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# Training Requirements for the Specialty of General Surgery

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

*(old chapter 6)*

**Preamble**

The UEMS is a non-governmental organisation representing national associations of medical specialists at the European Level. With a current membership of 34 national associations and operating through 40 Specialist Sections and European Boards, the UEMS is committed to promote the free movement of medical specialists across Europe while ensuring the highest level of training which will pave the way to the improvement of quality of care for the benefit of all European citizens. The UEMS areas of expertise notably encompass Continuing Medical Education, Post Graduate Training and Quality Assurance.

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

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

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

At the European level, the legal mechanism ensuring the free movement of doctors through the recognition of their qualifications was established back in the 1970s by the European Union. Sectorial Directives were adopted and one Directive addressed specifically the issue of medical Training at the European level. However, in 2005, the European Commission proposed to the European Parliament and Council to have a unique legal framework for the recognition of the Professional Qualifications to

facilitate and improve the mobility of all workers throughout Europe. This Directive 2005/36/EC established the mechanism of automatic mutual recognition of qualifications for medical doctors according to training requirements within all Member States; this is based on the length of training in the Specialty and the title of qualification.

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

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

**Introduction**

**General Policy Statement**

The objectives of the European Board of Surgery (EBS) are to assess, set standards for and progressively harmonize the content and quality of training and continuing medical education in all fields of surgery within the member states of the European Union (EU) and the other European countries.
There is a trend towards increasing specialization within surgery which has progressed to different degrees in different parts of the EU and some of the fields of surgery encompassed by the EBS have become recognized in some countries as well-defined or even totally independent surgical specialties.
The trend towards greater specialization is supported by the EBS whenever consistent with improved standards of clinical practice and training. However, in order to meet the needs of the many European hospitals which are not large enough to justify the same highly compartmentalized departments of surgery that have become the norm in most teaching centres it is essential to ensure that surgeons are able to obtain broadly based training across all the various fields. This makes it essential for newly emerging surgical specialties to continue to collaborate closely within the well-defined framework of the EBS.
In order to encourage beneficial specialization, while maintaining the integrity of surgery as a whole, it is the policy of the EBS to establish Surgical Specialty Boards to accommodate the special requirements of well-defined areas of surgical practice.

Surgical specialty Boards have responsibility for establishing and monitoring standards of training within their specific field of surgery while the EBS functions as a “common house of surgery" to coordinate the interrelationship, recommendations and actions of the Surgical Specialty Boards as they develop.
The EBS will require input from the Specialty Boards in common trunk training. It is empowered to issue European Board of Surgery Certificates of Quality of Training (EBSQ) in the surgical specialties on the recommendation of its Surgical Specialty Boards.
The EBS cooperates with national professional authorities and especially with the scientific organizations in the process of standardization and harmonization of surgical curricula.
The standardization efforts are paralleled with the continuous development of surgical qualification, validation, certification, recertification, professional development and CME processes and projects.
The EBS enhances strategies to see the Board qualification (Fellowship of the EBS) legally adopted in the countries aiming to a common European qualification process, that also respects national and regional peculiarities.

**Training Policy and requirements**

The EBS, composed of representatives of the national professional surgical organizations, the national scientific surgical organizations and the universities promotes the cooperation between these entities and the harmonization of surgical training programs in the EU.

It acts as a coordinating and monitoring body for the training in surgery in the EU and formulates standards, mentioned hereafter, for the training institutions, the teachers and the trainees within the specialty of surgery.
Teachers and training institutions select and appoint trainees who are suitable for surgery. In order to train the most suitable individuals for this specialty, a selection procedure on a national basis must be set up. This selection procedure must be transparent and application must be open to all persons who have completed basis medical training.
The duration of surgical training should be at least six years. The training may not be interrupted for more than one year.
A basic training program should be incorporated in the early years of the training during which the surgical trainee shall acquire a central core of knowledge embracing anatomy, physiology, metabolism, immunology, nutrition, trauma, pathology, wound healing, shock and resuscitation, intensive care and neoplasia.
Trainees must acquire experience in each of the areas of responsibility as given under the syllabus of surgery, in a structured and approved training program. Operative experience should be documented in adequate log-books. Credit as surgeon can only be claimed when the trainee has actively participated in all phases of treatment; has made or confirmed the diagnosis, participated in the selection of the appropriate procedure, has either performed or been responsibly involved in performing the surgical procedure and has been a responsible participant in both pre- and postoperative care.
The National Professional Monitoring Authority and/or the EBS, together with the teachers and training institutions shall implement a policy of quality assurance of the training. This includes visits to training institutions, assessment during training, monitoring of the log-books or other means. Visitation of training institutions by the National Monitoring Authority and/or the EBS shall be conducted in a structured manner.
Each country should train only enough surgeons to meet its own requirements. A European quorum, suggested by the EBS, should be established on an annual basis between member states of the EU.
Trainees should have the opportunity to be partly trained in recognized training institutions both in other member states of the EU as well as outside the EU. These training periods have to be approved by the National Monitoring Authority. The EBS shall maintain a list of training centres in the EU willing to exchange trainees. The EBS strongly recommends a period of basic or clinical research within the training program.
Training institutions need be recognized by their proper National Monitoring Authority.
Training must take place in an institution or group of institutions which together offer the trainee practice in the full range of the specialty as defined in the syllabus. Consultations and operative procedures should be sufficiently varied and quantitatively and qualitatively sufficient and include training in inpatient care, day care and ambulatory care.
Neighbouring specialties must be present to a sufficient extent to provide the trainees the opportunity of developing their skills in a team approach to patient care.
Super specialised institutions may be recognized by the National Monitoring Authority for periods of training.
The training institution must have an internal system of surgical audit/quality assurance including features such as mortality and morbidity conferences and structured incident-reporting procedures. Furthermore, various hospital activities in the field of quality control such as infection control and drugs and therapeutic committees should exist. Visitation of training centres by the National Monitoring Authority of the EBS shall be conducted in a structured manner.

In the training centre the trainee should have space and opportunities for practical and theoretical study. Access to adequate national and international professional literature should be provided (library) as well as space and equipment for practical training of techniques in a laboratory setting.
The chief of training should have been practicing surgery for at least 5 years after specialist accreditation and must have been recognized by his National Monitoring Authority. The Chief of training and his associate training staff should be actively practicing surgery.
The training program should be structured in accordance with national rules and EU/EBS recommendations.
The ratio between the number of specialists on the teaching staff and the number of trainees at any given moment should be tailored so as to provide close personal monitoring of the trainees as well as adequate exposure of the trainees to sufficient practical work.
To build up their experience the trainees should be involved in the management of a sufficient number of inpatients, day care patients and ambulatory patients. They must perform a minimum number of practical procedures. The amount and diversity of these procedures is set by the National Monitoring Authority and agreed by the EBS.
The trainees must have sufficient linguistic ability to be able to communicate with patients, to study international literature and to communicate with foreign colleagues.
The trainees shall keep up their personal log-books according to national rules and EU/EBS recommendations.

# I. TRAINING REQUIREMENTS FOR TRAINEES

## 1. Content of training and learning outcome

General Surgery is a large specialty which requires the acquisition of "Theoretical knowledge" in basic sciences required in the development of clinical and operative skills as well as specialized "Practical and clinical skills" in managing diseases in an elective and acute surgical setting.
It provides for the operative and non-operative management, i.e. prevention, diagnosis, evaluation, decision making, treatment, intensive care and rehabilitation of patients with pathological processes that affect these organs including the management of pain.
It also involves the necessary knowledge and expertise leading to referral to specialized centres when this is indicated and possible, and where this is not possible because of time or geographical considerations, to possess the multi-specialty skills to carry out these interventions safely.
General Surgery cooperates with other surgical specialties, e.g. anaesthesia, intensive care, emergency medicine, radiology, neurology, paediatrics, internal medicine, geriatrics, rehabilitation medicine, obstetrics and gynaecology and pharmacy in the management of patients.
The surgeon must have acquired and must maintain specialized "Theoretical knowledge" and "Practical and clinical skills" (precisely defined in an additional catalogue) relating to the diagnosis, preoperative, operative and postoperative management in the following areas of primary responsibility:

- Abdominal wall and abdominal organs,
- Alimentary tract,
- Thoracic wall and organs,
- Minimal invasive surgery, especially laparoscopic and thoracoscopic procedures
- Head and neck, including vascular, endocrine, congenital and oncological disorders, particularly tumours of the skin, salivary glands, thyroid, parathyroid and oral cavity.
- Surgical oncology, including coordinated multidisciplinary management of the cancer patient,
- Endocrine system,
- Breast, skin and soft tissue,
- Vascular system, excluding the intracranial vessels, the heart and those vessels intrinsic and immediately adjacent thereto,
- Urogenital tract,
- Comprehensive management of all forms of trauma, including musculo-skeletal traumata. Responsibility for the coordination of all phases of treatment is one of the main components of surgery,
- Care of critically ill patients with underlying conditions including coordinated multidisciplinary management,
- Rigid and flexible endoscopy of alimentary tract, diagnostic and therapeutic,
- Methods for gastrointestinal function diagnosis, especially manometry, pH-metry and anorectal function diagnosis
- Diagnostic and interventional radiology and sonography.

The focus is on diagnosis and treatment. Diagnosis and treatment comprises all non-instrumental and instrumental techniques including flexible endoscopy, radiology, sonography, computer tomography and magnetic resonance imaging.
The General Surgeon must be capable of employing endoscopic techniques both for diagnostic and therapeutic purposes and must have the opportunity to gain knowledge and experience of evolving technological methods.
The General Surgeon must be also capable of interpreting all types of surgery-related radiological examinations.
The General Surgical activity covers the pre-, peri- and postoperative period and follow-up of patients. The specialty also includes individual and general preventive activities, rehabilitation, palliation and management of pain, especially in oncologic patients.

The specialty particularly focuses on managing diseases and injuries of the oesophagus, stomach, intestines, rectum and pelvic floor, abdominal wall, biliary tract, liver, spleen and pancreas, thyroid gland, parathyroid gland, adrenal glands, mammary glands, vessels, skin and sub cutis.
Also included are the most common problems and interventions listed under the goals for orthopaedics, gynaecology and obstetrics, urology, plastic surgery, hand surgery, child and adolescent surgery, maxillofacial surgery, neurosurgery, traumatology, vascular, thoracic cardiac and transplant surgery.

The "Theoretical knowledge" and "Practical and clinical skills" required by General Surgery are closely related to other specialities and general surgeons collaborate with all other surgical specialities and a variety of non-surgical specialties like e.g. anaesthesia, intensive care medicine, emergency medicine, radiology, neurology, paediatrics, internal medicine, geriatrics, rehabilitation medicine, gynaecology and obstetrics.
General Surgery involves the necessary knowledge and expertise leading to referral to specialized centres when this is indicated and possible, and where it is not possible because of time or geographical considerations, to possess the multi-specialty Skills and skills to carry out these interventions safely.
Additionally, General Surgeons are expected to have knowledge of anatomy, physiology and biochemistry which enable them to understand the effects of common surgical disease and injuries upon the normal structure and function of the various systems of the body. They are expected to have knowledge of cell biology which enable them to understand normal and disordered function of tissues and organs. They should have an understanding of the pathogenesis of the common correctable congenital abnormalities. They are expected to know the actions and toxic effects of drugs commonly used in perioperative and intraoperative care and in the management of critically ill surgical patients. They must also have an understanding of general pathology including the principles of immunology and microbiology in relation to surgical practice.

The surgeon must be trained in the economics of health care, in the assessment of research methods and scientific publications and be given the option of research in a clinical and relevant field of further training in another related specialty.

The GenSurg syllabus comprehensively describes "Theoretical knowledge" and "Practical and clinical skills" (=basis for an individual "Log-book") mandatory for the qualification as F.E.B.S./GenSurg.
The syllabus is at that time is not a complete curriculum that gives a structured educational plan but provides a crude orientation and a framework around which preparation for the qualification as F.E.B.S./GenSurg can be structured.
The syllabus should not be viewed as static but will be continuously revised and updated by the members of the committee. It is noted, that research and changes in medicine may lead to significant changes in theory and clinical practice and by that will influence the content of the syllabus. New topics will be introduced and obsolete topics may be deleted. The candidates are expected to update their level according to the recent surgical practice and scientific literature.

To achieve the qualification as F.E.B.S./GenSurg "Theoretical knowledge" has to be documented and provided for Eligibility and are assessed by Examination.
"Practical and clinical skills" have to be documented and proved in the log-book for Eligibility and may be additionally assessed by examination. For pragmatic reasons the individual log-books are scrutinized in the Eligibility process taking into consideration the various national requirements and local situations.

By that provisional arrangements are provided: if e.g. "flexible endoscopy" is not part of GenSurg in a distinct country, the candidate may omit this section in "Knowledge and Skills" without consequences for the Eligibility process, but approval of "Theoretical knowledge" in e.g. "flexible endoscopy" will be mandatory for the Examination. This procedure is also valid for e.g. "thyroid surgery" or "breast surgery" and others.

**a. Theoretical knowledge**

The specialty of General Surgery requires documented and assessed knowledge (see appendix 1) in:

1) Preoperative Management
2) Intraoperative Care
3) Postoperative Management
4) Surgical Sepsis and its Prevention
5) Basic Surgical Technique and Technology
6) Critical Surgical illness and Intensive Care Medicine
7) Traumatology and Emergency Medicine
8) Haematopoietic and Lymphoreticular Systems
9) Skin & Soft Tissue
10) Musculo-skeletal System
11) Head & Neck
12) Abdomen – General
13) Abdominal Wall and Alimentary Tract
    i) Hernia
    ii) Biliary Tract
    iii) Liver
    iv) Pancreas
    v) Esophagus
    vi) Stomach
    vii) Jejunum & Ileum
    viii) Colon & Rectum
    ix) Anorectal
    x) Flexible Endoscopy
    xi) Minimal Invasive Surgery
    xii) Metabolic and Bariatric Surgery
14) Breast
15) Endocrine
16) Vascular System
    i) Vascular - Arterial
    ii) Vascular – Venous
17) Thoracic
18) Paediatric
19) Plastic Surgery
20) Transplantation
21) Urology
22) Gynaecology
23) Central Nervous System
24) Oncology
25) Radiology
26) Evaluation & Quality

**b. Practical and clinical skills**

The specialty of General Surgery requires assessed and documented numbers for "Practical and clinical skills"(see Appendix 2). Candidates for the qualification must demonstrate Skills in each of the above areas of responsibility and be able to present a complete and signed log-book.
The candidates' individual log-books have to fulfil the UEMS criteria. In the logbook for each item patient's initials (or hospital admission number), type of procedure, date of procedure and approval with signature by independent expert have to be provided.

The individual log-books for the categories A, B and C are scrutinized in the Eligibility process.
The minimal Eligibility requirement for a UEMS GenSurg qualification is a proved number of 1500 credit points for interventions and/ or procedures, endoscopies and operations (categories A + B + C).
For each intervention/endoscopy/operation performed by the candidate as principle surgeon (the principle surgeon is the person who performs the majority of the essential steps of the procedure) 2 credit points are given.
For each intervention/endoscopy/operation performed by the candidate as assistant 1 credit point is given.
At least 50% of the total number of 1500 credit points have to achieved as principle surgeon.
This means, that a total of 750 interventions/procedures/endoscopies/operations (categories A + B + C) are the minimum requirement, when they are all performed as principle surgeon.

| **A. Interventions, Procedures** | **n=125** |
|---|---|

| **B. Endoscopies** | **n=125** |
|---|---|

| **C. Operations (total)** | **n=500** |
|---|---|
| Head & Neck | n=25 |
| Thorax | n=25 |
| Abdomen | n=400 |
| Soft Tissues & Musculo-Skeletal System | n=25 |
| Vessels & Nerves | n=25 |

For pragmatic reasons provisional arrangements are provided (see below: "Provisional arrangements") to enhance the qualification until complete European harmonisation of surgical training is achieved.
These provisional arrangements allow a range of different compensations to consider various national and/or individual situations.

**ROP: Provisional arrangements**
Category A and B: The 60% rule
The total number of 250 credit points for the Categories A and B resp. is mandatory. Within the Categories A and B at least 60% for each item (e.g. 30 gastroduodenoscopies) have to be reached. Numeric deficits in one or more items have to be compensated by higher numbers in other items in order to reach the total minimum n=250credit points for each Category.

Category C: The 75% Rule
The total number of 1000 credit points (category C) is mandatory. Within the 5 subcategories the particular total number has to be reached at least to 75%. Numeric deficits in one or more subcategories have to be compensated by higher numbers in other groups in order to reach the total minimum n=1000credit points.

Category A: Interventions & Procedures
If the candidate is not able to present a detailed log-book on category A "Interventions and Procedures" a formal confirmation signed by 2 independent experts about the candidates experience in this category may be accepted. In this case the minimum number (n=250 credit points) for category A has to be added to category C in order to reach total n=1500credit points.

Category B: Flexible Endoscopy
If flexible endoscopy is not performed by the General Surgeon in a specific country, category B may be omitted for the individual candidate. In this case the minimum number (n=250 credit points) for category B has to be added to category C in order to reach total n=1500 credit points.

### c. Assessment and evaluation

The Division and Board of General Surgery of the Section of Surgery of the UEMS, have established a formal process for assessing training and qualifications in General Surgery. This is a robust and successful European quality control project. The details regarding this project are described in Appendix 1.

## II. TRAINING REQUIREMENTS FOR TRAINERS

### Process for recognition as trainer

The Section of Surgery of the UEMS and the European Board of Surgery, offer the opportunity to senior surgeons to obtain the qualification of Fellow of the European Board of Surgery as Honorary Fellows; ward of an Honorary European Diploma in Surgery.
Experienced and practicing specialized surgeons with at least 10 years of continuous service in formally recognized posts can apply for an Honorary Diploma and be exempted form the examination process.
Applications should be submitted via e-mail to the headquarters of the Section of Surgery: office@uemssurg.org and to the President of the Division of General Surgery.
A complete application should include (all documents in English):
1) A letter from the applicant highlighting the reasons he is worthy of an Honorary Diploma. Emphasis should be given to clinical experience as well as research and educational achievements.
2) Four letters from peers in support of the application, specifically highlighting the reasons for which the applicant is worthy of an Honorary Diploma. Two letters have to be provided by peers who know the applicant personally and have worked with him/ her for at least 5 years

and two from independent referees with a sound international reputation. The letters must analyse the overall achievements of the applicant and give emphasis to his/ her suitability as a trainer in surgery; this needs to be measured against the well established criteria of the Country where the applicant is practicing.
3) A copy of the applicant's complete CV
4) A passport size photo
5) Payment of the application fees (amount to be determined on yearly basis) to the account of the Division of General Surgery:
A subcommittee appointed by the President of the Division of General Surgery (members form the Executive of the Division as well as National Representatives) evaluate the applications and give a recommendation to the Division of General Surgery. The General Assembly of the Division finally decided regarding the acceptance or not of the application (majority of at least 2/3 of the members). A successful applicant is awarded the title of Honorary Fellow of the European Board of Surgery. Unsuccessful applicants are encouraged to apply for the exam in order to get the Fellow of the European Board of Surgery qualification
The robust process of applications for Honorary Diplomas and the fact that it is mandatory that applicants have to provide evidence and relevant references (national and international) confirming their competence as surgical trainers and this has to be reviewed and accepted by the Division of Surgery of the Section of Surgery of the UEMS (a European panel of the highest order) ensures their qualifications to provide surgical training at a pan-European level.

## III. TRAINING REQUIREMENTS FOR TRAINING INSTITUTIONS

### Process for Accreditation of Centres for Training in General Surgery

The Division of General Surgery and the Section of Surgery of the UEMS consider the accreditation of centres in Europe for training in General Surgery to be of paramount importance.
The process of application and evaluation prior to accreditation for training is based on the well established relevant practice of the UEMS; the steps are as follows:

1. Initially, the Centre has to submit an application to the Division of General Surgery including:

a) a formal letter by the Chairman stating the wish of the Centre to apply and highlighting the history of the centre, it's major achievements and providing evidence of recognition of it's status at a national, and international level.

b) a report regarding the Centre and the Training Programme. The information must cover the following domains:

- Faculty (junior and senior)

- Brief history of the Centre and general description of surgical activity
- Number of procedures performed at the Centre per year over the last 5 years
- Facilities available (clinical, research, educational)
- Facilities for experimental surgery
- Access to anatomic dissection facility
- Brief description of the training setting
- Trainee surgeons who worked and were trained in the Centre for minimum time of one year in the last 10 years
    - Residents
    - Clinical Fellows
    - PhD Students
    - Visiting Fellows
    - Other (specify)
- Number of surgical procedures per specialised surgeon and per category of operation
- Number of surgical procedures per trainee surgeon and per category of operation
- Outcomes of operations performed by specialised and trainee surgeons per category of operation
- Library facilities
- Choice of best 20 papers in the last 5 years including at least one of the trainee surgeons
- Grants for scientific projects in the last 5 years
- Courses, lectures and other teaching initiatives in the last 5 years
- Professional development of surgeons trained in the Centre

Graphs, tables, reports or any other material that describe the work of Centre and especially it's training programme can be included.

c) a fee (determined on a yearly basis) has to be paid to the account of the Division of General surgery of the Section of Surgery of the UEMS along with the initial application.
2. The application will be forwarded to Chairman of the Division of General Surgery (cc to the UEMS Section of Surgery Office in Berlin) via e-mail and will be reviewed by a subcommittee of the Division of General Surgery prior to its review by all the members of the Division at the next business meeting for approval or return to the applicants requesting more information. The application has to be submitted to the Division at least 4 weeks prior to the business meeting.

3. If the initial application is approved, then the next step is to organize a visit to the Centre of a Committee of 3 members: two from the Division of General Surgery of the UEMS and one external reviewer. The Committee will visit the Centre on site and meet with the Chairman, the Faculty and the Trainees and review on site the work of the Centre in all the domains of the original application. The visit will last one day and it will be strictly professional with no social programme. The Centre applying for accreditation needs to cover the travel and accommodation expenses of the members of the Committee. An effort is made so that the members are from countries close to the applying Centre to minimize the expenses.

4. Following the visit, the Committee will produce a report and scoring of the Centre in the same domains of the initial application.
Each domain will be scored from 0-3:

0: insufficient/ absent
1: sufficient
2: good
3: excellent

A minimum score of 36 (75%) is required for the Committee to give a positive recommendation to the Division. This will be presented at the next business meeting of the Division where a vote will be taken by all members regarding the approval of the application; 2/3 majority needed for approval.

5. If approved the Centre will be awarded the Accreditation for Training Certificate of the Division of General Surgery of the Section of Surgery of the UEMS.

# APPENDIX 1 – List of knowledge requirements

## 1. Preoperative Management

- Physical examination
- Tests of respiratory, cardiac, renal and endocrine function
- Electrocardiography and interpretation
- Management of associated medical conditions, e.g. diabetes, respiratory disease, cardiovascular disease, malnutrition, anaemia, jaundice, steroid, anticoagulant, immunosupressant and other drug therapy, and drug treatment for psychiatric disorders
- Patient information and documentation of informed consent
- Prophylaxis of thromboembolic disease
- Assessment of fitness for anaesthesia and surgery
- Premedication and sedation

## 2. Intraoperative Care

- Patient positioning
- Prevention of nerve and other injuries in the anaesthetised patient
- Principles of general and regional anaesthesia
- Care and monitoring of the anaesthetised patient

## 3. Postoperative Management

- Pain control
- Post-operative monitoring
- Post-operative complications
- Prevention, recognition and management of complications
- Techniques of venous access
- Assessment and maintenance of fluid and electrolyte balance
- Blood transfusion-indications, hazards, complications, plasma substitutes
- Respiratory failure-recognition and treatment
- Nutritional support-indications, techniques, total parenteral nutrition

## 4. Surgical Sepsis and its Prevention

- Hospital hygiene
- Aseptic techniques
- Sterilisation
- Principles of asepsis and antisepsis
- Surgically important micro-organisms
- The sources of surgical infection-prevention and control
- Pathophysiology of the body's response to infection

- Septic Shock
- Antibiotic prophylaxis and therapy of infections
- Surgery in hepatitis and HIV carriers-special precautions

## 5. Basic Surgical Technique and Technology

- Patients' positioning
- Dressings
- Surgical instruments and technical OR equipment
- Skin preparation
- Suture and ligature materials
- Incisions and their closure
- Principles and techniques of biopsy and cytological sampling
- Modalities of tissue probe sampling for frozen section and paraffin histology, cytology and bacteriology
- Pathophysiology of wound healing
- Principles of wound management
- Classification of surgical wounds
- Treatment of chronic wounds (e.g. VAC-therapy)
- Scars and contracture
- Wound dehiscence
- Basic principles of bowel and blood vessel anastomosis
- Mechanical stapling devices and techniques of stapled anastomoses
- Minimal invasive surgery techniques
- Surgical meshes
- Disorders of coagulation and haemostasis
- Diathermy-principles and precautions, alternative energy sources (e.g. Harmonic)
- Lasers-principles and precautions
- Explosion hazards relating to general anaesthesia and endoscopic surgery

### Procedures

- Drainage of body cavities and retentions
- Sampling of body fluids and/ or body excretions for laboratory investigation, interpretation of results
- Local and regional anaesthesia
- Excision of cysts and benign tumours of skin and subcutaneous tissues

## 6. Critical Surgical illness and Intensive Care Medicine

The applied basic science relevant to the clinical assessment of critically ill patients and to the understanding of disorders of function caused by haemorrhage, shock and sepsis.

- Posttraumatic, preoperative, perioperative and postoperative intensive care medicine
- Cardiopulmonary and pharmacological resuscitation
- Fluid replacement, infusion therapy and parenteral alimentation
- Blood transfusion and serology
- Blood coagulation disorders and substitution measures
- Blood gas analysis and acid base balance

- Derangements of electrolytes and acid-base
- Principles of organ transplantation surgery
- Principles of organ harvesting in Tx surgery

### Conditions

- Hypovolemic shock
- Septic, cardiogenic, anaphylactic and neurogenic shock
- Coagulopathy
- Neurologic dysfunction
- Endocrine dysfunction
- Pneumonia – hospital acquired
- Single organ failure (heart, liver, kidney)
- Multiple system organ failure (pathophysiology and treatment)
- Respiratory failure-pulmonary oedema "shock lung", adult respiratory distress syndrome, lobar and pulmonary collapse
- Pulmonary embolism
- Peritonitis
- Acute necrotizing pancreatitis
- Septic inflammatory response syndrome
- Common acute abdominal emergencies (ileus, perforation, bleeding)
- Acute gastrointestinal haemorrhage
- Acute renal failure in surgical patients
- Hemofiltration, dialysis and plasmapheresis
- Malignant hyperthermia

### Procedures

- Central venous catheterisation
- Catheterisation of the pulmonary artery
- Catheterisation of the radial and femoral artery
- Pulmonary artery catheter placement
- Endotracheal intubation
- Real-time ultrasound technique for vascular localization
- Administration of oxygen and administrative devices
- Airway management
- Thoracentesis
- Paracentesis
- Nasogastric tube placement
- Urinary catheterization
- Patient controlled analgesia and epidural analgesia
- Measurement of compartment pressures (abdomen, extremity)
- Cardiac pacing (external and trans venous) and pacemaker implantation
- Defibrillation and cardio version

## 7. Traumatology and Emergency Surgery

The applied basic science relevant to the clinical assessment of more or less severely injured patients and to the understanding of disorders of function caused by trauma, haemorrhage and shock.

- Principles of pre-hospital care
- Clinical assessment of critically ill and severely injured patients-scoring systems
- Subsequent initial treatment and decision-making about referral to specialized centre
- Monitoring of vital functions in critically ill or severely injured patients
- Maintenance of airway in severely injured and unconscious patients, endotracheal intubation, laryngotomy, tracheostomy
- Cardiac arrest, resuscitation and haemodynamic support

## Conditions

- Management of the unconscious patient
- Management of polytraumatised patients
- Haemorrhage and shock
- Initial treatment in severe head and brain injury
- Closed and penetrating head injury
- Head injuries including facial and orbital trauma
- Surgical emergency procedures and trepanation
- Spine fracture
- Initial management of traumatic spine injury, para- and tetraplegia
- Nerve and vascular injuries of the neck
- Injuries of the Pharynx, larynx and trachea
- Tracheobronchial injuries
- Sternal and rib fractures
- Closed and penetrating chest injuries
- Pneumo- and hematothorax
- Pulmonary contusion and laceration
- Myocardial contusion
- Cardiac tamponade
- Injuries of the diaphragm
- Closed, blunt and penetrating abdominal injuries
- Injuries of the oesophagus, stomach and duodenum
- Injuries of the liver, spleen and pancreas
- Injuries of the small intestine, colon, rectum and perineum
- Retroperitoneal hematoma
- Traumatic haematuria
- Injuries of the kidney, bladder, ureter and urethra
- Vascular injuries of the thorax, abdomen and extremities
- Aortic Injuries
- Extremity fractures
- Pelvic fractures
- Dislocations
- Sprains and strains
- Traumatic oedema and the compartment syndromes
- Pathophysiology of fracture healing, non-union, delayed union, complications, principles of treatment, principles of bone grafting
- Mangle and traumatic amputation
- Skin loss-principles of treatment by grafts and flaps

- Traumatic wounds
- Gunshot and blast injuries
- Burn injury
- Smoke inhalation injury
- Carbon monoxide poisoning
- Hypothermia and frostbite
- Snake, spider and other animal bites
- Human bites
- Bee and wasp stings
- Paediatric trauma
- Geriatric trauma
- Trauma in pregnancy

### Procedures

- Focused assessment with sonography and CT (FAST scan)
- Placement of intracranial pressure monitor
- Neck exploration for trauma
- Reduction and stabilization of maxillofacial fracture
- Repair cardiac injury
- Open exploratory thoracotomy and laparotomy
- Laparoscopic exploratory laparotomy
- Management of oesophageal and gastrointestinal trauma
- Splenectomy/splenorrhaphy
- Repair of hepatic lacerations and hepatic resection for trauma
- Drainage and resection in pancreatic injury
- Repair and resection for kidney trauma
- Repair ureteral and bladder injury
- Repair of thoracic aorta, innominate, subclavian injury
- Repair of carotid artery injury
- Repair of abdominal aorta or vena cava injury
- Repair peripheral vessels
- Debride/suture major wounds
- Fasciotomy for injury
- Burn debridement or grafting
- Repair of tendon or nerve
- Closed reduction of fracture
- Open reduction of open/closed fracture
- Debridement and reduction of open fracture

## 8. Haematopoietic and Lymph reticular Systems

The anatomy, physiology and pathology of the haemopoietic and lymphoreticular systems appropriate to the understanding of clinical signs and special investigations.

### Conditions

- Surgical aspects of disordered haemopoiesis
- Haemolytic disorders of surgical importance

- Haemorrhagic disorders, disorders of coagulation
- Immune response to trauma, infections and tissue transplantation
- Surgery in the immuno-compromised patient
- Surgical aspects of autoimmune disease

### Procedures

- Lymph node surgery in malignant disease
- Technique of sentinel lymph node detection and surgery
- Lymphoedema
- Splenectomy for hypersplenism

## 9. Skin & Soft Tissue

### Conditions

- Pilonidal cyst and sinus
- Nevi
- Melanoma
- Squamous cell carcinoma
- Basal cell carcinoma
- Evaluation of soft tissue masses
- Epidermal cyst
- Apocrine tumour
- Eccrine tumour
- Sebaceous tumour
- Merkel cell tumour
- Dermatofibrosarcoma
- Hidrosadenitis
- Cellulitis
- Necrotizing fasciitis
- Panaritium and paronychia
- Wound infection
- Decubitus ulcer
- Extremity soft tissue sarcomas
- Retroperitoneal soft tissue sarcomas
- Lymphedema

### Procedures

- Excisional and incisional biopsy of skin/soft tissue lesions
- Incision, drainage, debridement for soft tissue infections
- Pilonidal cystectomy
- Wide local excision melanoma
- Sentinel lymph node biopsy for melanoma
- Ilioinguinal – femoral lymphadenectomy
- Major resection for soft tissue sarcoma

## 10. Musculo-skeletal System

Musculo-skeletal anatomy, physiology and pathology relevant to the clinical examination of the locomotor system and to the understanding of disordered locomotor function with emphasis on the effects of trauma.

- Common disorders of infancy and childhood
- Metabolic and degenerative bone disease: osteoporosis and osteomalacia
- Bone and joint infections including those related to prostheses
- Principles of joint replacement
- Amputations
- Principles of orthotics and rehabilitation of the amputee
- Diagnosis and treatment of common fractures
- Diagnosis and treatment of common injuries and disorders of joints
- Hand infections and injuries
- Principles of tendon repair
- Common disorders of the foot
- Cervical and shoulder pain
- Back pain and sciatica
- Differential diagnosis of arthritis
- Peripheral nerve lesions
- Nerve regeneration-principles of nerve repair
- Malignant disease of bone and soft tissues

## 11. Head & Neck

### Conditions

- Upper airway obstruction
- Epistaxis
- Mucosal cancers of the oral cavity, pharynxand larynx
- Parotid gland tumours
- Submandibular gland tumours
- Cervical lymphadenopathy

### Procedures

- Tracheostomy
- Cricothyroidotomy
- Resection of lip/tongue lesions
- Parotidectomy
- Modified radical neck dissection

## 12. Abdomen - General

### Conditions

- Acute abdominal pain

- Intra-abdominal abscess
- Rectus sheath hematoma
- Mesenteric cyst
- Chronic abdominal pain
- Carcinomatosis
- Pseudomyxoma peritonei
- Spontaneous bacterial peritonitis
- Desmoid tumors
- Chylous ascites
- Retroperitoneal fibrosis

### Procedures

- Insertion peritoneal dialysis catheter
- Laparoscopic exploratory laparotomy
- Open exploratory laparotomy
- Open drainage abdominal abscess
- Open retroperitoneal lymph node dissection
- Laparoscopic retroperitoneal lymph node dissection
- Operation for pseudomyxoma

## 13. Abdominal Wall and Alimentary Tract

The surgical anatomy of the abdomen and its viscera and the applied physiology of the alimentary system, relevant to clinical examination, to the interpretation of special investigations, to the understanding of disorders of function and to the treatment of abdominal disease.

## Hernia

- Principles of standard and tension-free hernia repair
- Principles of hernia repair with/without surgical meshes

### Conditions

- Inguinal hernia
- Femoral hernia
- Ventral hernia
- Miscellaneoushernias

### Procedures

- Open and laparoscopic repair of inguinal and femoral hernia
- Open and laparoscopic repair of ventral hernia
- Repair of miscellaneous hernias
- Component separation and abdominalwall reconstruction

## Biliary Tract

### Conditions

- Cancer of the bile ducts

- Gallstone ileus
- Iatrogenic bile duct injury
- Biliary pancreatitis
- Ampullary stenosis/sphincter of Oddi dysfunction

### Procedures

- Open and laparoscopic cholecystectomy with or without cholangiography
- Open common bile duct exploration
- Laparoscopic common bile duct exploration
- Choledochoscopy
- Choledochoenteric anastomosis
- Operation for gallbladder cancer
- Repair acute common bile duct injury
- Operation for bile duct cancer
- Excision of choledochal cyst
- Transduodenal sphincteroplasty

## Liver

### Conditions

- Liver mass evaluation
- Hepatic abscess
- Hepatic adenoma
- Focal nodular hyperplasia
- Hemangioma
- Hepatocellular carcinoma
- Cholangiocarcinoma
- Metastatic tumors
- Miscellaneous hepatic neoplasms
- Ascites
- Bleeding oesophageal varices
- Hepatic failure and encephalopathy
- Hepatorenal syndrome
- Viral hepatitis (occupational risk)
- Split liver resection for Tx

### Procedures

- Open liver biopsy
- Laparoscopic liver biopsy
- Drainage liver abscess
- Open segmentectomy/lobectomy
- Laparoscopic segmentectomy/lobectomy
- Intraoperative ultrasound of liver
- Portal-systemic shunt

# Pancreas

## Conditions

- Pancreatic abscess and infected necrosis
- Pancreatic pseudocyst
- Autoimmune pancreatitis
- Chronic pancreatitis, including hereditary pancreatitis
- Pancreatic insufficiency
- Ductal adenocarcinoma
- Acinar cell carcinoma
- Cystic neoplasms
- Intraductal papillary mucinous neoplasms
- Other periampullary neoplasms
- Gastrinoma and Zollinger-Ellison syndrome
- Insulinoma, VIPoma, Glucagonoma and Somatostatinoma
- Nonfunctional endocrine tumors
- Lymphoma of pancreas

## Procedures

- Laparoscopic/endoscopic pancreatic debride ment for necrosis
- Pancreaticoduodenectomy
- Duodenaum preserving pancreatic resection
- Total pancreatectomy
- Ampullary resection for tumour
- Distal pancreatectomy
- Longitudinal pancreaticojejunostomy
- Intraoperative pancreatic ultrasound
- Open pancreatic debridement for necrosis
- Drainage pancreatic pseudocyst

# Spleen

## Conditions

- Postsplenectomy sepsis
- Hemolytic anemias
- Idiopathic thrombocytopenic purpura
- Secondary hypersplenism and splenomegaly
- Neoplasms of spleen
- Splenic cysts

## Procedures

- Open and laparoscopic splenectomy
- Partial splenectomy/splenorrhaphy

# Esophagus

## Conditions

- Zenker's diverticulum

- Epiphrenic diverticulum
- Hiatal hernia
- Gastroesophageal reflux and Barrett's esophagus
- Dysphagia
- Schatzki's ring
- Achalasia
- Nutcracker esophagus
- Foreign bodies
- Mallory-Weiss syndrome
- Diffuse oesophageal spasm
- Spontaneous oesophageal perforation
- Iatrogenic oesophageal perforation
- Chemical burns
- Scleroderma connective tissue disorders
- Benign neoplasms
- Adenocarcinoma
- Squamous cell carcinoma

### Procedures

- Diagnosis of gastroesophageal reflux (e.g. pH-metry)
- Diagnosis of oesophageal and gastric motility disorders (e.g. manometry)
- Open and laparoscopic antireflux procedure
- Open and laparoscopic repair of paraesophageal hernia
- Repair/resection of perforated esophagus
- Total esophagectomy
- Esophagogastrectomy
- Cricopharyngeal myotomy with excision Zenker's diverticulum
- Open Heller myotomy
- Laparoscopic Heller myotomy
- Collis gastroplasty

## Stomach

### Conditions

- Upside down stomach
- Upper gastrointestinal bleeding
- Gastric carcinoma
- Duodenal ulcer
- Gastric ulcer
- Peptic ulcer disease with bleeding, perforation or obstruction
- Gastric polyps
- Gastric lymphoma
- Gastric carcinoid tumour
- Stress gastritis
- Morbid obesity
- Bezoars and foreign bodies
- Gastroparesis

- Postgastrectomy syndromes

### Procedures

- Percutaneous endoscopic gastrostomy
- Open gastrostomy
- Partial/total gastrectomy
- Open and laparoscopic gastric resection
- Repair of duodenal perforation
- Truncal and selective proximal vagotomy
- Pyloroplasty
- Open and laparoscopic operation for morbid obesity
- Proximal gastric vagotomy
- Revisional procedures for postgastrectomy syndromes

## Jejunum & Ileum

### Conditions

- Small bowel obstruction and ileus
- Emergent and elective management of Crohn's disease of small intestine
- Acute mesenteric ischemia: arterial, venous, and nonocclusive
- Meckel's diverticulum
- Radiation enteritis
- Small intestinal polyps
- Small intestinal adenocarcinoma
- Small intestinal lymphoma
- Small intestinal carcinoid tumour
- Small intestinal GISTs
- Intussusception
- Pneumatosis cystoides intestinalis
- Short bowel syndrome
- Enteric infections and blind loop syndrome

### Procedures

- Open and laparoscopic small bowel resection
- Open and laparoscopic adhesiolysis
- Open and laparoscopic feeding jejunostomy
- Ileostomy
- Ileostomy closure
- Superior mesenteric artery embolectomy/ thrombectomy
- Resection and stricturoplasty for Crohn's disease

## Colon & Rectum

### Conditions

- Lower gastrointestinal bleeding
- Large bowel obstruction
- Volvulus

- Acute appendicitis
- Diverticulitis
- Diverticular bleeding and fistulae
- Colonic polyps
- Colonic and rectal cancer
- Miscellaneous colonic neoplasms
- Appendiceal neoplasms
- Crohn's disease
- Emergent management of indeterminate colitis
- Ischemic colitis
- Antibiotic-induced colitis
- Infectious colitis
- Ulcerative colitis
- Endometriosis
- Irritable bowel syndrome
- Functional constipation

### Procedures

- Open and laparoscopic appendectomy
- Open and laparoscopiccolon and rectum resection
- Colostomy
- Colostomy closure
- Subtotal colectomy with ileorectal anastomosis/ileostomy
- Low rectal resection with total mesorectal excision
- Total proctocolectomy
- Coloanal anastomosis
- Ileoanal pullthrough, ileal pouch formation and poucho-anal anastomosis
- Abdominoperineal resection
- Pelvic exenteration for rectal cancer

## Anorectal

### Conditions

- Hemorrhoids
- Anal fissure
- Anorectal abscess and fistulae
- Anal cancer
- Pelvic floor dysfunction
- Incontinence
- Anal dysplasia/sexually-transmitted disease
- Rectal prolapse
- Fecal incontinence and fecal outlet obstruction

### Procedures

- Diagnosis of colonic and anorectal disorders (e.g. anal sphincter manometry)
- Banding for internal hemorrhoids
- Hemorrhoidectomy

- Subcutaneous lateral internal sphincterotomy
- Drainage anorectal abscess
- Anal fistulotomy/seton placement
- Excision of anal cancer
- Stapled hemorrhoidectomy
- HAL/RAR and THD procedures
- Repair complex anorectal fistulae
- Operation for incontinence/constipation
- Open and laparoscopic transabdominal operation for rectal prolapse
- Perineal operation for rectal prolapse
- Transanal resection for tumour
- Operation for anal cancer

## Flexible Endoscopy

- Handling of endoscopes and hygienic measures

### Procedures

- Flexible diagnostic oesophago-gastroduodenoscopy
- Rigid and flexible diagnostic procto-colonoscopy
- Interventional endoscopy (e.g. stenting, polypectomy, mucosectomy)
- E.R.C.P., papillotomy, bile stone extraction and intraluminal stenting
- Therapeutic endoscopic interventions (e.g. polypectomy, dilatation)
- Sclerotherapy of oesophageal varices
- Treatment of gastrointestinal bleeding sites (injection, clipping, LASER)
- Endoscopic mucosectomy

## Minimal Invasive Surgery

- Techniques of establishing access for MIS (e.g. laparoscopy, SILS, NOTES)
- Detection and treatment of MIS complications
- Instruments and technical devices (e.g. stapling)
- Patient selection and indication for MIS
- Suturing and stapling in MIS

## Metabolic and Bariatric Surgery

- Principles of metabolic and bariatric surgery
- Pathophysiology and epidemiology of morbid obesity
- Metabolic syndrome
- Patient selction and indication for bariatric surgery
- Surgical techniques in bariatric surgery
- Detection and treatment of complications

## 14. Breast

- Surgical anatomy, applied physiology and pathology of the breast
- Principles of radiation, brachytherapy and chemotherapy in breast cancer

### Conditions

- Mastalgia
- Acute mammary infections
- Breast mass
- Nipple discharge
- Fibroadenoma
- Fibrocystic disease
- Intraductal papilloma
- Gynecomastia
- Invasive ductal carcinoma
- Ductal carcinoma in situ
- Invasive lobular carcinoma
- Lobular carcinoma in situ
- Fat necrosis
- Mastitis and abscess
- Galactocoele
- Inflammatory breast cancer
- Paget's disease of the nipple
- Cystosarcoma phylloides
- Breast cancer during pregnancy and lactation
- Occult breast cancer with axillary metastasis
- Male breast cancer
- Atypical ductal hyperplasia
- Hereditary breast cancer
- Radial scar

### Procedures

- Aspiration of breast cyst
- Duct excision
- Breast biopsy with or without needle localisation
- Lumpectomy
- Simple mastectomy
- Axillary dissection
- Sentinel lymph node biopsy
- Modified radical mastectomy
- Radical mastectomy
- Stereotactic breast biopsy
- Reconstruction after breast cancer surgery

## 15. Endocrine

The surgical anatomy, applied physiology and pathology of the endocrine glands relevant to clinical examination, to the interpretation of special investigations, to the understanding of disordered function and to the principles of surgical treatment of common endocrine disorders.

### Conditions

- Thyroid nodule(s)

- Papillary carcinoma
- Follicular carcinoma
- Primary hyperparathyreoidism
- Hypothyreoidism (postoperative)
- Hypercalcemia
- Hypocalcemia
- Addisonian crisis
- Hyperthyreoidism
- Thyreoiditis
- Medullary carcinoma
- Hürthle cell tumors
- Anaplastic carcinoma
- Secondary hyperparathyreoidism
- Tertiary hyperparathyreoidism
- Recurrent or persistent hyperparathyreoidism
- Parathyroid carcinoma
- Multiple endocrine neoplasia type I, IIA, IIB
- Incidental adrenal mass
- Pheochromocytoma
- Primary hyperaldosteronism
- Cushing's syndrome
- Cushing's disease
- Adrenocortical carcinoma

### Procedures

- Partial or total thyreoidectomy
- Parathyreoidectomy
- Open and laparoscopic adrenalectomy

## 16. Vascular System

The surgical anatomy and applied physiology of the vascular system relevant to clinical examination, to the interpretation of special investigations and to the understanding of the disorders of function caused by diseases and injuries of the blood vessels.

- Special techniques used in the investigation of vascular disease
- Limbischaemia: acute and chronic-arterial embolism
- Gangrene
- Aneurysms (e.g. aneurysms of the abdominal aorta)
- Principles of arterial reconstructive surgery
- Reconstructive aortoiliac and femoropopliteal bypass
- Vascular grafts
- Carotid artery
- Disorders of veins of the lower limbs
- Deep venous thrombosis and its complications
- Chronic ulceration of the leg
- Principles of anticoagulation

### Procedures

- Percutaneous vascular access for dialysis
- Percutaneous vascular access
- Arteriovenous graft/fistula
- Revision arteriovenous access
- Interventional radiological procedures (e.g. stenting)
- Implantable devices (e.g. i.v. port systems)
- Amputations for vascular disease

## Vascular - Arterial

### Conditions

- Acute limb ischemia
- Peripheral arterial emboli
- Acute arterial thrombosis
- Compartment syndromes
- Diabetic foot infections
- Cerebrovascular occlusive disease
- Aortoiliac occlusive disease
- Chronic visceral occlusive disease
- Renal artery occlusive disease
- Femoropopliteal occlusive disease
- Infrapopliteal occlusive disease
- Upper extremity occlusive disease
- Winiwarter-Bürger disease
- Fibromuscular dysplasia
- Cystic medial necrosis
- Behcet disease
- Aortic aneurysms
- Visceral arterial aneurysms
- Peripheral arterial aneurysms
- Aortic dissection
- Claudication
- Hypercoagulable syndromes
- Carotid body tumors
- Vascular graft infections
- Aortic thrombosis
- Thoracic outlet syndrome

### Procedures

- Embolectomy/thrombectomy artery
- Above knee amputation
- Below knee amputation
- Toe amputation
- Aorto-iliac/femoral bypass
- Ilio-iliac/femoral bypass
- Femoral-popliteal bypass

- Profunda endarterectomy
- Infrapopliteal bypass
- Other endarterectomy
- Composite leg bypass graft
- Revise/re-do lower extremity bypass
- Arm bypass, endarterectomy, repair
- Celiac/SMA endarterectomy/bypass
- Renal endarterectomy/bypass
- Femoral-femoral bypass
- Axillo-femoral bypass
- Axillo-popliteal-tibial bypass
- Transmetatarsal amputation
- Upper extremity amputation
- Disarticulation
- Elective repair infrarenal aortoiliac aneurysm
- Repair femoral aneurysm
- Repair popliteal aneurysm
- Repair suprarenal abdominal aortic aneurysm
- Repair thoracoabdominal aortic aneurysm
- Repair thoracic aorticaneurysm
- Carotid endarterectomy
- Reoperative carotid surgery
- Excise carotid body tumour
- Direct repair aortic arch branches for CNS symptoms
- Vertebral artery operation
- Vascular ultrasound
- Angioscopy
- Balloon angioplasty
- Transcatheter stent
- Other endovascular graft
- Endovascular repair aortic aneurysm
- Endovascular repair other aneurysm
- Endovascular thrombolysis
- Pseudoaneurysm repair/injection
- Explore post-op bleed, thrombosis, infection
- Graft thrombectomy/revision
- Excise infected vascular graft
- Repair graft-enteric fistula
- Sympathectomy
- Harvest arm vein
- Thoracic outlet decompression
- Repair ruptured aortic aneurysm

## Vascular – Venous

### Conditions

- Venous thrombosis/embolism
- Thrombophlebitis, including suppurative
- Venous stasis and chronic venous insufficiency
- Varicose veins

### Procedures

- Venous insufficiency and operation for varicose veins
- EVLT and other endoluminal venous ablation techniques
- Sclerotherapy, peripheral vein
- Insertion vena caval filter
- Venous embolectomy/thrombectomy
- Venous reconstruction
- Non-reconstructive venous ulcer operation
- Repair arteriovenous malformation

## 17. Thoracic

The surgical anatomy and pathology of the heart, great vessels, air passages, chest wall, diaphragm and thoracic viscera and the applied cardio-respiratory physiology relevant to clinical examination, interpretation of special investigations and understanding of disorders of cardio-respiratory function caused by disease, injury and surgical intervention.

- The role of surgery in the treatment of cardiac, lung and oesophageal disease
- Thoracoentesis, chest drainage
- Techniques of thoracotomy
- Cardiopulmonary by-pass-general principles
- Special techniques used in the investigation of cardiac disease
- Bronchoscopy, thoracoscopy, mediastinoscopy
- Empyema thoracis
- Pneumothorax
- Complications of thoracic operations
- Malignant disease of the lungs and bronchi

### Conditions

- Pneumothorax
- Hemothorax
- Pleural effusion/empyema
- Mediastinitis
- Chylothorax
- Adenocarcinoma of the lung
- Undifferentiated lung carcinoma
- Small-cell and large-cell carcinoma of the lung
- Soft tissue sarcomas of chest wall
- Thymoma
- Teratoma of the medisastinum
- Neurogenic tumour of the mediastinum

- Enteric cyst of the mediastinum
- Pericardial cyst
- Bronchogenic cyst
- Superior vena cava syndrome
- Tracheoinnominate fistula
- Tracheoesophageal fistula
- Valvular heart disease
- Congestive heart failure
- Endocarditis
- Coronary artery disease
- Ventricular aneurysms
- Cardiomyopathy
- Pericarditis

### Procedures

- Chest tube placement
- Exploratory thoracotomy
- Pericardial window for drainage
- Thoracoscopy with or without biopsy
- Thoracoscopic pleurodesis
- Excision mediastinal tumour
- Transthoracic repair diaphragmatic hernia
- Open drainage of empyema
- Pneumonectomy
- Cardiac procedures
- Pericardiectomy
- Pacemaker insertion

## 18. Paediatric

**Please refer to the curriculum and requirements of the Section of Peadiatric Surgery**

## 19. Plastic Surgery

**Please refer to the curriculum and requirements of the Section of Plastic, Reconstructive and Aesthetic Surgery**

## 20. Transplantation

- Immunosuppression

### Procedures

- Donor organ harvesting

- Donor nephrectomy and split-hepatectomy for Tx in relatives
- Kidney transplant
- En bloc abdominal organ retrieval
- Liver transplant
- Pancreas transplant

## 21. Urology

The surgical anatomy, applied physiology and pathology of the urinary system, relevant to clinical examination, to interpretation of special investigations, to the understanding of disordered function and to the principles of the surgical treatment of urinary disease and injury.

- Urinary tract infection
- Haematuria
- Urinary calculi
- Retention of urine
- Chronic renal failure: Principles and techniques of dialysis
- Principles of renal transplantation
- Scrotal pain and scrotal swellings
- Testicular torsion
- Disorders of the prostate
- Pelvic inflammatory diseases
- Malignant disease of the urinary tract
- Ureter resection and reconstruction
- Catheterism and stenting

### Conditions

- Iatrogenic ureteral injury
- Neurogenic bladder
- Urinary incontinence
- Obstructive uropathy
- Impotence
- Neoplasms of the ureter, bladder and kidney
- Neoplasms of the prostate
- Neoplasms of the testicle
- Stone disease

### Procedures

- Hydrocelectomy
- Nephrectomy
- Orchiectomy
- Cystostomy
- Repair iatrogenic ureteral injury
- Prostatectomy
- Ileal urinary conduit
- Cystectomy

## 22. Gynaecology

### Conditions

- Gynaecological causes of acute abdominal pain
- Ectopic pregnancy
- Pelvic inflammatory disease
- Incidental ovarian mass/cyst
- Endometriosis
- Benign and malignant ovarian neoplasms
- Benign and malignant uterine neoplasms
- Cystocoele
- Rectocoele

### Procedures

- Hysterectomy
- Salpingo-oophorectomy
- Caesarian section
- Repair cystocoele
- Repair rectocoele
- Surgery of infiltration endometriosis

## 23. Central Nervous System

The anatomy and physiology relevant to clinical examination of the central nervous system, to the understanding of its functional disorders, particularly those caused by cranial or spinal trauma, and to the interpretation of special investigations.

- Surgical aspects of meningitis
- Intracranial abscesses
- Intracranial haemorrhage
- Space occupying intracranial lesions and their effects
- Spinal cord injury and compression
- Paraplegia and quadriplegia: Principles of management

### Conditions

- Management of acute pain
- Management of chronic pain

### Procedures

- Digital nerve block
- Placement of indwelling epidural catheter
- Placement of nerve stimulator for chronic pain
- Celiac plexus blockade – percutaneous or endoscopic
- Thoracic splanchnicectomy
- Peripheral nerve block(s) other than digital

## 24. Oncology

The applied basic sciences relevant to the understanding of the clinical behaviour, diagnosis and treatment of neoplastic disease.

- Principles of molecular biology of cancer
- Carcinogenesis
- Genetic factors
- Mechanisms of metastasis
- Epidemiology of common cancers
- The role of cancer registers
- Screening for cancer
- Clinico-pathological staging of cancer and premalignant states
- Pathology, clinical features, diagnosis and principles of management of common cancers in each of the surgical specialties
- Principles of cancer treatment by: surgery, radiotherapy, chemotherapy, immunotherapy, hormone therapy
- Pain therapy management
- Terminal care of cancer patients and palliation

## 25. Radiology

- Principles of diagnostic radiography, Sonography, Computed Tomography and Magnetic Resonance Imaging and related techniques
- Principles and handling of contrast media
- Diagnostic and therapeutic interventional radiological methods
- Interventional radiological implantation of prostheses and stents into vessels, organs and other structures
- X-ray guided detection of foreign bodies
- Sonographically guided identification of unpalpable lesions
- Sonographic "Doppler" investigation of abdominal and limb vessels
- Sentinel lymph node marking and detection
- Security measures in Radiology

## 26. Evaluation & Quality

- Decision-making in surgery
- Clinical audit
- Statistics and computing in surgery
- Documentation
- Principles of research and design and analysis of clinical trials
- Critical evaluation of innovations-technical and pharmaceutical
- Health Service management and economic aspects of surgical care
- Medical/legal ethics and medico-legal aspects of surgery
- Psychological effects of surgery and bereavement
- Rehabilitation
- Screening programs
- Principles and pharmacology of intravenous drug delivery
- Quality control and quality management
- CIRS (Critical Incident Reporting System)

- Implementation of clinical studies
- Legal aspects
- Communication with patients, relatives and colleagues

# Appendix 2 – Catalogue of Interventions, Procedures, Endoscopies & Operations

| Category A: Interventions, Procedures | n=125 |
|---|---|
| 1. Radiological examination of head, thorax, abdomen and extremities (e.g. emergencies, trauma, preoperative assessment and strategy plan, foreign bodies, angiography, intraoperatively) | n=25 |
| 2. Abdominal sonographies | n=25 |
| 3. Punctures, biopsies and/or drainages of solid and /or hollow organs, cavities and/ or fluid retentions with or without sonographic or CT guided assistance | n=15 |
| 4. Resuscitation or approved theoretical and practical course | n=15 |
| 5. Orotracheal and/or nasotracheal intubation | n=15 |
| 6. Central venous catheter | n=15 |
| 7. Reposition and fixation of limb fractures | n=15 |

| Category B: Endoscopy | n=125 |
|---|---|
| 1. Flexible esophagogastroduodenoscopy | n=50 |
| 2. ERCP | n=10 |
| 3. Flexible colonoscopy | n=25 |
| 4. Flexible bronchoscopy | n=15 |
| 5. Endoscopic interventions (e.g. polypectomy, sclerotherapy, papillotomy, dilatation, LASER ablation) | n=15 |
| 6. Flexible cystoscopy | n=10 |

| Category C: Operations | n=500 |
|---|---|
| **1. Head &Neck** | **n=25** |
| A. Thyroid (e.g. Resection, Thyroidectomy, Hyperparathyreoidism, Neck dissection) | n=10 |
| B. Misc. (e.g. Tracheostomy, lymph nodes, tumours, Zenker's div.) | n=15 |
| **2. Thorax** | **n=25** |
| A. Thoracotomy (e.g. pneumonectomy, oesophageal surgery) | n=10 |
| B. Breast surgery (e.g.breast cancer, lumpectomy, benign lesions) | n=15 |
| **3. Abdomen** | **n=400** |
| A. General abdominal (e.g. Laparotomy/Laparoscopy, Appendicetomy, Ileus) | n=80 |

| | |
|---|---|
| B. Esophagus & Stomach (e.g. gastric resection, gastroenteroanastomosis, closure of perforation, pyloroplasty, gastrostomy, bariatric procedures) | n=25 |
| C. Biliary tract (e.g. Cholecystectomy, bile duct revision, choledochojejunostomy) | n=50 |
| D. Liver and spleen (e.g. biopsy, organ injury, resection) | n=20 |
| E. Pancreas (e.g. necrosectomy, (pseudo)cysts, resection) | n=20 |
| F. Small bowel (e.g. resection, ileostomy) | n=30 |
| G. Large bowel (e.g. colon and resection, colotomy, colostomy) | n=50 |
| H. Anorectal (e.g. haemorrhoids, abscess, fistulae) | n=30 |
| I. Inguinal hernia | n=30 |
| J. Abdominal wall (e.g. incisional hernia) | n=30 |
| K. Retroperitoneum (e.g. nephrectomy, adrenalectomy) | n=15 |
| L. Urogenital (e.g. bladder, ureter, uterus, ovaries) | n=20 |
| **4. Soft Tissues and Musculo-Skeletal System** | **n=25** |
| A. Trauma (e.g. operative osteosynthesis, soft tissue injuries) | n=15 |
| B. Infection (e.g. Diabetic foot, defects of the skin and soft tissue, compartment syndrome, amputations) | n=10 |
| **5. Vessels and Nerves** | **n=25** |
| A. Venous (e.g.varices, crossectomy, stripping, perforans ligation) | n=10 |
| B. Arterials (e.g. arteriotomy, thrombectomy, endarterectomy, embolectomy, vascular reconstruction, access for dialysis, implantation of subcutaneous venous ports) | n=10 |
| C. Nerves (e.g. neurolysis) | n=5 |

# Appendix 3 – EBSQ GENERAL SURGERY – EXAMINATION

The EBSQ GenSurg Examination (Board Exam) is subject of comprehensive revision and continuous development. The examination covers the whole field of General Surgery as defined in the relevant UEMS documents (www.uemssurg.org). This is conducted in cooperation with the relevant European authorities and fulfilling EU legislation and directives.

The evolving process of the Board Examinations is paralleled by the European ambition towards harmonization and standardization of medical education, specialist training and qualification.

Frequency of Board Examination, location and language are subject of continuous development. In any case of language diversification the EBS makes certain, that the content of all questions and items will be identical.

The structure of the Board Qualification is clearly defined and consists of a 2-stage process involving the Eligibility and the Examination, the Examination comprising a MCQ test with at least 100 items and an OSCE circuit with at least 6 stations.

## Date, Location & Language

The Board Exam takes place at least annually mainly in cooperation with surgical meetings, e.g. in collaboration with the congress of the European Society of Surgery or in cooperation with another scientific meeting. Dates will be announced on the Board website www.uemssurg.org.

Date, location and languages(s) of the Board Exam are to the discretion of the committee. This and further details about the next Board Exam(s) are published on the Board website.

The Board Exam is basically held in English. Upon special additional announcement the exam may also be offered in the national language of the country, where it is held. In that case, the content and the procedure of the Board Exam is identical in the provided languages.

In other cases the executive may offer the Board exam in English with interpretation support. Interpretation in the MCQ-test (see later) is on candidates' request and given to the whole audience to ensure equality.

Interpretation in the OSCE-circuit (see later) is only to reduce and overcome specific language difficulties for the candidates.

## Examiners

The EBSQ Board of Examiners is supported by selected local representatives from the scientific societies and/or the national boards and authorities.

The Examination can be observed and monitored by non-medical experts to enhance quality control.

The EBS makes every effort to ensure that there are no conflicts of interest between examiners and candidates. The EBS verifies that candidates and examiners have never been at the same institution at the same time or have worked together in any venue.

The Board Examination consists of a MCQ test and an OSCE circuit.

The MCQ examination session is under surveillance of the EBS examination executive and the scoring is done by the executive immediately after completion of the session.

In the OSCE circuit at least two examiners are used in each of the stations to assure the validity of the examination. At least one examiner will be an EBS examination executive and another will be an experienced EBS expert from the local regional medical community.

All examiners are surgeons in active practice and hold valid certificates. The examiners are carefully instructed to evaluate each candidate objectively. They have no knowledge of a candidate other than an anonymised ID sticker carrying a number produced for the examination and distributed randomly.

## MCQ-Test

The MCQ test includes up to 150 questions, not less than 100 questions. The time frame for the MC test is 3-5 hours. This time frame includes transfer of the individual answer codes to the evaluation form.

In the MCQ session the candidates have to demonstrated sufficient knowledge of general surgery.

The MCQ-answers are selected by the committee from a catalogue respecting a numeric distribution following the "Blueprint GenSurg" categories .

The question items may include relevant pictures (e.g. graphs, photographs, radiological pictures).

4 types of questions are used for the MCQ-test :

**$A_{pos}$ type**(single answer out of 5 items, true)

**$A_{neg}$ type**(single answer out of 5 items, false)

**$K_{prim}$ type** (4 items, give true/false for each item)

**E type** (select between: 5 items: "+ because+", "+/+", "+/-", "-/+", "-/-")

About 70% of question are A type ($A_{neg}$ below 20%), about 15% are $K_{prim}$ and about 5% are E type.

The type of the question is clear from the structure, the wording and the number and expression of items. For each correct answer in A and E questions 2 points are given. Three correct answers in a $K_{prim}$ question are given 1 point.

Sample questions are published on the website www.uemssurg.org.

## OSCE Circuit

The purpose of the OSCE circuit is on process thinking and judgment and the focus is on decision making. The candidates are faced with cases and/or clinical pathways representing the breadth of general surgery. The circuit may include the evaluation of relevant manual skills (e.g. simulation).

The clinical pathways presented are structured beforehand and constitute common problems seen in general surgery practice. The cases follow real clinical situations; patients are anonymized.

In the OSCE circuit candidates should be able to answer not only what they would do and how, but why.

The circuit consists of a 6 stations (10 min each; total duration of circuit: 60 min) where candidates will be confronted with clinical situations.

Each candidate will visit each station where he/she will be assessed by an examiner and may be asked to give an oral or written answer respectively.

The circuit will include all types of laboratory investigations, x-rays, CT, MRI and ultrasonography scans and pictures from typical clinical situations to interpret.

The candidates may also be asked to demonstrate practical abilities.

The individual time schedule for the OSCE circuit is established after the MSQ-test (6 candidates per hour maximum). Candidates appear prior to their randomly assigned starting time. After finishing the OSCE circuit candidates have to collect and wait separated from pre-OSCE candidates until the last round of the circuit has commenced.

Sample stations are published on the website www.uemssurg.org.

In the OSCE listen carefully to each case presented, read all information thoroughly and respond with your own plan or actions to resolve it. The examiners want to find out what you would do in your own practice. Tell them what you would do and not what you think they may want you to say. Be prepared to defend your plans and actions with acceptable logic. If you honestly do not know

anything about a problem, it is recommended that you say so. This will allow the examiners to proceed to other problems with which you may be more conversant.

In particular, the examiner will assess:

- Can the candidate recognize a basic problem?
- Can the candidate gather and analyse data relative to that problem in an efficient way?
- Can the candidate use that data in an organized and logical fashion to arrive expeditiously at a diagnosis?
- Can the candidate choose realistic, effective, and safe solutions (including non operative ones) to the problem?
- If multiple options are available for treatment of a given problem, can the candidate evaluate these logically and efficiently, and choose the one that is optimal and least hazardous to the patient?
- Can the candidate recognize the long-term risks/benefits of the solutions chosen?
- Does the candidate react in a prompt but flexible manner to alterations in the patient's course, e.g., disease or treatment complications?
- Does the candidate know the technical aspects of the procedures he or she will employ?

At the end of a each OSCE circuit station, each examiner independently records a grade based on his or her evaluation of the candidate's performance.

## R.O.P.

The candidates have to prove their identity (valid passport) at the Board exam venue. Mobile telephones, computers, tablets and other communication aids as well as all types of cheating are strictly forbidden as well as any type of written and/or printed material throughout the Board Exam. Cheating is subject to subsequent termination of the exam.

Prior to the exam the candidates are briefed and anonymized by the chairman or a representative of the executive. They draw numbers and receive stickers for the evaluation forms. The numbers reflect also the starting time for the OSCE circuit. A "Starting Grid" is provided locally.

The candidates stay anonymized during the whole examination process and also during evaluation. Personal data are synchronized after the evaluation process is concluded.

All documents for the exam are prepared and printed out previously. The evaluation forms with the candidates' stickers and the actual scoring are collected online after being signed by the 2 examiners from each station. The scoring is entered online by the chairman and the result calculated.

The result of the Board Exam is announced within 1 hour after the end of the last circuit.

## Evaluation & Threshold

The EBS' decision regarding certification is not based upon any pre-set pass/fail rate, but solely upon the aggregate evaluation of the examiners.

A total of 600 points can be achieved in the Board Exam, 300 points in the MC test (2 or 1 points per question) and 300 points in the OSCE circuit (50 points per station).

When the MCQ test includes less than 150 questions or when questions may be excluded at the discretion of the Executive during the evaluation process for certain reasons, the number of individually achieved points is calculated to 300 points equal 100%, by that ensuring, that the MCQ test and the OSCE circuit are weighted equally.

The threshold for passing the exam is 75%, which means at least a total of 450 points.

After the examination the candidates are asked to fill out a feedback form. The evaluation of the feedback questionnaires will be published.

Appeals against the decision of the Board of Examiners are possible.

An unsuccessful candidate is entitled to another chance to take the exam that he/she failed.

The successful candidates (successful Eligibility and Examination) are awarded the title "**Fellow of the European Board of Surgery – GenSurg" or "F.E.B.S./GenSurg**" and are provided with the relevant Diploma normally the same day in a formal celebration.

The title F.E.B.S./GenSurg determines, that the person successfully proved to have validated knowledge and skills, that in most cases exceed the requirements for the national CCSTs and allow him/her to successfully cover the broad field of GenSurg in respective to the actual demand according to the judging of the commission.

In the moment the qualification F.E.B.S./GenSurg has no automatic legal recognition in the E.U. or in any other country. Individual recognition of qualifications by the national authorities is supported by the EBSQ committee.

Individual recognition of qualifications by the national authorities is supported by the EBSQ committee and the number of countries officially adopting the Board exam is continuously rising.

The acceptance status of a Board Exam is published on the website www.uemssurg.org.

## How to prepare?

The EBS believes that the best preparation for the examination is to "practice" taking MCQ tests and oral examinations. You should ask a colleague, preferably a board-certified surgeon, to question you in several sessions over a longer period. Practice not only the content of your answers, but focus on presenting your decision-making process in a clear, logical manner. Your trainer should probe deeply enough into your answers to make certain that you provide adequate information, and should critique your answers with regard to promptness, clarity, logic, and evidence of problem-solving ability.

Once you have passed the Eligibility and are registered for the Examination, you will be assigned an exact day, time and place for you to be present for a candidates' briefing. You may base your travel plans on this information. Your actual examination will take place in the afternoon of day 1 and morning of day 2 based on your briefing assignment. Assignment of candidates is done randomly, candidates may not request a specific date or time.

No books, papers, briefcases or electronic devices may be brought into the examination sessions. You will not need to take extra notes during the sessions.

The fellowship does not implicate automatic allowance to work at own responsibility and does not automatically enhance participation in national social security systems of the E.U.

The future perspective of this European diploma is to been seen in unanimous legalizstion within the on-going project of the European standardisation process of medical education.

# EBSQ GENERAL SURGERY – ELIGIBILITY CRITERIA

To apply for certifications **F.E.B.S./GenSurg** (Fellow of the European Board of Surgery - General Surgery) a candidate has to undergo a two-step quality validation process: **Eligibility** and **Examination**. Eligibility is a prerequisite for the Examination.

To apply for **Eligibility** the candidate must fulfil the following requirements:

1. Eligibility for all exams run by the divisions of the European Board of Surgery is open for candidates trained in one of the 27 European Union countries, a UEMS country (Iceland, Norway and Switzerland) or an associated UEMS country (Armenia, Croatia, Israel and Turkey) or a country with UEMS observer status (Azerbaijan and Georgia).
2. Eligibility for all exams run by the divisions of the European Board of Surgery is also open to those candidates trained outside the UEMS-area provided that the relevant division is satisfied with the training and qualifications are equivalent.
3. The candidate must be able to communicate in the English language. Examinations in the local national language(s) will be additionally provided at the discretion of the executive.
4. A national CCST is not a prerequisite.
5. The candidate must provide a defined **Logbook** countersigned by an independent expert on every page.

   The Logbook must include general information (surgeon, hospital) and for any item the type of procedure and patient initials or hospital admission number (no information that allows identification of the patients' names).

   The content of the mandatory Logbook (minimum: 1500 credit points) is published in "**General Surgery – Knowledge and Skills**".
6. A candidate's individual Logbook with comparable layout and structure may be accepted for the Eligibility process on the decision of the committee.

   In any case the "**Logbook Summary**" in the EBSQ form is mandatory (the corresponding EXCEL file can be downloaded; in the table "Summary" the formulas for the automatic calculation are already provided)
7. The candidate must have a total of **25 credit points** based on the following criteria:

a. Participation at recognized international congress (4 points)
b. Participation at recognized international congress and first authorship (8 points)
c. Participation national congress (2 points)
d. Participation at national congress and first authorship (4 points)
e. Participation at relevant International Postgraduate Course (6 points)
f. Publication (first authorship) in peer reviewed national surgical journal (8 points)

g. Publication (first authorship) in peer reviewed international surgical journal (12 points)

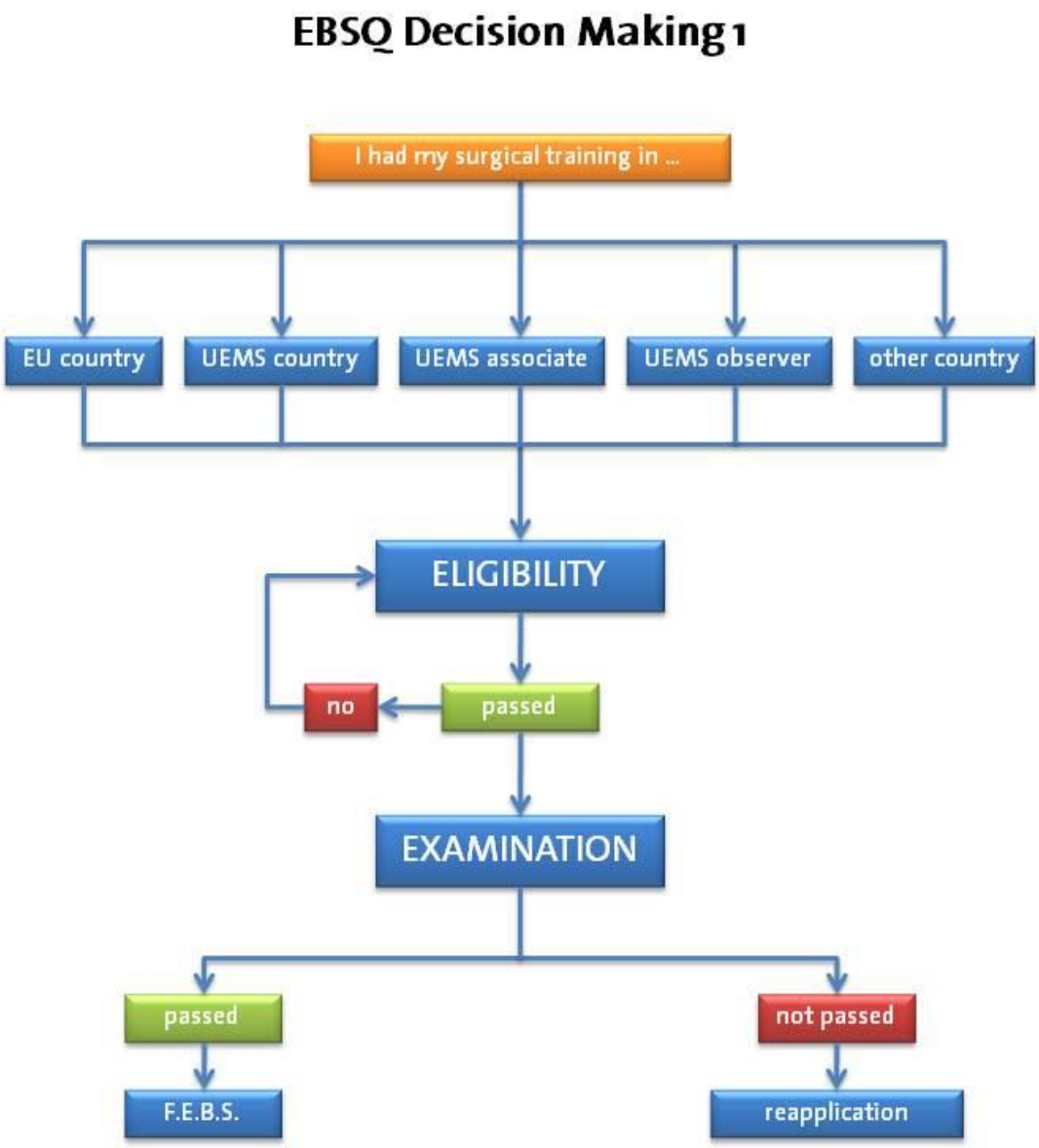
8. Candidates have to be recommended by 2 independent experts. One of the experts has to work in another country than the candidate.
9. Candidates are required to pay the fees for Eligibility (Euro 350,00) and - if accepted - a further Euro 350,00 to cover the Examination to the EBSQ Administration Office. The Eligibility sum is to cover the costs associated with the processing of returned application forms by the central EBSQ office and are non refundable.
10. All payments must be effected by the required deadlines and there are no refunds for (Eligibility) candidates who are deemed ineligible to sit for the EBSQ Gen Surg examination or do not succeed in passing the Examination. In the event that a candidate has paid for the Examination and does not attend the examination there will be no refund.
11. Reapplication is possible for Eligibility and/or Examination.
12. Successful EBSQ GenSurg Eligibility and Examination candidates are awarded the title "**Fellow of the European Board of Surgery /GenSurg – F.E.B.S./GenSurg**".

The UEMS fellowship (F.E.B.S.) represents a high-level validated quality control process and reflects certain knowledge and skills of a candidate.

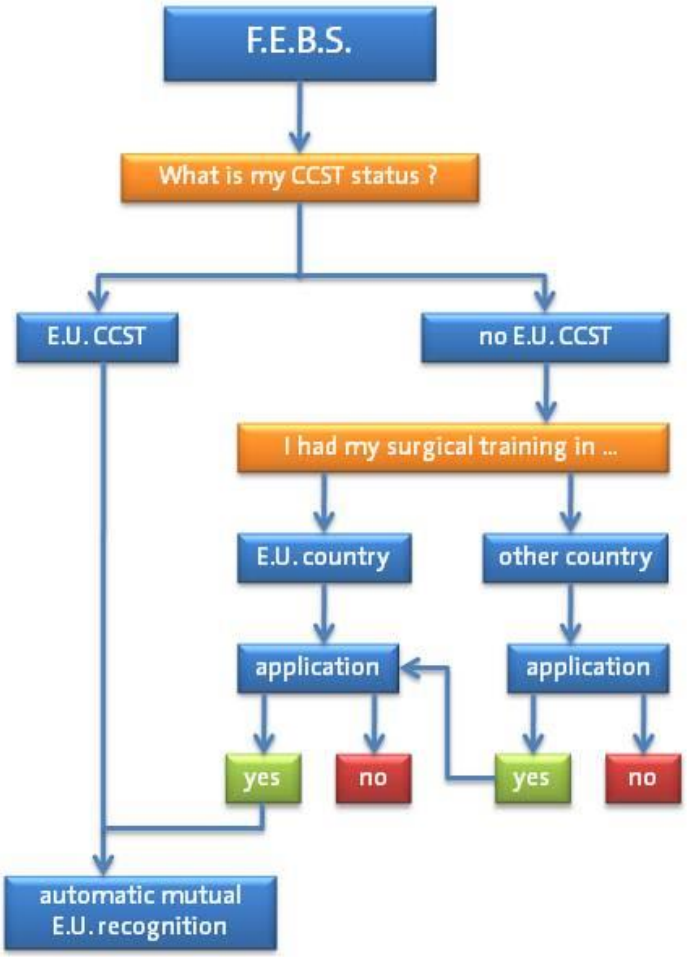
The title F.E.B.S./GenSurg determines, that the person successfully proved to have validated knowledge and skills, that in most cases by far exceed the requirements for the national CCSTs and allow him/her to successfully cover the broad field of GenSurg in respective to the actual demand according to the judging of the commission.

In the moment the qualification F.E.B.S./GenSurg has no automatic legal recognition in the E.U. or in any other country. Individual recognition of qualifications by the national authorities is supported by the EBSQ committee and the number of countries officially adopting the Board exam is continuously rising. The fellowship does not implicate automatic allowance to work at own responsibility and does not automatically enhance participation in national social security systems of the E.U.

The future perspective of this European diploma is to been seen in unanimous legalization within the on-going project of the European harmonization process of medical education.


EBSQ Decision Making 1
I had my surgical training in ...
EU country
UEMS country
UEMS associate
UEMS observer
other country
ELIGIBILITY
no
passed
EXAMINATION
passed
not passed
F.E.B.S.
reapplication

## EBSQ Decision Making 2



# EBSQ APPLICATION FORM

FAMILY NAME ……

FIRST NAMES ……

NATIONALITY ……

DATE/PLACE OF BIRTH ……

ADDRESS FOR CORRESPONDENCE:

……

……

TELEPHONE …… FAX……..

Email address ……

PRESENT APPOINTMENT:

TITLE ……

DEPARTMENT ……

ADDRESS ……

……

## DOCUMENTS ENCLOSED

Verified and signed documents following the UEMS Division of GenSurg criteria are enclosed.

- **25 credit points (based on Eligibility criteria)**
- **Logbook (based on Eligibility criteria)**
- **Logbook Summary**
- **2 recommendations**
- **Eligibility fee paid**

SIGNATURE …….  DATE…….

## DECLARATION BY APPLICANT

I wish to apply for Eligibility of the European Board of Surgery Qualification based upon assessment of my training experience. I declare that all information provided in support of my application is correct.

SIGNATURE …… DATE……

## DECLARATION BY TRAINER 1

I have scrutinised this application and declare that to the best of my knowledge the information provided by the candidate concerning his/her training experience is correct.

SIGNATURE ……..

PRINT NAME …… DATE……

POST HELD …….

HOSPITAL ADDRESS ……

……

## DECLARATION BY TRAINER 2

I have scrutinised this application and declare that to the best of my knowledge the information provided by the candidate concerning his/her training experience is correct.

SIGNATURE ……..

PRINT NAME …… DATE……

POST HELD …….

HOSPITAL ADDRESS ……

……

**Please return this form to:**
Eligibility Office
European Board of Surgery Qualification (EBSQ)
Chairman: Professor Wolfgang Feil, M.D., M.A.S., F.A.C.S.
Berufsverband der Deutschen Chirurgen
Langenbeck-Virchow-Haus
Luisenstrasse 58/59
D-10117 Berlin
Tel: +49(0)30-2800 4100 - Fax: +49(0)30-2800 4109 - E-mail: mail@bdc.de

## EUROPEAN BOARD OF SURGERY

# GENERAL SURGERY MCQ SAMPLES

The distribution of MC questions follows the "Blueprint General Surgery":

**Blueprint General Surgery 2013**

| | | weight |
|---|---|---|
| 1 | GenSurg Basics & Theory | 7% |
| 2 | Emergency & Intensive Care | 7% |
| 3 | Traumatology & Orthopaedic Surgery | 5% |
| 4 | Head & Neck Surgery | 2% |
| 5 | Thoracic Surgery | 5% |
| 6 | Cardiac Surgery | 2% |
| 7 | Vascular Surgery | 5% |
| 8 | Breast Surgery | 5% |
| 9 | Upper GI surgery | 10% |
| 10 | Lower GI Surgery | 10% |
| 11 | HBP Surgery | 10% |
| 12 | Coloproctology | 3% |
| 13 | Endocrine Surgery | 3% |
| 14 | Transplantation Surgery | 2% |
| 15 | Oncology | 5% |
| 16 | Radiology | 5% |
| 17 | Endoscopy | 5% |
| 18 | Urology | 3% |
| 19 | Plastic Surgery | 3% |
| 20 | Paediatric Surgery | 3% |
| | | 100% |

The Multiple Choice Question test (MCQ test) consists of up to 150 questions. The time frame for the MC test is 3-5 hours.
This time frame includes transfer of the individual answer codes to the evaluation form.
The MCQ-answers are selected by the committee from a catalogue respecting a numeric distribution following the "Blueprint GenSurg" categories .
4 types of questions are used for the MCQ-test :

1. **$A_{pos}$ type**(single answer out of 5 items, true)
2. **$A_{neg}$ type**(single answer out of 5 items, false)
3. **$K_{prim}$ type** (4 items, give true/false for each item)
4. **E type** (select between: 5 items: "+ because+", "+/+", "+/-", "-/+", "-/-")

About 70% of question are A type ($A_{neg}$ below 20%), about 15% are $K_{prim}$ and about 5% are E type.
The type of the question is clear from the structure, the wording and the number and expression of items.
For each correct answer in A and E questions 2 points are given. Three correct answers in a $K_{prim}$ question are given 1 point.
In the following examples for $A_{pos}$, $A_{neg}$, $K_{prim}$ and E are provided.

## Question1 (Type $A_{pos}$)

In patients receiving massive blood transfusion for acute blood loss, which of the following is correct?

| | |
|---|---|
| **A** | Packed red blood cells and crystalloid solution should be infused to restore oxygen-carrying capacity and intravascular volume. |
| **B** | Two units of FFP should be given with every 5 units of packed red blood cells in most cases. |
| **C** | Six packs of platelet concentrate should be administered with every 10 units of packed red blood cells. |
| **D** | One to two ampules of 8.4% sodium bicarbonate should be administered with every 5 units of packed red blood cells to avoid acidosis. |
| **E** | One ampule of calcium chloride should be administered with every 5 units of packed red blood cells to avoid hypocalcaemia. |

## Question 2 (Type $A_{neg}$)

Which of the following conditions is **NOT** caused by stenosis of the mitral valve?

| | |
|---|---|
| **A** | Hypertrophy of the left atrium |
| **B** | Hypertrophy of the right chamber |
| **C** | Hypertrophy of the left chamber |

| | |
|---|---|
| **D** | Chronic blood congestion in the lungs |
| **E** | Hemosiderin pigmentation in the lung |

## Question3 (Type $K_{prim}$)

Which of the following statements are true of the multiple organ dysfunction syndrome (MODS)?

| | | |
|---|---|---|
| **+** | **-** | The two-hit model proposes that secondary MODS may be produced when even a relatively minor second insult reactivates, in amore amplified form, the systemic inflammatory response that was primed by an initial insult to the host. |
| **+** | **-** | Shock due to sepsis or Systemic Inflammatory Response Syndrome (SIRS) and MODS may be regarded as a continuum of illness severity. |
| **+** | **-** | Prolonged stimulation or activation of Kupffer cells in the liver is thought to be a critical factor in the sustained, uncontrolled release of inflammatory mediators. |
| **+** | **-** | The incidence of MODS in intensive care units has decreased owing to increased awareness, prevention, and treatment of the syndrome. |

## Question 4 (Type E)

A 35 year old female patient with a 1 cm large histologically verified ductal breast cancer is treated by an organ preserving tumorectomy, sentinel node biopsy and/or axillary lymphadenectomy followed by local radiation of the breast and possibly the axilla.

**because**

in this situation the organ preserving operative strategy achieves the same good long term results in respect to survival as compared to mastectomy and axillary lymphadenectomy.

| | | | | |
|---|---|---|---|---|
| **+ because +** | **+/+** | **+/-** | **-/+** | **-/-** |

## Question 5 (Type E)

Brain oedema following blunt trauma may result in impaired consciousness

**because**

increase of intracranial pressure leads to an increase in the difference between mean arterial blood pressure and intracranial pressure (=cerebral perfusion pressure).

| | | | | |
|---|---|---|---|---|
| **+ because +** | **+/+** | **+/-** | **-/+** | **-/-** |

**Answers:**

Question 1 (Type A+): Key A

Question 2 (Type A-): Key C

Question 3 (Type Kprim): Key + + + -

Question 4 (Type E): Key: + because +

Question 5 (Type E): Key: +/-

# ETHICS & PROFESSIONALISM

The European Board of Surgery (EBS) believes that certifications by the EBSQ (European Board of Surgery Qualifications) carry an obligation for ethical behavior and professionalism in all conduct. The exhibition of unethical behavior or a lack of professionalism by a candidate may therefore prevent the certification of the applicant or may result in the suspension or revocation of certification. All such determinations shall be at the sole discretion of the EBS.

Unethical and unprofessional behavior is denoted by any dishonest behavior, including: cheating, lying, falsifying information, misrepresenting one's educational background, certification status and/or professional experience and failure to report misconduct.

The EBS has adopted a "zero tolerance" policy toward these behaviours, and individuals exhibiting such behaviours may be permanently banned from certification, reported to state medical boards, and/or legally prosecuted for copyright or other violations if identified.

Unethical behaviour is specifically defined by the EBS to include the disclosure, publication, reproduction or transmission of EBS examinations, in whole or in part, in any form or by any means, verbal or written, electronic or mechanical, for any purposes.

This also extends to sharing examination information or discussing an examination while still in progress.

Unethical behaviour also includes the possession, reproduction or disclosure of materials or information, including examination questions or answers or specific information regarding the content of the examination, before, during or after the examination. This definition specifically includes the recall and reconstruction of examination questions by any means and such efforts may violate federal copyright law.

All EBS examinations are copyrighted and protected by law. The EBS will prosecute violations to the full extent provided by law and seek monetary damages for any loss of examination materials.

# PRIVACY POLICY

In the course of all EBSQ processes, like application, assessment of Eligibility, examination, certification and appeal the EBS officials must collect and utilize personal and professional information pertaining to its applicants and candidates.

The EBS has issued the following Privacy Policy to govern EBS' collection, use, and disclosure of such information and its policies and practices regarding the privacy of information during the certification processes. The goal of establishing this privacy policy is to assure all persons disclosing information to EBS during the certification processes of the sensitivity and care utilized in protecting this information.

In order to determine the qualifications of applicants during the Eligibility process, EBS requires that applicants provide personal contact and identifying information, as well as personal, educational, and professional background information. This information is used by EBS solely to identify and determine an applicant's appropriate status with the EBS.

In connection with the registration and administration of its Examinations, EBS requires an applicant's personal information, including name, mailing address, and verified passport copy. EBS restricts access to such personal information to EBS employees and contractors who need this information to conduct the registration, administration, and scoring of examinations, and for the verification of certification by EBS executive.

EBS does not disclose any personal information regarding its applicants to non-EBS employees and contractors, except when required by law.

EBS does not share personal information about its applicants with companies or other third parties outside of EBS for marketing purposes.

EBS considers only the certification status of applicants to be public information and regards all other information about applicants as private and confidential.

Individual examination results are not provided to any other person or institution. EBS will use performance on examinations and other information for research purposes and may publish these studies. In these instances, however, EBS will not identify specific individuals, hospitals, or practice affiliations.

# APPEALS AND RECONSIDERATIONS

The European Board of Surgery (EBS), being dedicated to the principles of fairness, consistency and equality in its dealings with its applicants and candidates, hereby establishes the following policy with regard to the resolution of questions or dissatisfactions arising from its policies and procedures.

## Reconsiderations

Applicants and candidates may request reconsideration of decisions regarding the requirements and rules of the EBS on individual credentials, admissibility to the examinations.

These requests are referred to the EBS Credentials Committee for evaluation and decision.

Individuals may not only request reconsideration regarding potential fraud or misconduct by the examiners, they may also reclaim the sufficiency or accuracy of questions and answers in context with the examination process.

No requests for reconsideration may be made on items defined in the EBS outlines about purpose, organization and general requirements. Amendments in these general outlines are at the discretion of the UEMS officials and may be subject of alterations in the future, all of this in cooperation with and fulfilment of European legislation and EU directives.

Within these guidelines any applicant who considers an action of the EBS adverse to his or her interest, or to be based upon unfairness, inconsistency or inequality may request reconsideration. The request must be made in writing within 30 days of receipt of notice from the EBS of the action in question. Requests must be sent by mailto the EBS secretary office (no e-mails or faxes). The request may be accompanied by such documentation as the requestor considers appropriate to support the request.

The request for reconsideration will be brought before the EBS Credentials Committee at the next regular meeting of that committee, and the decision of the committee shall be reported to the Executive of the Section of Surgery at their next regular meeting. Within 60 days following the meeting of the Executive, the requestor shall be notified, in writing, of the Credentials Committee action and the reasons therefore.

The decision of the Credentials Committee shall be considered final unless the complainant, within 30 days after having been advised there of, gives written notification sent by mail to the EBS that he

or she wishes to institute a Personal Appeal, requests a hearing and sets forth the reasons for disagreement with the findings of the Credentials Committee.

## Personal Appeals

When a request for a Personal Appeal is received, the hearing shall be scheduled at the next regular meeting of the Credentials Committee. The appellant shall be notified in writing at least 60 days prior to the meeting of the time and location at which he or she should appear. The appellant shall be afforded the opportunity to appear in person and present oral and written evidence in his or her own behalf. The members of the committee have the right to question the appellant concerning anything in his or her record or the evidence presented. Upon completion of the hearing the committee shall, in closed session, reach a finding by majority vote. Their decision is final.

The finding of the committee and any recommendations shall be reported to the Section Executive. The appellant shall be notified in writing within 60 days as to the action taken and the reason for it.

# EXAM APPRAISAL BY THE CESMA-UEMS

The Section of Surgery of the UEMS and the Division of General Surgery have accepted as periodical quality control mechanism of their exams the process established by the Council for the European Specialists Medical Assessments (CESMA) of the UEMS.

The appraisal/ quality control process (it is recommended to take place every 3 years) is as follows:

## Background

The free movement of healthcare professionals and patients within the European Union is a fundamental principle stated in EU treaties and promoted by the most recent EU directives. This principle clearly also affects all countries associated with the EU (candidate States, members of the broader European Economic Area, Countries with special treaties with the EU). Based also on EU treaties, there is mutual recognition of the qualifications of medical specialists or other healthcare professionals. However, there are three important problems:

- not all countries have established mechanisms for assessing the qualifications of medical professionals upon completion of their training prior to accrediting them as specialists
- some countries evaluate the progress of a trainee while in training but do not have an overall exit exam/ assessment prior to their accreditation as specialists
- the existing national assessment processes are reflecting the national training framework and they do not guarantee in any way that a specialist has the necessary qualifications to practice at pan-European level.

The examinations/ assessments organized for many years by the European Medical Specialists Boards are aimed to:

- complement existing national processes
- offer an examination/ assessment to countries that don't have established assessment processes
- offer an examination/ assessment to all European countries as a quality control process at a pan-European level
- ensure quality control of the highest standards for medical professionals practicing in Europe.

## Quality Control of Exams/ Assessments

Although the Exams/Assessments of the European Boards are well established and well respected for many years, it is of paramount importance to have a generally accepted, constructive and robust quality control process to allow for periodical review/appraisal of the exams. This is even more important nowadays if it is for the UEMS to put formally forward to the EU the exams/assessments organized by the European Boards as the answer to the recent EU directive that focuses on ensuring high standards of medical professional qualifications and practice across Europe. In addition, many

non-European countries wish to use the exams/assessments for specialist accreditation (without this issuing a license to practice in the EU); a robust quality control mechanism will make the European exams/assessments more popular and trust worthy internationally.

## CESMA-UEMS (Council of European Specialist Medical Assessments of the European Union of Medical Specialists) as the Quality Control Organization

CESMA-UEMS is the ideal organization for establishing and operating the quality control mechanisms for the exams/assessments of the European Boards. This is for the following reasons:

- it operates within the UEMS which ensures that all processes are streamlined with UEMS bylaws, guidelines and overall strategy
- the fact that CESMA-UEMS consists of all European Medical Boards guarantees a true wealth of experience in exams/ assessments at a pan-European level which is by definition the first important element for proper quality control
- the diversity of the Boards operating under CESMA-UEMS offers a plethora of top class professionals from many different specialties that can objectively assess the exams/ assessment of other specialties
- although for simplicity purposes the terms of reference refer only to medical specialist, they apply to all healthcare professionals and their relevant Boards operating under the auspices of the UEMS

## Process for appraisal/assessment of the exams

### Principles

The appraisal/assessment:

- will be voluntary; the aim is to encourage the Boards to embrace the process and not to impose the process. The implementation will be gradual starting with an internal limited pilot scheme of a small number of Boards that wish to test the process on a volunteer basis. The experience of this pilot scheme will be discussed at the level of the CESMA general meeting before the format of the process will be finalized.
- has to be very professional and objective
- the evaluation has to offer a balance of reviewers appointed by CESMA-UEMS (internal to the UEMS reviewers-two reviewers suggested) as well as from other organizations relevant to the specific exam/ assessment (external to the UEMS reviewers-one reviewer suggested). The external reviewer has to be appointed following agreement between CESMA and the Board that is being appraised; the external reviewer could be a well-recognized medical specialist with expertise relevant to the work of the appraised Board but a broader pool of reviewers could be considered including for example experienced educationalists with expertise in assessment

processes. The participation of a representative of the EJD (European junior Doctors) is also advisable since they are the service users of the exams. During the pilot face, the appointment of the external reviewer will be optional and will take place only if the Board that is being appraised wishes that an external reviewer will be included.

- cost neutral; CESMA-UEMS will not make a financial profit from the process
- it is advisable to be repeated every 3 years, once the final format of the process has been agreed
- the review will be objective, detailed and robust offering specific scoring and overall comments about the strengths of the exam/assessment and areas for which it can be improved. It will not offer an overall pass/fail mark. If the appraisal process results in recommending certain improvements for an exam, this will not effect in any way the validity of the exam including past examinations.
- once they are finalized, the terms of evaluation of the exams/assessments will be on the CESMA-UEMS website.

## First step: Invitation

An invitation for the evaluation of the exam/assessment has to be initiated by the relevant Board to CESMA-UEMS. At that stage: an agreement will be made between the inviting Board and CESMA-UEMS regarding reimbursement of the expenses of the reviewers which are directly linked with the evaluation process. An effort should be made so that the reviewers are appointed from the country (or countries close to it) where the exam will take place to minimize traveling and accommodations costs. Cost should be kept to a bare minimum. Social events aiming to entertain the reviewers will not be allowed. In addition, a fee of 250 Euros for covering administrative costs related to the evaluation process should be paid to the CESMA-UEMS.

## Second step: initial report by the Board that is being evaluated

The Board that is being evaluated will provide initially a written report to the panel of reviewers that will include:

- details regarding the initial establishment, the development and the current status of the exam/assessment. In addition, information regarding partner organizations that participate in the exam/assessment and ways by which the exam/assessment is promoted.
- a clear description of the exam/assessment that has to cover: a) the process of assessing eligibility of the applicants, b) the structure and content of the exam/assessment, c) the marking of the performance of the applicants, d) the communication of the results to the applicants
- rate of pass/failure since the establishment of the examination/assessment
- any established mechanisms for internal or external quality control during the examination process
- processes for getting feedback from the applicants/examinees and evidence that this has been applied constructively in order to improve the exam/assessment
- a list of successful applicants since the establishment of the examination
- evidence of recognition of the exam/process at a national, European and international level

- The report has to submitted to the panel of reviewers at least 1 month before the actual examination/assessment that will be reviewed on site. The reviewers can ask for clarifications regarding the report.

## Third step: on site visit at the exam/ assessment of the panel of reviewers

Prior to the visit the Board needs to provide to the reviewers the following information:

- number of applicants, names/short description of their qualifications and country of origin
- names of the examiners, short description of their professional status with special emphasis as to the criteria used for their selection.
- The reviewers will attend the whole examination/process (initial set up/briefing, actual exam, marking, completion). During the examination process the reviewers will be attending different examination stations. There should be no more than one reviewer per station. The reviewer will not participate in the examination process.
- The reviewers will evaluate (independently and without communicating with each other) the examination/assessment for the following domains offering for each domain comments split in two categories- strengths and recommendations for improvement:
  - administrative/organizational preparation and support
  - quality/status of examinees
  - quality/status of examiners
  - examination content
  - examination format
  - balance between stations
  - fairness
  - professionalism of the examiners
  - marking process
  - decision making process for pass/ fail
  - minuting of examination, marking and pass/ fail decision making process
  - quality control mechanisms (i.e. external examiners)
  - established mechanisms for facing appeals and challenges (possibly legal)
  - process for examinees and examiners to offer feedback
  - announcement of the result
  - overall marking for the quality of the exam/ assessment
- The review panel will meet with a random sample of 5 examinees and 5 examiners (separately with each group) asking them to offer their comments regarding the above domains in an anonymised way. The minutes of those meetings will be kept by the members of the review panel. Those meetings will be optional during the pilot face.

## Outcome

The review panel will offer to the CESMA-UEMS Executive a report presenting their assessment per domain as well as their overall assessment. Following discussion between the review panel and the

CESMA Executive, a letter will be forwarded in confidence to the appraised Board summarizing the main outcomes (strengths/areas for improvement) of the exam.

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on behalf of the Section of Surgery of the UEMS
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