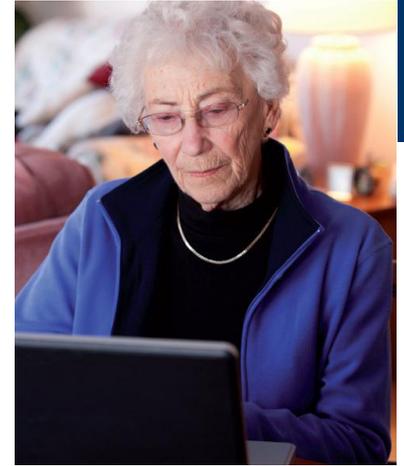


Telemedicine, also known as telehealth, telecare or e-health, is a new approach to healthcare, which uses technology to help you, as a patient, to manage your own condition from home.

## What is telemedicine?

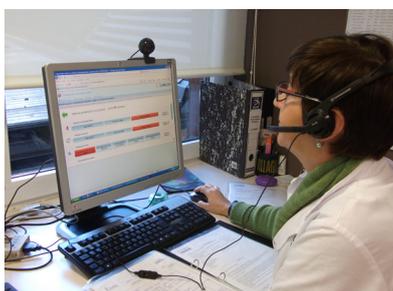
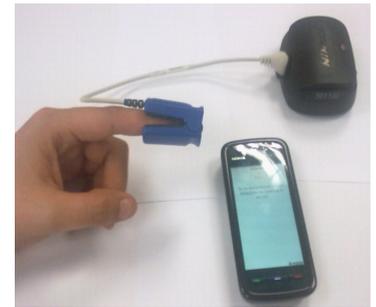
Telemedicine is an innovative approach that combines medical expertise and equipment with information and communications technology to allow examinations, monitoring and treatment to be carried out in your home.

Across Europe, people are living longer, so that more people suffer from one or more chronic (long-term) conditions. The need for long-term treatment has led to the development of new models of care that enable people to be treated and also monitored at home. Using electronic forms of communication, telemedicine is revolutionising the way healthcare is provided.



Below are some examples of telemedicine services:

- **Video conference with your healthcare professional.** This enables you to speak with your doctor online via a video link, reducing the need for you to visit the doctor's surgery or hospital.
- **Recording your symptoms on an electronic device at home.** Symptoms and measurements (such as peak flows and spirometry readings which test your lung function) can be recorded electronically using a touchscreen computer or a device similar to a mobile phone. This will enable you to collect important information on how your condition affects you whilst you are carrying out day-to-day activities either at home or when you are out of the house. Measurements can then be sent to your healthcare provider who can monitor whether you need further treatment. This also enables you to ask your doctor questions about the measurements you have recorded.
- **Education and self-management support.** Technology can be used to help you learn more about your condition, so that you are able to share your knowledge and experience with other people in similar situations. This concept is known as peer-to-peer education. It recognises the value of the lived experience of a condition and provides the opportunity to learn about a condition from first-hand accounts. Technology can also help to support successful self-management by using systems which can interpret your recordings and help with early recognition and management of any problems which may occur.
- **Online health information.** Increasingly, many people are using the internet to obtain health information. This can be a valuable resource but it is important to check whether the health website you are using is providing you with accurate information. (Visit the [www.european-lung-foundation.org/websiteguide](http://www.european-lung-foundation.org/websiteguide) to read *A Guide to Finding the Right Health Website*). You can also join social networking sites which often have specific groups for people with similar conditions.



- **Call centres.** There has been a growth in call centres providing health information over the telephone. These services enable healthcare professionals to decide who needs urgent medical attention and who can benefit from appropriate over-the-phone advice.

These examples are just some of the ways that telemedicine can help you become more independent by enabling you to have more control and manage your condition.

## Telemedicine and lung diseases

Various telemedicine devices and services can enable individuals to monitor lung function and manage lung conditions at home.

### Asthma

In recent years, a number of studies have highlighted the potential benefits of telemonitoring for asthma patients. Findings have demonstrated that people conducting their own lung function test, known as spirometry, at home, were able to record accurate results comparable to those collected by a healthcare professional.<sup>1</sup> Another study demonstrated that video monitoring enabled a doctor to assess and treat children with asthma, and the lack of face-to-face contact did not affect the quality of care and experience of the children.<sup>2</sup>

### Chronic obstructive pulmonary disease (COPD)

It is well recognised that improving a person's self-monitoring of their COPD symptoms can reduce the frequency of hospitalisations caused by a flare-up (exacerbation) of their symptoms. Using self-monitoring techniques can also reduce the time and cost implications of attending a hospital for treatment or monitoring. In a study which aimed to assess the impact of these services, people with COPD were provided with a videophone, an electronic stethoscope and a digital blood pressure monitor, allowing them to access specialist nursing support quickly. The results showed that remote video technology was effective and well-received by the study participants.<sup>3</sup> A further study showed that accessing web-based call centres after being discharged from hospital reduced the number of repeat hospitalisations.<sup>4</sup>

## What are the potential benefits of telemedicine?

- Enables individuals to have greater control over their condition and their lives by maintaining independence at home
- Enables services that were previously only available at hospitals to be available at home
- Reduces the need for hospital and doctor visits, saving time and travel costs
- Supports the longer-term management of a condition at home
- The technologies can be tailored to each individual
- Improving access to services in remote areas
- Reduces costs of healthcare
- Some forms of telemedicine provide direct access to a healthcare professional, removing appointment waiting times
- Some forms of telemedicine provide continuous monitoring, 24 hours a day, 7 days a week
- Solves the problem of shortages of healthcare providers



Visit the ELF website for examples of case studies and projects using telemedicine services.

1 Finkelstein J, Cabrera MR, Hripcsak G. Internet-based home asthma telemonitoring: can patients handle the technology? *Chest* 2000; 117: 148-155

2 Chan DS, Callahan CW, Sheets SJ, Moreno CN, Malone FJ. An internet-based store-and-forward video home telehealth system for improving asthma outcomes in children. *Am J Health Syst Pharm* 2003; 60: 1976-1981

3 Johnston B, Wheeler L, Deuser J, Sousa KH. Outcomes of the Kaiser Permanente Tele-Home Health Research Project. *Arch Fam Med* 2000; 9: 40-45

4 Casas A, Troosters T, Garcia-Aymerich J et al. Integrated care prevents hospitalisations for exacerbations in COPD patients. *Eur Respir J* 2006; 28: 123-130.