

# Telemedicine helping people manage their COPD at home



# Summary

With the financial agreement for 2016, the government, Kommunernes Landsforening (Local Government Denmark) and Danske Regioner (Danish Regions) have entered into an agreement on the national dissemination of telemedicine for citizens with COPD towards the end of 2019.

The purpose of the national dissemination of telemedicine to support treatment for citizens with COPD is to contribute to the potential positive effects on both health and social economy. This includes, for example, individual citizens with COPD understanding and acting on their own symptoms in order to achieve increased quality of life, satisfaction, safety and fewer and/or shorter subsequent consultations, admissions and re-admissions.

The national telemedicine solution enables citizens with COPD to measure their values in their own homes and forward data to a municipal healthcare professional who can monitor the development of the disease and act and provide support accordingly.

## Main effects of the solution

Results from TeleCare Nord show that as many as 71% of citizens experience greater security when using telemedicine and 26% state that they experience a higher degree of freedom as they can carry out the measurements themselves.

The results also show that telemedicine contributes to citizens' understanding and mastering of their own illness. 61% of citizens responded that they experienced increased control of their disease as telemedicine enables them to respond to disease exacerbations and they then become more aware of the symptoms.

## Users

- The users are citizens with chronic obstructive pulmonary disease (COPD).

### **It is recommended that the following criteria are met in order for citizens with COPD to be included in telemedicine-supported treatment of their disease:**

- Diagnosis of COPD is via spirometry, etc.
- The user has multiple symptoms (based on MRC > 3 or CAT > 10) and two or more exacerbations or admissions for COPD in the previous year or FEV1 < 50% of the expected), and/or the user requires oxygen treatment.
- The user is already receiving treatment or is motivated to receive treatment.
- The user has a permanent resident and general practitioner in the region (this may be deviated from locally by agreement).
- The patient is interested in participating – in relation to the technical set-up and health professional content – and is expected to be able to understand and act on their own measured values in the long term.

## Quotes/Testimonials

"Every Monday morning I take my Telekit and measure my blood pressure, oxygen saturation and heart rate, and I am weighed. Then I do some exercises. If there are any issues with the values, I know that my home nurse Birthe or one of the other helpful nurses will call right away. And if there is anything concerning the medicine that must be changed, I talk to the doctor. Things like colds and such like we try to prevent, so I don't have to be hospitalized," says Connie, continuing: "I'm really happy that I have been allowed to keep the Telekit. It gives me a sense of security and this is important!"

– Connie, COPD patient.

## Elaboration

### Needs and challenges

People living with COPD need to handle their disease for many hours during the day. This is associated with a high level of insecurity and they are often hospitalized due to dysregulation.

As the disease progresses, loss and weakening of muscle mass is often the result of inactivity. Thus, many patients with moderate COPD have significantly weaker muscles than healthy people of the same age. Bone calcification (osteoporosis) is a frequent sequelae of COPD. Heart disease and lung cancer also frequently occur among patients with COPD. This simultaneous occurrence of multiple diseases (multi-disease) makes it impossible to achieve a sufficiently effective result for the patient, even with optimal pharmacological treatment.

### Solution and function

Patients receive help monitoring their disease in their own homes, avoiding visits to the doctor and hospital.

#### Patients receive the following:

- A tablet (a small portable screen) and measuring equipment. Patients need to measure their oxygen saturation, heart rate, blood pressure and weight each week.
- A thorough guide on how to use the equipment and take measurements.
- Questions about the status of the illness that are entered on the device (tablet).
- The measurements are sent wirelessly from the device/tablet to health professionals in the municipality or hospital.

### Implementation

Training and instruction of citizens in connection with start-up and the ongoing follow-up of telemedicine data assumes that the relevant competencies are present among the healthcare personnel responsible for controlling the citizens' measurements in the municipalities and at the hospital. It is therefore crucial that there is an opportunity to gain the necessary competence boost if such competencies are not considered to be present. Thus, the framework for competence building and education should be considered from the start.

Furthermore, it is important that health professionals have knowledge of the patient's user interface and the most frequent faults encountered by the patient (e.g. logging in, equipment charging, battery replacement).

The technical set-up and equipment for telemedicine-supported treatment options may vary locally. However, it is important that the technical set-up supports the citizen's care procedure and that there is also accessibility so that the citizen has somewhere they can direct any questions.

The solution should be flexible in terms of being able to handle other disease groups.

## Economy

Business case calculations show that the accumulated net potential on a national level is positive by DKK 483 million over five years, while the annual net potential at full phasing in of the business case is DKK 202 million at a national level.

## Process

When a citizen has accepted and consented to telemedicine-supported treatment, the citizen must be notified about the additional individual course and be granted via written agreement. From this, there must be a clear plan for measurements, frequency of checks, who the responsible contact persons are and a plan for the further course.

Consent must be obtained for telemedicine-supported treatment and the transmission of contact data to partners. The responsible healthcare practitioner is obliged to record all relevant information regarding information and consent, including disclosure of health information, etc.

It is important to know who is responsible for starting the treatment. This is usually the municipality but can also be the hospital.

## Follow-up/monitoring

As a rule, the municipality is responsible for following up data. The citizen's measurement data is systematically followed up at set intervals. In the event of deviations in data that indicate a negative development of the disease, the citizen will be contacted in order to get in touch with their GP or, in accordance with their self-treatment plan, initiate treatment or change their treatment.

The GP regularly assesses the degree of the patient's illness and general condition, as well as any concurrent diseases. In this respect, telemedicine measurements can be an important supplement. Thus, it will be of benefit to the citizen to take their tablet containing measurement data when visiting the doctor. It is also important that there is continuous communication between the municipality and the general practice and vice versa with information on/evaluation of the course, including changes in treatment.

Continuous follow-up of effects is crucial for the patient and should be systematic and cross-sectoral, to ensure that the patient is not using the solution if it is not beneficial to them.

## Communication

When communicating the telemedicine solution, it is crucial that close and seamless collaboration takes place across actors and sectors involved in the solution.

As a starting point, the existing agreements on communication routes and standards in the health service will be used, including agreements on admission, discharge, etc. There may also be a need to establish new workflows and new forms of communication practice. In this respect it is recommended that workflows and communication practices are established that support the collaboration between sectors and actors, thereby providing a coherent course for the patient.

## More about effects

The solution helps to make users feel more secure and have more freedom. By moving the treatment to the patient's home, they avoid having to travel, which can be exhausting. Not only does it make them feel safer, it also gives them more energy.

The quality of life is reduced as the patient's illness deteriorates. However, the quality of life is less diminished for patients who use the solution compared to those who don't.

Based on a questionnaire, 88% of users state they are satisfied with the solution and that it is very user-friendly.

## Learning and tips

A prerequisite for being able to participate in the solution is that a citizen with COPD, in cooperation with healthcare staff, will eventually be able to understand and act on their own data. A benefit of this could be that the citizen achieves improved disease management.

It is crucial that the citizen is aware of when it is necessary to contact their GP and that they are also fully aware that telemedicine support for the treatment solution does not replace normal contact with their GP or hospital. Thus, the offer must not leave the citizen with a false sense of security with their illness. In this respect it is crucial, for example, that the citizen knows when measurements must be taken.

### Health professionals must have a certain set of skills:

- Knowledge of COPD, including the symptomatology and management of the disease in connection with aggravation and the ability to actively apply this knowledge and act on it. Broad medical knowledge is also required as this patient group often has multiple diseases.
- Health education skills in relation to being able to focus on the individual patient's needs, preconditions and competencies, and to involve different forms of knowledge in this context.
- Knowledge about other solutions that could be relevant to citizens, including offers regarding patient associations, networking groups, etc.
- Health professionals must also possess the technical skills and know how to carry out all measurements, as well as knowledge of the usual problems that patients face.

## Further information

Further information about the solution can be found in a publication made by Sundhedsstyrelsen, 2017. The publication is written in danish.

- [Telemedicine support for treatment services for people with COPD \(PDF\)](#)

## Context

The solution was first tested in the northern region in Denmark. It has been decided that by the end of 2019 the solution will be upscaled to the rest of the country.

## Name of the service

TeleCare Nord

