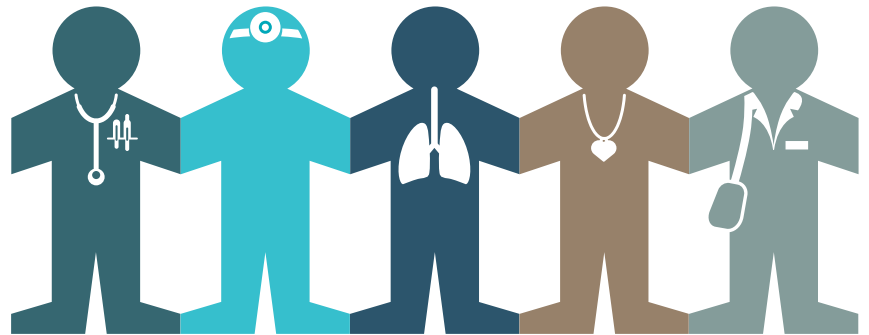


TeleCare North



General Practitioner

Hospital

COPD Patient

Family Members

Municipality

Large-scale telemedicine

Large-scale Project with Grand Ambitions

Denmark has made many advances in telemedicine, but in many instances the fascinating visions have never amounted to more than just promising, one-off pilot trials.

TeleCare North is an ambitious, large-scale telemedicine project where we go further by offering telemedicine to all COPD patients in North Jutland who could benefit from it. Initially, however, the project is aimed at patients with severe COPD (according to GOLD criteria) who could benefit from the project's solutions.

The promising results produced by Telekat – a previous research project targeting COPD patients – fuel our expectations of TeleCare North's benefits as it will enable us to improve patients' quality of life and reduce costs in the healthcare service at the same time.

The anticipated social and human benefits from this investment have also secured widespread support for the project: from all North Jutland municipalities, the North Denmark Region as well as hospitals, general practitioners, a patient advocacy organization and Aalborg University.

A large-scale project like TeleCare North where all healthcare professionals in the system engage in interdisciplinary telemedicine collaboration – not only concerning the patient but also involving the patient – is the first of its kind in Europe and also explains why the project is being closely monitored in Denmark and abroad. Yet the project is also challenging:

Setting a goal of health equality and turning the patient from a passive recipient of services into an active team player makes big demands on everyone involved. Unprecedented types of collaboration must be established, new support and service functions must be set up for patients and their families, work routines must be changed, patients must be brought into the process and they must provide their own data. In short:

Everyone must learn something new and be willing to change. It is a tall order. But in North Jutland we believe we can do it! We know that it requires a high degree of mutual trust, but everyone involved has entered into the project with a common wish that if we all work together, it simply MUST succeed. We will see whether we have achieved our goal when the project concludes at the end of 2014.

COPD

Chronic Obstructive Pulmonary Disease (COPD) is the chronic breakdown of lung tissue. COPD is frequently caused by smoking (15–35% of all smokers develop COPD), but it can also be caused by other factors. Some 430,000 Danes are afflicted

with COPD and more than 40,000 hospitalizations a year are related to COPD. COPD kills 3,500 Danes a year.

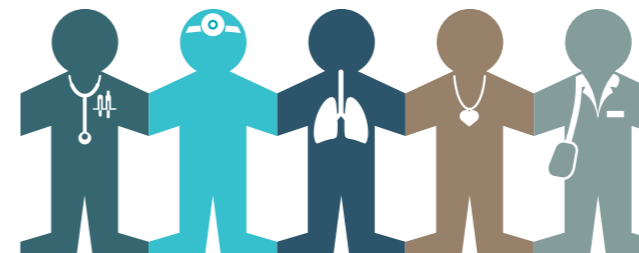
Source: National Institute of Public Health



Dorte Stigaard
Chairperson,
Steering Committee
TeleCare North



Bente Graversen
Vice-chairperson,
TeleCare North



"TeleCare North is a viable large-scale project because all eleven North Jutland municipalities, the North Denmark Region and GPs are eager to engage in this constructive collaboration – and because Aalborg University and a patient advocacy organization are taking part in the project.

As the establishment and development of local healthcare services is challenging for the municipalities, telemedicine solutions will help to overcome this challenge.

We hope to be able to document the trends observed and lessons learned during the Telekat research project, in order to increase our level of service vis-à-vis COPD patients and subsequently to other patients with chronic diseases. We also intend to use telemedicine to create efficient, well-run and profitable health-economic solutions."

Leif Serup
CEO Department of Health & Care
for the elderly and disabled
Hjørring Municipality

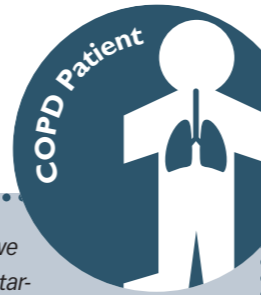
Quality of Life is Paramount

Many COPD patients lead lives shrouded in anxiety and worry. They feel anxious when they have difficulty breathing and they worry about getting pneumonia and having to be hospitalized – again.

COPD patients' family members are often just as affected, because they feel incapable of helping a suffering family member. Patients and families know that there is no cure for COPD. Knowing that it will not get better – only worse – makes it difficult to keep up their spirits and maintain their quality of life. For this reason, TeleCare North is notably a project which puts patients first. Patients and family members are active team players in the project and their wishes and the lessons they learn along the way are crucial.

In order for TeleCare North to be successful, it needs to develop and test solutions which are not only easy to use by the patients in their daily lives, but also increase patients' ability to manage their own disease and empower them to make their daily lives more rewarding.

Many will point to the socioeconomic benefits of telemedicine. But the biggest benefit of all will be if COPD patients feel empowered and feel that they have improved their quality of life.



"At the Danish Lung Association, we are pleased that TeleCare North targets patients with COPD. Besides having a severe lung disease, this group of patients experience frequent hospitalization because they suffer from other illnesses which further undermine their quality of life.

We hope that the project will help to develop the technology and educational environment for both patients and healthcare professionals which will empower patients to retake responsibility for their own lives. And that the project will also empower family members by enabling them to make a difference for the patient.

The knowledge and experiences gained in TeleCare North will benefit other groups of patients with chronic diseases, such as heart patients. There is no question that telemedicine has enormous potential, also in relation to rehabilitation."

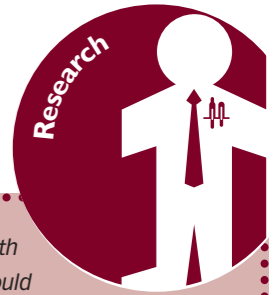
Anne Brandt, Managing Director
Danish Lung Association

From telemedicine pilot trials to large-scale project

About 4,500 residents of North Jutland suffer from severe COPD. Offering telemedicine to these patients – regardless of where they live in the region or their level of daily IT skills, for instance – is an enormous challenge. This also explains why TeleCare North is being monitored both in Denmark and abroad.

But the project's more interesting aspect – from a research perspective – is the possibility of conducting a randomized controlled trial. Drawing of lots among COPD patients to see who will be provided with telemedicine first makes it possible to set up the world's largest randomized telemedicine trial, where patients not drawn in the first round can become the control group, and enables us to learn more about telemedicine's impact. The control group will also be offered telemedicine, of course, just later in the project.

The goal is to find the most efficient telemedicine solutions and transform them into a general healthcare provision to any patients in the region who could benefit from it – even after the project ends in 2014.



"The potential of the TeleCare North project is enormous: not only could it improve patients' health, it can also heighten the quality of their care pathways – and ultimately reduce our healthcare expenditure.

Although higher quality usually costs more, the interesting aspect of this project is notably its potential to save money.

To us at Aalborg University, it is interesting to work with applied research which can make a difference, not just in a purely scientific context, but by directly affecting a group of patients. And this type of large-scale project is viable in North Jutland for the very reason that we have a tradition of working across sectors and interests."

Lars Ehlers, Professor of Health Economics
Department of Business and Management,
Aalborg University

Telemedicine

Telemedicine involves the use of information and – not least – communications technology in healthcare services. In practice a COPD patient could take his/her own blood pressure and have the device send the results – over a mobile phone, for instance – to a

healthcare database accessible by his/her GP, hospital and home-care nurse. Telemedicine gives patients a number of technological tools to help him/her better cope with his/her illness.

Randomized controlled trial

In a randomized controlled trial, lots are drawn among the participants to determine who will be offered treatment and who will join a control group for comparison purposes. A randomized trial is based on

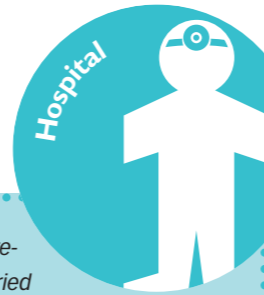
the idea that the only significant difference between two groups of patients is their form of treatment.

Health Economic Gains in Sight

It is estimated that 430,000 Danes suffer from COPD, and not surprisingly the most severely afflicted COPD patients weigh heaviest on the healthcare budget. Each year, 13,000 Danish COPD patients are hospitalized, accounting for 150,000 bed days and 30,000 out-patient visits. This makes COPD the most frequent cause of hospitalization in medical wards. In addition, almost one-fourth of these patients are re-hospitalized within one month of discharge. Almost half are hospitalized with the same diagnosis within one year. At the same time, there is a blatant social imbalance in health and disease.

Therefore, there is a great potential from a health-economic perspective to prevent hospitalization and re-hospitalization by improving patients' ability to take care of themselves and their disease and at the same time ensuring that domiciliary care services, homecare nursing and GPs work together to prevent the patient from becoming so ill that he/she requires hospitalization.

Hospitalization is unavoidable. But if the rate of hospitalization can be reduced, this will not only be economically beneficial for society but will greatly benefit the individual patients' quality of life as well.



"We took part in the Telekat re-research project and have also carried out our own telemedicine experiments here at the hospital, and telemedicine obviously works – it is the future! The patients liked it, families liked it and it reduced the number of outpatient visits and rate of re-hospitalization. Telemedicine gives the patient an entirely new role – a team player. But healthcare professionals also get to play new roles and must learn to collaborate and share information in new ways. According to the lessons learned from Telekat, we are pleased to have closer contact across the former professional demarcations. It will be very interesting to take part in TeleCare North!"

Lene Birgitte Birket-Smith, Chief Surgeon
Pulmonary Medical Unit, Aalborg Hospital



The Road to Success is Collaboration

Like other chronically ill patients, COPD patients experience having to engage in dialogue with many different healthcare professionals: hospital staff, GPs, home-care nurses – and domiciliary care workers. Not everyone is equally knowledgeable of the individual patient's situation or disease progression – not to mention COPD. As a result patients can experience a fragmented treatment process. They have to phone several places to get answers and, being severely ill, it can be difficult to muster enough energy to get them.

TeleCare North has set an ambitious goal: the project must establish fixed routines for collaboration among the various healthcare professionals and develop new communication channels to ensure that all healthcare professionals can share information with one another. This makes big demands for openness among healthcare professionals, but all TeleCare North participants have agreed to collaborate – not only concerning the patients but involving the patients to an equally great extent.



"Obviously we frequently see some of the most severely afflicted COPD patients in our medical consultation. This is what makes TeleCare North an interesting project: it has the potential to empower this group of patients, thus making them feel more secure and improving their understanding of their own disease."

We want to learn more about a new way of communicating with patients – and with other healthcare professionals. TeleCare North gives us an opportunity to try out methods, information-sharing and technologies before we will hopefully be able to offer telemedicine solutions to all groups of chronically ill patients. I am also looking forward to having a better decision-making basis due to the higher volume of information we will receive from the patients themselves. And not least the possibility of intervening earlier in the process."

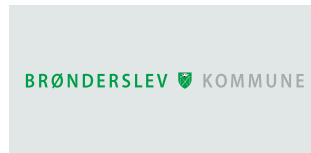
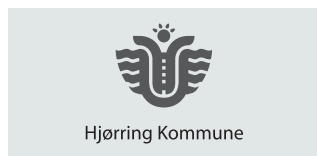
Ole Friis Junge,
GP, General Practitioners Hansen and Junge, Aalborg

Not only for COPD patients

Together with other projects under the new National Action Plan for Dissemination of Telemedicine, TeleCare North aims to contribute to a national IT infrastructure that will make it possible for all healthcare professionals to exchange and share information.

This is an ambitious goal, because the project must be instrumental in building up a joint nationwide IT infrastructure for telemedicine to benefit all of Denmark as well as other groups of chronically ill patients, such as diabetics and heart patients.

TeleCare North's Project Partners



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