In Denmark, 0.8% of the population is diagnosed with pneumonia and admitted to hospital each year. Extrapolating these numbers to the US and EU, 0.008 x 835,000,000 = 6.7 million are hospitalized each year due to pneumonia in the US and EU.

Approximately 0.7% (47,000) of patients with pneumonia develop empyema. Studies have found that medical thoracoscopy treatment has been effective for complicated parapneumonic effusion treatment for approximately 90% of patients (7,8).

Early empyemas can effectively be treated with the KatScope by suction and salvage.

**Mediastinal tumours** can in many cases be diagnosed by the KatScope by medical thoracoscopy.

**Laparoscopy**

Several hundred thousand laparoscopies/laparotomies are carried out in the western world every year.

In a substantial portion of these cases, a more simple setup such as the KatScope procedure could provide answers to the questions that are posed in the diagnostic phase.

A literature search by SurgeryTech indicates that the KatScope has the potential to be the first choice in up to 500,000 procedures every year in the US and EU.

**IPR - PATENTS**

The patented KatScope invention includes a method and a sterile single-use device for both laparoscopic or/and thoracoscopic single-port procedures within a body cavity, such as the pleural or abdominal cavity of an animal or a human being.

**STRATEGY**

SurgeryTech has developed and introduced a new medical single-use device for both laparoscopic or/and thoracoscopic single-port procedures. Its benefits and values have been demonstrated, and it is foreseen that the KatScope method will be the preferred method for both laparoscopic or/and thoracoscopic single-port procedures in the future.

SurgeryTech ApS, a privately owned company controlled by inventors, is now looking for partners and/or organisations who are able to bring the KatScope to the market.

The KatScope project is offered for sale to a third party e.g. as an asset deal with an up-front payment (primary) and a royalty-bearing agreement (secondary) or as a one-off deal structure.

The inventors offer, as a separate agreement, to assist the acquiring party under a consultancy agreement.

Further information/documents can be forwarded after signing of a CDA.

**REFERENCES**

The KatScope is a sterile **single use device** for both laparoscopic or/and thoracoscopic procedures.

The SurgeryTech KatScope provides for safety and minimally invasive procedures with a simple and cost-effective setup. These features, combined with maximum applicability, accessibility and flexibility, were the keywords in developing the KatScope.

**SINGLE USE**
The sterile, disposable KatScope developed by SurgeryTech is designed for a simple setup with a single-port technique that enables the surgeon to perform less complex diagnostic or therapeutic thoracoscopic and/or laparoscopic procedures such as salvage/suction, biopsies and talc administration. The sterile packaging prevents inaccurate and time consuming cleaning procedures and minimizes the risk of cross-contamination and hospital-acquired infections. Waiting time for repairs of damaged equipment is avoided.

**ERGONOMIC DESIGN**
Due to its ergonomic design, the SurgeryTech KatScope promotes safe and accurate guidance of the scope throughout the pleural and/or abdominal cavity. The handle enables the surgeon to guide the scope in all directions. The tip of the scope has a bending feature as known from broncoscopes.

**MINIMAL SET UP**
The single-port technique facilitates the use of KatScope for medical thoracoscopy or bedside laparoscopy with a minimal setup for less complex thoracoscopic/laparoscopic procedures. In many cases, the procedure can be performed under local analgesia and/or sedation. The minimal setup is cost-effective and fewer hospital personnel are needed compared to traditional procedures. The portable video screen makes the system highly flexible and portable.

**CO2 INSUFFLATION**
CO2 inflation is an option to improve inspection of the thoracic and/or abdominal cavity. The KatScope is applicable with known CO2 insufflation/exsufflation equipment.

**SUCTION AND SALVAGE**
A large air/water nozzle channel provides more powerful suction and salvage of infectious liquids with less tendency of clotting compared to regular endoscopic devices (e.g. bronchoscopes, colonoscopes). The large air/water nozzle channel is very useful for evacuating thick liquid (such as empyema or coagulated blood).

**BIOPSIES**
Large biopsies of malignant, benign or infectious lesions can be performed. Larger biopsies can be performed due to the large working channel compared to regular endoscopic devices.

**PLEURAL TALC ADMINISTRATION**
In patients with pleural effusion, administration of talc slurry significantly increases the chance of pleuradesis compared to catheter indwelling alone, among patients with no substantial lung entrapment (1). Talc pleuradesis is a well-described procedure for benign and malignant pleurisy (2). A success rate of 78% by medical thoracoscopy and talc pleuradesis in malignant pleurisy has been documented. Talc slurry can be effectively administered throughout the entire pleural cavity through the KatScope working channel.

**THE MARKET**
The KatScope has a substantial market potential. Medical thoracoscopy (thoracoscopy under local anaesthetic and intravenous sedation) is increasingly being performed in many countries. According to The British Thoracic Society guideline for medical thoracoscopy, the procedure is increasingly being performed by chest physicians in the UK (5). In 1999, 11 centres across the UK offered a local anaesthetic thoracoscopy service, increasing to 17 centres in May 2004 and 37 centres in 2009.

**BEDSIDE LAPAROSCOPY**
Bedside laparoscopy can be performed for biopsies in suspected peritoneal carcinomatosis from gastrointestinal or ovarian cancer. In addition, diagnostic bedside laparoscopy can be indicated in the ICU in extremely ill patients. 55% of laparotomies among these patients can be avoided by performing bedside laparoscopy (3). A future possibility could be the combination of KatScope diagnostic laparoscopy and intraoperative indocyanine green fluorescence angiography for the early detection of intestinal ischemia not detectable by CT scan (4).

**PLEURAL EFFUSION**
Affects more than 750,000 patients across the EU and USA each year (1). Roughly 60% are diagnosed by pleural aspiration. The remaining 40% of patients could benefit from the KatScope for further diagnostics. The number of potential KatScope thoracoscopies/year in US and EU for pleural effusion alone would be: 0.4 x 750,000 = 300,000 thoracoscopies in the US and EU/year.

**Recurrent pleural effusion** can in many cases be prevented by admission of talc slurry in the pleural cavity (6). The KatScope can effectively be used for talc administration throughout the pleural cavity.

**Pleural empyema** (purulent liquid in the pleural cavity) is a relatively common condition developing in about 0.7% of patients with pneumonia.

---

**Single use device for laparoscopic or/thoracoscopic procedures means:**

- Safe and minimal invasive procedure
- Minimal set up
- Ergonomic design
- No reprocessing
- No cross contamination
- No availability issues
- Cost effective