



Healthcare
DENMARK



Healthcare
DENMARK
INNOVATING BETTER LIFE

Planning and control in the Danish healthcare system

Hans Erik Henriksen
CEO
Healthcare DENMARK

Healthcare DENMARK is a public-private partnership





Her Royal Highness Crown Princess Mary is patron for Healthcare Denmark

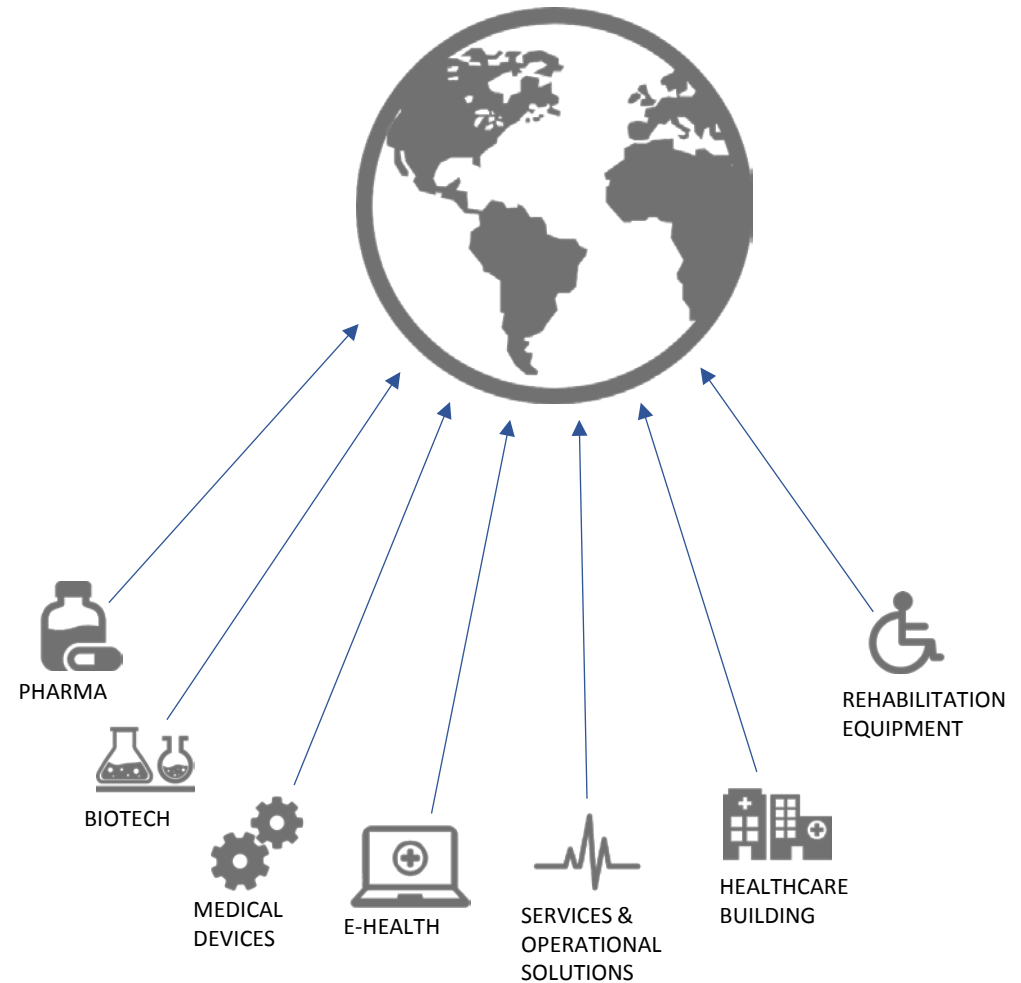
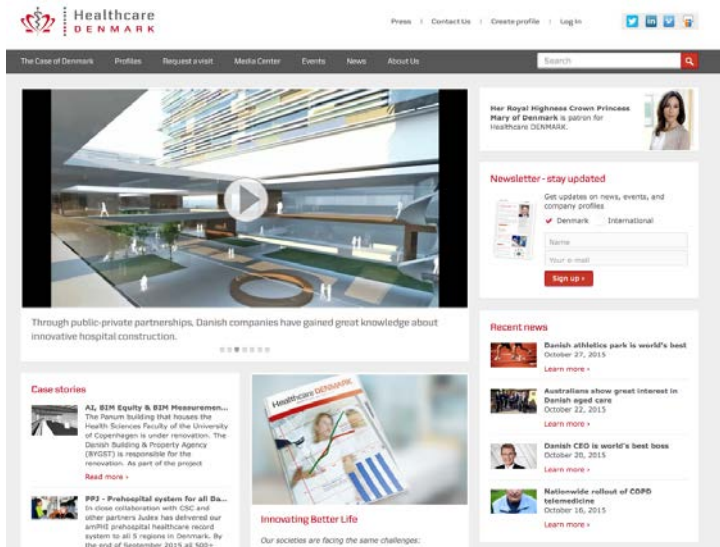
“In Denmark, our focus on putting the patient first – combined with constant efforts to improve efficiency and quality – has resulted in a wide array of innovative healthcare solutions.

I sincerely believe Danish technologies, products and expertise can have a positive impact on global health.”

Healthcare DENMARK



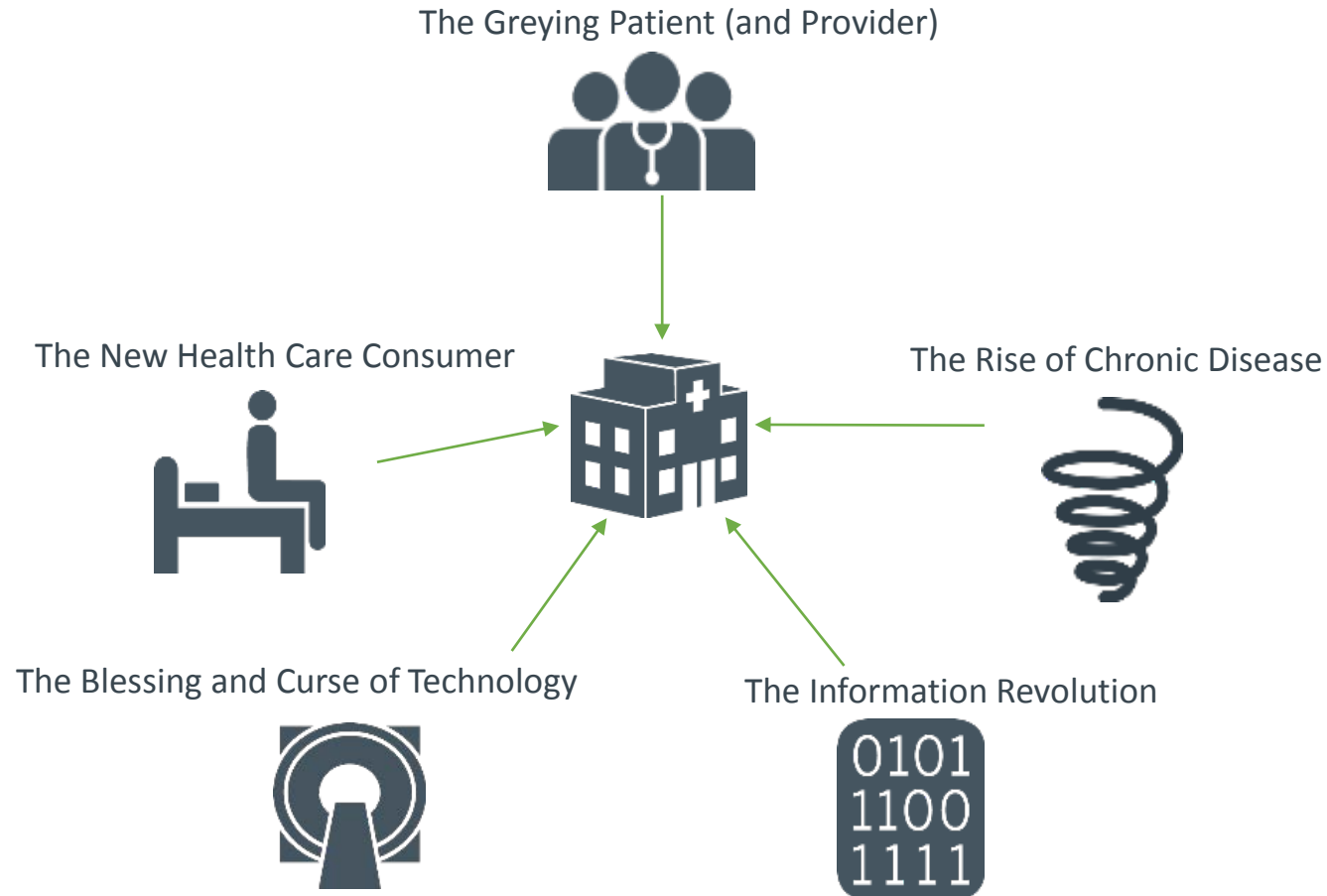
- Danish healthcare visitor programs
- Conferences
- Danish delegation visit to other countries
- Communication and press activities
- The Healthcare DENMARK homepage



Agenda

- Danish Healthcare Initiatives
- E-health background and status
- The new Digital Health strategy 2018-2022
- Governance and planning

The burning platform: Five Forces Influencing Health Care's future

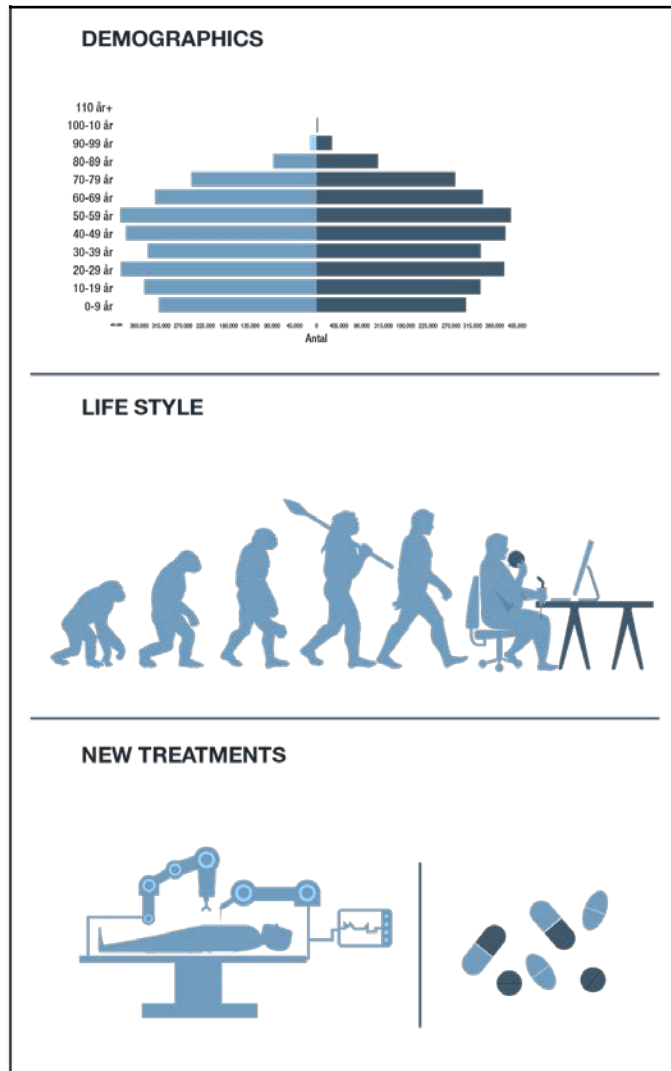


All countries face the same healthcare challenges



Healthcare
DENMARK

Healthcare challenges



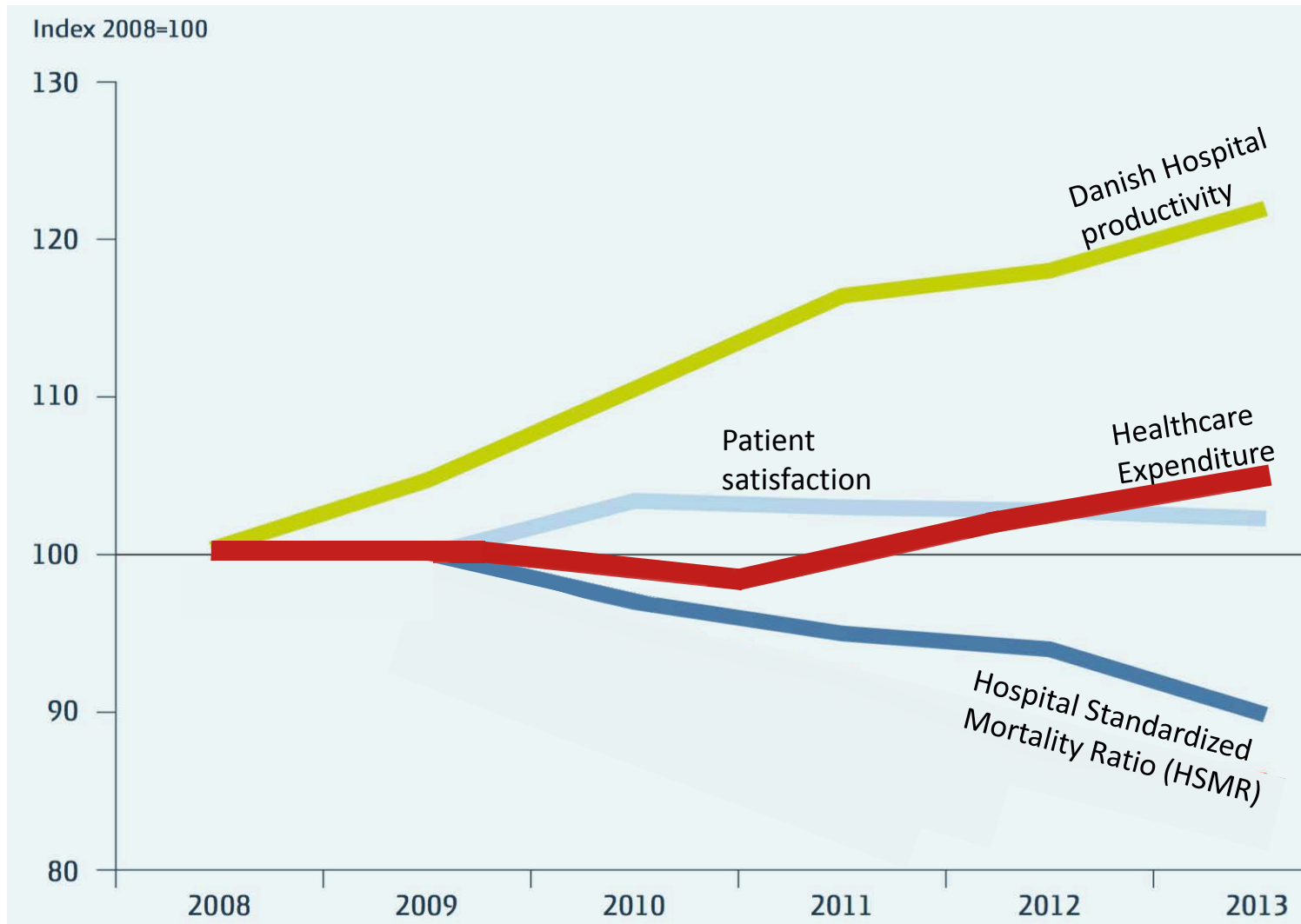
Denmarks initiatives

<p>QUICK ASSESSMENT AND TREATMENT</p>	<p>GREATER PATIENT INVOLVEMENT</p>	<p>ADDITIONAL HEALTHY LIFE YEARS</p>	<p>MORE EFFICIENT HEALTHCARE SYSTEM</p>
<p>BETTER CONTINUITY OF PATIENT CARE IN CLINICAL PATHWAYS</p>	<p>STRONGER MEASURES FOR CHRONICALLY ILL AND ELDERLY PATIENTS</p>	<p>HIGHER SURVIVAL RATE AND IMPROVED PATIENT SAFETY</p>	<p>HIGH QUALITY TREATMENT</p>

Danish citizens are happy with their lives and with healthcare services

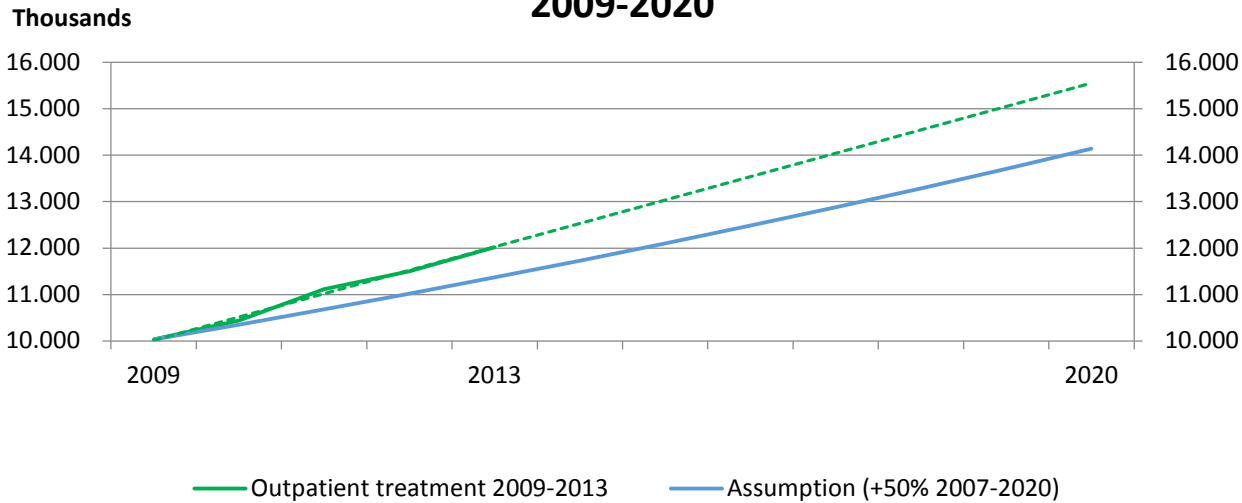


Healthcare
DENMARK

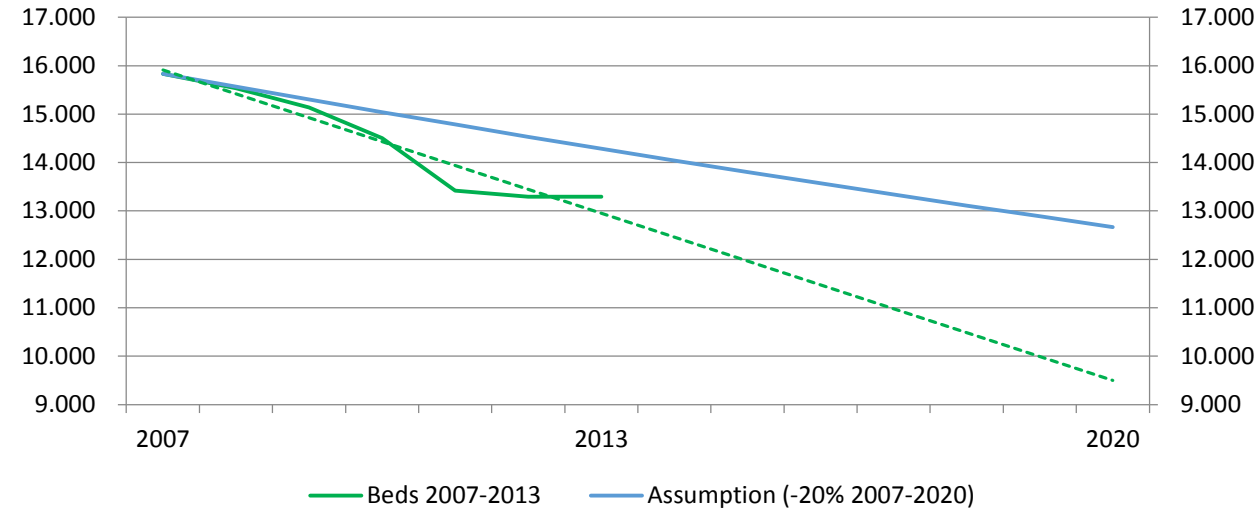


Outpatient treatment vs. inpatient treatment

Outpatient treatment 2009-2020

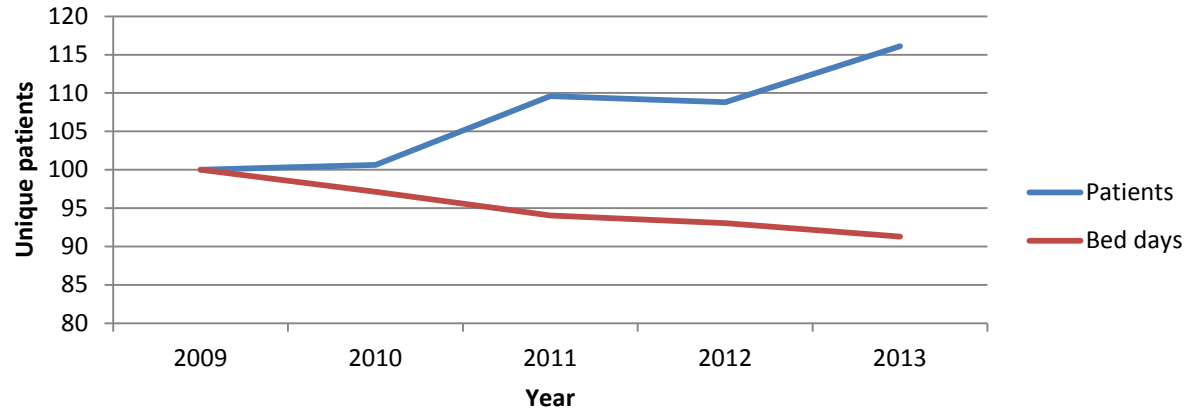


Beds 2007-2020

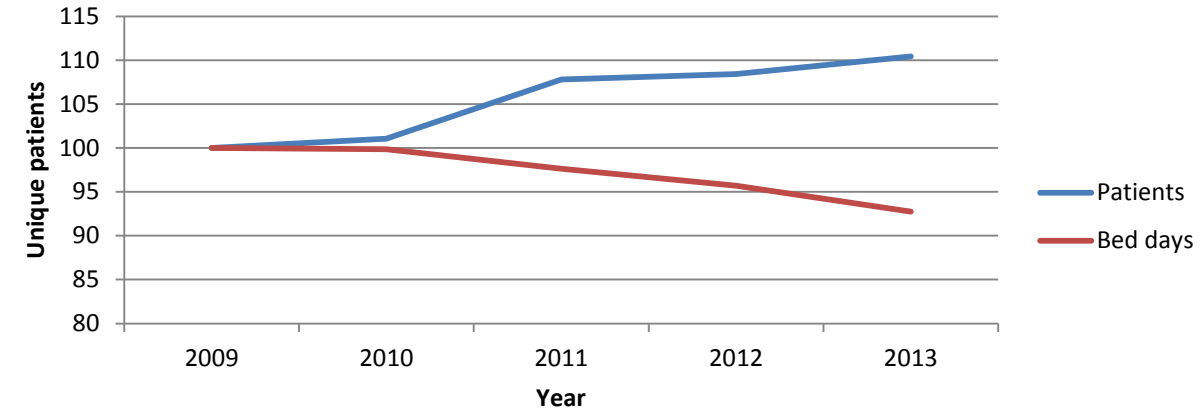


Unique patients vs. bed days (2009 = index 100)

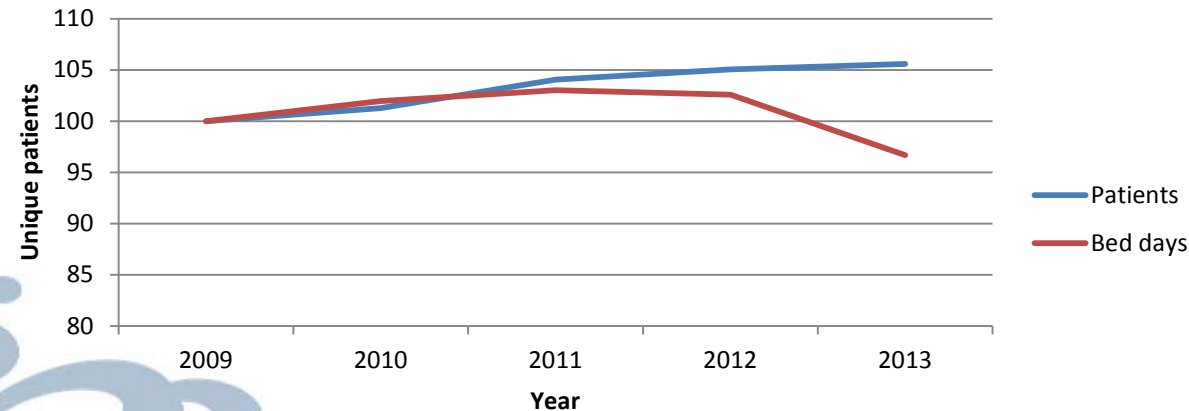
Cancer



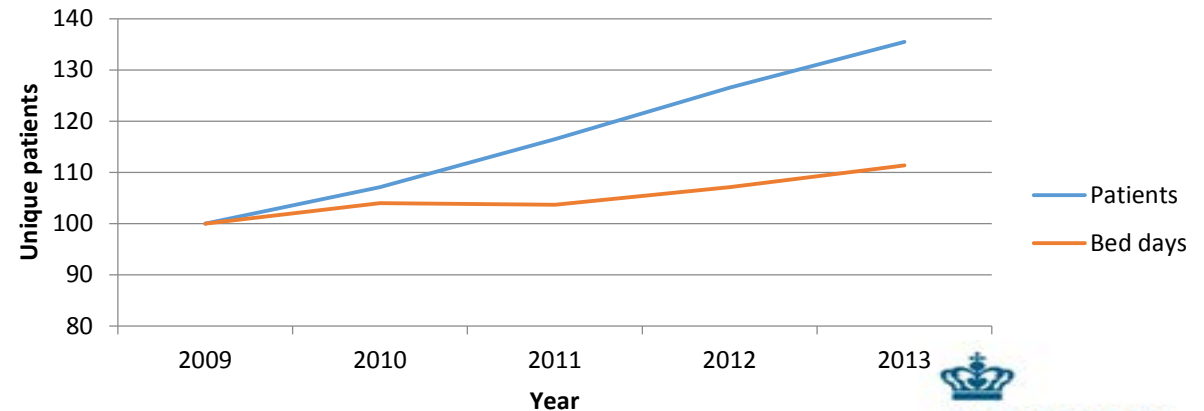
Cardiovascular diseases



COPD

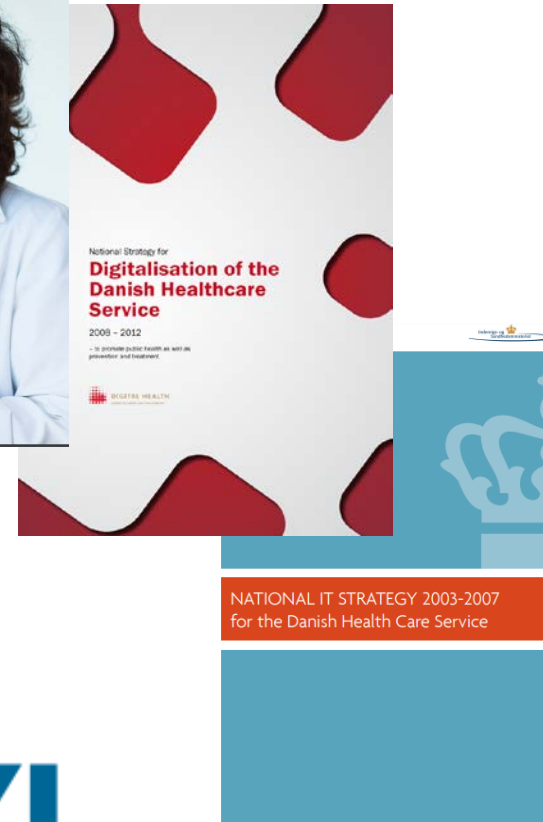
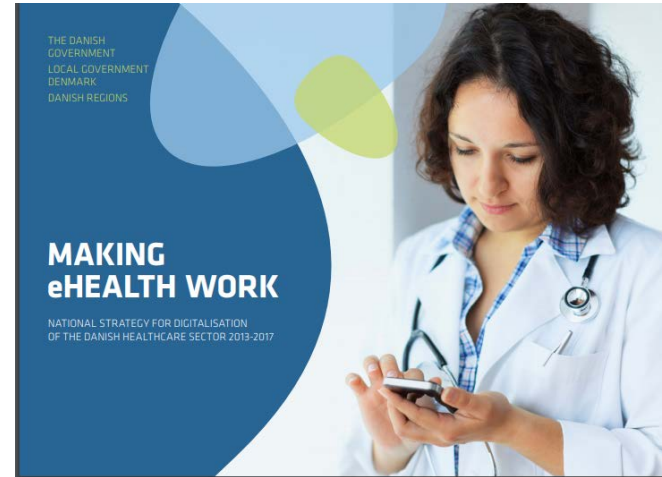


Type II diabetes

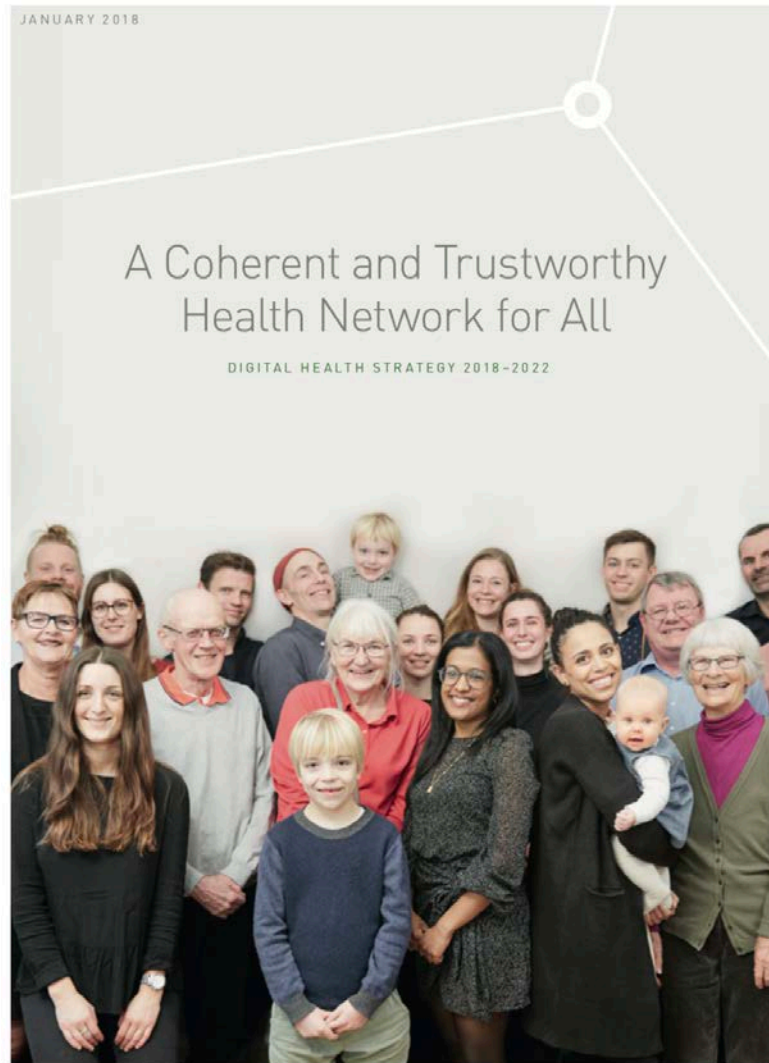


The digital transformation of healthcare

A digital transformation of healthcare supported by national strategies since 2003



The Digital Health strategy 2018-2022



5 main objectives based on 27 initiatives



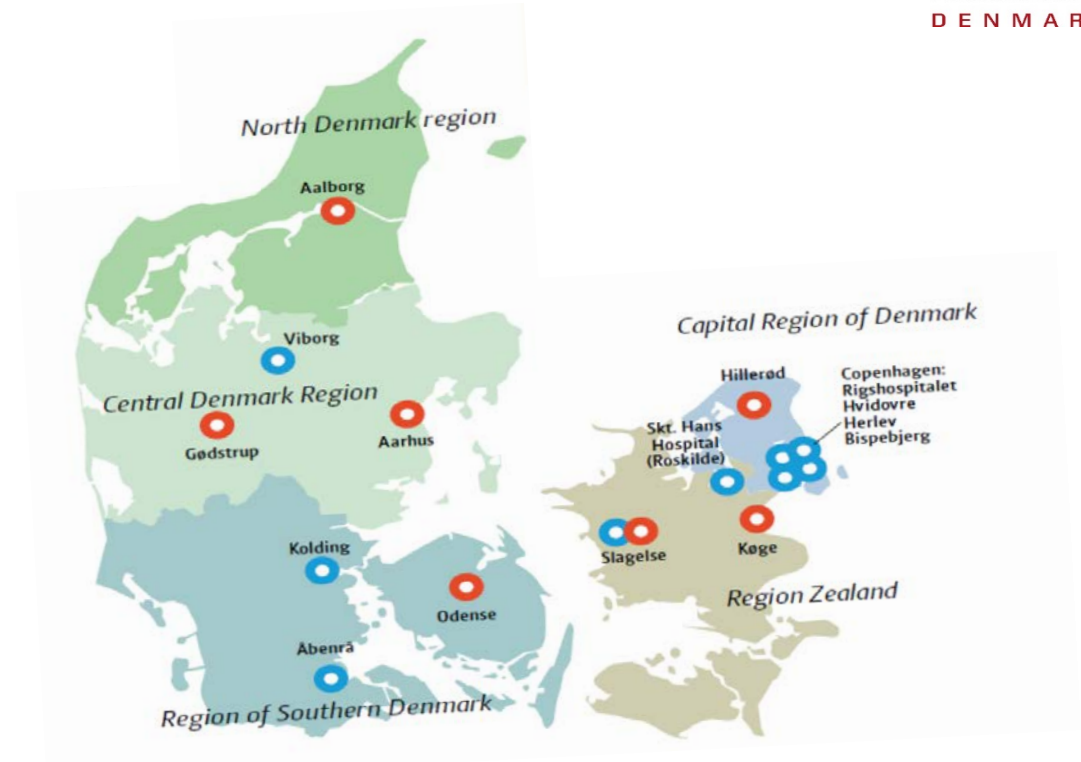
The eHealth and telehealth strategy will align with the 2013 – 2020 Assisted Living strategy

- Full scale implementation of proven solutions
 - Ceiling lifts
 - Digital rehabilitation
 - Selected robot technology
- Full scale Smart Home implementation
- Smart Home technology for disabled citizens
- Coordinated strategy:
 - Ministry of Health and Prevention
 - Danish Regions
 - Danish Municipalities



16 new hospitals will be the backbone of patient centric healthcare

- **Public-private partnerships**
- **New innovations**
- **Danish design**
- **Green technology**



Personalised Medicine will increase treatment efficiency and reduce adverse effects:



Healthcare
DENMARK



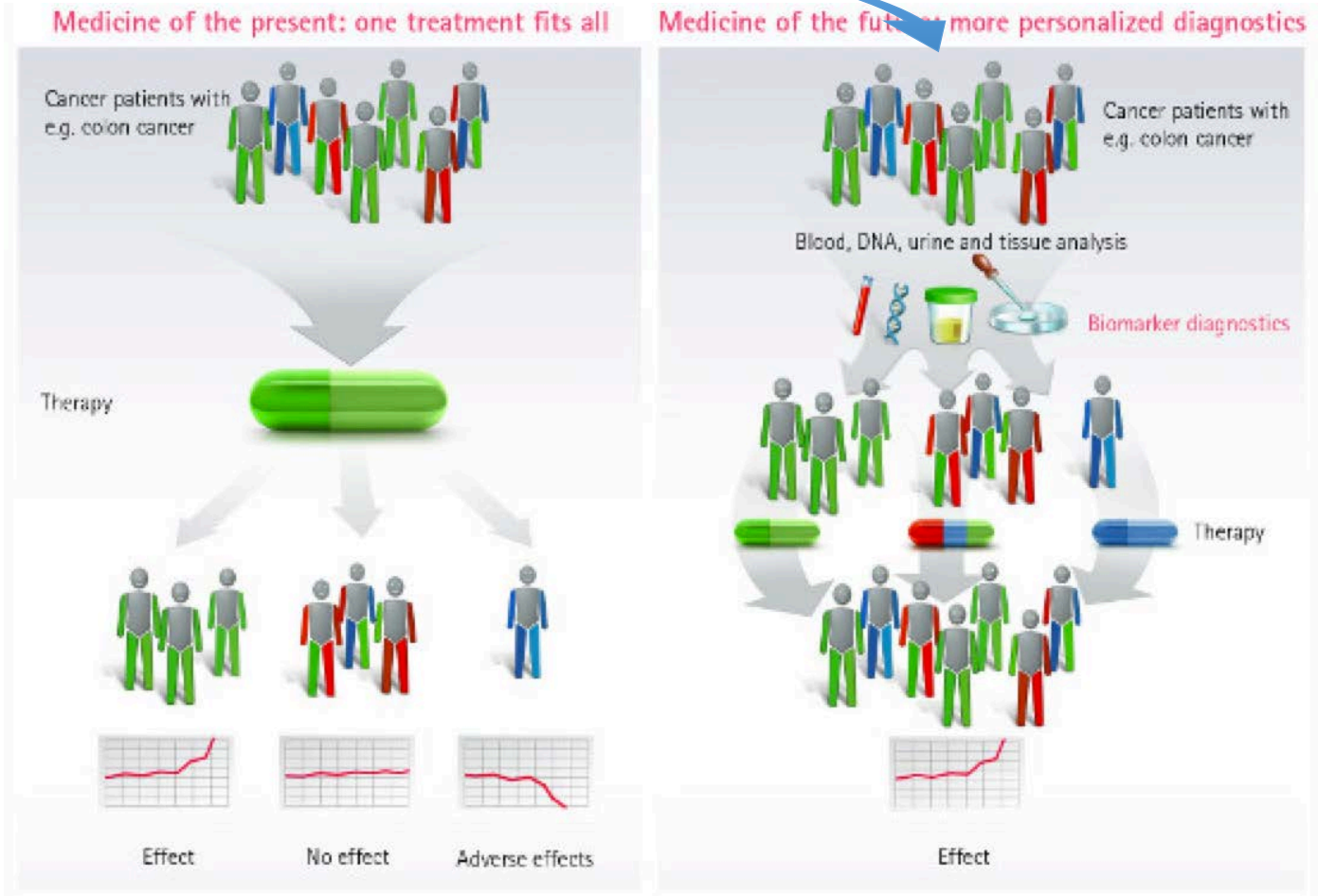
Danmarks Nationale Biobank

Danmarks Nat
der ligger i de
sundhedssekte
Forskere tilby
mere end 15 r



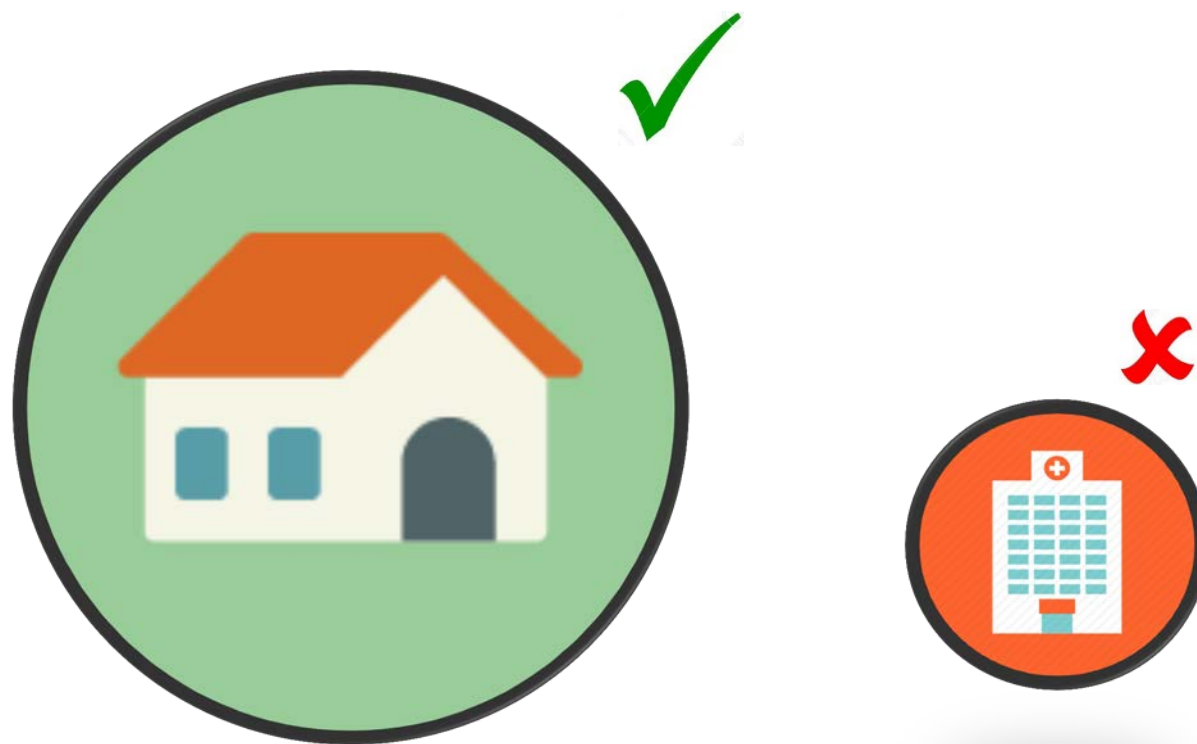
The Danish National Biobank offers 16+ mio. samples for research.

12-06-20



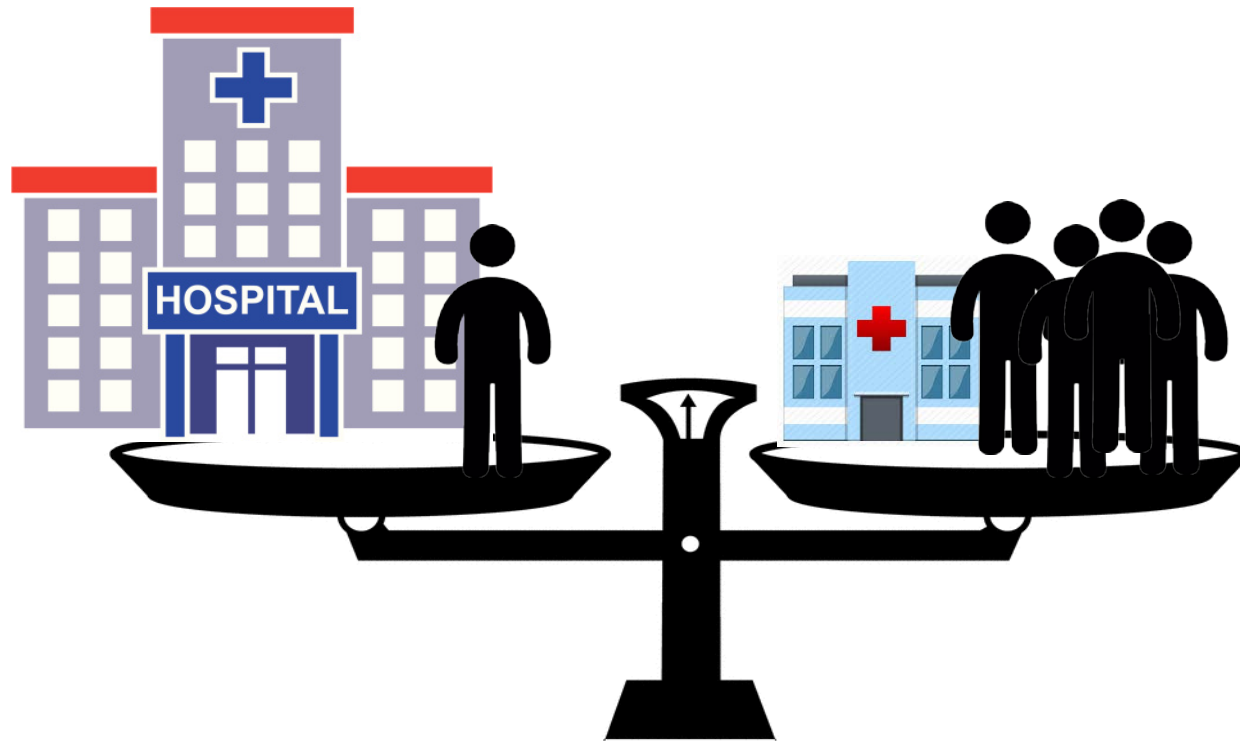


Healthcare
DENMARK



OUR VISION: STAY AT HOME

A coherent and sustainable healthcare system:
Health care for all at the lowest effective cost level



Agenda

- Danish Healthcare Initiatives
- **E-health background and status**
- The new Digital Health strategy 2018-2022
- Governance and planning

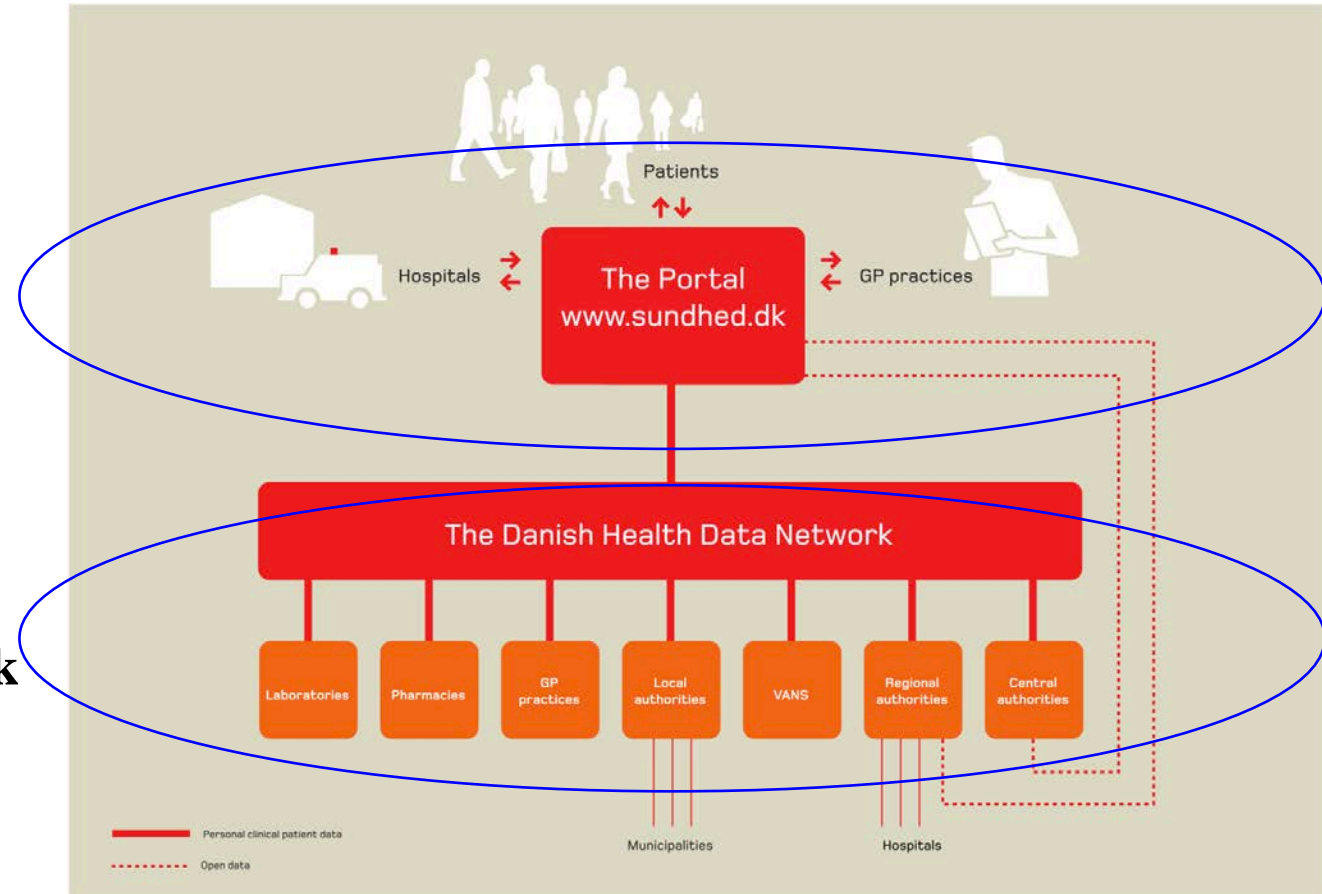


Healthcare
DENMARK

A long term focus on health data networks and on e-health provide efficient access to healthcare information

Sundhed.dk
E-health Portal
2003 -

MedCom
Health Data Network
1994 -



Who is behind?

Ministry of Health, Danish Regions, Ministry of Interior, National Association of Local Authorities, National Board of Health, Copenhagen Hospital Corporation, Danish Pharmaceutical Association

SERVICES FOR CITIZENS

- **Access to personal health data on treatment**
 - E.g. e-Record from hospitals and GPs and Shared Medication Card
- **Communication with health care providers**
 - E.g. Contact information and e-services like booking, prescription renewals and electronic communication
- **General information on health service**
 - E.g. quality in health care, patient rights
- **Accurate and updated information on health, disease and treatment**
 - E.g. medical handbook
- **Personal home care/hospital solutions**
 - E.g. diabetes and anticoagulant therapy
- **Patient to patient dialogue**

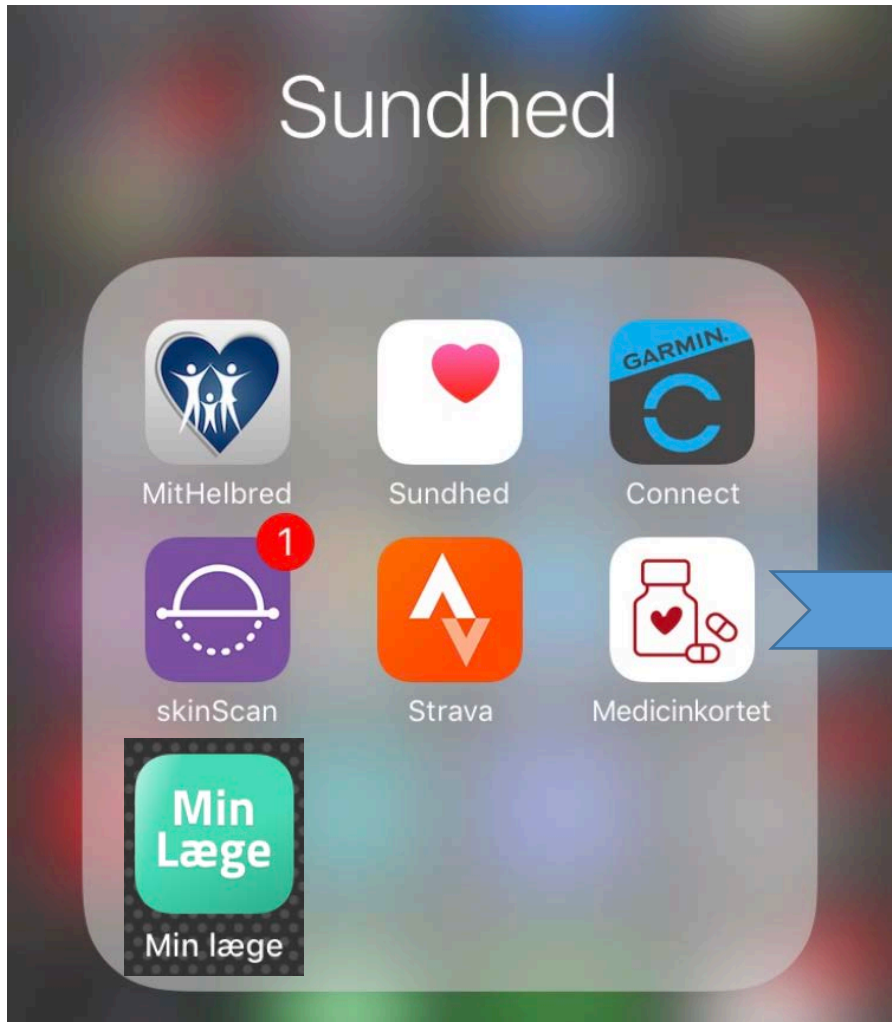


SERVICES FOR HEALTH CARE PROFESSIONALS

- **Access to personal health data on patients**
 - E.g. e-Record, laboratory data and Shared Medication Card
- **Contact and service information on other health care providers**
- **General information on health service**
 - E.g. waiting lists, quality in health care, health and prevention programs, visitation
- **Accurate and updated information on health, disease and treatment**
 - E.g. medical handbook, treatment feedback and benchmarking
- **Personal home care/hospital solutions**
 - E.g. diabetes and anticoagulant therapy



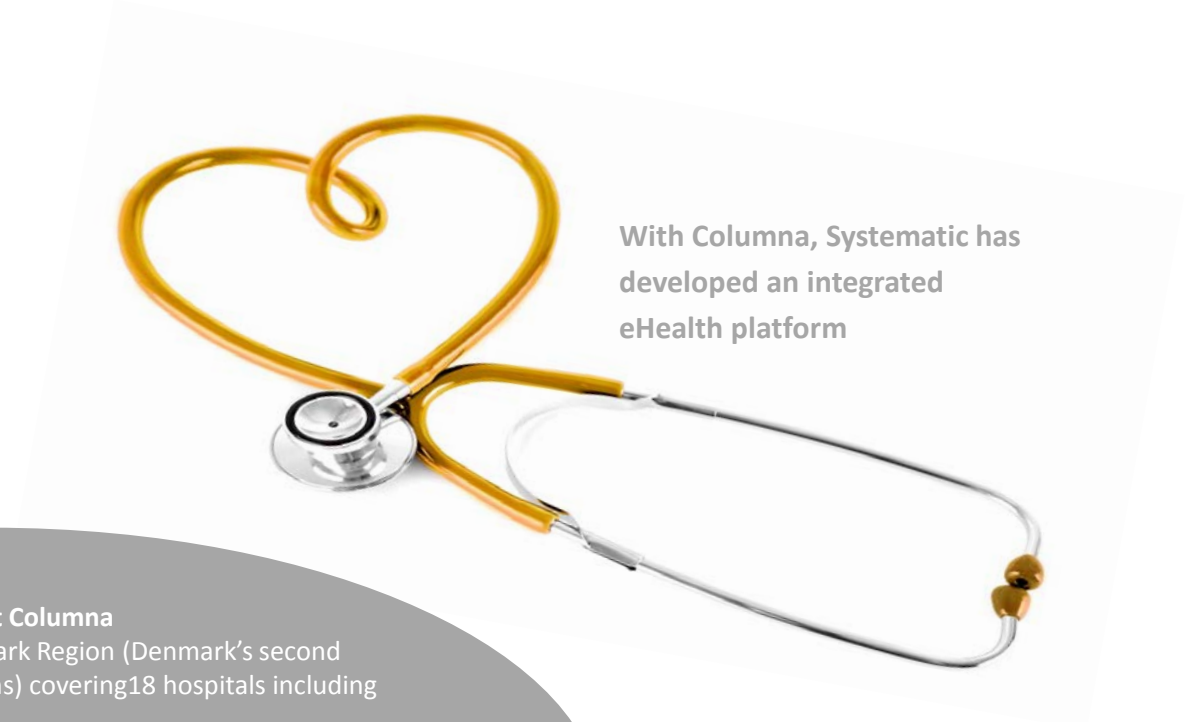
From web to app's



Data for the National E-health platform is delivered by the regional E-health solutions – e.g. the Systematic eHealth platform

Columna is a full blown eHealth platform consisting of

- The Patient Record
- Patient Administration (ADT)
- Booking
- Order/Result
- Medication Management
- Logistics



Facts about Columna

- ✓ Columna is used in Central Denmark Region (Denmark's second largest region with 1.3 million citizens) covering 18 hospitals including University Hospitals
- ✓ 10,000 different users per day, 25,000 registered users
- ✓ 6.7 million citizens are registered in Columna, of whom 1.2 million are patients with registered data.
- ✓ Registration of 2,400 admitted patients and 5,500 outpatients per day.
- ✓ More than 25,000 medication prescriptions per day.
- ✓ 40,000 lab results per day. 6,500 per hour in peak.

Government
National
Databases



National Healthportal



X 98

Municipal IT

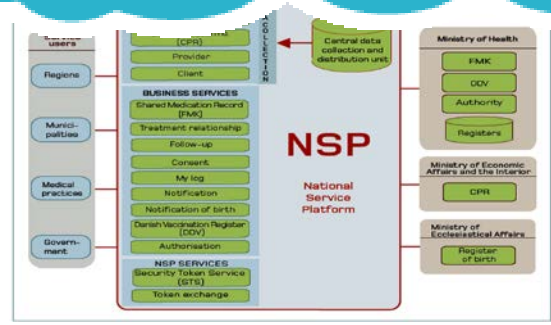
5 Regions



EU systems



3600 GP's



NSP Master

Agenda

- Danish Healthcare Initiatives
- E-health background and status
- **The new Digital Health strategy 2018-2022**
- Governance and planning



Healthcare
DENMARK

KEY FIGURES

A CHANGE IN OUR DEMOGRAPHY

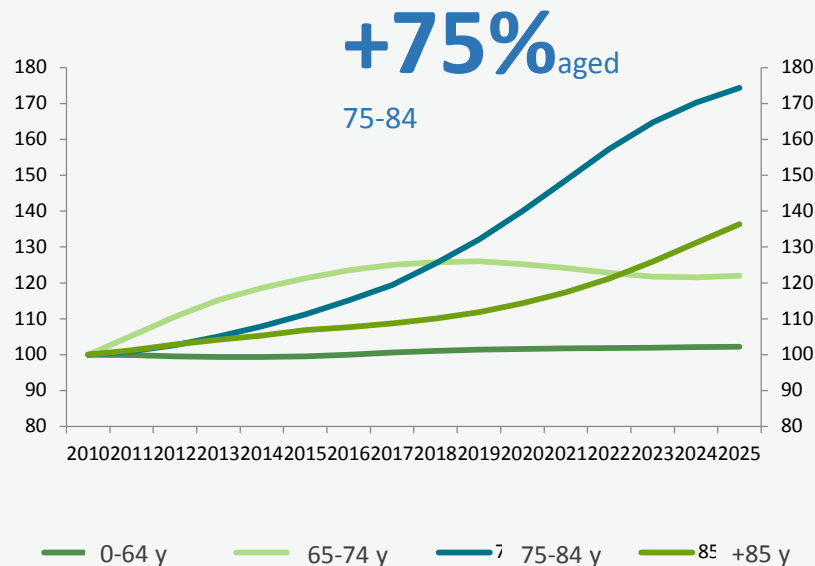
The population is getting older

In 2025 the number of citizens aged 0-64 will be the same as in 2010.

- but the number of citizens aged 75-84 will have increased by 75 percent.

→ Less tax payers and fewer health care workers

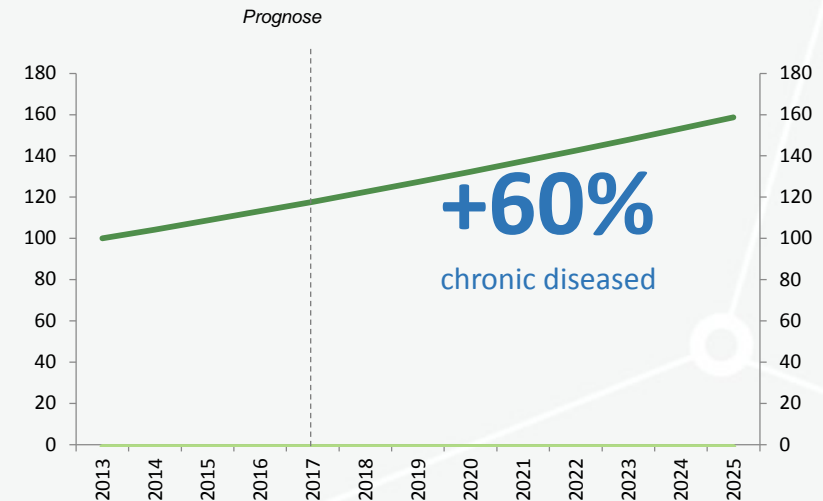
Index, 2010=100



- and more people will suffer from chronic diseases

From 2013 to 2025 the number of citizens living with the most common chronic diseases is expected to increase by 60 percent.

Index, 2013=100





Healthcare
DENMARK

A CHANGE IN OUR STRUCTURING OF HOSPITALS

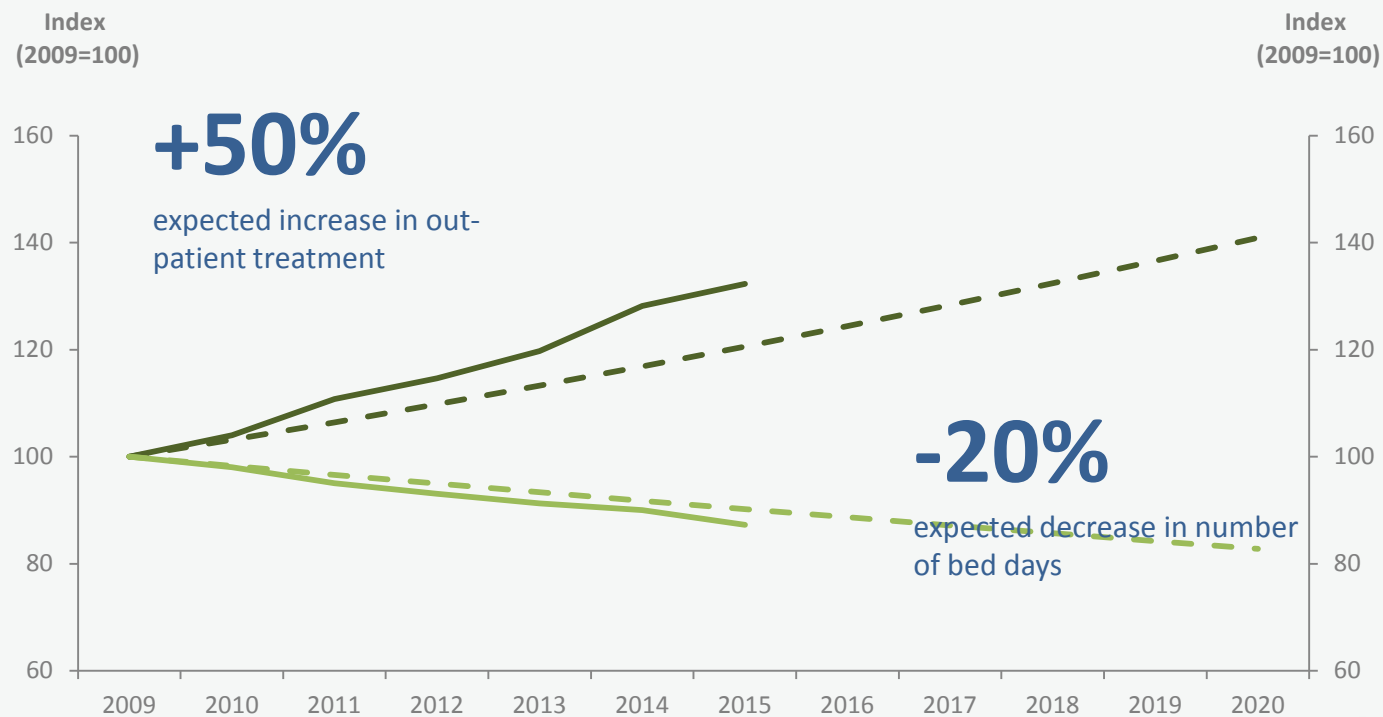


KEY FIGURES



Healthcare
DENMARK

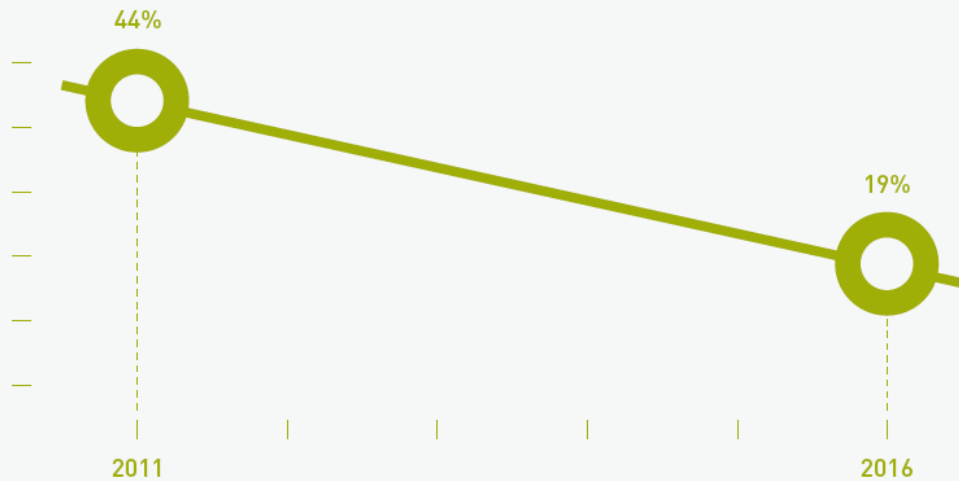
A CHANGE IN HOSPITALISATION AND TECHNOLOGY



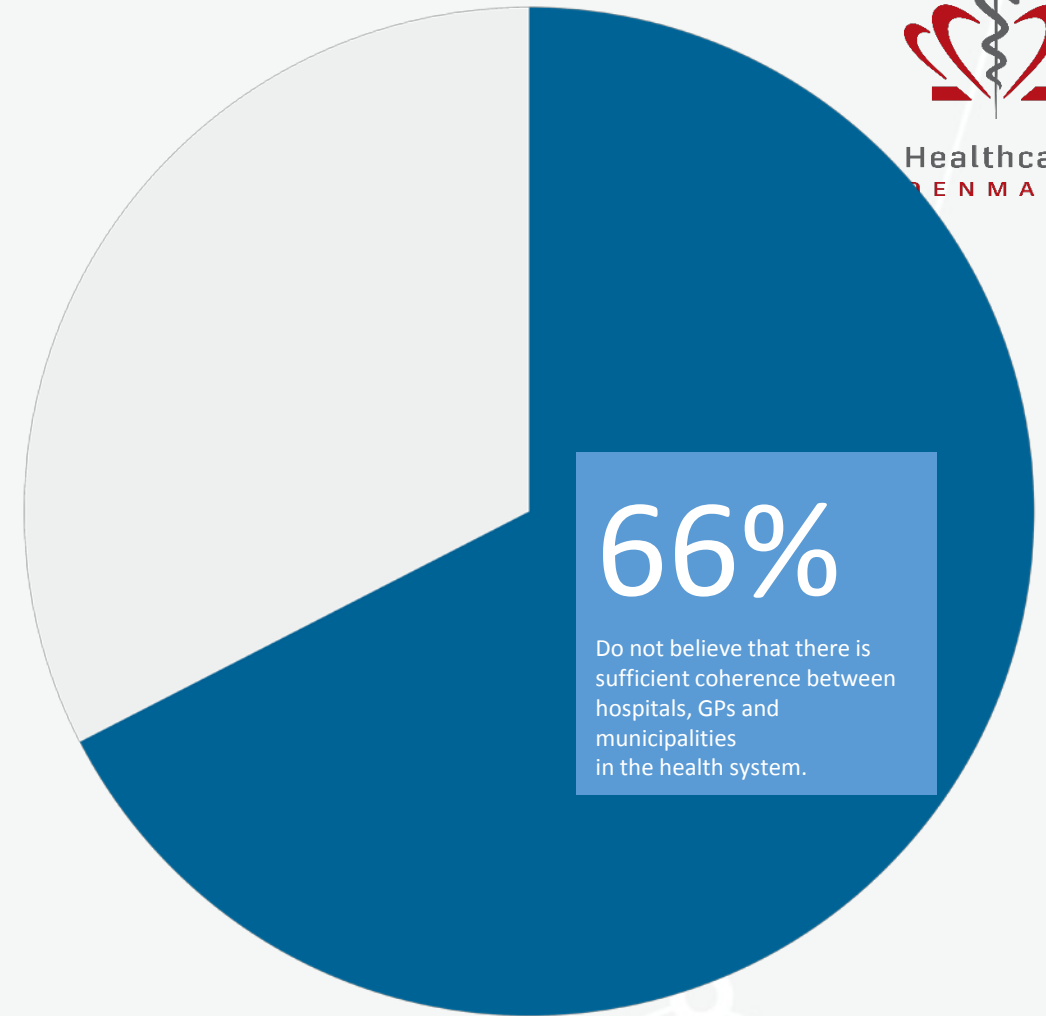
BECAUSE THE DANES WANT IT

The elderly are rapidly becoming experienced online users

In 2011, 44% of persons aged 65 to 89 never used the internet. By 2016, this percentage had decreased to 19%. Thereby, the number of non-users was more than halved in five years.



Source: Statistics Denmark, 2016



66%

Do not believe that there is sufficient coherence between hospitals, GPs and municipalities in the health system.

Source: In a 2015 survey conducted by Trygfonden and Mandag Morgen among Danish respondents, almost two-thirds responded that there is inadequate coherence between the various segments of the health system. In the same survey, respondents cite better coherence as the most important key feature of an improved health system. Only 25% expect cooperation between the hospital and the municipal health service to function satisfactorily to a great or very great degree.



Healthcare
DENMARK

8 NATIONAL TARGETS – A COMMON CROSSBAR

Better coherence, higher quality and greater geographical equality in the provision of health services



Better, coherent patient pathways



A stronger focus on the chronically ill and the elderly patients



Improved survival rates and patient safety



High-quality treatment



Rapid diagnosis and treatment



Enhanced patient involvement



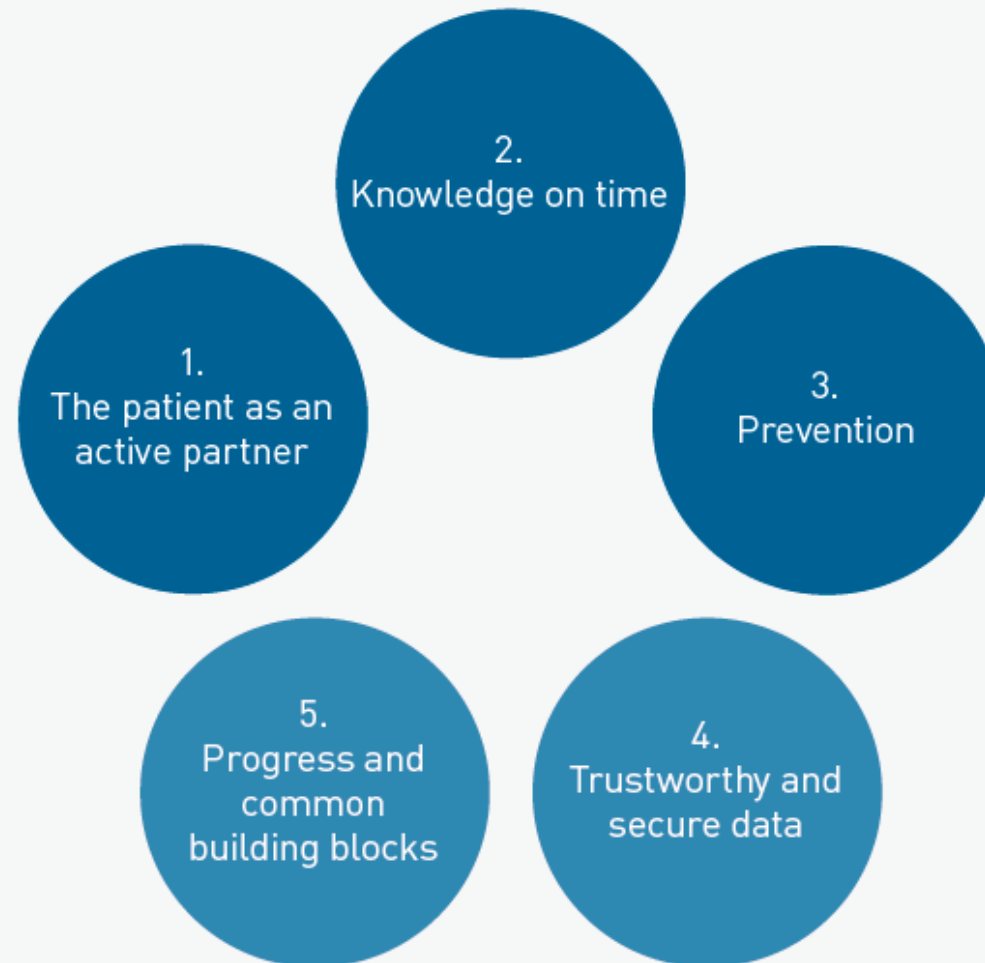
A greater number of healthy years of life



A more efficient health service



THE FIVE FOCUS AREAS OF THE STRATEGY



THE FIVE FOCUS AREAS – OVERVIEW OF 27 EFFORTS

FOCUS AREA 1

The patient as an active partner

- 1.1 The doctor in your pocket – A GP app for patients
- 1.2 Ask the patient – Patient Reported Outcome (PROs)
- 1.3 Digitally supported rehabilitation
- 1.4* A complete presentation of the patient's health data
- 1.5* A guide to health apps
- 1.6 Decision support tools for cancer patients
- 1.7* Digital pregnancy tool

FOCUS AREA 2

Knowledge on time

- 2.1 Better, faster and more secure digital communication across the sector
- 2.2 A complete overview of a patient's care and treatment
- 2.3 Digital workflows at GPs and more targeted communication with other parts of the health care sector
- 2.4 Safer medication at residential care centres and substance abuse rehab centres
- 2.5 Better overview by having structured care records in the municipalities

FOCUS AREA 3

Prevention

- 3.1 Digitally supported early detection in municipal elderly care
- 3.2* Data-driven technologies for automation, prediction and decision support
- 3.3 Digital decision support for prescribing medication
- 3.4 Continued roll-out of telemedical home monitoring
- 3.5 Digitally supported care plans for patients with chronic illness
- 3.6* Better follow-up on vaccination and cancer screening programmes

FOCUS AREA 4

Trustworthy and secure data

- 4.1 Patient access to log information from hospitals
- 4.2 Improved digital security – joint initiatives aimed at better cyber and data security across the health care sector
- 4.3* Better patient control of information shared across the health care sector
- 4.4 IT security at the General Practitioner
- 4.5* Modernisation of IT security standards in the health system

FOCUS AREA 5

Progress and common building blocks

- 5.1 Digital welfare solutions distributed to patients
- 5.2 Long-term vision for the common IT infrastructure
- 5.3 Better overview of organisational units in the health care sector
- 5.4 Establishment of a national substitute – Civil Registration System (e-CPR) solution



1. THE PATIENT AS AN ACTIVE PARTNER

PROACTIVE INVOLVEMENT IN EVERY DAY LIFE – AND MORE SELF-SERVICE

Change:

- Patients have better possibilities in assuming responsibility for handling their own health
- Patients have access to a complete overview of their own treatments and data

EXAMPLE: PATIENT REPORTED OUTCOME DATA (PRO)

Based on the patient answers an algorithm in the system calculates whether the patient needs to go to the hospital

Through regular questionnaires PRO is used to:

- Avoid unnecessary consultations and create a more flexible continuity of care
- Increase patient involvement
- Increase supervision and quality



THE DOCTOR IN YOUR POCKET

- Your GP: contact information and location
- Emergency information
- GP appointments (booking, upcoming and previous)
- E-consultation (active and previous)
- Prescriptions and medicine (the Shared Medication Record)
- Vaccination (status and recommendations)
- Other appointments and recommendations (e.g. screening)
- Referrals
- Continuum of care plans
- Diagnoses
- Children's data
- Next of kin delegation and access
- Video consultation
- Lab results



Healthcare
DENMARK

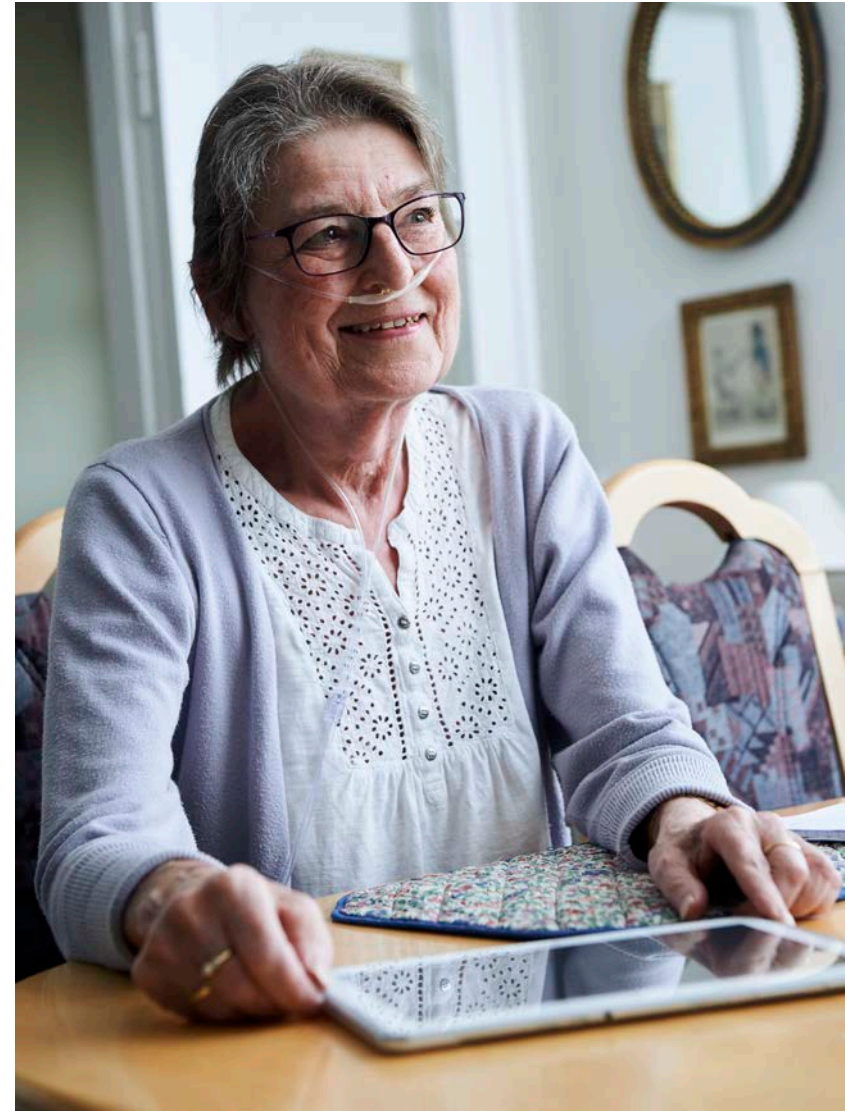


Home measurements for patients with COPD

Benefits include: Feeling of **increased security** and freedom, **ability to act independently** and proactive and impairments are discovered earlier, and hence emergency **hospitalizations can be avoided**.

National implementation: the goal is to offer telemedicine to all relevant COPD patients by 2019

Next project: Patients with chronic heart failure/heart insufficiency.



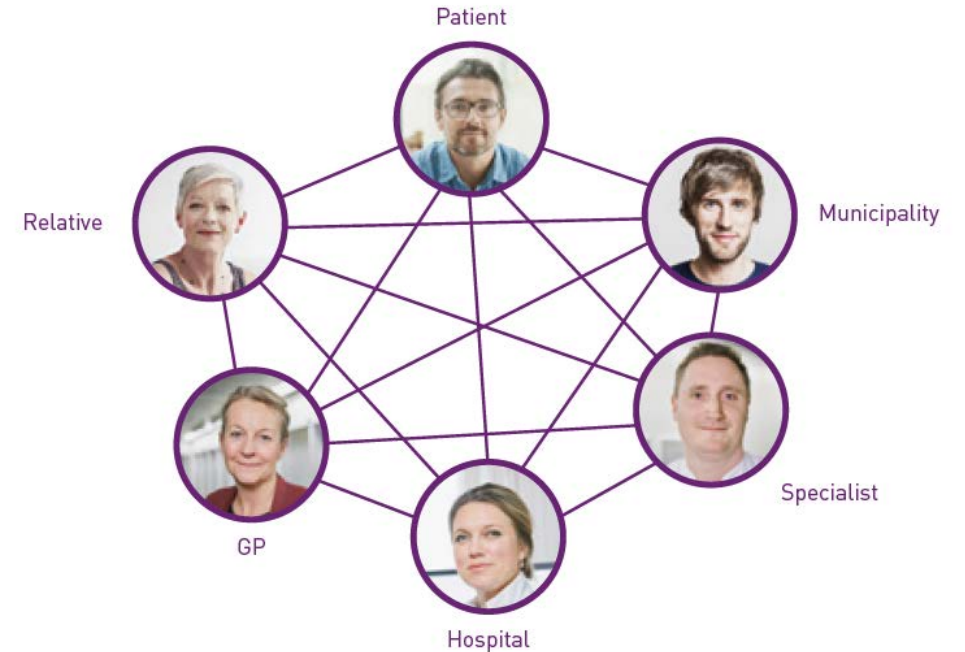


2. KNOWLEDGE ON TIME

THE RIGHT DATA ABOUT THE PATIENT SHOULD BE AVAILABLE WHENEVER NEEDED

Change:

- Complex patient pathways are experienced as being simpler by both patients and healthcare professionals
- Patients interact with healthcare professionals who have prior insight into the patient's pathway
- Healthcare professionals will spend less time obtaining relevant information about the patients to whom they are providing treatment and care



A shift in paradigm from a relay to a coherent network

- From messages to data sharing between local systems
- Today: The shared medication record

3. PREVENTION

HEALTHCARE SERVICES CAN BE DELIVERED IN NEW MANNERS PAVING THE WAY FOR AN EARLIER AND MORE TARGETED TREATMENT

EARLIER AND MORE TARGETED TREATMENT

Local and less intrusive management of illness by the use of digital solutions for home monitoring

Example: national dissemination of telemedicine for COPD-patients



4. TRUSTWORTHY AND SECURE DATA

THE RIGHT DATA AT THE RIGHT TIME – AND IN THE RIGHT HANDS

Government under pressure after NHS crippled in global cyber attack as weekend of chaos looms



MailOnline

Home | News | U.S. | Sport | TV & Showbiz | Australia | Email | Health | Science | More

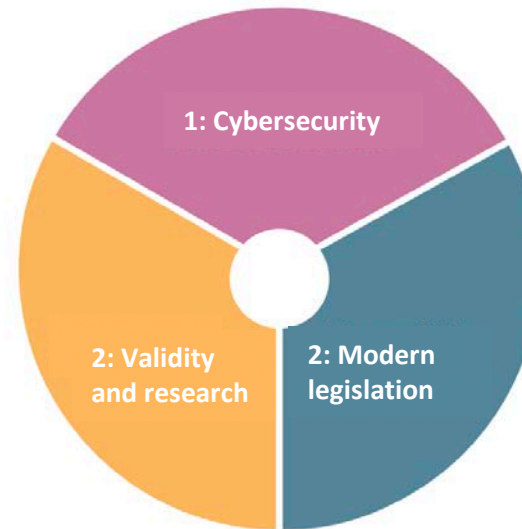
All of the UK's 200 NHS trusts have FAILED cyber security checks in the wake of North Korean-led WannaCry attack



Patients must have confidence regarding the use of their health data

Cooperation on cyber- and information security and risk-based approach for the security level of digital solutions

DANISH MINISTRY OF HEALTH INITIATIVES



THE RIGHT DATA AT THE RIGHT TIME – AND IN THE RIGHT HANDS



CYBERSECURITY



TRUST AND RELEVANCE



VALIDITY AND COHERENCE



PATIENT AND NEXT-OF-KIN



RESEARCH AND AI



MODERN LEGAL FRAMEWORK



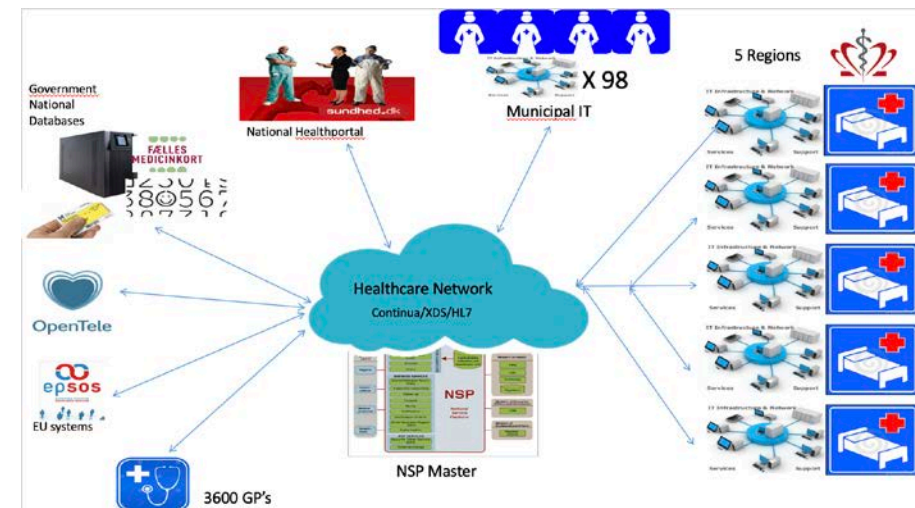
TRANSPARENCY AND EMPOWERMENT

5. PROGRESS AND SHARED BUILDING BLOCKS

AN ECOSYSTEM OF SHARED SERVICES AND COMPONENTS

Change:

- Solutions working well in one place should be rolled out in large scale to the benefit of citizens regardless of where you live
- The healthcare personnel should be supported in solving their core tasks by means of e.g. shared eHealth solutions
- The common infrastructure is composed of new services and functionalities facilitating new additions and thereby moving the ecosystem forward



An ecosystem refers to a complex system where loosely connected components – common building blocks – work together and support each other.

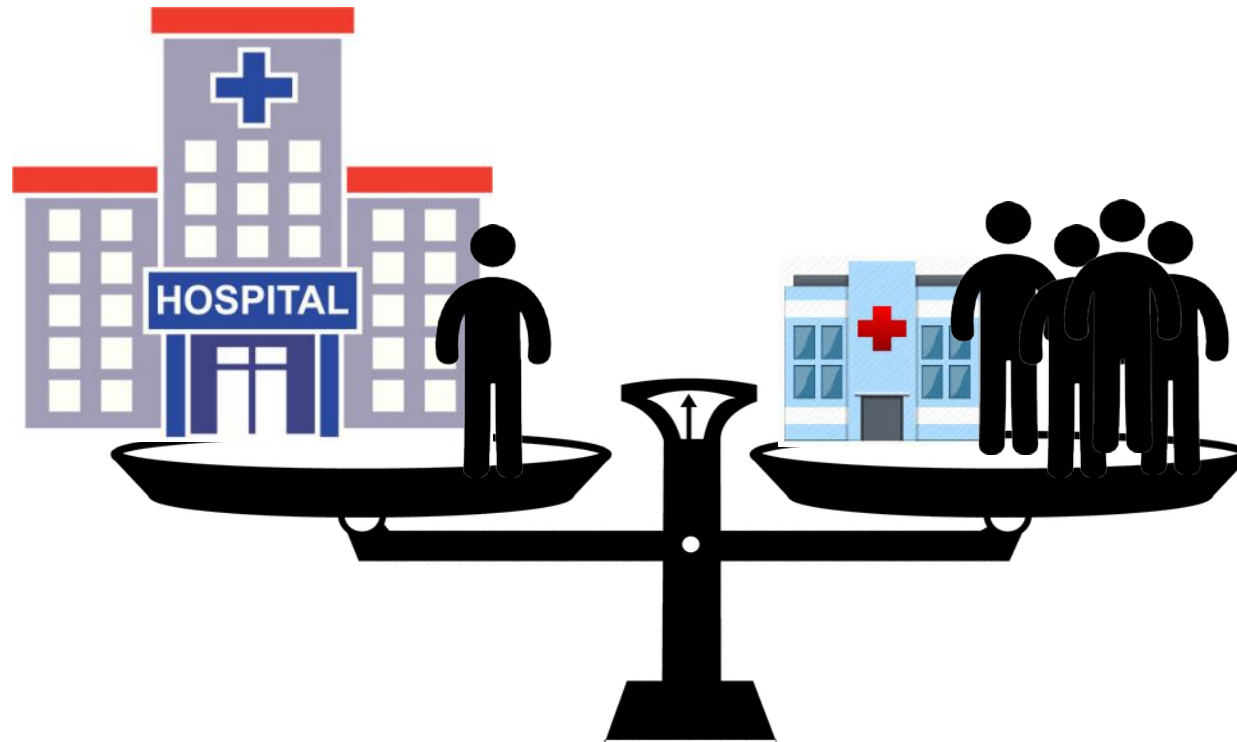


Healthcare
DENMARK

The digital and structural transformation of health care

A coherent and sustainable healthcare system

- delivering healthcare for all at the lowest effective cost level



Agenda

- Danish Healthcare Initiatives
- E-health background and status
- The new Digital Health strategy 2018-2022
- **Governance and planning**

Organization of the Healthcare System



Healthcare
DENMARK

National Level



Ministry of Health

Regional Level



5 Regions

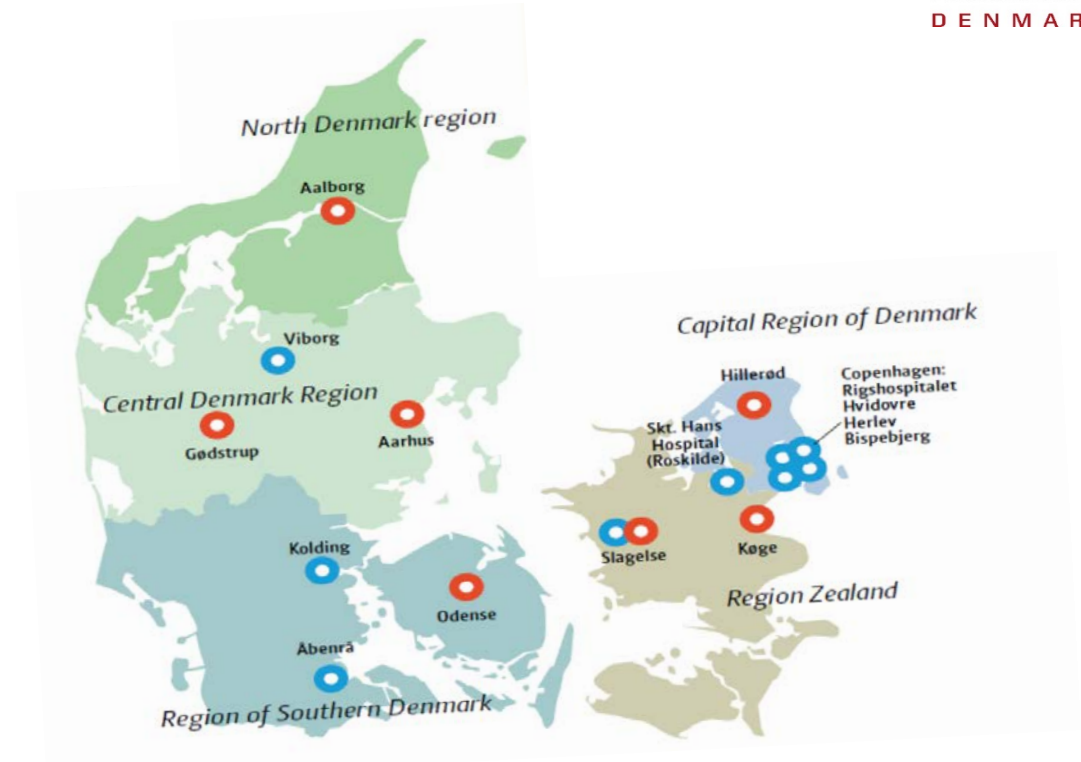
Local Level



98 Municipalities

16 new hospitals will be the backbone of patient centric healthcare

- **Public-private partnerships**
- **New innovations**
- **Danish design**
- **Green technology**



2007 – the expert taskforce for new hospital construction was established

- MoH and Danish Regions realised the need to:
 - Gather specialized treatments on fewer hospitals in order to secure the necessary quality and clinical standards
 - Both ensure a higher degree of specialization and the same time optimize the use of scarce resources
 - Specialized treatment at fewer hospitals is the foundation for changing the hospital structure of Denmark
- The Government initially committed 3 bn € for investment In new hospitals
- Members of the expert taskforce:
 - **Professor, doctor med., Erik Juhl**, Chairman. Erik Juhl was previously the CEO of Capital Region and before that, director of the Copenhagen Municipality healthcare department.
 - **Professor in health economics, Kjeld Møller Petersen**, Odense University. He was previously healthcare executive in County of Vejle in Denmark.
 - **Chief architect Ragnhild Aslaksen**, Helsebygg Midt-Norge who has several years of experience in hospital planning and was involved in the new St. Olav University Hospital project in Trondheim in Norway.
 - **CMO Bo Brismar**, Stockholm County Council. Bo Brismar has experience from the planning of the new Karolinska University Hospital.
 - **Hans Kirk**, previous CEO of the company Danfoss with experience from LEAN projects at Odense University Hospital.
 - **CEO Jesper Fisker**, the National Board of Health (observer)

Proces and activities

- **October 2007:** The taskforce was established.
- **Early 2008:** The taskforce met with each of the 5 Regions in order to collect existing hospital plans and also visit a couple of the Regions hospitals.
- **May-june 2008:** 2. meeting between the taskforce and each of the 5 Regions. QA and gathering of more information on selected topics.
- **Early june 2008:** Request for more information from each Region on future healthcare demands, geographical hospital capacity coverage, economy and efficiency targets.
- **August 2008:** The taskforce received reports form each Regions with requested information. This was input to further analysis in the taskforce.
- **November 2008:** The taskforce release its report to the Ministry of Health with recommendations on a new hospital structure and new hospital construction projects.



Healthcare
DENMARK



Healthcare

D E N M A R K

INNOVATING BETTER LIFE

Hans Erik Henriksen, CEO Healthcare DENMARK
heh@healthcaredenmark.dk