

MedCom

Sharing data in Health Care

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Agenda

1. MedCom and Danish Health Care
2. Standards in practical application
3. Social Care and Health Care
4. Results
5. Connecting Citizens
6. Concluding remarks

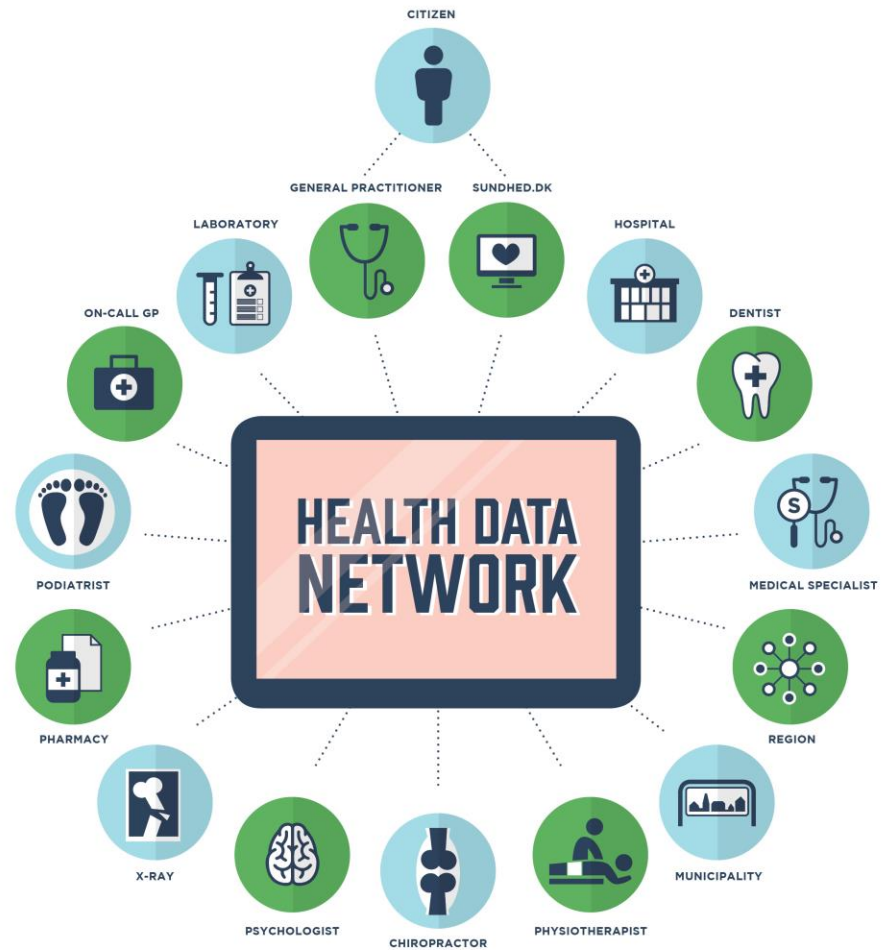


Danish Healthcare & MedCom

Denmark



5.6 mio. Citizens
43.000 km²
171 m high 😊



What is MedCom?

MedCom is established in 1994 as a partnership of authorities, organisations and private enterprise associated with the Danish health sector. In the 1999 financial agreement between the counties and the government, it was decided to make MedCom permanent, with the following aims:

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

MedCom is financed by:

The Ministry of Health

The Danish Regions

Local Government Denmark/Municipalities

- ✓ NONPROFIT
- ✓ CROSS SECTOR
- ✓ ALL IT-VENDORS
- ✓ STANDARDS & INFRASTRUCTURE
- ✓ NATIONWIDE
- ✓ PRACTICAL IMPLEMENTATION
- ✓ eCOMMUNICATION
- ✓ TELEMEDICINE

MedCom and the Governance for eHealth



SUNDHEDSDATA-
STYRELSEN

The Danish Health Data Authority



Regional eHealth



Local Government
Denmark

medcom

Standards and Health Net

sundhed.dk

National Health Portal

MedCom: Products and financing

Four basic Products:

- 1) Project Implementation (pilot, roll-out, consolidation)
- 2) Communications standards (EDI, XML, Webservice, HL7)
- 3) Secure Health Net (via contract with NetDesign A/S)
- 4) International Activities (EU-Projects, International Standardisation)

Basic financing DKK 21 m per year, of which

DKK 7 m from the Government (Ministry of Health)

DKK 7 m from the Regions

DKK 7 m from the Municipallities

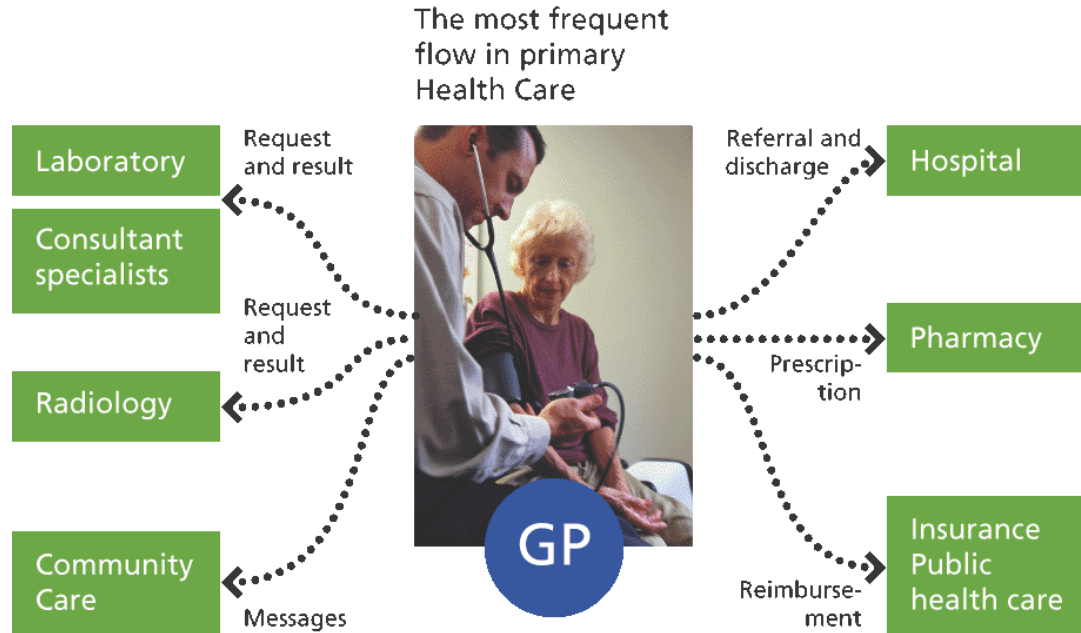
The following tasks are financed separately:

Operation of Health Net: Cost-neutral, user-financed

National telemedicine effort: Welfare Technology Fund



Starting point in 1994: Focus on the GPs



Increasing focus on municipal health sector communication since 2007

Municipalities:

- Elderly Care
- Rehabilitation
- Health prevention
- Social psychiatry
- Child care
- Labour-market (medical e-forms)



Three steps to National dissemination

1) National consensus

- Standards and secure infrastructure: *To ensure a multi-supplier strategy*
- National business case and project plan: *To ensure the marked for eCollaboration*

2) Pilot projects

- "First pilots": Testing in daily use
- "Secondary pilot": Implementation in all relevant IT systems

3) National dissemination - all relevant users

- Patient groups
- Hospitals
- GPs
- Municipalities

Standards in practical application

MedCom and the Governance for standardization



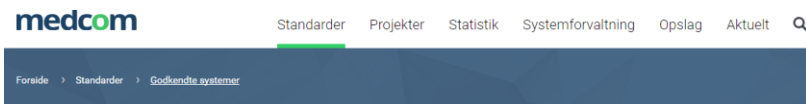
The Danish Health Data Authority
Official catalog of standards and profiles

medcom

- Owner of 194 national standards/profiles
- UN-EDIFACT, OIO-XML, Online webservice, HL7
- Responsible for monitoring and to make changes
- Develop and test new standards/profiles
- Test and certification of 153 IT systems i Danish Healthcare



Test and certification of IT systems



Godkendte systemer

Find oversigter over MedCom-godkendte systemer på disse sider.

Opdateret 19. april 2016

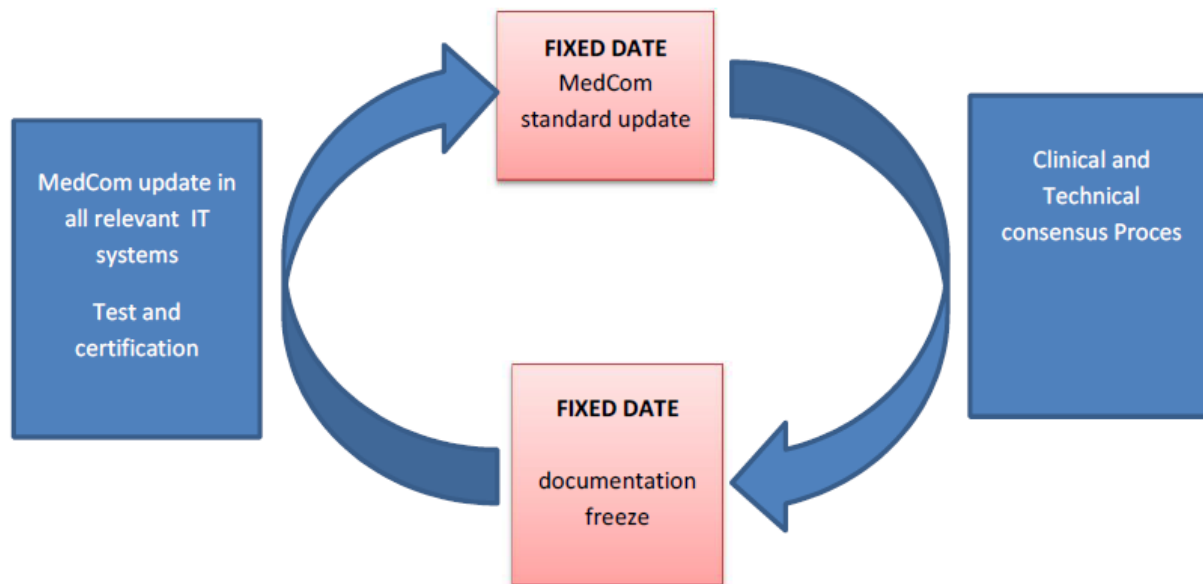
<ul style="list-style-type: none"> Apotekssystemer Børnejournalsystemer EOJ-systemer Fodterapisystemer Fysioterapisystemer 	<ul style="list-style-type: none"> Kiropraktorsystemer Laboratoriesystemer Lægesystemer Privathospitalssystemer Psykologsystemer 	<ul style="list-style-type: none"> Socialfaglige systemer Specialsystemer Sundhedscentersystemer Sygehus-EPI-systemer Sygehussystemer 	<ul style="list-style-type: none"> Sygesikringsystemer Tandlægesystemer Telemedicinsk hjemmemonitoring VANS-systemer
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MedCom standards ->

		Intype	Version	NOVAX	WinPLC	Web-Trans	MedWin	E6 China	ClinicCare	Ganglion	CCM XMO	Multimed Viteo	MyClinic
M o d u l e	MEDBIN PLO-format ver. 2.40	BIN01	B0130X	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	MEDBIN	BIN01	B0131X	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	FNIX-format	OIO XML	3.0	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
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	6 Mikrobiologivar	RPT02	R0230M	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	5 Cervixcytologivar	RPT03	R0330P	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	5 Patologivar	RPT04	R0430P	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	4 Immunologivar	RPT01	R0130K	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	16 Speciallægehenviisning	REF06	H0630R	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
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	1 Ambulanteepikrise	DIS02	D0233L	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	1 Skadestueepikrise	DIS03	D0333L	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	1 Billeddiagnostisk epikrise	DIS05	D0533L	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
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	1 Bookingsvar	DIS13	D1333L	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
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	2 Korrespondancebrev	DIS91	D9134L	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	2 Psykologepikrise	DIS10	D1034L	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	28 Kiropraktorepikrise	DIS09	D0933L	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt
	25 Adm. Korrespondance	DIS90	D9034L	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt	Godkendt

GP's EPR systems ->

Changes in MedCom standards: "Annual" cycle...



Exsamples on requests for MedCom standards (2016-17)

New standards:

- HL7 profile for Home monitoring /telemedicine (*National Strategy*)
- HL7 profile for questionnaires /Patient Reported Data (*National Strategy*)
- HL7 profile for sharing patient appointments/bookings in Health Care (*National Strategy*)
- XML standard for exchange of dataset between municipalities (*Municipal Strategy*)

Changes in existing standards:

- Public Health Insurance (EDI):
New collective agreements with the practice sector
- Rehabilitationplan (XML):
New clinical guidelines
- Elderly Care/Hospital Communication (EDI/XML)
User suggestions
Medicine data (Common Medicine Database)
Social Psychiatri
- Health Prevention (referral/discharge letter) (XML) *New clinical guidelines*

Social Care and Healthcare

Cooperation between Local Government Denmark, municipalities and MedCom

Local Government Denmark (LGDK) is the association and interest organisation of the 98 Danish municipalities

Health care, Social services, Integration, Employment, Technology and the environment, Primary schooling, Child care

Health care including rehabilitation, home care, prevention of abuse, dental care, and promotion of health

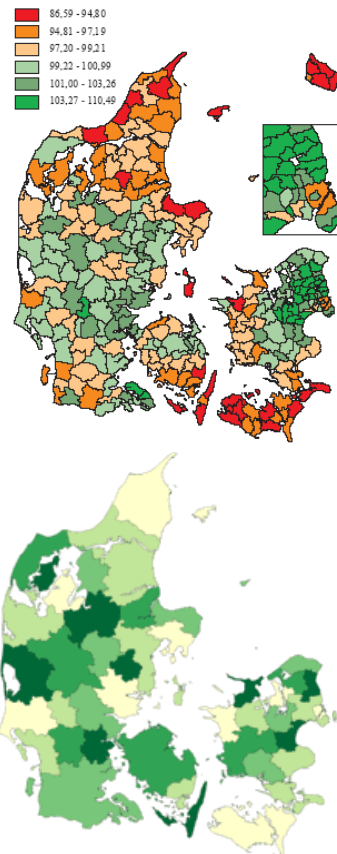
Social services such as care for elderly and disabled, psychiatric treatment, social psychiatry, placement of neglected children, and specialised education

The municipalities are using digital communication in the cooperation with hospitals, GP's and other actors in the health area

One of the tools is MedCom standards and services.

Local Government Reform, January 2007

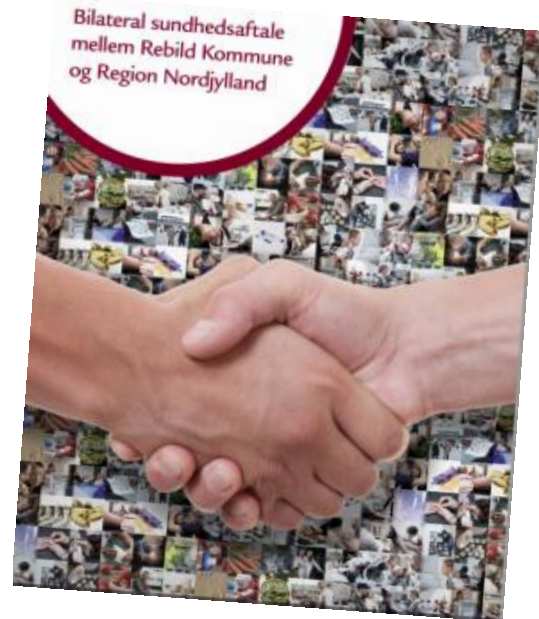
- From 275 municipalities to 98
- From 15 counties to 5 regions
- Health care tasks are more shared between regions and municipalities (health agreements)
- Regions, Municipalities and the Government agrees on common Digitalization Strategy for the health area



Health agreements

Since 2007 health agreements between region and municipalities are demanded by law

- The first generation of health agreements 2007-2010
- The second generation of health agreements 2011-2014
- The third generation of health agreements 2015- 2018
- The National Board of Health approves and monitors the health agreements
- Locally established cross-sectoral cooperation organizations



The third generation of health agreements 2015- 2018

Target areas:

1. Prevention
2. Treatment and Care
3. Training and Rehabilitation
4. Health IT and digital workflows

Cross-cutting themes:

- Division of labour and cooperation, including sharing of knowledge and health professional counselling between sectors
- Coordination of capacity
- The involvement of patients and relatives
- Equality in health
- Documentation, research, quality improvement and patient



MedCom & municipalities

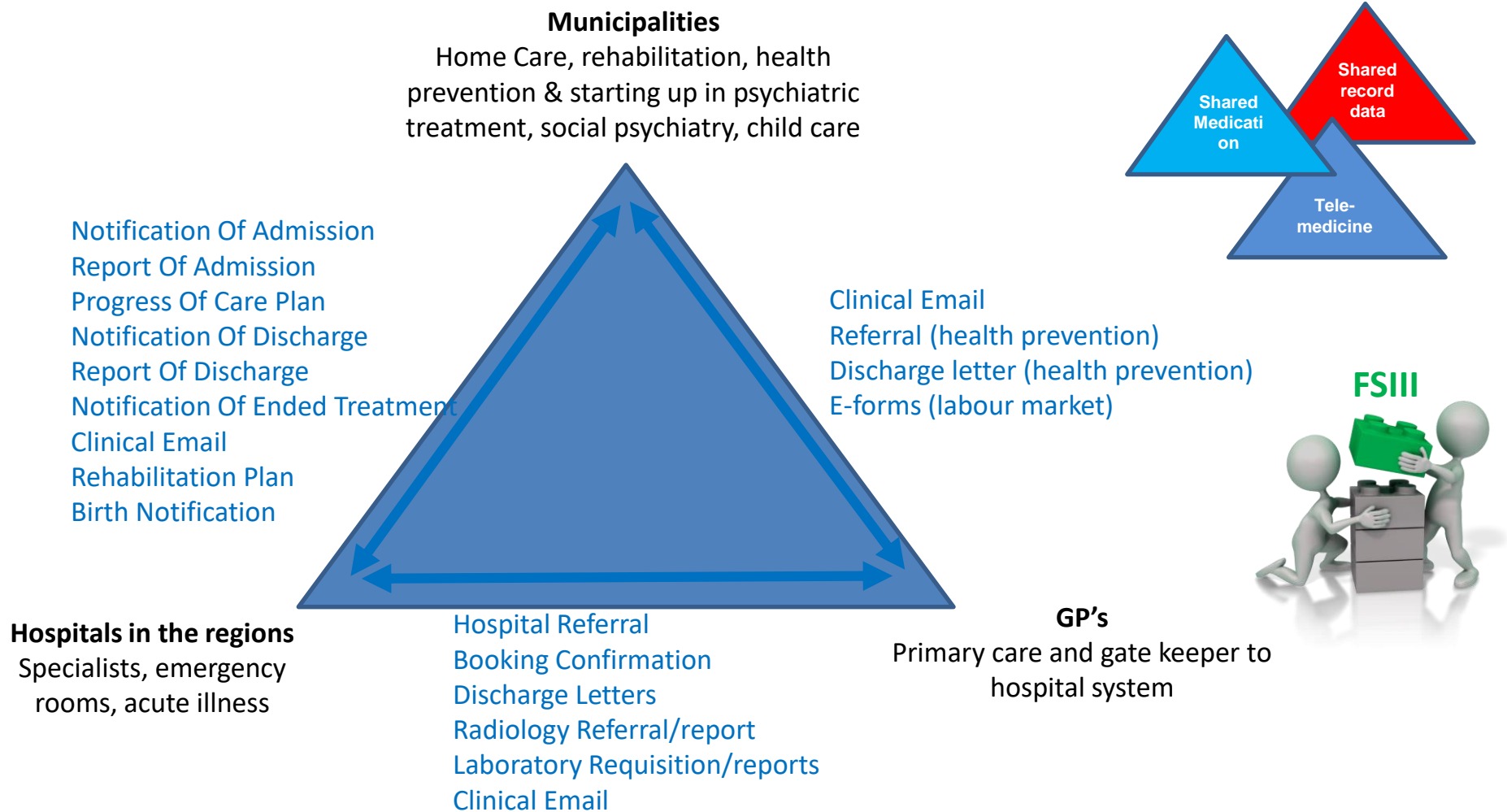
Municipalities:

- Elderly Care
- Rehabilitation
- Health prevention
- Social psychiatry
- Child care
- Labour-market – medical e-forms

MedCom standards:

- Notification Of Admission
- Report Of Admission
- Progress Of Care Plan
- Notification Of Discharge
- Report Of Discharge
- Notification Of Ended Treatment
- Clinical Email
- Rehabilitation Plan
- Referrals (health prevention)
- Discharge letters (health prevention)
- Birth Notification
- E-forms





FSIII =Cross Terminology in Municipalities

- 1) In Danish home care, multiple professions deliver services to citizens.
- 2) LGDK wants to improve the documentation of the services
- 3) Different professional groups use different terminologies, and different models for documentation
- 4) FSIII – documentation standard :
 - FSIII is a national home care documentation standard
 - One of the goals is to share documentation to improve coordination between these professional groups
 - Avoid double documentation
 - Building up structured information and the use of classifications (ICF, ICPC, ICD10, SNOMED):
 - ✓ Decision support
 - ✓ Improve exchange of data
 - ✓ Management information



FSIII = Cross Terminology in Municipalities



LGDK has developed the documentation standard

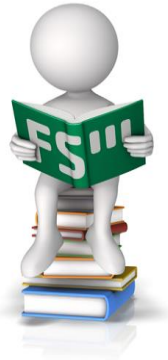
MedCom supports the national implementation by

- Kick-off meetings
- Network meetings
- Local support and dialogue
- Evaluation of the process
- Statistical follow-up on national dissemination
- XML standard for exchange of FSIII dataset between municipalities

FSIII method



FSIII Classifications



E-learning videos



Implementation



For IT-vendors



Background



Presentations FSIII



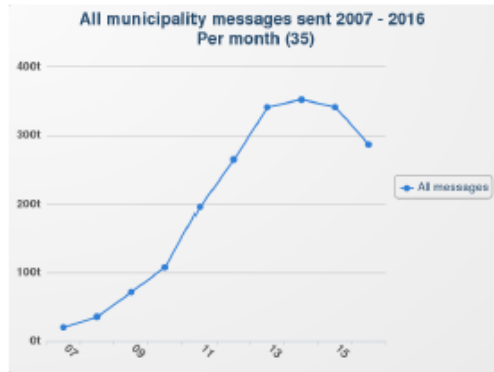
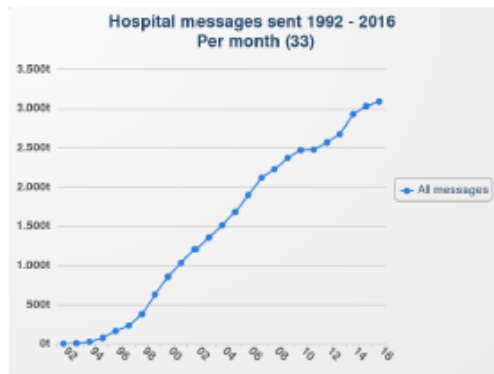
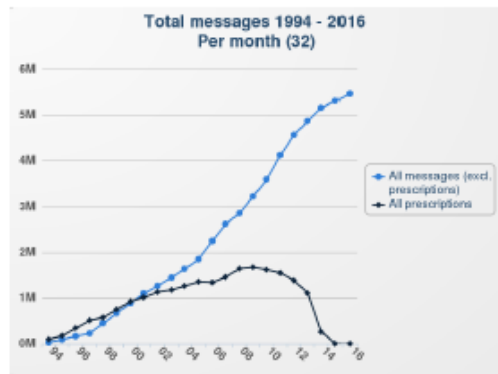
Contact & Support & Networking



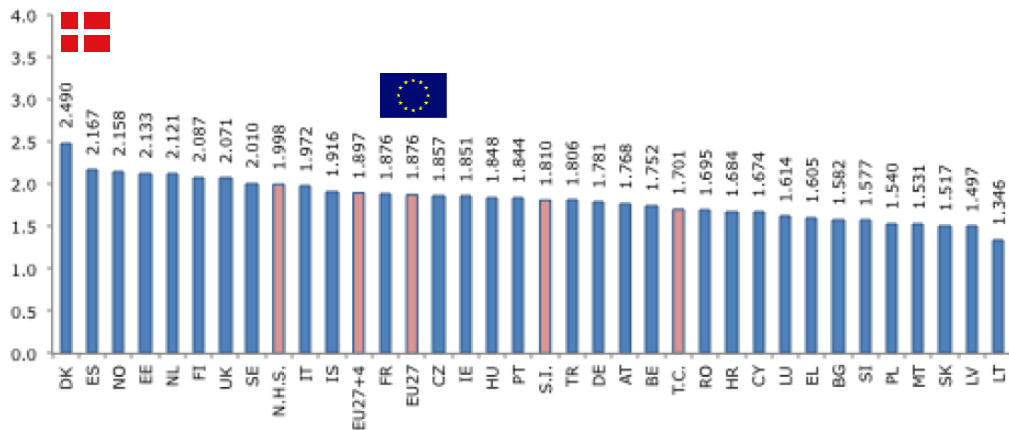
Some results

Overall traffic monitoring 1994 – 2016

Principal figures for traffic development per month for hospitals, General Practitioners and municipalities. januar 2016



European Benchmark 2013: GP use of ICT



- **Electronic Health Record (EHR):** systems that are used by healthcare professionals (doctors and nurses) to enter, store, view, and manage patient health and administrative information and data.
- **Health Information Exchange (HIE):** is the process of electronically transferring / sharing / enabling access to patient health information and data.
- **TeleHealth:** is the use of broadband-based technological platforms for the purpose of providing health services, medical training and health education over a distance.
- **Personal Health Record (PHR):** are electronic systems allowing patients to have secure access to, and manage, their health information.

Denmark no. 2

Denmark no. 1

Denmark no.16

Denmark no. 1



This study was carried out by



Authors

Cristiano Codagnone & Francisco Lupiañez-Villanueva

It actually works...

... but room for improvement:

MedCom focus in 2016-2017:

- Connecting Citizens
- National use of modern international standards (HL7)
- Quality Management System (ISO): Test and certification
- System Management (ISO): National Infrastructure

National focus towards 2020:

Digital support of complex patient care:

- Improved coordination in patient care
- Online datasharing vs. "store and forward"



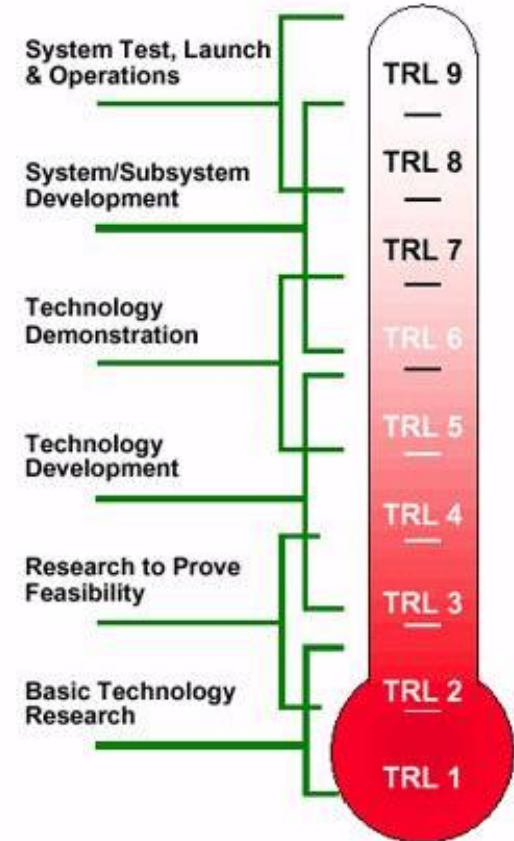
Connecting Citizens



Maturing Telemedicine InfraStructure



medcom



Once upon a time there was a National Action Plan...

- A **common** plan for the Public Health Sector (2012): Danish Government, Danish Regions and Local Government Denmark
- Focus on national dissemination of **mature** telemedicine concepts
- Better **framework** for telemedicine: Reference architectures and standards
- Large scale **pilotprojects**: 2 of 5 pilots regarding home monitoring, using common infrastructure and standards
- “**Telecare North**”
- “**Clinical Integrated Home Monitoring**”



ØA 2016 – Telemedicine support for COPD patients

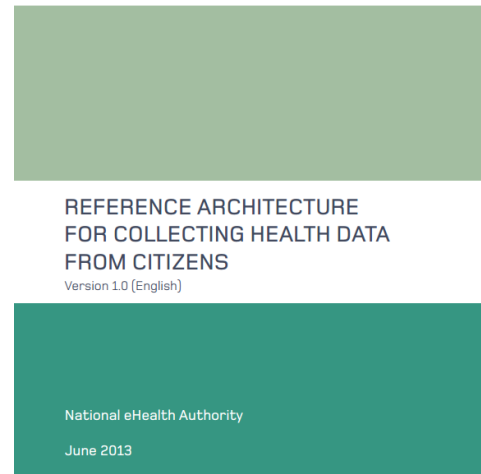
- Disseminate telemedicine home monitoring nationally supporting citizens with COPD by the end of 2019
- The initiative is closely linked to five regional/local programs
- A joint public steering committee is established in order to secure overall coordination and follow up
- The national telemedicine infrastructure is being matured and prepared for large scale implementation of home monitoring of COPD patients



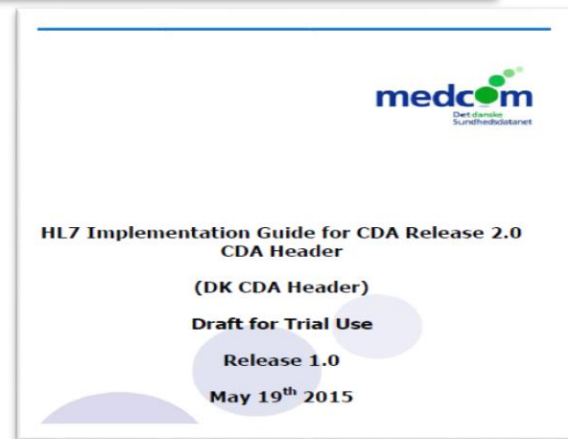
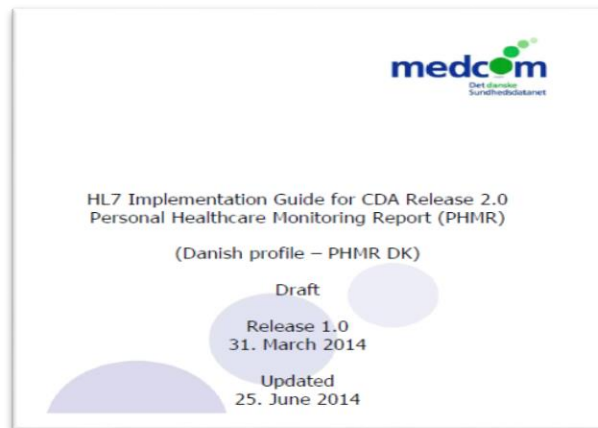
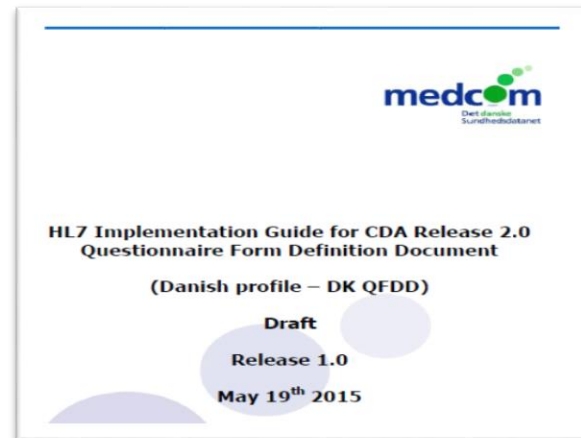
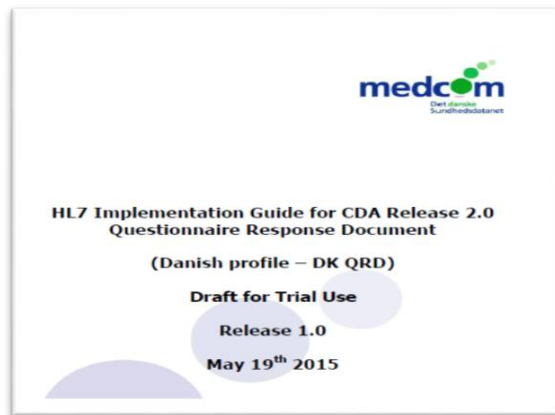
Reference architecture

- Cross sector sharing of home monitoring – measurement and questionnaires
- Enables sharing of data from different telemedicine application through standard interfaces
- Enables integration in the EHR

[Reference architecture for collecting health data from citizens \(PDF\)](#)



Danish Interface profiles



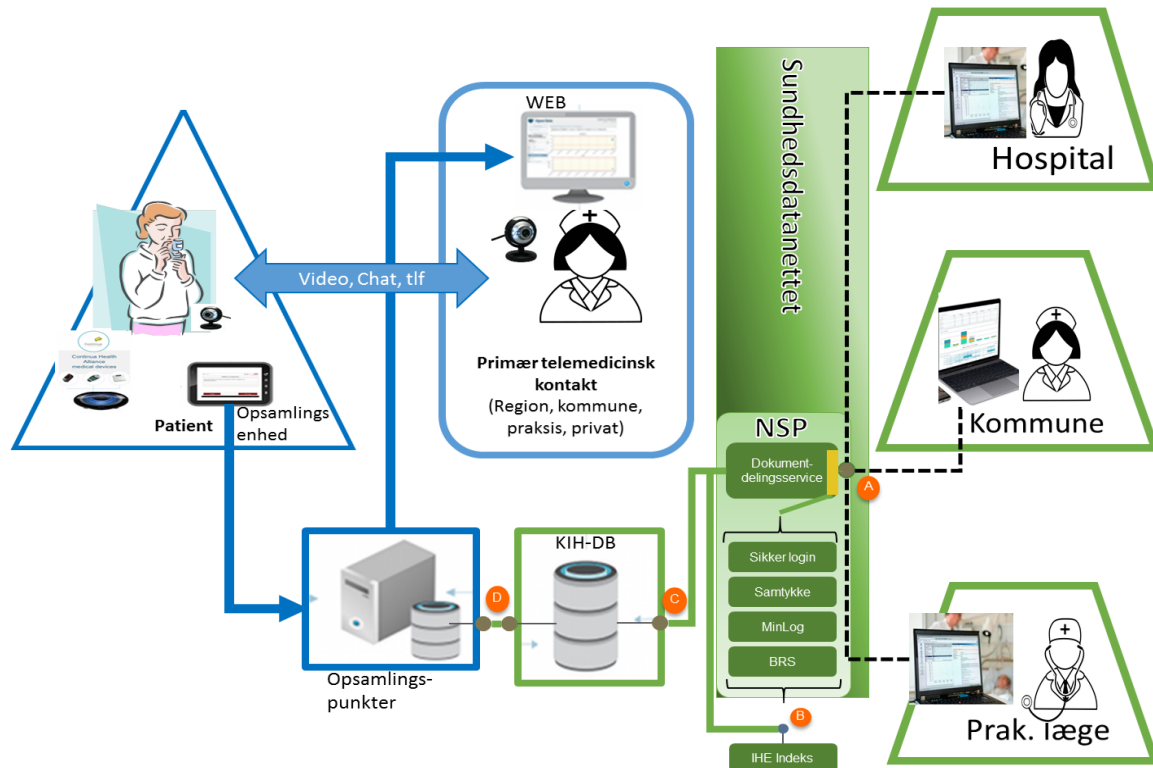
MaTIS – focus on the **green** Regional/local programs– focus on the **blue**



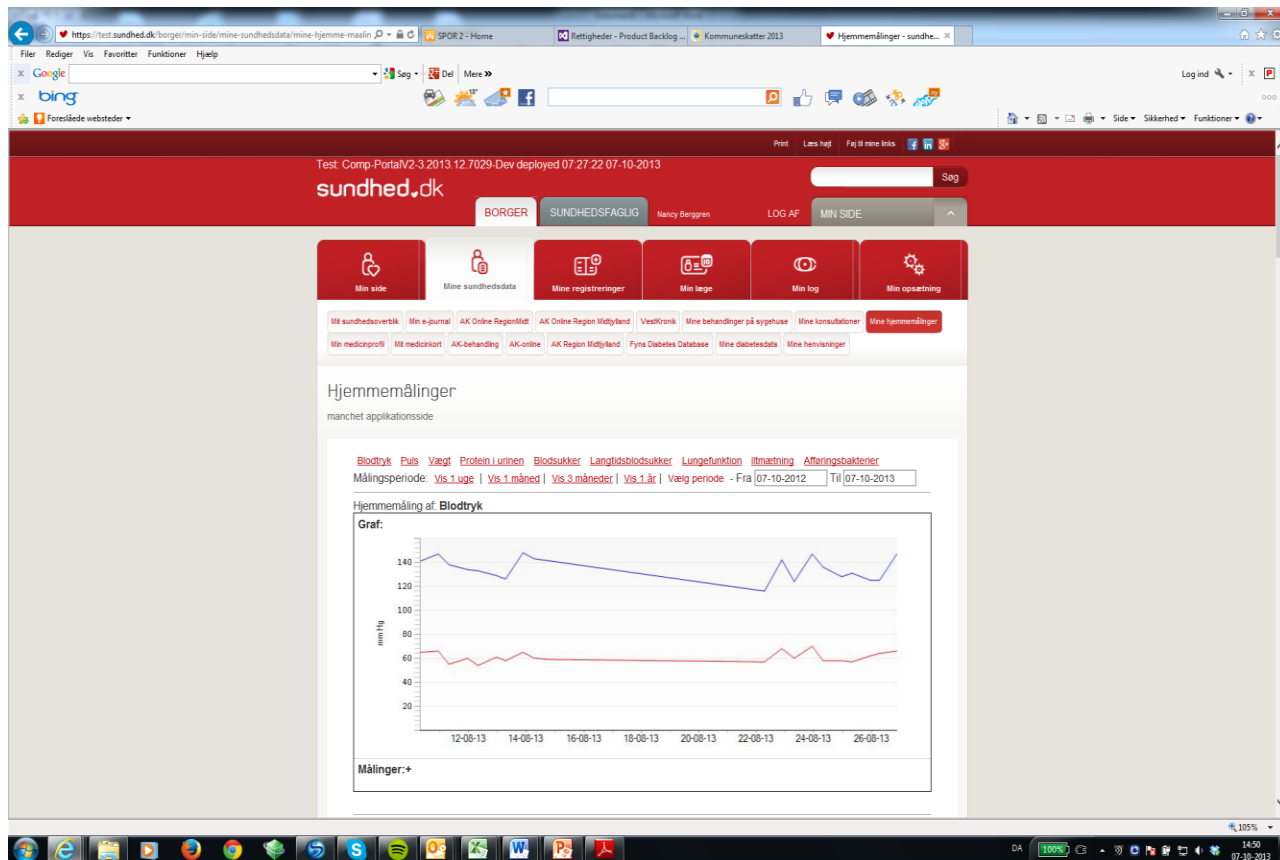
IHE interfaces

- A** From document consumer to NSP/DDS
- B** From DDS to IHE registry
- C** From KIH Database (XDS repository) to DDS
- D** From primary telemedicine app. to KIH DB

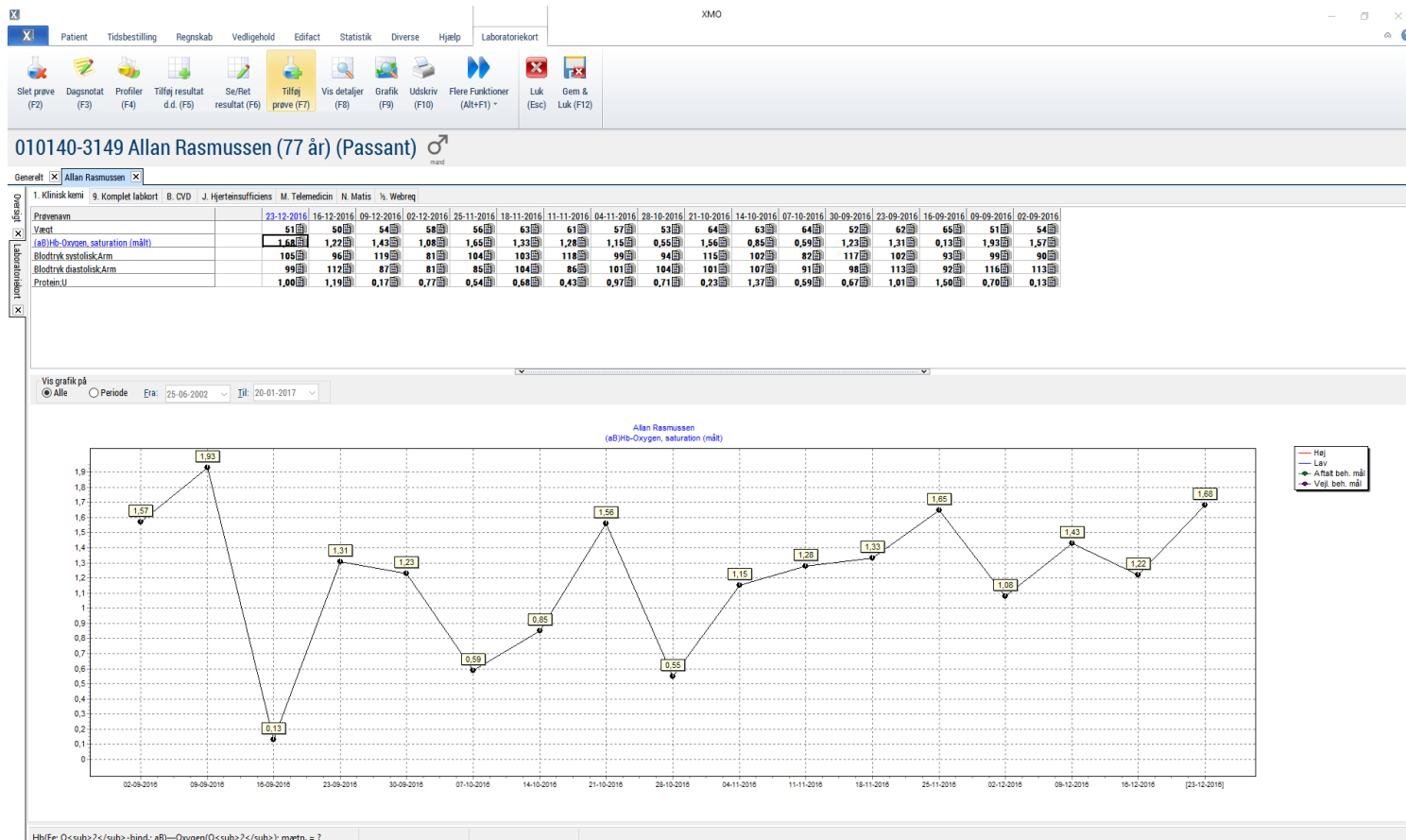
DDS = Document sharing service (IHE)
NSP = The National Service Platform



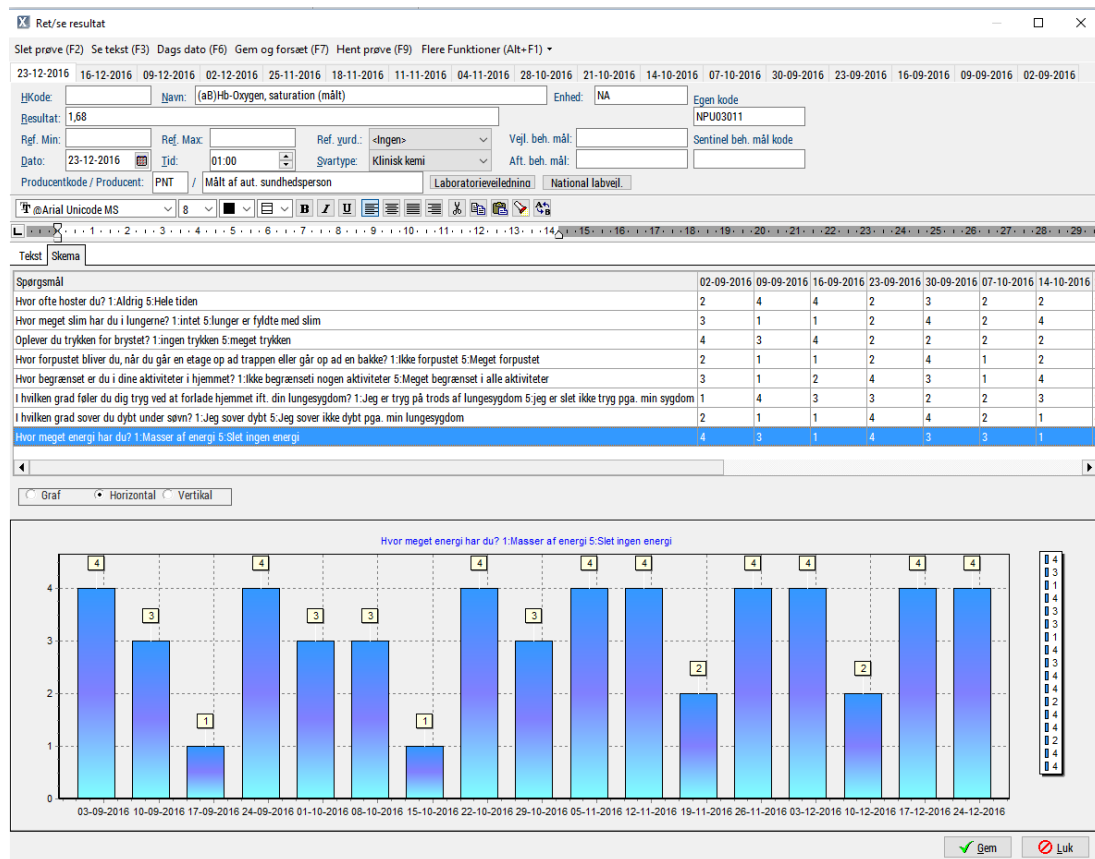
Sundhed.dk



Home measurements (HL7/PHMR) in EPR/GP-system



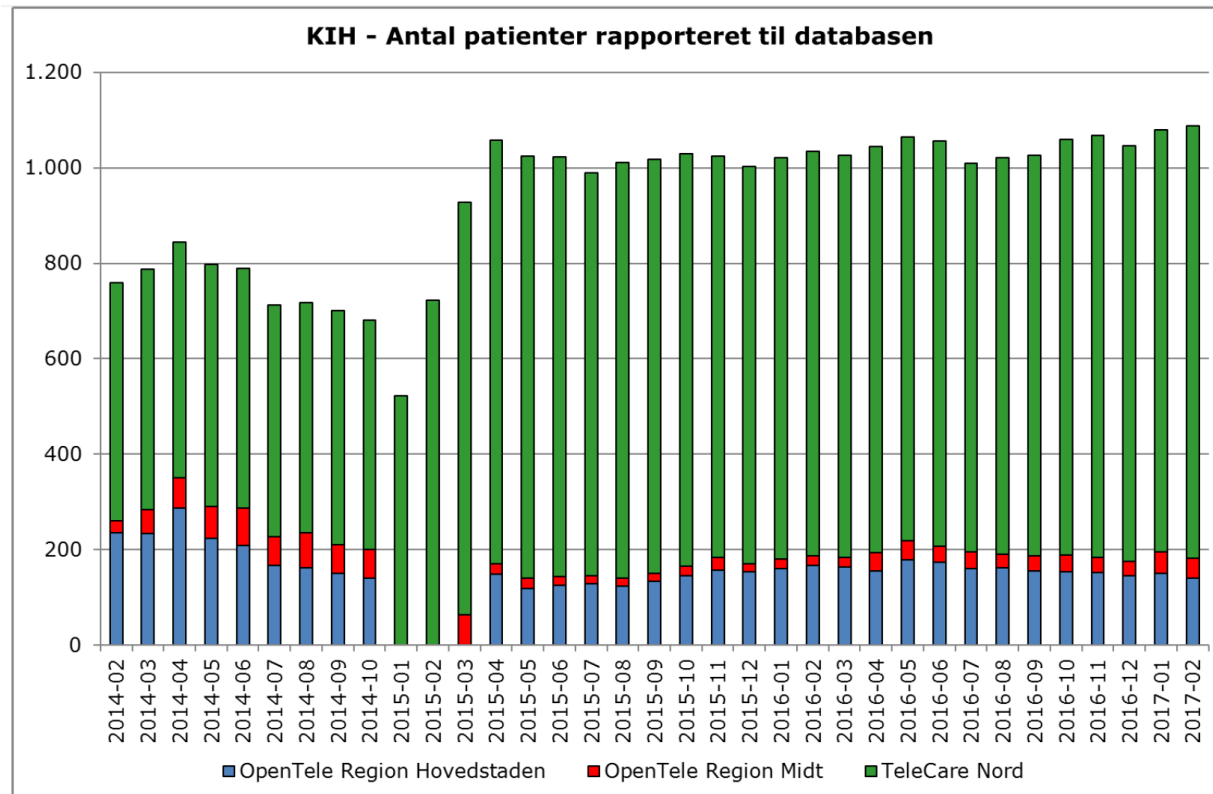
Patient Reported Data (HL7/QRD) in EPR/GP-system



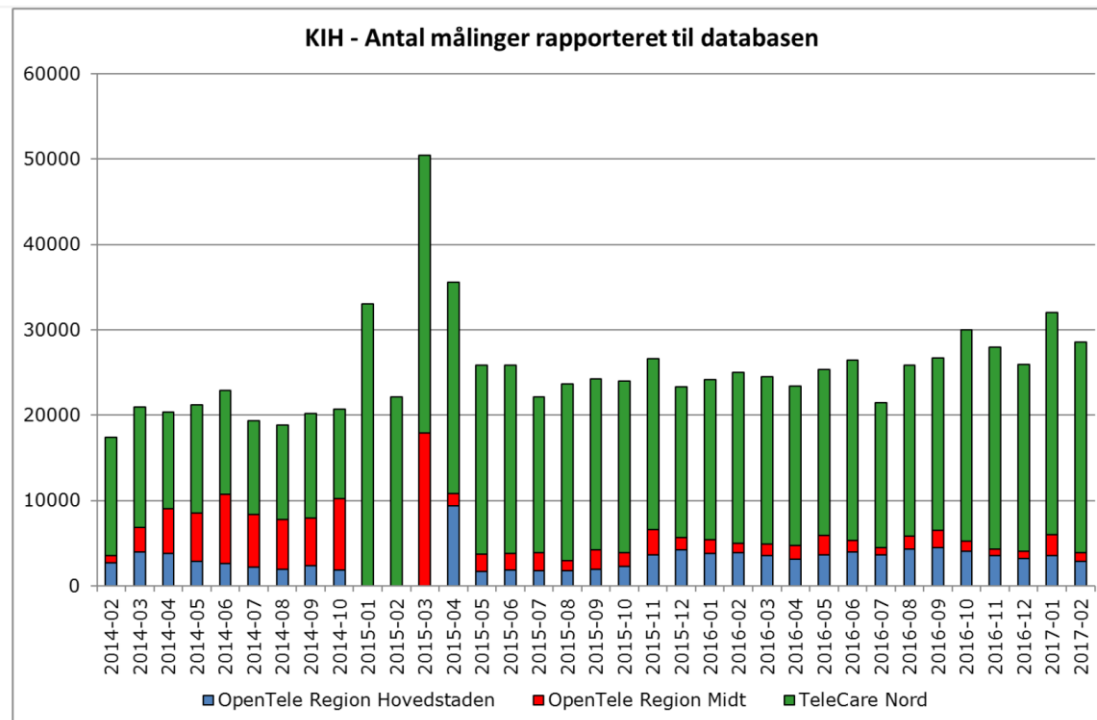
MaTIS Work packages

1. Standards and architecture
2. Maturing the National Service Platform
3. Maturing XDS Repository
4. Maturing General Health Care Systems
5. Pilot testing
6. Deployment of the National Service Platform
7. Deployment of XDS Repository
8. Governance for OpenTele/Open source components

Home Monitoring statistics: Patients



Home Monitoring statistics: Measurements



Three steps to National dissemination

1) National consensus

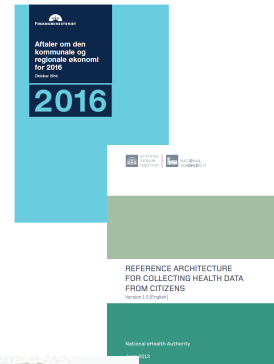
- National business case and project plan: *To ensure the marked for eCollaboration*
- Standards and secure infrastructure: *To ensure a multi-supplier strategy*

2) Pilot projects

- "First pilots": Testing in daily use (2016/2017)
- "Secondary pilot": Implementation in all relevant IT systems (2017)

3) Regional/Local tenders and dissemination programs (2018/2019+)

- All relevant COPD patients
- All Municipalities
- All Hospitals
- All GPs

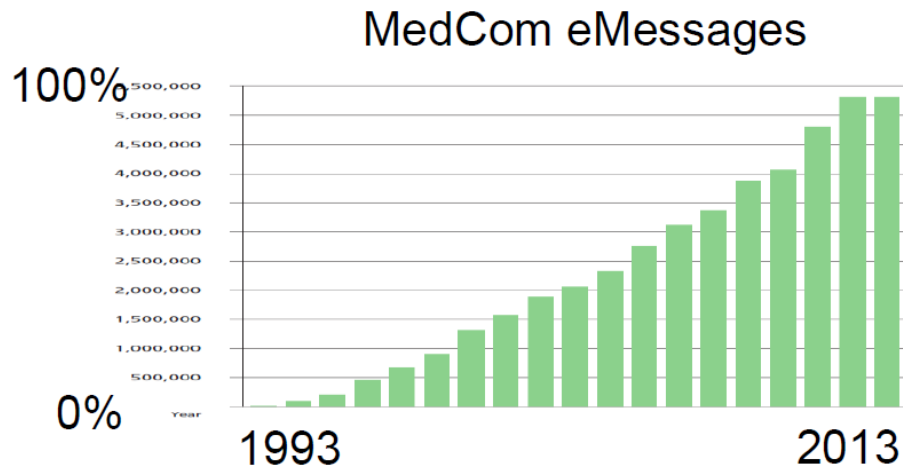


Concluding remarks

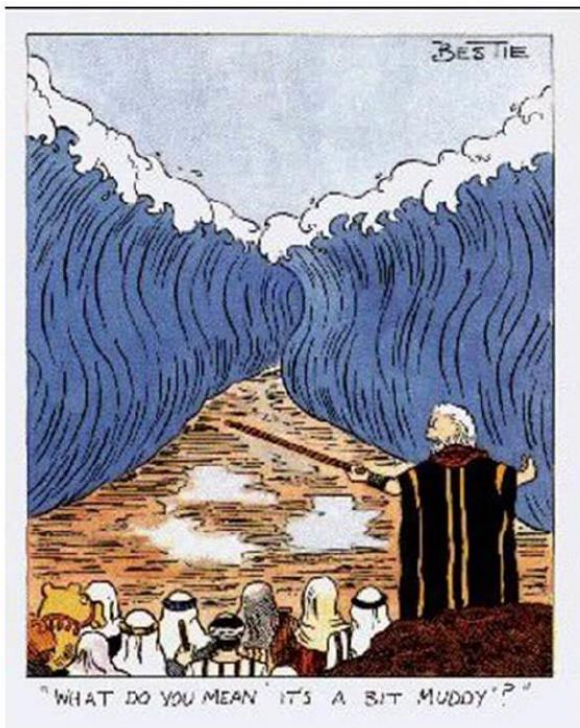
Challenges and Requirements:

Cross sector large scale dissemination

- **Implies huge investments:**
 - Healthcare organisations
 - IT vendors
- **Requires strong leadership:**
 - **Courage:** Selecting priority areas within telemedicine
 - **Persistence:** Ongoing support - all the way
 - **Patience:** The long and winding road to full dissemination...



Challenges and Requirements: Cross sector large scale dissemination



BE PRAGMATIC!

*Thank you for your
attention!*

*Lars Hulbæk
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