

Specialist clinical training (HERMES)

Specialist training in respiratory medicine



Key points

- There is wide variation in the duration and content of respiratory medical training in Europe.
- The free movement of labour within the European Union has created a need for internationally recognised standards of competence in medical specialties.
- The HERMES methodology has been set up to enable the creation and implementation of a full set of educational standards, from syllabus to individual assessment and accreditation of training centres.
- HERMES projects are now under way in seven areas of respiratory medicine.

An important mission of the European Respiratory Society (ERS) is the promotion of lung health through medical education, a central part of which is the training of future respiratory specialists (postgraduate training) through the ERS School.

There has been a clear need to harmonise and improve education and training in Europe. In part this has been driven by the advent of free movement of labour within the European Union and the consequent need for national registration authorities to agree criteria on the competence of medical specialists from other countries. Recognising this need, the ERS launched the HERMES (Harmonised Education in Respiratory Medicine for European Specialists) project in close cooperation with the European Union for Medical Specialists (UEMS),

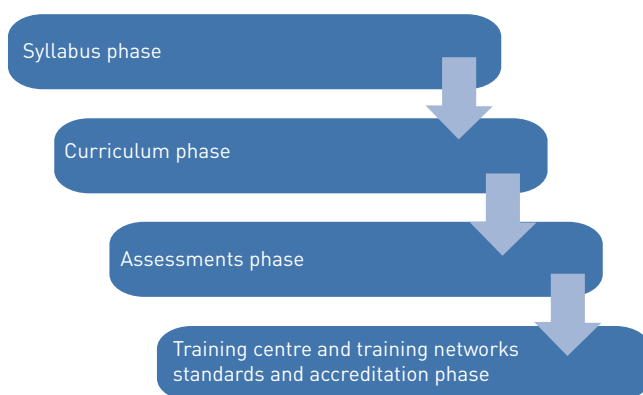


Figure 1 – The four phases of a HERMES project.

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The HERMES activities will have a real and significant impact on the care of patients with respiratory disease throughout Europe

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the Forum of European Respiratory Societies (FERS) and the European Board for Accreditation in Pneumology (EBAP). An educational task force established by the ERS School and consisting of experts representing the above organisations, along with a member of the Permanent Working Group of European Junior Doctors, plus representatives from several European regions, developed a strategy to define optimal educational standards in order to achieve better harmonised training of specialists in respiratory medicine. The strategy comprises four project phases (figure 1).

Development strategy for educational standards

The European task force, supported by the ERS School, applied a specific methodology consisting of facilitated group discussions, a modified Delphi consensus-building process and plenary meetings, to develop and produce a series of core documents setting out the agreed European consensus recommendations for each HERMES phase.

Syllabus phase: ‘what’

This phase aims to develop generally accepted European syllabi representing the content of the required knowledge (what respiratory specialists should know for their initial training in general respiratory medicine, and subsequently the additional knowledge required for those who choose to undertake more advanced training in a specific subspecialty area).

Curriculum phase: ‘how’

This phase aims to develop generally accepted recommendations for a full European curriculum, providing an overview of the entire content of the educational programme, not only what respiratory specialists should know, but also how competencies in respiratory medicine should be taught, learned and assessed. In addition, this phase also includes development of detailed recommended curriculum training modules, expressing objectives in terms of the knowledge, skills, and behaviour and attitudes required to complete each module.

In addition to the syllabus, other parts of the curriculum such as assessment and accreditation are also developed in greater detail in separate phases of the project as set out below.

Assessments phase

In the assessments phase, European assessment methods are developed. The first of these was the introduction of a voluntary knowledge-based examination in adult respiratory medicine with multiple-choice questions (MCQs), developed and run in close cooperation with the Institute of Medical Education in Bern, Switzerland, to assure high-quality professional educational standards. The examination is based on the examination blueprint – which comprises weighted examination topics from the 2006 syllabus – and is composed of 90 MCQs which must be answered in 3 hours. Only successful candidates who are already qualified as national respiratory specialists are eligible to receive the ERS Diploma in Adult Respiratory Medicine, as a recognised European qualification to mark their high quality and commitment to high-level knowledge. The examination is also used for regular revalidation, and is open to trainee specialists to test their knowledge. Following the success of the adult examination, a paediatric version has also been introduced.

More recently, the ERS School and HERMES task forces have seen the need to move beyond MCQ examinations based solely on the assessment of knowledge. Task forces are now investigating direct observation of procedural skills (DOPS) and other assessment methods for subspecialty areas of respiratory medicine.

Accreditation of training centres phase

The accreditation phase will enable European training centres in respiratory specialties to apply for ERS/EBAP accreditation. The purpose of accreditation within the HERMES initiative is to ensure that training centre networks whose educational programmes in respiratory specialties reach the required level of excellence are certified as such.

Development of this project phase requires two key steps:

- 1) Documented minimum criteria for a training centre.
- 2) Detailed processes and supporting documentation to determine whether the prerequisites are met.

The second step refers to the accreditation process itself and is based on the well-established accreditation practice of site visitation.

Network of supporting initiatives

The successful implementation of the HERMES educational standards in respiratory medicine is dependent not only on the core activities but also on a network of supporting initiatives, including preparation courses for the examination, educational resources, and e-learning activities for example (figure 2).

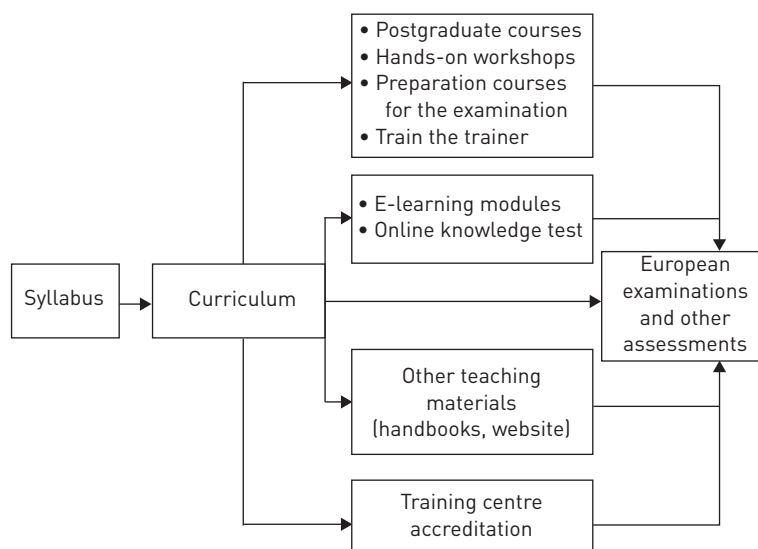


Figure 2 – The network of supporting initiatives for implementing the HERMES educational standards.

The HERMES projects

The important milestones reached by the first HERMES project to establish European standards for training in adult respiratory medicine provided clear evidence that similar methodology could be employed in the standardisation of education in other specialty areas of respiratory medicine (figure 3).

Adult respiratory medicine

A survey conducted in 2005 jointly by the ERS and the pneumology section of the UEMS showed large variation in respiratory training between countries, particularly concerning the length of the training period (ranging from 3 to 7 years for pre-specialist training and 2.5 to 8 years for specialist training). Although UEMS issued a recommendation on training requirements in Europe in 1994, which was updated in 2002, a benchmark analysis in 2005 revealed that wide discrepancies still existed in the length and quality of training in respiratory medicine (figure 4).

A further survey conducted by the ERS showed that not all countries have a unified syllabus and training programme, that some do not even have an 'exit' examination and that a few countries have no official list of accredited training centres. This confirmed the need to develop standardised educational documentation and activities in adult respiratory medicine and to move through each of the phases for development of European standards. This model was used in a similar way for all of the other HERMES projects, but is described in detail here only for adult respiratory medicine.

Syllabus development

Experts from 29 countries came together to develop the syllabus, and input was sought from all clinical specialist members of the ERS and national respiratory societies. The final consensus-based syllabus was published in 2006. It contained 229 competencies, split into 51 modules and nine sections:

- 1) Structure and function of the respiratory system
- 2) Knowledge of respiratory diseases



Figure 3 – The HERMES projects.

- 3) Symptoms and signs
- 4) Diagnostic procedures including monitoring techniques
- 5) Treatment modalities and prevention measures
- 6) Core generic abilities
- 7) Competence in fields shared with other specialities
- 8) Knowledge of associated fields relevant to adult respiratory medicine
- 9) Further areas relevant to adult respiratory medicine

The syllabus also included recommendations about the levels of knowledge required for each item listed. No recommendation was made relating to numbers of procedures to be performed in order to become qualified, but clear recommendations were made regarding overall training duration and structure.

General recommendations were divided into sections pertaining to:

- Clinical field of respiratory medicine
- Principles underpinning the development of a curriculum for respiratory medicine
- The education of respiratory medicine trainees
- Assessment
- Characteristics and responsibilities of key training personnel
- Accountability and regulation
- Quality assurance, validation, accreditation and evaluation of the programme.

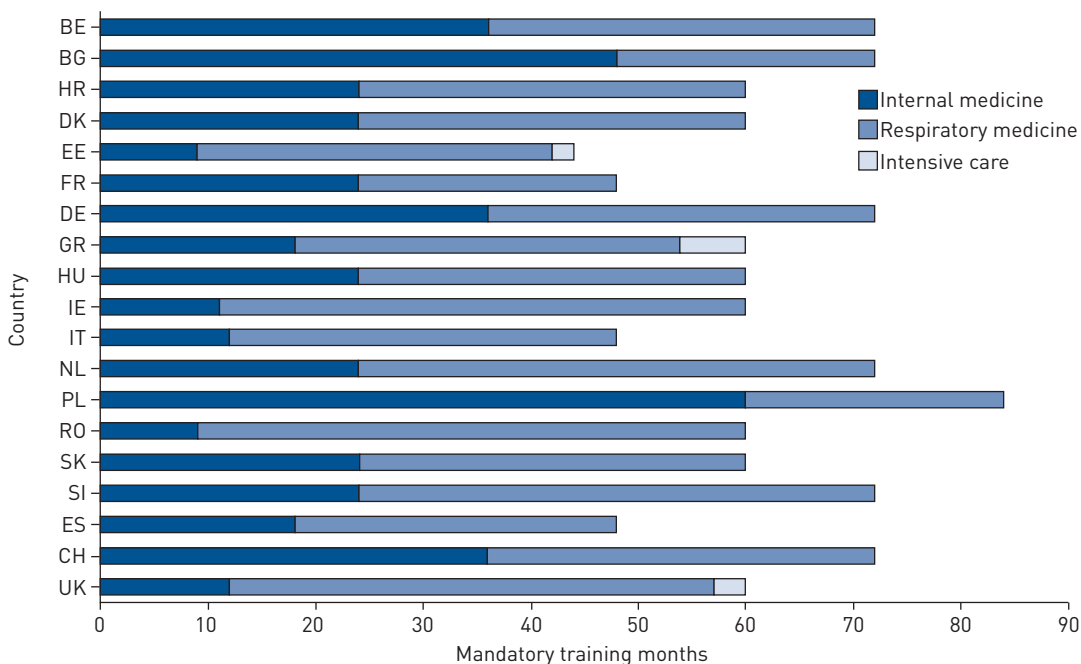


Figure 4 – Training practice periods in adult respiratory medicine, 2005. Intensive care has been indicated for those countries where a specific number of months are included in mandatory training. However, it must be noted that intensive care is also included as mandatory modules covered within respiratory medicine or internal medicine training of other countries. France: the 24 months indicated under internal medicine is elective training time for the trainee. It is possible that trainees may decide to spend this training in another specialty, for example cardiology, internal medicine or a further 2 years in respiratory. Germany: 6 months' intensive care medicine is covered within the assigned mandatory training for respiratory medicine and internal medicine. Slovenia: no common trunk training exists before entering either internal medicine or respiratory medicine. Spain: 5 months' intensive care medicine is covered within respiratory training. UK: dual training in internal medicine and respiratory medicine is a total of 60 months.

Curriculum development

The final curriculum contains 34 disease-based modules structured in a form which can be implemented and taught in practice, setting out the main core competencies that trainees are required to have knowledge of and demonstrate competence in. It also lists existing clinical guidelines pertaining to the modules.

Assessment development

The first European examination in adult respiratory medicine took place in 2008 at the ERS Annual Congress, and examinations have been held at each subsequent Congress. Candidates who pass the examination are eligible to be awarded the European Diploma in Adult Respiratory Medicine only if they have already acquired their national diploma as a specialist in adult respiratory medicine. Since 2010, trainees studying for their national specialist qualification have also been allowed to sit the European Examination as an exercise in in-training self-assessment of their progress, but such trainees are not eligible for the diploma until successful completion of their training. Local examinations are now organised for this purpose. Trainees in the Netherlands now take the examination as an in-training or self-assessment examination annually. In 2012, the examination took place for the first time in Moscow for in-training and self-assessment candidates.

The aim is for the European examination to be officially recognised in all European countries. Since 2008, Switzerland has used the HERMES European Examination in Adult Respiratory Medicine as the official part of its national exit examination for

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adult respiratory medicine specialists. Austria also formally recognises the HERMES European examination as equivalent to its official national exit examination, and avenues for collaboration with authorities in Greece, Ireland, Malta, Portugal, Romania, Saudi Arabia, Spain, Sweden and the UK are being explored. The number of voluntary participants, including candidates from outside Europe, is increasing, and it is hoped that the examination will gain international recognition as a state-of-the-art knowledge assessment.

Accreditation of training centres

The criteria for accreditation have been developed and agreed, and were published in December 2010. Following best-practice guidelines in accreditation of postgraduate education established by the World Federation of Medical Education, the ERS has partnered with the accreditation body EBAP.

Training centres or networks that gain accreditation will benefit from receiving a label of quality, gaining visibility and attractiveness for trainees and potentially being in a better position to secure research funding. Accredited centres (and those aspiring to accreditation) will be incentivised to develop or maintain high-quality training programmes and facilities.

The next challenge will be to implement an accreditation process. A pilot programme of three or four training centres is planned, in collaboration with EBAP.

Paediatric respiratory medicine

The paediatric assembly of the ERS published a syllabus specific for paediatric respiratory medicine in 2002, together with recommendations on training centres on a tertiary care level. In order to update this syllabus, a Paediatric HERMES task force was launched in 2007. Following the structure of the adult HERMES project, the new syllabus was published in 2009 and on the basis of this syllabus curriculum recommendations were developed, together with a special assessment toolbox. These were published in 2010. The first European examination in paediatric respiratory medicine took place in 2011.

Future tasks are the development of training networks and the accreditation of European training centres, with the aim of harmonising and standardising training in paediatric respiratory medicine across Europe. As with the adult HERMES project, the primary goal is to achieve quality control for all aspects of training, to facilitate free movement of trainees across centres and nations and to deliver the best care to children with respiratory diseases.

Spirometry

An ERS survey of national spirometry training programmes and research in the literature, conducted in 2008, confirmed

the lack of training opportunities, under-utilisation of spirometers and diagnosis based on inaccurate results. A task force was created to set educational standards for the training and certification of spirometry.

A complete training programme was published in 2011, defining the length of training, the target audience and educational methods required for training.

It is intended that the spirometry training programme will be delivered at a national level by trained and experienced spirometry teachers. Therefore a 'train the trainer' course programme to train future spirometry teachers was designed. This was launched during the ERS Congress in 2012, and will be repeated each year. The training programme is designed to equip course directors with the knowledge, skills and tools to deliver a complete spirometry training programme and to acquire a 'European Spirometry Driving Licence', thus enabling a new generation of health professionals, nonmedical as well as medical, to perform high-quality spirometry tests. In addition, a set of training guidelines for certification, standardised educational documents for participants and trainers, a spirometry website and assessment guidelines on spirometry testing, will be produced.

Respiratory critical care

A respiratory critical care educational task force was launched in 2009. The project's overall aim is to harmonise training in respiratory critical care medicine throughout Europe. Respiratory critical care can be defined as part of intensive-care medicine, dealing with specific respiratory problems; or as part of respiratory medicine, specifically respiratory failure that does not need direct access to general, medical or surgical intensive care units.

A syllabus with 19 comprehensive modules was finalised in 2011, and plans are in motion to develop a European curriculum and, as a further step, to provide the groundwork for a diploma in respiratory critical care medicine. The curriculum will define the level of competence for adult respiratory physicians not directly involved in multidisciplinary critical care but who need knowledge of respiratory critical care. This is a first step towards a European diploma in respiratory critical care open to all physicians specialised in adult respiratory medicine who deal with intermediate respiratory intensive care units or specialised units dedicated solely to pulmonary critical care.

Sleep

To address the increasing importance of respiratory sleep medicine as a subspecialty of respiratory medicine, the respiratory sleep HERMES task force and project was launched in 2009. The rationale for the project emerged from a needs analysis across 35 European countries, which confirmed the diversity and varying duration of respiratory sleep training and certification.

The project aims to establish common standards for both physicians and nonmedical practitioners. The consensus-based core syllabus, comprising nine modules, was published in 2011. On the basis of the syllabus the task force is preparing a curriculum to describe how the knowledge and skills should be taught and learned, with a view to developing an assessment in respiratory sleep medicine. As the curriculum is mainly intended for trainers, the task force is producing further educational materials (including a handbook, published in 2012) on respiratory sleep medicine to aid future trainees.

Thoracic oncology

The ERS considers comprehensive and multidisciplinary educational standards for thoracic oncology to be an important component of its mission to alleviate the suffering of patients with respiratory disease, including malignancies. The HERMES project methodology will be adopted to develop consensus-based educational standards and also to strengthen this subspecialty. The initiative is being carried out in collaboration with representatives from societies involved in thoracic oncology: the European Society of Thoracic Surgeons (ESTS), the European Society of Medical Oncology (ESMO) and the European Society for Radiotherapy and Oncology (ESTRO). One of the main objectives is to provide a comprehensive review of the current status of thoracic oncology training and certification in Europe. Another goal is to examine how to raise skill levels in thoracic oncology. This can be achieved through developing consensus-based standards with a European syllabus and curriculum and recommendations for a certification programme.

Respiratory physiotherapy

The respiratory physiotherapy HERMES project began in 2012. The project aims to develop a postgraduate respiratory physiotherapy training programme with a specific training period defined by task force members. The project will closely follow the development strategy for educational standards defined through HERMES.

Conclusion

The HERMES methodology has now been applied across many of the subspecialty areas of respiratory medicine and is providing a range of consensus documents and activities for the education and training of respiratory specialists. These activities will have a real and significant impact on the care of patients with respiratory disease throughout Europe.

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