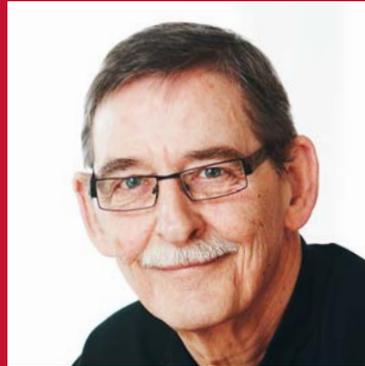


The Danish model



DENMARK
& HEALTH

The Danish model

eHealth is very commonly used throughout all branches of the Danish health service, and today IT supports a great many work processes, including processes that reach across organisations and sectors. This has also helped to make a large number of services available for citizens and healthcare professionals alike.

Alongside personal contact with the GP, the web portal sundhed.dk is the citizen's most important interface with the healthcare sector. Here, citizens have direct access to knowledge and advice about their own condition and treatment, and about sickness and health in general.

Digital services to citizens are based on the fact that a considerable amount of communication between healthcare professionals – hospital wards, GPs, specialist doctors, laboratories, pharmacies, physiotherapists – has gone digital over the past 15 years.

It began with electronic exchange of messages between healthcare professionals via MedCom standards. Millions of communications such as prescriptions, referrals, laboratory orders and responses, etc., are exchanged daily. In January 2010, more than 5 million communications were exchanged.

Over the years, the repertoire of communications has expanded considerably, and the infrastructure has been extended to include more and more aspects of the health service. Concurrent with this, Internet technology has been adopted, so now communications also include web services, and telemedical solutions are rapidly being developed.

Throughout the development process, efforts have remained focused on giving healthcare professionals access to flexible knowledge searches and internal communications and, at the same time, enhancing the quality of the services the healthcare sector is able to offer to citizens.

“Denmark leads the way in digital care”

The New York Times

Denmark and the healthcare sector – in brief



Denmark

has a population of approximately 5.5 million.

The Danish health service

is nationalised. Administratively, the country is divided into five regions, which are responsible among other things for healthcare and for running 60 public hospitals with a total of 21,000 beds. Furthermore the regions have agreements with 3,500 GPs. 98 municipalities also have tasks regarding healthcare, including home care and rehabilitation.

Doctors and pharmacists

Approximately 3,500 GPs constitute the primary interface with citizens and act as gatekeepers in relation to the healthcare sector. The health service also has approximately 1,000 specialist doctors and 250 pharmacists.

The health data network

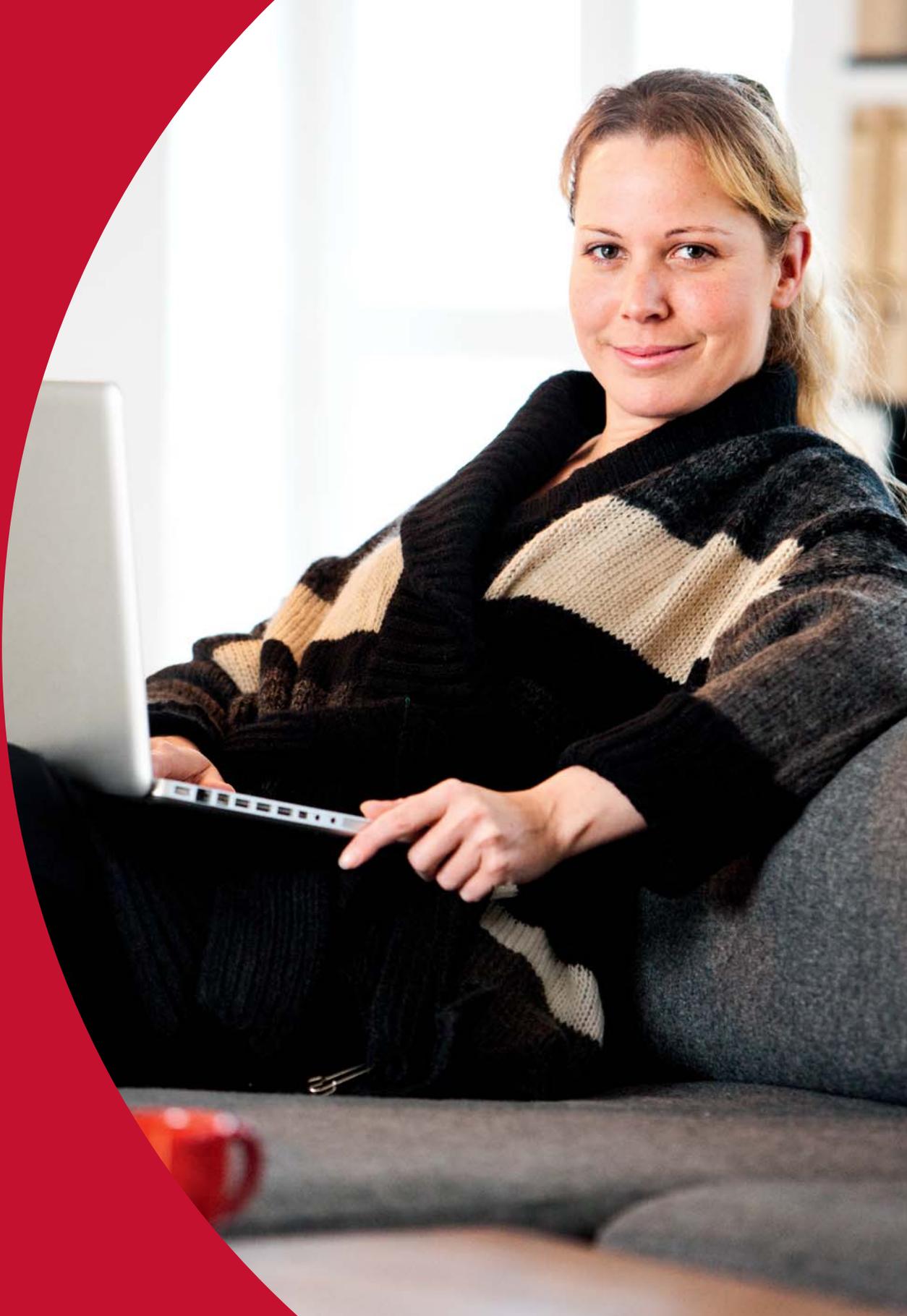
All players in the health sector use IT as a tool of their trade and a large proportion communicate electronically via the health service data network. 98% of laboratory responses and orders are electronic. 89% of all prescriptions are electronic.

The five regions

are responsible for regional IT solutions. A number of public-sector IT organisations develop joint solutions nationally, which the decentralised players undertake to implement.

“

I feel really good about being able to keep an eye on my treatment.



Marie Nielsen

Age 32. She was diagnosed with breast cancer one year ago and has then received treatment with surgery and chemotherapy.

Now she is on medication and attends check-ups at a hospital department which she selected herself from the information available at sundhed.dk concerning quality, service, waiting times, etc., at the individual hospitals.

Throughout her follow-up, Marie Nielsen has had access to her own Electronic Health Record (EHR) at sundhed.dk, and to information about her current medication.

She communicates with her GP via secure e-mail and renews prescriptions via the Internet from time to time. She has access to these services by virtue of her digital signature.

At the same time, Marie Nielsen is able to use all the more general information on sundhed.dk concerning her condition, about healthy living and prevention, etc.

sundhed.dk

The joint, public healthcare portal sundhed.dk gives citizens direct access to healthcare information and communications. The portal also conveys information between healthcare professionals.

e-records

Direct access to information in the hospitals' Electronic Health Record (EHR), for healthcare professionals and citizens.

Medicine profile

Citizens have access to their own data-protected medicine profile with a combined summary of prescribed medicines and dosage, public subsidies, etc.

Digital signature

A digital signature is strictly personal, and it is a prerequisite for gaining access to personal information, e.g. in the form of Electronic Health Record (EHR).

“

After my operation, the hospital sent all the information required to the rehabilitation centre – quickly and promptly.



Johannes Hansen

Age 72. Had a hip replacement operation three months ago.

Johannes Hansen is following a rehabilitation plan which the hospital department sends electronically to the municipal rehabilitation centre. One month later, the centre sends a final status report on the training process to the doctor at the hospital via the MedCom standard for clinical e-mails.

Immediately after being discharged, Johannes receives a visit from the municipal nurse because his wound is suppurating. The nurse exchanges electronic nursing reports with the hospital care staff. These describe the need for observation of the wound, Johannes' mobility and participation in rehabilitation.

Johannes is taking medicine, which he renews by ordering it on the Internet. Because he is no longer in great pain, the district nurse re-orders mild pain-killers using the MedCom standard for prescription renewals, and she uses an electronic correspondence message to ask the doctor to cancel the other pain-killers.

Johannes makes use of electronic consultations with his own doctor and is also able to find useful advice about his condition in the "Doctor's Handbook" that is available in electronic format on sundhed.dk.

Ordering medicine

The patient can re-order previously prescribed medicine via the Internet.

Electronic prescriptions

Prescriptions are one type of communication that is widely exchanged electronically.

Today, 89% of all prescriptions are sent electronically.

Rehabilitation plan

The discharging hospital prepares a rehabilitation plan. It is conveyed electronically to the local authority in charge of rehabilitation

Regions and municipalities

The five regions are responsible for the Danish health service, including hospitals, psychiatrists, general practitioners, specialist doctors, and national health insurance.

The municipalities have healthcare responsibilities, including in the fields of prevention, promoting healthy living and rehabilitation.

“

I've got my
condition under
control. That
reassures me.



Nancy Berggren

Age 61, COPD patient.

Nancy Berggren used to be admitted to the hospital frequently, typically for 1–1½ weeks at a time. Now, instead, she has been offered telemedical hospital services in her own home. In order to treat and monitor her condition daily, the hospital's experts have consultations with Nancy. This is done via a mobile device with built-in video conferencing functionality, set up in her home. Various aids are connected to the device, including measuring equipment, and data from this is transferred to the hospital department to which she is assigned. Once her treatment is completed and Nancy's condition has been stabilised, she is "discharged" and the device is taken away.

It can also be extremely useful to monitor Nancy's condition during the stable phase. This means many of the hospitalisations typical for COPD (Chronic obstructive pulmonary disease) patients can be avoided. Permanently installed measuring equipment and automatic data transfer to the assigned doctor ensure ongoing checking and monitoring, thus providing the opportunity to intervene when her condition worsens.

Telemedical admission to hospital

Using telemedical equipment, it is possible to admit patients to the hospital in their own homes. Patients can be in direct contact with the doctor instead of going to the hospital to have their state of health checked.

Video consultation

Video consultations are being used to an ever increasing extent, both internally between healthcare professionals and in patient contacts with doctors and hospitals.

Welfare technology

A growing labour shortage, especially in outlying areas, combined with the desire to be able to offer citizens better quality and service has led to the proliferation of telemedical solutions.

Prevention

Increased knowledge is a prerequisite for citizens and patients to be proactive when it comes to prevention and looking after themselves. The web portal sundhed.dk is an important source of information.

Tele-interpreting

For patients who need an interpreter, some areas of Denmark offer access to tele-interpreting by means of video conferencing equipment.

The Danish model and the future

Like health services in many other countries, the Danish healthcare sector faces significant challenges. Ongoing development and use of IT will be absolutely vital in efforts to tackle these challenges.

This means eHealth must take on an even greater role than is the case today. The guidelines for future development has been outlined in a national strategy for IT in the field of healthcare.

Digitisation of communications in the healthcare sector must expand to take in all players: private and public sectors and across all sectors of the entire field of healthcare. Individual citizens and patients must become more actively involved in this communication, and they must be given enhanced opportunities to influence their own healthcare and to contribute proactively to prevention and treatment.

The way forward is to link together data and processes in the various aspects of the healthcare service even more, and to create an overview of patient data at national level.



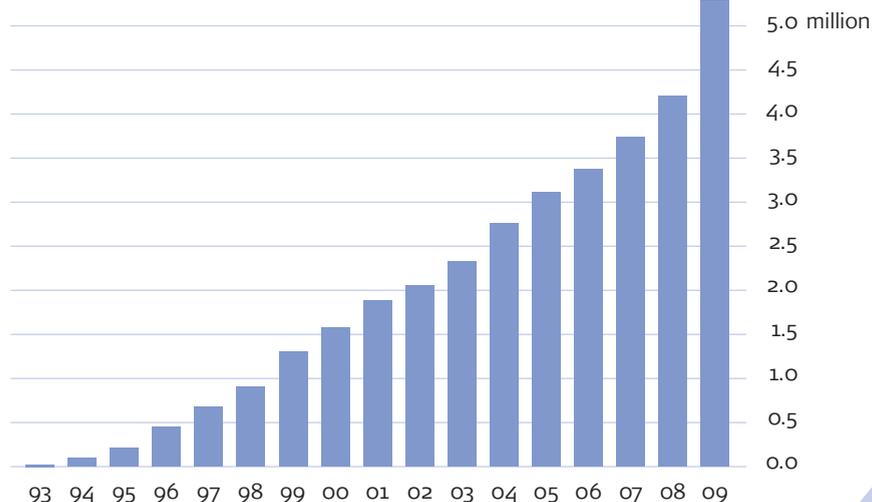
Collaboration and context

Many players in the healthcare sector are involved in giving Marie Nielsen, Johannes Hansen and Nancy Berggren the best possible help and advice. A person's own doctor is always a key person, but alongside the GP, hospital departments, laboratories, pharmacies, home nursing and physiotherapy, etc., all play their part in these efforts.

For citizens to feel that their treatment has continuity and is without hassle, close collaboration and a smooth flow of information between the parties is required.

The infrastructure and principle of the communications network is based on information being conveyed actively from sender to recipient. In other situations, recipients themselves fetch the information they require.

Millions of MedCom messages sent electronically every month between actors in the Danish healthcare sector.



Security

Closed networks are used, where the exchange of information about an individual patient requires the consent of the patient, and where access to the information requires a digital signature.

Continuity

Many players are involved, but from the patient's point of view, it is vital that the healthcare sector functions as a single entity, and for treatment efforts to be characterised by continuity.

Quality

Increasingly, information is transferred directly between IT systems and is integrated automatically. This minimises sources of error. At the same time, having the relevant information available on-line is of inestimable value in ensuring the quality of services.

Effectiveness

Having the right information available at the right time and place is essential for effectiveness.

Service

As far as possible, healthcare services are made available to citizens on their terms. For example, more and more services, especially for the chronically sick, are being made available in the citizens' own homes. This greatly increases their scope for monitoring their own condition and administering their own care.

Documentation

All transactions are logged and documented.

Four main players – one combined solution

DANISH REGIONS



Danish Regions

The interest organisation for the five regions in Denmark. The regions are responsible for healthcare including the provision of hospital services – both somatic and psychiatric. Furthermore, the regions sign agreements with the 3,500 GPs and enter into agreements concerning collaboration in the field of healthcare with the 98 municipalities. www.regioner.dk

sundhed.dk

sundhed.dk

The joint, public healthcare portal serving as the citizens' most important digital interface with the health service; also a knowledge centre of information about health and sickness.

Via sundhed.dk, significant amounts of information are conveyed between the parties to the healthcare service. www.sundhed.dk



DIGITAL HEALTH

CONNECTED DIGITAL HEALTH IN DENMARK

Digital Health

Digital Health is a joint public organisation. The starting point of its work is the national strategy for digitisation of the health service 2008–2012.

Digital Health creates the framework for digitisation of the Danish health service in close collaboration with the regions, municipalities, stakeholder organisations and other relevant parties. www.sdsd.dk



MedCom

A joint public organisation and key contractor in Danish eHealth establishing public-private partnerships.

New communication solutions are developed, implemented and deployed throughout the healthcare sector under the auspices of MedCom. www.medcom.dk