UNION EUROPÉENNE DES MÉDECINS SPÉCIALISTES
EUROPEAN UNION OF MEDICAL SPECIALISTS
Association internationale sans but lucratif – International non-profit organisation

UEMS Division of Angiology/Vascular Medicine

Training Requirements for Angiology/Vascular Medicine

European Standards of Postgraduate Medical Specialist Training

(old chapter 6)

Preamble

The UEMS is a non-governmental organisation representing national associations of medical specialists at the European Level. With a current membership of 37 national associations and operating through 43 Specialist Sections and European Boards, the UEMS is committed to promote the free movement of medical specialists across Europe while ensuring the highest level of training which will pave the way to the improvement of quality of care for the benefit of all European citizens. The UEMS areas of expertise notably encompass Continuing Medical Education, Post Graduate Training and Quality Assurance.

It is the UEMS' conviction that the quality of medical care and expertise is directly linked to the quality of training provided to the medical professionals. Therefore the UEMS committed itself to contribute to the improvement of medical training at the European level through the development of European Standards in the different medical disciplines. No matter where doctors are trained, they should have at least the same core competencies.

In 1994, the UEMS adopted its Charter on Post Graduate Training aiming at providing the recommendations at the European level for good medical training. Made up of six chapters, this Charter set the basis for the European approach in the field of Post Graduate Training. With five chapters being common to all specialties, this Charter provided a sixth chapter, known as “Chapter 6”, that each Specialist Section was to complete according to the specific needs of their discipline.

More than 20 years after the introduction of this Charter, the UEMS Specialist Sections and European Boards have continued working on developing these European Standards in Medical training that reflects modern medical practice and current scientific findings. In doing so, the UEMS Specialist Sections and European Boards did not aimed to supersede the National Authorities' competence in defining the content of postgraduate training in their own State but rather to complement these and ensure that high quality training is provided across Europe. At the European level, the legal mechanism ensuring the free movement of doctors through the recognition of their qualifications was established back in the 1970s by the European Union. Sectorial Directives were adopted and one Directive addressed specifically the issue of medical Training at the European level. However, in 2005, the European Commission proposed to the European Parliament and Council to have a unique legal framework for the recognition of the Professional Qualifications to facilitate and improve the mobility of all workers throughout Europe. This Directive 2005/36/EC established the mechanism of automatic mutual recognition of qualifications for medical doctors according to training requirements within all Member States; this is based on the length of training in the Specialty and the title of qualification.

Given the long-standing experience of UEMS Specialist Sections and European Boards on the one hand and the European legal framework enabling Medical Specialists and Trainees to move from one country to another on the other hand, the UEMS is uniquely in position to provide specialty-based recommendations. The UEMS values professional competence as "*the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served*"[1]. While professional activity is regulated by national law in EU Member States, it is the UEMS understanding that it has to comply with International treaties and UN declarations on Human Rights as well as the WMA International Code of Medical Ethics.

This document derives from the previous Chapter 6 of the Training Charter and provides definitions of specialist competencies and procedures as well as how to document and assess them. For the sake of transparency and coherence, it has been renamed as "Training Requirements for the Specialty of X". This document aims to provide the basic Training Requirements for each specialty and should be regularly updated by UEMS Specialist Sections and European Boards to reflect scientific and medical progress. The three-part structure of this documents reflects the UEMS approach to have a coherent pragmatic document not only for medical specialists but also for decision-makers at the National and European level interested in knowing more about medical specialist training.

Angiology/Vascular Medicine in Europe

Angiology/Vascular Medicine is the medical specialty dealing with Vascular Diseases (arterial, venous, lymphatic and microcirculatory diseases) and focuses on prevention, diagnosis, therapy and rehabilitation as well as research and education, to benefit patients and the general population. Angiology/Vascular Medicine are synonyms in different countries.

In numerous countries (Austria, Czech Republic, Germany, Hungary, Poland, Slovenia, Switzerland) the specialty is recognized either as a primary specialty or following a Common Trunk. In other countries there are National Diplomas or Masters.

Therefore, at the moment Angiology/Vascular Medicine still does not reach the requirements for a primary specialty. In fact, the process required for the European Union to include A/VM as a specialty in the annex V first requires recognition in at least 2/5th of the Member States (article 25), by a 'qualified' majority and submitted to the committee on qualifications of the European Commission. Secondly, to create a Specialist Section for A/VM within the UEMS, A/VM has to be recognized as an independent specialty by more than one third of the E.U. Member States and must also be registered in the Official Journal of the European Commission (Directive 205/36/EC).However, in most European countries Angiology exists in the NHS and these Centers are entrusted with the care of vascular patients in the medical area. There is expertise defined by this medical area to respond to the requests in demand from an increase in vascular diseases, the need for a prevention also in terms of evolution of the diseases, both linked to the ageing population and the social burden of chronic disease.

Angiology/Vascular Medicine has extensive training background in Europe, first with the EWGMA (European Working Group on Medical Angiology) and then as VAS (VAS-Vascular-Independent Research and Education-European Organization-, becoming VAS-European Independent Foundation for Angiology/ Vascular Medicine). Educational programs (European Master in Angiology/Vascular Medicine, European Fellowship in Angiology/Vascular Medicine and EU Advanced Postgraduate Courses) are offered with formal agreements thanks to the cooperation of VAS with European Universities and qualified Centres. Exchange and International collaboration are encouraged within these projects In close co-operation with UEMS.

Recognized in 2007 as a Division within the UEMS, it has produced a Chapter 6 that guided the evolution and in 2013, following the UEMS-CESMA indications, created, in collaboration with VAS, a European Board for the European Exam in Angiology/Vascular Medicine, to become one of the specialties that today offer a CESMA–UEMS European Exam in Angiology/Vascular Medicine to obtain the UEMS Diploma in Angiology/Vascular Medicine

The UEMS Division of A/VM has published the first Requirements for the Specialty (Chapter 6) of which this document represents a further improvement and consolidation . The previous document remains valid, unless modified or covered herein.

I. TRAINING REQUIREMENTS FOR TRAINEES

The ultimate goal of training is to provide the best quality for care, in accordance with the principles of equity for patients, citizens and for the specialists in the right to education.

Europe still has major differences in its training and the programmes provided. The differences are even more profound for Angiology/Vascular Medicine.

It is crucial that the European population and patients have the same quality in medical care and prevention. This is only possible by providing high quality training programs, to European standards, offered by qualified and validated Centres and should be based on training, standard methods and with appropriate equipment independently from the wealth of the individual countries.

This also responds to the aims of harmonisation coordinated by UEMS.

1. Content of training and learning outcome

This Document statements of mission and outcomes must describe the competency-based training process to create a medical doctor able to undertake comprehensive up-to-date medical practice in Angiology/Vascular Medicine in a professional manner, unsupervised and independently or within a team, in keeping with the needs of the health care system.

Appropriate innovation in the training process is encouraged for development of broader competencies than minimally required and constantly strive to improve patient care that is appropriate, effective, respecting human rights, dignity and Equity in dealing with health problems and promotion of health. The training should prepare specialists for lifelong, self-directed learning and readiness for continuing medical education and professional development.

Professionalism and autonomy

The training process must strengthen professionalism of the doctor. The training should foster professional autonomy to enable the doctor to act in the best interests of the patient and the public.

Training outcome

Competences, which must be achieved by trainees as a result of the training programmes are described in the Curriculum. The extent of competence achieved by trainees should be used as feedback for programme development.

Learning approaches

Postgraduate training must follow a systematic training programme, which describes both the general and specialist components of training. The training must be practice - based involving the personal participation of the trainee in the services and responsibilities of patient care activities in the training institutions (taking into consideration the national rules) . The training programme must encompass integrated practical and theoretical instruction.

Training programme include a defined curriculum to enable trainees to achieve the Programme's learning outcomes. The curriculum includes specific learning outcomes and a syllabus of knowledge, skills and professional attitudes and behaviour.

Training must include considerable experience with patient care in appropriate clinical settings, involving trainees in the supervised delivery of service and providing regular formal educational sessions that cover topics of value and of interest to the trainee.

Trainees should also have opportunities for self-directed learning and to create a personal development plan.

Scientific methods

The trainee must achieve knowledge of the scientific basis and methods of Angiology/Vascular Medicine including understanding of research methodology, through exposure to a broad range of relevant clinical/practical experience in different settings, become familiar with evidence-based medicine and critical clinical decision-making.

The trainees should be involved in research projects. No-profit European collaborative projects which can facilitate exchange of experience and expertise should be recommended.

Training content

The training process must include extensive clinical work and relevant theory of the basic biomedical, clinical, behavioural and social sciences; clinical decision-making; communication skills, medical ethics, public health policy, medical jurisprudence and managerial disciplines required to demonstrate professional practice in the specialty.

Competencies required of the trainee

Specialists in Angiology/Vascular Medicine should possess a defined set of knowledge, skills, and assessments, aiming to offer the best quality of care to patients.

Specialists should take care of the patient in a holistic way, taking into account ethical indications, social situations, characteristics and individual needs of the patient along with their theoretical and practical expertise. The patients should be made fully aware of their situation and provided with the tools to improve it, be helped to follow their therapy to prevent the evolution of the disease and complications.

A/VM specialists should apply their competencies to stimulate and understand the information provided by the patient, make appropriate clinical choices also through diagnostic and therapeutic interventions.

Therefore it is necessary for the specialist to possess sound knowledge not only in the context of specific expertise, but also within the framework of the local Health Services and the services available. They should have knowledge on communication, on patient education, ability in problem solving and to work in a team.

In addition to this, specific knowledge about:

Clinical conditions (pathophysiology, epidemiology, natural history, prognosis, clinical aspects, differential diagnosis, treatment)

1.Peripheral arterial diseases
2.Deep Venous Thrombosis
3.Superficial Flebitis
4.Chronic Venous Insufficency
    a.Varicose Veins
    b.Venous Ulcers
6.Cerebral Vascular Diseases
7.Raynaud Syndrome
8.Microcirculatory disorders
    a.Other vasospastic disorders
    b.Diabetic microangiopathy
9.Buerger disease
10.Vasculitis
11.Lymphedema
12.Renal Vascular Disesases
13.Mesenteric Vascular Diseases
14.Aortic Aneurism
15.Main risk factors (in particular
    a.HT
    b.Dyslipidemia
    c.Hypercoagulative states)
16.Vascular Malformation
17.Vascular involvement in rare diseases
18.Prevention

Disease management

·Manage clinical, diagnostic and therapeutic protocols for vascular diseases
·Apply commonly used scoring systems for assessment of severity of illness/risk
·Evaluate each time the benefit-risk balance of the prescribed treatment report.
·Manage the care of the critically ill vascular patient with acute medical conditions
·Identify the implications of relevant chronic and co-morbid disease
·Identify and minimize risk of adverse events and complications
·Critically apply guidelines and protocols
·Identify and manage risk factors
·Interact with General Practitioners and organize patient's follow-up
·Organize and take part in Patient education
·Take active part in preventive measures and promote safe life styles for patients and population
·Facilitate multidisciplinary collaboration

Diagnosis

·Obtain a history and perform an accurate clinical examination
·Undertake timely and appropriate investigations
·Perform and interpret vascular ultrasound and other vascular and microvascular assessments
·Interpret clinical vascular imaging
·Define investigations for multiorgan localization also in collaboration with the other specialists
·Integrate clinical findings with instrumental and laboratory investigations
·Obtain appropriate microbiological samples and interprets results
·Stimulate interaction and collaboration with other bordering Specialists(Vascular Surgeons, Cardiologists, Neurologists, Nephrologists, Radiologists, Diabetologists, Dermatologists, etc.) in respect of each reciprocal competence

Practical procedures

·Perform Ultrasound assessment for peripheral arteries
·Perform Ultrasound assessment for carotid and vertebral arteries
·Perform Ultrasound assessment for venous deep and superficial
·Perform Ultrasound assessment for abdominal arteries
·Perform Ankle Brachial Index, Segmental pressures and Toe Index
·Perform Free Interval evaluation and Treadmill test
·Perform Microciculatory assessment(capillaroscopy, Laser Doppler, Po2/Pco2 and other thecniques)
·Perform Transcranial Doppler
·Describe indications for laboratory risk assessment
·Apply Venous contentive bandages
·Give indications for treatment of venous ulcers
·Perform or indicate Sclerotherapy for Varicose Veins
·Perform or indicate Thermoablation for Varicose Veins
·Perform or indicate Arterial interventional therapy
·Manage the assessment, prevention and treatment of pain and other distress.
.Stimulate nterdisciplinary approach to establish indications for vascular surgery, preoperative work-up, aftercare
.Basic medical intensive care, especially in pulmonary embolism, acute limb and visceral ischemia

Professionalism

·Communicate effectively with patients and relatives
·Communicate effectively with members of the health care team
·Maintain accurate and legible records / documentation
·Involve patients in decisions about care and treatment
·Demonstrate respect of cultural and religious beliefs and an awareness of their impact on decision making
·Respect autonomy, privacy, dignity, confidentiality and legal constraints on the use of patient data
·Collaborate and consult; promote team-working
·Ensure continuity of care through effective hand-over of clinical information
·Take responsibility for safe patient care
·Formulate clinical decisions with respect for ethical and legal principles
·Seek learning opportunities and integrate new knowledge into clinical practice
·Maintain independence from economical interest.

. 2. <u>Organisation of training</u>

a.Schedule of training

<u>Composition and duration of training</u>

European Core Curriculum could be considered for the basic content of the national training programme.

The Core Curriculum recommends 5 certified years of training and the direct participation in collaborative European research projects. Optimal training would be:

- ·At least 2 years Common Medical Trunk training in Internal Medicine
- ·3 years training in an accredited Angiology/Vascular Medicine Center

The Core Curriculum foresees the training on all the aspects of competence in Angiology/Vascular Medicine and defines the minimum requirements for the main skills.

.1 additional year is requested for each of the further Additional Competencies/Curricula.

b.Curriculum of training

As usual, 3 Levels of Autonomy are foreseen: Level 1(able to choose the procedure, interpreting the results. No experience in performing the procedures. Need direct supervision), Level 2 (Level 1 competences plus able to perform procedures. Limited supervision in routine), Level 3 (autonomy in all the competences, also in complicated cases. No supervision needed).

Decision-making autonomy (level 3) in the management of vascular disorders and risk factors, from the diagnostic, therapeutic and organizational points of view will be reached through training.

The trainee should follow clinical cases on all the relevant specialist diseases.
The activity will be recorded in a Log Book and evaluated in terms of the acquired expertise.

Skills - Number of procedures required to reach autonomy:

•Perform Ultrasound assessment for peripheral arteries
•Perform Ultrasound assessment for carotid and vertebral arteries
•Perform Ultrasound assessment for venous deep and superficial
•Perform Ultrasound assessment for abdominal arteries
Minimum 1000 personally performed (Minimum 200 per category) to reach Level 3

•Perform ABI, segmental pressures and Toe Index
•Perform FI evaluation and Treadmill test
Minimum 100 personally performed to reach Level 3

•Perform Microcirculatory assessment (capillaroscopy, Laser Doppler, Po2/Pco2)
Minimum 200 personally performed to reach Level 3

•Perform Transcranial Doppler
Minimum 60 assisted to reach Level 2 or 100 personally performed to reach Level 3

•Perform Venous bandaging
Minimum 60 personally performed to reach Level 3

•Give indications and supervise treatment of venous ulcers

•Perform or indicate Sclerotherapy for Varicose Veins
•Perform or indicate Thermoablation for Varicose Veins
Minimum 10 as observer (including the possibility to follow recorded training sessions.) (Level 1).
100 personally performed (if additional Curriculum2) to reach Level 3

•Performs or indicates Arterial interventional therapy
Minimum 10 as observer (including the possibility to follow recorded training sessions.) (Level 1)/
100 personally performed (if additional Curriculum1) to reach Level 3

•Patients education sessions
Minimum 40 personally performed to reach Level 3

•Describe indications for laboratory risk assessment

Also requested Level 1 to provide guidance and interpret.

Angiography,AngioTAC, AngioMNR, Phlebography, Lymphography and Nuclear Medicine techniques also in interaction with Radiologists.
Also requested Level 1 for procedures and Level 3 to monitor the follow-up of (in collaboration, when necessary, with other Specialists) :
Vascular reconstructive surgery
Venous surgery
Lymphatic surgery
Abdominal vessel surgery
Major and minor amputations.

Additional optional Curricula

Further expertise are available for specialists that have already completed the Training in A/VM in:
1) Arterial interventional therapy
2) Venous Procedures

I. Additional Curriculum in Arterial interventional therapy

Arterial Interventional Therapy is an area of treatment common to more than one Specialty (Vascular Surgery, Radiology, Cardiology and Angiology/Vascular Medicine). For Angiology/Vascular Medicine this treatment is commonly practised and is part of the Training Curricula of the Specialty in Austria, Germany and Switzerland and is extending to selected Centres in some other European Countries.

Indications for endovascular re-opening procedures in

- patients with advanced form of Peripheral Arterial Disease (Fontaine III, IV),
- with rest pain or non-healing ischemic ulceration,
- life-style limiting claudication despite risk factor modification, antiplatelet treatment and appropriate exercise program.

Endovascular revascularization procedures

- Endovascular revascularization procedures include balloon angioplasty with or without stent placement, atherectomy, laser atherectomy, krioplasty, cutting balloon angioplasty, drug-eluting balloons, reabsorbable stents, and finally drug covered stents.

II. For the Additional Curriculum in Venous Procedures

Venous Procedures is an area of treatment common to more than one Specialty (Vascular Surgery, Radiology, Dermatology and Angiology/Vascular Medicine). For Angiology/Vascular Medicine this treatment is commonly practised in numerous Countries in particular, Switzerland, France, Italy, Germany with defined Training Programs. The procedures require an accurate knowledge in Ultrasound and Clinics and are suitable also for Specialists in the Medical Area.

1.Techniques concerned:

Radiofrequency(RF)
Endovenous laser treatment (EVLT)

2 Prerequisites :

2.1 Required :
Extensive clinical knowledge of superficial venous disease
Preliminary training in venous ultrasound

2.2 Recommended:
Practice venipuncture under ultrasound guidance (ultrasound-guided sclerotherapy for example)

2.3 Recommended :
Practice the technique of phlebectomy

3 . Contents

3.1 Theoretical Education :

Theoretical :
Physical principles of different techniques
therapeutic indications
therapeutic strategy
complications
Contra -indications

Conditions:
environment
hygiene
specific Equipment

3.2 Teaching practice :

Ultrasound-guided puncture
Overview of puncture's material (introducers)
Puncture phantom

Use of devices
Presentation of different materials: RF , EVLT , etc
Hands-on phantom (guides, catheter fibers)

Tumescent anesthesia
How to do it (syringe pump)
Hands-on phantom (if possible)

Analysis procedures (video and live)

Tips and Tricks

Management of technical difficulties (navigation ...) and difficulties related to the patient (stress, needle phobia , ...)

Management of complications

Clinical cases
Discussion of the technique
Discussion of practical modalities of realisation (vascular access catheter placement or fibre)

Attend "live" procedures in:
SSV and GVS
Intervene actively on procedures (all or part of the proceedings: vein puncture under ultrasound guidance , navigation of the thermal probe, tumescent anaesthesia , firing and pull back)**.**

c. Assessment and evaluation

Postgraduate medical training must include a process of assessment. .The methods used for assessment of trainees, including the criteria for passing examinations or other types of assessment must emphasize formative in-training methods and constructive feedback. Assessment principles, methods and practices must be clearly compatible with training objectives . The methods used should encourage a constructive interaction between clinical practice and assessment. Assessment should include methods that cover knowledge, skills and attitudes in order that a broad picture of a trainee's clinical competence and ability to practice safely is obtained.

It gives a evidence that traineer is meeting the curriculum and in the meantime identify areas for additional training.

Personal Logbook is part of the evaluation.

<u>CESMA-UEMS European Exam</u>

Trainees are invited to apply for the UEMS European Exam to obtain the UEMS European Diploma in Angiology/Vascular Medicine, following the application criteria defined by the European Board Examination in Angiology/Vascular Medicine-(EBEAVM) formed by representatives from VAS and Board of the UEMS Division of Angiology/Vascular Medicine.

Candidates should fulfill one of the following criteria: a) specialist in Angiology/Vascular Medicine in a European country where the Specialty in Angiology/Vascular Medicine exists, b) if already a Specialist in another border specialty should have obtained European Master in Angiology/Vascular Medicine Diploma or the VAS Fellowship in Angiology/Vascular Medicine c) with at least 3 years' experience in one Accredited European Angiology center..

The Exam consists of 2 parts: one computerized 100 MCQ and a second oral with the discussion of clinical cases.

The written exam is a multiple choice answers examination. There are 100 questions, with 4 or 5 answers for each question, only one of which is correct.

Questions cover the whole spectrum of Angiology: fundamental etio-pathogenetic knowledge, clinic, diagnostic (both non-invasive and invasive), therapeutics (both with drugs and interventional), prognostic and statistic interpretation of medical studies.

The Exam covers diseases of peripheral, cervical and abdominal arteries, diseases of veins, superficial and deep, as well as microcirculatory and lymphatic diseases.

A database of 200 questions is created, with each of the commission members preparing 40 questions.

One week before the exam, the referee selected 100 questions, that were sent to the central informatic management engineer, who uploaded them to the server.

Once in the final form, access to the 100 questions database is given to the 5 commission members, for revision. Finally, the 100 questions are validated.

In the multiple choice questions (MCQ) exam the computers are connected to a central server via internet. Duration of the MCQ exam is two hours. During this time, answers are directly introduced to the computer and centralised to the server.

Results of the written exam are later forwarded to the commission, after the clinical exam takes place. The results are expressed as a number of correct answers (out of 100).
The written exam grade was represented by the number of correct answers divided by ten.
The minimum accepted grade is 6.

The second part of the exam is the clinical case.

Three members of the EBEAVM prepare the clinical cases: Clinical cases consist in the presentation to the candidates of a clinical history of a real patient, presented to the hospital.

Cases reflect complex clinical conditions, mostly emergency ones.

Candidates should evaluate clinical history and offer their interpretation.

Candidates have to ask for successive additional information: clinical exam findings, biological results, non-invasive and invasive explorations findings etc.

In relation to these results, candidates have to suggest the possible diagnosis, including future evaluation and therapeutic options.

The oral exam lasts 30 minute

At the end of the clinical case exam, each candidate is graded (1-10).

The final exam grade, for each candidate, represents the average of the two grades, the first from the written MCQ exam, the second from the clinical case exam.

The commission requires a final grade of at least 6.5 (on a 1-10 scale), in order to validate the exam.

II. TRAINING REQUIREMENTS FOR TRAINERS

Appointment Policy

All physicians should as part of their professional obligations recognize their responsibility to participate in the practice-based postgraduate training of medical doctors. Participation in postgraduate training should be rewarded. Staff policy should ensure that teachers are active in the relevant field and that teachers in sub-areas are only approved for relevant specific periods during training.

Obligations and development of Trainers

Teaching activities must be included as responsibilities in the work schedules of trainers and their relationship to work-schedules of trainees must be described.
The ratio between the number of recognized trainers and the number of trainees should ensure close personal interaction and monitoring of the trainee.

Programme Director

The Programme Director must:

- have at least 5 years of participation as an active faculty member in an Angiology/Vascular Medicine program.
- be certified in Angiology/Vascular Medicine (Specialty or CESMA-UEMS European Diploma)
- be responsible to the sponsoring organization.

- oversee and organize the activities of the educational program in all institutions that participate in the programme.
- ensure the implementation of fair policies, grievance procedures, and due process are in place in all institutions that participate in the programme.
- have appropriate dedicated time to devote to the program.
- ensure that all training institutions participate in the required quality assurance.

Educational Supervisor

Each trainee must have an educational supervisor. One such individual might be responsible for all trainees at one site or alternatively this might be allocated to several individuals.

The educational supervisor must:
- be certified in Angiology/Vascular Medicine (Specialty or CESMA-UEMS European Diploma)
- arrange to meet with each trainee at the beginning, middle and end of each placement or every 2-3 months
- assess progress and professional development of the trainee
- ensure that the trainee has access to the training and clinical experience necessary to meet curricular requirements
- ensure that there is an appropriate balance between service and training
- check that the necessary work-based assessments are carried out
- receive feedback from the trainee about the training provided and make necessary changes.
- provide counselling to trainees as appropiate.

III. TRAINING REQUIREMENTS FOR TRAINING INSTITUTIONS

The European Training Centres(ETC) previously called European Teaching Centre (see Chapter 6) must offer training that fit the European quality criteria and programmes suitable for the European Curriculum.

They take part on the educational European programmes (European Master, European Fellowship etc) and are the reference Centres for training programmes finalized to the UEMS Exam for the UEMS European Diploma in A/Vascular Medicine.

They can be formed from one Center or from more institutions with a Center of reference coordinating other smaller Centres or institutions with specific expertise to offer a complete range of educational opportunities. In the case of multicentres organization the Center of reference must create an Educational Committee (joining Trainers from the different institutions) to coordinate and monitor the educational programme.

Process for recognition as European Training Center

Training must be carried out in Certified Centres .

Due to the fact that the ETC could involve more than one institution cooperating with the Angiology/Vascular Medicine referee Center, part of the training could take place in other relevant hospitals or institutions and community-based facilities.

They must have sufficient clinical facilities and infrastructures to support the delivery of training. Training locations must have a sufficient number of patients and an appropriate case-mix to meet training objectives. They must have adequate teaching staff. The training must expose the trainee to a broad range of experience.

The number of patients and the case-mix should allow for clinical experience in all aspects of Angiology/Vascular Medicine including training in health promotion and disease prevention. The quality of training settings should be regularly monitored.

Angiology/Vascular Medicine expertise and organizational integration.

The Centre must present, in addition to the general characteristics outlined in the other sections of the document, a study format relevant to the training of Tutors which covers the major specialist skills for A/MV. Collaboration with Centres is admissible so that any areas not covered by a single Centre can be covered by one or more complementary Centres.

A ETC can be represented by:

•only one Center offering the entire spectrum of training or
•a Reference Center flanked by other Centres (which will be part and parcel of an A/VM ETC) with specific complementary skills or
•by one of the preceding solutions with the integration of minor Centres , even small, but of verified quality, to broaden the clinical training in its more advanced stages. These facilities will be considered an integral part of ETC.
•Coordinated multi-site training should be ensured to gain exposure to different areas and management of the discipline.

The training should include an acceptable number of clinical cases within the area of:

•Arterial Disease (peripheral, CVD, abdominal)
•Venous diseases (TED and IVC)
•Microcirculation Disease
•Lymphedema
•Major risk factors
•Vascular Malformation
•Preventve activities

It must also ensure:

- Educational programmes (also by the existing certified VAS European platform for e-learning), meetings
- Research activity
- Computerized bibliographic research and consultation areas
- Interdisciplinary confrontation to include either meetings on specific topics or discussion of selected clinical cases
- Patient and Population education programs
- Contacts/meetings with Family Doctors

These activities include the use of appropriate instruments.

All equipment should be registered. Some marginal differences exist in European countries.

The list below will be automatically updated to include affirmed scientifically accepted innovative methods.

•Vascular Ultrasound to study the arteries and veins of the upper and lower limbs, neck and abdomen
•Capillaroscopy and at least one of the other methods to study microcirculation
(such as LaserDoppler,tcPo2/PCO2)
•Doppler for ABI and segmental pressures measurement

•Doppler or Laser Doppler for Toe Index
•Treadmill for Tests and Rehabilitation
•Transcranial Doppler
•Plethysmography (can be replaced by Ultrasound or, for the study of Microcirculation, by microcirculation methods)
•MAP(even within the host hospital)
•Coagulation / RF monitoring facilities

Additional Services (Mandatory for Training Centres requesting Additional Accreditation in this areas):
•.Arterial Interventional Area and facilities
•.Facilities for VV Treatment (Thermoablatiom, sclerotherapy)

Services related to multidiscipline approaches must be available in the ETC to facilitate interactions In fact, interdisciplinary collaboration with other Units/Depts. or Specialists are considered part of modern medicine and essential for good training . In particular twill be stimulated interactions with vascular surgery, radiology, diabetology, neurology, cardiology, dermatology, rheumatology and epidemiologists/statisticians.

Minimum number of case studies and exams

In terms of the minimum number of case studies and exams required for a ETC, the entire offer should be considered

. However, the minimum criteria to be considered should be:

•In-patients at the Centre itself or from other departments for consultations or hospitalization. (This joint offer has been considered in view of the different organizations or organizational trends of NHS on hospital stays): Minimum/year n:1,000
•Out-patient Instrument Examinations Minimum/year n: 4,000
•Out-patient visits Minimum/year n: 1,000

All vascular diseases should be covered above, with obvious respect for the epidemiological distribution.

From the instrumental point of view, each district of Vascular Ultrasound must be present, again with respect to epidemiology.

Only data from official records (computerization of the structure) will be considered for the Validation Process.

Defining a Transition Period

The development of A/VM is not the same in all EU countries, even if it is progressing everywhere.

On the other hand every applicant should have the same training curriculum and the same chance in each country independently from the current situation.

To offer a transition period for those countries that are seriously working on the development of A/VM, following European standards and at the same time guaranteeing equity for the trainees, specific projects can be developed in the single countries during the Validation phase. These specific projects could include:

1) recognition of a National European Training Centre ETC formed by more than one Centre

2) specific training programs should be made available

3) to have one or more supporting countries where the students can frequent (to complete the formation not available locally/nationally)

4) particular attention will be given, apart from the general program, to the formation of the Trainers in those countries.

For Centres seeking further Additional Accreditation in:

- **Arterial interventional therapy**

What has previously been mentioned in the subchapter “Additional Curriculum in Arterial Interventional Therapy” on the border areas among different Specialties and on the existence of consolidated practice in different Countries should be taken into account.

The Centre applying must already be Accredited as a European Training Centre in Angiology/Vascular Medicine

1- General

The minimum of medical service available must be a functional interventional/endovascular unit. This might be ideally available and located in an angiology, cardiology or radiology catheter laboratory. The minimum infrastructure there must be a fluoroscope which can be used to do arterial endovascular procedures and which is able to store and reproduce all the images done during the procedure. At a minimum the images must be able to be printed out in paper form, the better if hard copies or digital files can be reproduced. If the man power and expertise exists in a center, meaning experienced interventionalists as being defined below, this fluoroscope can also be anchored in whatever ward or medical suite, e.g in an intensive care unit with a special surgical theatre.

Another important acquisition at a minimum level at such a place must be a certificate that the radiation protection rules at the place are fulfilled.

At such a training place at least one experienced interventionalist must be placed, who is able to fulfil the training skills. The minimum number of patients treated a Training Centre must be 50 per year, for each main disease area.

2- Equipment

The minimum of equipment must be a fluoroscope with the ability to capture and store the images of the procedure. It must fit all necessary legal conditions referring to international radiation protection conditions. Furthermore the endovascular unit must be equipped with an ECG and blood pressure measurement facility, so that the patient can be monitored during the procedure. First-aid equipment must be within reach, so that in emergency cases the patient can be taken care of.

A Duplex ultrasound machine is necessary for diagnostic procedures (retroperioneal hematoma, immediate follow up after the procedure in case of suspicion of acute re-occlusion and so on).

Experienced staff with a surveillance facility to take care of the patient in the time span before and after the procedure is also needed.

3- Tutors/Qualified endovascular specialists

The minimum number of tutors for a Training Centre is one, who must have a certificate that allows her or him to perform endovascular procedures on her/his own and she/he must provide at least a 2 year´s self-standing experience in endovascular procedures. The numbers of qualified doctors

with the same requirement as that of the tutor can be the same. It is also sufficient if the tutor and the qualified doctor are the same person.

Experienced nurses or technicians are a must and there must be at least one available.

4- Qualification of the person responsible and/or tutor

- for teaching (in general see general document):

the person who is responsible for the teaching process must have theoretical knowledge about endovascular arterial interventions also practical by having at least assisted during these interventions..

- for arterial interventional treatment:

the person who is responsible for arterial interventional treatment must provide evidence of one year training and one year self-standing experience in endovascular interventions. The required number of is 100 interventions in each main arterial disease region assisted

5- Facilities

The further facilities necessary for a European Training Centre in arterial intervention already exist as they are accredited ETCs. There are outpatients clinic where patients can be screened and assessed before the procedure, with at least one duplex ultrasound machine and an ABI measurement facility. During the screening process the physical exam, the medical history and ABI as well as ultrasound of carotid arteries must be captured. Therefore a PC to capture patient data as well as a substitute a paper patient record is necessary. Concerning the after the endovascular procedure treatment and surveillance the Training Centre must be equipped with a ward, where experienced and trained nurses, as well as medical doctors who have at least a training in recognizing and handling complications after an endovascular procedure, are available.

6-Surrounding Conditions

A Training Centre must cover all the necessary “surrounding conditions”, therefore the presence of an haematology laboratory is necessary, as before the procedure necessary lab assessments as creatinine and coagulation levels are mandatory.

Active collaboration is necessary and mandatory with a special vascular surgical department, as in case of emergencies a vascular surgeon must be on standby. Furthermore there must be an active collaboration with a radiology suite which must provide the expertise on diagnostic images (MRI, CT)

- **Venous procedures**

What has previously been mentioned in the subchapter “Additional Curriculum in Venous Procedures” on the border areas among different Specialties and on the existence of consolidated practice in different Countries should be taken into account.

The Centre applying must already be Accredited as a European Training Centre in Angiology/Vascular Medicine

1 . Techniques:

a) Thermal ablation techniques
Radiofrequency (RF)
Endovenous laser treatment (ELT)

b) Sclerotherapy
Sclerotherapy under direct vision with liquid or foam
Ultrasound-guided foam sclerotherapy (USGFS)

2 . The instructor (s)

2.1 Required :
Vascular doctor (or equivalent depending on country)
Not subject to any judicial procedure or liable of any criminal offence
Practicing the technique in question for at least 3 years, with (thermal ablation) at least 100 procedures performed over the last year) and (sclerotherapy) at least 200 procedures of USGFS performed over the last year.

2.2 Recommended:

Practice of one or several alternative techniques (surgical, thermal or chemical)

2.3 Recommended :

Experience in the field of education (Provide training of trainers in order to homogenize the educational aspect - specification of skills and items to provide full guidance for the trainer in all his actions)

3 Environment

3.1 Area (reception, offices, archives, examination rooms, treatment rooms, recovery ...)
According to legislation in force in the country concerned

3.2 Equipment and materials :

Non-specific Equipment (general medical equipment, appropriate emergency equipment, containers for medical waste disposal, according to current legislation ...)

Equipment suitable for venous Doppler exploration, especially superficial.
a) Specific tools for thermal ablation techniques:
Generators comply with current maintenance certificates
Goggles and probes for Laser
Suitable probes, puncture material, catheters, long and short guides
Masks, caps, scrubs
Sterile drapes, sterile gowns
Materials for local anaesthesia, tumescent pump ...

b) Specific equipment for schlerotherapy:
Syringes, needles
Equipment for the manufacture of sterile foam or not (according to legislation)

3.3 Personnel required :

None for sclerotherapy; scrub Nurse and assistant (runner) during thermal procedures

3.4 Reception of students

1-2 students per trainer

Opportunity for students to attend the consultation and the process leading to the indication of the technique and the conduct of the procedure and the follow-up consultation .
Encourage the grouping of 2-3 procedures in the same unit of time (1 day or half-day for example)
Allow the student to actively take part in the diagnosis, the indication and during the procedure; specific work on the incident / accident during the procedure to be ready to react properly in case of difficulties per - procedure.
Evaluation of the training; control theory, practical control (development of a uniform evaluation procedure applicable in all Centres).

Further Additional Accreditation of the ETC in “Venous Procedures” will be done in collaboration with UEMS MJC Phlebology.

Training structure

a) Clinical Training

The core experience of trainees must provide training in vascular in and out-patients (investigation, treatment and education) and in the prevention of vascular diseases.

The learning environment must be favourable and the trainee must have stable defined figures of reference .

Trainees must have substantial experience of conducting ward rounds, both under direct supervision of a training physician and independently. Trainees early in the programme will require considerable supervision but this will gradually become less as experience is obtained. All trainees must be able to seek help from a more experienced colleague who must be available to provide on-site support.

Trainees must have primary responsibility for a sufficient number of unselected patients .

Clinical experience in Angiology/Vascular Medicine must be gained as well as in other related disciplines (for defined periods)

Trainees must have experience of follow up clinics in order that they understand the natural history of acute illness and care of chronic illness.

b)Procedures

Trainees must be given instruction in relevant procedural skills. They must be aware of the indications, contraindications, complications, limitations, and interpretations of findings of the procedures commonly undertaken by specialists. They must be given the opportunity to perform the relevant procedures under supervision prior to being judged competent to perform these independently.

c) Educational Programme

Formal teaching sessions in the form of seminars, grand rounds and case conferences as well as e-Learning material should cover the whole Angiology/Vascular Medicine curriculum.

International/European and National Guidelines must be available and discussed.

Structure and Human Resources

•The reference centres for the ETC should be a public facility (Hospital or University) accredited to the NHS

•The Head of the Unit should be employed full-time, a specialist in Angiology/Vascular Medicine or relevant discipline, should have at least 10 years curriculum and publications in this area, given the differences in the distribution of the Specialty in Europe. The reference Centre will Coordinate the entire ETC

•Medical staff must be minimum Head + 3 Tutors to Train each candidate. Each Tutor should, as a rule, follow a maximum of 3 Trainees.

•The role of Programme Director and Educational Supervisor should be identified

•Technical and nursing staff must be available

Duration of ETC Accreditation

•Completed the Validation Process by VAS, obtained Accreditation from the UEMS Division A/VM, the title will last for 5 years, if during that time no problems arise from the Trainers' reports, from eventual intermediate evaluative tests or from staff working at the Centre.

•After this period the Centre may apply to renew its accreditation, which will be renewed automatically in absence of negative reports from Trainers and Trainees and if the Centre maintains its documented standard.

Management of training

The responsibility and authority for organising, coordinating, managing and assessing the individual training setting and the training process must be clearly identified and is the responsibility of the Programme Director and Training Programme team.

b. Requirement on equipment, accommodation

The trainee must have adequate time and opportunities for practical and theoretical study and have access to adequate professional literature as well as equipment for training of practical techniques.

The physical facilities and equipment for training should be evaluated regularly for their appropriateness and quality regarding postgraduate training.

2. Quality Management within Training institutions

Accreditation

Recognition of Teachers and Training Institutions at a national level: the training in Angiology/Vascular Medicine is regulated by National Authorities/National Boards, which set standards in accordance with national rules and EU legislation The standard for recognition of training institutions (Training Centers), teachers and trainers are defined by national authorities, in accordance with national rules and EU legislation In countries where qualified Angiology/Vascular Medicine centers do not exist, applicants can make motivated requests to carry out their period of training in the accredited European Training Centers from other European countries (Validation Process).

Centres applying for an European Accreditation (European Training Centres) will submit the file to the Board of the UEMS Division of Angiology/Vascular Medicine.

VAS, acting in the name of the UEMS Division of Angiology/Vascular Medicine, will Validate the fulfilment of criteria.

Centres applying for Accreditation could propose or receive, during the Validation Process, indication to cooperate with other Angiology/Vascular Medicine Centres or Centres with other Specialist structures (consistent with the purpose and the training curriculum) to expand the training offer.

The Validation Process and the conseguent Accreditation recognize the 1997 UEMS visitations Charter and its principles

Only once the ETC has obtained Accreditation can it also apply for further Additional Accreditation as a ETC for:

1) Venous Procedures
and/or
2) Arterial Interventional Therapy

Clinical Governance

The clinical training must include experience in working as a team with medical colleagues and other health professionals. The training process should allow learning in a multi-disciplinary team resulting in the ability to work effectively with colleagues and other health professions as a member or leader of the health care team and should develop competencies in guiding and teaching other health professions. The Programme should include training in Communication, Team working skills and Equality and Diversity.

Completion of training must be documented by degrees, diplomas, certificates or other evidence of formal qualifications conferred as the basis for formal recognition as a competent medical doctor in Angiology/Vascular Medicine (National level). At EU level, application for the UEMS Exams are stimulated to obtain the UEMS European Diploma in Angiology/Vascular Medicine and VAS European Fellowship.

Manpower planning

Manpower planning is under the jurisdiction of each member state according to their needs for Angiology/Vascular Medicine specialists. The EBEAVM will produce proposals with a European outlook.

Regular report

Each year a detailed report is requested to evaluate the training period

External auditing

Is possible, both in the Validation and Accreditation phase and during the activity of the Centre

Transparency of Training programmes

Training programmes are published and the activities registered in a logbook.

Evaluation of Training Process

Mechanism for programme evaluation

Feedback from trainees must be incorporated in to the review of the programme.

Programme evaluation should address the context of the training process, the structure and specific components of the programme and the general outcomes.

Feedback from Trainers and Trainees

Feedback about programme quality from both trainers and trainees must be systematically sought, analyzed and acted upon.

Trainers and trainees should be actively involved in using its results for programme development.

Continuous Renewal

The process of renewal should be based on prospective surveys, analyses and audits that should lead to the revisions of the policies and practices of the postgraduate medical training programmes in accordance with past experience, present activities and future perspectives. In so doing it should address the following issues:

•Adaptation of the mission and outcome objectives of postgraduate training to the scientific, socio-economic and cultural development of the society.

•Modification of the competencies required on completion of the postgraduate training programme in Angiology/Vascular Medicine in accordance with the needs of the environment the newly trained doctor will enter.

•Adaptation of the learning approaches and training methods to ensure that these are appropriate and relevant.

•Development of assessment principles and methods according to changes in training objectives and methods.

•Adaptation of recruitment and policy of appointment of supervisors and teachers according to changing needs in postgraduate training.

•Updating of training settings and other educational resources to changing needs of postgraduate training, i.e. the number of trainees, number and profile of trainers, the training programme and contemporary training principles.

•Refinement of the process of training programme monitoring and evaluation.

•Adjustment of the structure, content and duration of training programmes in keeping with the developments in the basic biomedical sciences, the clinical sciences, the behavioural and social sciences, and changes in the demographic profile and health or disease pattern of the population, and in socio-economic and cultural conditions.

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