

THE EUROPEAN SECTION AND BOARD OF GASTROENTEROLOGY AND HEPATOLOGY

Speciality Training Programme and Curriculum for Gastroenterology and Hepatology

TRAINING PROGRAMME

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ROLES OF UEMS-RELATIONSHIP WITH THE EUROPEAN SECTION AND BOARD OF GASTROENTEROLOGY AND HEPATOLOGY

The European Union of Medical Specialists (UEMS) is the oldest medical organization in Europe founded in 1958.

With a current membership of **37 countries**, it is the representative organization of the National Associations of Medical Specialists in the European Union and its associated countries.

Its structure consists of a Council responsible for and working through **43 Specialist Sections** and their European Section and Boards, addressing training in their respective Specialties and incorporating representatives from academia (Societies, Colleges and Universities). An Executive comprising the President, the Secretary-General, the Liaison Officer, the Treasurer and four Vice-Presidents, is responsible for the routine functioning of the organization.

UEMS represents over **1.6 million medical specialists**. It also has strong links and relations with European Institutions (Commission and Parliament), the other independent European Medical Organizations and the European Medical / Scientific Societies.

By its agreed documents, UEMS sets standards for high quality healthcare practice that are transmitted to the Authorities and Institutions of the EU and the National Medical Associations, stimulating, and encouraging them to implement its recommendations.

The UEMS is committed to promote the free movement of medical specialists across Europe, while ensuring the highest level of training which will fulfil its goal of improvement of healthcare quality delivered to European (and non-European) citizens. The 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. The UEMS areas of expertise notably encompass Post Graduate Training, Continuing Medical Education (CME) and Quality Assurance.

In 1994, the UEMS adopted its Charter on Post Graduate Training aiming at providing recommendations at the European level for high quality medical training. This charter is composed of 5 chapters common to all specialties and a 6th chapter outlining the specific needs of a specialist section.

A further objective is the encouragement and facilitation of CME (Continuing Medical Education) for European specialists. UEMS is very active in the field of CME-CPD (Continuing Professional Development). Amongst the developments in this area are:

The Charter on CME of Medical Specialists in the European Union 1994,

The Criteria for International Accreditation of CME 1999,

The Basel Declaration on CPD 2001,

The Declaration on Promoting Good Medical Care 2004

The Budapest Declaration on Ensuring the Quality of Medical Care 2006.

A major concern of the UEMS has been the structure and facilitation of accreditation of CME-CPD activities with the awarding of appropriate credits (hours) to individual medical specialists throughout Europe. The UEMS established the European Accreditation Council for CME (EACCME®) in order to provide Europe with a coordinated system to facilitate such activity, without encroaching on the responsibility of national organizations where they exist. In addition to the promotion of the standardization and evaluation of postgraduate specialist medical training and CME/CPD in Europe, the UEMS promotes quality assurance and assessment of Specialist medical practice at a European level.

DEFINITION OF THE SPECIALTY

Gastroenterology is a medical specialty dealing with the normal function of and diseases of the digestive system including the organs of the alimentary canal from mouth to anus and the hepatobiliary system (liver, gallbladder, bile ducts and pancreas). Additional areas of focus include nutrition and nutritional deficiencies, digestive oncology, prevention and screening of disease, particularly colorectal cancer. Gastroenterology requires increasingly complex decision-making; mastery of a growing number of endoscopic and interventional techniques, both diagnostic and therapeutic; It is a procedure-intense specialty that often requires manual dexterity, knowledge of basic science and clinical skills and the ability to solve problems analytically.

THE GASTROENTEROLOGY AND HEPATOLOGY SECTION OF THE UEMS-REPRESENTATION

This is composed of two delegates from each of the 37 UEMS member countries (the 28 EU-countries plus, Norway, Iceland and Switzerland) and a representative from the Junior Doctors Organization (EJD)). The delegates are appointed by the National Medical Associations. Azerbaijan, Georgia, Israel and Turkey are associated countries. Belarus, Bosnia and Herzegovina, Russia and Ukraine are observer countries.

THE EUROPEAN SECTION AND BOARD OF GASTROENTEROLOGY & HEPATOLOGY

Vision

To serve patients throughout Europe by developing, supporting and encouraging doctors of the highest quality in the specialty of Gastroenterology and Hepatology.

Purpose

To achieve the delivery of high quality patient care by promoting and harmonizing high standards for medical practice and postgraduate education, and thus clinical excellence.

Key Objectives

To define, secure and assess the standards of training in Gastroenterology and Hepatology in Europe including the awarding of Fellowship diplomas and accreditation of training centers
 To evaluate the quality of International Gastroenterology and Hepatology CME/CPD in Europe in conjunction with EACCME.
 To promote exchange of trainee gastroenterologists and hepatologists across Europe
 To collect and analyze workforce demographics in Gastroenterology and Hepatology.

To administer a European Specialty examination for Gastroenterology and Hepatology each year.

THE FELLOWSHIP OF THE EUROPEAN SECTION AND BOARD OF GASTROENTEROLOGY & HEPATOLOGY (FESBGH)

In order to improve the quality of gastroenterology and Hepatology training, the ESBGH accredits Specialist gastroenterologists and hepatologists.

Applications for the award of the Fellowship of the European Section and Board of Gastroenterology and Hepatology can be made through the ESBGH Website.

Eligible gastroenterologists are those who:

- Have received a national accreditation/diploma as a certified specialist in Gastroenterology within a UEMS Country or associated country,
- are actively working as a gastroenterologist,
- have published a minimum of 2 papers in peer reviewed journals

Additionally hepatogastroenterologists who fulfil the following criteria are eligible to apply for the ESBGH Fellowship:

- Gastroenterologists who undertook their basic training outside Europe, achieved Specialist Certification inside Europe, who then left Europe to work in a non-European country (eligible provided support is received from European delegates on the ESBGH)
- Gastroenterologists who undertook their basic training in a UEMS member state or associate country, who have achieved specialist certification inside Europe, but who then left Europe to work in a non-EU country (eligible provided they get support from European delegates on the ESBGH or from a delegate from the country where he/she were trained)
- Gastroenterologists who undertook their basic training outside Europe, obtained a specialist certificate outside Europe but currently work as a specialist in Europe, and are on the relevant country's specialist register (eligible with national delegate's support)

To work actively as a Hepatogastroenterologist and to have published a minimum of 2 papers in peer-reviewed journals are also mandatory for the criteria described above.

Applications from candidates who fulfil these requirements are evaluated by members of the Training and Recognition Committee (TRC) and are awarded the

Diploma of ESBGH if their application is approved by the TRC and the European Section and Board of Gastroenterology and Hepatology.

Once candidates have obtained the certificate of the ESBGH, they can use the post nominal 'Fellow of the European Section and Board of Gastroenterology & Hepatology'. (See Application Form on www.eubogh.org)

The attainment of the FESBGH indicates that an individual doctor has achieved the ability to practice gastroenterology according to international European standards, but it does not guarantee competence in local language, cultural and legal matters. The award of the Fellowship of the ESBGH does not assume that each fellow has achieved competence in all areas of hepatogastroenterology, including knowledge, clinical skills or procedural skills, but has achieved a critical mass of competence to practice as a general gastroenterologist and hepatologist and has the ability to acquire further specialized competencies as necessary.

TRAINING CENTRE ACCREDITATION

The ESBGH arranges peer review of training centers to ensure the quality of training centres. Site-visits are the key component for the ESBGH to secure the quality of training in Gastroenterology. They are considered as the most valuable contribution to maintaining high standards of training. At current training centers, the trainers are encouraged to apply for the Certificate of Fellowship of the European Section and Board of Gastroenterology & Hepatology.

Inspections are conducted, within published guidelines (www.eubogh.org), by two external assessors, nominated by the Board who hold the FESBGH. Centers granted approval are re-evaluated every five years. Major changes in the institution should be reported to the Training & Recognition Committee. A diploma will be issued to a training center fulfilling all ESBGH requirements, approving it as a Training Centre of the European Section and Board of Gastroenterology & Hepatology. A certificate of visitation with a letter of commendation may be issued to a visited training center, fulfilling most but not all ESBGH requirements. The site-visits are intended to encourage the establishment of high quality national training programmes.

THE ESBGH EXAMINATION

Introduction

The European Section and Board of Gastroenterology and Hepatology Examination (ESBGH Exam) is a fully validated assessment of knowledge of gastroenterology and hepatology, which is described in the curriculum below.

Eligibility requirements

There are no restrictions to entry for the ESBGH exam. There is no limit to the number of attempts that can be made. For doctors in formal Gastroenterology and Hepatology training programmes success is more likely if the examination is taken after the first two years of training.

The remit of the ESBGH exam

Success in this examination is a demonstration of having achieved the knowledge necessary to fulfil the requirements of the ESBGH curriculum, which is a Europe-wide description of the level expected of a specialist Gastroenterologist and Hepatologist. The examination is delivered once a year.

TRAINING PROGRAMME - SETTING AND ORGANIZATION

Training requirements for trainees

Content of training and learning outcome

Competencies required of the trainee

A medical **trainee** is a doctor who has completed his/her undergraduate medical education and professional training as a physician and is in an accredited training programme to become a recognized medical specialist. The trainee is described differently as an intern, resident, trainee, fellow or registrar in different countries.

Learning Outcomes represent the skills that learners can expect to demonstrate after completing the training period. They are defined in terms of competence (measured or observed as knowledge, skills and professional behaviour).

A gastroenterologist is an individual who has acquired enough competence (knowledge, skills and behaviours) to diagnose, treat and prevent diseases of the digestive system and related organs after a defined period of training and based on a specific syllabus.

The curriculum comprehensively described below encompasses "theoretical knowledge" and "practical and clinical skills" which are mandatory to be trained as a hepatogastroenterologist. The curriculum also mandates that the trainee has acquired sufficient knowledge and attitudes in relation to communication, interpersonal skills, ethics, professionalism, patient safety and quality improvement.

Knowledge, skills and behaviours - Core Curriculum

The core curriculum described below defines the required knowledge, skills and behaviours that a gastroenterologist should have acquired upon completion of his/her training period.

In addition to knowledge and practical skills to enhance patient care and prevent disease, it is recommended that the curriculum provides the candidate with basic knowledge of scientific methodology, organizational skills, medico-legal and ethical and palliative care issues, including health economics, leadership and teaching skills.

To achieve these goals, the trainee should be exposed to a sufficient number and variety of patients and procedures throughout the entire training period.

Education is a dynamic process and the curriculum will be updated according to major advances in gastroenterology and hepatology and specific National requirements.

Competences

To be appointed as a specialist/consultant an individual should show a level of competence sufficient to allow independent clinical practice and be able to care for patients both in acute and chronic situations.

By the end of the training programme the trainee will be expected to select appropriately, interpret correctly and where appropriate, perform competently, the required procedures and investigations. For the assurance of adequate experience a minimum number of procedures should be undertaken by each individual under different levels of supervision. For practical procedures each trainee should have a training log-book. The recommended ESBGH logbook can be found at <http://www.eubogh.org/logbook>. The necessary numbers and levels of competence are defined in the curriculum. The trainee should have adequate competence in information technology, data recording and analysis and skills in researching relevant literature.

Organization of training

- Trainee Posts Entry schedule

The selection procedure for the trainees is endorsed by the national authorities of each country. The number of positions offered should match the manpower needs in the specialty. In order to recruit the most suitable candidates for training in gastroenterology, the procedure of selection should be transparent and the application must be open to all persons who have completed appropriate basic medical training.

- Duration of training

The training programme should be of at least six years duration including at least one year of common trunk training in internal medicine, (maximum of two years), and at least five years of full-time gastroenterology and hepatology training; the fifth year in gastroenterology or one further year may be used for gastroenterology and hepatology related scientific work or hepatogastroenterology practice or optional specialized training, e.g. in advanced endoscopy or hepatology or other medical/scientific activity related to hepatogastroenterology or general internal medicine. For training in this additional year to be recognized, it must be approved in advance by the relevant Local and National Training organizations..

- Clinical Responsibilities and Timetable

Although training will be supervised, assessed and documented by a number of different trainers in different centres, the trainee, must, in cooperation with the Training Programme Director, organize in advance overall supervision, assessment and documentation of their training by one nominated supervisor, usually the supervisor at the initial training centre or alternatively a regional or national training

supervisor. A supervising trainer who takes on this responsibility must ensure overall supervision and mentoring of the trainee during their training programme by liaising with other training centres to ensure that the trainee undertakes the full curriculum

- **Clinical Training**

Adequate Clinical Experience is mandatory during the Training Period, where, there should be appropriate clinical exposure with an adequate number of both inpatients and outpatients and a wide breadth of clinical experience in all aspects of the. Specialty. The trainee should have sufficient linguistic ability to communicate with patients, communicate with colleagues and be able to study the international medical literature.

- **Teaching Activities**

Case Conferences, Journal Clubs, In-service Meetings, Multi-Disciplinary Meetings (especially surgery, radiology, histopathology, and liaison psychiatry), Hospital Staff Rounds and Seminars should take place regularly. Trainees should attend and contribute to these educational activities. In addition, trainees should be encouraged to attend and present at local, regional, national and international meetings.

- **Appointment and Job Description**

Trainees should be employed in substantive, paid, higher postgraduate medical positions, entry to which is by a competitive process. Employing Authorities should provide a job-description for the post. Trainee posts should provide adequate and appropriate clinical responsibility for both inpatient and outpatients but the hours of work should not be so great as to deny the trainee adequate time for personal study and attendance at formal educational activities. At least half the trainee's time should be devoted to clinical work; the remainder might be divided between personal study, formal educational activities, teaching, audit and research.

- **Study Leave**

During their training programme, trainees should be facilitated to be completely relieved of their clinical duties in order that they can take study leave to attend conferences and other educational activities outside their training unit.

- **Documentation of Training**

Trainees must document their training on an ongoing basis throughout their training period by means of a logbook(see above).. This logbook, which may be published nationally or by the local training centre, should log information regarding experience, competencies and non-experiential education (e.g. formal teaching sessions, educational courses attended etc.).Trainees should be encouraged to constructively reflect on training experiences. Opportunities for feedback should be provided throughout the duration of their training.

Experience to be logged includes the volume and nature of clinical interaction with patients (emergency, elective, inpatient and outpatient), endoscopy and other procedures, communication and ethical matters, teaching sessions personally delivered, research, audit and administration (e.g. Rota management, representative duties etc.).

- **Supervision of Training**

Trainees require continuing supervision of their clinical duties. In addition, supervision of their training programme and schedule is required to ensure they are making sufficient progress, that milestones are being achieved and that the training curriculum is being covered. Thus the trainee needs both Clinical Supervision and Educational Supervision. One supervisor may undertake both roles or the roles may be undertaken by separate individuals depending on local arrangements. It is advisable, however, that if there is a separate Educational Supervisor, he or she should be a clinician in the specialty team and not be remote from the clinical environment in which the trainee works. A Clinical Supervisor may be responsible for one trainee and the Educational Supervisor ideally should supervise no more than three trainees. If there is difficulty in recruiting an Educational Supervisor for trainees rotating through a number of Training Centres, the local National Delegate to the European Section and Board of Gastroenterology and Hepatology should be contacted to provide advice (see www.eubogh.org).

A Clinical Supervisor oversees the trainee's ongoing work and provides constructive feedback. Although all elements of work in training posts must be supervised, as training progresses the trainee should have the opportunity for increasing autonomy, consistent with safe and effective patient care.

An Educational Supervisor oversees the trainee's educational progress in the context of the specialty curriculum. He or she reviews the trainee's logbook or e-logbook, sets goals and provides direction and advice on a regular basis. Educational Supervisors should be familiar with the use of assessment tools, how to support trainees in difficulty and how to give effective feedback including goal setting and career advice. Ideally, Educational Supervisors should have attended a 'Train the Trainers' course.

- **Assessment and Appraisal of Training**

Educational Supervisors should have an induction session with their trainees soon after enrolment, during which the training programme and curriculum are explained and the means by which the various clinical aspects of training can be completed. . In addition, each trainee should, on a yearly basis, discuss and document a detailed training plan for the forthcoming year with their Educational Supervisor.. In the first year of specialized gastroenterology training, after common trunk/general medicine training, the trainee will require frequent formal feedback from their Clinical and/or Educational Supervisor up to 2-3 times in that year. Established assessment tools for appraisal of clinical knowledge, skills and professional attributes should be used on an ongoing basis during training, and documentation of these appraisals should be maintained in association with the trainee's logbook. The assessment of clinical skills, especially problem orientated

history taking, physical examination, diagnostic decision making ability, appropriate selection of investigations, investigation interpretation and overall clinical judgements, is particularly important. Different workplace assessment instruments may be used in various countries or institutions to document these clinical skills. Workplace assessment of trainee's behaviour and professionalism is normally carried out by patient surveys and feedback from colleagues and other members of the relevant multidisciplinary teams. Assessment of procedural skills, particularly endoscopic skills need to be documented by each trainee in conjunction with his/her trainer this is normally performed by direct observation of the trainee's procedural skills.

Appraisal of training progression should be performed formally on a yearly basis jointly by the trainee and Educational Supervisor by reviewing the trainee's logbook and confirming evidence of the attainment of competencies in knowledge, clinical skills and professional attributes and discussing other matters of relevance to completion of training. The appraisal of training before entering into the final year of training is particularly important as deficits in training can be identified and plans made for correction.; for this reason it is advisable that this particular appraisal involves an external/ assessor as well as the usual Educational Supervisor.

- **Governance of Training**

The governance of an individual's training program is the responsibility of the Program Director and the institution(s) in which the training program is being delivered. A trainer will be responsible to the Program Director for delivering the required training in this/her area of practice.

Training requirements for trainers

Process for recognition as a trainer

Trainers will be expected to have achieved the appropriate nationally recognized qualification to allow them to practice as a specialist/consultant in Hepatogastroenterology. A Program Director would be someone who has been or still is a trainer and who has considerable knowledge and experience in training doctors.

- **Recognized qualification and experience**

Trainers and Program Directors must be in active clinical practice and engaged in training in the training centre or network.

The Director of Training should have at least five years of experience, .post Specialist accreditation. He/she must have a sound practical knowledge of the broad field of gastroenterology and must be recognized by the national authority. Likewise, the medical staff acting as educational supervisors should be actively practicing gastroenterology and endoscopy and be committed to residency training.

- **Core competencies for trainers**

A trainer should:

- 1) Know all aspects of the overall gastroenterology curriculum and the problems related to its clinical implementation.
- 2) Have experience in teaching theoretical aspects of GI diseases and acquisition of skills in endoscopic procedures.
- 3) Be familiar with modern medical education principles and receive regular updates in leadership and mentorship.
- 4) Understands the needs of the trainee to achieve the goals of the training programme and helps him/her to progress throughout the training period.
- 5) Be able to promote in his/her mentee scientific curiosity as well as professionalism, ethical behaviours and humanistic values.

Quality management for trainers

The Gastroenterology & Hepatology Faculty of Trainers should show itself to be committed to specialist education and provide appropriate time, space, facilities and funding to protect the needs of education from the demands of service.

The members of the faculty should be experienced both as Gastroenterologists and teachers, committing time, effort and enthusiasm to the training programme. They should regularly attend interdisciplinary meetings with surgeons, pathologists and radiologists. The faculty should be large enough to supervise the clinical and practical work of the trainees.

Training requirements for training institutions

Process for recognition as training centre

Training in Gastroenterology and Hepatology should be based in a University department, a University affiliated institution or in those with an equivalent educational, and/or research programme, with the full complement of Medical, Surgical and diagnostic services commensurate with a University Hospital. The Training Centre should be housed in quality buildings which are well maintained. The Training Centre must have facilities for inpatients and outpatients and must contain an Endoscopy Unit and a Gastrointestinal/Liver Clinical Investigation room/laboratory. Satisfactory premises for education are needed with teaching space, library, and contemporary information technology and audio-visual teaching aids. The equipment in the gastroenterological, surgical, radiological and pathological departments must be of a standard to provide good clinical and education training. The Gastroenterology and Hepatology Training Centre should be located in a Hospital or Institution, which also has surgical, intensive care, radiology and access to histopathology, biochemistry, and microbiology and haematology laboratory facilities. The Hospital/Institution should also have a broad array of other medical subspecialty services such as cardiology, pulmonary, endocrinology/diabetes, haematology, nephrology, infectious disease and oncology.

Rotations- Training Centres and One Centre Training

- Training Centres may be recognized by The European Section and Board of Gastroenterology & Hepatology to be of such quality as to provide sufficient

training for the total four-year period of specialty gastroenterology/hepatology training. However some Units, with high quality gastrointestinal and hepatology clinical facilities and training, may lack the full complement of training facilities and opportunities. These Units may be recognized by the ESBGH as a Rotation Training Centre of sufficient merit such that a Gastroenterology Trainee will receive sufficient training for either a period of one year or a period of two years. A trainee may therefore fulfil the four-year programme of training by rotating between a numbers of recognized training centres.

Facilities for Endoscopy and Hepatogastroenterology Procedures

The training center Endoscopy Unit should contain up-to-date endoscopes with appropriate decontamination equipment and processes. The unit should be staffed by fully trained endoscopy nurses and assistants and should undergo regular quality control assurance according to local, national or international criteria.

These quality control assessments might include assessment of patient comfort levels, and facilities, complication rates (perforation, post ERCP pancreatitis, post polypectomy bleeding etc.), procedure completion rates, pathology detection rates (polyp detection etc.) and referral appropriateness. The unit should have implemented a CIRS (Critical Incident Reporting System) or equivalent system.

Protocols and guidelines should be available within the Unit to ensure the proper management of complex patients (diabetics, those receiving anticoagulation , prophylactic antibiotic treatment etc.). Trainees should receive formal induction training on entry to an Endoscopy Unit particularly with regard to patient safety issues, including consent and sedation. As far as practicable, endoscopy sessions during which training occurs should be adjusted to the needs of the trainee. Formal competency 'sign-off' should be undertaken by the trainer.

The Training Centre Endoscopy Unit should perform at least one thousand upper GI endoscopies a year including relevant therapeutic procedures. At least one thousand Colonoscopies including therapeutic colonoscopies should also be carried out in the Unit each year.

Facilities for Abdominal Ultrasound and Ultrasound Guided Biopsy must be available to the Training Centre. ERCP and Endoscopic Ultrasound are an essential tools in GI units. Furthermore, appropriate equipment and experienced teams are necessary in units providing advanced interventional endoscopy services (i.e. interventional EUS, EMR, ESD, POEM etc.).

CORE CURRICULUM

Objective

The recommended training curriculum of the ESBGH is constructed so that doctors who successfully complete the specialist training programme will be enabled to practice autonomously as a Gastroenterologist and Hepatologist, without ongoing supervision, not discounting the use of appropriate peer consultation. The curriculum is designed to train across the entire discipline of clinical Gastroenterology and Hepatology, so although trainees may develop particular clinical interests, they will also have acquired core knowledge and skills.

Sub-Specialist Modules and Advanced Modules

As gastroenterology and hepatology has grown, some areas have become increasingly complex. The curriculum therefore contains modules of advanced training in Hepatology, Nutrition, Digestive Oncology, and Interventional Endoscopy and Ultrasound. These modules are not obligatory but trainees may wish to undertake part or all of these modules .

Assessment and Recognition of Competencies

During their training, doctors will acquire a variety of clinical competencies. The acquisition of these competencies needs to be assessed and documented initially in a formative process and thereafter in a summative and maintenance process. Valid tools for assessing and documenting the successful acquisition of competencies must be available to trainees and trainers during the programme. Although these instruments will vary throughout the European area, it is important that full documentation of competence acquisition occurs.

The accreditation of a competence is primarily the teaching responsibility of the local supervising trainer and the learning responsibility of the trainee themselves. There is an ethical responsibility on both the trainer and the trainee to ensure that the accreditation of any particular competence is valid from the viewpoint of patient safety the 'primum non nocere' principle. The ESBGH does not validate individual competencies for individual trainees. Local patient care requirements in the various clinics, hospitals, regions and countries will determine which specialized competencies are necessary. There is an ethical requirement on a practitioner not to care for, or carry out procedures for, a patient in which he/she, the practitioner, is not competent.

Once training is completed the subsequent attainment of the FESBGH by an individual doctor does not indicate that this doctor is immediately competent to practice clinical gastroenterology throughout the European area. Europe is a multi- cultured, multi-language, multi-state area. Thus an individual doctor who wishes to practice medicine in any area of Europe must be au fait with the local language, cultural context and legal framework in order to effectively practice medicine. Notwithstanding this, in European Law, language is not a barrier to the entitlement of an individual doctor to practice medicine. The attainment of the FESBGH indicates that an individual doctor has achieved the clinical ability to practice gastroenterology according to international European standards but it does not guarantee competence in local language, cultural and legal matters. To effectively practice clinical medicine and communicate with and care for individual patients, a competence in these latter aforementioned factors is necessary, but their attainment is outside the scope of this curriculum.

Behaviour and Professionalism

Appropriate behaviour and clinical actions by doctors are guided by ancient and longstanding norms and ethical codes. Patients and relatives place their trust in doctors at moments when they are most vulnerable. Doctors must display a

professionalism, which maintains and nurtures this trust. As trainee doctors achieve increasing autonomy in patient care, it is important that they also display increasing professionalism and an increasing spectrum of generic behaviours.

Hepatogastroenterologists caring for their patients need to demonstrate the highest levels of compassion and honesty and show respect for others and not be discriminating or judgmental. They need to be able to communicate clearly and confidentially with patients and their relatives, careers, advocates and other professionals and involve the patient in decision-making, be it simple or complex. In order that no untoward harm should occur, gastroenterologists should be involved in quality improvement. They should have a scholarly disposition and maintain knowledge and skills through continuing education. They will also need to display leadership, administrative, personnel management and team management skills.

Professionalism during training

During their training programme, trainees will at all times need to display appropriate behaviour and professionalism. The precise quantification of these generic behaviours is not easy as they are implicit in all actions involved in patient care, as well as actions not involving patient care. Feedback from patients themselves, as well as members of the multidisciplinary team provide useful information. Lapses in appropriate behaviour or professionalism by a trainee which are reported to, or come to the attention of the Clinical and/or Educational Supervisor need to be evaluated and discussed with the trainee, and escalated to appropriate authorities as necessary.

FUNDAMENTAL GENERIC COMPETENCIES

Patient Interaction and Consultation-related Competencies

All interactions between a patient and a doctor may be viewed as a consultation and there are a number of fundamental consultation-related competencies which must be acquired by the clinician. These include:

- Establishing rapport and putting the patient at ease
- Eliciting an appropriate history
- Performing a physical examination
- Making an initial diagnosis or differential diagnosis
- Arranging appropriate cost-effective and ethical investigations
- Reaching diagnostic conclusions
- Communicating clearly
- Educating and providing educational resources for the patient
- Deliberating about various management approaches including benefits, risks and alternatives
- Obtaining informed consent
- Obtaining help or second opinions from colleagues or other health professionals
- Quickly sourcing reference information
- Prescribing or recommending therapies or procedures
- Personally undertaking procedures

- Providing sensitive and empathetic emotional support
- Managing the consultation time efficiently

Throughout the duration of the training programme, the trainee's acquisition of the various consultation related competencies needs to be supported, and when successfully acquired, documented.

System Interaction, Management and Organizational Competencies

The doctor-patient interaction occurs within a professional and organizational system and a doctor must be competent in his or her relationship with these systems. Thus an array of competencies which are not directly related to the individual doctor-patient relationship and consultation must be shown. These include:

- Personal management especially time management
- Team working, including appropriate leadership, with the patient care clinical team, the multidisciplinary team, the departmental and institution-wide management and clinical teams
- Hospital/Clinic Management including resource allocation and service development
- Ethical behaviour
- Clinical governance
- Awareness and understanding of legal frameworks and obligations within which clinical care occurs
- Awareness and understanding of commercial pressures and biases impacting on clinical care
- Teaching of colleagues and students
- Audit
- Research
- Public Health implications of clinical care

Academic Activities

Trainees need to have and support an attitude of active inquiry and realize the value of continuing education and knowledge generation. As evidence of this, by the end of training, trainees should ideally have two publications or presentations at National or International level as first or second author.

BASIC COMPETENCIES IN GASTROENTEROLOGY AND HEPATOLOGY

Gastroenterology and Hepatology trainees must be thoroughly familiar with the structures and normal functions of the gastrointestinal tract, liver, biliary tree and pancreas. To this end, they need to acquire sound theoretical knowledge of:

- Anatomy (gross and microscopic) and embryology of the liver, pancreas and gastrointestinal tract

- Biochemistry, especially GI hormones and neurotransmitters
- Hepatic metabolism and transport, biliary physiology and pathophysiology
- Cellular turnover, growth, differentiation and death
- Mucosal immunity and immunology
- Pharmacology
- Physiology including motility, digestion, absorption and secretion
- Classical and molecular genetics
- Microbiology of the normal gut and infection as a cause of disease
- Epidemiology of liver and gastrointestinal diseases
- Principles of preventative hepato-gastroenterology
- Physiological and other changes in the GI tract and liver associated with special circumstances such as pregnancy, aging and their clinical relevance.

POLICIES ON SAFEGUARDING CHILDREN AND VULNERABLE ADULTS

All Gastroenterology and Hepatology departments must have policies in place to safeguard children and vulnerable adults.

Vulnerable Adult, Child or Young Person

The vulnerable patient may be an adult (aged 18 years and over) or a child (aged under 18 years), may have dementia, and/or psychiatric or complex physical disorders, and/or adverse financial or social circumstances, and/or may have suffered from abuse or neglect. An acute gastroenterological illness resulting in hospital admission can heighten these vulnerabilities.

The healthcare professional is expected to aim to represent the best interests of the patient. A collaborative working relationship with the patient and or their closest carers is most likely to support this goal. The design and delivery of services will also consider, and where possible incorporate the views of and the specific needs of, the most vulnerable patients and those known to have poorer levels of access to healthcare and clinical outcomes. Patient dignity and the delivery of patient-focused care in a safe clinical environment should always be primary objectives of the doctor.

In particular, trainees should be familiar with departmental policies for obtaining consent for procedures on vulnerable adults, children or young persons.

COMPETENCIES AND TRAINING RELATED TO COMMON PRESENTATIONS

Upper GI Bleeding

Trainees need to be competent in determining the severity and source of upper GI bleeding and undertake necessary and timely diagnostic and therapeutic approaches (including vasoactive drugs, volume replacement, blood transfusion, therapeutic endoscopy and surgical intervention). Distinguishing variceal from non-variceal Upper GI Bleeding is a core clinical competence.

Jaundice and Abnormal Liver Enzymes

A knowledge of the metabolism of bilirubin along with its laboratory analysis and measurement in serum is an essential competence that must be acquired by trainees. Trainees should demonstrate a knowledge and a clinical ability to diagnose isolated disorders of bilirubin metabolism and jaundice due to both hepatocellular dysfunction and cholestasis. The trainee should demonstrate an ability to elicit a focussed history in a patient with jaundice and/or abnormal liver biochemistry including attention to presentation, past medical and surgical history with attention to environment history, social history, travel history and family history. The trainee should be able to recognise the physical findings associated with specific liver diseases as well as the signs of chronic liver disease. In addition it is important that the trainees can discriminate between obstructive and hepatocellular abnormalities of liver enzymes and plan an effective and efficient blood and serum work-up which will inform the selection, immediate or otherwise, of appropriate functional, imaging, and elastographic and histological investigations.

Ascites

The differential diagnosis of ascites may prove challenging. Trainees should have knowledge of the pathogenesis of portal hypertension and other causes of ascites and demonstrate the clinical skills involved in the diagnosis of the various causes of ascites including portal hypertension, hypoalbuminaemia and other disorders including ovarian disease, pancreatic ascites, bile ascites, chylous ascites, hypothyroidism, cardiac failure and dialysis associated ascites.

COMPETENCES AND TRAINING RELATED TO DISEASES AND THEIR MANAGEMENT

Functional and Motility Disorders of the GI Tract

Knowledge of:

- Irritable Bowel Syndrome-Rome Diagnostic Criteria
- Functional abdominal pain syndrome/ constipation and functional dyspepsia
- History taking/awareness of psycho-social factors/sexual and physical abuse/depression/anxiety and cancer phobia
- Oesophageal and gastric dysmotility syndromes
- Psychogenic vomiting
- Abdominal wall syndromes
- The Gut Microbiome and dysmotility
- Functional diarrhoea and constipation
- Faecal incontinence

Oro-Oesophageal Disorders

Knowledge of:

- Oesophageal motor function and its related disorders.
- Pathogenesis and clinical significance of GERD.
- Barrett's oesophagus (especially screening protocols)
- Tumours of the oesophagus.
- Oesophageal disorders caused by caustic agents, medications, infection and trauma.
- Oesophageal diverticula
- Foreign body impaction
- Diagnosis, investigation and management of dysphagia
- Swallowing disorders in the elderly
- Oesophageal function tests
- Management of reflux oesophagitis
- Diagnosis and management of oesophageal strictures
- Management of oesophageal diverticula

Oesophageal emergencies

- Acute dysphagia
- Mallory Weiss tear
- Spontaneous oesophageal perforation
- Acute oesophagospasm
- Bleeding oesophageal varices

Stomach and Duodenum

Knowledge of:

- H. Pylori and NSAID induced ulcer disease/erosions/gastritis
- Refractory peptic ulcer disease
- Stress-related ulcer disease
- Complications of peptic ulcer disease
- Complications of peptic ulcer surgery
- Indications and complications of bariatric surgery
- Management of premalignant gastric lesions
- Presentation, investigation and treatment of gastric adenocarcinoma, gastric NETS, gastric dysplasia, gastric polyps. Gastric GISTs. Zollinger-Ellison Syndrome

Pancreatic Disorders

Knowledge of:

- Management of acute and chronic pancreatitis including genetic disorders of the pancreas
- Aetiology of pancreatitis
- Staging of acute pancreatitis, Management of complications including infected necrosis, pseudocysts and portal vein thrombosis.
- Nutritional support in pancreatitis.
- Multidisciplinary approach to acute pancreatitis, with radiological and surgical colleagues.
- Diagnosis and management of pancreatic tumours
- Diagnosis and management of pancreatic insufficiency

Biliary Tract Disorders

Trainees should demonstrate knowledge in the physiology and biochemistry of bile formation and the pathogenesis of gallstones. They should be able to recognise the symptoms and signs of the complications of gallstones disease including biliary colic, acute cholecystitis, bile obstruction and cholangitis. They should be able to distinguish between symptomatic and asymptomatic gallstones and understand the clinical implications of this differentiation. They should know the various treatment options and their complications and the indications for operative and non-operative management. A knowledge of sclerosing cholangitis and other causes of cholangitis is necessary along with that of tumours of the bile duct, gall bladder and ampulla. Trainees should be aware of the indications and complications of endoscopic and radiological treatment of biliary disease.

Liver

All prospective specialists in gastroenterology and hepatology should receive basic training in hepatology. Some trainees may opt to undertake an advanced module in hepatology which particularly will involve training in therapy of liver failure, endovascular intervention and liver transplantation. Basic training should make it clear to the trainees when advanced competencies are necessary and when more specialised hepatology services should be involved in patient care. Trainees should understand the micro anatomy, physiology and biochemistry of the liver as it relates to disease process. They should recognise and understand the patterns of presentation of liver disease including altered transaminases, jaundice, acute liver failure, acute and chronic hepatitis, cirrhosis, iron and copper overload, intra- and extra-hepatic cholestasis, cholangitis, vascular liver diseases, abscesses/localised infections and tumours. They should be able to elicit the symptoms experienced by patients with these various presentations and the relevant physical signs and identify the patterns of abnormalities of blood tests, imaging, and liver stiffness, functional and histological evaluation.

They should understand the causes of acute hepatitis including viral, drug- and toxin-induced, alcohol-induced, fatty liver disease, and autoimmune liver disease and be able to put in place an appropriate plan for the investigation and management of these diseases including the role of serological investigations, non-invasive tests, indication of liver imaging and liver biopsy. They should be able to investigate the causes of liver disease in a structured manner.

They should develop the ability to treat hepatotoxic poisoning with antidotes. They should be able to identify and manage patients with acute alcohol withdrawal symptoms and distinguish this presentation from the many other causes of encephalopathy/coma and acute cognitive impairment in alcoholics.

Trainees must be able to evaluate and follow patients in ambulatory care.

Trainees should be familiar with different diagnostic and prognostic scores in hepatology, in order to evaluate severity of diseases and response to treatment.

They should have knowledge about the risks and prevention of viral hepatitis and vaccination schedules. They should be aware of international guidelines on the management of liver disease and the need for expert clinician involvement in patient care. Many trainees will achieve competence and experience in the management of viral Hepatitis and the details of this are included in the Advanced Hepatology Module.

Trainees should be able to diagnose the presence of liver cirrhosis and define its aetiology. They should have experience in the management of haemochromatosis, and knowledge of other genetic liver diseases. Trainees should develop the ability to assess the changes in liver function during pregnancy and identify and manage pregnancy-related liver diseases (e.g. benign cholestasis, acute fatty liver of pregnancy and HELLP syndrome).

Trainees should also be aware of the increasing frequency of a multi-factorial aetiology in liver disease and how it affects patient's management.

Trainees will need to become competent in management of the complications of cirrhosis including variceal bleeding, ascites, spontaneous bacterial peritonitis, hepato-renal syndrome, hepatic encephalopathy and bacterial infections. We particularly emphasize the competent management of acute bleeding.

Trainees will need to be competent in making objective assessment of nutritional status in patients with liver disease and undertake nutritional support as necessary in conjunction with a nutritional multi-disciplinary team.

Trainees will need to know the indications for liver transplantation and transfer to special care units with critically ill liver patients. Trainees will need to provide basic care for pre and post-liver transplant patients and liaise decisively with liver-transplant hepatologists.

Trainees will need to have gained competence in the assessment of patients with primary and secondary liver cancer including the guidelines for surveillance for hepatocellular carcinoma in cirrhosis. They should have knowledge of treatment principles for primary tumours and metastases with surgery, chemotherapy (general and local), transplant, local ablation, radiotherapy as well as targeted treatment.

Percutaneous liver biopsy

Increasingly, percutaneous liver biopsy is aided by ultrasonography. During the training period, the trainee should have carried out 20 liver biopsies.

Small Intestine

Knowledge of:

- Management of global malabsorption and specific nutrient malabsorption, particularly coeliac disease.
- Diagnosis and treatment of bacterial, parasitic and helminth infections of the small intestine
- Small intestinal bacterial overgrowth
- Whipple's disease
- Small intestinal lymphoma
- Small intestinal tumours-adenocarcinoma, GIST, Carcinoid Syndrome

Intestinal Failure

Small bowel emergencies

- Perforation
- Intussusception
- Obstruction
- Sub-acute obstruction
- Small bowel ischemia

Investigation of small intestine structure (capsule endoscopy, double balloon enteroscopy, CT, MRI) could be changed to capsule endoscopy, deep enteroscopy, or flexible enteroscopy, CT, MRI, deep enteroscopy includes double balloon, single balloon and spiral enteroscopy

Large Intestine

Knowledge of:

- Infectious diarrhoea
- Antibiotic-associated diarrhoea/C.difficile diarrhoea
- The Gut Microbiome
- Diverticular Disease/Diverticulitis
- Mesenteric ischemia
- Diseases of the appendix
- Colorectal cancer-multidisciplinary approach
- Anorectal disorders: Functional anorectal disorders
- Solitary rectal ulcer
- Intussusception,
- Enterocele,
- Dyssynergia (see ROME IV)
- Anorectal disease
- Haemorrhoids mucosal prolapse
- Fissure
- Perianal fistula
- Bowen's disease, condylomata
- Pruritus ani
- Colorectal polyps
- Proctitis
- Sexually transmitted perianal disease
- Rectal Bleeding

Radiation and Chemotherapy induced Enteropathies

Skills:

- Proctoscopy
- Rubber Band Ligation

Radiation and Chemotherapy induced Enteropathies

- Diagnosis and management of radiotherapy and chemotherapy induced intestinal damage, particularly radiation enteropathy, and radiation proctitis.

Systemic disease and the gut

- GI tract and hepatic involvement in infectious, endocrine, haematological, infiltrative, rheumatological and vascular disease.
- GI and hepatic disease in the elderly
- Impact of clinical genetics on GI tract and hepatic disease

Inflammatory Bowel Disease

- Diagnosis, differential diagnosis and management of Ulcerative Colitis and Crohn's Disease
- Assessment of severity of IBD
- Imaging of IBD
- Therapeutic management including indications for biological therapies.
- Exclusion of tuberculosis and Hepatitis B before starting biological therapies
- Surgical management of IBD
- Recognition and management of fulminant colitis
- Management of local and systemic, (extra-intestinal), complications of IBD
- Multidisciplinary team involvement in the long term management of IBD
- Prevention of cancer in IBD=endoscopic surveillance
- Transition of adolescent with IBD
- Microscopic colitis

ENDOSCOPY TRAINING

Endoscopy Training is not solely about the acquisition of motor skills to complete procedures. It involves a much broader set of knowledge and generic clinical skills the acquisition of which is often underestimated.

Fundamental Clinical and General Skills and Knowledge for Endoscopy

- Appropriateness and correct indications
- Informed consent including difficult complex consent situations
- Patient safety and comfort assessment and measurement
- Safe administration of sedation including its monitoring, e.g. Ramsey Scale of Sedation
- Communication with patients before and after procedure, especially communicating 'bad news'
- Endoscope design, function and capabilities

- Use and complications of diathermy
- Endoscopic unit design and management including finance and personnel
- Endoscope decontamination
- Quality Measures of outcome

Specific Endoscopy Skills

Trainees should be able to recognize endoscopic abnormalities and be able to use severity scores for these abnormalities.

Upper GI Endoscopy

- 1) Diagnostic Endoscopy with biopsy and vital staining
- 2) Therapeutic Endoscopy- Haemostasis techniques (ligation, thermal haemostasis, injection techniques, clip insertion), - Balloon dilatation
- 3) PEG insertion and retrieval

Lower GI Endoscopy

- 1) Diagnostic lower endoscopy with biopsy and vital staining
Proctoscopy, Rectoscopy, Sigmoidoscopy
Total Colonoscopy
- 2) Therapeutic Endoscopy
Snare Polypectomy
Haemostasis techniques (e.g. ligation, endoloop, thermal haemostasis, injection techniques, clip insertion)
Balloon dilatation of stenosis

During basic endoscopy training, a minimum of procedures needs to be carried out by the trainee:

Diagnostic esophago-gastro-duodenoscopy	200
Haemostatic techniques for oesophageal varices and other upper GI-bleeding	30
Diagnostic total colonoscopy	200
Diagnostic sigmoidoscopy	50
Rectoscopy/Proctoscopy	50
Polypectomy and haemostatic procedures in the lower GI-tract	50
Balloon dilatation (upper and lower tract)	10
PEG	15

As well as carrying out the minimum number of procedures, competence in these procedures must be validated according to local, national or international criteria.

ULTRASOUND TRAINING CURRICULUM

INTERVENTIONAL ULTRASOUND (INVUS 1)

Training in ultrasound techniques is highly desirable for specialists in hepatogastroenterology. The ESBGH, however, recognises that there are still centres and some countries throughout Europe in which this training is not available. In these conditions, links have to be made with radiological colleagues or/and hepatogastroenterology colleagues inside or outside centres in order to find ways to secure ultrasound training for those trainees who are interested.

Ultrasound (US), both as a diagnostic modality as well as a guidance technique for interventional procedures, has developed into an invaluable tool in virtually all medical specialties. The real time nature of US combined with low cost and high availability, has allowed US to become the modality of first choice for a broad variety of interventional procedures.

The INVUS 1 curriculum is recommended for all trainees who are using US as a guidance method for puncture/biopsy (ascites, abdominal fluid collections, pleura effusion, and liver biopsy)
INVUS 2 is recommended for advanced trainees. (See below).

INVUS 1

Trainees should be familiar with sterile techniques, equipment for aspiration/biopsy, Indications, complications and management of complications, and peri-interventional management.

Trainees may acquire Ultrasound training by:

Simulation training, special courses at teaching centres, assisted learning.

CEUS in guidance and therapy control, elastography in guidance, image fusing, (mandatory in countries where US is available in daily work and integrated in education program.)

To gain these specialized competences, a minimum number of procedures are required:

US-guided diagnostic procedures 50

Cyst puncture/FNA
Abscess/infected lesion puncture
Lymph node FNA/FNB
Liver tumour FNA/FNB
Pancreatic tumour FNA/FNB

US-guided therapeutic procedures 20

Liver cyst therapy
Pancreatic cyst drainage
Abscess puncture/drainage
Percutaneous transhepatic cholangiodrainage PTCD optional
Percutaneous US-guided gastrostomy (PUG) optional
Tumour ablation therapy (RFA/PEI) optional

CORE NUTRITION TRAINING

The ESBGH recommends a focussed period of training in relevant nutrition-related areas.

In recent years, attention has given to the severe impact of disease-related malnutrition on clinical outcome, partly due to the associated strain on healthcare resources. Severe malnutrition remains present in one out of four to five patients in hospitals.

Diseases which impair digestion, absorption or delivery of nutrients may result in malnutrition, dehydration, electrolyte disturbances or specific vitamin and mineral deficiencies, which subsequently may negatively influence clinical outcomes. The risk of developing malnutrition is also increased during states of severe injury, inflammation or infection. Stress metabolism impacts on nutritional status and may also result in the need for alternative feeding by the enteral or the parenteral route. It is important for the HGE-specialist to understand metabolism under normal conditions, but also in relation to adaptation following semi-starvation and in relation to stress conditions and to provide the best possible nutritional support, when oral feeding is inadequate. Patients with diarrhoea, malabsorption, pseudo-obstruction, short bowel syndrome and small bowel fistulae require specific management. At the other end of the nutritional spectrum, HGE specialists and paediatric gastroenterologists are increasingly confronted with obesity and its related problems following bariatric surgery procedures.

The treatment of malnutrition should be initiated by physicians, in close cooperation with adequately trained (clinical) dietitians. The lack of doctor awareness of nutrition-related issues probably results from the absence of this topic in the medical curriculum.

In summary, the situation outlined above offers a window of opportunity for the HGE specialist (in training) for several reasons:

- Nutrition is one of the key functions of the physiology of the gastrointestinal tract.
- Compared to other care providers, the HGE-specialist has the advantage that they can recognize malnutrition or conditions that threaten the patient's nutritional status at an early state, can visualize this, and can then intervene.
- Many nutritional problems are associated with motility disorders, such as postoperative or drug induced dysmotility. GE-specialists are particularly skilled to diagnose and treat these problems.
- HGE specialists play a central role in the care of patients at the interface of surgical and medical specialties, who deal with metabolic and nutritional derangements. The HGE specialist plays an important role in the performance of therapeutic procedures to prevent or treat malnutrition, including placement of feeding tubes, percutaneous endoscopic gastrostomies (PEG) and jejunostomies (PEG-J and PEJ).
- As specialists in gastrointestinal function, and intestinal failure, Specialists in Nutrition should always be involved in the use of parenteral nutrition.
- Specialists in Nutrition should be trained in complications associated with nutritional interventions, including metabolic derangements, such as the refeeding syndrome.
- Comprehensive training also requires exposure to research, either in basic sciences, translational research, or in clinical trials.

HIGHER TRAINING MODULES

These areas of the curriculum are deliberately constructed to be representative of the best training currently available, but trainees are not expected to achieve experience of all the areas described, as this is often not possible, and will depend on individual National arrangements. However National authorities who recognize Higher Specialist Training Modules, should ensure that trainees have access to the broad range of training necessary for safe practice in these subspecialty areas.

Digestive Oncology

Introduction

There are remarkable opportunities for those seeking a career in Digestive Oncology. The revolution in interventional endoscopy and anti-cancer therapies, as well as the management of treatment-related side effects, have changed the way care is provided for patients with digestive tumours. Hepatogastroenterologists are pre-eminently competent to organize supportive care around the Digestive Oncology patient. They recognize problems in nutrition and can take supporting measures that are necessary for completion of the patient's treatment. This holds true for situations in which patients experience toxicity induced by anti-cancer treatments. The next generation will assume a more central role in the multidisciplinary care of our patients. With proper training, there is no reason that the new generation of gastroenterologists should be barred from the delivery of anti-cancer therapies.

Minimally invasive laparoscopic approaches have been developed for almost all digestive tumours, and image-guided intervention is providing an innovative therapeutic option for early cancers. Modern evidence-based "outcomes research" provides an objective tool for assessing clinical results. Patient-completed questionnaires and standardized assessment of individual preferences help us to understand survivorship issues in digestive oncology, including the long-term effects of treatment on quality of life.

The Hepatogastroenterologist has the advantage that he/she can both recognize malnutrition or obstructing symptoms threatening the patient's condition in an early state, can subsequently visualize this endoscopically, and can take the necessary measures to resolve such devastating situations.

Obviously, full insight into the possible treatment plan for this vulnerable patient group is warranted.

The Hepatogastroenterologist with special competence in Digestive Oncology must be a skilled physician capable in advanced endoscopy, image-guided therapy, and medical cancer therapy. They must be trained in the nuances of modern diagnostic and staging procedures, fully appreciative of the benefits and limitations of anti-cancer therapy (chemotherapy, immunological, and targeted therapy) and radiation therapy (including chemo radiation).

The ESBGH Programme

Training programs are required to provide a structured educational experience at an advanced level in centres that are recognised as providing training in Digestive Oncology, to ensure that trainees acquire the knowledge and skills necessary to gain expertise beyond that acquired in the standard Gastroenterology and Hepatology residency.

Duration

The duration of advanced fellowship training might be 12-18 months, with a minimum of 6 months of clinical exposure during the formal 6 years of training (focus year) and 12 months of formal Digestive Oncology after completing training.

Knowledge

- of the pathophysiology of gastrointestinal tumours
- of anti-cancer drug treatment and radiotherapy treatment
- of primary and secondary prevention of digestive tumours
- of hereditary cancer and polyposis syndromes affecting the digestive tract
- of the rarer digestive tumours, such as anal carcinomas, hepatocellular carcinomas, GI-lymphomas (MALT-lymphomas and Enteropathy Associated T-cell lymphomas), GIST tumours, neuro-endocrine tumours,
- of advanced endoscopic techniques for diagnosis, staging, and treatment of pre-malignant disorders, such as chromo-endoscopy, Endoscopic Ultrasonography (EUS), ablative techniques, and endoscopic mucosal resection
- of palliative care for malignant digestive disorders and recognition patients in need of nutritional support
- of dealing with end-of-life care
- of side-effects of different anti-cancer treatment modalities.

Skills

- in endoscopy and practical procedures such as those described by the end of training general HGE-specialists; (overlap with focus year of advanced endoscopy);-minimum of 100 procedures including:
- endoscopic treatment of malignant stenoses of the oesophagus, stomach, duodenum, and colon;
- recognition and identification of premalignant lesions;
- endoscopic treatment of anastomotic leakages after surgery;
- percutaneous endoscopic gastrostomy (PEG) placement; endoscopic ultrasound (EUS) and EUS-guided fine needle aspiration (FNA);
- endoscopic ablative treatment, such as Photo-Dynamic Therapy, electrocoagulation, argon plasma coagulation (APC), and intraluminal radiotherapy;
- Endoscopic mucosal resection in the oesophagus, stomach, duodenum, and colorectum.

Logbook where the specific procedures and therapeutic interventions are recorded,(see above).

Attending a minimum of 40 weekly multidisciplinary oncology meetings with an internist-oncologist, an oncological surgeon, a radiotherapist, a radiation oncologist, a pathologist, and a nuclear medicine specialist.

Administration of anti cancer medical therapy to 250 in / out patients

Supervision of end of life care in a minimum of 10 patients.
Participation in a minimum of 300 outpatient consultations

Writing at least one article in the digestive oncology field as principal author or co-author or giving one lecture/talk at a national or international oncology symposium

After ending training in Digestive Oncology the specialist will:
Devote > 50% of his/her total professional activity to the field of digestive tumours.
Should be encouraged to be board-certified by the European Section and Board of Gastroenterology and Hepatology (<http://www.eubogh.org>)
Share a membership of The European Society of Digestive Oncology (ESDO) (<http://www.esdo.com>).

Advanced hepatology curriculum

Introduction

During the dedicated year of formation the trainee is expected to widen and deepen the knowledge and experience in all areas of hepatology covered by the basic core curriculum. In addition, the trainee should get wide experience and develop specific clinical competence in the following areas:

- 1) Liver transplantation
- 2) Intensive care management of patients with acute liver failure.
- 3) Intensive care management of patients with acute-on-chronic liver failure.
- 4) In-depth management of viral hepatitis including management of antiviral-resistant strains.
- 5) Management of difficult-to-treat autoimmune and metabolic liver diseases.
- 6) Management of difficult-to-treat alcoholic and fatty liver disease.
- 7) Management of malignant liver diseases.
- 8) Management of patients with portal hypertension, including the use of specialized investigations and treatment, such as portal pressure measurement, transjugular liver biopsy, TIPS, and expanding esophageal stents
- 9) Refractory ascites and its complications
- 10) Manifest hepatic encephalopathy
- 11) Nutritional counsel to patients with chronic liver disease, prior to and after transplantation, and to patients with co-morbidities in addition to liver disease.

Liver Transplantation

It is expected that the trainee should be directly involved in the pre-, peri- and post-transplant care of liver transplant patients

- Knowledge of indications for liver transplantation - acute and chronic disease.
- Knowledge about the principles of living donor selection, including appropriate surgical, psychosocial and ethical considerations and questions related to living donors, criteria for appropriate donors and recipients.
- Knowledge of the scoring systems used in transplant assessment e.g. MELD and Child-Pugh scores and eligibility criteria for hepatocellular carcinoma and the ability to apply these.

- Knowledge of the evaluation and management of hepato-pulmonary syndrome, porto-pulmonary hypertension and cirrhotic cardiomyopathy.
- Knowledge about transplant immunology, and application of standard and second line immunosuppression and their infectious and malignant complications.
- Ability to detect and manage primary graft non-function and acute and chronic rejection.
- Knowledge of the common liver biopsy findings post-transplant and the scoring systems used in assessment.
- Ability to manage early and late complications requiring medical, endoscopic or surgical intervention.
- Ability to communicate relevant patient/relative information concerning the disease, its treatment and prognosis.

Intensive Care Management of Patients with Acute liver Failure

- Knowledge of the clinical course and prognosis in acute and subacute liver failure, particularly drug- and toxin-induced damage, hypoxic hepatitis, severe viral and autoimmune hepatitis
- Ability to manage fluid imbalances, cerebral oedema, hypoglycaemia and electrolyte imbalance
- Ability to identify signs of poor prognosis and criteria for acceptance into a special care unit
- Ability to identify and manage life threatening liver disease in pregnant women
- Ability to communicate relevant patient/relative information concerning the disease, its treatment and prognosis
- Ability, using internationally validated scoring scales, to identify and care for patients needing urgent/emergency liver transplantation

Intensive Care Management of Patients with Acute-on-Chronic Liver Failure (ACLF)

- Trainees should acquire the competencies to manage patients with severe ACLF, in an ICU and in a multidisciplinary setting
- Trainees should have the ability to assess organ function, impairment and failure including the cardiovascular, GI, neurological, respiratory and renal systems in ventilated patients
- Knowledge of liver support techniques including artificial support
- Knowledge of intensive care and prognosis scoring systems
- Ability to assess and treat coagulation disorders in severely ill liver patients

Viral Hepatitis

- Knowledge of epidemiology, clinical courses and prognosis in the acute and chronic viral hepatitis
- Ability to carry out patient assessment and interpretation of blood work including examination for relevant viruses and genotypes
- Detailed knowledge of and ability to correctly treat viral hepatitis (including the management of antiviral resistant strains) taking into account indications, side effects, drug-drug interactions and expected treatment outcomes, and be familiar with international guidelines
- Knowledge of the liver biopsy findings and the histopathology scoring systems in viral hepatitis
- Knowledge of the assessment and treatment of combined viral infections
- Ability to communicate relevant patient information regarding risks of infection, treatment options, side effects and prognosis

Auto-Immune Liver Disease

- Knowledge of assessment and clinical course for patients with autoimmune hepatitis not responding to standard therapy, primary sclerosing cholangitis, primary biliary cholangitis, IgG4 cholangiopathy, and overlap syndromes
- Ability to interpret liver biochemistry, autoantibodies and histology in preparation for conclusive diagnostics, treatment and monitoring in complicated cases
- Ability to deliver treatment to patients with uncomplicated and complicated disease, and ability to offer further treatment options in case of failure of standard treatments.

Management of difficult to treat Alcoholic and fatty liver disease

Management of malignant liver diseases

Management of Patients with clinically significant Portal Hypertension

- Ability to assess the severity of the condition and the anatomical state of the portal vein and other splanchnic vessels
- Experience with rescue treatment including glue injection, expanding stents, indication for acute TIPS for unresponsive bleeding oesophageal and/or gastric varices
- Experience in the management of ectopic varices

Refractory Ascites and its Complications

- Ability to deliver treatment for difficult ascites including sodium limited diet, fluid restriction, diuretics, paracentesis and TIPS, and drainage systems.
- Ability to manage the complications of difficult ascites (tense ascites, spontaneous bacterial peritonitis, hepatic hydrothorax, abdominal hernia development)
- Ability to diagnose and treat hepato-renal syndrome. Ability to distinguish it from dehydration and other causes of renal failure
- Knowledge and experience of clinical course and prognosis with or without spontaneous bacterial peritonitis
- Ability to assess the increased operative risk in patients with chronic liver disease

Manifest Hepatic Encephalopathy (HE)

- Ability to take relevant medical history regarding earlier episodes, classification, severity of manifestations, clinical time course, and existence of precipitating factors. Competing diagnoses causing brain involvement should be excluded. Other complications of cirrhosis should be noted.
- Ability to carry out focused physical examination with emphasis on neurological signs of HE so as to grading the HE, supplemented with general signs of cirrhosis and portal hypertension.
- Ability to initiate care for a patient with altered consciousness, to treat alternative causes for altered consciousness, to correct precipitating factors, and to plan and commence specific HE treatment.
- Ability to plan the course of treatment including prevention of new episodes of HE as well as mapping other complications in cirrhosis, including application of clinical scores (i.e. Child-Pugh, MELD, and Glasgow Coma Score)
- Ability to inform the patient and caregivers about HE and its impact on daily living, prognosis, and preventive measures.

Advanced Nutritional management of Liver Diseases

- Knowledge about the central importance of nutritional status and correction of undernutrition for the clinical course and prognosis of cirrhosis.
- Capability to perform baseline clinical nutritional assessment by medical history and physical examination in order to identify without delay the patient at nutritional risk.
- Ability to plan and interpret the established tools for screening and assessment of malnutrition
- Ability to evaluate protein, energy, and micronutrient needs by means of the established formulae.
- Ability to prescribe enteral and parenteral nutritional therapy (including hyper-alimentation in hepatic malnutrition) according to established guidelines.
- Ability to follow-up on nutritional therapy, adherence to it, and adjust administration route when nutritional goals are not attained.
- Ability to plan long-term nutritional therapy of cirrhosis patients.
- Ability to communicate the aims, means, and importance of nutritional therapy to patient and caregivers.

Infiltrative Liver Disease

- Knowledge of and capability to manage or management of infiltrative diseases of the liver including storage diseases, granulomatous diseases and haematological diseases
- Knowledge of and capability to manage or direct management of localized infectious diseases of the liver including bacterial liver abscesses, amoebic abscesses and hydatid cysts

Primary and Secondary Liver Cancer Advanced Management

- Knowledge of risk factors, causes, and prognostic factors
- Ability to carry out initial diagnostics, stage classification and assessment regarding resectability utilising tumour markers, endoscopy, radiological diagnostics (including operational radiological diagnostics) as well as histology
- Knowledge of clinical course and outcome of primary and secondary liver cancer (from gastrointestinal cancer, neuroendocrine tumours, lung cancer and breast cancer)
- Knowledge of and experience of complications of e.g. portal vein thrombosis, extrahepatic metastases, malignant ascites, icterus, carcinoid syndrome/paraneoplastic syndromes
- Knowledge and application of screening protocol for hepatocellular carcinoma in cirrhosis
- Knowledge and application of assessment strategy after radiology diagnostic detection of liver tumours
- Knowledge of and application of treatment principles for primary tumours and metastases with surgery, chemotherapy (general and local), transplant, local ablation, radiotherapy as well as targeted treatment
- Ability to communicate relevant patient/relative information concerning the disease, its treatment and prognosis

Procedural Skills

Overall Procedural Skills the trainee should acquire can be summarised as follows:

- Liver Biopsy
- Transjugular liver biopsy
- Hepatobiliary ultrasonography
- Liver stiffness measurement
- Insertion and management of expanding distal oesophageal stents
- Insertion and Management of balloon tamponade
- Enox band ligation and, in the relevant clinical scenario, sclerotherapy
- Hepatic venous and portal pressure measurements

Higher training in nutrition

The goal of the ESBGH fellowship program remains to produce, for the regional countries, a framework of well-trained Specialists who will be qualified to improve care and reduce the incidence, morbidity, and mortality of malnutrition.

Didactic education

The goal of the 1-year advanced nutrition program is to provide a broad view of all aspects of advanced nutrition, and a familiarity with diagnostic and therapeutic approaches. The emotional impact of this work must be recognized, and fellows should be coached on this, not only to appreciate the impact of chronic intestinal failure on the patients, but also on the impact of the care of these patients on support staff.

- Comprehensive training also requires exposure to research, either in basic sciences, translational research, or in clinical trials.

The ESGBH Higher training programme in Nutrition

Training programs are required to ensure that trainees acquire the knowledge and skills necessary to gain expertise beyond that acquired in the standard Gastroenterology residency. Access to patient care and multidisciplinary team discussions are required. The ESGBH Programme provides structured clinical opportunities for trainees to develop advanced skills in the field of clinical nutrition. Essential requirements for the Gastroenterologist with a focus in nutrition should include:

- Pathophysiology of the gastrointestinal tract and its motility regulation
- Metabolism in health and disease
- Diagnosis of nutritional status
- General understanding of dietary requirements in health and disease
- Understanding of disease-related digestive and metabolic dysfunction, diagnosis and treatment of intestinal failure
- Diagnosis and treatment of obesity
- The ability to perform and understand the limitations of more complex nutritional treatments and metabolic derangements in healthy subjects and those with disease, including enteral and parenteral nutrition strategies.
- Expertise in multidisciplinary care
- Ability to collaborate in (translational) research.

The goal of advanced training in nutrition is to improve the knowledge and skills beyond the expertise that is obtained during the regular Gastroenterology residency program. The suggested duration of advanced fellowship training might be twelve months of clinical exposure during the formal six years of Gastroenterology training (focus year).

Learning environment

This intense module in nutrition should occur in a unit in which at least one consultant hepatogastroenterologist has a special interest in nutrition and works with a multi professional nutrition support team (including doctor, nurse, dietician and pharmacist).

Clinical experience

The trainee must be responsible for patients with malnutrition, both as inpatients and outpatients. This should include those with complications following surgery, chemotherapy and radiotherapy. This includes patients in need of (par) enteral nutritional support. Clinical experience must be gained in paid positions.

The trainee should participate in multidisciplinary team discussions at least on a weekly basis.

Quality control of Nutrition training

GI training and quality inspections at a regular interval of at least 5 years, organized and supervised by the national society for HGE.

Trainers must provide adequate on-site supervision for trainees at all times, as defined in the curriculum. Satisfactory assessments from trainers and completed log books that demonstrate that the fellow meets the criteria of competence are required.

Nutrition training competencies

Trainees should develop experience with a broad spectrum of patients requiring nutritional support, i.e. those with severe malnutrition, pre- and post surgery, patients with severe IBD, pancreatitis, hepatic disease, renal disease, patients with oncological disease and burns, in patients with cancer, cardiac or pulmonary disease, in patients with diabetes, in pregnant patients as well as critically ill and septic patients.

General

- Knowledge about body composition, fluid and electrolyte balance, energy homeostasis, micro- and macronutrient requirements and their measurement
- Understand the clinical and metabolic sequelae of malnourishment on a macro level and for specific nutrients
- Clinical and laboratory assessment of nutritional status including overall nutritional state and specific micronutrient deficiencies
- Ability to assess a patient's requirements for fluid and electrolytes, macro and micro nutrients and trace elements in various clinical situations and disease states, especially those associated with injury, inflammation, sepsis and stress
- Understands and has the ability to recognise, prevent and manage refeeding syndrome
- Ability to assess and investigate weight loss and distinguish GI and non-GI causes of weight loss
- Knowledge of and ability to implement strategies for management of obesity

Team Working

- Ability to join a multidisciplinary nutrition support team
- Ability to take the lead role in a multidisciplinary nutrition support team
- Ability to work closely with colleagues whose patients require nutrition support

Dysphagia

- Ability to clinically assess the causes of dysphagia
- Ability to determine the short-term and long-term prognosis in patients with dysphagia.

Intestinal Failure and Adaption

- Can clinically classify and grade the severity of intestinal failure
- Understands the process of adaption to intestinal failure
- Understands and can assess clinically fluid absorption and secretion in the GI tract in health and various disease states including post-surgical acclimatization and the effects of stomas and fistulas and the importance of colonic continuity
- Can diagnose and manage intestinal dysmotility associated with neuropathy, myopathy, scleroderma, amyloid, diabetes and congenital motor dysfunction.

Short Bowel Syndrome and Post-Surgery Problems

- Understands and has the ability to assess the degree of nutrient deficiency including fluid balance in patients with short bowel syndrome
- Can advise on the use of oral glucose-saline solutions, magnesium oral preparations, subcutaneous replacement and pharmacological anti-secretory and anti-diarrhoea agents
- Understands and can advise on indications for surgical intervention
- Is aware of and can manage complications of the short-gut syndrome including dehydration, renal failure, gallstones, renal stones, liver fibrosis, osteoporosis, acidosis and malnourishment
- Is able to manage complex post-surgical complications especially enterocutaneous fistulae, wound dehiscence, ileus, intestinal obstruction, continuing sepsis and advice as when to re-operate if necessary.

Enteral Nutrition (EN)

- Knows and is able to deliver EN in patients with residual intestinal function appropriately
- Can determine when EN has failed and when PN is preferable
- Can transfer a patient from PN to EN
- Knows about the composition and indication of various EN preparations

Parenteral Nutrition (PN) Can prescribe appropriate PN regimes

- Knows the principles of feeding bag composition
- Is aware of varying catheter types and their ports, the practice of strict aseptic techniques and the care of catheters including possible complications
- Can recognise and treat adverse metabolic sequelae of PN including osteoporosis, gallstones and abnormal liver biochemistry
- Can institute home parenteral nutrition (HPN)

Ethical Considerations and Nutrition towards the end-of-life

- Knows the ethical and legal considerations surrounding nutritional support
- Is able to assess the benefits and disadvantages of nutritional support in patients with advanced cerebral dysfunction, those unwilling to eat and those with advanced incurable diseases
- Can determine whether a patient is mentally competent to make decisions and to respect these decisions
- In the instance where patients are unable to make decisions about their own care, to make decisions about the nutritional and medical care of the patient taking into account previous decisions and directives of the patient and the input of authorized patient advocates, the patients spouse and family and other relevant people according to local, legal and ethical frameworks
- Can compassionately and honestly discuss these matters with the patient and/or other relevant people.

Skills

- Review and supervise nutritional needs of patients between ward rounds and provide clinical input at ward rounds
- Assess patients for consideration of gastrostomy placement
- Assess patients for consideration of parenteral and enteral nutrition
- Ability to communicate with the patients' families, friends and loved ones, including the patient's lawyers and attorneys if necessary.
- Skill in procedures such as those described by the end of training general HGE-specialists; optional (overlap with focus year of advanced endoscopy); endoscopic treatment of malignant stenoses of the oesophagus, stomach, duodenum, and colon; endoscopic treatment of anastomotic leakages after surgery; and percutaneous endoscopic gastrostomy (PEG) placement.
- Knowledge regarding the placement of central venous access such as tunnelled catheters, peripherally inserted central catheters (PICCs), subcutaneous ports and arteriovenous fistulas or shunts.

Procedures

- Nasogastric tube insertion endoscopically
- Nasojejunal tube insertion endoscopically
- Placement of Percutaneous Endoscopic Jejunostomy (PEJ) tube
- Central intravenous line insertion (jugular or subclavian)
- Peripheral intravenous long-line insertion
- Tunnelled insertion of intravenous central line
- Unblocking of obstructed PEG/PEJ tube
- Unblocking of blocked venous lines
- Removal of cuffed intravenous feeding line

Interventional endoscopy curriculum

After having acquired the basic requirements in endoscopy, a trainee may wish to extend their endoscopic competencies. This specialized training should be undertaken in an endoscopy unit which provides a minimum number of specialized procedures per year in order to enable the trainee the opportunity of learning these techniques in a reasonable period of time. The training period should not be shorter than one year and may take up to two years.

The main focus of training, besides therapeutic interventions for benign and malignant stenosis in the upper and lower GI tract (bougienage, dilatation, stent insertion), is usually diagnostic and therapeutic ERCP, and endoscopic polypectomy, mucosal resection, and therapeutic intervention for complex GI bleeding.

In regard to ERCP, the trainee must gain competences in endoscopic sphincterotomy, stone removal, including lithotripsy and bilio-pancreatic stent insertion. Further training may be acquired in percutaneous access to the biliary tree...

Trainees who complete advanced endoscopy training, should be competent in EMR, and may be competent in endoscopic mucosal dissection, capsule endoscopy and small bowel enteroscopy.

Advanced endoscopy trainees may wish to develop higher level skills in endoscopic ultrasound. (See below).

Recommended minimum number of procedures - competent under supervision

1) Stenosis Treatment- Upper GI tract	
Dilatation benign strictures	20
Stent insertion-malignant strictures	10
Malignant Colonic Strictures-stent insertion	10
2) ERCP	
Diagnostic and/or therapeutic procedures	100
Sphincterotomy (biliary/pancreatic)	75
Stent placement (plastic/metal)	30
Gall stones treatment (Balloon extraction, Dormia basket, mechanical lithotripsy)	40
3) Endoscopic Local Tumour Treatment	
Mucosectomy (independent of the organ, esophagus, stomach, duodenum, colorectum) New: > 2cm	20
4) Small Bowel Endoscopy	
Flexible enteroscopy	10
Diagnostic capsule endoscopy (analysis)	30

EUS interventions (INVUS 2)

EUS-Procedures upper GIT 200

Gastral EUS of oesophagus (oesophageal cancer)
 Gastral EUS of mediastinum (lymph nodes, lung cancer)
 Gastral EUS of stomach (gastric cancer, submucosal tumours, GIST)
 Gastral EUS of pancreas (pancreatic cancer, NET, cystic tumour)
 Gastral EUS of biliary tract (CBD stones, tumours)
 Gastral EUS of adrenal gland (tumour left AG)

EUS-Procedures lower GIT 50

Rectal EUS of rectal / anal cancer
 Rectal EUS of pararectal and perineal region (abscess, fistula)
 Flexibly EUS of Sigma

EUS interventional procedures

Diagnostic EUS-guided procedures (FNA/FNB) 50

(30/20)
 Lymph node FNA/FNB
 Cyst puncture/FNA
 Pancreatic tumour FNA/FNB
 Adrenal gland tumour FNA/FNB

Therapeutic EUS-guided procedures (Punctures/Drainages) 20

EUS-guided pancreatic cyst drainage
 EUS-guided pancreatic necrosectomy (optional)
 EUS-guided abscess drainage
 EUS-guided drainage of bile duct system (optional)
 US-guided drainage of pancreatic duct system (optional)
 cyst drainage
 EUS-guided pancreatic necrosectomy (optional)
 EUS-guided abscess drainage
 EUS-guided drainage of bile duct system (optional)
 EUS-guided drainage of pancreatic duct system (optional)

Position	Country	Name
Observer country	ALBANIA	<i>To be confirmed</i>
Full member country	AUSTRIA	Michael Jonas
Full member country	AUSTRIA	Ludwig Kramer
Observer country	AZERBAIJAN	<i>To be confirmed</i>
Observer country	BELARUS	Marakhouski Yuri
Full member country	BELGIUM	Chantal de Galcsy
Full member country	BELGIUM	Henri Büscher
Observer country	BOSNIA AND HERZEGOVINA	Rusmir Mesihovic
Observer country	BOSNIA AND HERZEGOVINA	Nenad Vanis
Full member country	CROATIA	Zeljko Krznaric
Full member country	CROATIA	Davor Štimac
Full member country	CYPRUS	George S Potamitis
Full member country	CZECH REPUBLIC	Miroslav Zavoral
Full member country	CZECH REPUBLIC	Milan Lukás
Full member country	DENMARK	Hendrik Vilstrup
Full member country	DENMARK	Palle Bekker Jeppesen
Full member country	ESTONIA	Riina Salupere
Full member country	FINLAND	Hannu Nuutinen
Full member country	FINLAND	Airi Jussila
Full member country	FRANCE	Jean Paul Jacques
Full member country	FRANCE	Philippe Marteau
Observer country	GEORGIA	Teimuraz Kodua
Observer country	GEORGIA	Manana Jebashvili
Full member country	GERMANY	Dieter Nuernberg
Full member country	GERMANY	Heiner Krammer
Full member country	GREECE	Spyros Michopoulos
Full member country	GREECE	Sotiris Georgopoulos
Full member country	HUNGARY	Zsolt Tulassay
Full member country	HUNGARY	István Rác
Full member country	ICELAND	Einar Oddsson
Full member country	IRELAND	Luke O'Donnell
Full member country	IRELAND	Aiden McCormick
Associate country	ISRAEL	Doron Schwartz
Full member country	ITALY	Gianfranco Delle Fave
Full member country	LATVIA	Juris Pokrotnieks
Full member country	LITHUANIA	Limas Kupcinskas
Full member country	LITHUANIA	Darius Krukas
Full member country	LUXEMBOURG	Christiane Steichen
Observer country	MACEDONIA	Dimitar Trajkov
Observer country	MOLDOVA	<i>To be confirmed</i>
Observer country	MONTENEGRO	<i>To be confirmed</i>
Full member country	NETHERLANDS	Chris J J Mulder
Full member country	NORWAY	Kristine Wiencke
Full member country	NORWAY	Mathis Heibert
Full member country	POLAND	Teresa Starzynska
Full member country	POLAND	Witold Bartnik
Full member country	PORTUGAL	Isabelle Cremers
Full member country	PORTUGAL	Guilherme Macedo
Full member country	ROMANIA	Carol Stanciu
Full member country	ROMANIA	Anca Victorita Trifan
Observer country	RUSSIA	Vladimir T Ivashkin
Observer country	RUSSIA	Chavdar Pavlov
Observer country	SERBIA	Srdjan Djuranovic
Full member country	SLOVAKIA	Ladislav Kuzela
Full member country	SLOVAKIA	Lubomir Jurgos
Full member country	SLOVENIA	Borut Štabuc
Full member country	SPAIN	Cecilio Santander
Full member country	SPAIN	Enrique Dominguez-Muñoz
Full member country	SWEDEN	Jan Lillienau
Full member country	SWEDEN	Lina Vigren
Full member country	SWITZERLAND	Gian Dorta
Associate country	TURKEY	Sedat Boyacioglu
Associate country	TURKEY	Nurdan Tozun
Observer country	UKRAINE	G D Fadeyenko
Observer country	UKRAINE	O Ya Babak
Full member country	UNITED KINGDOM	Ian Barrison
Full member country	UNITED KINGDOM	Chuka Nwokolo

