

Danish Centre for Health Telematics  
National and International  
projects 1994–2008

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# Synergy across borders

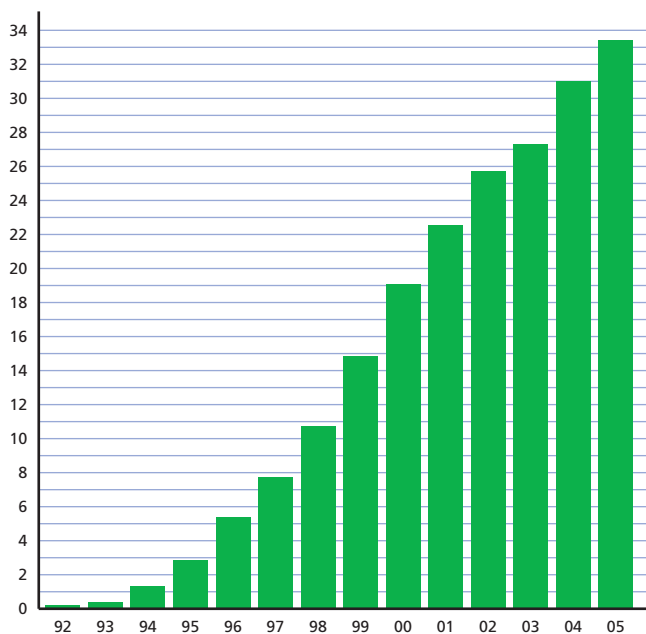
MedCom ● Baltic eHealth ● @HEALTH ● eHealth Trends ● InfoBioMed ●  
Health Optimum ● HC-INTEREST ● OpenECG ● ciTTis ● JUST ● Picnic ●  
Propractition ● WISE ● PrimaCom ● CoCo

# International correlation at the Danish Centre for Health Telematics

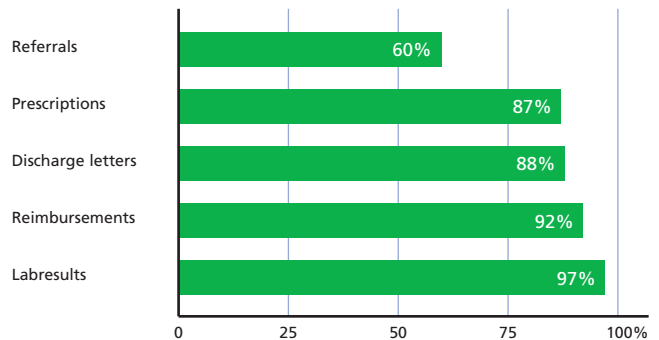
The Danish healthcare sector's use of Information and Communication Technology has witnessed a near explosive development. Initially, tentative experiments of electronic communication between general practitioners and pharmacies took place. Today, millions of messages are exchanged electronically between all healthcare sector's players. Simultaneously, numerous other forms of electronic communication are developing.

In 2006 the Danish Health Data Network is used in daily operation by all 63 hospitals, 331 pharmacies and more than 4000 general practitioners and 100 local authorities together with all the IT suppliers in the healthcare sector.

Million messages/year



Penetration, March 2006



The penetration of the use of the Health Data Network is very high. As illustrated almost all reimbursements and laboratory results, close to 90 per cent of all prescriptions and discharge letters and more than half of all referrals are sent electronically today. In March 2006 the total number of electronic messages was 3,493,917. Continuous consolidation and expansion of the communication as well as the collaboration with healthcare partners and constant technical modernisation are key words.

Planning and co-ordination of these activities are joined in the project organisation MedCom, which, along with FynCom and the International Section, form the Danish Centre for Health Telematics.

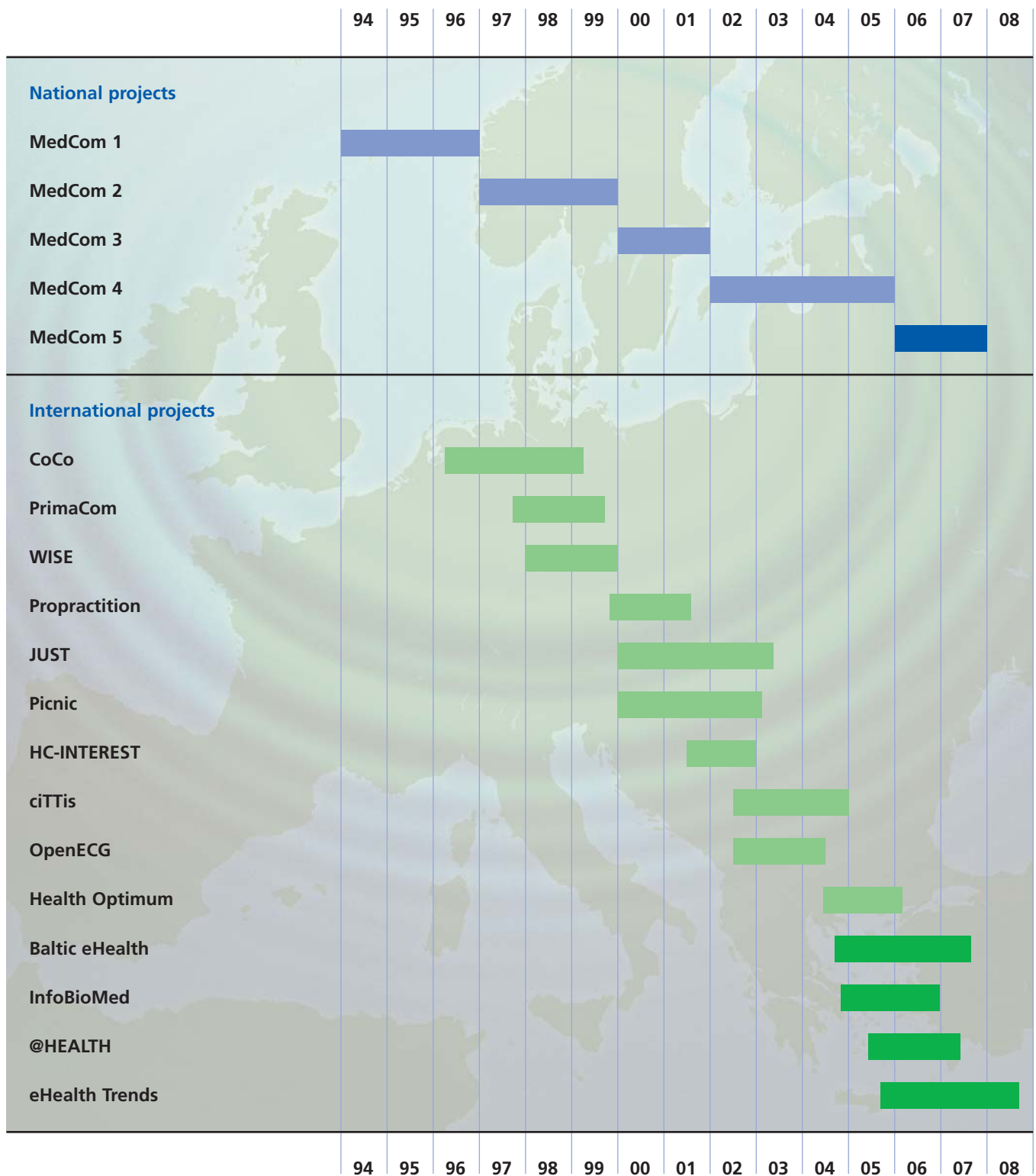
Very early in the process, the Danish development work took on an international dimension. The background was a desire to enter into close teamwork with related communication projects abroad to gather inspiration and to inspire other projects. In short, to reach a synergy effect in the correlation between these projects across borders.

Experience has shown that aiming at international teamwork was both right and necessary. Numerous examples show how national project experience has been an advantage internationally – and the other way around.

## Lessons learned

- National, regional and local commitment is needed.
- Necessary economy and infrastructure is crucial.
- A close co-operation between health professionals and developers is necessary to reach consensus on standards.
- Persistent and consistent project management is a key word in the development work.
- Test and certification of software solutions and providers is a condition for many-to-many communication.
- Information and promotion is important.

# National and International projects



# Finalised international projects April 2001–February 2006

## CoCo

The CoCo project, *Coordination and Continuity in Health Care*, gathered 11 regional health providers in 10 countries. The projects focused on communication to and from the general practitioners in the form of electronic messages. The regional CoCo projects were instrumental in bringing standards, guidelines, test systems and other services into the regions.

## PrimaCom

*PRIMAry Care Physicians COMmunication Network* established and evaluated pilots in Hungary and Slovenia in co-operation with European partners. These included electronic links between healthcare professionals and structured message communication to ensure re-use of data in different systems.

## WISE

WISE, *Working in Synergy for Europe*, was an umbrella for a number of EU projects and 13 organisations in 10 EU countries joined in the WISE-co-operation. The idea was to look at the regional and national effort within health communication and to disseminate the experiences and solutions at a European level.

## Propractition

The project focused on the continuing education of healthcare professionals using the advantages of Internet and websites. The aim of Propractition was to educate physicians for a co-operative work style.

## Picnic

The EU project PICNIC, *Professionals and Citizens Network for Integrated Care*, joined partners from nine EU countries. The aim was to support the regional healthcare providers in implementing the next generation of secure healthcare networks and to make the European market for eHealth services less fragmented. PICNIC developed an Open Source component for web services.

## JUST

The JUST project delivered IT-support to education in emergency care. JUST included 15 partners from seven EU countries. An interactive multimedia CD training course and a website was created, which aimed at teaching volunteers how to assist when encountering emergency situations.

## ciTTis

The objective of this INTERREG project was to develop a framework for telemedicine applications to be interconnected in order to perform collaboration between healthcare professionals. A major part of the project focused on the organisational changes, which follow, when the “collaboration” takes place across organisations and across borders.

Today, the IT Collaboration Platform is an environment for the provision of examination, monitoring, treatment and administration of patients through immediate access to expertise and patient information regardless of where the patient or relevant information are geographically located.

## OpenECG

The objective of OpenECG was to raise awareness and disseminate the use of computerized ECG standards. An open ECG Portal assists and supports manufacturers and integrators in creating interoperable equipment and software for seamless exchange of electrocardiograms.

## HC-INTEREST

The Nordic project HC-INTEREST, *Health Care record INTERoperability and Record Structure*, created a first basis for interoperable Electronic Healthcare Records in the Nordic countries. The aim was that the information in different EHR systems could be communicated and thus re-used.

The project built on European standards for EHR models and messages, and combined these with national developments. The result was EHR models and messages adjusted to the Nordic needs.

## Health Optimum

Health Optimum was a market validation project supported by EU. The aim of the project was to optimise the provision of healthcare by the use of telemedicine. Through the exchange of experiences the ten partners from the County of Funen (Denmark), the Veneto Region (Italy), and Aragon Region (Spain) found the best possible solutions for the optimisation of healthcare.

In Denmark, the County of Funen participated with the Danish Centre for Health Telematics and the Funen Hospital. The field trials in Denmark focused on telemedicine between Svendborg Hospital and Aeroeskoebing Hospital, giving patients access to highly specialized treatment at the Aeroeskoebing hospital. Cardiology and endocrinology was selected for the Danish field trials and today the teleconsultations are part of the daily operations at the Funen Hospital.

# Present international projects September 2004–2008



## Baltic eHealth

**September 2004–August 2007**

The aim of Baltic eHealth is to counteract the tendency for rural migration. With the introduction of eHealth services, Baltic eHealth aims to provide for more equal treatment opportunities in the Baltic Sea region.

eHealth can reduce health disparities by applying new approaches to improve the health of underserved people, while also attracting specialized health professionals. The objective of Baltic eHealth is therefore to link already existing health networks in Denmark, Norway and Sweden plus two regional networks in Estonia and Lithuania.

Test and examination results in the form of image and sound recordings are communicated digitally, typically from the small local hospital to specialists at a university hospital. In this way, the health professionals at the local hospital can obtain an expert assessment of the results. Examples of communication topics in eHealth are digital images as ultrasound scans and X-rays, tele-dermatology, telecardiology and telepsychiatry.

The project is coordinated by the Danish Centre for Health Telematics.

## InfoBioMed

**January 2004–January 2007**

InfoBioMed (Structuring European Biomedical Informatics to Support Individualised healthcare) is a EU financed project, bringing together 16 European organisations.

The objective is to bring bio informatics and health informatics together in a cross field, where large genome databases can be used in the area of eHealth and vice versa.

The Danish Centre for Health Telematics is partner in the project and contributes with knowledge and development of standards, when genetic data is reported to selected clinical databases.

## eHealth Trends

**September 2005–September 2008**

This project focuses on the “new patients or consumers” and the digital divide in Europe. The aim of the project is to investigate European health consumers’ use of, their attitudes to and desires with regards to Information and Communication Technologies for health purposes. The project will establish a European-level survey on eHealth consumer trends.

The role of The Danish Centre for Health Telematics is to carry out a survey of the usage of and attitudes towards eHealth among Danish citizens – e.g. the use of web services like the national eHealth Portal Sundhed.dk.

## @HEALTH

**May 2005–May 2007**

The objective of the @HEALTH project is to enable European and Latin American researchers, industries, organisations and other relevant players operating in the field of eHealth to access and exchange knowledge, skills, technologies and facilities.

The project focuses on the mapping of best practice in the two regions, as well as looking at financing and funding possibilities.



The international projects are supported by European funding.

# Finalised national projects 1994–2005

## MedCom 1

### Pioneer spirit and beginning professionalism

1994–1996

The background for the MedCom project was local and regional projects, which to a large extent were launched by enthusiastic initiators within the health sector. MedCom was established in recognition of the need for an impartial prime mover, negotiator and co-ordinator in the development work to secure communication across individual projects.

One of the first efforts became the establishment of the five national EDIFACT communication standards on the basis of international CEN standards.

The developers of systems for the general practitioners and other system providers were involved in the standardisation process. The aim was to build up and support a market for software solutions for IT in the healthcare sector over the Health Data Network.

## MedCom 2

### Dissemination and consolidation

1997–1999

After the initial stage MedCom aimed at massive dissemination of the Health Data Network. A cornerstone was co-operation agreements with regional and local projects.

MedCom worked consistently with making the extent of the communication visible by using the so-called EDI-top showing the number of messages communicated for each county and message type. Another part of the effort was clear and precise information about which software suppliers had been certified for which communication forms.

Focus was also directed at the need for organisational development in the clinic. At the end of the second MedCom period, all Danish hospitals, pharmacies and laboratories, 66% of the general practitioner's surgeries and 16 local authorities were using the Health Data Network. In total 1.3 million messages were exchanged monthly or 44% of all messages.

New groups of players, such as dentists and local authorities were connected to the Health Data Network. Communication of text messages was supplemented with other eHealth applications, e.g. transmission of images and X-rays.

## MedCom 3

### Quality, dissemination, development

2000–2001

With approximately five years of existence, the Health Data Network had shown its worth but also its weaknesses. One challenge was that the actual standards were not precise enough. There was a need for quality

assurance and new, accurate standards were documented in "The good EDI-letters".

An actual test function was established with a number of tasks primarily in the form of validation of standards and counselling for software suppliers. This meant that suppliers to the Health Data Network now had to be approved and certified.

New pilot projects were established for communication between hospital departments and laboratories. Web technology pilots were carried out, for example in the form of e-mail consultation and web access to patient data in laboratory and radiology systems.

## MedCom 4

### Network and new technology

2002–2005

So far, significant parts of the Health Data Network had been based on traditional EDI communication. However, development and dissemination of the Internet had made it clear that parts – and in the long run all – of the health communication should be made web based.

Some of the new options were: Web access to the patient records, large scale dissemination of web access to laboratory and radiology systems, tele-dermatology, EDIFACT via secure mail and web requisitions of laboratory tests from general practitioner's surgeries.

The web based Health Data Network makes large demands on security, infrastructure, certification and user administration. The network was established by connecting existing intranets. The vision was to open up for many-to-many communication across certified networks. Therefore, an effort was put into development of a technical platform and a common structure of information of the national eHealth Portal (Sundhed.dk) for the Danish citizens to access own patient data.

New information and streams of communication was also integrated in the Health Data Network and an adaptation to the National Basic EHR model was carried through. In general, communication to and from EHR systems plays an increasingly larger part and the development and implementation of EHR in the Danish health sector is considered a strategic matter for the entire health sector.

Local authorities play an ever-larger part as a player on the Health Data Network. New messages have been developed with more health specific contents for example for use by admission to or discharge from hospital, and in the form of nurse report to and from home nurses.

# Present national project 2006–2007

## MedCom 5

### Consolidation and expansion

#### 2006–2007

The fifth MedCom period takes over where the previous MedCom period left off – not essentially different in nature, but a natural continuation of the work carried out over the years and at the same time innovative in relation to the utility that electronic communication will provide for the healthcare sector of the future.

Since 2003 MedCom has increasingly co-operated with the National eHealth Portal, Sundhed.dk, both in general and in connection with specific projects. The efforts of the two organisations supplement and complement one another to a large extent. While the eHealth Portal provides citizens with access to health information, MedCom takes care of the communication on the network between professionals and across sectors.

Other activities in MedCom 5 are aimed at making electronically registered patient data available across country boundaries. The project provides a web-based access function and will give Danish citizens access to own patient data over the eHealth Portal by the virtue of the Health Data Network.

In MedCom 5 improving the general quality of the medication process in the healthcare sector will be another activity. The idea is to provide patients and health professionals with access to information regarding all prescribed medicine. This is done by connecting to the Danish Medicines Agency's Prescription Server, which contains a list of the patient's prescribed medication from both hospitals and general practitioners.

In addition, improvement and development of the national web-based service for requisition of laboratory tests will be carried out. The purpose of the WebReq project is to offer general practitioners a web-based access to requesting laboratory tests in clinical biochemistry, clinical immunology, clinical microbiology and pathology. During the fifth project period, the WebReq programme will be expanded to all counties in Denmark.

Requirements for constant technical modernisation of already existing standards continue to be the focus of MedCom. In the fifth project period, special focus will be paid on the development of new and improved standards for communication between homecare, general practitioners and hospitals.

Continuous consolidation and continued expansion of the communication on the Health Data Network continues to be the central focal points in MedCom.

## Nordic networking

In 2001 a Nordic co-operation was initiated between organisations working with health networks at a Nordic level. Since then KITH from Norway, CareLink from Sweden, STAKES from Finland, The Icelandic Ministry of Health and MedCom from Denmark have met regularly.

The purpose is exchange of experiences and establishment of cross-border projects. In several cases knowledge about communication solutions or health network infrastructures have been re-used in another Nordic country.

## The partners behind MedCom – the Danish Health Data Network

Ministry of Interior and Health  
Ministry of Social Affairs  
National Board of Health  
Association of Danish Regions  
Copenhagen Hospital Corporation  
National Association of Local Authorities  
Copenhagen Local Authority  
Frederiksberg Local Authority  
Danish Pharmaceutical Association  
Organisation of General Practitioners

## Websites

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Danish Centre for  
Health Telematics: [www.cfst.dk](http://www.cfst.dk)

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MedCom: [www.medcom.dk](http://www.medcom.dk)

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FynCom: [www.fyncom.fyns-amt.dk](http://www.fyncom.fyns-amt.dk)

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Baltic eHealth: [www.baltic-ehealth.org](http://www.baltic-ehealth.org)

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InfoBioMed: [www.infobiomed.org](http://www.infobiomed.org)

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eHealth Trends: [www.telemed.no/  
eHealthtrends](http://www.telemed.no/eHealthtrends)

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Health Optimum: [www.healthoptimum.info](http://www.healthoptimum.info)

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@HEALTH: [www.ithealth.org](http://www.ithealth.org)

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PrimaCom: [www.primacom.dk](http://www.primacom.dk)

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Picnic: [www.medcom.dk/picnic](http://www.medcom.dk/picnic)

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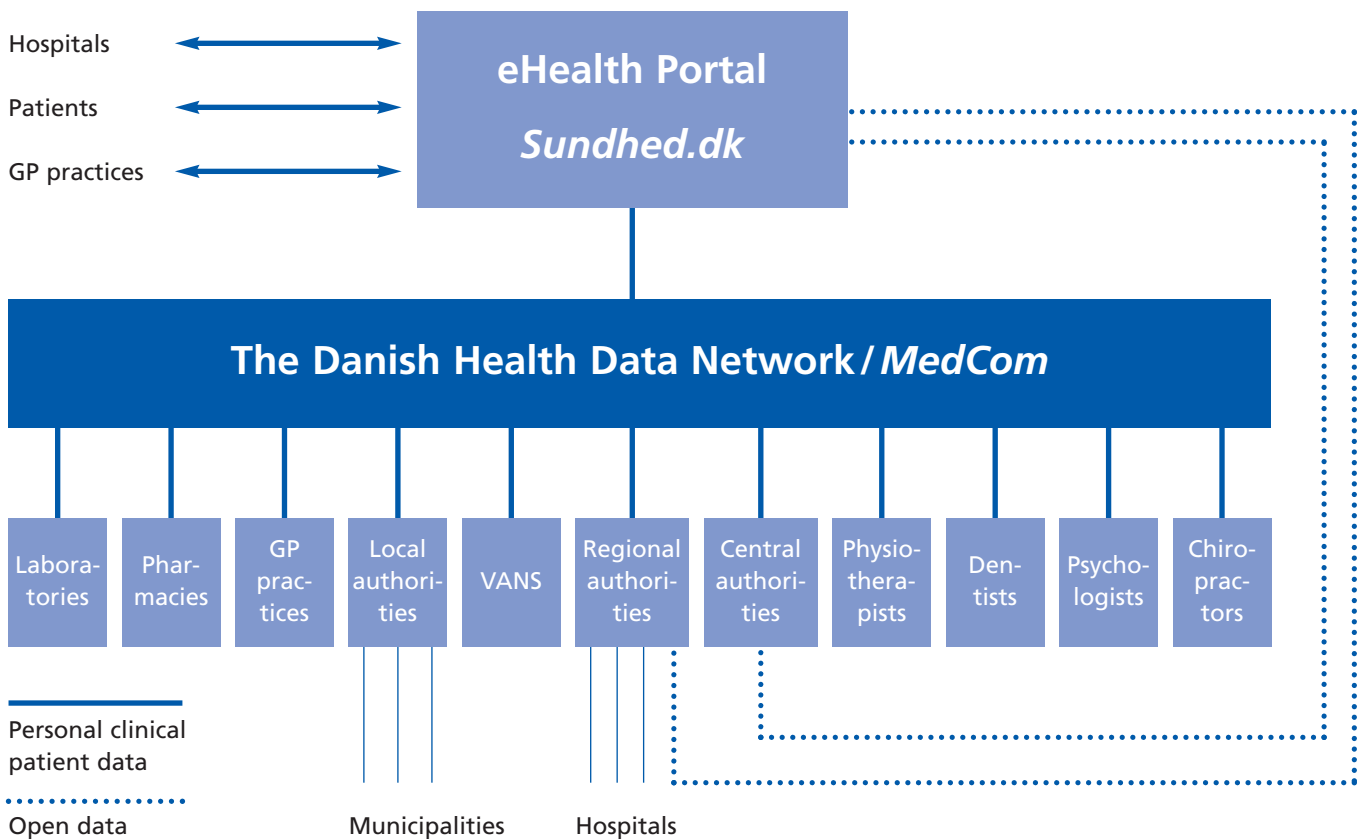
OpenECG: [www.openecg.net](http://www.openecg.net)

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HC-INTEREST: [www.hc-interest.dk](http://www.hc-interest.dk)

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# The Danish Health Data Network



## Danish Centre for Health Telematics

The Danish Centre for Health Telematics was established December 1994, based on an initiative from the County of Funen. Today, several activities under the same management are sharing facilities in the Centre, all having the establishment of a market plus implementation of electronic communication in health and social services as the focal point. The main objective of the Centre is to use the expertise to contribute to development of the Danish Health Data Network locally, regionally, and internationally. The Centre therefore gives advice and project support to many including national authorities, county councils, municipalities, healthcare providers and IT service providers.

The main activities co-ordinated by the Centre all evolve around one or several of the following elements: telemedicine services, infrastructure for telemedicine and standardisation. They are coordinated on a national level by MedCom and on a regional level by FynCom and the Telemedicine Strategy. In addition, the Centre also participates in several European projects including Baltic eHealth, InfoBioMed, eHealth Trends and @HEALTH.

In May 2004, together with the Danish eHealth Portal, MedCom was awarded the prestigious eHealth award by the European Commission.



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