Interventions in pulmonary medicine (thoracentesis, bronchoscopy, advanced techniques) are important for both diagnostic and treatment purposes for a wide variety of pulmonary diseases.

Various methods are available to transfer knowledge of procedural skills such as: text books, DVD’s, and hands-on workshops. However, witnessing a real time approach of a common clinical case by an expert, with the help of existing audio visual technologies is an important tool in education and training that is valued by participants.

**ORGANISERS**

Prof. Dr J.T. Annema is responsible for the live endoscopy programme and is in charge of the Academic Medical Center (AMC) Amsterdam site

Dr D. Slebos is in charge of the University Medical Center (UMCG) Groningen site

**FORMAT OF THE LIVE ENDOSCOPY**

The endoscopy programme is split into four sessions, which include:

1. Lung cancer
2. Interstitial lung and pleural diseases
3. Emphysema and asthma
4. Transthoracic ultrasound

Each individual session will consist of four parts

1. **Opening lecture from Chair**
   - In the introductory lecture, the topic will be introduced, the available techniques and associated indications will be discussed.
2. **Live demonstrations**
   - Case presentation, clinical questions, case history, key radiological images and learning objectives
   - Procedure - a live demonstration will be performed by an international expert, a second expert stands next to him/her. Both experts can communicate with the Chairs during the investigation and the audience can hear their explanation. 
     *Process repeated for each case*

   *The audience will experience the: video of the room, endoscopy image, ultrasound images (when applicable), fluoroscopy image (when applicable), live explanation by the Moderator and Operator, discussion between Chairs and the experts in the operating room, pathology material obtained, on site cytological evaluation.*

3. **Interactive MCQ session and summary of questions from the audience (provided electronically)**
   - The audience will be able to interact with the Chairs of the session electronically, using their own portable devices or those provided onsite. Although the audience will not have a direct link to the operating room, any questions can be channelled via the Chairs of the session.

4. **Closing lecture from second Chair**
   - In the closing lecture, the techniques under discussion will be put into perspective (key studies will be briefly presented) and position of the various techniques in clinical algorithms will be addressed.

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**PROGRAMME**

1. **Lung cancer**
   Endosonography (EBUS and EUS) has become an important tool to help clinicians in the diagnosis and staging of lung cancer. Techniques to be demonstrated are: bronchoscopy, TBNA, cryobiopsy, EBUS-TBNA, EUS (B) - FNA, EUS-FNA and radial EBUS.

2. **Interstitial and pleural diseases**
   Endoscopy procedures can be helpful in diagnosing sarcoidosis and various other interstitial lung diseases. Techniques to be demonstrated are: bronchoscopy with BAL, TBNA and TBLB, peripheral cryobiopsies, EBUS-TBNA and or EUS (B) - FNA. 

   Pleural diseases are frequent for both malignant and infectious/inflammatory diseases. Thoracoscopy is the standard technique for the diagnosis of pleural diseases. Techniques to be demonstrated are: both flexible and rigid thoracoscopy.

3. **Emphysema and severe asthma**
   Innovative endoscopic techniques provide novel treatment options for patients with severe emphysema/asthma. Techniques that will be demonstrated are: endobronchial valves chartis measurements, endobronchial coils, bronchial thermoplasty.

4. **Transthoracic ultrasound**
   Transthoracic ultrasound is a helpful tool for investigating clinical problems such as suspected pleural fluid, white hemi thorax, atelectasis, empyema, and diaphragm function analysis. This session will demonstrate some of the most common investigations carried out using transthoracic ultrasound.
THE TEAM AND ROLES
The description of roles has been based on the live endoscopy events position statement prepared by the European Society of Gastrointestinal Endoscopy.

AMC and UMCG hospitals

1. Local organising committee
   - Medical doctors with the overall responsibility for the live endoscopy

Endoscopy room

2. Patient
   - Recruited by the AMC and UMCG
   - Consent will be sought prior to the live event

3. Patient advocate
   - Independent advisor acting on patients behalf
   - This specialist doctor is present in the endoscopy room during the investigation
   - The advocate ensures that the patient is always receiving the best care and has the authority to stop the procedure at any time

4. Operator
   - Person performing the procedure
   - Is an expert in the field, does not necessary come from the local hospital
   - Has the discussed the case in detail and review all necessary medical information (medical history/ radiology) prior the procedure

5. Moderator
   - Person supporting the Operator in the endoscopy room
   - Provides comments and questions to the Operator
   - Is an expert in the field, does not necessary come from the local hospital

6. Local staff
   - Support team onsite including: specialist doctors, nurses, anaesthesiologist, and other support staff
   - A local staff doctor is present at all times during the investigation
   - Managed by the organisers at each site

Control room and case room

7. Control centre (AMC only)
   - Is the link between all sites (conference, and all AMC and UMCG operating rooms)
   - Trained medical doctor that decides which procedure/case will be transmitted in the lecture room at the conference centre
   - In charge of communicating with the case presenter

8. Case presenter (AMC only)
   - Provide a live overview of each case for the delegates in the conference centre before the procedure is started

CONFERECE CENTRE

9. Chair
   - There are 2 Chairs per session
• Crucial role in providing a link between the auditorium and the AMC
• Each Chair will provide a brief lecture either to open the session or to conclude it
• It is important to keep to time schedule
• Will be in charge of the interaction with the audience

10. Audience
• Up to 1700 delegates can attend the session
• Can answer multiple choice questions and interact with the faculty using interactive feedback system

11. Communication specialist
• Is the key link between the conference centre and the AMC control room
• Will communicate by telephone throughout the entire day

12. ERS support staff
• Provide technical, administrative and logistic support prior to the session and onsite

ETHICAL CONSIDERATIONS
This event will follow the rules and recommendations as formulated in the 2014 ESGE guideline for ‘Live Endoscopy Events’ (LEEs) and the procedures will be performed according to the highest standards. To summaries the guidelines the organisers will ensure that:

• There is a clear indication for each procedure
• Informed consent for both procedure and live demonstration is obtained
• An expert with experience in live demonstrations will perform the procedure
• An AMC (or UMCG) local physician will be present in the endoscopy suite
• A patient advocate is appointed, this is an independent expert with full knowledge of the case, who speaks the local language, who will follow the procedure in the endoscopy suite
• The patient advocate has the authority to intervene and stop the procedure if he/she argues something happens that might harm the patient
• Complications and adverse events are duly monitored.