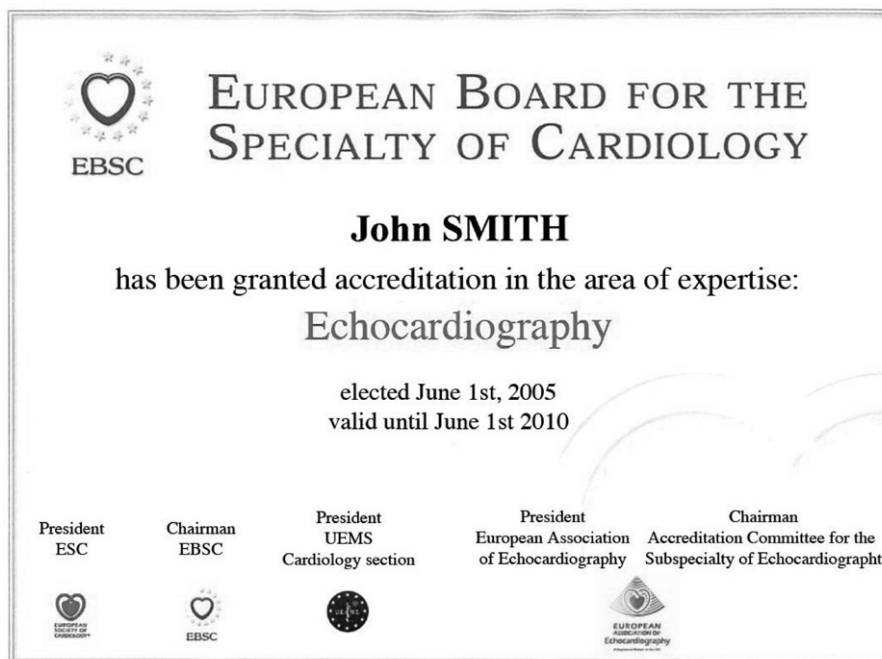


Figure 5 Area of expertise accreditation diploma. See online Supplementary material for a colour version of this figure.

European languages for use by candidates in the knowledge assessment.

The core curriculum, syllabus, practical skills assessment, knowledge assessment, and other materials should be in English, although authorized translations to local languages organized by national cardiac societies are recommended.

2.1.6. Accreditation diplomas

The EBSC accreditation diplomas are issued by the EBSC after recommendation of the relevant working group or association of the ESC.

On EBSC diplomas, the following items should be clearly indicated:

- (i) EBSC logo and sub-specialty logo and ESC and UEMS logos
- (ii) the document in question is an EBSC diploma, issued by the EBSC
- (iii) the subject of accreditation
- (iv) the approval of the EBSC Chairperson, the Chairperson of the Sub-specialty and the Chairperson of the Accreditation Committee of the Sub-specialty (signatures of Chairpersons/President)

- (v) the date of issue
- (vi) the duration of validity
- (vii) the name of the accredited person and relevant (medical) qualifications of the certified person

Types and content of the diplomas. Different types of accreditation diplomas should indicate the specific accreditation awarded. These include the following:

- (i) Speciality Accreditation, for example:
 - (a) European Cardiologist (EBSC Diploma of European Cardiologist) (*Figure 3*)
 - (b) National Cardiologist
- (ii) Sub-speciality Accreditation (*Figure 4*)
- (iii) Accreditation in an area of expertise (*Figure 5*)
- (iv) Accreditation/certification in a single skill

2.1.7. Budget

All sub-speciality accreditation processes should have a budget. The budget should be reviewed annually. Resources for the running of the accreditation process should be identified. The fee to applicants should be stated and the amount justified on the basis of the budget. The responsibility for the budget lies with the sub-speciality.

EBSC collects a handling fee for each individual and the fee will be set by EBSC in discussion with the sub-speciality.

- (i) Additional further items that may be (should ideally be) included:
- (ii) administrative time and costs
- (iii) Assessment of Knowledge, venue hire, and/or electronic mechanism development and other cost
- (iv) Assessment of Knowledge marking and analysis/logbook distribution and marking
- (v) payment if any for examiners/question writers
- (vi) re-accreditation costs
- (vii) expenses for examiners and committee members to attend meetings
- (viii) marketing
- (ix) accreditation committee meetings: venue, etc;
- (x) language review.

2.1.8. Archiving/record keeping system of accreditation awarded

All the result of the assessment is the responsibility of the sub-specialities and the records of the accreditation and the archiving will be the responsibility of the EBSC.

2.2. Re-accreditation: re-certification

Knowledge and skills in cardiology are continuously developing and evolving. Continued learning and practice are required to maintain standards of practice. Therefore, accreditation is time limited. Continuing accreditation will require individuals to go through a process of re-accreditation.

The time period before re-accreditation is required and may vary between sub-specialities but should be 5 years if a suitable electronic platform is available. Otherwise 10 years maximum is recommended.

Re-accreditation requires submission and validation of evidence of continued learning and practice within the sub-speciality.

2.3. Revocation

At its discretion, the EBSC will be empowered to revoke accreditation if the accredited professional or centre was not qualified to receive accreditation at the time it was granted. Similarly, accreditation may be revoked if it is proven that the accredited professional or centre acts incompetently or in a professionally or ethically unsatisfactory manner.

The EBSC reserves the right to institute proceedings through all legal and administrative means as deemed necessary in the case of inappropriate use, whether intentional or not, of the denomination 'EBSC Accredited' and its derivatives.

2.4. Appeal procedure

The Accreditation Committee should assure that an appropriate appeal/complaint procedure is in place.

The Knowledge Assessment Board handles the first level of appeals.

The Accreditation Committee handles the second level of appeals and takes decisions according to the procedure in place.

Exceptional situations and extra-procedural issues should be formally reported to/consulted with the EBSC Chairperson and/or the EBSC Coordination Task Force on Sub-speciality Accreditation.

A candidate should have the right to appeal to the Chairperson of the Knowledge Assessment Board or Practical Skills Assessment Board about matters of process. Appeals should be evaluated by two persons, one of whom would normally be the Chairperson or another senior member of the respective Board or Accreditation Committee.

2.5. Documentation

It is recommended that every sub-speciality accreditation process is supported by appropriate documentation done by the sub-speciality. The EBSC has an ongoing right to access the result of the assessments held by the sub-speciality.

These should include:

- (i) Guidelines for candidates;
- (ii) Guidelines for assessors/evaluators;
- (iii) Guidelines for Programme Directors;
- (iv) Template of logbook.

3. Quality control

Accreditation procedures should be supported by a quality control system.

The elements for a quality system in sub-speciality accreditation should include the following:

- (i) Adequate qualification of candidates and board members of the Accreditation Committee
- (ii) Continued education of accredited professionals
- (iii) Appropriate recording and storage of information on procedures and activities related to accreditation
- (iv) Monitoring and review of accreditation procedures by internal audits
- (v) Detection of areas for improvement
- (vi) Continuous update of procedure guidelines and manuals

- (vii) Allocation of responsibilities
- (viii) Being prepared for external audits.

Conclusions

The process of sub-speciality accreditation of physicians in Europe has already been initiated by a number of scientific associations and working groups but, so far, no recommendations have been established by authorized scientific or regulatory bodies.

This document, prepared by a special Task Force of the EBSC, outlines the recommendations to provide uniformity in the accreditation standards in Europe. These guidelines do not intend to constrain the much-needed accreditation of expertise nor do they invalidate the ongoing accreditation programmes of some associations or working groups. On the contrary, they are designed to harmonize the process of accreditation and should be considered as a form of guidance. Some of the recommendations will need sometime before they are fully implemented. Undoubtedly, the process of accreditation itself will improve with time. Feedback from the cardiology community and other specialities involved in the care of patients with cardiovascular diseases together with local health authorities will be built into the accreditation process as it develops in the future.

Supplementary material

Supplementary material is available at European Heart Journal online.

Conflict of interest: The EBSC Coordination Task Force on Sub-speciality Accreditation in Cardiology expenses were covered by the European Society of Cardiology (ESC) and the Union Européenne des Médecins Spécialistes-Cardiology Section (UEMS-CS).

Appendix: glossary of terms

Accreditation is a process which results in a Diploma/Certificate indicating proficiency. This can apply to individuals, institutions, and laboratories.

Accreditation: Signifies making something credible or proving its certitude. It is voluntary, it is motivational, and its objective is the improvement of quality. The standards measured are optimal. It is performed in health centres which already have the appropriate authorization from the corresponding official organization to carry out a certain activity and, therefore, are already in operation.

Authorization: Signifies giving somebody permission to do something. It is obligatory, it is always performed prior to opening a specific programme, and therefore its purpose is legislative, that is to say, to verify compliance with the minimum standard criteria demanded before granting authorization to commence a specific activity.

Inspection: Signifies examining something in detail to supervise it. It is obligatory, it is carried out to maintain control, and its purpose is supervisory, that is to say, its

objective is to check compliance with the criteria demanded by the regulations once a programme is opened.

Homologation: Signifies to authoritatively verify compliance with determined specifications or properties. It can be voluntary or obligatory. The objective is to guarantee that the product complies with previously defined specifications. The purpose is homologous. Minimum standards are to be measured. It may or may not be operational.

Credentialing is a process undertaken by a hospital to permit individuals to perform certain procedures. Different hospitals may adopt different credentialing criteria. This term is not used in this document.

A sub-speciality in cardiology is a field of knowledge and skills in a specific sector of the speciality of Cardiology that:

- (i) goes beyond the basic requirements of general cardiology
- (ii) is proposed by EBSC and approved by the experts in the field and by the ESC and the UEMS-CS as a field of sub-specialization
- (iii) follows the general cardiology speciality training
- (iv) requires specific additional knowledge and training

Certification is not used in this document. It is not equivalent to accreditation; it involves passing an Assessment of Knowledge which is only a part of an accreditation process. Assessments of Knowledge demonstrate objective competency in the theory within a field.

Curriculum is a formal education plan for a training programme which intended to bring about specific learning outcomes.

Syllabus is a listing of subject matter to be covered in a training programme.

Logbook is a record of practical experience of the trainee.

Re-accreditation is a process of renewal of accreditation, subject to specific criteria.

EBSC is the European Board for the Speciality of Cardiology.

EBAC is the European Board for Accreditation in Cardiology.

UEMS-CS is the Union Européenne des Médecins Spécialistes-Cardiology Section.

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