

The aim of the APPLAUS-study is to investigate, whether patients suffering from diseases of the pleura (i.e malignancy, infection, fluid accumulation or a collapsed lung) receives a superior treatment, when their health care professional has a clinical decision-making tool available to them. We aim to develop a smartphone-app, which will be based on recent, internationally published guidelines, to aid the medical professional in supplying guideline-based treatment to their patients. It is our hope that this will result in a decrease in hospitalization time, a conversion from admission to ambulatory management, a reduction in the need of rescue surgery as well as an increase in overall survival – all which will benefit the patients, but also the Danish national health service.

Healthcare professionals without specialist knowledge in this area, treat the majority of patients with diseases in the pleura (including malignancy). For example emergency doctors, non-pulmonologists and surgeons. With this app, we aim to equip health care professionals with the needed specialist knowledge.

Fluid accumulation in the pleural space is called a pleural effusion. If the etiology is cancer, then it is referred to as a malignant pleural effusion (MPE). MPE affects roughly 4.000 patients/year in Denmark and lung cancer is the most frequent cause. It is a condition, which is associated with a great disease burden, a reduced quality of life as well as a reduced life span. For the health care system, MPE results in frequent admissions to hospitals and a repeated need for insertion of chest tubes in order to remove the accumulating fluid in the pleural cavity.

A survey conducted by the Danish Thoracic Society indicates that MPE is treated inconsistently and subpar to international standards, among Danish hospitals. This can result in unnecessary hospitalization and surgical procedures (i.e chest tubes) and increased time for diagnosis and targeted treatment – increasing the use of resources in the health care system.

The clinical decision making tool, which will form the basis of the app, will be developed in close cooperation with international experts. The decision-making algorithms will be evaluated by an expert panel from the European Respiratory Society. The app itself will be developed with help from a professional software company. We plan to make the app available both nationally and internationally. When finalized, the app will be implemented in a randomized, clinical trial in Denmark, including 10 hospitals in all 5 regions and including 828 patients.

We expect that the app can be implemented easily in Danish emergency departments, as well as other departments who treats people with pleural diseases.