



# UNION EUROPÉENNE DES MÉDECINS SPÉCIALISTES EUROPEAN UNION OF MEDICAL SPECIALISTS

*Association internationale sans but lucratif*

*International non-profit organisation*

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## Training Requirements for the Specialty of Medical Microbiology

### *European Standards of Postgraduate Medical Specialist Training*

#### **Preamble**

The UEMS is a non-governmental organisation representing national associations of medical specialists at the European Level. With a current membership of 34 national associations and operating through 39 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 a decade 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.

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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”*<sup>1</sup>. 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.

## Introduction

Ideally every EU member state recognizing the specialty should have a professional specialist society of Medical Microbiology. Man power planning and forthcoming quantitative training facilities are the responsibility of the national medical association on the advice of the Medical Microbiology specialty group. The specialty of Medical Microbiology should be represented in the national medical association in each EU country.

The Central Monitoring Authority of the specialty of Medical Microbiology is the UEMS Section of Medical Microbiology which, in consultation with the Professional Affairs Committee of the European

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<sup>1</sup> Defining and Assessing Professional Competence, Dr Ronald M. Epstein and Dr Edward M. Houndert, Journal of American Medical Association, January 9, 2002, Vol 287 No 2

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Society of Clinical Microbiology and Infectious Diseases (ESCMID: [www.escmid.org](http://www.escmid.org)), produces guidelines for training in the specialty and produces a training programme blueprint to be filled in with the specific aspects of the training, pertinent to the individual EC member states.

A revised core training programme and training programme for Medical Microbiology was published on the internet under auspices of the Medical Microbiology Commission of the UEMS Section of Medical Biopathology in 2007.

In 2008 a Section of Medical Microbiology was created within the UEMS. After the creation of a separate section it was decided to adopt the version of Chapter 6 of the UEMS Charter on Postgraduate Training for Medical Microbiology which was used when Medical Microbiology was still a part of Medical Biopathology as a basis for the further development and modernisation of specialist training. The current standard is again derived from this but has undergone certain changes.

It is recognised that the practice of Medical Microbiology differs across EU member states, ranging from a principally laboratory-based specialty in states where there is a legal obligation for all reports to be signed by a Medical Microbiologist, to a predominantly clinically-based service, particularly in those states where there are few infectious disease physicians. In the latter states, much of the diagnosis and management of patients with infection is directed by Medical Microbiologists.

Training centres are recommended to apply for the status of ESCMID Collaborative Centre, which will enable and promote the exchange of trainees within the European Union and UEMS member countries.

## **I. Training Requirements for Trainees**

In order to become a trainee for the speciality Medical Microbiology the candidate has to be a qualified medical doctor. Procedures for recruiting medical doctors, who have fulfilled the requirements for basic medical training leading to an EC recognized medical diploma, must be transparent.

### **1. Content of training**

#### **a. Theoretical knowledge**

The core of Medical Microbiology consists of the subjects bacteriology, virology, mycology and parasitology and includes in these fields the following knowledge: clinical advice/counselling: diagnosis, treatment and prevention, isolation identification of pathogens and diagnostics including serology, antibiotic and antifungal susceptibility testing, the use of molecular methods within these fields, antibiotic/antimicrobial (antibacterial, antiviral, antimycobacterial, antimycotic and antiparasitic) therapy, antibiotic stewardship. In addition laboratory management is an essential part of the abilities of a medical microbiologist, and includes quality control and quality assurance,

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economics/budgeting and leadership training. Medical microbiologists should also learn about public health and Infection control; consisting of counselling, auditing and accreditation, surveillance of pathogens, resistance and nosocomial infections, epidemiology, bioinformatics and molecular typing. In addition a specialist in Medical Microbiology should have relevant clinical practice in his/her training to be able to give informed clinical interpretation of test results and be able to give independent clinical interpretation of the patient in question. The field of Medical Microbiology covers almost all aspects of medicine and ranges from general practice to specialised hospital programmes (e.g. haematology and transplantations).

## **b. Practical skills**

The specialist training should produce medical microbiologists able to provide specialist opinion in their clinical discipline and who should have developed the appropriate management skills to lead a department of Medical Microbiology, if required. The trained medical microbiologist should be competent to:

1. Give advice as a physician on the diagnosis, treatment and prevention of microbial diseases.
2. Provide a scientific basis for laboratory diagnosis; to set protocols and to maintain standards within the laboratory.
3. Undertake the management responsibilities required from the director of a Medical Microbiology laboratory.
4. Take charge of infection control in hospitals
5. Propose hospital policies on the control of antibiotic usage and on the prevention of hospital acquired infection
6. Collaborate with national surveillance organisations and public health authorities and to provide services for these organisations
7. Participate in the training programs for medical microbiologists, infection control doctors and other experts in the field of microbial diseases.
8. Undertake research and development in the specialty of Medical Microbiology

## **c. Professionalism**

The abilities that are essential for a specialist in Medical Microbiology are: Being a medical expert, having good communication, academic, cooperative and, organisational/administrative abilities.

It is expected that the finished specialist during his/her education has acquired attitudes that promote a high professional and ethical standard and a positive collaboration with colleagues and other professional groups.

Relevant elements to obtain these qualifications are a recognition that Medical Microbiology primarily is to serve the patient. This requires a high degree of willingness for fast and good communication with clinical colleagues. A motivation for their own professional development includes, amongst others, participation in continued medical education. It is expected that specialists in Medical Microbiology have respect for colleagues and other professional groups working in the medical laboratories.

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Training in such attitudes comes first and foremost by model learning from supervisor and other senior doctors.

## **2. Organisation of training**

### **a. Assessment and evaluation**

The training programme should contain sufficient opportunities to check the trainee's proceedings by means of observations during critical practical situations, written proofs of critical assessments by the trainer and examinations of knowledge. The frequency of these tests is laid down in the training programme. Trainers and other staff members involved in the training process should be trained to be able to critically make an assessment of the trainee's knowledge, skills and attitude.

The section will not require that an examination should be passed but will leave the decision to have an examination or not to the medical associations in the individual member states. Nevertheless an assessment of the candidate should be made by the trainer based on theoretical knowledge, practical skills (amongst others based on the candidates log book or equivalent) and the candidates professionalism.

The section encourages the use of courses, both national and international, to train the candidates. Certain subjects might better be seen in an international course, e.g. parasitology courses on a European level, especially in countries with no institutes for tropical diseases.

### **b. Schedule of training**

Specialisation in Medical Microbiology requires education within clinical medicine, microbiology, laboratory management, public health & infection control and science. The duration of the specialisation should be at least 60 months (5 years, including any compulsory periods in clinical medicine required for entry into formal Medical Microbiology training after obtaining a license to practice (authorisation). One or more of the subjects (laboratory management, public health & infection control and science) may be integrated within Medical Microbiology. In this case, documentation for acquired skills is required. Amendments or minor changes that may be necessary in single countries should on a European level comply with a mandatory minimum of five years of training for medical microbiologists.

The training period may be reduced when there is proof of experience in one or more of the major different themes as stated in the UEMS Section of Medical Microbiology training program (e.g. bacteriology, virology, mycology, parasitology, practical clinical training, and infection control). This experience should imply a period of more than twice the training period needed in the specific theme and the period in practice should not have taken place longer than 5 years before the training is started. The reduction shall not be more than half of the period required for training in the specific theme.

- Medical Microbiology (at least 24 months). The following subjects should be covered: Bacteriology, Virology, Mycology and Parasitology. The subjects (virology, parasitology and

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mycology) may be integrated into bacteriology/general microbiology where no separate department exists. In order to be able to cover the entire field of Medical Microbiology the approximate length of each sub-discipline should be: bacteriology - 12 months, virology - 8 months, mycology - 2 months and parasitology - 2 months.

- Laboratory Management (Up to 6 months)
- Public Health and Infection control (up to 12 months):
- Clinical Medicine (minimal 12 months)  
and, either
- Science project (6 months): Projects should preferably be based on Medical Microbiology or translational, i.e. method-based studies within Medical Microbiology that include clinical information. Clinical epidemiological studies with limited laboratory involvement are discouraged. The project should lead to a publication: here defined as a presentation (article in peer reviewed journal, poster or oral presentation) at national or international level.  
or
- Direct in-patient care and out-patient clinics in infectious diseases, HIV/AIDS, tuberculosis or related specialties (6 months).

## **II. Training Requirements for Trainers**

### **a. Requested qualification and experience and core competencies**

Every centre should have one recognised training leader but can have more trainers.

The recognised training leader should have been practising the specialty for at least 5 years after specialist accreditation. The training leader should be specialist in Medical Microbiology. The training leader should be supported by a trainer representative and there should be sufficient specialist medical staff to operate the daily department's activities. Ideally, the training leader should have academic qualifications.

The trainer should work out a training program for the trainee in accordance with the trainee's progress during the training and the possibilities of the institution, which also complies with national rules and EU directives and considers UEMS/European Board recommendations.

The ratio between the number of qualified specialists in the teaching staff and the number of trainees should provide a close personal monitoring of the trainee during his/her training and provide adequate exposure of the trainee to the training. Therefore this ratio should approximate one trainer to a maximum of 3 trainees.

### **b. Quality management for trainers**

Evaluation of the training provided should be organized, e.g. evaluation of trainers by trainees.

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## **III. Training Requirements for Training Institutions**

### **1. Process for recognition as training centre**

#### **a. Requirement on clinical activities**

All or part of the training can take place in a training centre that offers the full spectrum of facilities needed for training accordingly the essential themes in Medical Microbiology (University laboratories or laboratories covering nearly all aspects of Medical Microbiology). Parts of the 5 year training programme, no longer than 3 years, may be followed in a department with a lesser spectrum of facilities (small or peripheral laboratories). In any case, all training should take place in a department that is a recognised training centre. The section of Medical Microbiology encourages training in more than one institution (small and large) to be able to learn the full spectrum of the subject. The medical specialist responsible for the training programme, and the trainer representative, should be of sufficient scientific status, preferably at PhD level, and have at least 5 years of practical specialist experience in the field of Medical Microbiology.

Training institutions should be part of /or serving a medical centre, harbouring the main leading clinical specialties such as internal medicine, surgery, paediatrics and gynaecology/obstetrics. In addition, the trainee should gain experience in serving including clinical consulting in the field of clinical microbiology on Intensive Care Units and gain experience in the epidemiology of hospital acquired infections and antibiotic resistance. These main specialties should also be qualified to train specialists in their respective field.

#### **b. Requirement on equipment, accommodation**

The equipment should be of such standard that it meets the current standards of the speciality.

### **2. Quality Management within Training institutions**

It should be aimed at a maximum of 3 trainees per member of the training group.

The quality of the training institution should be audited by an external team of specialists in Medical Microbiology, delegated by the national medical association or its equal. Audit should take place at regular intervals, preferably annually. The training institution and the clinical departments should be subject to auditing procedures according to national requirements for accreditation and certification.

**Board, Section of Medical Microbiology**

**March 2013**

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