

THE EUROPEAN SECTION AND BOARD OF GASTROENTEROLOGY AND HEPATOLOGY

Specialty 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 UEMS is a non-governmental organisation representing national associations of medical specialists at the European Level. With a current membership of 39 national associations and operating through 43 Specialist Sections and European Boards, the UEMS is committed to promote the free movement of medical specialists across Europe while ensuring the highest level of training which will pave the way to the improvement of quality of care for the benefit of all European citizens. The UEMS areas of expertise notably encompass Continuing Medical Education, Post Graduate Training and Quality Assurance.

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

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

More than a decade after the introduction of this Charter, the UEMS Specialist Sections and European Boards have continued working on developing these European Standards in Medical training that reflects modern medical practice and current scientific findings. In doing so, the UEMS Specialist Sections and European Boards did not aim to supersede the National Authorities' competence in defining the content of postgraduate training in their own State but rather to complement these and ensure that high quality training is provided across Europe.

At the European level, the legal mechanism ensuring the free movement of doctors through the recognition of their qualifications was established back in the 1970s by the European Union. Sectorial Directives were adopted, and one Directive addressed specifically the issue of medical Training at the European level. However, in 2005, the European Commission proposed to the European Parliament and Council to have a unique legal framework for the recognition of the Professional Qualifications to facilitate and improve the mobility of all workers throughout Europe. This Directive 2005/36/EC established the mechanism of automatic mutual recognition of qualifications for medical doctors according to training requirements within all Member States; this is based on the length of training in the Specialty and the title of qualification.

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

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

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

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), the pancreas and the peritoneum. Additional areas of focus include nutrition and nutritional deficiencies, digestive oncology, prevention and screening of disease, particularly colorectal cancer, and liver disease. Gastroenterology requires increasingly complex decision-making with mastery of a growing number of advanced endoscopic interventional techniques, both diagnostic and therapeutic. It is a procedure-intense specialty that requires manual dexterity, knowledge of basic science, 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 31 UEMS member countries (the 27 EU-countries plus, Iceland, Norway, Switzerland, and United Kingdom) and a representative from the European Junior Doctors (EJD)). The delegates are appointed by the National Medical Associations.

Armenia, Serbia, Israel, and Turkey are associated countries. Georgia, Iraq, Lebanon, Morocco, and Tunisia 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 harmonising high standards for medical practice, 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 centres

To evaluate the quality of International Gastroenterology and Hepatology CME/CPD in Europe in conjunction with EACCME.

To promote exchange of trainee gastroenterologists across Europe

To collect and analyse workforce demographics in Gastroenterology and Hepatology.

To administer an annual European Specialty examination for Gastroenterology and Hepatology.

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

To improve the quality of Gastroenterology and Hepatology training, the ESBGH accredits specialists in Gastroenterology and Hepatology.

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 and Hepatology within a UEMS Country or associated country,
- are actively working as a gastroenterologist,
- have published a minimum of two papers in peer-reviewed journals.

Additionally, gastroenterologists 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 was 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 Gastroenterologist 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 Gastroenterology, including knowledge, clinical skills, or procedural skills, but has achieved a critical mass of competence to practice as a gastroenterologist and can acquire further specialised competencies as necessary.

TRAINING CENTRE ACCREDITATION

The ESBGH arranges peer review of training centres 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 centres, 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.eubog.org), by two external assessors, nominated by the Board who hold the FESBGH. Centres 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 centre 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 centre, fulfilling most but not all ESBGH requirements. The site-visits are intended to encourage the establishment of high-quality national training programmes.

THE EUROPEAN SPECIALTY EXAMINATION IN GASTROENTEROLOGY AND HEPATOLOGY (ESEGH)

Introduction

The ESEGH is a fully validated assessment of knowledge of Gastroenterology and Hepatology, which as described in the curriculum below.

This Examination is a collaboration between the Federation of the Royal Colleges of Physicians of the UK, the British Society of Gastroenterology and the ESBGH.

Eligibility requirements

There are no restrictions to entry for the ESEGH. 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 ESEGH

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 currently delivered once a year.

TRAINING PROGRAMME - SETTING AND ORGANISATION

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 recognised 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** (specialist in Gastroenterology and Hepatology) is a physician who has acquired sufficient knowledge, competence, 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 gastroenterologist. 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, organisational skills, medico-legal, 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 trainees under different levels of supervision. For practical procedures each trainee should have a training logbook. The recommended ESBGH logbooks 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**

National authorities of each country endorse the selection procedure for trainees. The number of positions offered should match the manpower needs in the specialty. 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 minimum training programme should be of four years duration, in single specialty training, to comply with EU regulations (Directive 2005/36/EEC).

We acknowledge that EU countries have different training programmes.

We recommend, at least, one/two years of internal medicine, and at least four years of full-time Gastroenterology and Hepatology training; the last year in Gastroenterology or one further year may be used for Gastroenterology and Hepatology related scientific work or Gastroenterology practice or optional specialised training, e.g., in advanced endoscopy or Hepatology or other medical/scientific activity related to Gastroenterology or general internal medicine. For training in this additional year to be recognised, 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 several different trainers in different centres, the trainee, must, in cooperation with the Training Programme Director, organise 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 inpatients 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. The maximal legal working time in Europe is 48 hours a week.

- **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 (can be found on the website www.eubogh.org/logbook), 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, and 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 several 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 how 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 specialised 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 the final year of training is particularly important as deficits in training can be identified and plans made for remedy; 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 programme is the responsibility of the Programme Director and the institution(s) in which the training programme is being delivered. A trainer will be responsible to the Programme 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 recognised qualification to allow them to practice as a specialist/consultant in Gastroenterology. A Programme Director would be someone who has been or still is a trainer and who has considerable knowledge and experience in training doctors.

- **Recognised qualification and experience**

Trainers and Programme 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 recognised 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:

- Know all aspects of the overall Gastroenterology curriculum and the problems related to its clinical implementation.
- Have experience in teaching theoretical aspects of GI diseases and acquisition of skills in endoscopic procedures.
- Be familiar with modern medical education principles and follow regular updates in leadership and mentorship.

- Understand the needs of the trainee to achieve the goals of the training programme and help him/her to progress throughout the training period.
- 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 a facility with an equivalent educational, and/or research programme, with the full complement of Medical, Surgical, and diagnostic services associated 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, a library, and contemporary information technology/audio-visual teaching aids. The equipment in the gastroenterology, surgery, radiology, and pathology departments must be of a standard to provide good clinical and educational training. The Gastroenterology and Hepatology Training Centre should be in a hospital or Institution, which has surgical, intensive care and radiology facilities with access to histopathology, biochemistry, microbiology and haematology laboratory facilities. The Hospital/Institution should also have a broad array of other medical subspecialty services such as cardiology, respiratory medicine, endocrinology/diabetology, 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 period of specialty Gastroenterology/Hepatology training. 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 programme of training by rotating between a number of recognized training centres.

Facilities for Endoscopy and Gastroenterology Procedures

The training centre Endoscopy Unit should use 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, 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.

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 regarding 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. The trainer should undertake formal competency 'sign-off'.

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.

Training should take place in an Accredited Endoscopy Unit (at a national level).

Facilities for Abdominal Ultrasound and Ultrasound Guided Biopsy must be available to the Training Centre. ERCP and Endoscopic Ultrasound are 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 the specialty of 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 one 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 specialised 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.

Trainees should be assessed in each domain within the curriculum on an annual basis with a recorded level of supervision with detailed comments to justify their entrustment decision. An example of such an assessment tool can be seen below

Level	Descriptor
Level 1	Entrusted to observe only – no provision of clinical care
Level 2	Entrusted to act with direct supervision: The trainee may provide clinical care, but the supervising physician is physically within the hospital or other site of patient care and is immediately available if required to provide direct bedside supervision

Level	Descriptor
Level 3	Entrusted to act with indirect supervision: The trainee may provide clinical care when the supervising physician is not physically present within the hospital or other site of patient care, but is available by means of telephone and/or electronic media to provide advice, and can attend at the bedside if required to provide direct supervision
Level 4	Entrusted to act unsupervised

The educational supervisor should also indicate an appropriate global anchor statement to summarize progress towards independent practice. An example of such statements is listed below.

Global assessment anchor statements

- Below expectations for this year of training: may not meet the requirements for critical progression point
- Meeting expectations for this year of training: expected to progress to next stage of training
- Above expectations for this year of training: expected to progress to next stage of training

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 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.

Gastroenterologists 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. This includes respect to gender equity and equality regardless of sex, ethnicity, region of origin, or religion. Gastroenterologists need to be able to communicate clearly and confidentially with patients and their relatives, carers, 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.

There is an increasing need for consideration of environmental issues including waste arising from medical procedures and energy use.

Professionalism during training

During their training programme, trainees will always 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, as well as members of the multidisciplinary team provides 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 several 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 and empathetically
- Educating and providing educational resources for the patient
- Considering different management approaches taking into account relative benefits, risks, and alternatives
- Obtaining appropriate informed consent
- Obtaining help or second opinions from colleagues or other health professionals
- Quickly sourcing reference information with critical appraisal of veracity.
- Prescribing or recommending therapies or procedures
- Personally, undertaking procedures
- Providing sensitive and empathetic emotional support
- Managing the consultation time and health care resources efficiently
- Respecting confidentiality of patient's data

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
- Awareness and understanding of commercial pressures and bias which may impact 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 medicine in gastroenterology and hepatology
- Physiological and other changes in the GI tract and liver associated with special circumstances including pregnancy, ageing 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 with 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

GI Bleeding

Trainees need to be competent in determining the severity and source of upper and lower 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 drug usage, environmental risk factors including possible toxins, 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 acute and chronic liver disease. In addition, it is important that the trainees can discriminate between obstructive and hepatocellular abnormalities of liver enzymes to plan appropriate and efficient blood and serum investigations which will inform the immediate and subsequent selection of appropriate further imaging, functional testing, elastography 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. Trainees should be able to demonstrate the clinical skills involved in differentiating between the various causes of ascites including portal hypertension, infection, cardiac failure, renal failure, and malignancy. Theoretical knowledge of the rarer causes of ascites including pancreatic duct disruption, biliary ascites, chylous ascites, and hypothyroidism should be demonstrated.

COMPETENCES AND TRAINING RELATED TO DISEASES AND THEIR MANAGEMENT

Disorders of Gut-Brain interactions

Trainees should be able to diagnose irritable bowel syndrome and communicate this in a reassuring way to the patient. This requires detailed knowledge of gut-brain interactions, visceral hypersensitivity, the Gut microbiome, and GI dysmotility. Furthermore, the trainee should be aware of the possible influence of psychosocial factors, sexual and physical abuse, depression, anxiety, and cancer phobia, and be able to address these factors when appropriate. The trainee should have knowledge about tests including oesophageal pHmetry, impedance-pH monitoring, impedance manometry, oesophageal manometry, gastric emptying studies, assessment of anorectal function, anorectal biofeedback, colonic transit, breath tests, drink test or other visceral hypersensitivity testing.

The trainee should have knowledge of The Rome Diagnostic criteria including:

- Functional abdominal pain syndrome
- Functional dyspepsia
- Oesophageal and gastric dysmotility syndromes
- Psychogenic nausea and vomiting syndrome and Cyclic vomiting syndrome
- Abdominal wall syndromes
- Irritable Bowel Syndrome
- 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)
- Diagnosis, follow up and treatment of dysplasia in Barrett's metaplasia.
- Eosinophilic oesophagitis
- Tumours of the oesophagus.
- Oesophageal disorders caused by caustic agents, medications, infection, and trauma.
- Diagnosis, investigation, and management of dysphagia
- Diagnosis and treatment of achalasia
- Swallowing disorders in the elderly and oropharyngeal dysphagia
- Management of reflux oesophagitis
- Diagnosis and management of oesophageal strictures
- Management of oesophageal diverticula

Oesophageal emergencies

Knowledge of:

- Acute dysphagia, including food and foreign body impaction
- Mallory -Weiss tear
- Spontaneous oesophageal perforation
- Post-procedural perforation
- Acute oesophagospasm
- Bleeding oesophageal varices

Stomach and Duodenum

Knowledge of:

- *H. pylori*, NSAID induced ulcer, and idiopathic ulcer disease
- Specific gastritis and gastropathies
- Eosinophilic gastritis
- Refractory peptic ulcer disease
- Stress-related ulcer disease
- Complications of peptic ulcer disease, including 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, and Zollinger-Ellison Syndrome

Pancreatic Disorders

Knowledge of:

- Management of acute and chronic pancreatitis including genetic disorders of the pancreas
- Aetiology of pancreatitis
- Identification, differentiation and treatment of autoimmune pancreatitis and IgG4 disease
- 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 chronic pancreatitis and exocrine pancreatic insufficiency
- Diagnosis and management of pancreatic tumours and cystic lesions of the pancreas

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 duct 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. Competence is required in the management of sclerosing cholangitis, other causes of cholangitis, and tumours of the bile duct, gallbladder and ampulla. Trainees should be aware of the indications and complications of endoscopic and radiological treatment of biliary disease.

Liver

All trainees in gastroenterology and Hepatology should receive basic training in Hepatology. Some trainees may opt to undertake an advanced module in Hepatology, which will involve further training in the 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 microanatomy, 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, the relevant physical signs and identify the

patterns of abnormalities of blood tests, imaging, liver stiffness, functional and histological evaluation.

Knowledge of:

- Diagnostic and prognostic scores to evaluate both severity of disease and response to treatment.
- Increasing frequency of a multi-factorial etiology in liver disease and how it affects patient's management.
- Prevalence of alcohol related problems and the importance of both early diagnosis using questionnaires (CAGE, AUDIT, etc.) and prompt intervention utilizing a multi-disciplinary approach to support and management.
- Identification and management of patients with acute alcohol withdrawal symptoms, distinguishing this presentation from other causes of encephalopathy/coma and acute cognitive impairment in patients with alcohol problems.
- Causes of acute hepatitis including viral, drug and toxin-induced, alcohol, fat related, 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, liver imaging, and liver biopsy.
- Treatment of hepatotoxic poisoning with antidotes.
- Strategies for both prevention and early identification of patients with viral hepatitis in 'at risk' groups encompassing knowledge of vaccination schedules.
- Awareness of international guidelines for the management of specific liver diseases 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.
- Diagnosis of liver cirrhosis and causation
- 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.
- Assessment of patients with primary and secondary liver cancer and cholangiocarcinoma including the guidelines for surveillance for hepatocellular carcinoma in cirrhosis. They should have knowledge of treatment principles for primary tumours and metastases including surgery, chemotherapy (general and local), transplantation, local ablation, and radiotherapy as well as targeted treatment.
- Assessment of operative risks in patients with chronic liver disease.
- Objective assessment of nutritional status in patients with liver disease undertaking nutritional support as necessary in conjunction with a nutritional multi-disciplinary team.
- Indications for liver transplantation and need for timely transfer of critically ill liver patients to special care units. Trainees will need to be able to provide basic care for both pre and post liver transplant patients and liaise routinely with liver-transplant hepatologists.
- Management of haemochromatosis, and knowledge of other genetic liver diseases.
- Ability to assess the changes in liver function during pregnancy and identify pregnancy-related liver diseases.
- Evaluation and follow-up of patients receiving ambulatory care.

Small Intestine

Trainees should have knowledge of the:

- Management of global malabsorption and specific nutrient malabsorption, particularly coeliac disease. Lactose and fructose-malabsorption and non-allergic intolerances
- Food protein induced enterocolitis syndrome (FPIES)
- Diagnosis and treatment of bacterial, parasitic and helminth infections of the small intestine
- Small intestinal bacterial overgrowth
- Protein losing enteropathies including Whipple's disease

- Small intestinal lymphoma
- Small intestinal tumours - adenocarcinoma, GIST, neuroendocrine tumours (NET)
- Intestinal failure

Small bowel emergencies

Trainees should be able to recognise:

- perforation
- intussusception
- obstruction
- sub-acute obstruction
- small bowel ischemia

Large Intestine

Trainees should have knowledge of:

- Infectious diarrhoea
- Antibiotic-associated diarrhoea/ *Clostridioides Difficile* diarrhoea
- The Gut Microbiome
- Diverticular Disease/Diverticulitis
- Mesenteric ischemia
- Diseases of the appendix
- Colorectal polyps
- Anal and colorectal cancer
- Solitary rectal ulcer
- Intussusception,
- Enterocoele,
- Benign anorectal lesions
- Bowen's disease, condylomata
- Proctitis
- Sexually transmitted perianal disease

Systemic disease and the gut

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

Inflammatory Bowel Disease (IBD)

All prospective specialists in Gastroenterology and Hepatology should receive specific training in IBD. This basic training provides the minimum framework required for trainees to diagnose and manage patients with IBD. Some patients may require care from specialists with more advanced training.

General IBD Knowledge

The trainee needs to understand and be aware of the current knowledge relating to the pathogenesis of IBD, its phenotypic classification, natural history, and differences between ulcerative colitis (UC), Crohn's disease (CD), IBD unclassified (IBDU) and microscopic colitis (lymphocytic colitis and collagenous colitis). The trainee should have a current knowledge of the immunology of IBD and be able to relate this to the different treatments that are available.

Diagnosis and Assessment

The trainee should have knowledge of the diagnostic tools that are available and be able to diagnose IBD from other potential differential diagnoses such as infection, vasculitis, ischaemia, Behcet's disease, irritable bowel syndrome (IBS), drug induced colitis, etc.

The trainee should be able to differentiate between active IBD and other mechanisms of GI symptoms such as bacterial overgrowth, bile salt malabsorption, intestinal obstruction, enteric infection, sepsis, and functional bowel disease related symptoms, in a patient with acknowledged IBD. Adequate knowledge must be demonstrated by the appropriate investigations required for diagnosis and as part of follow up. These include biomarkers (blood and stool), endoscopy (upper and lower GI endoscopy, capsule endoscopy, enteroscopy), imaging techniques such as CT, MRI, abdominal ultrasound, and intestinal ultrasound.

The trainee should also be able to classify the disease using standard classifications such as the Montreal Classification. Knowledge on extent of disease, disease activity, extra intestinal manifestations and complications should be demonstrated.

Medical Treatment

The trainee should demonstrate knowledge of the various medications that are used and available for the management of IBD. The trainee should be able to know the available treatment options taking into consideration phenotypic disease characteristics including extent and behaviour, current activity, previous treatment history, and complications, together with the results of screening tests needed before starting specific treatments.

A knowledge of symptom-based scoring systems and tests of disease activity is essential. Trainees should be confident in treatment strategies and monitoring for both side effects and complications (including frequency) of medical therapy and their management. Furthermore, experience in treatment optimisation, including the interpretation of therapeutic drug monitoring for conventional medications (e.g., thiopurines) and biological therapies should be demonstrated. Trainees should have experience in decision making with regard to stopping medications and considering surgical intervention and/or onward referral to a tertiary centre.

General Medical Care

The trainee should have knowledge about medical co-morbidities in relation to medical and surgical IBD treatment, considering previous histories of malignancy or the development of malignancy in IBD, the risks relating to infections such as tuberculosis, hepatitis B, hepatitis C and HIV in relation to the treatment of IBD, the role of screening for infectious diseases and immunisation prior to commencing therapy and while on medical treatment.

Endoscopy

Apart from having knowledge in performing a high-quality endoscopic procedure, the trainee should understand the following:

- different disease scoring systems that are used in clinical practice
- the principles of colorectal cancer surveillance in IBD
- the use of chromoendoscopy or other advanced endoscopy techniques
- the role and contraindications of video capsule endoscopy in IBD
- the appearances of and management of dysplasia during surveillance colonoscopy
- the indications for and complications of stricture dilatation in IBD
- pouchoscopy.

The trainee needs to understand the importance of close liaison with histopathologists in interpreting biopsy results. One must also have basic knowledge of the histological features of IBD and the differences from other gastrointestinal pathologies (e.g., infection).

Further specific training is required in how to perform wireless video capsule endoscopy and enteroscopy.

Surgery and IBD

The trainee should understand the importance of timely referral for consideration of surgery, and the role of the IBD MDT in decision making. There should be an understanding of the importance of pre-operative optimisation, the surgical role in the management of disease-associated dysplasia and the different surgical procedures, which may be considered. Trainees should demonstrate a knowledge of the principles of, and evidence base for, the prevention of IBD recurrence post-surgery.

Nutrition

There should be knowledge of the role of enteral nutrition as a treatment for active IBD, nutritional screening, mechanisms of nutritional deficiency in IBD (including vitamin and mineral deficiency), the indications for enteral and parenteral nutrition and its potential complications. The trainee should have knowledge of the challenges and some basic principles of HPN (home parenteral nutrition).

Imaging

There should be knowledge, including indication and risks, of the imaging modalities used in the diagnosis and follow-up of patients with IBD (MR enterography, CT scan, intestinal ultrasound).

Training is also required in the following specific situations:

- Assessment and management of ileoanal pouches and pouchitis
- Management of acute severe colitis
- Fistulising and perianal CD (perianal, enteroenteric, enterocutaneous, enterovesical and rectovaginal fistulae)
- Extraintestinal manifestations of IBD
- Pregnancy
- The effect of active IBD, drug therapy, and surgery on fertility and pregnancy.
- The management of immunosuppressants, biological therapy and surgery during pregnancy,
- Breastfeeding and choice of treatment
- Vaccination of neonates
- Malignancy (IBD and non-IBD related and the impact on medications, screening)
- Opportunistic Infections
- Nutritional Assessment
- Transition Care (Paediatric to Adult Transition)
- Role of IBD Multidisciplinary Team (MDT)
- Novel Therapies

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, comfort assessment and measurement
- Safe administration of sedation including its monitoring, e.g., Richmond Agitation Sedation Scale
- Communication with patients before and after procedure, especially communicating 'bad news'
- Endoscope design, function, and capabilities, including artificial intelligence (AI)
- 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 recognise endoscopic abnormalities and be able to use severity scores for these abnormalities.

Upper GI Endoscopy

- Diagnostic Endoscopy with biopsy and chromoendoscopy
- Therapeutic Endoscopy - Haemostasis techniques (ligation, thermal haemostasis, injection techniques, clip deployment), - dilatation of stenosis
- Stent insertion
- PEG insertion and retrieval

Lower GI Endoscopy

- Diagnostic lower endoscopy with biopsy and chromoendoscopy
- Proctoscopy, Rectoscopy, Sigmoidoscopy
- Ileocolonoscopy
- Therapeutic Endoscopy
- Basic Polypectomy
- Haemostasis techniques (e.g., ligation, endoloop, thermal haemostasis, injection techniques, clip deployment)
- Dilatation of stenosis

Indicative numbers of procedures to be carried out by the trainee prior to summative assessment of competence:

Diagnostic oesophago-gastro-duodenoscopy	300
Haemostatic techniques for oesophageal varices and other upper GI-bleeding	30
Ileocolonoscopy	300
Diagnostic sigmoidoscopy	50
Rectoscopy/Proctoscopy	50
Polypectomy and haemostatic procedures in the lower GI-tract	100
Balloon dilatation (upper and lower tract)	10
PEG	15

As well as carrying out the minimum number of procedures, the 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 Gastroenterology. The ES-BGH, however, recognises that there are still centres and some countries throughout Europe in which this training is not available. In these situations, training could be supervised either in an accredited radiology department within the same institution or via secondment to another accredited institution.,

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, pleural effusion, and liver biopsy) The INVUS 2 curriculum 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 to practice.

Contrast enhanced ultrasound (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 programme.)

To gain these specialised 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 cholangiography and drainage (PTCD) optional

Percutaneous US-guided gastrostomy (PUG) optional

Tumour ablation therapy (RFA/PEI) optional

CORE NUTRITION TRAINING

The ESBGH recommends specific training in nutrition. In recent years, attention has become focused on the severe impact of disease-related malnutrition and its effect on clinical outcome. Significant malnutrition is present in 20-25% of patients in hospital.

A lack of physician awareness of nutrition-related issues most probably results from the lack of prominence given to this topic in both undergraduate medical curricula and during postgraduate medical training.

Poor nutrition in hospital patients frequently arises due to key information including diet records and weight measurements being poorly recorded with inadequate prominence in the medical notes. Specific nutritional deficiencies arise when appropriate monitoring is not undertaken.

There is a key role for gastroenterologists and trainees, working in conjunction with nursing staff, dieticians, and pharmacists to lead and educate staff in the identification of patients with inadequate nutrition.

Trainees are required to be skilled in the recognition of malnutrition and conditions that threaten the patient's nutritional status at an early stage, recommending appropriate intervention and, where necessary, arranging further tests of gastrointestinal function with appropriate interventions.

An awareness of the causes and management of intestinal failure is essential

General Nutrition Knowledge

The trainee should have the knowledge and be aware of:

- nutrition as a key component in the physiology of the gastrointestinal tract and that adequate digestion, absorption and nutrient delivery are the cornerstones for metabolic homeostasis and health
- the biochemistry and physiology of malnutrition
- the current knowledge relating to the pathogenesis of malnutrition such as maldigestion and malabsorption, including related aetiologies such as motility disorders, postoperative complications, and drug induced dysmotility
- the physiological role of the microbiome in health and the importance of dysbiosis in the pathophysiology of disease
- metabolism under normal conditions, and in relation to adaptation following semi-starvation and in relation to stress conditions
- how to avoid/manage refeeding syndromes
- options for feeding with the ability to select an appropriate diet/feed/supplement and route of administration e.g., oral, enteral, or parenteral, with an awareness of the potential complications relating to method of delivery.
- the management of cancer cachexia in GI oncology
- the basic principles and challenges of home parenteral nutrition (HPN)
- the optimal organisational setup for the successful management of patients at risk of malnutrition
- the importance of the Nutrition Support Team (NST) in decision making with the need for close collaboration with allied health professionals including specialist nurses, dieticians and pharmacists.
- the care of patients at the interface of surgical and medical specialties.

By the end of training the trainee should have acquired the competences and skills to contribute to the multi- and inter-disciplinary services required to provide optimal nutrition to the individual patient.

The trainee should be aware that comprehensive training also requires exposure to research, either in basic sciences, translational or in clinical trials.

Diagnosis and Assessment

The trainee should demonstrate competence in

- Performing baseline clinical nutritional assessments by medical history and physical examination to identify without delay the patient at nutritional risk.
- Undertaking and interpreting the established tools for screening and assessment of malnutrition
- Evaluating protein, energy, and micronutrient needs by means of established formulae.
- Diagnosing nutritional deficiency and differentiate when oral supplements, enteral and parenteral nutrition is indicated.
- performance of/referral for therapeutic procedures to prevent or treat malnutrition, including placement of feeding tubes, percutaneous endoscopic gastrostomies (PEG) and jejunostomies (PEG-J and PEJ).

Nutritional Treatment

Thus, based on basic training in nutrition and understanding the fundamentals of biochemistry and physiology related to the provision of nutrition, the trainee should have the competence to identify and treat patients with diarrhoea, malabsorption, pseudo-obstruction, short bowel syndrome and small bowel fistulae.

Obesity

Adult and paediatric gastroenterologists are becoming increasingly involved in the management of patients with obesity. The trainee should have the knowledge and ability to recommend treatment for obesity including related conditions such as the 'metabolic syndrome' and sarcopenic obesity.

The trainee should have an awareness of the different types of bariatric surgery and complications which may arise.

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 in all the areas described, as this is often not possible, and will depend on individual National arrangements. However National authorities who recognise 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

The revolution in the diagnostic armamentarium (including imaging, molecular and genetic tools), 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.

The general clinical Gastroenterology and Hepatology curriculum should already prepare the future specialist for a central position in the care path of a patient with a digestive tumour. Following graduation there should be a possibility for several tracks with even further subspecialisation, including endoscopic and dedicated medical oncology training. Despite further subspecialisation, a digestive oncologist should maintain an overview of the diagnostic and treatment plans for the patient as an individual and within a patient cohort.

This will require a continuous effort from the digestive oncologist to keep their medical and scientific knowledge, and managerial competencies up to date.

In this chapter we list the training duration, required knowledge and skills of the track that is focusing on achieving competence in medical oncology. For the endoscopy track we refer to other chapters of the blue book.

The ESBGH Programme on Digestive Oncology (medical oncology track)

Centres that are recognised as providing training in Digestive Oncology offer a structured in-depth and advanced training on all major gastrointestinal tumours (oesophageal, gastric, pancreatic, biliary, hepatocellular, small bowel, colorectal and anal), including neuroendocrine tumours of the gastrointestinal tract and pancreas, as well as GI stromal tumours.

Duration

The duration of an advanced fellowship in Digestive Oncology should be 12 months, following a minimum of 6 months clinical exposure in Digestive Oncology undertaken during Gastroenterology and Hepatology training.

Knowledge

- Pathophysiology of all major GI tumours with an addition of a basic knowledge of lymphomas occasionally involving the GI tract
- Primary and secondary prevention of digestive tumours
- Hereditary cancer and polyposis syndromes affecting the digestive tract
- High-risk groups for developing cancer (e.g., chronic liver disease, inflammatory bowel disease)
- Integration of prognostic markers, predictive markers, and pharmacogenomics markers in clinical practice
- The appropriate use of imaging modalities (including nuclear medicine) in the diagnosis

and staging of digestive tumours

- Anti-cancer drug treatment (systemic therapies including chemotherapy, targeted therapy and immune oncology agents and strategies) and trans arterial (chemo)embolisation
- Radiotherapy treatment (external beam radiotherapy, peptide receptor radioligand therapy and radioembolisation)
- Side-effects of the above-mentioned anti-cancer treatment modalities.
- Indications for 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
- Nutritional support (assessment, management of malnutrition and cachexia)
- Palliative care for malignant digestive disorders
- Dealing with end-of-life care

Competence in

- Safe, cost-effective diagnosis and staging of GI tumours
- Overseeing anti-cancer medical therapy
- Counselling patients and families with hereditary cancers and other high-risk cancer groups (e.g., polyposis syndromes, chronic liver disease, inflammatory bowel disease)
- Breaking bad news, motivational conversations
- Oncological decision making with a focus on interdisciplinary coordination skills
- Organization of an oncological day clinic
- Measuring and improving quality, safety, and experience in an oncological setting

Logbook to record the specific procedures and therapeutic interventions

- Attending a minimum of 40 weekly multidisciplinary oncology meetings with an oncologist, an oncological surgeon, a radiation oncologist, a pathologist, nurse specialist and a nuclear medicine specialist
- Oversee anti-cancer medical therapy to 250 patients
- Supervision of end-of-life care in a minimum of 10 patients
- Participation to a minimum of 300 outpatient consultations
- Publishing at least one peer reviewed manuscript in the digestive oncology field as principal author and/or giving one presentation at a national or international oncology symposium.

Advanced Hepatology curriculum

Introduction

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

- Liver transplantation with a special focus on both indication and follow up.
- Intensive care management of patients with acute liver failure
- Intensive care management of patients with acute-on-chronic liver failure
- Liver cirrhosis and management of related complications
- Portal hypertension
- Varices
- Refractory ascites and its complications
- Hepatic encephalopathy
- Viral hepatitis
- Auto-immune liver disease

- Alcohol related- and metabolic associated fatty liver disease
- Drug induced liver disease
- Genetic liver disease
- Vascular liver disease and anticoagulation in cirrhosis
- Infiltrative liver disease
- Focal lesions of the liver
- Nutritional support in liver disease including liver transplantation
- Liver disease in pregnancy

The trainee is expected to:

- Be up to date with all major specialty specific international guidelines.
- Have an understanding of scoring systems for identification of patients needing referral to specialised centres.
- Be competent in communicating relevant information of the disease process including prognosis, aims, means, and importance of specific procedures and treatments and their expected beneficial effect and potential risk of side effects, to patients and caregivers.

Liver Transplantation

The trainee should have competence in the pre-, peri- and post-transplant care of liver transplant patients. This training should take place in a liver transplant centre and the trainee should play an active role in the multidisciplinary transplant team.

The trainee should have:

- knowledge of indications for liver transplantation.
- knowledge of donor management.
- knowledge of priority, including scoring systems used in transplant assessment and management of the waiting list.
- knowledge of histological findings in the transplant.
- Competence in transplant immunology, immunosuppressant therapy, and their complications.
- competence to detect and manage primary graft non-function and acute and chronic rejection.
- competence to manage early and late complications after liver transplantation.

Acute liver Failure

The trainee should have:

- competence in diagnosing the spectrum of acute liver failure and assessment of prognosis.
- Competence in the management of the spectrum of acute liver failure in an intensive care unit.

Acute-on-Chronic Liver Failure (ACLF)

The trainee should have competencies in:

- Diagnosing ACLF and assessing prognosis.
- The management of the spectrum of ACLF.
- Managing patients with severe ACLF, in an ICU multidisciplinary setting being able to assess and treat the specific organ failures of ACLF including cardiovascular, GI, neurological, respiratory, renal, and haematological, including ventilated and dialyzed patients.

Portal hypertension (PH)

The trainee should have knowledge of the:

- Definition of clinically significant portal hypertension (CSPH) in cirrhosis, how to measure the hepatic venous pressure gradient (HVPG) and the clinical implications of CSPH.
- Evaluation and management of hepato-pulmonary syndrome, porto-pulmonary hypertension, and cirrhotic cardiomyopathy.

- Rescue treatments for unresponsive bleeding from oesophageal and gastric varices including glue injection, expanding stents, and indication for acute TIPSS.
- Management of ectopic varices.

In addition, they should demonstrate competence in:

- Diagnosis and management of PH.
- Prevention, diagnosis, and management of oesophageal and gastric varices including acute bleeding episodes.
- Management of refractory ascites and its complications including severe hyponatremia, spontaneous bacterial peritonitis, hepatic hydrothorax, and hepato-renal syndrome (HRS).

Hepatic encephalopathy (HE)

The trainee should have competence in:

- Management of hepatic encephalopathy including classification, severity of manifestations, clinical time course, and existence of precipitating factors.
- Conducting a focused physical examination with emphasis on neurological signs, to grade HE, including signs of cirrhosis and portal hypertension.
- Recognizing minimal HE and the relevant tests for its diagnosis.

Viral Hepatitis

The trainee should have knowledge of:

- Epidemiology, grading and staging, clinical course, and prognosis of acute and chronic viral hepatitis.
- measures to prevent acquisition of viral hepatitis

The trainee should also demonstrate competence in managing outpatient assessment including biochemistry, virology, histopathology, and non-invasive methods for scoring fibrosis.

Auto-Immune Liver Disease (AILD)

The trainee should have competence in:

- The assessment and management of patients with autoimmune hepatitis not responding to standard therapy, primary sclerosing cholangitis, primary biliary cholangitis, IgG4 cholangiopathy, and overlap syndromes.
- Interpretation of liver biochemistry, autoantibodies, and histology for diagnosis of AILD including autoimmune hepatitis, primary sclerosing cholangitis, primary biliary cholangitis, IgG4 cholangiopathy, and overlap syndromes.
- The treatment and monitoring of patients with AILD including treatment options in the case of failure of standard treatments.

Alcohol related liver disease

The trainee should have:

- competence in managing alcohol related liver disease in a multidisciplinary setting

Metabolic fatty liver disease

The trainee should have competence in:

- Diagnosing and managing metabolic fatty liver disease in a multidisciplinary setting
- Scoring and risk stratification including advanced fibrosis and hepatocellular cancer (HCC).

Drug induced liver disease (DILI)

The trainee should have knowledge of:

- The different mechanisms of DILI related to drugs, supplements, and herbals.

- Frequency, dose-relation, latency, time relation, clinical manifestation (hepatocellular, cholestatic or mixed) and prognosis for the different types of DILI mechanisms.

In addition, the trainee should demonstrate competence in the initialization and follow up of treatment of DILI, including awareness of scoring systems and evaluation for liver transplantation.

Genetic and development liver disease

The trainee should have knowledge of:

- Genetic liver diseases.
- Genetic cholestatic liver diseases including progressive familial intrahepatic cholestasis and benign recurrent intrahepatic cholestasis.
- Developmental liver disease.

The trainee should demonstrate competence in:

- Interpretation of genetic tests.
- Diagnosis and management of hemochromatosis, Wilson's disease and alpha one antitrypsin deficiency.
- Management of fibro polycystic liver disease including congenital hepatic fibrosis, autosomal dominant polycystic kidney disease (ADPKD), biliary hamartomas, bile duct cysts, and peribiliary cysts.

Vascular liver disease (thrombotic liver disorders)

The trainee should have competence in diagnosis and management of acute and chronic thrombosis of portal- and hepatic veins (Budd-Chiari syndrome), including the need for acute TIPSS or liver transplantation in Budd-Chiari syndrome.

Anticoagulation in liver disease

The trainee should have competence to guide anticoagulation in patients with liver disease, including assessment of coagulation status and the risk for bleeding and thrombosis in portal hypertension

Infiltrative liver disease

The trainee should have knowledge of and capability to evaluate and manage infiltrative diseases of the liver including storage diseases, granulomatous diseases, and haematological diseases.

Focal lesions of the liver

The trainee should have competence in distinguishing between benign and malignant focal lesions

Benign lesions

The trainee should have knowledge of when and how to treat benign lesions by surgery, ablation, embolization or pharmacological techniques as appropriate.

The trainee should demonstrate competence in:

- Diagnosing benign focal solid or cystic lesions, such as haemangiomas, adenomas, and focal nodular hyperplasia (FNH).
- Management of bacterial or parasitic infectious diseases of the liver including bacterial liver abscesses, amoebic abscesses, and hydatid cysts.
- Understanding indications for surveillance and when to terminate further investigation of benign lesions.

Primary and secondary liver cancer – advanced management

The trainee should have knowledge of:

- Risk factors, causes, and prognostic factors of primary liver cancer.
- The clinical course and outcome of primary and secondary liver cancer.
- Application of surveillance for hepatocellular carcinoma in cirrhosis.

The trainee should demonstrate competence in:

- The safe, cost-effective diagnosis, and staging of primary and secondary liver cancer.
- Assessment of liver function and/or PH to guide different treatment modalities.

Nutrition in liver disease including liver transplantation

The trainee should have knowledge of the importance of nutritional status and correction of undernutrition for the clinical course and prognosis of cirrhosis and alcoholic hepatitis.

The trainee should demonstrate competence in:

- Performing baseline clinical nutritional assessment by medical history and physical examination to identify without delay the patient at nutritional risk.
- Undertaking and interpreting the established tools for screening and assessment of malnutrition
- Evaluating protein, energy, and micronutrient needs by means of established formulae.
- Prescribing enteral and parenteral nutritional therapy according to established guidelines.
- The follow-up of patients receiving nutritional therapy with modification when necessary.
- Planning long-term nutritional therapy for the cirrhotic patient.

Frailty in liver disease

The trainee should have:

- Knowledge of the risk for and importance of frailty for the clinical course and prognosis of cirrhosis, including patients on the liver transplantation waiting list and for patients with alcoholic hepatitis.
- Competence to perform baseline assessment and follow up of frailty in liver disease.

Liver disease in pregnancy

The trainee should have competence to:

- Identify and manage life threatening liver disease of pregnancy
- Counsel patients with liver disease/cirrhosis who contemplate pregnancy including patients on immunosuppression due to autoimmune liver disease or liver transplantation.
- Follow up pregnant patients with chronic liver disease or liver transplantation in collaboration with the obstetrics team.

Procedural Skills

The trainee should have knowledge of the indications for and where appropriate complications of:

- liver biopsy, - percutaneous and trans jugular
- insertion and management of expanding distal oesophageal stents
- insertion and management of balloon tamponade, band ligation and sclerotherapy, in the relevant clinical scenario
- management of gastric and ectopic varices
- hepatic venous and portal pressure measurements
- ERCP
- hepatobiliary ultrasonography
- liver stiffness measurement

Advanced training in nutrition

Introduction

Training programmes are required to ensure advanced training where trainees acquire the nutrition knowledge and skills necessary to gain expertise beyond that acquired in the standard Gastroenterology residency training programme.

Therefore, ESBGH recommends a focussed period of training and clinical exposure in a relevant nutrition unit during the dedicated period that might be 12 months of training where the trainee is expected to widen and deepen their knowledge and experience in a multidisciplinary team. Thereby, the ESBGH Programme should provide structured clinical opportunities for trainees to develop advanced skills in the field of clinical nutrition.

Learning environment

This intense module in nutrition should occur in a unit in with at least one consultant gastroenterologist who has a special interest in nutrition and working with a multi professional nutrition support team (including physician, nurse, dietician, and pharmacist). An Intestinal Failure Unit is the most appropriate place for training, but its availability will depend on hospital facilities. The trainee should participate in multidisciplinary team discussions at least on a weekly basis. Quality control of Nutrition training should be ensured by regular external inspections of service delivery and quality of training at an interval not exceeding 5 years, organised and supervised by the National society for Clinical Nutrition or Gastroenterology. Review of assessments from trainers and completed logbooks should demonstrate that the trainee has met the criteria for competence.

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 (including cancer cachexia syndrome) and burns, cardiac or pulmonary disease, in patients with diabetes, in pregnant patients as well as critically ill and septic patients.

At the end of training, the trainee should have the ability to take the lead role in a multidisciplinary nutrition support team and to work closely with colleagues whose patients require nutrition support.

The trainee must be responsible for patients with risk of malnutrition or established malnutrition, both as inpatients and outpatients; sarcopenic obesity; eating disorders; Complications following surgery; chemotherapy; immunotherapy and radiotherapy and/or need of enteral and/or parenteral nutritional (PN) support.

Knowledge

Requirements for the Gastroenterologist with a focus in nutrition should include more elaborate understanding and knowledge of:

- Metabolism in health and disease
- Body composition, fluid and electrolyte balance, energy homeostasis and energy needs, micro and macronutrient requirements, and their measurement
- The clinical and metabolic sequelae of malnourishment on a macro level and for specific nutrients
- General understanding of dietary requirements in health and disease
- Microbiota and faecal microbiota transplantation (FMT)

Diagnosis

- Diagnosis of nutritional status
- 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 micronutrients and trace elements in various clinical situations and disease states, especially those

associated with injury, inflammation, sepsis, and stress.

- Ability to assess and investigate involuntary weight loss and distinguish GI and non-GI causes of weight loss.
- Eating disorders
- Physiology, pathophysiology of the gastrointestinal tract and its motility regulation
- Understanding of disease-related digestive and metabolic dysfunction, diagnosis, and treatment of intestinal failure

Therapeutic approach

- Therapeutic approach to different nutritional situations
- Recognise, prevent, and manage refeeding syndrome
- 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.
- Based on knowledge use of the principles of multi-chamber bag composition or tailored PN, possible interactions and incompatibilities in PN and with other therapy.
- Implement strategies for management and treatment of obesity
- Ability to collaborate in (translational) research.

Competence in

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 classify and grade the severity of intestinal failure
- Understands the process of adaption to intestinal failure
- Understands the mechanisms of fluid absorption and secretion in the GI tract in health and various disease states including post-surgical adaptation and the effects of stomas and fistulas and the importance of colonic continuity
- Can diagnose and manage intestinal dysmotility associated with neuropathy and myopathy,
- Able to manage patients with complex diseases including scleroderma, amyloid, diabetes, and congenital motor dysfunction including liaison with other medical specialties.

Short Bowel Syndrome and Post-Surgery Problems

- Understands and can assess the degree of nutrient deficiency including fluid balance in patients with short bowel syndrome (SBS)
- Can advise on the use of oral glucose-saline solutions, oral magnesium preparations, subcutaneous replacement, and pharmacological anti-secretory and anti-diarrhoeal agents
- Can advise on the use of selective drugs in SBS
- Understands and can advise on indications for surgical intervention and intestinal transplantation
- Able to manage complications of the short-gut syndrome including dehydration, renal failure, gallstones, renal stones, liver fibrosis, osteoporosis, metabolic acidosis, and malnourishment
- Can manage complex post-surgical complications including enterocutaneous fistulae, wound dehiscence, ileus, intestinal obstruction, and continuing sepsis. Able to liaise with surgical colleagues when further surgery may be necessary.

Enteral Nutrition (EN)

- Delivery of EN in patients with residual intestinal function
- Can identify when EN has failed and when PN is needed
- Can transfer a patient from EN to PN and vice versa
- Knowledge of the composition and indication of available EN preparations

Parenteral Nutrition (PN)

- Can prescribe appropriate PN regimes
- Knows the principles of multi-chamber bag composition or tailored PN
- 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 including liver failure and indications for liver transplantation.
- Can institute and follow home parenteral nutrition (HPN)

Ethical Considerations and Nutrition towards the end-of-life

- Knows the ethical and legal considerations surrounding nutritional support
- Can 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 considering previous decisions and directives of the patient and the input of authorized patient advocates, the patients partner 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 during ward rounds
- Assess patients for consideration of gastrostomy or enterostomy
- Assess patients for consideration of enteral and parenteral nutrition
- Ability to communicate with the patients' families, friends and loved ones, including lawyers and attorneys if necessary.
- Ability to undertake procedures as described in the core nutrition curriculum
- Optional competencies (overlapping with advanced endoscopy curriculum) including:
 - Treatment of malignant stenoses of the oesophagus, stomach, duodenum, and colon
 - Endoscopic treatment of anastomotic leakages after surgery and percutaneous endoscopic gastrostomy (PEG) or PEG-J or PEJ placement.

In addition, a thorough knowledge of line insertion and line management is required for tunneled catheters, peripherally inserted central catheters (PICC), and subcutaneous ports.

Procedures

- Nasogastric tube insertion
- Endoscopic nasogastric tube insertion
- Endoscopic nasojejunal tube insertion
- Placement of Percutaneous Endoscopic Gastrostomy
- Button placement
- Changing of PEG/Button/PEG-J/PEJ
- Placement of Percutaneous Endoscopic Jejunostomy (PEJ) tube
- Central intravenous line insertion (jugular or subclavian)
- Peripheral intravenous long-line insertion (e.g., PICC)
- Tunneled insertion of intravenous central line
- Unblocking of blocked venous lines
- Removal of cuffed intravenous feeding line
- Unblocking of obstructed PEG/PEJ tube
- Faecal Microbiota Transplantation

Advanced endoscopy curriculum

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

- Part of the advanced endoscopy curriculum may be followed during Gastroenterology and hepatology training
- Competency assessment should not be based solely on the number of procedures. We strongly suggest using Entrustable Professional Activities (EPA's) or other assessment methods to evaluate competency.
- To obtain the qualification of advanced endoscopist, the trainee or fellow should become competent in one or more advanced endoscopic procedures
- If a diploma is attributed, it must specify which technique(s) the gastroenterologist is competent to perform from the following procedures:
 - Endoscopic Retrograde Cholangiopancreatography (ERCP)
 - Endoscopic Ultrasound (EUS)
 - Endoscopic mucosal resection (EMR) of large lesions and Endoscopic submucosal dissection (ESD)
 - Device-assisted enteroscopy
- Not all advanced endoscopic procedures are addressed in this advanced curriculum section. Procedures like POEM, bariatric endoscopy, endoscopic gastroenterostomy, EDGE procedure etc. are considered as advanced endoscopic procedures, but are not incorporated in this curriculum.

The European Society of Gastrointestinal Endoscopy (ESGE) has defined the prerequisites and steps of training to develop skills in ERCP and EUS. The assessment of competence and the quality of training has been described in the main recommendations. It is of importance to use formal assessment tools during ERCP and EUS training to track trainee's competence and to support a feedback culture during teaching. New formal assessment tools have been introduced in most European countries such as EPA's (Entrustable Professional Activities) and they will change the postgraduate training with objectives moving away from required numbers of procedures to a more comprehensive assessment of treatment plans and endoscopic skills.

Recommended minimum number of procedures - competent under supervision

- ERCP
 - Aim: competency up to Schutz level 2 ERCP
 - ERCP (therapeutic) 300
 - Including:
 - Sphincterotomy (biliary/pancreatic) 150
 - Stent placement (plastic/metal) 100
 - Gallstones treatment (Balloon extraction, Dormia basket extraction, mechanical lithotripsy) 100

The recommended success rates for each interventional procedure (papilla cannulation, stone clearance, and stenting) according to the ESGE guidelines are available in the following link: <https://www.esge.com/ercp-and-eus-training-curriculum/> .

- EUS
 - Aim: to achieve independent competency in diagnostic and therapeutic EUS
 - EUS-Procedures upper GIT 250
 - EUS-Procedures lower GIT 50
 - EUS interventional procedures 100*
 - Including:
 - EUS-guided procedures (FNA/FNB) 75*
 - Therapeutic EUS-guided procedures 20*

* Included in the total number of EUS procedures

The recommended success rates of each aspect of the procedure (visualization of anatomical landmarks, accuracy rate of FNA/FNB) according to the ESGE guidelines are available in the following link: <https://www.esge.com/ercp-and-eus-training-curriculum/> .

- Endoscopic Mucosal Resection of large lesions (>2cm) and ESD (optional)
 - Aim: competency in removing large lesions in the gastrointestinal tract by (piece-meal) EMR.
 - Mucosectomy of lesion >2cm 50

Before starting training in ESD, trainees must be competent in EMR. ESD training should commence utilising animal or ex vivo models.

For further details refer to the ESGE guideline, in the following link: <https://www.esge.com/esd-training-curriculum/> .

- Small Bowel Endoscopy
 - Capsule endoscopy 50
 - Device-assisted enteroscopy 75

EUS interventions (INVUS 2)

EUS-Procedures upper GIT 250

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

EUS-Procedures lower GIT 50

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

EUS interventional procedures

Diagnostic EUS-guided procedures (FNA/FNB) 75

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)
EUS-guided drainage of pancreatic duct system (optional)

Position	Country	Name
Associated country	Armenia	To be confirmed
Full member country	Austria	Ludwig Kramer
Full member country	Austria	Gerald Oppeck
Full member country	Belgium	Chantal de Galocsy
Full member country	Belgium	Chris Verslype
Full member country	Croatia	Zeljko Krznaric
Full member country	Croatia	Davor Stimac
Full member country	Cyprus	George S. Potamitis
Full member country	Czech Republic	Miroslav Zavoral
Full member country	Czech Republic	Tomas Greca
Full member country	Denmark	Palle Bekker Jeppesen
Full member country	Denmark	Niels Kristian Aagaard
Full member country	Estonia	Riina Salupere
Full member country	Finland	Ville Mannisto
Full member country	Finland	Nina Barner-Rasmussen
Full member country	France	Jean Paul Jacques
Full member country	France	Michel Robaszkiewicz
Observer country	Georgia	Irakli Khmaladze
Observer country	Georgia	Manana Jebashvili
Full member country	Germany	Heiner Krammer
Full member country	Germany	Oliver Pech
Full member country	Greece	Spyros Michopoulos
Full member country	Greece	Sotiris Georgopoulos
Full member country	Hungary	Zsolt Tulassay
Full member country	Hungary	Istvaán Rác
Full member country	Iceland	Einar Oddsson
Observer country	Iraq	To be confirmed
Full member country	Ireland	Danny Cheriyan
Associate country	Israel	To be confirmed
Full member country	Italy	Gianfranco Delle Fave
Full member country	Latvia	Juris Pokrotnieks
Observer country	Lebanon	To be confirmed
Full member country	Lithuania	Limas Kupcinskas
Full member country	Lithuania	Darius Krukus
Full member country	Luxembourg	Marc Berna
Full member country	Malta	Pierre Ellul
Full member country	Malta	James Pocock
Observer country	Morocco	To be confirmed
Full member country	Netherlands	Alexandra Langers

Position	Country	Name
Full member country	Netherlands	Rutger Jacobs
Full member country	Norway	Kristine Wiencke
Full member country	Norway	Mathis Heibert
Full member country	Poland	Marek Bugajski
Full member country	Portugal	Isabelle Cremers
Full member country	Romania	Carol Stanciu
Full member country	Romania	Anca Trifan
Associated country	Serbia	Srdjan Djuranovic
Full member country	Slovenia	Borut Stabuc
Full member country	Slovenia	Davorin Dajcman
Full member country	Spain	Cecilio Santander
Full member country	Spain	Federico Arguelles
Full member country	Sweden	Jan Lillienau
Full member country	Sweden	Lina Vigren
Full member country	Switzerland	Gian Dorta
Full member country	Switzerland	Jan Borovicka
Observer country	Tunisia	To be confirmed
Associate country	Turkey	Nurdan Tozun
Associate country	Turkey	Sedat Boyacioglu
Associate country	Ukraine	Olena Barabanchyk
Associate country	Ukraine	Vadym Shypulin
Full member country	United Kingdom	Tony Ellis
Full member country	United Kingdom	Chuka Nwokolo

