GESEA4EU
Standardising Gynaecological Endoscopy Training

D2.1 Standardised GESEA Training Modules

Gynaecological Endoscopic Surgical Education and Assessment for Europe
Project Number: 101101180

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EXECUTIVE SUMMARY

This deliverable provides a summary of the Standardised Training Modules to be taken up in the GESEA Educational Programme.

In total, 27 learning modules are included in this document, divided into four thematic areas: General Modules (6 learning modules), Laparoscopy Modules (8 learning modules), Hysteroscopy Modules (9 learning modules), Robotics Modules (4 learning modules).

Each learning module is identified with a letter (G for General Modules, L for Laparoscopy Modules, H for Hysteroscopy Modules, R for Robotics Modules) and a progressive number according to the outline available in Annex 1, Part B of the Grant Agreement.

The Training Programme is aimed at healthcare and non-healthcare professionals. The following target groups are identified in the scope of the Project: General Medical Staff, Specialist Professionals, Nurses, Non-Clinical Staff, Trainers (i.e. Training Specialists). Each learning module is aimed at one or more target groups.

General Modules include 6 learning modules designed to offer general knowledge and skills concerning the GESEA Training Programme and daily practice in gynaecological endoscopy for all target groups.

Laparoscopy Modules include 8 learning modules designed to offer knowledge and skills to participate in laparoscopic surgery or in providing training in laparoscopy. Basic, Intermediate and Advanced training modules are designed for Specialist Professionals to acquire stepwise theoretical knowledge and psychomotor skills in laparoscopy. Specific learning modules are designed for Nurses, Trainers, Non-Clinical Staff. Advanced Laparoscopy is structured in four subspecialties: Oncology, Endometriosis, Urogynaecology, Neuropelveology.

Hysteroscopy Modules include 9 learning modules designed to offer knowledge and skills to participate in hysteroscopic surgery or in providing training in hysteroscopy. Basic, Intermediate and Advanced training modules are designed for Specialist Professionals to acquire stepwise theoretical knowledge and psychomotor skills in hysteroscopy. Specific learning modules are designed for Nurses, Trainers, Non-Clinical Staff. Advanced Hysteroscopy consists in Digital

Hysteroscopy Centre. A specific module for Nurses in the Digital Hysteroscopy Centre is included.

Robotics Modules include 4 learning modules designed to offer knowledge and skills to participate in robotic surgery or in providing training in robotics. In Robotics Modules, one learning module is aimed at each of the following target groups: Specialist Professionals, Nurses, Trainers (divided into Training Specialists and Training Nurses).

This deliverable is accompanied by 3 annexes:

Annex 1: State-of-Art of Simulation Training Tools currently used in the GESEA Training and Diploma Centres in the Consortium;

Annex 2: Teaching Guide for Trainers/Mentors to be used during the GESEA Training and Certification Sessions;

Annex 3: Questionnaire sent to all GESEA Training and Diploma Centres in the Consortium regarding Training Programme Requirements and Contents.

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PART A: Rationale, Objectives, Methods, Results.

Rationale

GESEA4EU: An Overview

The aim of GESEA4EU is to develop standardised learning modules which are applicable and recognised across Europe as part of the GESEA Educational Programme. This programme is well established and already provides certification to gynaecological surgeons with more than 4,044 certificates issued to date (May 2023). While the certification and diploma modules of the GESEA Educational Programme for gynaecological surgeons are standardised and implemented in Diploma Centres across Europe and beyond, the training itself is much less standardised. For this reason, GESEA4EU is a necessary development if the GESEA Programme is to fulfil its mission of providing necessary training in endoscopy, advanced imaging techniques and robotics to not only surgeons but also other healthcare professionals including nurses, general medicine, non-clinical staff.

During the scope of this project, 27 learning modules will be developed and trialled in 12 centres within the existing network. Furthermore, 9 new centres will be identified in Europe where the learning modules will be piloted. These modules will be taken up in the GESEA Educational Programme to be further implemented and will be promoted through the European Board & College of Obstetrics and Gynaecology (EBCOG).

Training Objectives and Methods

Background and Mission

Surgical simulation is an exercise enabling the trainee to practice a surgical task several times and under safe conditions. Several training models are available for simulation including static model, wet lab and virtual reality simulators. The European Society for Gynaecological Endoscopy (ESGE) has established the GESEA (Gynaecological Endoscopic Surgery Education and Assessment) Programme to standardise certification and accreditation for gynaecological endoscopic psychomotor skills in static model simulators.

Skills assessment is carried out by means of the following models:

- LASST: Laparoscopic Skills Training and Testing;
- SUTT: Suturing and Knot Tying Training and Testing;
- HYSTT: Hysteroscopic Skills Training and Testing;
- SRTT: Robotics Simulator Training and Testing.

The LASTT (Laparoscopic Skills Training and Testing) model is a training model that represents the spatial distribution and orientation of the different planes and angles of a female pelvis. It provides validated laparoscopic exercises to train and test the individual on laparoscopic psychomotor skills.

The SUTT (Suturing and Knot Tying Training and Testing) model consists of two levels, SUTT1 and SUTT2 with increasing levels of difficulty and trains laparoscopic suturing and knot tying.

The HYSTT (Hysteroscopic Skills Training and Testing) model tests and trains hysteroscopic camera navigation and instrument handling. The model is shaped like a human uterus and installed in a female genital model. It has two levels of difficulty, HYSTT1 and HYSTT2 and both levels consist of two exercises.

Lastly, the SRTT consists in a series of robotic skill exercises performed on a simulator to train and assess the psychomotor skills needed for robotic surgery.

The simulation tools validated for gynaecological endoscopic skills assessment are currently employed in the GESEA Training and Diploma centres also for training sessions.

The Mission of the GESEA4EU Project is to develop a Standardised Training Programme for gynaecological endoscopy in Europe with learning objectives and measurable outcomes. Considering the complexity and diversity of professionals in the operating room, the ambition of the project includes the development of specific training modules for all OR-professionals including Specialist Professionals, Nurses, Non-Clinical Staff and Trainers (i.e. training specialists).

Actions Pipeline for Training Curriculum Development

To develop the Learning Modules in Gynaecological Endoscopy for all target groups, the Consortium has adopted a methodology summarised by the following Actions Pipepline (Fig 1).

The process leading to the definition of the Learning Modules began with the collection of the training tools and programmes currently in use in the GESEA Training and Diploma Centres in the Consortium (Annex 1).

The Consortium agreed by means of a survey on the usefulness and effectiveness of a static simulation model - currently employed in the GESEA Educational Programme for credentialing and certification - for training purposes. The opportunity and usefulness of other training tools and methods (wet lab, virtual reality simulators) will be eventually investigated in the future.

The Consortium agreed by group meetings and consultations that a stepwise process (basic, intermediate, advanced levels) is the most appropriate educational path for both theoretical knowledge and corresponding practical skills-building for specialist professionals. Group consultations and a survey have provided support in the definition of the Learning Objectives within each learning module.

The design of a common training curriculum in gynaecological endoscopy is a vital step in successfully implementing the current educational programmes for gynaecological residents and surgeons. It is envisaged that this methodology, if evidence-based and proven effective, will be scaled up in European Training Programmes.

Implementation and validation of the content is envisaged by outcomes measurement and thanks to the potential expansion of the training centres network able to run and assess training activities according to the outputs of the GESEA4Eu Project.

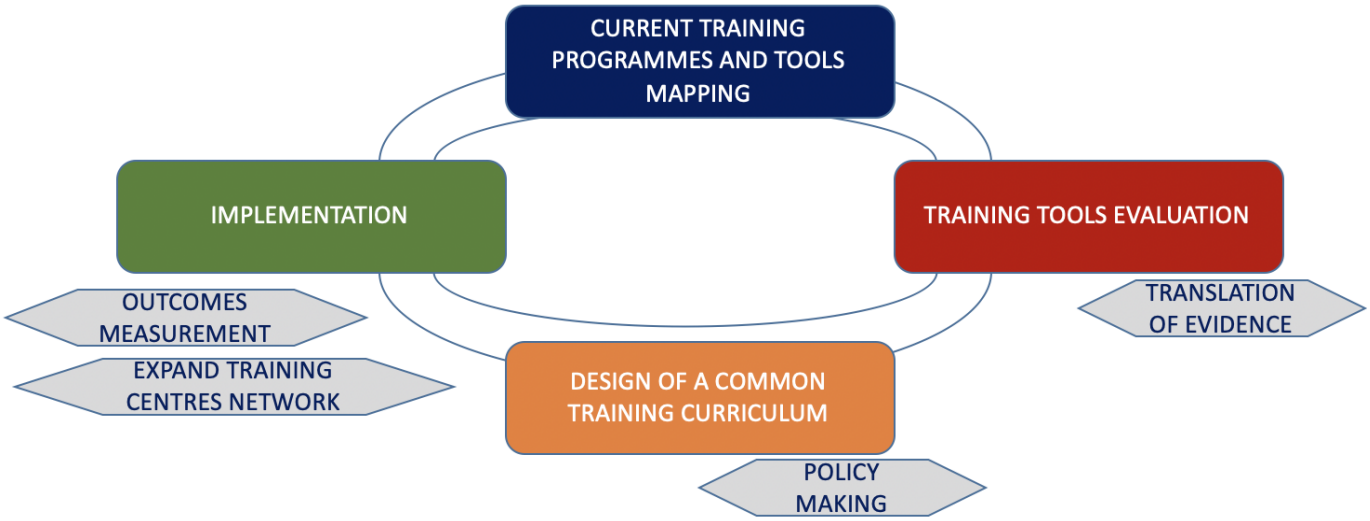

Fig. 1: Actions Pipeline for Training Programme Development and Implementation in Gynaecological Endoscopy.

Specific Objectives and Methods in D2.1 in relation to the Work Plan (M1-M4)

The specific objectives achieved in this Deliverable (D2.1) are:

- **S.M.A.R.T. Objective 1:** To make an inventory and classification of the simulation training tools and programmes as used in the scope of the GESEA Educational Programme.
  Description: Mapping of the state-of-the-art of simulation training tools and programmes used in the GESEA Training and Diploma Centres.
  Methods:
  - A Questionnaire has been sent to all the GESEA Training and Diploma Centres in the Consortium including 38 Questions developed in two sections: Section A "Training **Programme Needs**" and Section B "Training **Programme Requirements**" (Questionnaire in Annex 3).
  - Qualitative Data Collection about **Training Tools** (Inventory), provided by each Training and Diploma Centre in the Consortium to the Work Package 2 (WP2)

Leader EAGS: Data Analysis and Synthesis under WP2 Leadership responsibility. (Results in Annex 1).

Results:

Thirteen centres provided content contribution (all GESEA Training and Diploma Centres in Europe). Results of the Questionnaire are available upon request. Results of the Data Collection for Training Tools are available in Annex 1.

Key Value Indicator:

The categorisation and mapping of the simulation training tools and programmes used by the partners of the Consortium and the other GESEA Diploma Centres.

- **S.M.A.R.T. Objective 2:** To standardise European training modules as part of the GESEA Educational Programme for gynaecological surgeons.
  Description: Definition of learning modules for gynaecological surgeons to be used in clear training pathways with learning objectives. The modules are to be adopted by all the Consortium Partners and GESEA Centres.
  Methods:
  Online group meetings and discussions (consultations) to achieve consensus on Results of Objective 1 Activities (cf. S.M.A.R.T. Objective 1) and Training Experience of each Consortium Partner.
  Results:
  Thirteen centres provided content contribution (all GESEA Training and Diploma Centres in Europe).
  This objective only refers to the Learning Modules for Gynaecological Surgeons (Specialist Professionals).
  Results are included in the content of the Present Document (D2.1): Summary of the standardised training modules of the GESEA Educational Programme.
  Key Value Indicator:
  11 learning modules for Specialist Professionals.

- **S.M.A.R.T. Objective 3:** To extend the GESEA Educational Programme by developing standardised training modules for General Medicine, Nurses, Non-Clinical Staff and Trainers.
  Description: Definition of learning modules for General Medicine, Nurses, Non-Clinical staff and Trainers to be used in clear training pathways with learning objectives. The modules are to be adopted by all the Consortium Partners and GESEA Centres.
  Methods:
  - Online group meetings and discussions (consultations) to achieve consensus on Results of Objective 1 Activities (cf. S.M.A.R.T. Objective 1) and Training Experience of each Consortium Partner.
- Specific Workshops for Training Nurses and Train-the Trainer Activities supported by Consortium Partners in Europe.
  Results:
  Thirteen centres provided content contribution (all GESEA Training and Diploma Centres in Europe).

Results are included in the content of the Present Document (D2.1): Summary of the standardised training modules of the GESEA Educational Programme.

Key Value Indicator:

-2 learning modules for General Medicine;
-6 learning modules for Nurses;
-6 learning modules for Non-Clinical Staff;
-9 learning modules for Trainers.

Results

Deliverable D 2.1: An Overview

This Deliverable is a document containing a summary of the Standardised Training Modules to be taken up in the GESEA Educational Programme. In total, 27 learning modules are included in the present document, divided into four thematic areas: General Modules (6 learning modules), Laparoscopy Modules (8 learning modules), Hysteroscopy Modules (9 learning modules), Robotics Modules (4 learning modules).

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The Methodology applied to the learning modules was developed through:

- Online Focus Group Consultations;
- Analysis of questionnaire with close-ended questions (rating-scale) for quantitative data collection;
- Direct Requests to Consortium Centres for Qualitative Data Collection;
- Results of Workshops and Specific Training Activities already carried out by the Training and Diploma Centres who are members of the Consortium.

This deliverable includes 3 annexes:

- **Annex 1**: State-of-Art of Simulation **Training Tools** currently used in the GESEA Training and Diploma Centres in the Consortium (Task T2.1 results);
- **Annex 2**: **Teaching Guide** for Trainers/Mentors to be used during the GESEA Training and Certification Sessions;
- **Annex 3**: Questionnaire sent to all GESEA Training and Diploma Centres in the Consortium regarding **Training Programme** Requirements and Contents.

Deliverable D2.1: position in overall project workflow

The purpose of the Deliverable 2.1 is to provide a summary of the standardised Training Modules of the GESEA4EU Educational Programme. The level of dissemination of this document is Public (PU).

This Deliverable is a project output indicating GESEA4EU Project progress during months M1-M4.

In particular, it includes:

- Results of Task T 2.1 "Mapping and Categorisation of simulation training tools and programmes" (M1-M2) (Annex 1 and Annex 3);

PART B: Learning modules

General Learning Modules: Overview

ID	Title	Type	Target Group (TG)
G1	Remote Consultations	Online	General Medicine; Specialist Professionals; Nurses; Non-Clinical Staff
G2	Endoscopic Surgery and Patient Wellbeing	Online	General Medicine
G3	GESEA Educational Programme	Online	Specialist Professionals; Nurses; Non-Clinical Staff; Trainers
G4	GESEA Administration	Online	Non-Clinical Staff
G5	Motivation and Communication	Hybrid (Online and On-site)	Trainers
G6	Managing Online Training Sessions	Online	Non-Clinical Staff; Trainers

General Learning Modules: Content Summary

G1. Remote Consultations

This learning module will describe how to organise remote or hybrid consultations.

The training material will explain the digital workflow for patients in gynaecological endoscopy, step by step. This module will address Non-Clinical Staff, Nurses, General Practitioners and Specialist Professionals.

Learning Objectives:
To be able to set up a digital patient workflow, including intake, consultation and patient checkout.

Type:

- Online (e-learning module).

Target:

- General medical practitioners, Specialist professionals, Nurses, Non-clinical staff.

Content:
Digital patient workflow includes three phases: patient intake, patient consultation and patient checkout. In hybrid scenarios patient consultation with the specialist can be run on-site.

- PATIENT INTAKE

Steps of patient intake are the following:

- The patient requests appointment by phone or mail
- The Medical secretariat proposes date to patient for video consultation
- Date is entered in App for professional agenda management
- Patient approves appointment
- Medical secretariat confirms date in the App; sends personalized email, medical questionnaire and invoices the patient
- The patient pays the invoice and completes the medical questionnaire; proof of payment and completed medical questionnaire are sent to the medical secretariat
- Medical secretariat updates the file of the patient
- The patient installs Zoom client or Zoom app.

- PATIENT CONSULTATION

1. Patient clicks on the medical secretariat Zoom link in personalized email or reminder.
   Patient enters the Zoom waiting room of the medical secretariat.
   Medical secretariat lets patient in the Zoom meeting room; checks with the patient whether audio and video are working correctly; validates the file of the patient; finalize files with patient; tells the patient to go to the Waiting room of the Specialist by clicking the correct link on the email.

Patient enters the Zoom waiting room of Specialist.

2. Specialist lets patient into the Specialist waiting room. Specialist does patient consultation. Specialist tells the patient to go to the waiting room of the medical secretariat by clicking on the correct link in the email.

- PATIENT CHECKOUT

Patient enters the Zoom waiting room of the medical secretariat. Secretariat lets patient in the zoom meeting room of the medical secretariat. Secretariat completes the checkout process with the patient.

As a learning objectives, all the activities for Remote Consultations must be in the framework of the EU General Data Protection Regulation (GDPR).

Final training material of this learning module will be online (e-learning: recorded lecture).

G2. Endoscopic Surgery and Patient Wellbeing

This learning module will describe endoscopic surgery in gynaecology: main procedures and impacts on patient wellbeing.

The training material will highlight the current technical evolutions and showcase what type of gynaecological treatments can be performed through endoscopic surgery. This module will address General Medicine.

Learning Objectives:
To have a basic understanding of Endoscopic surgery in Gynaecology; To become familiar with different types of procedures and the benefits for patients.

Type:
- Online (e-learning module).

Target:
- General Medical practitioners.

Content:
Surgeons and physicians have been consistently focused on minimizing the risks and complications of surgery. Endoscopic procedures have become an integral part of all surgical specialties and are now a standard approach in all fields of surgery. Gynaecological endoscopy includes two main procedures: laparoscopy and hysteroscopy. Nowadays conventional laparoscopy has been extended to include natural orifice transluminal endoscopic surgery (NOTES) and robotic-assisted surgery (RAS).

The generic advantages of avoiding a large abdominal incision (laparotomy) are now well established. For the patient, an endoscopic procedure is invariably less painful, lengths of

hospital stay (if needed) is reduced and return to normal activities is more rapid. There are also significant advantages in short-term quality of life indicators associated with the endoscopic approach (patient satisfaction). For the surgeon, endoscopic surgery improves the visualization of the surgical field and offers the opportunity of more precise and accurate surgery in order to reduce over- all complications.

Gynaecological disorders and their treatments both affect the general well-being of patients and can have specific impacts on femininity, self-esteem, and body image. All can lead to loss in the quality of life for patients, so it has become a vital measure of the usefulness of care. Nowadays, with technical evolutions of endoscopic procedures, it is possible to treat most benign and malignant disorders, congenital and acquired. Major endoscopic procedures in gynaecology and their impact on the quality of life on patients will be described.

Final training material for this learning module will be online (e-learning: recorded lecture).

G3. GESEA Educational Programme

This Learning Module will describe the GESEA Educational Programme as developed by the European Society for Gynaecological Endoscopy (ESGE).

The training material will describe the GESEA Educational Programme, its relevance and scope, including Non-Clinical Staff involvement and programme validity assessment. This module will address Specialist Professionals, Nurses, Non-Clinical Staff, Trainers.

Learning Objectives:
To have a good overview of the GESEA Educational Programme; Non-clinical staff involvement; Management; Programme validity assessment.

Type:
- Online (e-learning module).

Target:
- Specialist Professionals, Nurses, Non-Clinical Staff, Trainers.

Content:
The GESEA Educational Programme is a structured educational and assessment programme for gynaecological endoscopy. It trains and certifies knowledge and psychomotor skills prior to surgical competence. Since its inception in 2014, it has steadily grown and gained acceptance by other societies and industry, with to date more than:
- 4300 certifications performed
- 15,000 test reports issued
- 12,000 e-learning members

Certification is available in 12 Diploma Centres across Europe, UAE and South-Africa.
A new GESEA portal has been developed to address the needs of increase in scope of the GESEA Educational Programme and those of the supporting societies and industry. it

serves as the access portal to the programme presenting all relevant information and highlighting partnerships.

The training and certification equipment used is a combination of industry designed hardware and custom designed consumables, and the providers of these materials will also be informed on the importance of being trained in the use of these materials, as part of the GESEA Educational Programme.

ESGE is the responsible authority who validates the viability of institutions to become an Accredited Diploma or Accredited Training Centre. ESGE is the central organ that coordinates the centres, the community, informs them with the latest information and data, and supports them in the organisation of GESEA certifications.

Programme validity assessment consists of a validated certification process with qualified instructors and continuous analysis and review of training and certification data.

Final training material for this learning module will be online (e-Learning: recorded lecture).

G4. GESEA Administration

This Learning Module will describe how to run the GESEA Educational Programme from an administrative point of view by managing training and/or certification sessions.

The training material will describe the management of training and certification sessions and the Online Scoring Platform (OSP). This module will address Non-Clinical Staff.

Learning Objectives:
To learn how to manage training sessions; certification sessions; and to understand how the Online Scoring Platform (OSP) operates.

Type:

- Online (e-learning module).

Target:

- Non-Clinical Staff.

Content:
MANAGING TRAINING SESSION
Before training sessions, the Manager (Administrative, Non-Clinical Staff) is responsible for participants' personal identification (document/ID card).
During training session, a scoring sheet is filled in with participant name, date of the training session, name of the mentor training the trainee.
After the training session, results from the scoring form are uploaded on OSP-*light* online platform by the Chief Mentor.

MANAGING CERTIFICATION SESSIONS

Before the certification session, the Manager (Administrative, Non-Clinical Staff) is responsible for participants' personal identification (document/ID card). The manager verifies previous sessions attended by the participant and the completion of e-Learning. If all previous steps are confirmed, each participant is registered in the OSP (Online Scoring Platform). The OSP generates a QR code for each participant.

During the certification session, after participants and mentors' personal identification, an attendance sheet is signed by all participants and mentors.
Participants are allocated to their working stations – and corresponding mentor – randomly.

The certification session can be administered either digitally (OSP Application) or manually (scoring sheets).
In case of digital session, the OSP Application enables the identification of the QR code previously generated as participant identification code. Results from psychomotor skills tests are immediately and univocally uploaded on the OSP.
In case paper forms are employed, the mentor fills in paper scoring sheets during the certification session after every exercise (including date, name of participant, name of mentor). Results are manually uploaded to the OSP after the certification session.

To note: SUTT 1 AND SUTT 2 exercises are evaluated by the chief mentor and results are uploaded to the OSP after the training session.

The written theoretical test is corrected manually and the result is uploaded to the OSP after the certification session.

THE ONLINE SCORING PLATFORM (OSP)

The Online Scoring Platform (OSP) is a reporting and documentation module which provides group training and testing sessions. It gives mentees a private space to document their training progress and their results and activities. The OSP is perfect to give your team feedback on their skills and guide them during their training.

In contrary to surgical skills, where the result of an evaluation only can be sufficient or insufficient, OSP will allocate an individual to a certain skill level. The individual is positioned in a benchmark group and proficiency is defined in function of the exposure rate to laparoscopy and hysteroscopy. Three levels of skills are defined: Excellent, Fair, and Room for improvement. The OSP is to be used with the training tools of the GESEA Programme, being LASTT, SUTT and HYSTT.

Final training material of this learning module will be online (e-Learning: recorded lecture).

G5. Motivation and Communication

This Learning Module will provide GESEA Trainers with training on motivation and communication skills.

The training material will explain trainers how to give courses that truly engage the participants and keeps them motivated. It will also address how to best communicate with course participants and deal with unforeseen circumstances or difficult participants. This module will address Trainers.

Learning Objectives:
To better understand Leadership;
Communication skills;
Art of giving feedback;
Management of change in the context of the GESEA Educational programme

Type:

- Hybrid (online and on-site).

Target:

- Trainers.

Content:
Trainers will be invited to have a reflection on their self-leadership, professional communication, the art of giving feedback and the management of change, confrontation and resistance.

This learning module learning objectives include:

1. Leadership:
   The Trainer should focus on increasing his/her self-awareness and discover his/her own favourite leadership style. Guidance in how the Trainer can set himself/herself as a leader and trainer and how to develop empathy. Further skills to master include: active listening, knowing your own toolbox, reading body language.
2. Professional communication:
   The trainer should choose his/her communication preferences but acquire elements of transparent communication; indications on how to "walk the talk" will be provided.
3. Art of giving feedback:
   The trainer should know how to prepare constructive feedback that results in improving learning capacity of trainees. Learning objectives include Do's and Don'ts in giving feedback.
4. Management of change:
   The trainer should understand the needs and hurdles of his/her trainees, how to invite and listen to resistance and confrontation; how to reframe resistance into opportunities and building the capacity to change.

During a live workshop further personal effectiveness and communication will be exercised with role-play exercises.

Final training material for this learning module will be hybrid (online and on-site). Online training material will be e-learning (recorded lecture). On-site training material will be lectures with slides and videos.

G6. Managing Online Training Sessions

This Learning Module will illustrate how an online course can successfully be set up achieving similar learning outcomes as an on-site course.

The training material will detail online training course materials and method. This module will address Non-Clinical Staff and Trainers.

Learning Objectives:
To have a good overview of both the Online training course materials; and the Online training course method.

Type:

- Online (e-learning module).

Target:

- Non-Clinical Staff; Trainers.

Content:
ONLINE TRAINING COURSE MATERIALS
Pre-requisites for online training courses attending are: performing internet connection, laptop/personal computer with Zoom programme downloaded (latest version).

In order for an online training course to be run, the following materials are required for each Trainee:

- Pelvic Trainer: E-knot;
- 2 Needle Holders;
- Ruler to measure the sutures;
- Scissors to cut the sutures;
- Black marker to mark the dots on the neoderma;
- SUTT 1 pad;
- Suturing materials: Polysorb.

ONLINE TRAINING COURSE METHOD
Online training course method includes registration, materials shipping and set up, training session.

After Registration, online training course materials are sent to the Participant (registration should be completed at least two weeks prior to the course date).

The Administrator sends the Trainees email regarding training session instructions:
-Zoom link details;

-Zoom platform manual;
-Pelvic Trainer Installation Instructions;
-Course Programme.

The Administrator sends the Trainer email regarding training session specifications:
-Zoom link details;
-List of Participants.

The day before the course date, the Administrator organises a pre-session with all the Trainees to check for correct training tools installation and technical requirements.

During the online training course, after the Program Introduction, a Pre (course) test is run.
Lectures and exercises explanation are conducted in the Main Room.
Practice is run in Breakout rooms (maximum 3 participants/breakout room for maintaining the highest training quality possible).
Online Course closure is Post (course) test.
Course duration is 5 days; 2/3 hours per day. Maximum number of participants is fixed to 10.

The feasibility and effectiveness of online suturing course compared to the standard on-site course is evidence-based.

Final training material for this learning module will be online (e-Learning: recorded lecture).

Laparoscopy Learning Modules: Overview

ID	Title	Type	Target Group (TG)
L1	Basic Laparoscopy	Hybrid (online and on-site)	Specialist Professionals
L2	Intermediate Laparoscopy	Hybrid (online and on-site)	Specialist Professionals
L3	MIGS Clinical Attachment	On-site	Specialist Professionals
L4	Advanced Laparoscopy	Online	Specialist Professionals
L5	Laparoscopy for Nurses	On-site	Nurses
L6	Laparoscopy for Equipment operators	On-site	Non-Clinical Staff
L7	Laparoscopy for Training Specialists	On-site	Trainers
L8	Laparoscopy for Training Nurses	On-site	Trainers

Laparoscopy Learning Modules: Content Summary

L1. Basic Laparoscopy

- The basic laparoscopy module is aimed at Specialist Professionals to provide them with the basic laparoscopy knowledge and psychomotor skills.

This learning module is hybrid (online and on-site). Online training material will be e-Learning describing basic theoretical knowledge. On-site activities consist in suturing courses and GESEA LASTT and SUTT exercises. Level 1 GESEA Certificate attainment will prove the acquirement of psychomotor skills taught and trained in the Basic Laparoscopy module.

Learning Objectives:
To build knowledge and skills in the following areas:
Online

- Understanding laparoscopy and basic rules;
- Laparoscopy instrumentations;
- Anatomy from laparoscopic point of view;
- A laparoscopic view of pelvic neuroanatomy;
- Suturing basic;
- Suturing: loading the needle;
- Suturing: intracorporeal knot;
- Use of energy;
- Ways of entry in laparoscopy;
- Exposure techniques;
- Complications.

On-site

- Laparoscopic Skills Training and Testing (LASTT) 1 Exercises;
- Suturing and Knot Tying Training and Testing (SUTT) 1 Exercise;
- On-site Suturing Courses.

Type:

- Hybrid (online and on-site).

Target:

- Specialist Professionals.

Understanding laparoscopy and basic rules
The lecture's learning objectives include practical advice and theoretical principles behind rules and strategies in laparoscopy.

Surgery is the synthesis of different qualities and capabilities. In this lecture, focus is provided on advantages (vision, high homogeneous quality of work etc.) and disadvantages (ergonomy, reduced productivity, suturing, energy, fatigue etc.) of laparoscopic approach. Recognition (dissection), Control (hemostasis) and Action (section/approximation) are three main aspects in laparoscopic surgery.
In laparoscopy the surgeon needs strategies and rules, imagination and creativity. Practical advice and theoretical principles in laparoscopy will be provided.

Laparoscopy instrumentations
The lecture's learning objectives include:

- Hand instruments;
- Introduction of the parts of the laparoscopic tower;
- Other laparoscopic instrumentations.

The correct use and assembly of laparoscopic hand instrumentations will be explained by equipment operators and specialist professionals. The different parts of laparoscopic tower will be explained with the corresponding set up (insufflator, generator, camera system, suction-irrigation system, smoke evacuation). The instruments related to gynaecological procedures - e.g. uterine manipulator - will be explained.

Anatomy from laparoscopic point of view
The lecture's learning objectives include:

- Pelvic vascular anatomy;
- Ureter anatomy.

A general overview of the pelvic vascular anatomy will be provided. In particular: The Aortic Bifurcation, Promontory area and Middle Sacral artery and vein.
Iliac bifurcation. External iliac artery course and extra pelvic branches.
Internal iliac posterior and anterior trunks (obturatory artery, umbilical artery, superior vesical artery, uterine artery, vaginal artery, middle rectal artery, inferior vesical artery, inferior pudendal artery, inferior gluteal artery).
Ureter generalities, topographic relations, path of the pelvic ureter (5 segments: parietal, retroligamental, intraligamental, retrovesical, vesical), blood and nerve supply of the ureter.

A laparoscopic view of pelvic neuroanatomy
The lecture's objective is to provide General overview of the Pelvis-Perineal Innervation: Somatic Nerves, Autonomic Nerves.

The Topographic Anatomy will detail where nerves are located in different pelvic spaces, and their relation to different anatomical landmarks.
Somatic pelvic innervation includes genitofemoral nerve, femoral nerve, obturator nerve, lumbo-sacral trunk, sciatic and pudendal nerve.
The Pelvic Autonomic Innervation: Sympathetic system (superior hypogastric plexus, hypogastric nerves), Parasympathetic system (pelvic splanchnic nerves), Inferior Hypogastric Plexus, Visceral nerve branches.

This lecture will give a guide in the identification of the autonomic innervation.
The lecture includes explanation of complications in case of nerve lesion at each level.

Suturing Lectures
The lecture's objective is to provide the basic knowledge regarding ergonomy, trocar set up and suturing technique.

Suturing is probably one of the most challenge parts of a laparoscopic procedure requiring specific psychomotor skills and knowledge.
The clinical applications of suturing are several and beside the suturing technique of stitching and knotting the initial trocar set up plays a pivotal role. Furthermore, in gynaecological surgery most of the suturing is performed at the end of the surgery and a correct ergonomy helps in sparing resources for the most challenging part.
The lecture provides the whole necessary knowledge for a correct ergonomy at the operative table and trocar set up along with all the details that must be known about the specific instrumentation.
The final part of the presentation is focused on the suturing technique, where the speaker explains a step by step approach to simplify the needle loading and the knotting.

Use of energy
The lecture's objective is to provide the basic knowledge on the use of energy during laparoscopic procedures.

Electrosurgery refers to the cutting and coagulation of tissue using high-frequency electrical currents. Physicians using this technique must be knowledgeable about preventing and managing potential complications of electrosurgical procedures. In addition, they should understand the mechanism of action and how to troubleshoot equipment. Education on the principles of electrosurgery is important as electrosurgical complications are relatively common.
In monopolar surgery, electrical current goes through the patient to complete the current cycle. In contrast, in bipolar surgery, the current only goes through the tissue between the instrument's two electrodes.
The cutting mode on the electrosurgical unit generates a continuous, low-voltage current, concentrating the energy over a small area.
The coagulation mode on the electrosurgical unit generates an interrupted, high-voltage current dispersed over a large surface area.
Fulguration and vaporization are noncontact methods of monopolar electrosurgery, while desiccation/coagulation is a direct-contact method.
Vaporization results from rapid heating in the cut mode with intense vibration and heat within the cells, which causes the cell to explode and form smoke (plume). Fulguration is caused by an interrupted current (coagulation mode), causing slower tissue heating and a less-focused tissue effect.
The cutting mode is preferred when the thermal spread is undesirable, such as when the electrosurgical device is near vital structures.
The coagulation mode is better suited for fatty and scar tissue and when fulgurating a large surface area with superficial bleeding.

Bipolar electrosurgery is ideal when dealing with highly vascular tissue or blood vessels, such as the uterine artery.
The disappearance of water vapour is a good guide for determining when to stop the application of bipolar electrosurgical energy.
A return and active electrode monitoring systems are important safety tools during monopolar electrosurgery.
Several modern alternatives to traditional electrosurgery, such as the sealing bipolar, and the ultrasonic scalpel, can be valuable additions to a surgeon's armamentarium.

Ways of entry
The lecture's objective is to provide general knowledge on anatomy of the abdominal wall and the basic ways of entry in laparoscopy.

Anatomical description of the abdominal wall includes muscles, vessels, nerves.
Entry techniques will be detailed: Direct entry, Veress entry, Hasson technique, direct-optical trocars, Palmer's entry.
Entry complications (major and minor); to note: 50 % of the complications are arise with the placement of the first trocar.
Obese entry will be detailed. The lecture will include an insight on periumbilical adhesions: incidence according to types of previous abdominal surgery.

Exposure Technique
The objective of this lecture is to understand the importance of exposing the operating field as a surgical step.

The exposure in laparoscopy approach it is a fundamental surgical principle, it is considered a surgical strategy that will bring some benefits like:

- Keep good vision of the operating field;
- keep your assistant free, thus being, your assistant to be more efficient to help you;
- Improve working area and vision;
- Providing you a better information of the surgical field that will allow you to work with more precision, that means more comfort and confidence;
- Improving the surgical performance saving time and energy.

During the lecture, the reason for exposing the surgical field will be explained, as well as when it should be performed and, to conclude, it will show how adequate exposure of the operative field can be carried out according to the surgical planning, according to the type of surgery and the strategy adopted.
Step by step the main exposure techniques of the surgical field will be explained.

Complications
The lecture's objective is to provide an overview of the most common site of injuries during gynaecological surgery, the technique to enhance the intraoperative diagnosis and the correct way or injury repair.

The lecture will focus on the most common injuries occurring during gynaecological surgery divided by organ: bladder, ureter, bowel, and vascular.
Surgical complications are part of the daily practice, and the scope of the lecture is to aware the trainees on the most common site in order to enhance the attention and avoid it.
The speaker explains organ by organ where to pay more attention to reduce the rate of complication accordingly to the procedure performed.

The complication rate cannot be erased but an intraoperative diagnosis reduces the sequels and the lecture explain safety test to be performed at the end of the surgery to increase the detection rate of a complication.
The last part of the lecture will be focused on how each complication should be fixed safely and also provide tips and tricks on postoperative care.

ON-SITE TRAINING:

Laparoscopic Skills Training and Testing (LASTT) 1 Exercises

LASTT is a practical test to measure the competence level of an individual in basic laparoscopic psychomotor skills in the specific uterine environment:

- LASTT 1 exercise 1: CAMERA NAVIGATION
- LASTT 1 exercise 2: HAND-EYE COORDINATION
- LASTT 1 exercise 3: BI-MANUAL COORDINATION

Exercise 1: Camera Navigation

Aim
To navigate the camera and visualise the reach of all important areas of the pelvis;
Camera handling with a 30° optic;
Camera head in NON-DOMINANT Hand;
Rotate light cable with your DOMINANT hand for correct view.

Procedure

- Start your search by locating the first position 1a;
- Zoom in to position the target circle on the small character so that it is fully shown and readable;
- Only proceed when mentor gives the OK;
- Search and locate the corresponding CAPITAL character (A);
- Continue this sequence until you reach the last position with small character 'end'
- Maximum time of the exercise is 3 minutes.

Tips and Tricks

Always remember to the participant that they're using a 30 degree optic so the vision change by rotating the light cable.
If the light cable in down, they're looking up

If the light cable is up, they're looking down
If the light cable is on right, they're looking on left
If the light cable in on left, they're looking on right

Use your dominant hand to control the light cable, while the non-dominant hand holds the camera. Reason: When using 30° optics, lenses can be often used to optimize the vision of the surgeon.
Meanwhile, it is important that the camera is always maintained on a horizontal alignment. Your dominant hand is more suited to precision movement during light rotation, while the other hand just needs to increase camera stability

Remember to zoom-out before moving sideways. Reason: Moving sideways can be confusing for the operator if you are too close to the anatomical structures. It is always a good habit to zoom-out first until you can visualize both previous and the next targets and then zoom-in again on the new one. Moreover, moving sideways without zooming-out can cause collisions with nearby anatomical structures

Control your tremors, especially when you are close to the numbered targets. Reason: The fulcrum effect, typical in laparoscopy, amplifies tremors when the instrument is pushed forward. The more the tip goes in, the more tremors you will have. First operators can be distracted by uncontrolled camera tremors.

Considering experts and novices learning-curves analysis (slope, shape and number of exercise repetitions to reach plateau), evidence-based suggested repetitions for LASTT Exercise 1 is: 10 – 15.

Exercise 2: Hand-eye Coordination

Aim
To evaluate the ability to navigate the camera with NON-DOMINANT hand;
To handle a forceps with the DOMINANT hand.

Procedure

- Position ONE corresponding coloured ring on each nail;
- If you drop an object, you can use the second ring OR you may re-grasp, as long as you can find the object within the endoscopic boundaries;
- Maximum time of the exercise is 3 minutes.

Tips &Tricks

Bring the instruments close to the camera while transferring the ring. Reason: Bringing the laparoscopic instruments closer to the camera increases the precision of each movement thanks to the fulcrum effect, making the transfer and grabbing manoeuvre easier. The manoeuvre allows a better vision of the instrument and a safer transfer.

Keep your instruments in the field of view Reason: It's much safer to track the position of the instrument to increase efficacy and avoid unwanted collisions.

Rotate up the tip of the dissecting forceps when picking up the ring Reason: The rotation makes it easier to safely put the instrument jaw
Accompany the ring down the nail while lowering them onto the metal rods Reason: To ensure that the ring is correctly positioned before leaving it

Make a plan and decide where to put your peg Reason: This improves the exercises speed, making it more fluent.
After dropping down one ring, start again from the same side. Reason: Redirecting the instrument to another side will lead to lost time.
Start by grasping the most distant corresponding nail
Reason: Most distant are the most difficult to control due to the disadvantaged fulcrum effect. Dealing with these in the beginning can be easier because the trainee is not yet under time stress.

Tips &Tricks
Considering experts and novices learning-curves analysis (slope, shape and number of exercise repetitions to reach plateau), evidence-based suggested repetitions for LASTT Exercise 2 is: 15.

Exercise 3: Bi-manual Coordination

Aim
To evaluate the ability to handle two forceps simultaneously with the DOMINANT hand and the NON-DOMINANT hand.

Procedure
- Position ONE coloured pin in each corresponding coloured target circle;
- Grasp plastic part of the pin with NON-DOMINANT hand and lift pin up;
- While elevated, pass the pin to the DOMINANT hand by grasping the metal part of the pin;
- Place the pin in the corresponding coloured circle and repeat for each colour;
- If you drop an object, you can use the second pin OR you may re-grasp, as long as you can find the object within the endoscopic boundaries.
- Maximum time of the exercise is 3 minutes.

Tips & Tricks

Bring the instruments close to the camera while transferring the ring. Reason: Bringing the laparoscopic instruments closer to the camera increases the precision of each movement thanks to the fulcrum effect, making the transfer and grabbing manoeuvre easier. The manoeuvre allows a better vision of the instrument and a safer transfer.

Keep your instruments in the field of view Reason: It's much safer to track the position of

the instrument to increase efficacy and avoid unwanted collisions.

Take the plastic part with your non dominant hand, go next your corresponding coloured circle, grab it with your dissecting forceps top down already well oriented towards the circle, open slowly the tips, leave it and in the meantime, use the left forceps to protect against a possible fall, or to grasp it with closed tips in order to assist insertion into the circle.

Considering experts and novices learning-curves analysis (slope, shape and number of exercise repetitions to reach plateau), evidence-based suggested repetitions for LASTT Exercise 3 is: 10-15.

On-Site Suturing Course

Aim
The aim is to develop the ability of fine and complex psychomotor skills by performing stitches using correct needle handling and intra-corporeal knot tying.

Procedure

- Basic loading techniques (loading the needle 90° angle);
- Stitching in the perfect stitch line with dominant hand;
- Loading the needle for open angle (two techniques);
- Stitching in the central line with dominant hand;
- Intra-corporeal knotting techniques (Gladiator Technique);
- Suturing and knot tying Training and Testing (SUTT) 1: five stitches in the central line and one intracorporeal knot.

Trainers will perform the abovementioned procedures on silicon Camembert.
The SUTT 1 Exercise will be performed during the on-site course (at least three repetitions).

It is advised that the Trainer adapts the percentage of time spent in each of the abovementioned procedures according to the skills level of participants. The suggested mean time for on-site suturing training course is 12-14 hours (1,5 days).

Level 1 GESEA Certificate attainment will prove the acquirement of psychomotor skills taught and trained in the Basic Laparoscopy Module.

Tools for Training:
All materials required for on-site training are included in Annex 1.

L2. Intermediate Laparoscopy

The Intermediate Laparoscopy module is aimed at Specialist Professionals to provide them with the laparoscopic knowledge and psychomotor skills for laparoscopic procedures.

This learning module is hybrid (online and on-site). Online training material will be e-

Learning describing intermediate laparoscopic theoretical knowledge. On-site activities consist in suturing courses and GESEA LASTT 2 and SUTT 2 exercises. Level 2 GESEA Certificate attainment will prove the acquirement of psychomotor skills taught and trained in the Intermediate Laparoscopy module.

Learning Objectives:
To build knowledge and skills in the following areas:
ONLINE

- Laparoscopic hysterectomy;
- Myomectomy;
- Myomas and Adenomyosis: impact on fertility;
- Chronic pelvic pain and anterior ligamentopexy;
- PID, Ovarian abscess and Tubal surgery;
- Ovarian/Adnexal Tumors;
- Laparoscopy in emergency;
- Endometriosis for Gynaecological Surgeons;
- General principles of v-NOTES;
- Adhesiolysis;
- Laparoscopy and pregnancy.

ON-SITE

- Laparoscopic Skills Training and Testing (LASTT) 2 Exercises;
- Suturing and Knot Tying Training and Testing (SUTT) 2 Exercise;
- On-site Suturing Courses.

Type:

- Hybrid (online and on-site).

Target:

- Specialist Professionals.

Requirements:
Certified Basic Laparoscopy Knowledge and Skills.

Laparoscopic hysterectomy
The learning objective of the lecture is to describe laparoscopic hysterectomy advantages, indications and surgical strategies.

Laparoscopic hysterectomy, which is associated with well-documented benefits (decreased morbidity, shorter hospital stay, and quicker return to normal activities) compared to an abdominal approach, should be the surgical treatment choice for certain gynaecological conditions (uterine leiomyomas, adenomyosis, idiopathic abnormal uterine bleeding, endometriosis, uterine prolapse).

The available evidence indicates that laparoscopic hysterectomy should be considered the preferable alternative to abdominal hysterectomy in those patients in whom the vaginal approach is not indicated. Laparoscopic surgery, associated with proven benefits, has been adopted by gynecologic surgical specialists as an effective surgical approach for removing the uterus. The standardization of the surgical technique, the clinical practice guidelines, and the detailed description of the surgical steps of laparoscopic hysterectomy are intended to make this approach safe and to ensure a favorable outcome for all patients.
This lecture will describe the procedure in a didactic way for the trainees to learn about the best surgical strategies in different scenarios.

Myomectomy
The learning objective of the lecture is to describe surgical strategy and steps of myomas removal in laparoscopy.

General overview of epidemiology and symptoms of myomas. Standard myomectomy technique is described. Relevance of surgical strategy and planning considering myomas location, number and dimensions. Instrumentation set up and bleeding control strategies are detailed. Different modalities of uterine incision and suturing techniques are shown. Myomas removal from the abdominal cavity is explained.

Myomas and Adenomyosis: impact on fertility
The learning objective of the lecture is to provide knowledge about myomas and adenomyosis and their impact on fertility.

Chronic pelvic pain
The learning objective of the lecture is to provide general knowledge about aetiology, diagnosis and management of chronic pelvic pain.

PID, Ovarian abscess and Tubal surgery
The learning objective of the lecture is to describe inflammatory disease of pelvis, ovarian abscess and tubal surgery.

The lecture will describe fallopian tubes anatomy. Differences between Salpingectomy and Salpingotomy is detailed. Salpingectomy technique (Ligasure, monopolar and bipolar devices).Tuboplasty (Neosalpingostomy, Fimbrioplasty). Tubal reanastomosis (laparoscopic suturing techniques). PID diagnosis and management will be introduced.
The lecture will conclude with ovarian abscess diagnosis and surgical management.

Suspicious Ovarian Tumors
The learning objective of the lecture is to define suspicious ovarian tumors management.

The lecture introduces terminology and strategy in suspicious ovarian masses workup. Workup includes: role of markers; ultrasound classification.

Surgical strategy will be detailed with oncological basics and surgical techniques and staging. The lecture will provide differences between conservative surgery and adnexectomy and indications, concluding the importance of safe tumor extraction. Controversies will be emphasized for critical learning: port-site metastasis (incidence, prevention).

Laparoscopy in emergency
This lecture's objective is to provide general overview of the role of laparoscopy in emergency gynaecological scenarios.

Acute pelvic pain in woman accounts for 40% of visit to emergency gynaecological departments. Most common cases are: adnexal torsion, acute PID, ovarian cyst rupture, tubo-ovarian abscess, ectopic pregnancy. Adnexal torsion is described in adult, paediatric, and pregnancy cases. Clinical signs, diagnostic process, surgical management are detailed. Management of PID and Tubo-ovarian abscess including: diagnosis, symptoms, conservative and surgical treatment. Ectopic pregnancies: prevalence, location, diagnosis, treatment (conservative, medical, surgical). Outcomes of salpingostomy and salpingectomy. Management of interstitial ectopic pregnancy.

Endometriosis for Gynaecological Surgeons
The learning objective of the lecture is to describe inflammatory disease of pelvis, ovarian abscess and tubal surgery.

Introduction: aetiology, locations (classification), prevalence. Clinical symptoms, preoperative workup and correct indications for surgery.
Surgical strategy will be explained through different procedures: endometrioma, recto-vaginal nodule, bladder nodule, ureter nodule.
The lecture will conclude with the importance of safety tests in bowel and bladder surgery.

General principles of v-NOTES
The learning objective of the lecture is to provide general principles of v-NOTES (vaginal natural orifice transluminal endoscopic surgery).

Adhesiolysis
The learning objective of the lecture is to provide knowledge on adhesions as common result of abdominal and pelvic procedures and adhesiolysys.

Laparoscopy and pregnancy
The learning objective of the lecture is to provide knowledge on laparoscopy during pregnancy: indications, risks and safety issues.

ON-SITE TRAINING:
Laparoscopic Skills Training and Testing (LASTT) 2 Exercises

LASTT is a practical test to measure the competence level of an individual in basic laparoscopic psychomotor skills in the specific uterine environment:

- LASTT 2 exercise 1: CAMERA NAVIGATION
- LASTT 2 exercise 2: HAND-EYE COORDINATION
- LASTT 2 exercise 3: BI-MANUAL COORDINATION

Exercise 1: Camera Navigation

Aim
To navigate the camera and visualise the reach of all important areas of the pelvis;
Camera handling with a 30° optic;
Camera head in NON-DOMINANT Hand;
Rotate light cable with your DOMINANT hand for correct view.

Procedure

- Start your search by locating the first position 1a;
- Zoom in to position the target circle on the small character so that it is fully shown and readable;
- Only proceed when mentor gives the OK;
- Search and locate the corresponding CAPITAL character (A);
- Continue this sequence until you reach the last position with small character 'end'
- Maximum time of the exercise is 2 minutes.

Tips and Tricks

Always remember to the participant that they're using a 30 degree optic so the vision change by rotating the light cable.
If the light cable in down, they're looking up
If the light cable is up, they're looking down
If the light cable is on right, they're looking on left
If the light cable in on left, they're looking on right

Use your dominant hand to control the light cable, while the non-dominant hand holds the camera. Reason: When using 30° optics, lenses can be often used to optimize the vision of the surgeon.
Meanwhile, it is important that the camera is always maintained on a horizontal alignment. Your dominant hand is more suited to precision movement during light rotation, while the other hand just needs to increase camera stability

Remember to zoom-out before moving sideways. Reason: Moving sideways can be confusing for the operator if you are too close to the anatomical structures. It is always a good habit to zoom-out first until you can visualize both previous and the next targets and then zoom-in again on the new one. Moreover, moving sideways without zooming-out can cause collisions with nearby anatomical structures

Control your tremors, especially when you are close to the numbered targets. Reason: The fulcrum effect, typical in laparoscopy, amplifies tremors when the instrument is pushed

forward. The more the tip goes in, the more tremors you will have. First operators can be distracted by uncontrolled camera tremors.

Considering experts and novices learning-curves analysis (slope, shape and number of exercise repetitions to reach plateau), evidence-based suggested repetitions for LASTT 1 Exercise 1 is: 10 – 15. Per analogy, suggested repetitions for LASTT 2 Exercise 2 is: 15-20 (maximum exercise time is reduced from 3 minutes to 2 minutes).

Exercise 2: Hand-eye Coordination

Aim
To evaluate the ability to navigate the camera with NON-DOMINANT hand;
To handle a forceps with the DOMINANT hand.

Procedure

- Position ONE corresponding coloured ring on each nail;
- If you drop an object, you can use the second ring OR you may re-grasp, as long as you can find the object within the endoscopic boundaries;
- Maximum time of the exercise is 2 minutes.

Tips &Tricks

Bring the instruments close to the camera while transferring the ring. Reason: Bringing the laparoscopic instruments closer to the camera increases the precision of each movement thanks to the fulcrum effect, making the transfer and grabbing manoeuvre easier. The manoeuvre allows a better vision of the instrument and a safer transfer.

Keep your instruments in the field of view Reason: It's much safer to track the position of the instrument to increase efficacy and avoid unwanted collisions.

Rotate up the tip of the dissecting forceps when picking up the ring Reason: The rotation makes it easier to safely put the instrument jaw
Accompany the ring down the nail while lowering them onto the metal rods Reason: To ensure that the ring is correctly positioned before leaving it

Make a plan and decide where to put your peg Reason: This improves the exercises speed, making it more fluent.
After dropping down one ring, start again from the same side. Reason: Redirecting the instrument to another side will lead to lost time.
Start by grasping the most distant corresponding nail
Reason: Most distant are the most difficult to control due to the disadvantaged fulcrum effect. Dealing with these in the beginning can be easier because the trainee is not yet under time stress.

Tips &Tricks
Considering experts and novices learning-curves analysis (slope, shape and number of exercise repetitions to reach plateau), evidence-based suggested repetitions for LASTT Exercise 2 is: 15. Per analogy, suggested repetitions for LASTT 2 Exercise 2 is 20 (maximum exercise time is reduced from 3 minutes to 2 minutes).

Exercise 3: Bi-manual Coordination

Aim
To evaluate the ability to handle two forceps simultaneously with the DOMINANT hand and the NON-DOMINANT hand.

Procedure
- Position ONE coloured pin in each corresponding coloured target circle;
- Grasp plastic part of the pin with NON-DOMINANT hand and lift pin up;
- While elevated, pass the pin to the DOMINANT hand by grasping the metal part of the pin;
- Place the pin in the corresponding coloured circle and repeat for each colour;
- If you drop an object, you can use the second pin OR you may re-grasp, as long as you can find the object within the endoscopic boundaries.
- Maximum time of the exercise is 2 minutes.

Tips & Tricks

Bring the instruments close to the camera while transferring the ring. Reason: Bringing the laparoscopic instruments closer to the camera increases the precision of each movement thanks to the fulcrum effect, making the transfer and grabbing manoeuvre easier. The manoeuvre allows a better vision of the instrument and a safer transfer.

Keep your instruments in the field of view Reason: It's much safer to track the position of the instrument to increase efficacy and avoid unwanted collisions.

Take the plastic part with your non dominant hand, go next your corresponding coloured circle, grab it with your dissecting forceps top down already well oriented towards the circle, open slowly the tips, leave it and in the meantime, use the left forceps to protect against a possible fall, or to grasp it with closed tips in order to assist insertion into the circle.

Considering experts and novices learning-curves analysis (slope, shape and number of exercise repetitions to reach plateau), evidence-based suggested repetitions for LASTT Exercise 3 is: 10-15. Per analogy, suggested repetitions for LASTT 2 Exercise 3 is 15-20 (maximum exercise time is reduced from 3 minutes to 2 minutes).

On-Site Suturing Course

Aim

The aim is to develop the ability of fine and complex motor skills by performing correct stitches and intra-corporeal knots.

Procedure

- Basic loading techniques (loading the needle 90° angle) with dominant and non-dominant hand
- Stitching in the perfect stitch line with dominant and non-dominant hand
- Loading the needle (two techniques) with dominant and non-dominant hand
- Stitching in the central line with dominant and non-dominant hand
- Continuous running suture
- Greek line
- Suturing in the vertical zone
- Intra-corporeal knotting techniques (two techniques)
- Extra-corporeal knotting technique
- Suturing and knot tying Training and Testing (SUTT) 2: greek line; left hand stitch with knot; right hand stitch with knot; vertical stitch with knot

Trainers will perform the abovementioned procedures on silicon Camembert.
The SUTT 2 Exercise will be performed during the on-site course (at least three repetitions).

It is advised that the Trainer adapts the percentage of time spent in each of the abovementioned procedures according to the skills level of participants. The suggested mean time for on-site suturing training course is 12-14 hours (1,5 days).

Tools for Training:
All materials required for on-site training are included in Annex 1.

L3. MIGS Clinical Attachment

Learning Objectives:
To familiarise trainees with the ESGE Fellowship Programme including its activities, enrolment, criteria, duration, centres

Type:

- On-site.

Target:

- Specialist Professionals.

This e-learning module will describe the ESGE Fellowship Programme in Gynaecological Endoscopic Surgery, which is a Theoretical and Clinical training programme aimed at Obstetricians - Gynaecologists, after obtaining the specialty title, who have a particular interest in Gynaecological Endoscopy.

Upon completion, trainees will be able to perform Level 2 endoscopic surgeries (execution of 2 diagnostic and 2 operative hysteroscopies and a total laparoscopic hysterectomy) by obtaining the ESGE Diploma of Minimally Invasive Surgeon, validated and peer-reviewed by experts in the field.

The Specialist in Gynaecological Endoscopic Surgery (Gynaecological Endoscopic Surgeon) is a specialist doctor in Obstetrics - Gynaecology who, in addition, is able to:

- To provide clinical counselling and manage patients with gynaecological diseases indicated to be treated endoscopically by evaluating the patient and her disease and the comparative benefits of the different surgical approaches (vaginal, open, and laparoscopic);
- To treat patients with gynaecological diseases laparoscopically and / or hysteroscopically;
  up to the aforementioned level if there is a medical indication.
- To practice the specialization of Gynaecological Endoscopic Surgery within a Hospital Institution where all the means are available for the safe application of the methods.

Necessary (minimum) qualifications of the candidate Academic Assistant:

- Recognized Title of Medical Specialty of Obstetrics - Gynaecology.
- In cases of citizens of other countries, for acceptance to a full specialization programme, certification of knowledge of the English language is required.
- Assessment and Certification of the Candidate's Psychomotor Skills at least at level 1 and ideally at level 2 of the structured programme of Gynaecological Endoscopic Surgical Education and Assessment (GESEA) of ESGE.

Programme of fellowship will be available on ESGE website by October 2023.
Fellowship centres:

- CICE - Centre International de Chirurgie Endoscopique, Clermont-Ferrand, France
- Universitätsklinik für Gynäkologie, Pius-Hospital Oldenburg, Germany
- Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Rome, Italy1st Dept Obstetrics and Gynaecology,
- Aristotle University of Thessaloniki, Thessaloniki, Greece

L4. Advanced Laparoscopy

The advanced laparoscopy module is aimed at Specialist Professionals to provide them with knowledge in in four subspecialties: oncology, endometriosis, urogynecology, neuropelveology.

In this module, certain objectives and topics are, like knowledge of anatomy, transversal and common to the different subspecialties.

Oncology e-learning

Objectives in terms of theoretical knowledge and topics:

- Laparoscopic anatomy of pelvic spaces, vessels and ureter
- Laparoscopic pelvic neuroanatomy: descriptive and functional
- Rules of exposure in laparoscopy
- Surgical rules of vessels dissection
- Surgical rules of ureteral dissection
- Surgical rules of pelvic nerves dissection
- Technique of total laparoscopic hysterectomy and radical laparoscopic hysterectomy
- Technique of pelvic and lomboaortic lymphadenectomies
- Principles of nerve sparing
- Intraoperative management of vascular and ureteral complications

Endometriosis e-learning

Objectives in terms of theoretical knowledge and topics:

- Laparoscopic anatomy of pelvic spaces, vessels and ureter
- Laparoscopic pelvic neuroanatomy: descriptive and functional
- Diagnosis approach in endometriosis regarding pain and functional disorders (urinary, digestive, sexual)
- Rules of exposure in laparoscopy
- Surgical rules of ureteral dissection
- Surgical rules of pelvic nerves dissection
- Different techniques to manage ovarian endometrioma
- Techniques of laparoscopic management in rectovaginal endometriosis (shaving, colorectal resection)
- Techniques of laparoscopic management in bladder and ureteral endometriosis
- Intraoperative and Postoperative management of vascular, digestive and urinary complications

Urogynecology e-learning

Objectives in terms of theoretical knowledge and topics:

- Anatomy and landmarks required for the surgery of laparoscopic POP repair. (promontory, lateral spaces, RV and VV spaces, Retzius space)
- Laparoscopic pelvic neuroanatomy: descriptive and functional
- Laparoscopic suturing in prolapse surgery
- Techniques of sacrocolpopexy and of lateral suspension (Dubuisson, pectopexy)
- Importance of nerve sparing approach
- Management of difficult cases
- Management of recurrences
- Prevention and treatment of complications
- Management of UI and POP surgery
- Technique of laparoscopic Burch colposuspension

Neuropelveology e-learning

Objectives in terms of theoretical knowledge and topics:

- Laparoscopic anatomy of somatic and autonomic pelvic nerves: descriptive and functional
- Architecture and microanatomy of peripheral nerve
- Diagnosis approach in pelvic pain and functional disorders (urinary, digestive, sexual)
- Surgical rules in peripheral nerve dissection
- Technique of nerve sparing according to surgical indications
- Technique and different type of neurolysis in endometriosis entrapment of somatic nerves
- Principles of pelvic neuromodulation
- Indications and technical principles of the implantation of neural electrodes on the pelvic nerves (LION procedures).

Type:

- Online.

Target:

- Specialist Professionals.

Requirements:
Certified Intermediate Laparoscopy Knowledge and Skills and Surgical Curriculum in the Subspecialty.

L5. Laparoscopy for Nurses

This learning module is aimed at Nurses to provide them with the knowledge and skills to prepare and support the surgeon in the operating room during laparoscopic procedures.

This learning module is on-site. On-site training will consist in instrumentations demonstration, lectures with slides. This module will address Nurses.

Learning Objectives:
To have a good level of understanding of

- Basic pelvic anatomy
- Correct positioning of the patient in the OR
- Instruments, equipment and energy sources in laparoscopy
- Laparoscopic procedures and challenges
- Organization and ergonomy of the OR
- Management of endoscopic units and data management in OR

Type:

- On-site.

Target:

- Nurses.

Content:
In the last 10 years the big majority of diagnostic and therapeutic interventions are performed by minimally invasive surgery. In the same time the role of the operating room nurse has been upgraded.

The learning module is designed for operating room nurses willing to increase their knowledge in the field of endoscopic surgery. The learning objectives include a theoretical part consisting in lectures (power point presentations and videos) to help participants to understand and learn quickly the principles and the procedures of correct assistance in endoscopic surgery. Experts in instruments and equipment management will teach and provide information and guidelines in cleaning maintenance and sterilization.

The on-site training will teach the nurses how to use several devices essential for MIS (training with work stations using simulators, minimally-invasive surgery instruments, equipment, training boxes for hysteroscopy).

Final training material for this learning module will be for on-site education: laparoscopic instruments demonstrations, lectures with slides, videos.

L6. Laparoscopy for Equipment Operators

This learning module is aimed at Non-Clinical Staff to provide them with the knowledge and skills to support laparoscopic training and diploma sessions in the GESEA Educational Programme.

This learning module is on-site. On-site training will consist in instrumentations demonstration, lectures with slides and videos. This module will address Non-Clinical Staff.

Learning Objectives:

To have a good level of understanding of

- GESEA Educational Programme;
- Laparoscopy training tools;
- Manual for tools use in the GESEA Educational Programme.

Type:

- On-site.

Target:

- Non-Clinical Staff.

Content:

GESEA Educational Programme (cf. G3)

Laparoscopy Training Tools

The European Academy of Gynaecological Surgery has developed a series of training tools (static simulation model) to increase the practical skill level needed by endoscopic surgeons to correctly perform basic endoscopic procedures.

The following training tools are currently used in GESEA Training and Diploma Centres for Laparoscopy Training and Certification Sessions:

- Telepack
- Szabo Berci (pelvic trainer)
- Camera head
- Light cable
- Trocars: 1x10 mm, 2x 5 mm
- Telescope 0 degree 10 mm
- Telescope 30 degree 10 mm
- Dissetting laparoscopic forcep
- Grasping laparoscopic forcep
- Laparoscopic scissor
- LASST model
- 12 coloured pins (more of reserve)
- 12 coloured rings (more of reserve)
- Foam Base for SUTT
- SUTT model
- Polifilament 2/0 26 20 cm length, 15 cm length (more of reserve)
- Monofilament 2/0 26 15 cm length (more of reserve)
- Needle holder (R/L)
- Stopwatch or smartphone to record the time of the exercises
- Target sheet
- Enote
- Camembert Pad

Manual for Tools use in The GESEA Educational Programme

Laparoscopic Skills Training and Testing (LASTT)

LASTT is a validated practical test to measure the competence level of an individual in basic laparoscopic psychomotor skills in the specific uterine environment: camera handling, hand-eye coordination and bi-manual coordination.

It uses the LASTT model, representing the spatial distribution and orientation of the different planes and angles of a female pelvis, which is placed in a pelvic trainer.

LASTT is one for the three exercises as used in the practical skill assessment of the GESEA Programme.

Exercise 1: Camera Navigation

This exercise evaluates the skills to handle the camera and work with a 30° optic.

Exercise 2: Hand-eye Coordination

This exercise evaluates the skills of simultaneous camera and instrument handling.

Exercise 3: Bi-manual Coordination

This exercise evaluates the skills of bi-manual instrument handling.

For Skills Assessment in the GESEA Certification session, each participant performs the exercise three times.

Exercises are done in pairs, where one mentee performs the exercise and the other assists.

Pairs swap positions after each run.

All exercise runs are carried out and timed simultaneously under instruction of the head mentor.

Scoring happens on the basis of time to correctly perform the exercise.

Pelvic Trainer Port Position CAMERA is introduced in the mid-central port (position 3) using a 10mm Trocar FORCEPS in each of the central lateral ports (position 4A & 4B). Correct orientation of the pelvic trainer: port 1-3 are closer together than 3-6.

Suturing and Knot Tying Training and Testing (SUTT)

SUTT is a practical test consisting of a series of exercises on stitching and knotting to assess, independent of the medical skills, the required quality levels of suturing skills. It measures the ability of fine and complex motor skills by performing correct stitches and intra-corporeal knots.

It uses the SUTT model consisting of a SUTT Foam Base and SUTT Pad, which is placed in a pelvic trainer.

SUTT is one for the three exercises as used in the practical skill assessment of the GESEA Programme.

LASTT and SUTT models are evidence-based valid and cost-effective simulation tools for testing and training laparoscopic psychomotor skills.

During the training session, the performance of LASTT and SUTT Exercises provides improvement in the trainers' psychomotor skills. Ensuring proficiency in validated exercises before entering the operating room is a fundamental educational step for maintaining highest standards of care in women's health (quality and safety).

Final training material for this learning module will be for on-site education: lectures with slides, videos.

L7. Laparoscopy for Training Specialists

This Learning Module is aimed at Trainers to provide them with the skills (technical and non-technical) to deliver training on laparoscopic learning modules (theoretical knowledge and psychomotor skills).

This learning module is on-site. On-site training will consist in instrumentations demonstration, lectures with slides. This module will address Trainers.

Learning Objectives:
To have a good level of understanding of

- GESEA Educational Programme Background
- Technical Skills
- Non-Technical Skills (Communication, Leadership)

Type:

- On-site.

Target:

- Trainers.

Content:
This learning module aims at training candidate Trainers to deliver teaching on laparoscopic learning modules (theoretical knowledge and psychomotor skills).
Training specialists need: GESEA Educational Programme Background (GESEA Programme, Administration, Psychomotor Skills Tests), technical skills and non-technical skills (Communication, Leadership).
A complete Programme for Training Trainers including Training and Assessment is envisaged under ESGE advocacy.

Final training material for this learning module will be for on-site education: lectures with slides, videos.

L8. Laparoscopy for Training Nurses

This Learning Module is aimed at Nurses to provide them with the skills (technical and non-technical) to deliver training on laparoscopic nursing in the OR.

This learning module is on-site. On-site training will consist in lectures with slides, videos. This module will address Nurses.

Learning Objectives:

To ensure trainees develop the necessary

- Technical Skills (Anatomy, Patient Positioning in the OR, OR Organization and ergonomy, Endoscopic Units and Data Management in the OR);
- Management Skills;
- Non-Technical Skills (Communication, Leadership).

Type:

- On-site.

Target:

- Nurses.

Content:

This learning module aims at training candidate Trainers Nurses to deliver training on laparoscopic nursing in the OR.

Nurses specialised in training need: Technical skills, Management Skills and Non-Technical skills (Communication, Leadership).

Final training material for this learning module will be for on-site education: lectures with slides, videos.

Hysteroscopic Learning Modules: Overview

ID	Title	Type	Target Group (TG)
H1	Basic Hysteroscopy	Hybrid (online and on-site)	Specialist Professionals
H2	Intermediate Hysteroscopy	Hybrid (online and on-site)	Specialist Professionals
H3	MIGS Clinical Attachment	On-site	Specialist Professionals
H4	Digital Hysteroscopy Centre	Hybrid (online and on-site)	Specialist Professionals
H5	Hysteroscopy for Nurses	On-site	Nurses
H6	Digital Hysteroscopy for Nurses	On-site	Nurses
H7	Hysteroscopy for Equipment operators	On-site	Non-clinical Staff
H8	Hysteroscopy for Training Specialists	On-site	Trainers

H9	**Hysteroscopy for Training Nurses**	**On-site**	**Trainers**

Hysteroscopy Learning Modules: Content Summary

H1. Basic Hysteroscopy

The basic hysteroscopy module is aimed at Specialist Professionals to provide them with the basic hysteroscopic knowledge and psychomotor skills.

This learning module is hybrid (online and on-site). Online training material will be e-Learning describing basic hysteroscopic theoretical knowledge. On-site activities consist in HYSTT 1 exercises. Level 1 GESEA Certificate attainment will prove the acquirement of psychomotor skills taught and trained in the Intermediate Laparoscopy module.

Learning Objectives:

To build knowledge and skills in the following areas:
Online

- Principles of Hysteroscopy
- Hysteroscopy Instrumentations
- Office Hysteroscopy
- Anatomy from hysteroscopic point of view
- Biopsy
- Hysteroscopic Complications and Management
- Abnormal Uterine Bleeding

On-site

- Laparoscopic Skills Training and Testing (LASTT) 1 Exercises

Type:

- Hybrid (online and on-site).

Target:

- Specialist Professionals.

Online Training:

Principles of Hysteroscopy

Hysteroscopy is considered to be the "gold standard" method for evaluation of the uterine cavity. This chapter describes the importance of hysteroscopy in the context of infertility evaluation and the historical aspects and evolution of the technology as well as briefly evaluates important topics such as preoperative considerations, instrumentation, media and fluid management systems, and optimal sterilization techniques.

Hysteroscopy instrumentations

Hysteroscopy is considered to be the "gold standard" method for evaluation of the uterine cavity. This chapter describes the importance of hysteroscopy in the context of infertility evaluation and the historical aspects and evolution of the technology as well as briefly evaluates important topics such as preoperative considerations, instrumentation, media and fluid management systems, and optimal sterilization techniques.

Office Hysteroscopy

Hysteroscopy is considered the gold standard procedure for the evaluation and management of intrauterine pathologies. Over the last decade, the number of hysteroscopic procedures performed in office setting has increased substantially. Initially, the office setting was limited to diagnostic procedures; however, with advances in hysteroscopic technology, including miniaturization of instruments and improved surgical techniques, an important number of surgical procedures are currently being performed in the office rather than in surgical room with anesthesia. Office hysteroscopy is an efficient procedure with a recognized value for providing adequate visualization of the uterine cavity, with great patient acceptability, and a negligible complication rate. For this reason, office hysteroscopy is often preferred instead of hysteroscopy performed in the operating room, although it is occasionally reported as a painful procedure. Moreover, patient's anxiety before and during the procedure is the most common reason of failure to conclude the procedure in the office setting.

Anatomy from hysteroscopic point of view

Hysteroscopy provides a panoramic view of anatomy of the cervical canal, uterine cavity, endometrium and tubal ostia. Once the uterine cavity has been reached, a systematic evaluation is necessary, including base of uterus, right ostium, left ostium, anterior wall and posterior wall; it allows to evaluate and locate any possible lesions avoiding accidental omission of any areas. In some cases for complete evaluation on the uterine cavity, a biopsy for histological assessment of the endometrium is required.

Biopsy

For complete evaluation of the uterine cavity, in some cases histological assessment of the endometrium is required. The endometrial biopsy technique always require two steps, to compensate for limits in the sample size. The first phase requires the area identified for the biopsy probe to be collected using scissors, creating a square of tissue. Then the distal part of the partially removed area is grasped with forceps and dragged down or sideways until it

is completely detached. Extraction from the uterine cavity is performed keeping the forceps near to the tip of the scope but without retracting it into the operative sheath.

Hysteroscopic complications and management

Office and resectoscopic hysteroscopic techniques are considered minimally invasive procedures with a low incidence of complications. Intraoperative and postoperative complications may include: pain and vasovagal crisis, trauma, hemorrhage, complications related to the distension media, thermal damage caused by the electric current, infections. Incidence and severity of complications in resectoscopic hysteroscopy are greater than those encountered in office hysteroscopy; moreover, complication related to equipment and surgical technique must be added to those related to anesthesiology. The increased complexity of instrumentation and techniques make it necessary for operators to go through repeated sessions of adequate training to reduce rate of complications.

Abnormal uterine bleeding

Abnormal uterine bleeding (AUB) is probably the most common symptom in gynecological practice especially in perimenopausal and postmenopausal women. The main causes of AUB are: submucous myomas, endometrial polyps, endometrial atrophy, endometrial hyperplasia, endometrial carcinoma, postpartum metrorrhagia. Various diagnostic techniques for management of AUB (i.e. dilatation and curettage, endometrial biopsy, transvaginal ultrasound) have been proposed. In recent years office hysteroscopy in combination with endometrial biopsy sampling has demonstrates its great potential as the first line treatment of AUB patients. Experience has shown the usefulness of combined outpatients procedures (hysteroscopy and endometrial biopsy) versus blind dilatation and curettage, which requires anesthesia and hospitalization.

ON-SITE TRAINING:

Hysteroscopic Skills Training and Testing (HYSTT) 1 Exercises

HYSTT is a practical test to measure the competence level of an individual in basic hysteroscopic psychomotor skills in the specific uterine environment:

HYSTT 1 exercise 1: CAMERA NAVIGATION

HYSTT 1 exercise 2: HAND-EYE COORDINATION

Exercise 1: Camera Navigation

Aim

To teach the trainee the proper use of a 30 degrees optic to reach all important areas of the uterine cavity without unnecessary movements and correct camera position.

Procedure

- Place the optic as such that you have an overview of the entire cavity;
- Camera head with 30° optic in NON-DOMINANT hand;
- Rotate light cable with your DOMINANT hand for correct view;

- Start your search by locating the first position 1a;
- Zoom in to position the target circle on the small character so that it is fully shown and readable;
- Only proceed when mentor gives the OK!
- Search and locate the corresponding CAPITAL character (A);
- Continue this sequence until you reach the last position with small character 'end'
- Maximum time of the exercise is 3 minutes.

Tips & Tricks

Always remember that you are using a 30 degrees optic so the vision change by rotating the light cable.

If the light cable is down, you're looking up

If the light cable is up, you're looking down

If the light cable is on right, you're looking on left

If the light cable in on left, you're looking on right

Use your dominant hand to control the light cable, while the non-dominant hand holds the camera. Reason: When using 30 degrees optics, lenses can be often used to optimize the vision of the surgeon. Meanwhile, it is important that the camera is always maintained on a horizontal alignment. Your dominant hand is more suited to precision movement during light rotation, while the other hand just needs to increase camera stability.

Remember to zoom-out before moving sideways. Reason: Moving sideways can be confusing for the operator if you are too close to the anatomical structures. It is always a good habit to zoom-out first until you can visualize both previous and the next targets and then zoom-in again on the new one. Moreover, moving sideways without zooming-out can cause collisions with nearby anatomical structures.

Control your tremors, especially when you are close to the numbered targets. Reason: The fulcrum effect amplifies tremors when the instrument is pushed forward. The more the tip goes in, the more tremors you will have.

Exercise 2: Hand-eye Coordination

Aim

The task is to teach the trainee for simultaneous camera and instruments handling.

Procedure

- Place the optic as such that you have an overview of the entire cavity with the forceps;
- Camera head in the NON-DOMINANT hand;
- Use DOMINANT HAND for rotations and grasp;
- Mentor will state one by one a range of colors to collect;
- Remove total of 14 pins;

- Leave the pins in the cavity;
- Maximum time of the exercise is 3 minutes.

Tips &Tricks

Remember that you are using a 30° optic so your instrument always run up to your camera in the opposite position of your light cable, so first of all reach your position with the light cable in order to have your grasping forceps on the bases of the pins, never turn your camera in order to avoid loss of orientation in the uterine cavity, grasp the pins and with all the instrument and small lateral movement, take the pins out and leave it in the fundus.

Bring the instruments close to the camera while transferring the pins. Reason: Bringing the hysteroscopic instruments closer to the camera increases the precision of each movement thanks to the fulcrum effect, making the transfer and grabbing manoeuvre easier. The manoeuvre allows a better vision of the instrument and a safer transfer.

Keep your instruments in the field of view Reason: It's much safer to track the position of the instrument to increase efficacy and avoid unwanted collisions.

Try to avoid movements of the proximal part of the grasping forceps as they are useless and put you in the risk of instrument damage.

Suggested training time per trainee in HYSTT 1 exercises: 90 minutes.

Tools for Training:
All materials required for on-site training are included in Annex 1.

H2. Intermediate Hysteroscopy

The intermediate module is aimed at Specialist Professionals to provide them with the laparoscopy knowledge and psychomotor skills for hysteroscopic procedures.

This learning module is hybrid (online and on-site). Online training material will be e-Learning describing basic theoretical knowledge. On-site activities consist in HYSTT 2 exercises. Level 2 GESEA Certificate attainment will prove the acquirement of psychomotor skills taught and trained in the Intermediate Laparoscopy module.

Learning Objectives:

To build trainees' knowledge and skills in the following areas:
Online

- Myomectomy (FIGO type 1, 2)
- Polypectomy
- ESGE/ESHRE U1-U2a Uterine Malformation
- Endometrial Hyperplasia

On-Site

- Hysteroscopic Skills Training and Testing (HYSTT) 2 Exercises

Type:

- Hybrid (online and on-site).

Target:

- Specialist Professionals.

Requirements:

Certified Basic Hysteroscopy Knowledge and Skills.

Online Training:

Myomectomy (FIGO Type 1-2)

Uterine fibroids (also known as leiomyomas or myomas) are the most common benign solid tumors of the female genital tract, affecting 20–25% of women of reproductive age.

Submucosal myomas are more frequently symptomatic, mainly causing menorrhagia, dysmenorrhea, and infertility.

Hysteroscopic myomectomy is the best therapeutic option for the treatment of submucosal myomas. It is usually performed using the slicing technique, which consists of repeated and progressive passages of the cutting loop. This technique can be performed with a 26 Fr resectoscope after dilating the cervical canal, or with a 15 Fr mini-resectoscope, if the fibroid does not exceed 2-2.5 cm in diameter; in this case the mechanical dilation of the cervical canal can be avoided. Both of these instruments are based on the use of bipolar energy, an electrosurgery system that allows the use of normal saline solution as uterine distension medium and which avoids the passage of current through the patient's body. For both instruments, we also have cold loops, more robust loops that allow mobilization and easier removal of the intramural portion of the myoma.

Another innovative technique for the removal of uterine myomas is intrauterine morcellation which involves the use of a mechanical tool, without energy, which "chops and sucks" the myoma.

In case of small myomas, myomectomy can also be performed in an outpatient setting with the help of 5 Fr bipolar instruments.

Combined techniques are also possible to improve surgical outcomes and to personalize the intervention on each patient.

U1-U2a (ESGE/ESHRE) Uterine Malformations

Congenital uterine malformations (CUM) are deviations from normal anatomy resulting from incorrect embryological development. 5.5% of women are affected if we consider the general population, 8.0% of infertile women, 13.3% if we consider women with a history of

spontaneous abortions and 24.5% considering those with previous miscarriages and infertility.

Three-dimensional (3D) ultrasound has become the non-invasive gold standard method for a correct diagnosis of uterine malformations.

Uterine septum is the most common uterine malformation and some authors have reported an effective and safe treatment for this pathology even in an "office" setting.

Treatment of partial septate uterus and T-shaped uterus remain a very controversial topic.

Therefore, hysteroscopic metroplasty may be offered on an individualized basis to women with a history of recurrent infertility and/or abortion by experienced surgeons in specialized centers, while the treatment of an accidentally diagnosed may be questionable and unproven.

Endometrial Hyperplasia

Endometrial Hyperplasia (EH) is a heterogeneous clinical entity characterized by an abnormal and excessive glandular proliferation, with less than half of the tissue area occupied by stroma. In general, this is considered a precursor to type 1 endometrial carcinoma, with which it shares all the risk factors associated with endogenous and exogenous hyperestrogenism. EH has a prevalence of 1.3% in women of fertile age, and 15% in those of postmenopausal age, with a peak incidence from 50 to 60 years of age.

Abnormal Uterine Bleeding (AUB) is the cardinal symptom of endometrial hyperplasia, both in women of childbearing age and in postmenopausal women.

A small percentage of patients (0.5-1.5%), may remain asymptomatic for a long time.

In Western societies, simple and complex EH without atypia affects 170 women/100 000/year.

Office hysteroscopy provides the clinician with the possibility of an accurate assessment of endometrial morphology and the further option of targeted biopsy sampling under direct vision.

Even though a properly performed biopsy will permit the removal of an adequate amount of tissue to establish a correct diagnosis, in case of diffuse polypoid endometrial thickening, the use of tissue removal devices (TRD) is gaining more widespread acceptance. TRD have the capability to obtain adequate and abundant endometrial tissue samples from the uterine cavity. The technique has also been named "visual D&C", as it is a type of "atraumatic" curettage which obviates the need for using electric current while offering the added benefit of direct vision of the uterine cavity.

ON-SITE TRAINING:

Hysteroscopic Skills Training and Testing (HYSTT) 2 Exercises

HYSTT is a practical test to measure the competence level of an individual in basic hysteroscopic psychomotor skills in the specific uterine environment:

HYSTT 2 exercise 1: CAMERA NAVIGATION

HYSTT 2 exercise 2: HAND-EYE COORDINATION

Exercise 1: Camera Navigation

Aim

To evaluate the participant's ability to navigate the hysteroscope, using forward/backward and rotation movements, in order to be able to identify targets.

Procedure

- Mentors need to position themselves in such a way that they can clearly see: the instrument handling of the mentee; tthe image feed on the monitor; the scoring form in their hands.
- Starting position: Place the optic so that you have an overview of the entire cavity. Camera head in NON-DOMINANT hand. Use your DOMINANT hand to rotate and grasp.
- Mentor names a position (Cornua, Mid or Isthmus) and a colour (black, red, blue or yellow) according to the sequence on the scoring sheet;
- Mentee locates the pin and positions the instrument to take the pin out;
- Mentor verifies the location, colour and camera position;
- Mentor says OK or NOT OK, the mentor does not give any additional feedback and the mentee can only continue once the errors have been corrected;
- When Mentor says OK, the pin can be extracted from the cavity.

Tips & Tricks

Always bring the pin to the middle of the cavity before extraction;

Remove the pin first in horizontal position to avoid damage caused by the rectocele. Afterwards, turn pin vertical to remove completely from the vagina.

Suggested training time per trainee in HYSTT 2 exercises: 120 minutes.

Tools for Training:
All materials required for on-site training are included in Annex 1.

H3. MIGS Hysteroscopic Clinical Attachment

Learning Objectives:
To familiarise trainees with the ESGE Fellowship Programme; including activities, enrolment, criteria, duration, centres.

Type:

- On-site.

Target:

- Specialist Professionals.

This e-learning module will describe the ESGE Fellowship Programme in Gynaecological Endoscopic Surgery, which is a Theoretical and Clinical training programme aimed at Obstetricians - Gynaecologists, after obtaining the specialty title, who have a particular interest in Gynaecological Endoscopy.
Upon completion, trainees will be able to perform Level 2 endoscopic surgeries (execution of 2 diagnostic and 2 operative hysteroscopies and a total laparoscopic hysterectomy) by obtaining the ESGE Diploma of Minimally Invasive Surgeon, validated and peer-reviewed by experts in the field.
The Specialist in Gynaecological Endoscopic Surgery (Gynaecological Endoscopic Surgeon) is a specialist doctor in Obstetrics - Gynaecology who, in addition, is able to:

- To provide clinical counselling and manage patients with gynaecological diseases indicated to be treated endoscopically by evaluating the patient and her disease and the comparative benefits of the different surgical approaches (vaginal, open, and laparoscopic)
- To treat patients with gynaecological diseases laparoscopically and / or hysteroscopically up to the aforementioned level if there is a medical indication.
- To practice the specialization of Gynaecological Endoscopic Surgery within a Hospital Institution where all the means are available for the safe application of the methods.

Necessary (minimum) qualifications of the candidate Academic Assistant:

- Recognized Title of Medical Specialty of Obstetrics - Gynaecology.
- In cases of citizens of other countries, for acceptance to a full specialization programme, certification of knowledge of the English language is required.
- Assessment and Certification of the Candidate's Psychomotor Skills at least at level 1 and ideally at level 2 of the structured programme of Gynaecological Endoscopic Surgical Education and
  Assessment (GESEA) of ESGE

Programme of fellowship will be available on ESGE website by October 2023.
Fellowship centres:

- CICE - Centre International de Chirurgie Endoscopique, Clermont-Ferrand, France
- Universitätsklinik für Gynäkologie, Pius-Hospital Oldenburg, Germany
- Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Rome, Italy1st Dept Obstetrics and Gynaecology,
- Aristotle University of Thessaloniki, Thessaloniki, Greece

H4. Digital Hysteroscopy Centre

This learning module is aimed at Specialist Professionals to provide them with the knowledge and skills to in the Digital Hysteroscopy Centre (DHC).

This learning module is hybrid (online and on-site). This learning module is hybrid (online and on-site). Online training material will be e-Learning. On-site activities consist in psychomotor skills training including the use of transvaginal simulators.

Learning Objectives:
To build trainees' knowledge and skills in the following areas:

Online

- DHC Organisation and Facilities
- DHC Instrumentations
- DHC Procedures: Ultrasound and mini – Hysteroscopy.
- How to engage patients for compliance

On-Site

- Psychomotor Skills Training in Hysteroscopy and Ultrasound. (On demand Transvaginal laparoscopy) ;
- Clinical teaching.

Type:

- Hybrid (online and on-site).

Target:

- Specialist Professionals.

Content:

Digital Hysteroscopy Centre (DHC) Organisation and Facilities.

The digital hysteroscopy centre (DHC) is an innovative concept of precision medicine, combining advanced ultrasound imaging with ambulatory hysteroscopic diagnosis and surgical care. Nowadays, with the continuous miniaturization of hysteroscopic instruments and in the hands of well trained physician's, outpatient hysteroscopic surgery is a procedure that is easy to perform, safe, and well- tolerated by patients. It is estimated that over 95% of all one stop uterine diagnosis and treatment can be done in an ambulatory operating room.

The core concept of the DHC, involving the combined use of hysteroscopic equipment and 2 - 3D ultrasound imaging in an ambulatory high technological environment, aiming to provide the comfort advantages of the office approach and the technology and instrumentation of a well equipped operating room for uterine diagnosis and treatment.

In concrete terms, the one stop uterine diagnosis assessments including TVUS, fluid mini hysteroscopy and if necessary contrast sonography and or endo myometrial biopsy in the high tech patient friendly operating room. Depending on the diagnosis the patient is then

scheduled for a minimal invasive surgical intervention under conscious sedation in a second phase.

All activities are performed in the same fully equipped surgical room (OR 1) both for diagnostic as for the operative procedures under conscious sedation. This unit is organised with a capacity of around 38 procedures per day per surgical oR1 room.
Surgery is done without intubation, no necessity of ventilation or larynx mask, only oxygen supply is used and patient only leaves the operating room when all parameters are perfect.

Staff organization
The DHC staff will minimal include:
n. 1 Admin support
n. 1 Nurse coordinator
n. 1 Responsible surgeon
n. 2 Specialised physicians
n. 2 Nurses

One hysteroscopy nurse will be dedicated to the DHC, he or she needs experience in MIS procedures, organisation, instrument handling and instrument care. Under her responsibility 2 nurses are necessary to provide the patient care, admission, blood sampling, post op surveillance and consultation and instrument care.

Digital Hysteroscopy Centre (DHC) Instrumentations

The standard equipment in a DHC includes:

- Fully equipped DHC OR with double screens for simultaneous US and Hysteroscopic image and possibilities of in house communication. The OR and all the screens must be connected with the teaching room. Communication between the room and the surgeon must be provided.
- Compact diagnostic and operative hysteroscopes (2.9 and 5.7mm, 15-Fr bipolar resectoscope and 15 - 19 Fr Intrauterine Shaver or tissue removal system;
- 2D/3D ultrasound system with transvaginal and abdominal probe integrated in the

endoscopic tower;

- Electronically controlled suction-irrigation pump;
- Digital recording and documentation system for patient reports and data archiving.
- No routine use of speculum, tenaculum or cervical dilatation.

DHC Procedures: Ultrasound and Mini – Hysteroscopy.
Indications for the DHC.

- Abnormal Uterine Bleeding (AUB) disorders in pre and post-menopausal women
- Infertility
- Abnormal findings at other diagnostic tests (e.g. ultrasound, hysterosalpingography, magnetic resonance imaging, blind biopsy)

- Medical or surgical treatment follows up (Hyperplasia – Tamoxifen treated patients, post-operative control etc.)
- Correct IUD positioning
- Evaluation and confirmation as the second opinion following Hysteroscopic diagnosis performed in other centres
- Tubal patency test and endometrial biopsy as a supplementary test

DHC Diagnostic procedures

The routine procedure is to perform a 2 or 3D vaginal ultrasound, Trophy® fluid Hysteroscopy and a post hysteroscopy contrast sonography of the uterine cavity.

Depending on the indication supplementary eye directed endometrial biopsy, D&C, endomyometrial Spirotome® biopsy, Gel Infusion sonography, GIS or tubal permeability test by contrast sonography can be performed. In specialised centres also the diagnostic transvaginal laparoscopy can be included.

All procedures are routinely performed without the use of speculum or tenaculum and only image-controlled procedures are implemented.

The Trophyscope® hysteroscope provides the possibility to use the outer sheet as a guide to insert an endometrial sampler or an endometrial – myometrial biopsy probe called the Spirotome®.

The Spirotome® consists of a corkscrew and cutting sheet which permits to collect a biopsy of up to 2 cm length under ultrasound guidance. This technique claims to collect tissue with minimal risk of cell spreading and bleeding. In practice, after removing the Spirotome® the Trophy® optic can be reinserted to inspect the area where the biopsy was collected.

Likewise, another common technique, the so-called "grasp" biopsy, must be taken into account. In this technique, biopsy forceps are placed, jaws open, against the endometrium, then the forceps are pushed into and along the tissue for half or one cm. Finally, the two jaws are closed, and the whole hysteroscope is pulled out of the uterine cavity, without pulling the tip of the instrument back into the channel. Under this procedure, targeted hysteroscopic biopsy (to confirm the "visual" diagnosis) can be performed regularly by a trained physician.

Post Diagnostic procedure
Operative Hysteroscopy surgeries under sedation can only be planned when the patient has been seen in the One Stop Uterine Diagnostic Unit or after Zoom consult with the leading physician.

If no outstanding results are waiting for the patient receives an appointment for the operative procedure and all necessary documents and pre op samplings and consultations are immediately performed or organised.

The surgeon defines the time slot and ranking order for the operative procedures.

The system will enable the clinic to plan:

1) Day of Surgery
2) Follow up (Post-op. controls, including HSC).
3) Second Step Operative Hysteroscopy Procedures.

Operative Procedures

Patient has been seen by the anesthesiologist prior to entering the surgery room.

A preop blood sample and or radio exams are only on indication and not routinely asked for.

The DHC infrastructure does not provide routine intubation or larynx mask, general anesthesia is not performed and a ventilation machine is not available in the OR.

Patient receives oxygen support and conventional supervision of the critical parameters.

Patient can only leave the surgical room when all clinical parameters are normal as in the post operative room only limited surveillance is possible.

All hysteroscopic surgical interventions will be performed under vocal, local or mild sedation Mild conscious sedation provides the possibility of an extremely fast transition time between surgeries and recovery of the patient.

Relative Clinical imitations for Surgery:

- ASA > 2
- Myoma > 2
- Placental remnant strong vascularisation > 3
- Adenomyosis > 2 cm
- Complex congenital anomalies

In case of one of the above parameters the leading physician and anesthesiologist have to validate the indication to perform the intervention in the DHC. Operative hysteroscopy will be performed within the maximum capacity of 10 major operations per session.

All patients receive an immediate post operative consultation and strategy plan for the further follow up. Patients leave the facility from one hour after the intervention in agreement with the anesthesiologist. All patients receive an emergency number for contact if anything happens on the way home.

Planning

A morning session can perform up to 10 patients for operative procedures under sedation and this session can be followed by a total of 28 ambulatory procedures.

A patients list is prepared in advance according to the indications and includes all information and personal data of the patients in order to optimise the organisation and task definition of all parties involved.

To create an experience as comfortable and painless as possible for the patient, a lot of attention is given to 'soft' factors. A modern reception, nice design of service areas, ambient lightening in the operating room, are known to have a positive effect on the patient's well-being and comfort.

During the hysteroscopic procedure, the so-called 'local vocal' is crucial: someone communicating with the patient by showing empathy, reassuring her and engaging her in the procedure itself. If wanted, the patient can follow the procedure on a separate video screen, while the examiner is providing explanations about what is done in the current moment.

ON-SITE TRAINING

- Psychomotor Skills Training in Hysteroscopy and Ultrasound
- Clinical proctorship

Aim:
To provide Trainers with psychomotor skills in hysteroscopy and ultrasound through simulation tools.

Final training material for this learning module will be hybrid (online and on-site).
Online training material will be e-learning (recorded lecture).
On-site training material will be lectures with slides and videos and clinical demonstrations.

Clinical proctorship is performed on site, by observation and after successful GESEA certification level II and proof of successful master course in hysteroscopy approval a system of local distance proctorship technology is implemented.

H5. Hysteroscopy for Nurses

This learning module is aimed at Nurses to provide them with the knowledge and skills to prepare and support the surgeon during hysteroscopic procedures.

This learning module is on-site. On-site training will consist of instrumentation demonstration, lectures with slides. This module will address Nurses.

Learning Objectives:
To build trainees' knowledge and skills in the following areas:

- Basic intrauterine anatomy
- Correct positioning of the patient in the OR
- Instruments, equipment, fluid balance, energy sources in hysteroscopy
- Hysteroscopic procedures and challenges
- Organization and ergonomy of the OR
- Management of endoscopic units and to learn data management in OR

Type:

- On-site.

Target:

- Nurses.

In the last 10 years the big majority of diagnostic and therapeutic interventions are performed by minimally invasive surgery. In the same time the role of the operating room nurse has been upgraded.

This learning module is designed for operating room nurses willing to increase their knowledge in the field of endoscopic surgery. The learning objectives include a theoretical part consisting in lectures (power point presentations and videos) to help participants to understand and learn quickly the principles and the procedures of correct assistance in endoscopic surgery. Nurses will understand several major endoscopic surgery issues e.g. fluid balance in hysteroscopy, the pre-operative patient preparation, patient positioning. Quick nurse response during a difficult case will be demonstrated.

Experts in instruments and equipment management will teach and provide information and guidelines in cleaning maintenance and sterilization.

The on-site training will teach the nurses how to use several devices essential for MIS (training with work stations using simulators, minimally-invasive surgery instruments, equipment, training boxes for hysteroscopy).

Final training material for this learning module will be for on-site education: hysteroscopic instruments demonstrations, lectures with slides, videos.

H6. Digital Hysteroscopy Centre for Nurses

This learning module is aimed at Nurses to provide them with the knowledge and skills to prepare and support the surgeon in the Digital Hysteroscopy Centre (DHC).

This learning module is on-site. On-site training will consist in instrumentations demonstration, lectures with slides. This module will address Nurses.

Learning Objectives:

- Digital Hysteroscopy Centre Organization and Facilities
- Patient Workup and Management in the Digital Hysteroscopy Centre
- Equipment in Digital Hysteroscopy Centre
- Decontamination of Instruments

Type:

- On-site.

Target:

- Nurses.

Content:

Digital Hysteroscopy Centre Organization and Facilities.(Cf. H4)
Modern hysteroscopy represents a revolution for the diagnosis and treatment of uterine pathology. Traditionally hysteroscopy is performed in a conventional operating room under general anesthesia (in-patient hysteroscopy). Recent advances in technology and techniques made hysteroscopy less painful and invasive, allowing it to be performed in an ambulatory setting (outpatient hysteroscopy).

Patient admission to the ambulatory hysteroscopic care unit
It is recommended to interview patient online and at admission with careful anamnesis of all persons who should enter the facility.
One dedicated person in the facility is responsible for patient admission and the flow until the DHC room allocation..

Examination room rules of procedure
Examination rooms should be cleaned thoroughly starting a session of exams, including all surfaces of the infrastructure and instruments like computer keyboard and mouse, stretcher rails, door handles, cabinet knobs, light switches, chairs and countertops.

Limit the number of visitors in the examination room to a maximum of one and do not allow the presence of children, trainees or students. One doctor treats one patient at a time in the hysteroscopic room, and all rooms should be disinfected immediately after use. The patient bed or couch should be wiped with an LLD and only use disposable covers.

Patient Workup and Management in the Digital Hysteroscopy Centre
Patient workup for Digital Hysteroscopy in DHC includes pre-operative workup and OR management.

Pre-operative workup: clinical data collection, procedural information (correct and complete), informed consent. In particular, an email is sent from the Nurse / Administrative to the patient (or mobile phone contact) pertaining:

- Pre-operative tests if required and anamnestic information (blood tests, imaging, anesthesia checklist);
- Procedural information;
- Consent forms to be signed;
- Appointment date and time.

Examples of each essential document will be provided.

The day of the procedure, the Nurses of the DHC should:

- Prepare the OR and instruments for the procedure;
- Prepare patient rooms (cabins);
- Perform a preoperative consultation and if necessary blood sampling and pre op preparations;
- Assist the surgeon during the procedure;
- Perform the instrument post-operative care including final sterilization;
- Post operative care and discharge consultation.

A specific flowchart for each phase will be included in the lecture.

According to the volume of procedures in the digital hysteroscopy centre and managing choices, a nurse could be specifically dedicated to the pre-operative workup of patients and general centre administration. A minimal of 2 DHC trained nurses are necessary to run the DHC.

Equipment in Digital Hysteroscopy Centre
This chapter details Hysteroscopy Equipment in DHC for Nurses knowledge and practical skills building, including: Compact Hysteroscope, Mechanical tissue removal system, Bipolar resectoscope, 2/3D Ultrasound.

Decontamination of instruments
This chapter details the entire decontamination process and workflow from once the device is removed from the patient right through to being ready for the next patient.
It includes all auxiliary equipment, transport of the device between the patient and decontamination room, decontamination room layout and all the necessary components of a de-centralized decontamination facility. This chapter will address all questions in relation to a decentralized CSSD protocol using the Stella Sterilization System.
The method of decontamination incudes manual cleaning followed by sterilization utilizing the Stella Sterilization System. Stella is compatible with the instruments used within the clinic and the intended patient throughput.
Stella's fast turnaround time supports the objectives of an ambulatory clinic, allowing for optimal patient throughput and instrument use efficiency. The Sterilizing Agent used with the Stella Sterilization System is Tristel Fuse for Stella, a single-use chlorine dioxide-based ambient sterilant.

Final training material for this learning module will be for on-site education: lectures with slides, videos.

H7. Hysteroscopy for Equipment Operators

This learning module is aimed at Non-Clinical Staff to provide them with the knowledge and skills to prepare and support the surgeon during hysteroscopic procedures.

This learning module is on-site. On-site training will consist in instrumentations demonstration, lectures with slides and videos. This module will address Non-Clinical Staff.

Learning Objectives:

To familiarise trainees with:

- GESEA Educational Programme
- Hysteroscopy training tools
- Manual for tools

Type:

- On-site.

Target:

- Non-Clinical Staff.

Content:

GESEA Educational Programme (cfr. G3)

Hysteroscopy Training Tools

The European Academy of Gynaecological Surgery has developed a series of training tools (static simulation model) to increase the practical skill level needed by endoscopic surgeons to correctly perform basic endoscopic procedures.

The following training tools are currently used in GESEA Training and Diploma Centres for Hysteroscopy Training and Certification Sessions:

- HYSTT table model;
- HYSTT model exercise 1 (x3);
- HYSTT model exercise 2 (x3);
- Hysteroscope with 30 degrees optic;
- Hysteroscopic gasping forceps;
- Hysteroscopic Scissors;
- Coloured pins for HYSTT model (more of reserve);
- Pro Delphus artificial uterus.

Manual for Tools use in The GESEA Educational Programme

Hysteroscopic Skills Training and Testing (HYSTT)

HYSTT is a practical test to measure the competence level of an individual in basic hysteroscopic psychomotor skills (HPS) in the uterine environment. These typical skills need to be applied in a 'key- hole' situation, such as camera navigation and hand-eye coordination.

It uses the HYSTT model, representing the spatial distribution and orientation of the different planes and angles of a normal uterus, which is placed in a female genital model.

HYSTT is one of the three exercises used in the practical skill assessment of the GESEA Programme.

HYSTT models are evidence-based valid and cost-effective simulation tools for testing and training hysteroscopic psychomotor skills.

During the training session, the performance of HYSTT Exercises provides improvement in the trainers' psychomotor skills. Ensuring proficiency in validated exercises before entering the operating room is a fundamental educational step for maintaining highest standards of care in women's health (quality and safety).

Final training material will be for on-site education: lectures with slides, videos.

H8. Hysteroscopy for Training Specialists

This Learning Module is aimed at Trainers to provide them with the skills (technical and non-technical) to deliver training on hysteroscopic learning modules (theoretical knowledge and psychomotor skills).

This learning module is on-site. On-site training will consist in instrumentations demonstration, lectures with slides. This module will address Trainers.

Learning Objectives:
To familiarise trainees with

- GESEA Educational Programme Background;
- Technical Skills;
- Non-Technical Skills (Communication, Leadership).

Type:

- On-site.

Target:

- Trainers.

Content:
This learning module aims at training candidate Trainers to deliver teaching on hysteroscopic learning modules (theoretical knowledge and psychomotor skills).
Training specialists need: GESEA Educational Programme Background (GESEA Programme, Administration, Psychomotor Skills Tests), technical skills and non-technical skills (Communication, Leadership).
A complete Programme for Training Trainers including Training and Assessment is envisaged under ESGE advocacy.

Final training material for this learning module will be for on-site education: lectures with slides, videos.

H9. Hysteroscopy for Training Nurses

This Learning Module is aimed at Nurses to provide them with the skills (technical and non-technical) to deliver training on hysteroscopic nursing in the OR and outpatient settings.

This learning module is on-site. On-site training will consist in lectures with slides. This module will address Nurses.

Learning Objectives:
To familiarise trainees with

- Technical Skills (Anatomy, Patient Positioning in the OR, OR Organization and ergonomy, Endoscopic Units and Data Management in the OR);
- Management Skills (Digital Hysteroscopy Centre Management);
- Non-Technical Skills (Communication, Leadership).

Type:

- On-site.

Target:

- Nurses.

Content:
This learning module aims at training candidate Trainers Nurses to deliver training on hysteroscopic nursing in the OR and outpatient settings.
Nurses specialised in training need: Technical skills, Management Skills and Non-Technical skills (Communication, Leadership).

Final training material for this learning module will be for on-site education: lectures with slides, videos.

Robotics Learning Modules: Overview

ID	Title	Type	Target Group (TG)
R1	Robotics	Hybrid (online and on-site)	Specialist Professionals
R2	Robotics for Nurses	Hybrid (online and on-site)	Nurses
R3	Robotics for Training Specialists	Hybrid (online and on-site)	Trainers
R4	Robotics for Training Nurses	On-site	Trainers

Robotics Learning Modules: Content Summary

R1. Robotics

The Robotics Module is aimed at Specialist Professionals to provide them with the basic knowledge and psychomotor skills on robotic assisted surgery (RAS).

This learning module is hybrid (online and on-site). Online training material will be e-Learning describing basic robotics theoretical knowledge. On-site activities consist in psychomotor skills training and procedural training. It is envisaged to develop a standardised system of credentialing and certification of Robotics theoretical knowledge and psychomotor skills taught and trained in the Robotics Learning Module in the GESEA Educational Programme.

Learning Objectives:
To build trainees' knowledge and skills in the following areas:
Online

- General principles of robotic assisted surgery
- Evolution of RAS

- Global interest of RAS in Gynaecologic Surgery

On-site

- Psychomotor Skills Trainings (Simulators)
- Procedural Training (Simulators) (GUIDED)

Type:

- Hybrid (online and on-site).

Target:

- Specialist Professionals.

Content:

Online

General principles of robotic assisted surgery

This lecture will describe fundamental principles of RAS and different philosophical approaches to RAS.

Evolution of RAS

This lecture will detail history of robotics and introduction of robotic assistance in surgery.

Global interest of RAS in Gynaecologic surgery

This lecture will define application of robotic assisted surgery in gynaecology (indications, procedures) and safety principles in RAS.

On-site Training

a. **Psychomotor Skills Training**

Aim:

To practice simulation-based training with a structured number of simulation exercises in a robotics simulation based training facility.

Procedures:

The following exercises and considered fundamental for psychomotor skills attainment:

- Sea Spike / Peg board (depending on the simulator);
- Wrist articulation;
- Clutch;
- Energy pedal/ Use of energy (depending on the simulator);
- 4th arm cutting;
- Camera targeting.

The proficiency in the abovementioned exercises execution will ground the credentialing and certification method envisaged in the GESEA Educational Programme for Robotics.

In case of demand or need of further skills training, additional training exercises could be used:

- Knot tying;
- Puzzle piece dissection;
- Roller coaster;
- Tower transfer.

Tips & Tricks
Exercises must be completed and safety feature assessment will be made in order to provide improvement advice by the training team.

b. Procedural Training (Guided)

Aim:
To gain insight on robotic assisted procedures in gynaecological surgery (guided).

Procedures:
RAS Procedural Training modules should include:
- Oophorectomy (guided);
- Hysterectomy (guided).

R2. Robotics for Nurses

This learning module is aimed at Nurses to provide them with the knowledge and skills to prepare and support the surgeon in the operating room during robotic assisted procedures.

This learning module is hybrid (online and on-site). Online training material will be e-learning describing basic robotics theoretical knowledge for nurses. On-site activities consist in psychomotor skills training and procedural training.

Learning Objectives:
To build trainees' knowledge and skills in the following areas:
Online
- General principles of robotic assisted surgery
- General principles of nursing for RAS
- General principles of 1st assist for RAS, team communication, specific robotic cautions, external assistance in case of trouble shooting
- Emergency procedure

On-site
- Serious game on secured communication
- Access to a simulator and Training
- Technical training on a robotic system (if available)

Type:
- Hybrid (online and on-site).

Target:

- Specialist Professionals.

Content:
Online Training:

General principles of robotic assisted surgery
This lecture will describe fundamental principles of RAS and different philosophical approaches to RAS.

General principles of nursing for RAS
This lecture will detail room setting specificities, patient positioning for RAS, Team communication skills.

General principles of 1st assist for RAS
This lecture will describe general principles of first assist in RAS, team communication, specific robotic cautions, external assistance in case of trouble shooting

Emergency procedure
This lecture will detail emergency procedures in RAS.

On-site Training:

Aim:
To approach simulation-based training in a robotics simulation based training facility.

Procedures:

Serious game on secured communication
The creation of a communication exercise is envisaged.

Access to a simulator and Training
This activity includes access to simulator for RAS and the execution of exercise 1 (sea spike or peg board). This will emphasize RAS interest and restrains in gynaecologic surgery.

Technical training on a robotic system (if available)
This activity will be system specific and depending on the possibility to access to a robotic system.

R3. Robotic for Training Specialists

This learning module is aimed at Trainers (Surgeons Certified in RAS with a current clinical practice in RAS) to provide them with the knowledge and skills to teach and train on robotic assisted procedures in gynaecological endoscopy and to provide guidance and accurate expertise during the R1 module.

This learning module is hybrid (online and on-site). Online training material will be e-

Learning describing theoretical knowledge for Trainers in Robotic-Assisted Surgery (RAS). On-site activities consist in technical and non-technical skill building activities for Trainers.

Learning Objectives:
To familiarise trainees with:

- GESEA Educational Programme Background;
- Technical Skills;
- Non-Technical Skills (Communication, Leadership).

Type:

- Hybrid (online and on-site).

Target:

- Trainers.

Content:
Online:

Principle of secured communication;

Principles of safety assessed by simulation exercises;

Introduction to Proficiency based progression training;

Introduction to GESEA Robotics level 2 (tips and tricks about exercises);

Lecture on interest of validated data collection on simulation exercises.

On-site Training:

Introduction to the TTT course principles;

Serious game on communication with trainees (assessing different interaction situations) during a R1 module;

Robotic simulator (Exercises similar to R1): emphasizing on safety aspect and improvement margin;

Additional exercises on procedural training and advanced robotic skills;

Technical training on trouble shooting with the simulator;

Specific training on coaching a R1 session and GESEA robotic level 2 module (step by step process).

R4. Robotics for training Nurses

This learning module is aimed at Nurses, certified in RAS, to provide them with the knowledge and skills to teach and train on nursing during robotic assisted procedures in gynaecological endoscopy and to provide guidance and accurate expertise during the R2 module.

This learning module is on-site. On-site training material will be lectures with slides and videos.

Learning Objectives:

To build trainees' knowledge and skills in the following areas:

- Technical Skills (Technical Aspects of the main systems available, Principles for safety in RAS);
- Management Skills (OR Management);
- Non-Technical Skills (Communication, Leadership).

Type:

- On-site.

Target:

- Nurses.

Content:
On-site Knowledge:

- Principles of secured communication.
- Principles for safety in RAS.
- Technical aspects of the main systems available.

On-site Training:

Serious game on communication with trainees (how to get attention and how to deal with disruptive communication situation);

Simulation session to organise OR settings and relationship with surgical and anaesthetic team;

Access to a simulator for 3 simulation exercise to help understanding benefits and restrains of RAS;

If access to a robotic system, technical insight.

Final training material for this learning module will be for on-site education: lectures with slides, videos.

Next Steps

The 27 Learning Modules described in this Deliverable represent the current position of the GESEA Training Programme at the end of M4 of the GESEA4EU project.

All Training and Diploma Centres in the Consortium have been actively involved in the definition of the summary of the Training Modules by means of group meetings, qualitative and quantitative data collection and analysis and online consultations for feedback and consensus achievement.

All the Consortium Partners will be involved in the expansion and elaboration of the learning objectives identified in the Learning Modules in order for them to become the GESEA4EU Training Programme, completed with training materials (slides, lectures, teaching guides, videos etc.) by M9.

The Training Programme will be ready for Training Activities as planned in WP3 (M9-M19) and for Assessment and Validation as planned in WP4 (M10-M23).

Annex 1 Training Tools

Training Tools currently in use in the GESEA Training and Diploma Centres for Training Sessions

Hysteroscopic Skills Training and Testing (HYSTT)

- Storz:
    - Telepack + camera + lightcable
    - Telescope 2,9 mm
    - Operative sheath
    - Outer sheath
    - Grasping forceps
    - Scissor
- Hystt models Exercise 1
- Hystt models Exercise 2
- Artificial Uterus
- Table Holder
- Long Vagina
- Hystt pins
- Transparent target sheet

Suturing and Knot Tying Training and Testing (SUTT)

- Storz:
    - Telepack + camera + lightcable
    - Telescope 10 mm 0°
    - Needle holder left – right
    - Metzenbaum scissors

Trocar 6 mm

Trocar 11 mm

Szabo Trainer

- Foam base + pins
- Metal base + artificial suturing pad
- Vaginal cuff model
- Sutt pads:

  Sutt 1 for certification and training

  Sutt 2 for certification and training
- Sutures:

  Polysorb 2.0 (multifilament)

  Caprosyn 2.0 (monofilament)

Laparoscopic Skills Training and Testing (LASTT)

- Storz:

  Telepack + camera + lightcable

  Telescope 10 mm 0°

  Telescope 10 mm 30°

  Trocar 6 mm

  Trocar 11 mm

  Kelly grasping forceps

  Matkowitz grasping forceps

  Szabo trainer
- Lastt model + rings + pins
- Transparent target sheet

E-Knot

- USB HD camera

- Academy metal base
- Artificial suturing pad
- Camera tower
- 2 x mobile pole
- 2 X mobile tower
- Rubber foot with butterfly nut
- 5 x Gesea Sutt 1 pad for training
- 5 X Gesea Sutt 2 pad for training
- USB stick training programme
- 10 X Polysorb 2.0

Annex 2 Teaching Advice/ Guide

This short guide could be piloted in the GESEA4EU training sessions commencing in M9.

This is the result of the experience in Training activities organised by Training and Diploma Centres in the Consortium.

TEACHING ADVICE/TEACHING GUIDE

for Trainers/Mentors during GESEA Training and Certification Sessions

Check all the station setting

Every station must be checked before starting the training/testingsession. All the tools must be in the correct place and all the instruments must be checked. Eventually be ready for an unexpected event or a break of an instrument

Explain the instrument ergonomics

Explain the instrument ergonomics at the beginning of the session. Check the position of thehand on the handle and correct it, if necessary.

Reason: Correct ergonomics leads to a better understanding and use of the tools.

Explain the rules

Explain the rules of each task before starting. Observe closely the rules foreach task and don't let the trainee "invent" or improvise during his exercise.

Reason: Rules and tasks are designed to train specific skills. Any variation or departure from the exercise could alter its original aim and result to a negative training.

Watching the screen

Ensure that the trainees are not looking inside the box instead of watching the screen. If this happens, cover the box with a sheet of paper.

Reason: Among the main aims of basic skills training is the achievement of proper hand-eye coordination.

Think and relax

Remind the trainee to think and relax during the exercises.

Reason: Speed is not the final aim. Quality and precision often make the difference.

Time the exercises

Time the exercises whenever possible. Reason: This will give the trainee a sense of improvement in performance during the session

Reasoning

Ask the trainee for the reason of each manoeuvre.

Reason: Prompt the trainee to carefully think about what he or she is doing for them to fully understand and optimize the movements for each manoeuvre (economy of movement).

Training vs Certification rules

During training session, you can let people talk and help each other but during certification session they cannot.

Checks:

- Check the position of the trainee (shoulders down, elbows at 90°, feet as wide as the shoulders to provide stability)

Reason: During this task you can eventually suggest to the participant to use a step to work comfortably for the rest of the session. This highlights the importance of a relaxed, comfortable and ergonomic body position during laparoscopic surgery.

- Check the focus of the camera (not on auto-focus camera)

Reason: The Camera Handling Training (if performed as first task) often requires focus switching.

- Ask the second trainee to hold the camera.

Reason: This will involve both participants and can be also useful to explain to the trainees the most comfortable position for the operator and the cameraman.

- Stop the trainee if you see that he's not using the right hand or he's doing incorrectly the exercise. Ask him to perform the exercise correctly.

Reason: In line with standardization and rules

Annex 3 Questionnaire

GESEA4EU | WP2 | TRAINING IN GYNAECOLOGICAL ENDOSCOPY

Q1. NAME OF THE PERSON COMPLETING THE SURVEY:

(CHIEF MENTOR OF THE CENTRE)

PART A

TRAINING PROGRAM REQUIREMENTS

TRAINING NEEDS

Q2. We need a standardised training curriculum for gynaecological endoscopic surgery

Q3. Simulation based training should be a component of training pathway

Q4. Results should be included in EBCOG Project for Achieving Consensus in Training (EBCOG-PACT)

e- LEARNING

Q5. Completion of e-modules is a practical way to develop theoretical knowledge

Q6. Completion of e-modules is necessary to access hands on training

Q7. Video library is an important tool to improve practical knowledge

SIMULATION BASED TRAINING

Q8. Simulation is recommended before trainees are allowed to assist in surgery on real patients

Q9. Simulation training would be useful for developing technical and non- technical skills before operating on patients.

Q10. Simulation in a wet lab is recommended if available

FELLOWSHIP

Q11. A fellowship period in an accredited training centre should be recommended

Q12. In which step of the modular training system (basic, intermediate, advanced) a fellowship should be recommended

Q13. A fellowship duration should be at least: 3m 6m 12m 18m 24m

GESEA METHOD FOR TRAINING AND ASSESSMENT

Q14. GESEA assessment tools are a good method for skills assessment

Q15. A modular training system involving basic, intermediate, and advanced steps should be followed.

Q16. Stepwise modular exercises and corresponding assessment is an effective learning pathway

Q17. Anonymous video accreditation is a good method for advanced skills assessment

Q18. Independent surgery should only be allowed after surgeons have attained certification

Q19. Robotics should be part of MIGS curriculum

Q20. Simulators are a good tool to assess psychomotor skills in robotic surgery

PART B

TRAINING PROGRAM CONTENTS

GENERAL

Q21. Trainees should be able to perform remote or hybrid consultations

Q22. Motivation, leadership, decision-making and communication are key skills and they should be addressed

Q23. Trainers should perform live demonstrations of all on-site activities

Q24. Trainers should receive training and accreditation in effective teaching skills

Q25. Specific learning modules are required for nurses assisting gynaecological endoscopic procedures

Q26. Suturing online courses should be included in training modules

TRAINING DURATION

Q27. How long should training in basic laparoscopy last (days)

Q28. How long should training in intermediate laparoscopy last (days)

Q29. How long should training in basic hysteroscopy last (days)

Q30. How long should training in intermediate hysteroscopy last (days)

VIRTUAL REALITY SIMULATORS

Q31. In which level of the modular training system (basic, intermediate) VRS should be included

Q32. Virtual reality (VRS) should be used to implement basic skills assessment (suturing)

Q33. Virtual reality (VRS) should be used to implement intermediate skills assessment (procedures)

LAPAROSCOPY TRAINING

Q34. Select the topics you consider necessary for theoretical knowledge (Basicl Level)

Understanding laparoscopy and basic rules

Laparoscopy instrumentations

Anatomy from laparoscopic point of view

Suturing basics

Suturing: loading the needle

Suturing: intracorporeal knot

Use of energy

Ways of entry

Exposure techniques

Complications

Suggestions (if any):

Q35. Select the topics you consider necessary for theoretical knowledge (Intermediate Level)

Total laparoscopic hysterectomy

Myomectomy

Chronic pelvic pain and anterior ligamentopexy

PID and Tubal surgery

Ovarian/Adnexal Tumors

Laparoscopy in emergency

Endometriosis for Gynaecological Surgeons

General principles of v-NOTES

Adhesiolysis

Suggestions (if any):

HISTEROSCOPY TRAINING

Q36. Select the topics you consider necessary for theoretical knowledge (Basic Level)

Principles of Hysteroscopy

Hysteroscopy instrumentations

Office Hysteroscopy

Anatomy from hyteroscopic point of view

Fluid management

Biopsy

Hysteroscopic complications and management

Abnormal uterine bleeding

Suggestions (if any):

Q37. Select the topics you consider necessary for theoretical knowledge (Intermediate Level)

Myomectomy (G1, G2)

Polipectomy

ESGE U1-U2a Uterine Malformations

Endometrial Hyperplasia

Q38. Select the topics you consider necessary for theoretical knowledge (Advanced Level)

Adenomyosis

Asherman's Syndrome

Advanced Technology

Myoma (FIGO Type 3, 4)

Oncology

Complex congenital malformations

Ultrasound training