

The MedCom project



A nation-wide network

MedCom is a project involving co-operation between authorities, healthcare organisations and private companies linked to the healthcare sector. The purpose behind this co-operation is to establish and continue the development of a coherent Danish healthcare data network.

MedCom is to contribute towards implementing the Danish Government's IT policy action plan for the healthcare sector, including continuing the dissemination and quality assurance of electronic communication. At the same time, MedCom is to contribute to development and implementation projects relating to the electronic patient record (EPR). MedCom can act here as a link between the EPR standardisation taking place in the Danish National Board of Health

and EPR implementation, which takes place in the hospitals.

The parties behind the permanent MedCom are the Ministry of Health, the Association of County Councils in Denmark, the National Board of Health, Copenhagen Hospital Corporation, Copenhagen and Frederiksberg Local Authorities, the Danish Pharmaceutical Association, the Association of Danish Doctors and Dan Net.

MedCom 1, 2 and 3

MedCom activities are carried out as projects for defined periods of time, and each project period consists of particular projects, each having a specific purpose. From 1 January 2000 MedCom becomes permanent, but it is still intended that the activities will be carried out under specific projects.

MedCom 1 (1994 - 96)

had the purpose of

- developing communication standards for the most common communication flows between medical practices, hospitals and pharmacies.

MedCom 2 (1997 - 99)

had the purpose of

- developing communication standards for the most common communication flows between local authorities and hospitals,
- expanding communication between medical practices, hospitals and pharmacies,
- carrying out pilot projects in the areas of the Internet, telemedicine and dentistry.

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The national IT strategy

"The MedCom project made permanent will continue the effort to expand and assure the quality of electronic communication in the healthcare sector. The aim is for all medical practices and hospitals to be connected to the Danish Healthcare Data Network by 2002.

As well as expanding and assuring quality in the application of new and old standards, MedCom should, in the light of the development of the Internet and the consideration being given to the construction of a patient index, examine the options for broadening the infrastructure for the Danish Healthcare Data Network, including data interchange by 'data pull' (the user retrieves data when it is to be used) instead of 'data push' (data is sent to the user).

MedCom is additionally to contribute to development and implementation projects in the area of EPR. MedCom can act here as a link between the EPR standardisation taking place in the National Board of Health and the EPR implementation being undertaken in the hospitals and ensure that the standardisation takes place interactively between users, suppliers and authorities."

MedCom 3 (2000 - 01) is expected to have the purpose of

- consolidating the communication between medical practices, hospitals and pharmacies
- expanding basic communication between hospitals and local authorities
- carrying out a changeover to Internet technology and expanding telemedical communication

- developing a "push-pull" hospital package for communication of the most common messages in the hospital area

Income and expenditure

MedCom is jointly financed by the parties behind the projects.

(DKK 1000)	MedCom 1	MedCom 2 (Forecast)	MedCom 3 (Expected)
Income:			
Ministry of Health	5000	8333	8000
Counties and CHC	5000	8333	7050
Local-authority grants	0	3780	186
Healthcare organisations	1000	2776	666
Private companies	4000	6666	500
Total	15000	29888	16402
Expenditure:			
Basic expenditure	4730	8150	
EU projects	1378	0	
Projects: Doctor-Hosp.-Pharmacy	7997	9400	?
Projects: Local authority-Hosp.	0	6230	
Projects: Internet-Telemed	0	4000	
Other	117	1608	
Total	14222	29388	
Repaid	778	500	

...The MedCom project

The MedCom 2 steering group

Vagn Nielsen, Head of Department, Ministry of Health (Chairman)

Leif Vestergård Petersen, County Health Director, Vejle County Council (Deputy Chairman)

Svend Tychsen, Head of Development and Personnel, Odense Local Authority (Deputy Chairman)

Peder Ørnsholt Ring, Chief of Section, Association of County Councils

Jens Meiland Hansen, Bachelor of Commerce, Sen. Clerical Officer, Nat. Association of Local Authorities

Arne Kverneland, Chief of Section, National Board of Health

Vibeke Høeg, Head of Secretarial Services, Copenhagen Hospital Corporation

Jørn Jan Nielsen, Deputy Chief of Section, Copenh. Local Authority

Torben Hede, Senior Clerical Officer, Ministry of Social Affairs

Jan Staack Nielsen, Head of IT, Danish Pharmaceutical Association

Kresten Nielsen, General Practitioner, Association of Danish General Practitioners

Jens Harbo, Dental Surgeon, Danish Dental Association

Jesper Damsgaard, Marketing Manager, Tele Danmark Business Division

Anders Kristian Jørgensen, Sales Director, Dan Net A/S

Ole Mikkelsen, Regional Director, Kommunedata

Jens Peter Christensen, Senior Clerical Officer, Ministry of Health

Henrik Bjerregaard Jensen, Centre Manager (Project Manager)

The history of the Danish Health Care Data Network

It started in the eighties

The history of MedCom goes back to the end of the 1980s, when interest in electronic communication between the various parties in the healthcare sector grew. Local projects were launched on the initiative of the Association of County Councils, at the hospitals in Vejle and Silkeborg among others. The projects, together with the DSI report "Computing Across (Sector) Boundaries" helped to draw attention to the need for cross-sector communication from 1991 on.

Alongside these projects, a trial involving communication between 10 pharmacies and 11 medical practices was held in Amager in 1989 - 90. The trial was pioneering in EDI communication in Denmark, and since the Amager trial all EDI projects in the healthcare sector have been built on the same technological foundations:

- standardisation of message content
- EDIFACT syntax
- use of existing telephone lines for communication
- use of VANS suppliers (Dan Net and Kommunedata) and traditional e-mail-based "mailbox technology".

Three large regional EDI projects started in 1992:

- FynCom in Funen County
- the Odder project in Århus County
- KPLL in Copenhagen

All three projects were based on the technology used in the "Amager trial".

MedCom 1

To counteract the tendency for the counties each to "re-invent the wheel", Funen County in 1992 submitted a proposal to organise a joint nation-wide project bringing together national government, the counties, private companies and healthcare organisations, under the name of MedCom.

The purpose of MedCom was to develop nation-wide standards for the most common communication flows between medical practices, hospitals and pharmacies: referrals and discharge letters, laboratory requests and results, X-ray letters, prescriptions and national health insurance billing, totalling over 30 million messages a year.

The development projects ran from 1994 to 1996 as 25 pilot projects spread across the whole country, which together involved the majority of the suppliers of IT to hospitals and medical practices.

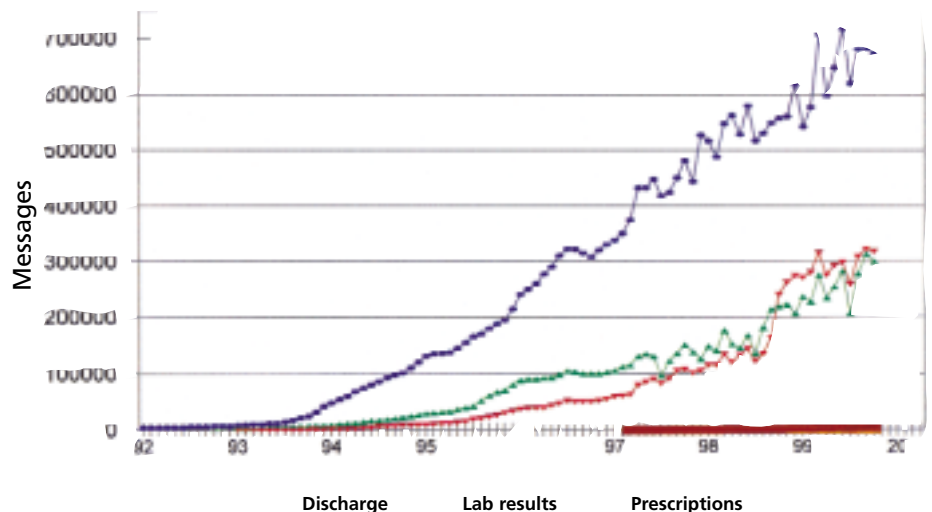
However, the dissemination of the standards went slowly. A decision was therefore taken to carry out a second project - MedCom 2.

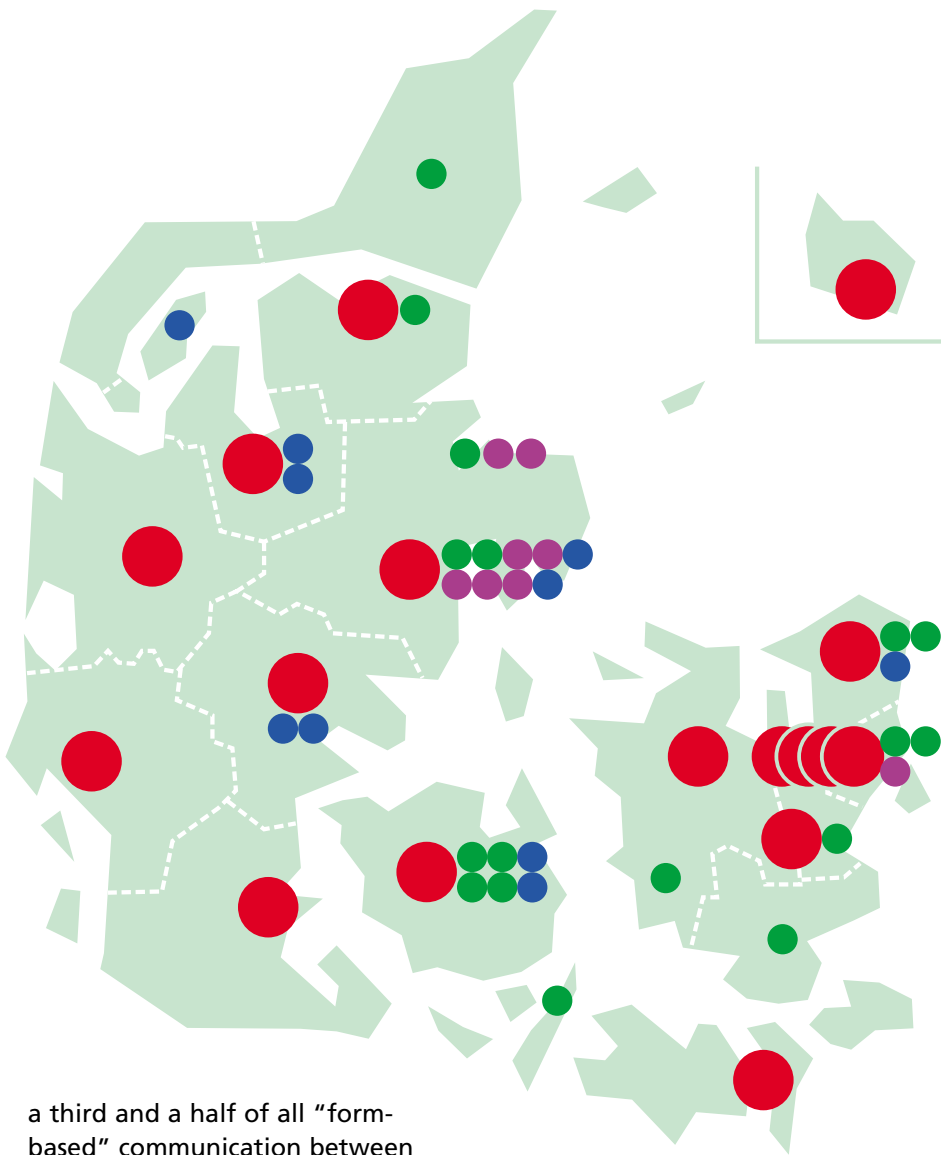
MedCom 2

The primary purpose of MedCom 2 was to ensure rapid and large-scale dissemination of the standards developed under the MedCom 1 project. In addition, the local-authority healthcare sector was brought into the project together with the dentistry and telemedicine. Internet technology also started to be used.

Following the implementation of MedCom 2, EDI communication is now everyday reality in all Danish counties, and 1.3 million messages a month are exchanged. All hospitals, pharmacies and laboratories, two-thirds of medical practices and 16 local authorities use the Danish Healthcare Data Network daily. Altogether there are over 2,000 different organisations with many thousands of daily users. Between

MedCom - the Danish Health Care Data Network Number of messages per month





Projects carried out in MedCom 2

- 193 dissemination projects
- 12 local-authority projects
- 8 dentist projects
- 10 TeleMed projects

a third and a half of all “form-based” communication between the parties in the healthcare sector is exchanged electronically.

MedCom permanent

In the autumn of 1999, the parties behind MedCom decided to make the project permanent. However, the intention continues to be to

carry out MedCom activities as projects, typically with two-year project periods.

At the international level

EDI-based information in the healthcare sector has also been de-

veloping in other countries for a number of years, based on the same technological cornerstones as in Denmark. Britain, the Netherlands and the Scandinavian countries have been working on large EDI-based healthcare data networks since the beginning of the nineties. Similar projects and national strategies have seen the light of day in all European countries in the last few years. However, no other countries have reached a level of use that even comes close to that in Denmark.

A common strategy has been drawn up at European level for the development of regional healthcare data networks which, like the Danish one, are based on a change-over to Internet-based communication. The primary purpose of the strategy is to target healthcare information at a limited number of action areas with the aim of fostering the development and marketing of standard solutions in these selected areas.

Daily users of the Danish Health Care Data Network:

- All hospitals, pharmacies and laboratories
- Two-thirds of medical practices
- 16 local authorities

Total number of messages per month 1.3 million

The dissemination project

Purpose

The purpose behind MedCom's dissemination projects is to ensure rapid and large-scale dissemination of the communication standards developed under the first MedCom project.

Plan

All the counties and the three nation-wide laboratories, Statens Serum Institut, KPLL and the Medical Laboratory, decided to take

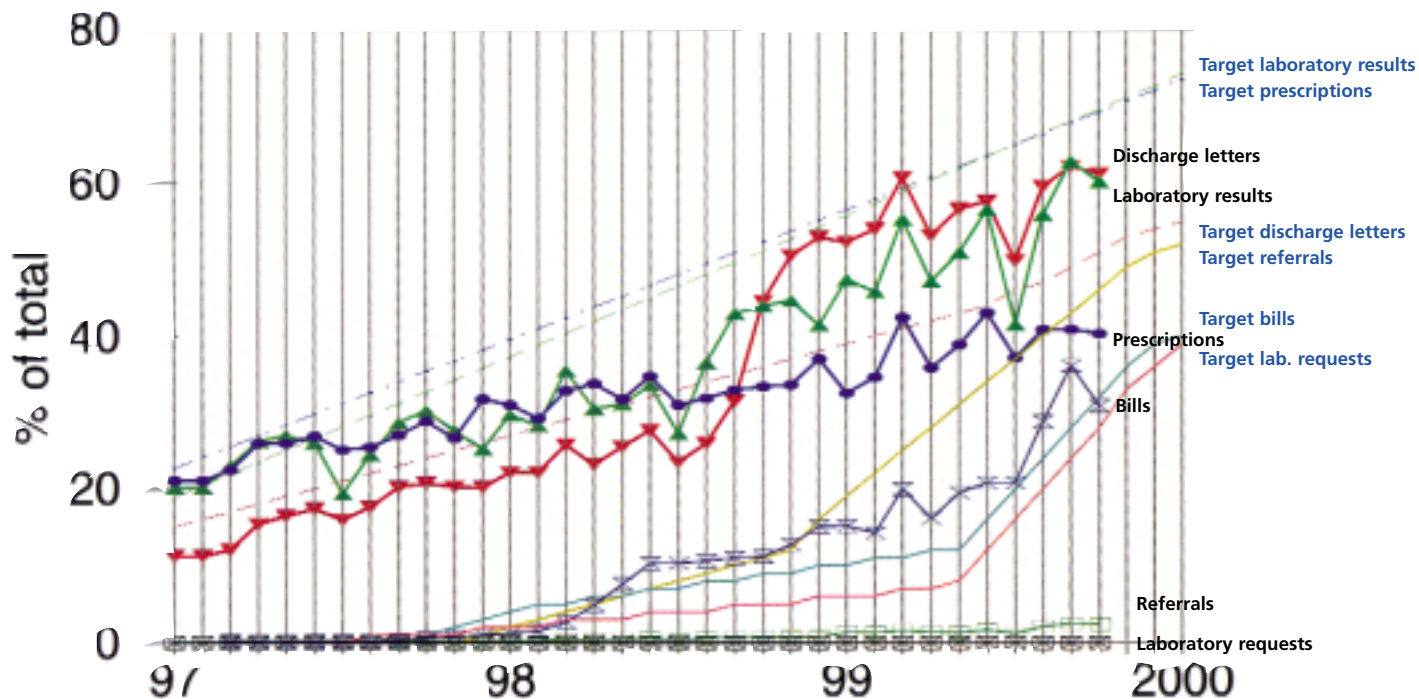
part in the dissemination project and in the summer of 1997 drew up a specific timetable for the introduction of EDI communication in the individual county, where each project entailed the introduction and dissemination of one of the EDI messages developed under MedCom 1, such as the dissemination of "discharge letters" from hospitals to medical practices, the dissemination of X-ray results etc. Altogether, the 14 counties, Copenhagen Hospital Corporation and the laboratories planned 173 dissemination projects which, if they were all implemented according to plan, would result in total commu-

nication of 1,987,000 monthly EDI letters, or 66% of the total possible communication of the types of letter mentioned.

Ambitious target achieved!

Of the planned 173 dissemination projects, 103 had been carried out by the end of September 1999. However, most of the counties have started EDI projects over and above those originally planned, and a total of 193 EDI projects have therefore been started, each covering one of MedCom's EDI messages.

Target: 68% of all messages. Achieved: 44%
Target: 173 dissemination projects. Achieved: 193



MedCom national targets/status

The development of EDI communication under the MedCom 2 project shown as a percentage of the total possible communication for each type of EDI messages. EDI communication has increased by 260 percent from 497,039 in January 1997 to 1,300,349 in October 1999. At present 44% of all EDI letters are sent compared with a stated target for the end of 1999 of 68%. This 44% corresponds to a percentage execution of 64%.

The county project managers' group

Ivan Andersen, Director,
Ascott Software A/S, Æskulap

Lise Arendtsen, Head of Section,
Statens Serum Institut

Bente Christensen,
IT Co-ordinator,
Vejle County Council

Niels Jørgen Christensen,
Bachelor of Science,
Aarhus County Hospital

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Anne-Marie Falch, Project
Manager, North Jutland County

Anny Føns, Nurse,
Frederiksborg County Council

Jens Grønlund,
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Viborg County Council

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Hospital Corporation

Jan Stokkebro Hansen,
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Copenhagen County Council

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Tom Onsberg Henriksen, IT Planner,
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Datagruppen MultiMed A/S

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South Jutland County

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MedCom

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Ringkøbing County Council

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Funen County Council

Jan Mark, Consultant,
Kommunedata A/S

Birgit Nielsen, Senior Clerical
Officer, Storstrøm County Council

Lisbeth Nielsen, IT Consultant,
Bornholm County Council

Tove Charlotte Nielsen, Head of
Section, Vejle County Council

Jens Parker, General Practitioner,
PLO, IT Committee

Niels Henrik Pedersen, IT Consul-
tant, Århus County Council

Peter Pedersen, Consultant,
Copenhagen Hospital Corporation

Jens Henning Rasmussen, Head of
IT, Roskilde County Council

Erik Riber, Head of IT, Medi-Lab

John Rode,
Deputy Chief of Section,
Copenhagen County Council

Jette Rosbæk, IT Project Manager,
West Zealand County Council

Mogens Schlamovitz, Engineer,
MOS Informatik

Projekts	Carried out?	Projekts	Carried out?
173 county dissemination projects	Yes	EDI-PIXI project guidance	Yes
Lab. register standard (Prodat)	Yes	County group	Yes
Utility project	No	LAB-ERFA national lab. co-operation	Yes
Clinical aspect project	Yes	Referral spearhead project	Yes
Technology group	Yes	Nat. health insur. spearhead project	Yes
Preparation of test messages	Yes	Meddis Quality Assurance	Not completed

Dissemination projects planned and carried out	N.Jut	Viborg	Århus	Ringk.	Ribe	Vejle	S.Jut.	Funen	W.Zeal.	Storstr.	Roskil.	F.ri.borg.	CHC	Copen.	Bornh.	SSI	KPLL	Medlab	Total
Planned EDI projects	16	10	15	4	11	13	13	12	7	15	11	12	9	15	4	2	2	2	173
EDI projects carried out	16	12	10	10	7	19	16	20	14	16	15	12	9	8	7	1	1	0	193
Percentage carried out	100	120	67	250	64	146	123	167	217	107	136	100	100	53	175	50	50	0	112

Barcodes

A nation-wide system for marking with barcodes has been developed and introduced to ensure that specimens for pathology and clinical microbiology are clearly identified. This means that the specimens can always be identified automatically and quickly using barcode readers.

The introduction of barcode marking in general practice brings increased certainty in connection with specimen handling, and the built-in module check in the labels means that misreading and keying-in are eliminated.

Uniform request module for microbiology

To ensure easy and effective electronic requesting for microbiology, all suppliers of doctors' systems and microbiology systems have been brought together, and most of them have drawn up request modules in their doctors' systems.

The doctors' systems MultiMed, EMAR, Æskulap, Ganglion and PLC have developed the modules according to the new concept, where MedCom reviews the application before it is sent out to the users.

The EDI Telephone Directory

MedCom has published the EDI Telephone Directory in the last two years to create an easy and rapid overview of who is on the Healthcare Data Network. It was originally intended as a tool to support the project managers, but was quickly found to be capable of being used by all parties in the Healthcare

Data Network. All the suppliers of the doctors' systems regularly send in reference lists, which represent a major source for updating the directory. The EDI Telephone Directory contains information on extension numbers and doctors' systems as well as the names of medical practices and hospitals.

Boom in EDI in West Zealand County

West Zealand County had not made plans for EDI to be put to use in the hospital sector at the start of MedCom 2. But over the course of a few months systems were established for hospitals, laboratories, on-call GP services and the national health insurance scheme which could communicate with EDI. A real boom in EDI was created in close co-operation between the county and the Association of Medical Districts.

On-call GP services

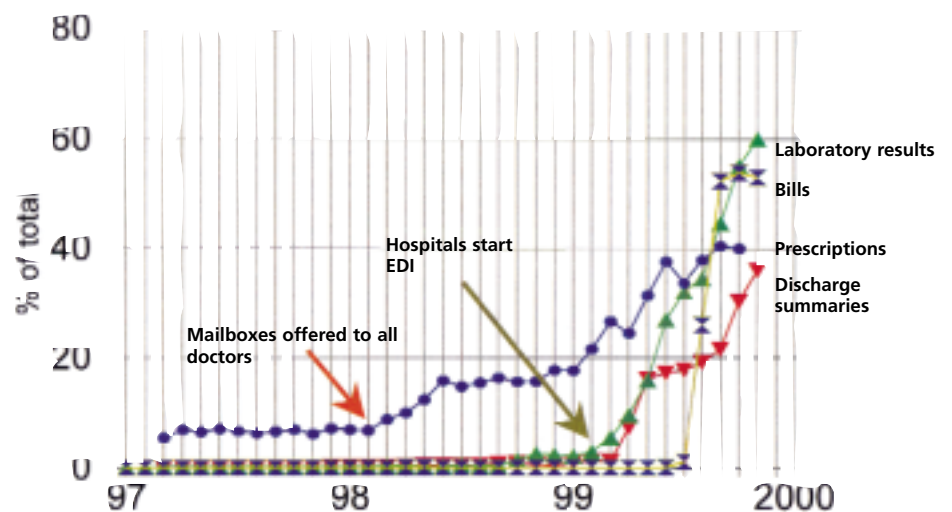
All on-call GP services in Denmark (except for Bornholm County) now have computer systems. They send

all on-call service notes, prescriptions and bills to the national health insurance scheme using MEDRUC.

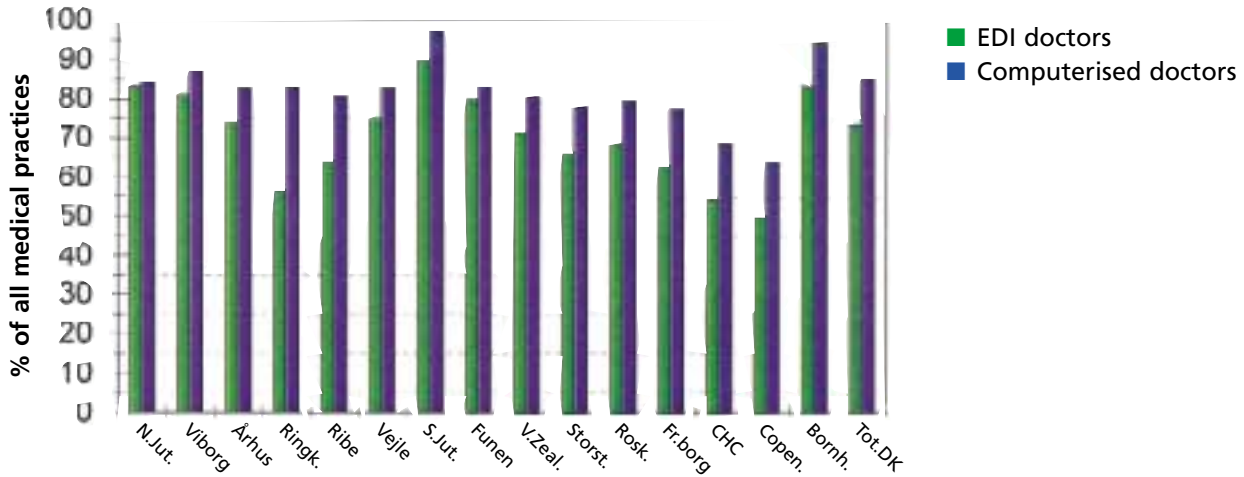
The national health insurance scheme has joined

All three national health insurance system suppliers, Kommunedata, Bema and Brugerklubsystemet, are able to receive MEDRUC bills. At present 33% of all bills from doctors and on-call GP services are sent, whereas only one pharmacy has started. Only one county has yet to make a start with the electronic billing system.

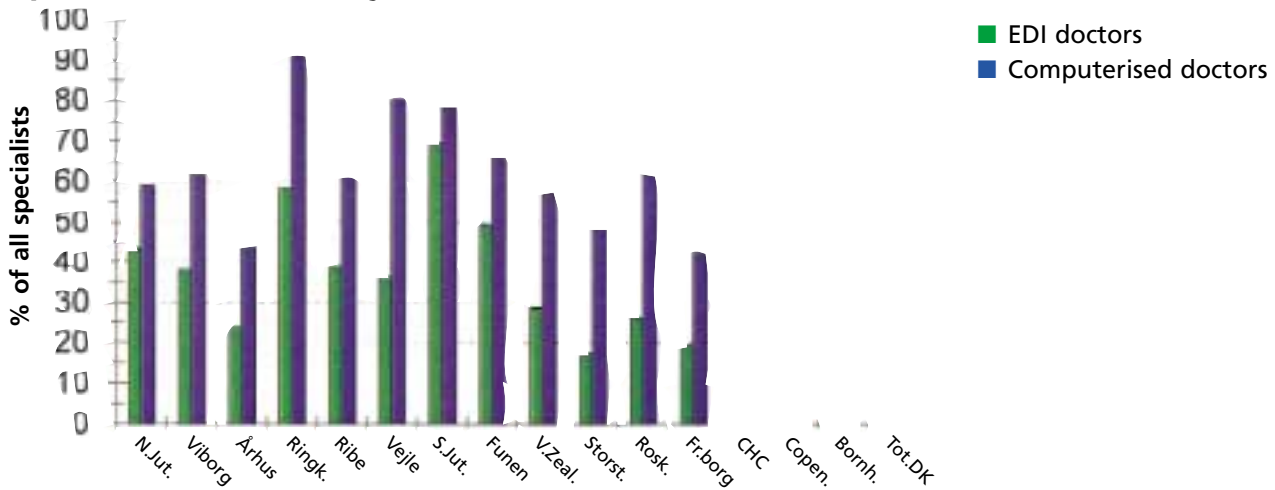
Boom in EDI in West Zealand County



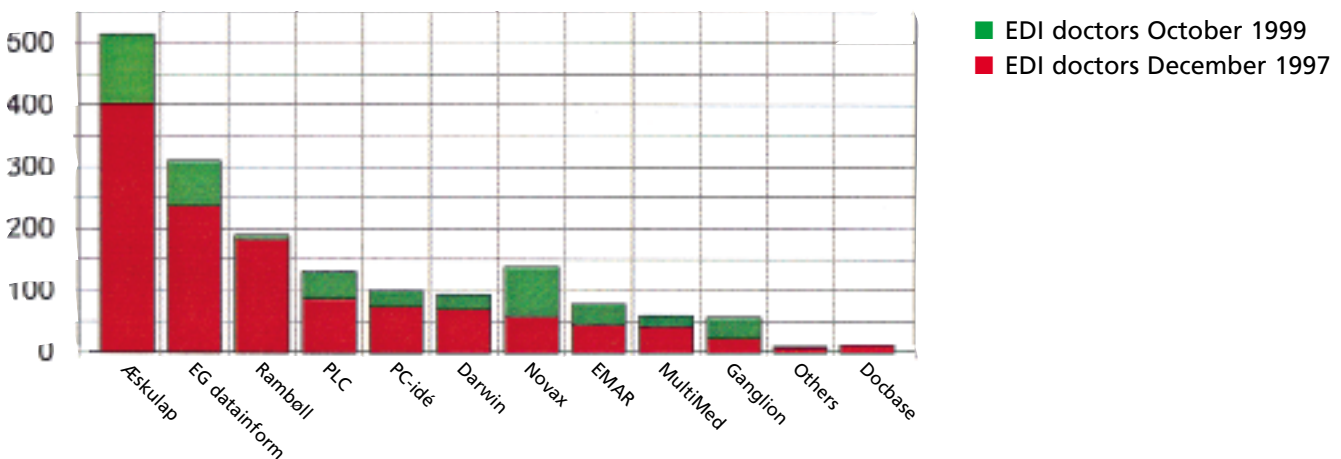
General practice classified by counties. October 1999



Specialists classified by counties. October 1999



EDI doctors' systems in Denmark. December 1997 and October 1999



Who can do what now - the counties:

Status in the counties

The overview shows which counties are able to communicate which EDI messages.



Symbols

White icon shows that the message is in use in the county.



Red icon means that the message is not yet being used in the county.

Key to symbols



Prescription from on-call GP service (LV) Prescription from GP (L) On-call GP service discharge summary On-call GP service referral On-call GP service billing GP billing Dentist billing (T) Pharmacist billing (A)



Inpatient discharge summary Outpatient discharge summary Casualty discharge summary Image diagnostic discharge summary Referral admission Referral out-patients Referral image diagnostics Booking results (BS)



Clinical chemistry results Pathology results Clinical microbiology results Clinical immunology results Clinical chemistry request Pathology request Clinical microbiology request Clinical immunology request



Specialist referral Specialist discharge summary Physiotherapy discharge summary Physiotherapy referral Physiotherapist billing (FY)

North Jutland County



Viborg County



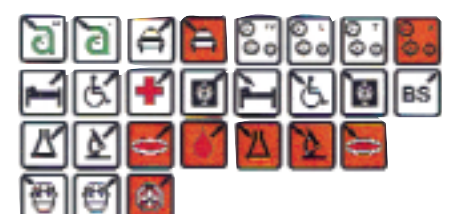
Ringkøbing County



Ribe County



South Jutland County



Århus County



Bornholm County



Frederiksborg County



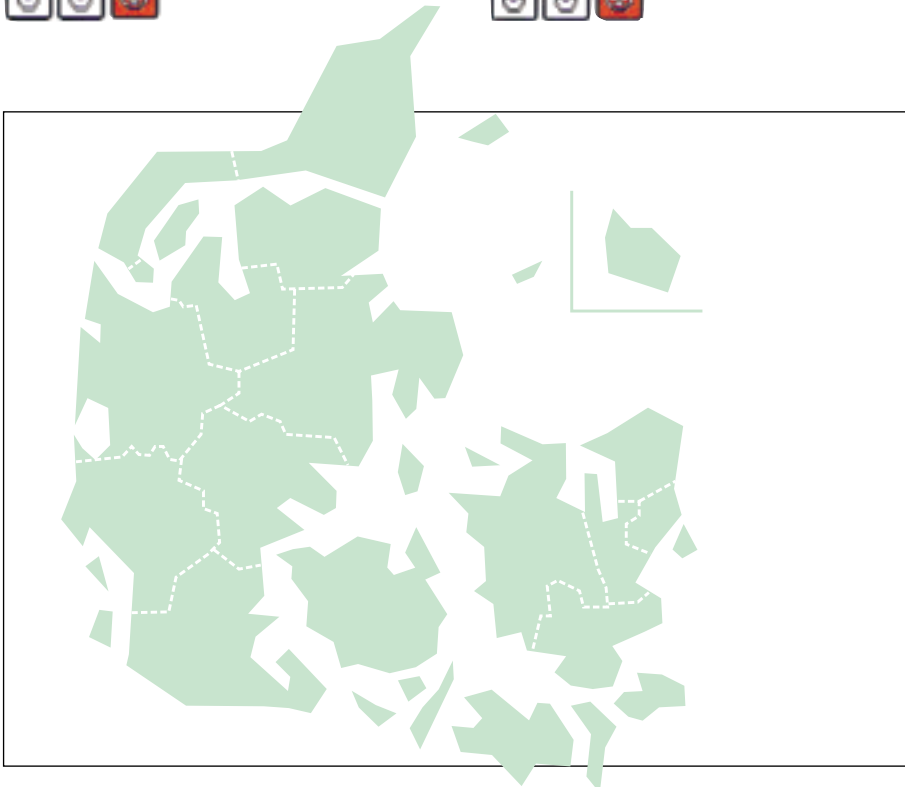
Vejle County



West Zealand County



Roskilde County



Copenhagen County



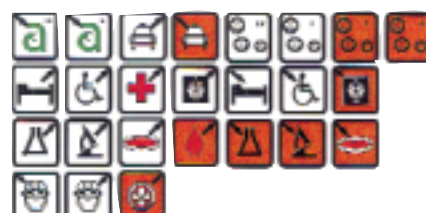
Copenhagen Hospital Corporation



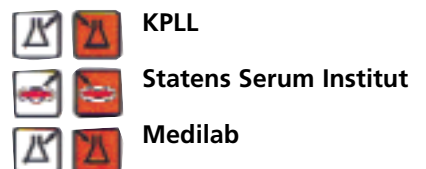
Funen County



Storstrøm County



Laboratories



The EDI league table:

Total %	County no.		Discharge	Referral	Lab. results	Lab. requests	Billing	Prescriptions	Notes	Prescriptions	Billing	Billing	Letters	Referrals	All messages
55,1	1	Funen County	35672	1576	41225	539	86	66316	16254	2479	426	0	3841	0	46
52,4	2	S.Jut. County	22248	195	17769	0	111	43301	4604	1659	303	3	2887	20	0
50,6	3	N.Jut. County	17765	606	46290	0	73	85964	19039	4517	531	0	3019	0	0
49,1	4	Vejle County	21349	1078	19709	566	109	53557	11160	2750	409	25	1267	5	0
46,6	5	KPLL			28729	0									
45,9	6	Viborg County	10975	8	18426	0	172	38418	4523	1464	202	2	1201	0	0
38,3	7	Roskilde Co.	5283	318	12542	0	70	27206	7502	2045	257	14	1038	1	0
34,2	8	Ribe County	0	2	9933	0	125	31899	9180	1741	285	0	835	1	0
33,9	9	Århus County	34025	71	27428	0	80	85720	19768	4744	23	0	1779	2	0
32,4	10	Storstr. County	7733	94	9640	0	19	31544	9655	1414	294	0	559	2	0
30,7	11	V.Zeal. County	4361	15	13222	1	58	35252	4916	1597	393	0	886	41	0
24,1	12	Bornh. County	839	0	2233	0	0	8982	0	0	0	0	237	0	0
23,4	13	Fr.borg County	40	0	14975	221	159	35360	301	1201	350	37	677	9	0
21,5	14	CHC	7318	0	8194	0	250	25473	5373	5063	0	0	3618	0	0
16,7	15	SSI			19988	0									
15,6	16	Ringkøb. Co.	123	0	9271	0	41	28746	1447	1362	0	3	1168	0	0
12,8	17	Copenh. Co	35	0	0	2	176	38893	10193	3504	495	63	2847	0	0
0,0	18	MediLab			0	0									
		Tot. mess. DK	167766	3963	299574	1329	1529	636631	123915	35540	3968	147	25859	81	47
All messages in Denmark: 1,300,349															

Hospitals/GPs/Pharmacies On-call GP services Dentists Specialists Local authorities

Number of messages in %, October 1999

The table above shows how far the individual counties have come with regard to EDI communication.

The EDI league table shows how many EDI messages there are in the individual county in the month in question.

The counties and the national laboratories are ranked from nos. 1-18 according to how large a share the EDI messages account for in the county concerned. The total, calculated as a percentage, of the

EDI message types is the basis for the ranking. All types of messages between local authorities, counties and pharmacies are listed under local authorities. The EDI messages are counted every month at Dan Net and Kommunedata. There is a message for each UNH segment in the message.

Status of the doctors' systems

Page 13 presents an overview of which doctors' systems are able to communicate which EDI messages for all their users in Denmark - shown as "DK" in the table. In some cases a date indicating when

the supplier has announced that the doctors' system is able to communicate the message is stated.

The overview is regularly updated at www.MedCom.dk.

Key

DK	Can do so for all their EDI doctors
N	Can do so, but not for all the doctors
29.4	Can communicate the message on this date.
/	The message is not developed
?	Cannot yet communicate the message

Who can do what now?

21-11-99		GPs' systems													
		Æskulap	Novax	PC Praksis	PLC	MEDWIN	Midoc	Multimed	Medex	iPRAKSIS	Medicare	EMAR	Docbase	Ganglion	Darwin
Information from suppliers															
Version of system		6.3 rev4	2.6.1	Latest new	3.6NPS	37.x	7.1	010699, 2.3D	8.2-10	8-12-2	1.2.6	99.2	1.1.26	6.76 2.1	18.0
DISE	3.Discharge letters	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK
	4.Outpatient notes	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK
	5.Casualty letters	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK
	6.X-ray results	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK
	16.On-call serv. notes	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK
REF	1.Referral, admission	DK	DK	DK	DK	DK	/	DK	DK	DK	DK	DK	DK	DK	DK
	2.Outpatient referral	DK	DK	DK	DK	DK	/	DK	DK	DK	DK	DK	DK	DK	DK
	7.X-ray requests	DK	DK	DK	DK	DK	/	DK	DK	DK	DK	DK	DK	DK	DK
RPT	9.Chemistry results	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK
	11.Pathology results	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK
	13.Microbiol. results	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK
REQ	8.Chemistry requests	?	N	N	N	?	/	?	?	?	?	?	?	?	?
	10.Pathology req.	DK	DK	DK	DK	DK	/	DK	DK	DK	DK	DK	DK	DK	1.12
	12.Microbiol. request	N	1.12	1.12	N	1.12	/	DK	?	?	?	N	1.12	N	1.12
RUC	14.Reimbursement	DK	DK	DK	DK	DK	DK	DK	?	?	?	DK	DK	DK	DK
PRE	25.Prescription GPs	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK	DK

Sub-projects

A number of sub-projects have been carried out under the auspices of MedCom 2 to support dissemination.

● **LAB-register project**

This project has resulted in the preparation of the PRODAT standard for the communication of register updates in the laboratory area and for the updating of the analytical repertoire of the individual laboratory.

● **“Clinical Aspect” project**

The purpose of this project was to focus on the clinical use of MedCom’s standards. This resulted in the publication of the brochure entitled “Clinical Work and Electronic Communication”. This brochure has been sent out to all medical practices.

● **PIXI project**

This project was launched on the initiative of the Copenhagen Hospital Corporation and resulted in extensive practical guidance on EDI implementation, known as the EDIFACT-PIXI book.

● **LAB-ERFA project**

This project involved setting up experience groups within each of the laboratory specialities of biochemistry, pathology and microbiology, firstly with respect to the formation of a consensus on electronic requesting and secondly with respect to adaptation of the laboratory results to the electronic medium.

It has been very difficult to make progress in laboratory requesting, as it makes great demands on com-

puter systems and necessitates significantly changed procedures for both doctors and laboratories. Only pathology requesting has been put to use. Experience in the three counties concerned has been favourable.

● **REF and RUC spearheads**

The ‘spearheads’ were established in the spring of 1998 with a view to strengthening the dissemination of referrals and national health insurance billing, which at that time was progressing very slowly. The groups’ work has resulted in EDI national health insurance billing today being used in all the counties with a total communication rate of 33%. Referral has been started in seven countries, but still has limited dissemination of 2%. The brochures entitled “Electronic Billing of the National Health Insurance Scheme” and “Electronic

Referral from Medical Practice to Hospital” have been published as part of this work.

● **MEDDIS quality assurance project**

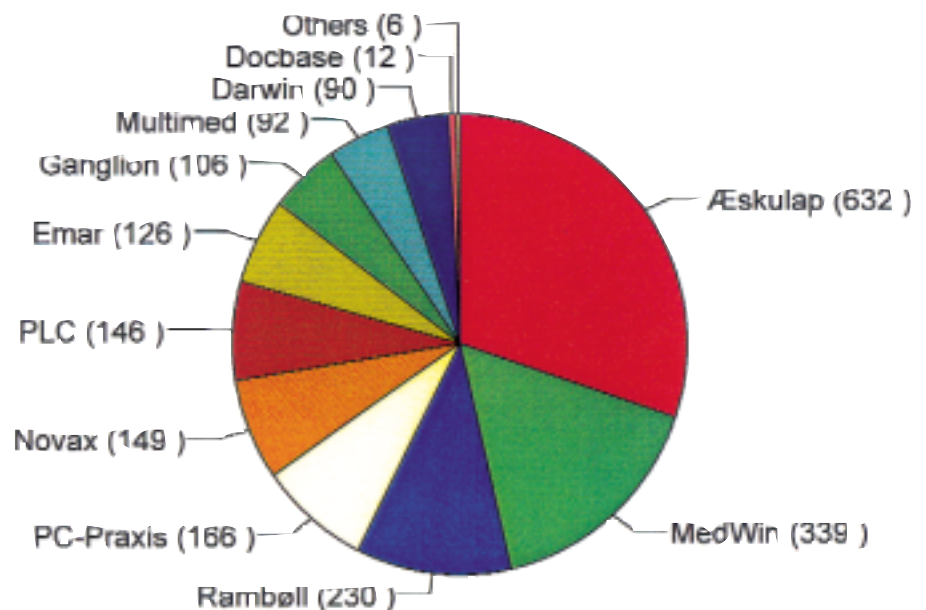
This project started in the spring of 1999 following strong criticism from doctors and the county councils of the technical quality of the discharge letters sent. A proposal for a “Good Discharge Summary” was drawn up under the project and is expected to be implemented in the spring of 2000.

● **“Make a Good Start” courses**

In order to give added impetus to the acquisition of EDI in doctors’ practices, four whole-day courses were held in co-operation between the individual counties and national laboratories. More than 300 people attended the courses. The book “Make a Good Start with

Doctors’ systems in Denmark. October 1999

Number of medical practices in brackets



Computers and EDI in medical practice" was published and sent out to all medical practices in the country.

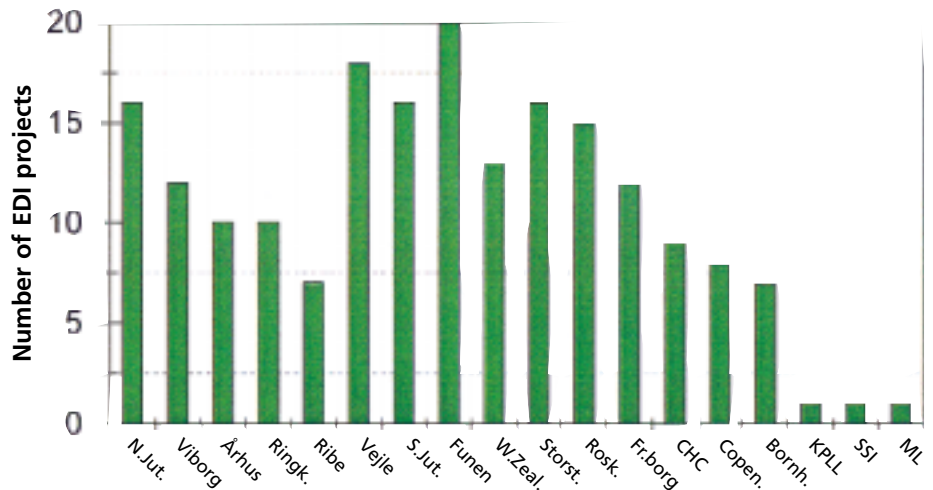
● **Documentation of utility value**

A planned project with the intended purpose of describing the utility of introducing EDI was not carried out.

Most have joined

All systems within hospitals, pharmacies, health insurance schemes, laboratories and in general practice are now able to use EDI in everyday operation. In October 1999, exchange took place between 1,462 general medical practices (72% of the total), 238 specialist practices (35%), 334 pharmacies (99%), 14 on-call GP services (93%), 2 national laboratories, 147 dentists (10%), 3 physiotherapists (1%) and hospitals covering 72% of the

EDI projects carried out. October 1999



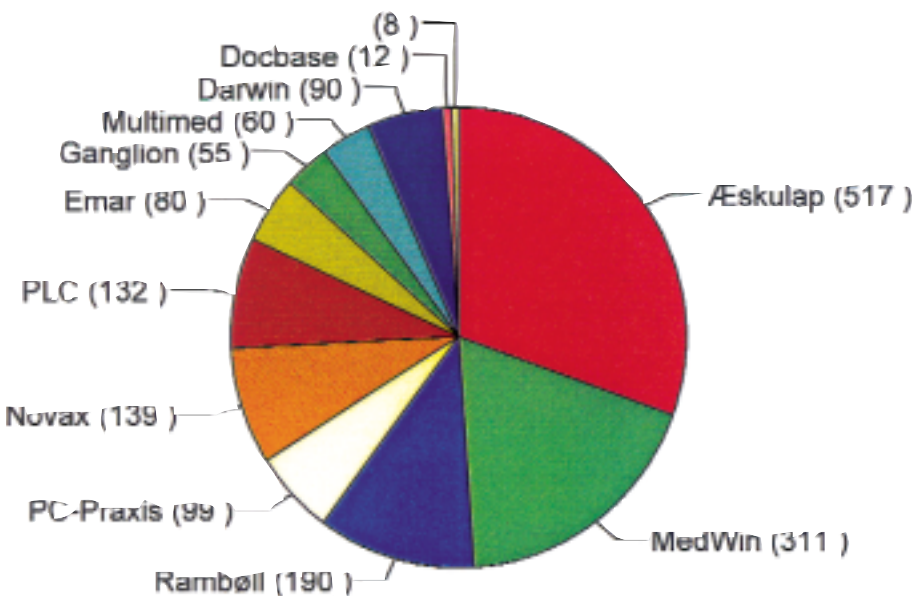
Danish population. Altogether, 1,300,349 messages or 44% of all messages were communicated.

The hospitals now have EDI systems

Thirteen out of fifteen counties now send EDI discharge summaries to general practitioners, and 98% of national and hospital laboratories in Denmark have procured IT systems capable of communication with MedCom's EDI standards. Clinical chemistry EDI laboratory results are now being sent from all the counties and national laboratories. Such progress has been made with pathology and microbiology results that all the laboratories will have joined in the year 2000.

Doctors' systems in Denmark with EDI. October 1999

Number of medical practices in brackets



Lab-Erfa groups

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The local-authority project

Purpose

Standards were developed over the period from 1995 to 1996 for the communication of the major flows of information between the local authorities and the hospitals, pharmacies and general practitioners. The volume of messages covered by these communication flows is approximately 14 million a year.

When the local-authority projects entered the MedCom project in May 1997, the aim was to run a number of pilot projects with the defined information flows until the end of 1999.

The plan

A number of elements were planned in the local-authority project:

Communication between hospital and local authority

- Basic communication between hospital and health-visitor service on admission and discharge
- Text-heavy messages concerning the health-visitor service

Communication between pharmacy and local authority

- Subsidies for medicines from local authority to pharmacy
- Billing for medicines from pharmacy to local authority

Communication between local authority and the Social Appeals Board

- Reporting of decision on invalidity pension

EDI/Internet solution for smaller local authorities

Access to the sending and receiving of the standardised EDIFACT messages using a standard WEB browser. This takes place particularly with a view to supporting communication to and from smaller local authorities, which for financial reasons do not use their own IT systems. Two solutions have been developed: Kommunedata's EDI2WEB solution for text-heavy messages and GE-Capital's solution, which covers all hospital-local authority messages.

The first part of the basic communication covers the sending of advices of admission and discharge. These brief messages are sent from the hospital to a sorting system in the local authority, which can capture and distribute messages of relevance to the local authority. The receiving system in the local authority is an expanded version of Kommunedata's Case and Advice System (known as Hospital Stay).

The second part of the basic communication consists of the sending of admission results from the local authority to the hospital for those people for whom the municipality has found a relevant type of case. In this way, the hospital obtains a number of items of basic information on the person who has been admitted. Distribution of the brief messages to decentralised systems, at present only care systems, is another phase in the project being applied in the municipality of Odense.

The dispatch of more text-heavy messages forms part of the second

phase of the project. It covers the dispatch of a health-visitor report from the local authority to the hospital, warning of completion of treatment and a hospital report from the hospital to the local authority. The health-visitor report is the message most recently added. It has been standardised at a joint meeting on the basis of proposals from the local authorities wishing to use this report.

Execution

Many of the local-authority projects were delayed between six months and a year. Much of 1998 was spent working through the communication standards and finding local authorities, counties and suppliers wishing to take part in a pilot project. The entire communication project between local authority and pharmacy has had to be closed, as system development has stopped due to changes in legislation in the area of health insurance.

Implementation of the messages is taking place in 28 projects, split between 13 local authorities and 7 counties. The implementation being carried out ensures that all the other local authorities and counties in the country will be able to introduce tried-and-tested technical solutions when they choose to change over to electronic communication.

The status at the end of the project is as follows:

- MedCom's standards have been incorporated into the Case & Advice (C&A) system, systems for invalidity pensions, the preventive healthcare schemes relating to children and adolescents and some care systems.

Planned local-authority projects	Carried out?
Hospital-local authority projects	
Bramming Local Authority and Esbjerg Hospital: Advice of admission and discharge	No
Frederiksberg Local Authority and CHC: Advice of admission and discharge	Yes
Græsted-Gilleleje Local Authority and Hillerød Hospital: WEBFACT Internet solution	Yes
Holbæk Local Authority and Holbæk Hospital: Advice of admission and discharge	Yes
Copenhagen Local Authority and CHC: Advice of admission and discharge	Yes
Næstved Local Authority and Næstved Hospital: Advice of admission and discharge	Yes
Odense Local Authority, Andersen & Lyngsøe, OUH and Hospital Funen: Advice of admission and discharge	Delayed
Odense Local Authority, C&A, OUH and Hospital Funen: Advice of admission and discharge	Yes
Skovbo Local Authority and Køge Hospital: Advice of admission and discharge	Yes
Tranekær Local Authority and Funen Hospital: EDI2WEB Internet solution	Delayed
Ålborg Local Authority and Ålborg Hospital: Advice of admission and discharge and admission results	Yes
Århus Local Authority, Marselisborg Hospital and Århus Municipal Hospital: Internet solution	No
Århus Local Authority and Skejby Hospital: Internet solution	No
Årslev Local Authority, OUH and Funen Hospital, Advice of admission and discharge	Yes
Pension reporting	
Græsted-Gilleleje Local Authority and Appeals Board: KMD Pension-system solution	Yes
Odense Local Authority and Appeals Board: KMD Pension-system solution	Yes
Randers Local Authority and Appeals Board: KMD EDI2WEB solution	Delayed
Århus Local Authority and Appeals Board: KMD Pension-system solution	Yes
Area of births	
Brønderslev Local Authority and Hjørring Hospital: Birth notification	Delayed
Lunderskov Local Authority and Kolding Hospital: Birth notification, notice of birth	No
Pharmacy project	
Subsidising of medicines, billing for medicines	No

- Hospitals in counties, where GS classic, B-data's patient administration system and FPAS are used, will be capable in the future of communicating with the local authorities on hospital admissions.
- All local authorities using Kommunedata's Case and Advice System will be able to receive mes-

sages from the hospitals and send replies.

- The care systems Rambøll Care, GE Capital's care system and Andersen/Lyngsø will be able to receive and dispatch messages.
- All the local authorities will be able to report electronically to the Social Appeals Board. Four local

authorities send pension forms to the Social Appeals Board electronically - three from KMD's pension system, one using KMD's EDI2WEB system.

- The system for children and adolescents from EG Datainform can receive notifications of birth.

Sub-projects

Citizen and patient - the local authorities in the health service

In conjunction with the MedCom conference in June 1999, a booklet was issued focusing on the benefits to the population of electronic communication between the local authority and primarily the hospitals. The booklet is based on three main areas: children and adolescents, medicines and the health-visitor service. Each area is illustrated by interviews.

XML project

The Danish EDI Council together with Fischer & Lorenz has taken the initiative for a national XML project (standing for eXtensible Markup Language), targeted at application on the Internet. Entirely new XML solutions will be developed on the basis of the valuable knowledge acquired and experience of EDIFACT. MedCom is taking part within the healthcare area, and notification of birth has been selected as the message to be converted to XML. The knowledge

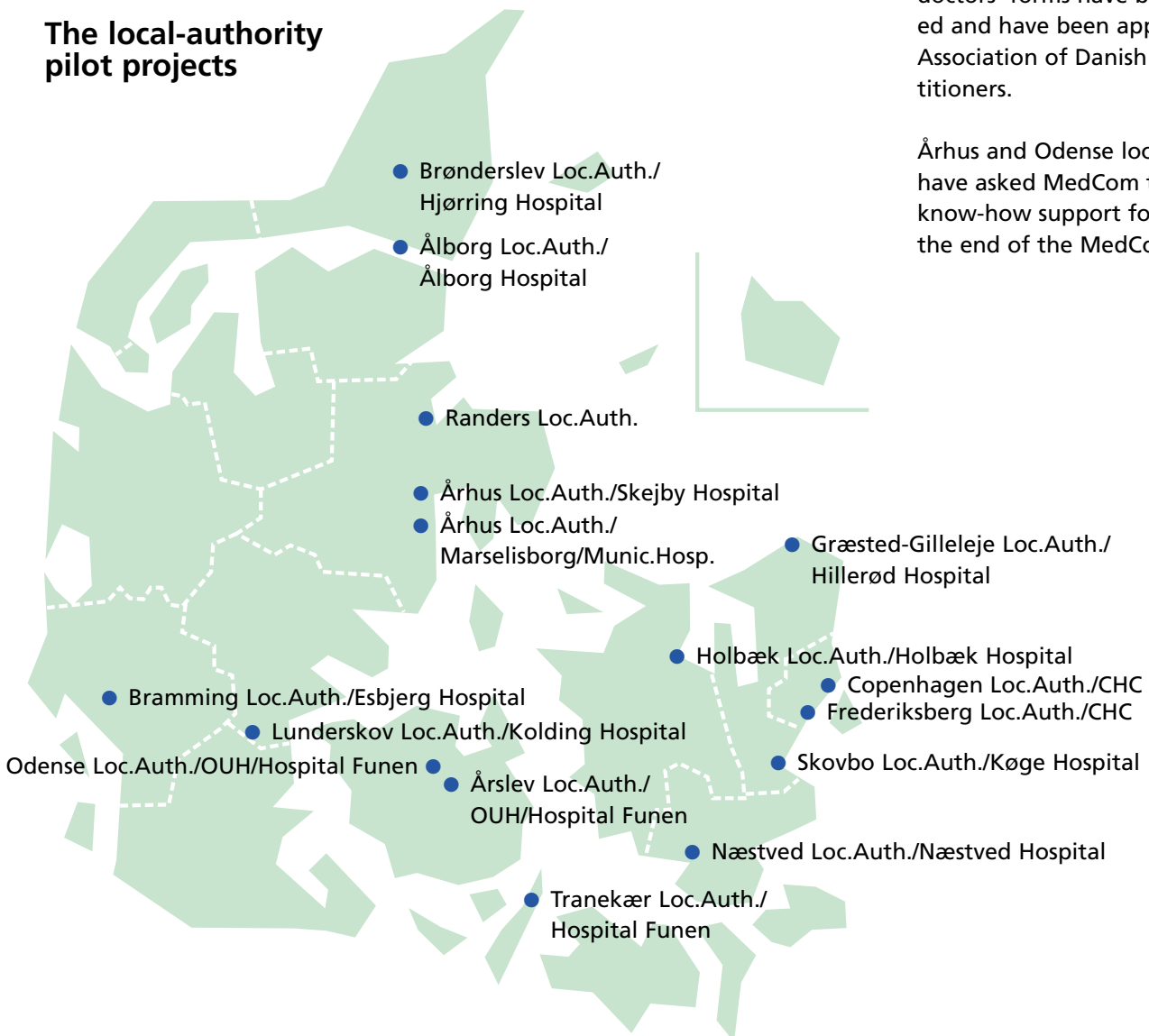
built up in the EDIFACT application guidelines on how the individual data elements are used for business purposes is being re-used.

Doctor-local authority project

A project involving the communication of doctors' forms between general practitioners and the local authority has been planned for a long time. There is a strong desire in the local authorities to introduce electronic transfer of the forms, as great savings on resources can be achieved in this way. The communication standards relating to the doctors' forms have been developed and have been approved by the Association of Danish General Practitioners.

Århus and Odense local authorities have asked MedCom to provide know-how support for start-up at the end of the MedCom 2 period.

The local-authority pilot projects



Local-authority project managers' group

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Kommunedata A/S

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EG Data Inform

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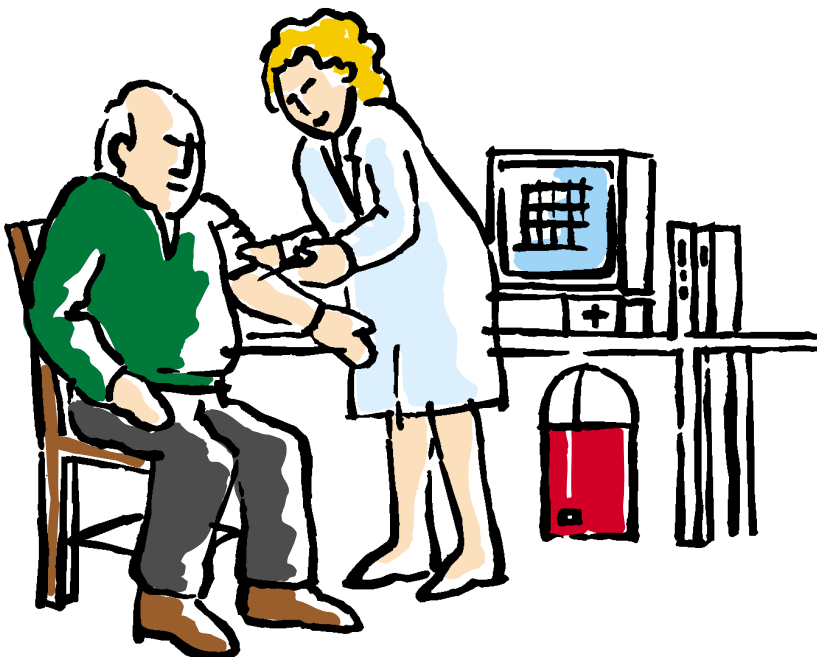
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Inform

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Anne-Mette Oudrup, MedCom



The pilot projects

Purpose

The purpose of the pilot projects in MedCom 2 has been to:

- Develop and test EDI communication to new parties and in new areas
- Test other forms of electronic communication, including telemedicine

Planned pilot projects	Carried out?
Dentist project	Yes
TeleMed project	Yes
Physiotherapy project	Yes
Consultant specialist project	Yes
MedCity	No
Booking results	Yes

The dentist project

The purpose of this project was to link dental practitioners to the established Healthcare Data Network. Various forms of communication were to be tried out under the project, including low-cost image communication and EDI updating of a central database in the Danish Dental Association.

The plan

Statistics on resources used were reported to the Danish Dental Association by a working group with the participation of suppliers. The remaining part of the dentist project is being carried out in

The dentist group

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Hans Chr. Boisen, Head of IT,
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Lars Hulbæk Fog, Consultant,
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Århus County. Co-operation agreements were entered into at the beginning of 1998 with specialist

dental parties on practical communication testing.

Carried out	
T1 X-ray images between dental practice and school of dentistry	15 image transfers
T2 Mucous-membrane images from dental practice to department of oral surgery	10 image transfers
T3 Dental images from dental practice to dental laboratory	57 image transfers
T4 Patient record material between co-operating dental practices	24 messages
T5 Prescription from specialist dental surgeon to pharmacy	Not carried out
T6 Referral from dental practice to hospital department (MEDREF, Webfact)	Tested December 1999
T7 Discharge summary from hospital department to dental practice (MEDDIS, Webfact)	Tested December 1999
T8 Statistics on resources used from dental practice to data in Danish Dental Association (MEDRUC)	Tested December 1999
Percentage carried out	88%

The TeleMed project

The purpose of this project was to critically examine the need for and opportunities presented by the new forms of communication and techniques, including telemedicine, information systems and Internet-based text communication. As part of the TeleMed project, an assessment has also been made of the



The TeleMed group

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 Lars Hulbæk Fog, Consultant, MedCom

overall need for electronic communication in the healthcare sector.

The plan

Co-operation agreements were entered into at the end of 1998 with project managers for 10 sub-projects for a minimum of three months of pilot operation in 1999 within the areas of image commu-

nication, information systems and text communication. The agreements contained guidelines for documenting the effects of the individual solutions. The TeleMed group was formed in connection with implementation of the project.

Carried out (1999)	Mar	Apr	May	Jun	Jul	Aug	Final rep.
TM1: Skin images from general practice (Øster Jølby - Skive)	PILOT OPERATION						Yes
TM2: Pathology videoconferencing (Skive - Viborg)	PILOT OPERATION						Yes
TM3: CT/MR scans between hospitals (Odense - South and South Jutland)	PILOT OPERATION						Yes
TM4: Radiological homeworking (Viborg)			PILOT OPERATION				Yes
TM5: Booking to general practice (Viuf)		PILOT OPERATION					Yes
TM6: National health insurance scheme data warehouse (Århus)			PILOT OPERATION				Yes
TM7: VISINFO-Internet (Funen)		PILOT OPERATION					Yes
TM8: Secure e-mail in the healthcare sector (Elsinore)		PILOT OPERATION					Yes
TM9: Web-based X-ray referral and results (Fredericia)			PILOT OPERATION				Yes
TM10: Secure EDI billing via the Internet (Århus)			PILOT OPERATION				Yes
Percentage carried out							100%

The physiotherapy project

The purpose of the physiotherapy project was to formulate referrals and discharge summaries between medical practices and physiotherapy practices, so that they are rele-

vant for medical practices and are communicated electronically using the MEDREF and MEDDIS standards. In addition, a facility for electronic billing between physio-

therapists and the national health insurance scheme is being established using the MEDRUC standard.

The plan

A co-operation agreement was entered into in March 1999 with the supplier of computer systems

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- Paul D. Samsig, A-Data ApS, PLC

The consultant specialist project

The purpose of the project was to test and disseminate

- Consultant specialist discharge summary from specialist practitioners to general practitioners (MEDDIS)

- Doctors' letters between general practitioners in connection with holiday relief, locum schemes and on-call GP services (MEDDIS)
- Referrals from general practitioners to specialist practitioners (MEDREF)

Carried out		
Supplier	Specialist discharge summary	Specialist referral
Ascott Software	OK	OK
PLC	OK	OK
MultiMed	OK	OK
Novax	OK	OK
PC-Praxis	OK	OK
Percentage carried out	100%	100%

to the physiotherapy area on the implementation and testing of MEDREF, MEDDIS and MEDRUC before the end of 1999. The project was based on a project group whose task included drawing up guidelines for the discharge summaries of physiotherapists.

Carried out	
Physiotherapy discharge summary	Yes
Physiotherapy referral	No
Physiotherapy billing	Tested Nov. 99
Percentage carried out	67%

The plan

A co-operation agreement was entered into in mid-1998 between the Association of IT Users in the GP Sector (EDB-PS) and MedCom on a pilot trial and dissemination of the three communication flows between all the members of EDB-PS. A basic requirement was that the participants in the project should be able to communicate with the other MedCom standards.

Booking results

The purpose of this project was to launch pilot projects involving the electronic communication of "booking results" from hospitals to general practitioners and consultant specialists. "Booking results" are sent to the doctor with information that the patient is on a waiting list, has been called in for hospital treatment or has been transferred to another hospital department. This information at present is rarely communicated to general practitioners, who are therefore not informed about how the hospital treatment is progressing. The project "re-uses" the MEDDIS standard for discharge summaries.

The plan

Co-operation agreements were entered into in mid-1999 with South Jutland and Funen Counties to carry out pilot projects with

electronic booking results. Booking results are sent out at the same time as the corresponding notice is sent to the patient. On Funen, "booking results" are sent out from all hospital departments, but only if the patient has been referred using electronic referral. "Booking results" have been used as an incentive for dissemination of the electronic referral. In South Jutland County, "booking results" are sent from the radiology department to Haderslev Hospital.

Execution

The project was initially delayed, but started on a large scale on Funen around the summer 1999 and in November was also launched in South Jutland County. There is great demand for the information from general practitioners, and introduction has boosted referral communication. Several counties are expected to start using "booking results" in the year 2000.

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 Jens Parker, General Practitioner, Copenhagen
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 Henrik Bjerregaard Jensen, Project Manager, MedCom
 Tove Kaae, Consultant, FynCom (booking results project manager)
 Niels Hedemand, Senior Physician, Haderslev Hospital
 Gerda Fønnesbæk, Assistant Matron, Haderslev Hospital
 Mie Frederiksen, Project Manager, North Jutland County
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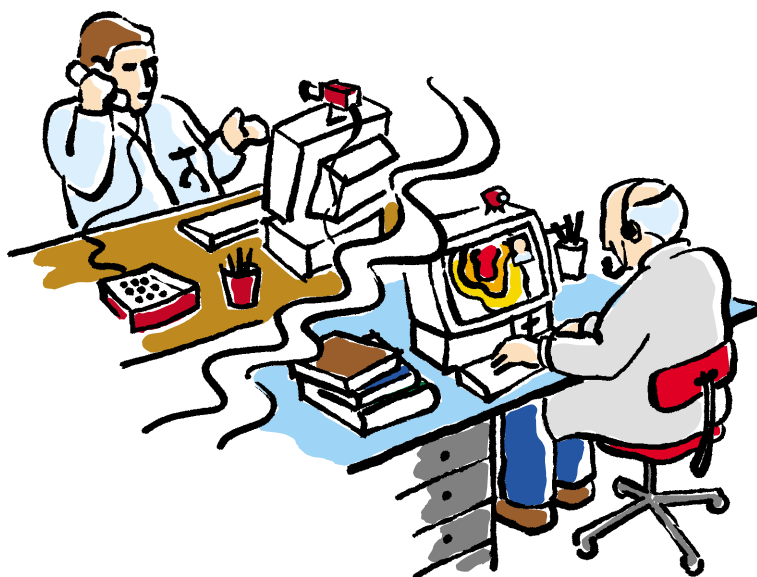
MedCom permanent

Patient focused care

It was decided in the financial agreement in 1999 between the counties and the government that the MedCom project should be made permanent.

“MedCom shall contribute to the development, testing, dissemination and quality assurance of electronic communication and information in the healthcare sector with a view to supporting patient focused care.”

It may be expected that developments in both healthcare and technology in the years ahead will create a need for continuous quantitative and qualitative enhancement of both the Danish Health-



care Data Network and other forms of electronic communication in the healthcare sector.

Viewed in the light of the efforts to establish a coherent patient care between the sectors and within the individual hospitals, it

may therefore be increasingly appropriate in the future to broaden the scope of MedCom.

Broadened scope:

- In terms of healthcare in the direction of supporting “patient focused care” to a greater extent. This may be done by looking at the communication at and between the hospitals and supporting the introduction of EPR systems in the hospitals.
- In terms of technology by also bringing in forms of communication other than “EDI via VANS”, including the Internet, pull-based communication and telemedicine. This will mean that the individual county, hospital or medical practice can choose between competing communication techniques to achieve what is most appropriate in the particular situation.

MedCom permanent

As before..

- Paid for and controlled by the parties
- Projects in two-year periods
- Measurable and focusing on broad needs
- Described and carried out by the participants
- Communication in treatment and nursing
- Emphasis on EDI

New..

- Internet
- Pull, telemedicine, WEB, e-mail etc. also
- Hospital communication also

Two-year project periods

It remains the intention that MedCom's activities will be carried out in projects for limited times - normally in two-year project periods. Another MedCom project will therefore be carried out over the period 2000 - 01: MedCom 3.

- **Start**
At the start of the project period, the MedCom budget is divided up into "framework budgets" with an indication of the total budget for each of the "umbrella projects" which it is proposed will be carried out in the next project period, e.g. budget frameworks for a dissemination project and for a pilot project.
- **Project description**
An actual project description is next drawn up in a broadly composed background group. The project description is approved by MedCom's steering group.
- **Co-operation agreements**
Co-operation agreements are entered into on the basis of the project description with the counties, suppliers and other parties with an interest in taking part in the project.
- **Project execution**
The projects are normally carried out as has been the case to date as "umbrella projects", where the individual county or the municipality attends to the actual project management and financing of the local project.
- **Project termination**
At the end of the project period, the projects are terminated - including projects which it will not be possible to carry out within the project period - so that it is possible to start from scratch with completely new projects in the next project period.

Two-year project period

	1st half-year	2nd half-year	3rd half-year	4th half-year
Start-up	●			
Project description	● ●			
Co-operation agreements		●		
Project execution		● ● ● ● ● ● ● ●		
Project termination				●

MedCom 3: 2000 - 2001

The demarcations between the specific projects in MedCom 3 will be fixed in the spring of 2000 by the MedCom steering group. However, on the basis of the work done to date, consideration is being given to launching the following four projects. It is anticipated that they will be carried out on the basis of MedCom's permanent budget and any additional grants and income for individual projects.

Project proposal 1:

Consolidation of hospital - GP communication

The dissemination of EDI communication between hospitals, general practices and pharmacies is increasing sharply, and it is now used on a large scale throughout the country. Despite the frequent and steadily increasing communication, faulty situations often arise. Doubts have also been expressed by doctors, pharmacists and the counties about the quality of the communicated EDI letters. The instability and faults are judged to be so serious that it will be appropriate to undertake fundamental quality assurance of the communication.

In view of this state of affairs, consideration is being given to a consolidation project, the purpose of which will be to ensure quality in the application of the present MedCom standards in the form of:

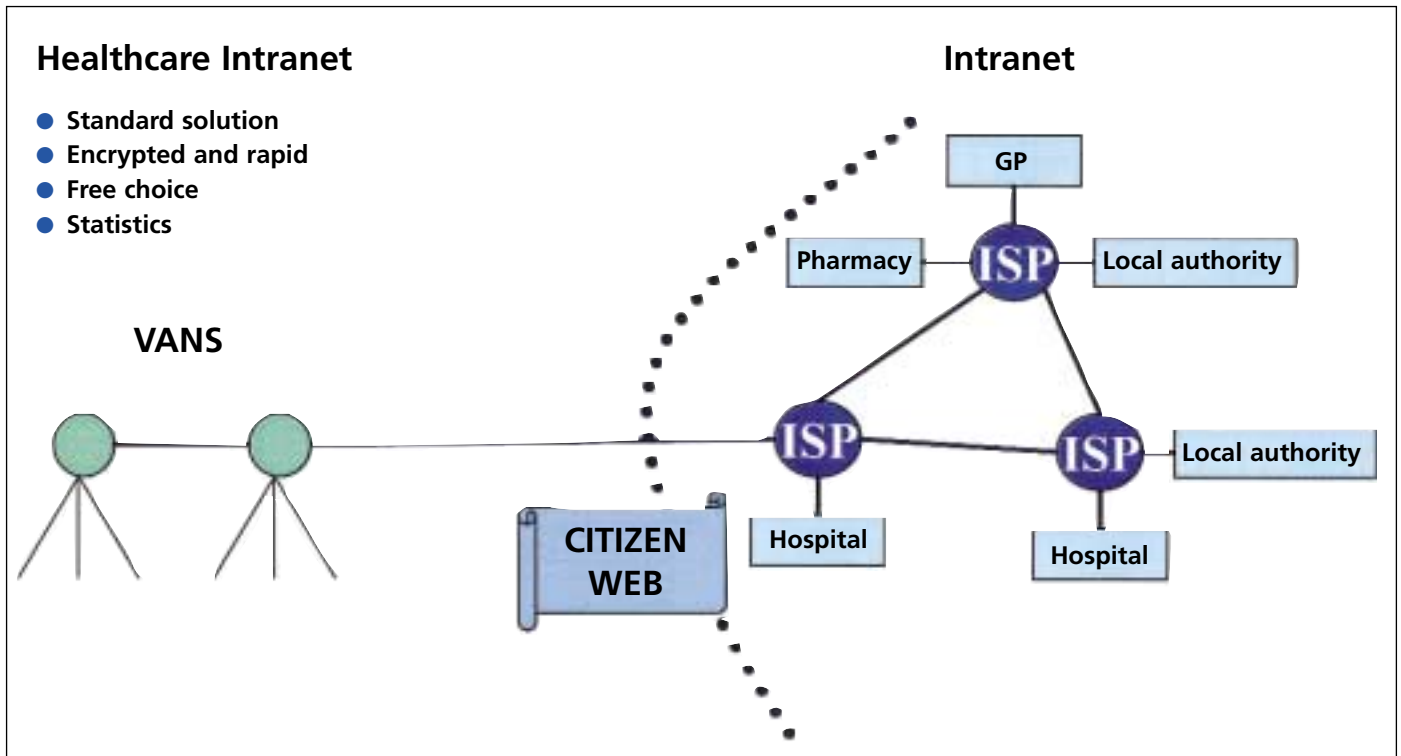
- **Harmonisation** of the use of MedCom's standards. It has been shown that the individual suppliers apply the MedCom standards differently, which leads to faults and instability and relatively low functionality in the receiving systems.

- **Quality assurance** of the applications of the sending and receiving systems. It will be appropriate to standardise basic sender and recipient conditions in order to achieve adequate clinical and functional stability and security.

- **Testing** of sending and receiving systems. Harmonisation of the use of the standards will make it possible to test the suppliers' EDI communication effectively before it is put into operation as well as monitoring compliance with the standards.

It is expected that execution of a consolidation project will ensure a marked reduction in the costs faced by counties and suppliers in rectifying faults and in maintenance and create the possibility of developing "backwards-convertible" standards.





Project proposal 2:

Change-over to Internet - and dissemination of telemedicine

The Healthcare Data Network has to date been based on traditional "VANS technology". Ten years of stability in the underlying technology has been an essential factor in achieving the current volume of communication. However, the spread of Internet technology is creating the possibility of changing over to modern, inexpensive and proven technology. At the same time it will make it possible to establish a large number of new forms of communication between parties in the healthcare sector, in which the hospital area is increasingly involved.

Consideration is therefore being given to starting to build up a nation-wide closed intranet to transfer treatment and nursing information for patients. In the longer term, a solution of this kind will make it possible for the employees in the healthcare sector, wherever they work, to communicate using different, competing Internet-based techniques such as e-mail, "pull look-up", EDI etc.

To ensure the necessary competition, an intranet of this kind could be constructed on the basis of bids and/or certification of a number of ISP suppliers, who are to fulfil the same function as the present VANS suppliers.

The construction of such a secure Internet-based data network would at the same time make it possible to start introducing new

forms of communication such as telemedicine. There will also be an opportunity for information projects where referral information and specialised recommendations via the Internet are made available to particular groups of healthcare professionals.

Project proposal 3:

Re-use and "push-pull" in the hospital area - an input to the process of standardisation

Form-based clinical communication between hospitals and the primary healthcare sector amounts to more than 15 million messages a year. Form-based communication equivalent in content in the hospital area amounts to just under 150 million messages a year.

It will therefore be relevant to establish a "re-use project" where

MedCom's standards are adapted to the operational situation in the hospital and are tested in a number of pilot projects in daily operation.

However, the operational situation in the hospital's treatment departments demands a more flexible and advanced form of communication than EDI. Individual hospitals have therefore developed on-line access to requesting and results enquiries in the laboratory and X-ray systems of the interdisciplinary service departments. This functionality provides satisfactory communication from the treating department to laboratories and X-ray departments, but leaves behind a

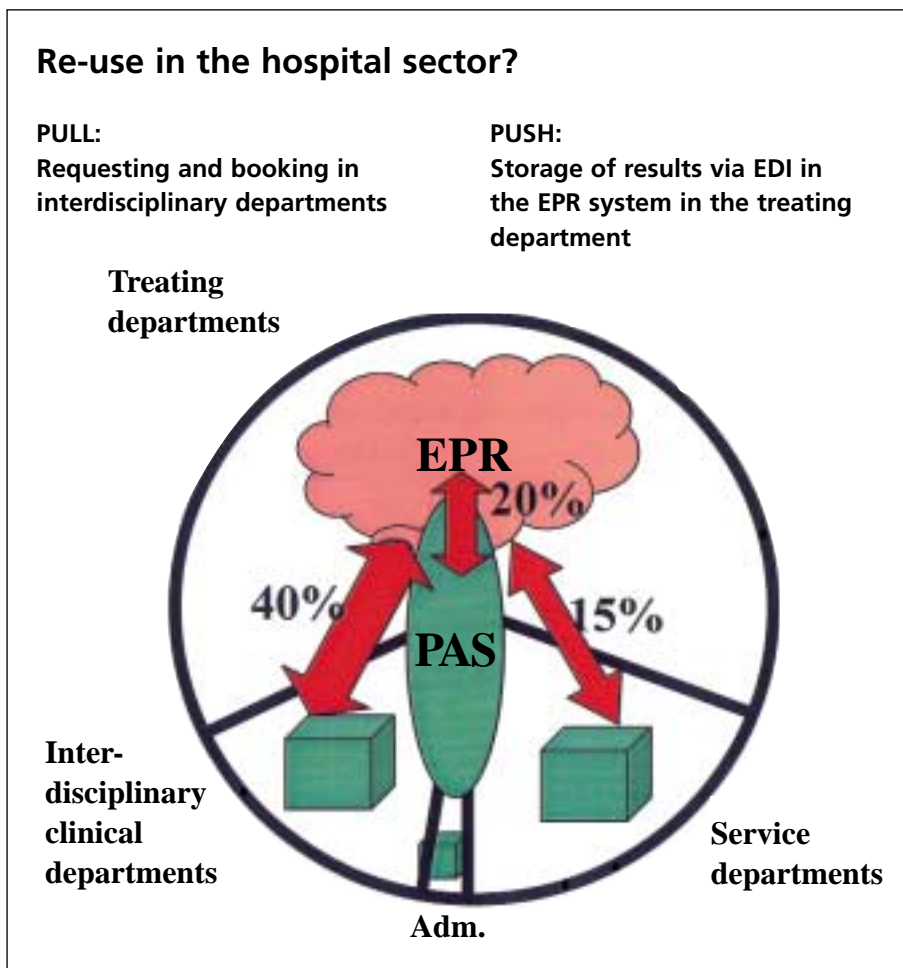
need to transfer data structured to EPR systems. This need can probably be met by "re-using" the MedCom standards in the hospital area.

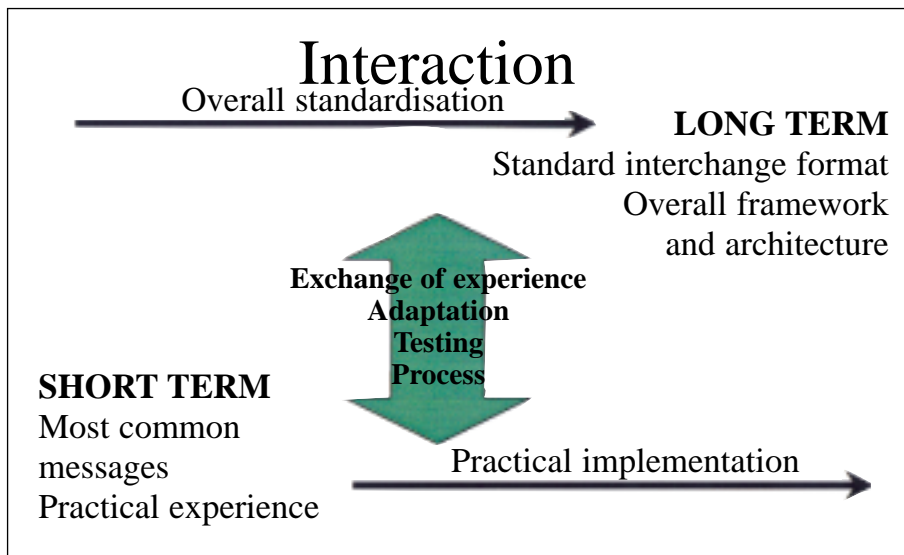
The purpose of this third project proposal is to develop a concept for a "MedCom hospital package" that makes possible

- on-line requesting, results enquiries and booking from treating department to laboratory and X-ray systems,
- EDI communication of results back to the treating department.

National IT strategy - in co-operation with the National Board of Health
The introduction of electronic patient records will be the key action area over the next few years in the hospital sector. Extensive standardisation work under the National Board of Health has been set in train with the adoption of the national IT strategy for the hospital sector. In the longer term, this standardisation will cover the basic structure of the record, revision of the SKS classification system, building up the health service terminology system, development of a standard interchange format etc.

This process takes place in gradual interaction between the long-term overall process of standardisation and more short-term experience of practical communication in the healthcare sector. MedCom can act in this connection as a practical link between the EPR standardisation taking place in the National Board of Health and the work proceeding with the implementation of EPRs in the hospitals.





Project proposal 4:

Dissemination of local-authority communication

EDI standards for the communication of "admission and discharge advices" from hospitals to the local-authority health-visitor service and "hospital results" from the health-visitor service to hospitals have been developed and tested under MedCom 2. These messages are in daily operation in individual local authorities. It may therefore be relevant to start a dissemination project with a view to achieving large-scale dissemination of these basic messages, which are of great importance for planning good patient progression for both hospitals and municipalities.

Standards have also been developed under MedCom 2 for completion of treatment and nursing report from hospital to local authority, birth-related EDI information again between hospital and local

authority and doctors' forms. In addition, there are two Internet-based communication systems ("EDI2WEB" and "WEBFACT"), which are designed so that all the MedCom local-authority messages can be keyed in by smaller local authorities which do not use an actual specialised IT system. If these methods of communication are to achieve wide dissemination, there is also a need for dissemination activities in these areas.

It is unclear at present whether the National Association of Local Authorities in Denmark will decide to join a permanent MedCom. The scope of the local authority-related projects in a future permanent MedCom therefore cannot yet be clarified with certainty.



The vision

A multi-functional Internet-based healthcare intranet

Building Regional Healthcare Networks in Europe.

It is not just in Denmark that work is in progress to establish the next generation of healthcare data networks. Development towards an Internet-based, multi-functional healthcare data network is also taking place in other European countries.

As part of the EU's fourth framework programme for healthcare informatics, six EU projects were carried out over the period 1995 - 98, all of which had the aim of establishing regional healthcare data networks. The six projects were implemented in 45 regions in 14 European countries and involved several hundred healthcare professionals. On the basis of the experience gained from the projects, the Commission has drawn up a joint European strategy for the development of regional healthcare networks. The strategy focuses on the demand for IT products for 18 action areas - all based on standard Internet technology - in order to create a market for the development of standard products in this area.

MedCom is monitoring the European work closely, and aims for long-term development that supports - and is supported by - European development. Communication in the healthcare sector covers both actual exchange of information in connection with treatment of the individual patient and the need for access to more general information.

1. Clinical communication

EU action areas for clinical communication	
Clinical EDI	Standardised and automatic e-mail communication of the most common, form-based messages
Secure e-mail	General, but encrypted e-mail for daily ad-hoc enquiries and results
Pull look-up	On-line WEB-based look-up in IT systems of laboratories and radiology systems
Booking	On-line WEB access to booking systems
Joint records	EPR systems used across sectors, departments and organisations
Telemedicine	Internet-based "push" or "pull" systems for remote diagnostics and expert assistance

The most important clinical communication in the healthcare sector is the daily routine communication of information which can be returned to a patient in connection with the treatment of the individual patient (e.g. prescriptions, transfer of records, test results). This communication is normally form-based, brief and in text form, and is generally transferred by post, telephone, fax or is brought along by the patient himself or herself.

Progress communication is particularly important for long-term patients and for large patient groups such as diabetics, the elderly and the mentally ill. In contrast to daily routine communication, progress communication necessitates agreement having been reached beforehand on procedures, protocols and guidelines for action in relation to such patient groups.



2. Healthcare information and Healthcare gateway

Healthcare information is information of a more general nature on the provision and use of healthcare services such as referral information, practical information and citizen information. Healthcare information does not normally contain personal information.

The need for healthcare information is covered at present by written material in the form of guidelines, catalogues etc. The WEB facilities of the Internet can make it

possible to pass on such general healthcare information more effectively. At the same time it becomes

possible to reach out to new groups of users.

EU action areas for healthcare information	
Referral info	WEB-based information systems targeted at various specialised groups, e.g. general practitioners
Quality info	WEB-based information systems with information on quality in the provision of treatment
Citizen info	WEB-based information systems targeted at the citizen

3. Administrative communication

Finally there is a need for communication in connection with administration, finance and management. This is due among other things to the desire for greater transparency and freedom of choice in treatment.

MedCom and the European strategy

In the Danish context, the intention in the longer term is to develop, standardise, co-ordinate and support the use of various forms of communication, as alternative options to the existing paper-based, telephone or electronic communication for both hospitals and other parties in the healthcare sector.

Such development will typically take place in steps, where some forms of communication will only exist at an experimental level for a number of years, while for other forms of communication it will be more appropriate to disseminate and support these within a shorter period of time. As with the MedCom projects carried out to date, the intention continues to be to focus on the needs for treatment and nursing information and preferably to use low-cost, tried-and-tested technological solutions which can make it possible to achieve broad application in the health sector within the foreseeable future.

EU action areas for administrative communication	
Billing E-commerce	Standardised transfer of billing information EDI or WEB-based ordering and invoicing of goods and services



Picnic in Europe

The "PICNIC" project is being carried out under the EU's fifth framework project 1999 - 2002.

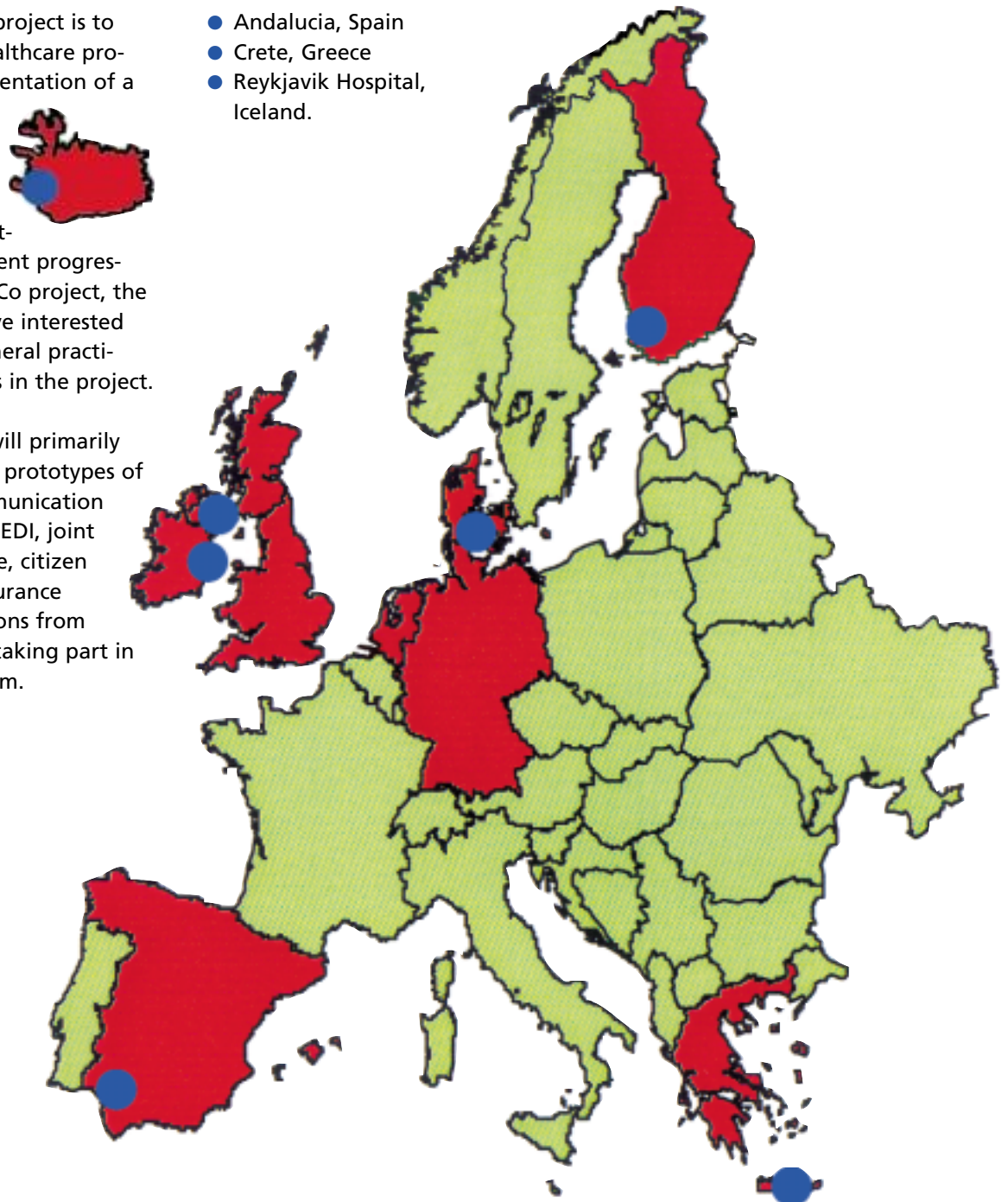
"PICNIC" is the largest EU-financed project within healthcare IT, and is directed by the Centre for Health Telematics, Funen County.

The purpose of the project is to support regional healthcare providers in the implementation of a modern, Internet-based health care data network which supports patient-centred treatment and good patient progression. As with the CoCo project, the intention is to involve interested Danish counties, general practitioners and suppliers in the project.

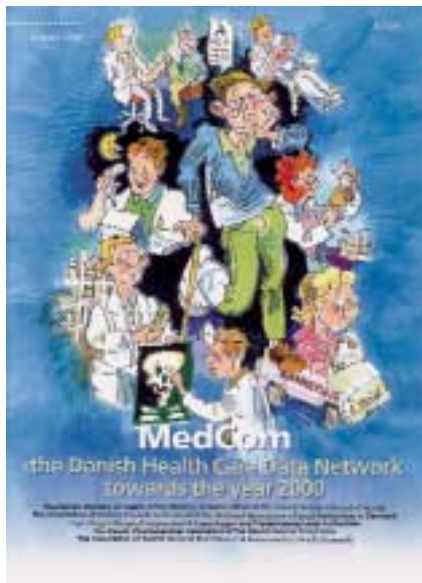
The PICNIC project will primarily focus on developing prototypes of Internet-based communication solutions for clinical EDI, joint records, telemedicine, citizen information and insurance scheme billing. Regions from seven countries are taking part in the PICNIC consortium.

Regions in "PICNIC"

- Funen County, Denmark
- Satakunta Region, Finland
- South and East Belfast Trust, Northern Ireland
- GMS Board, Ireland
- North Western Health Board, Ireland
- Andalucia, Spain
- Crete, Greece
- Reykjavik Hospital, Iceland.



MedCom in print



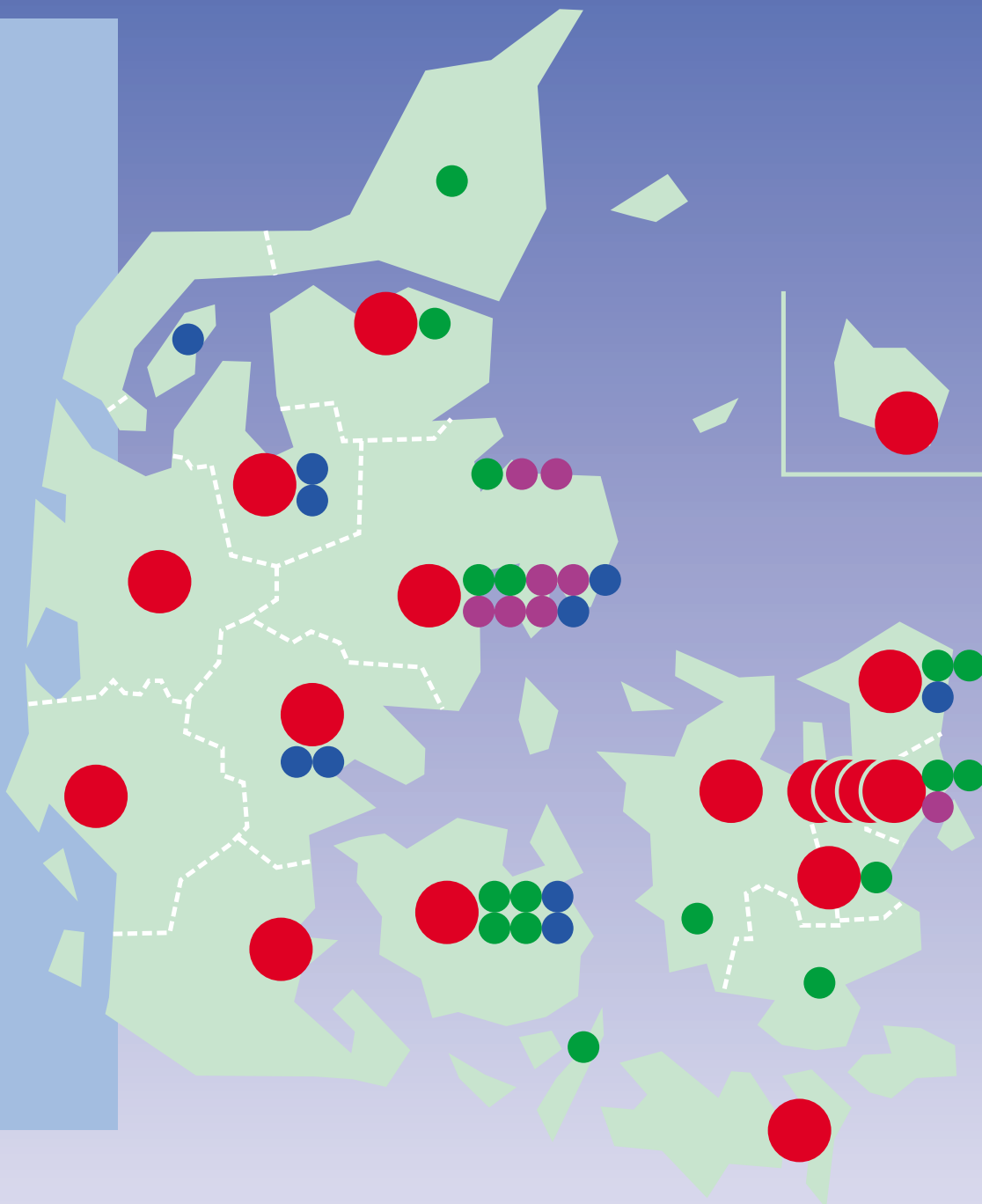
MedCom regularly publishes information material on the Danish Healthcare Data Network.



MedCom 2 projects

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