
INTRODUCTION TO THE DANISH HEALTHCARE SYSTEM

How proper data analytics can contribute to tracking the health outcomes and forecasting th budget

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MY BACK GROUND



Medical doctor, Certified surgeon

- Master of business management (MBM)
- Master in health informatics
- PhD in computer science



The last 8 years Head of Department, Danish Health Data Authority
Responsible for:

- Data collection to national registries
- Reporting guidelines
- Classifications
- Patient Reported Outcomes (PRO)

Now consultant



THE DANISH HEALTHCARE SYSTEM

Universal coverage

Free & equal access

Mainly financed by general taxes (~84 %)

A high degree of decentralization

National Level



Ministry of Health

- Legislation
- National health policies
- National targets
- Overall economic framework
- Structural planning
- Planning of medical specialties across regions and hospitals
- Clinical guidelines
- Auditing (patient safety etc.)
- National registries

Regional Level



5 regions

- Hospitals
- Psychiatric care

- General practitioners (family doctors)
- Adult dental care
- Other private practitioners

+ 3-5% provided by private agents

Local Level



98 municipalities

- Preventive care and health promotion
- Elder care
- Non-hospital rehabilitation
- Treatment of alcohol and drug abuse
- Child nursing



SOME STATISTIC ABOUT DANISH CITIZENS

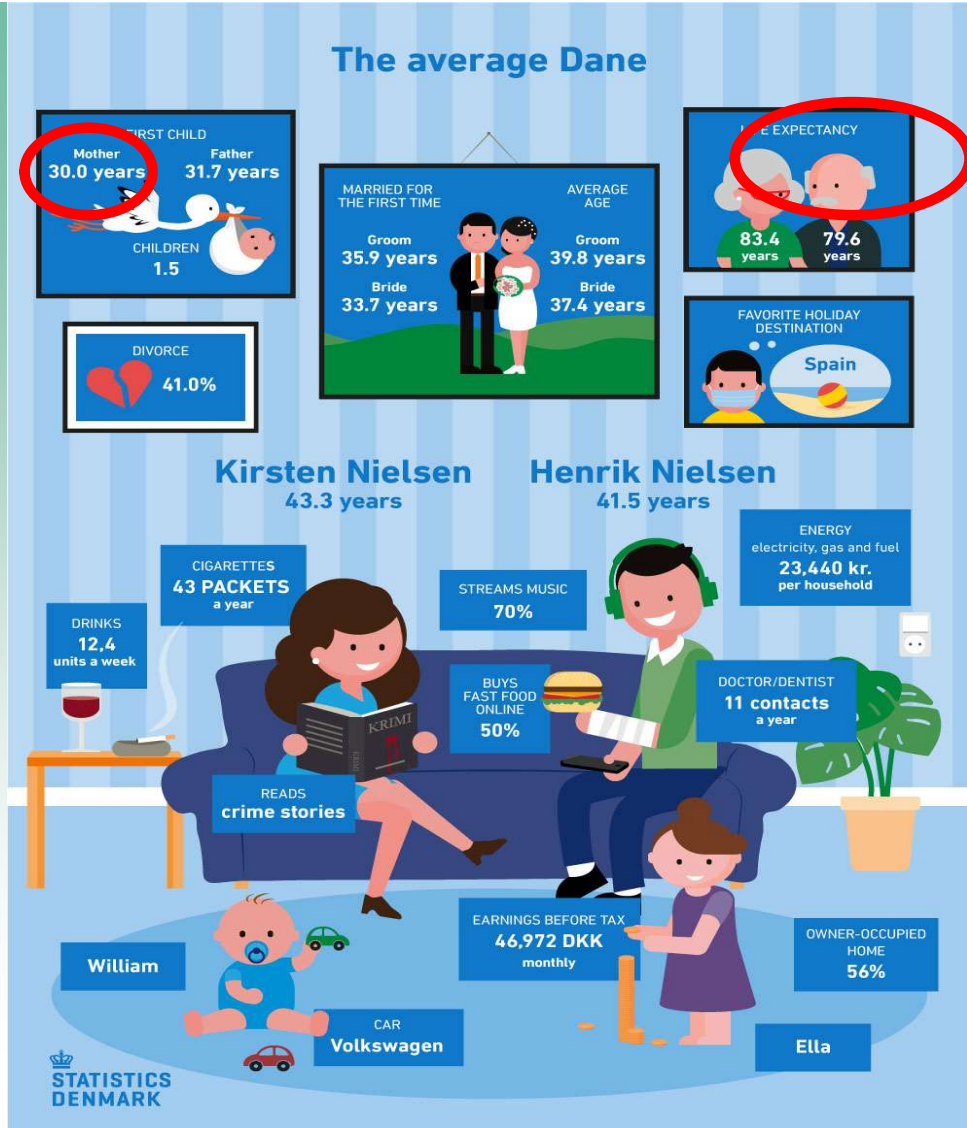
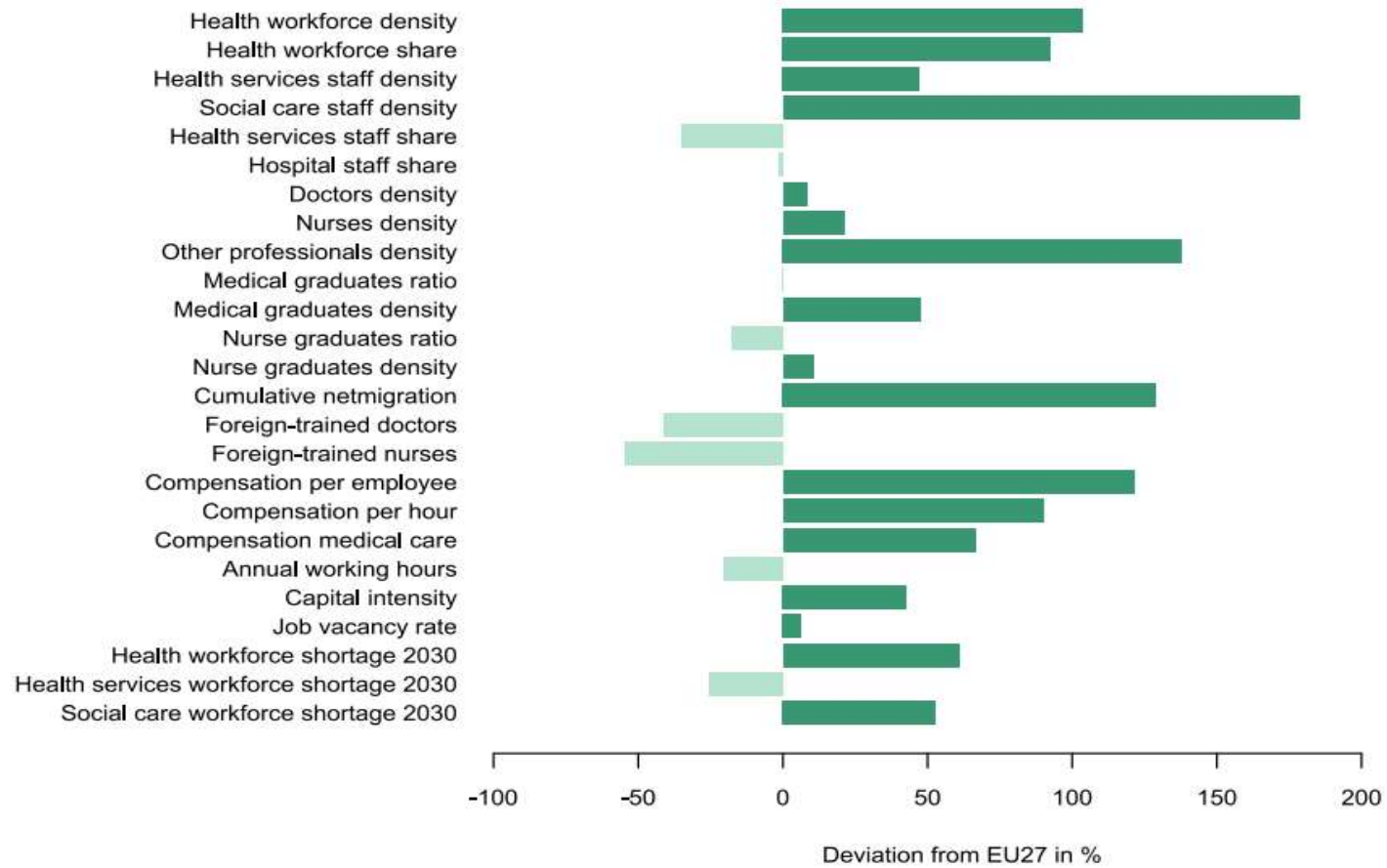
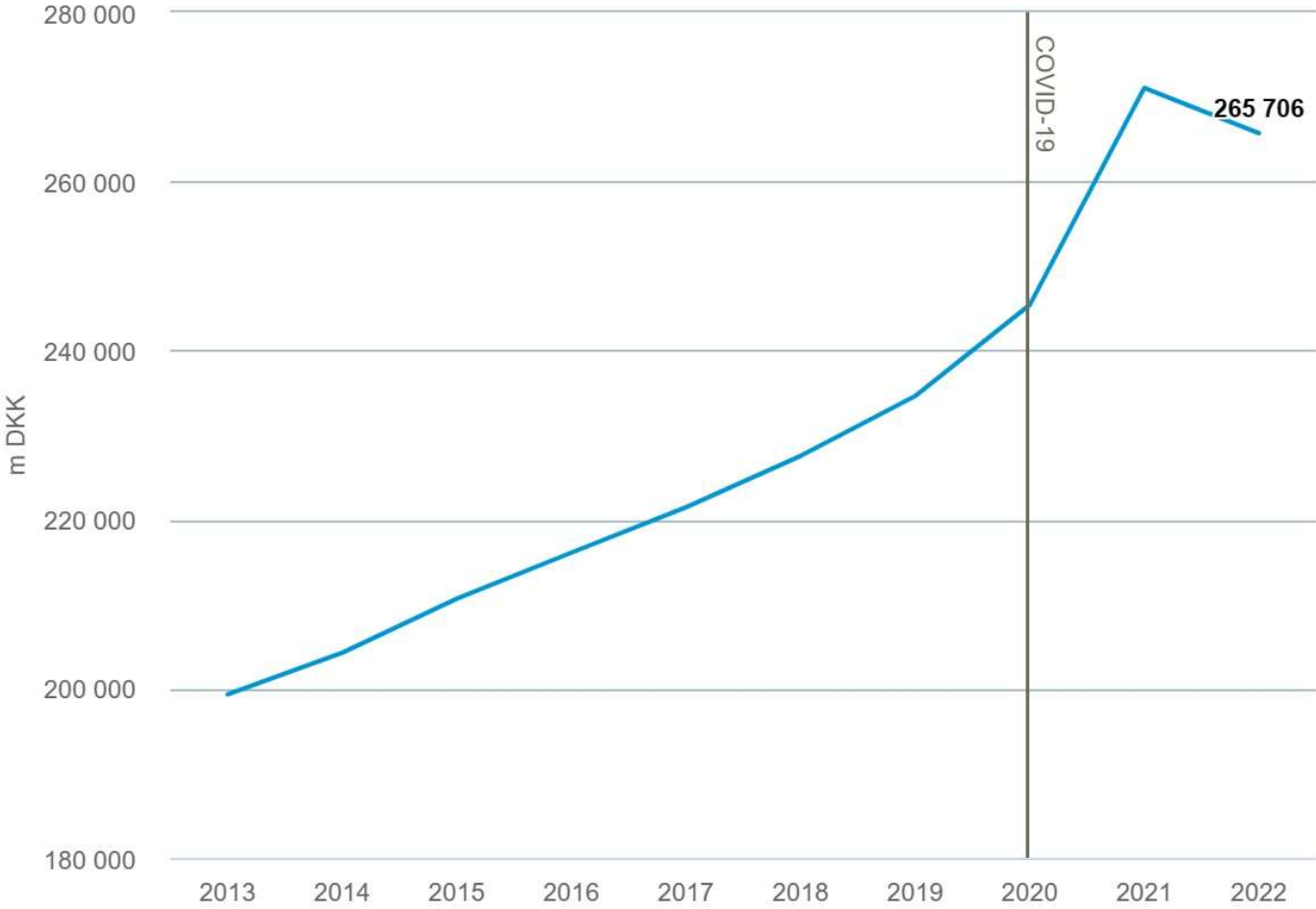


Figure 1: Danish health workforce as compared to EU27



Source: BASYS based on the following indicators of this report.

Health care expenditures in total



= 35B Euro

The expenditure is in current prices, which means that it is not adjusted for inflation.

1 Euro = 7,5 DKK

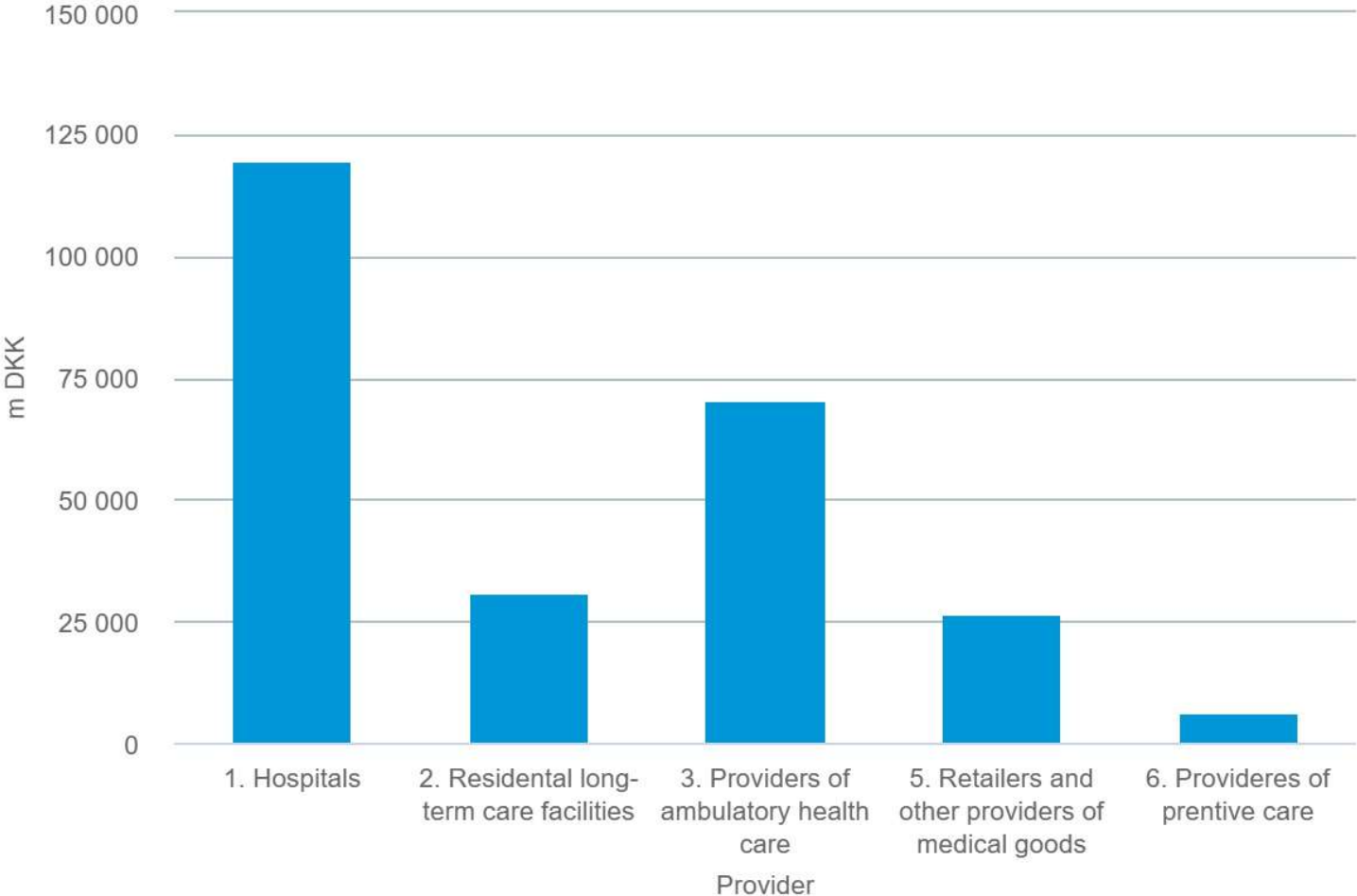
Source: Statistics Denmark



Expenditure by selected health care providers

Function: Health care expenditures in total | Time: 2022:

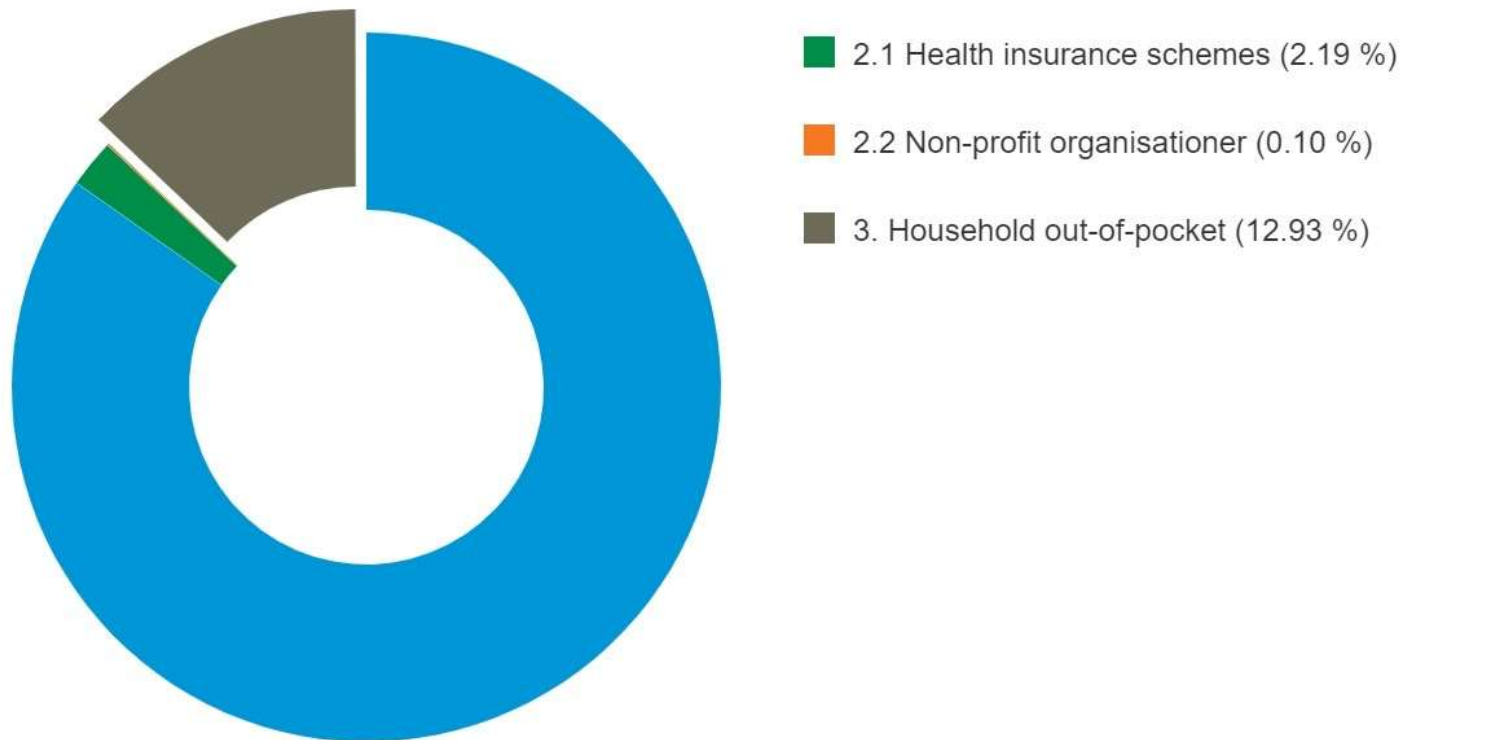
1 Euro =
7,5 DKK



Source: Statistics Denmark

Financing schemes

Time: 2022:



Source: Statistics Denmark

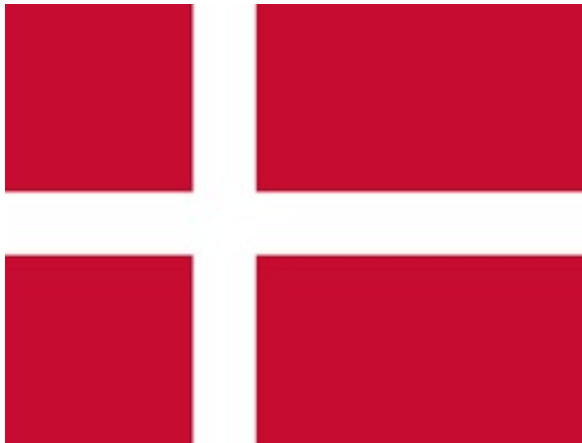


FINANCING OF THE DANISH HOSPITALS

The Danish hospitals are funded through **four types** of grants, which are partly administered by the Danish Ministry of Health. The types of grants are:

- I. Block grant: The block grant depends on a number of factors, e.g. socioeconomic characteristics for each region.
- II. National incentive model: In addition to the national block grant, the regions also receive financing based on fulfilment of the incentive model.
- III. Co-financing by the municipalities: The municipalities pay a share of their citizen's regional health expenses. This is to create incentives for effective health prevention in the municipalities.
- IV. Settlement between the regions: Patients can decide to be treated in any hospital in Denmark. However, the region of residence pays for the treatment. Therefore, there is a regional payment scheme, where the regions charge each other for health expenses based on agreements.

STRUCTURE AND ORGANISATION OF DANISH HEALTHCARE



FORMAL STAKEHOLDERS OF HEALTH IN DENMARK

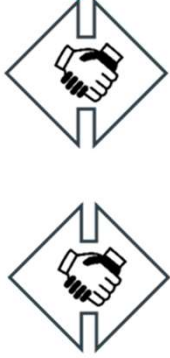

MINISTRY OF FINANCE

AGENCY FOR DIGITAL GOVERNMENT
MINISTRY OF FINANCE

DANISH MINISTRY OF HEALTH

DANISH HEALTH DATA AUTHORITY

Budget and initiatives agreements with municipalities and regions



KL Local Government Denmark and the 98 municipalities

DANISH REGIONS
Danish Regions and the five regions



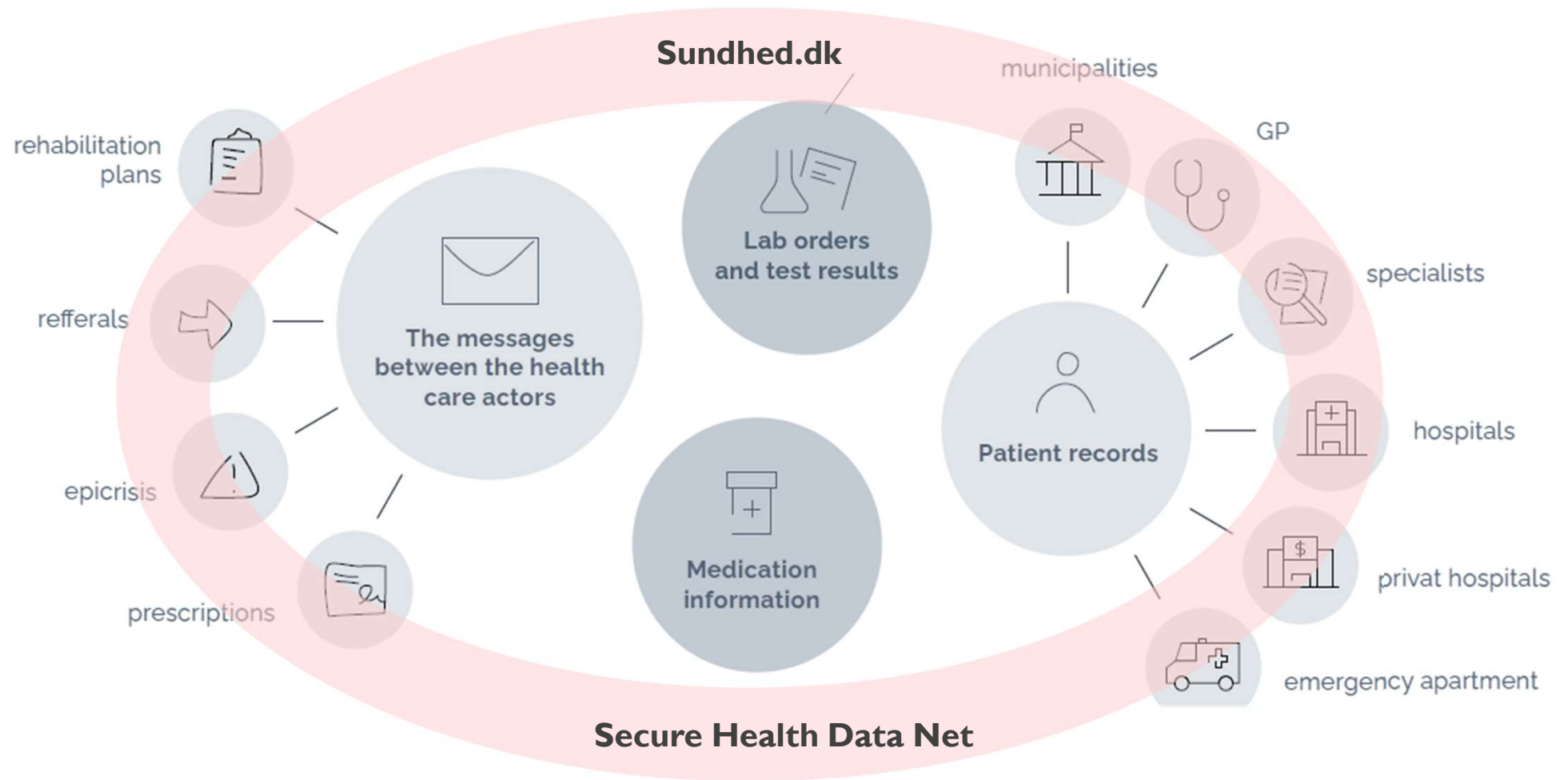
sundhed.dk
medcom
 **rkkp**

The private practitioners:

- General practitioners
- Specialist practitioners
- Physiotherapy
- Chiropractors
- Psychological help
- Adult dental care
- Podiatry

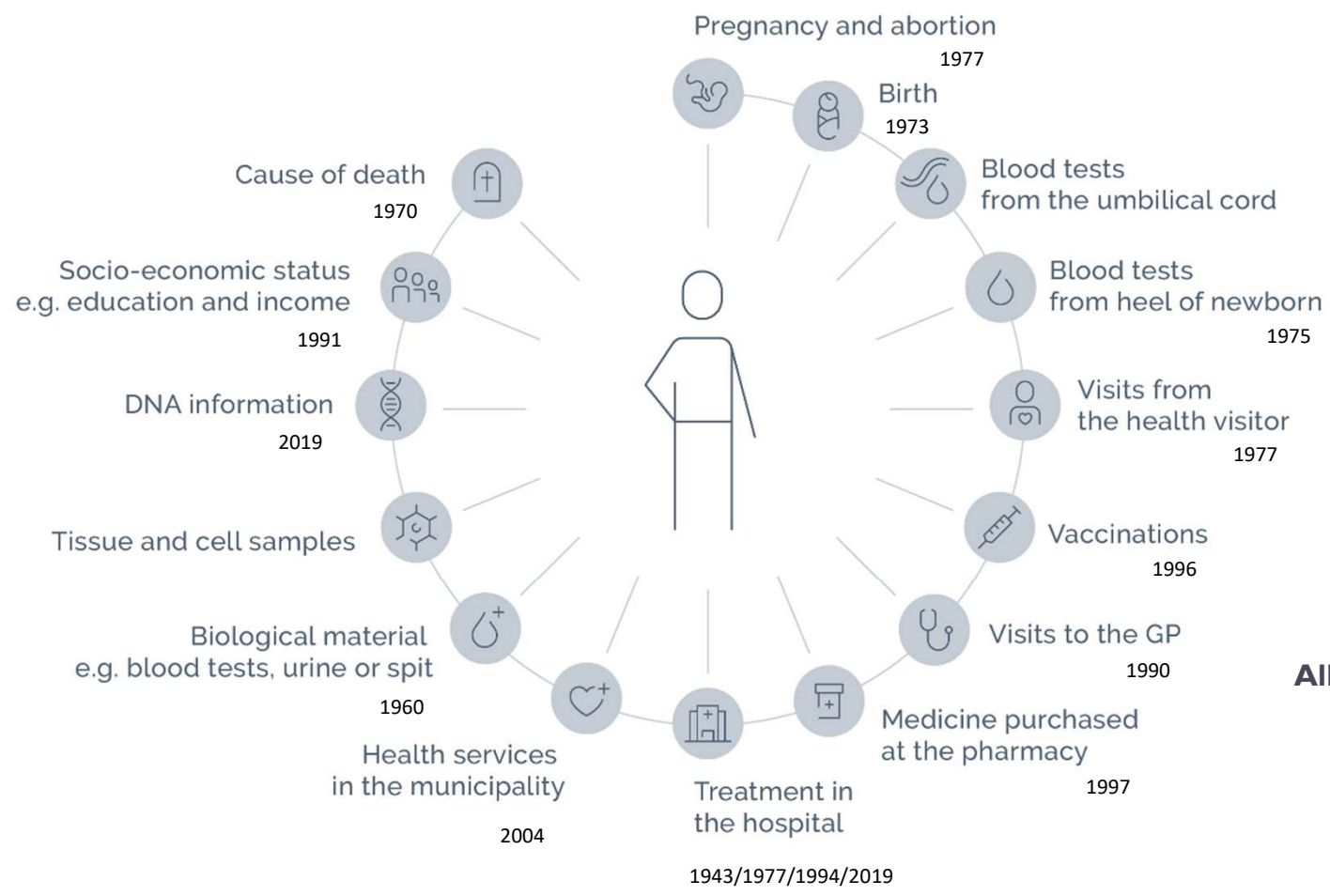
Medicinrådet

THE DANISH HEALTHCARE SECTOR IS FULLY DIGITALIZED



NATIONAL HEALTH REGISTRIES IN DENMARK –

The basis for statistics, monitoring and research



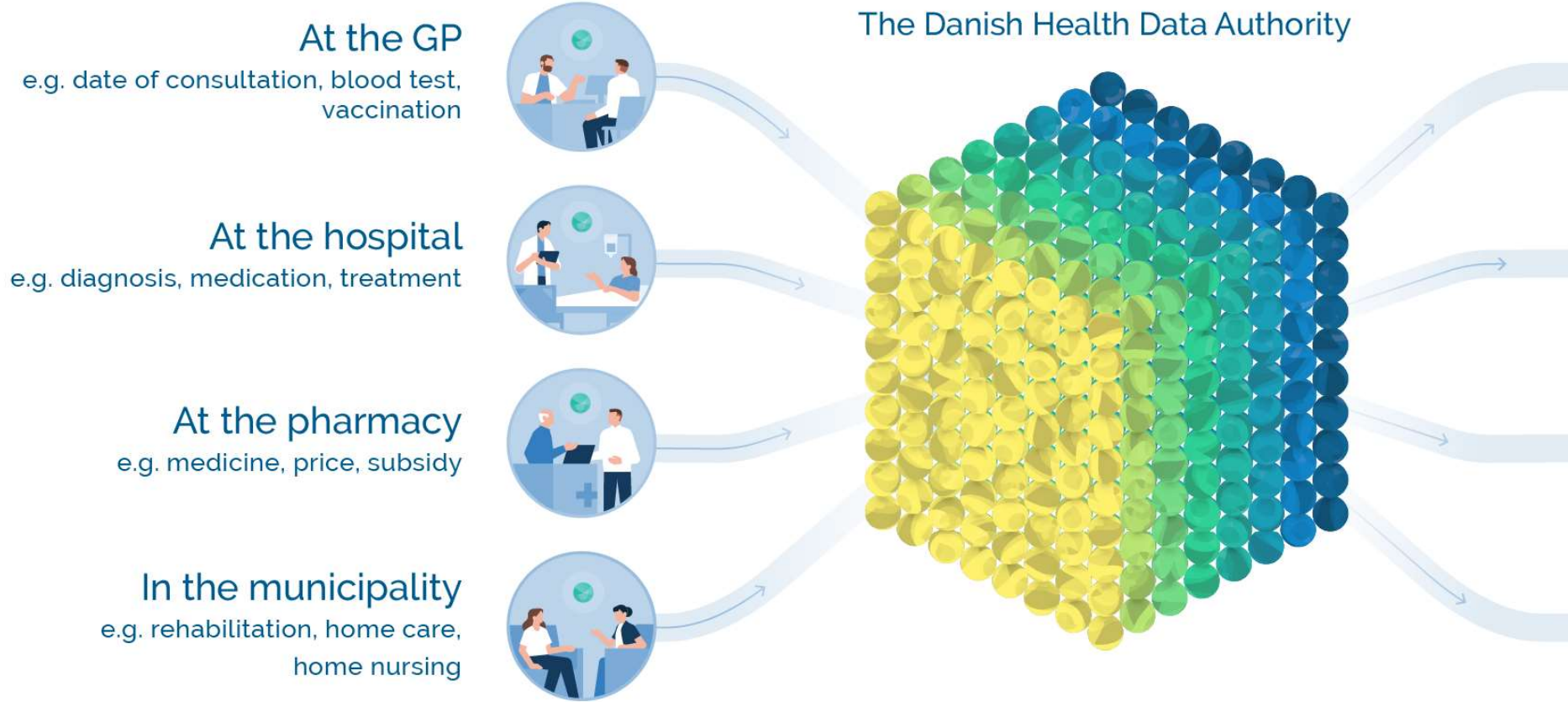
All data are linkable via CPR



PURPOSES FOR THE NATIONAL DANISH REGISTRIES

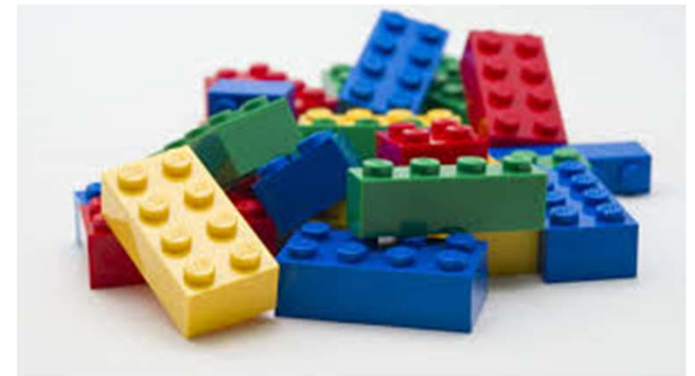
- For statistical use
 - Activities
- The basis for economic calculations
- The basis for health planning
- As the basis for inspection of local health units
- Health surveillance
 - Disease prevalence
- Research
- Quality monitoring
- Access to information on previous treatment – but not to be used in relation to current treatment

HEALTH DATA IS REGISTERED IN DENMARK

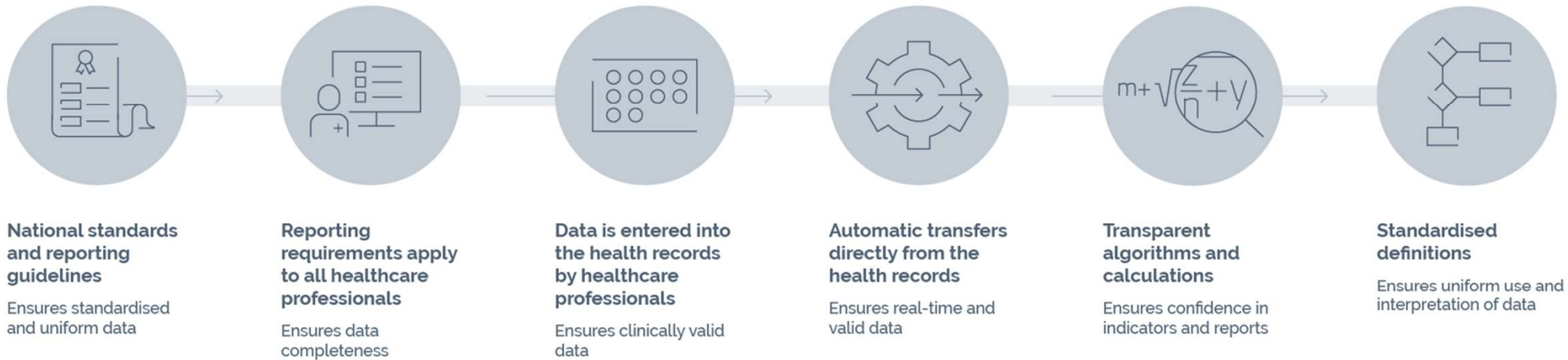


DANISH NATIONAL (HEALTH) IT INFRASTRUCTURE

- Safe health data net
 - Covering all healthcare institutions
 - Standardized messages (MedCom)
- Unique identifiers for all:
 - Citizens
 - Authorized health professionals
 - Care providing organizations
- Digital signature
- Limited number of classifications systems
 - Healthcare classification system (SKS) based on ICD ++, ICF, NPU in hospitals
 - ICPC, ICF, NPU in primary care
 - ‘Shared language’ (Fællessprog III) based on a SNOMED CT in the municipalities
- National patient databases
 - National patient registry
 - Shared medication portal (FMK)
- National health portal where citizens can access own health data
- Mandatory technical standards
 - HL7 – CDA, QFDD....., APIs
- Governing bodies

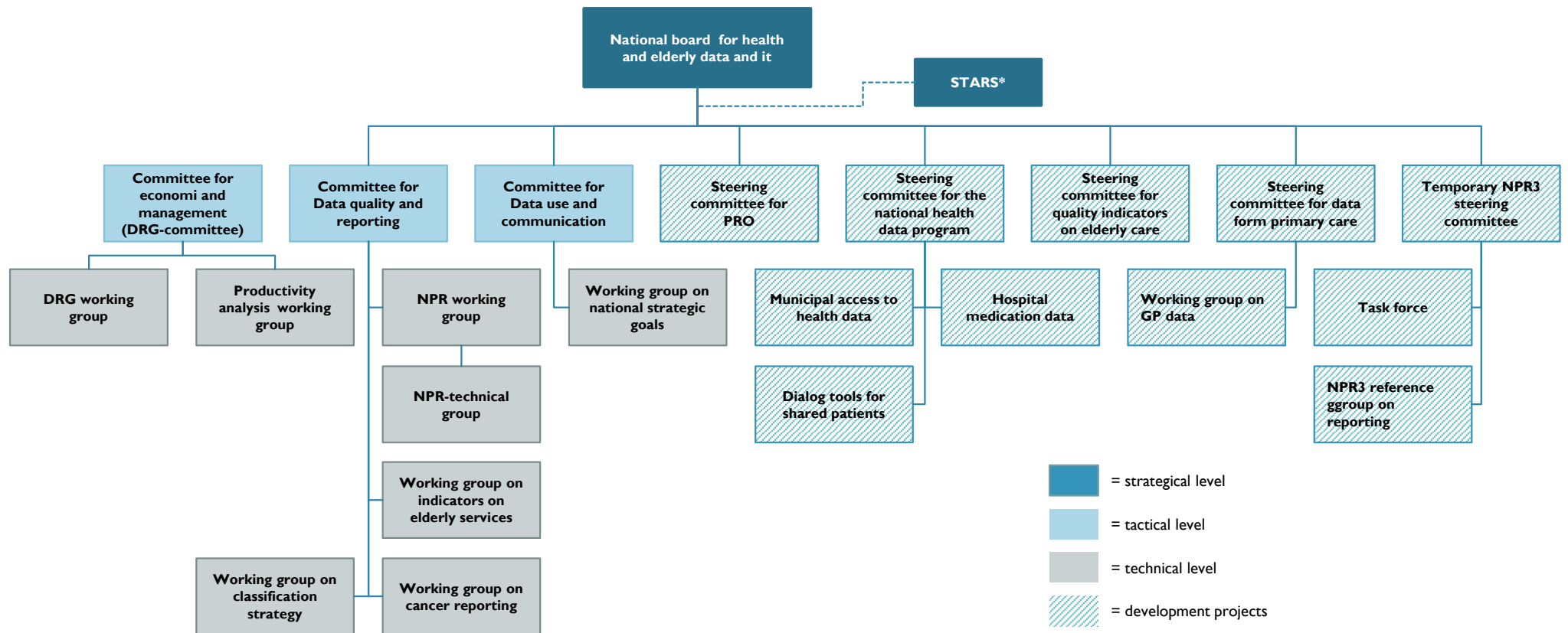


SRANDARISATION AND AUTOMATION PROVIDE HIGH DATA QUALITY IN DENMARK

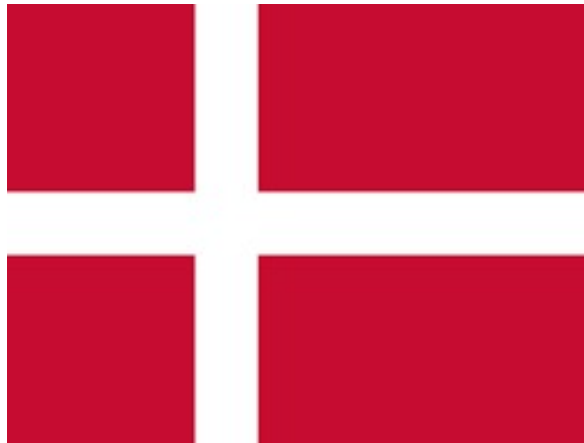


THERE ARE NUMEROUS BOARDS AND COOPERATION SCHEMES

Danish governance and cooperation structure, health and elderly



INCENTIVE MODELS IN DANISH HEALTHCARE



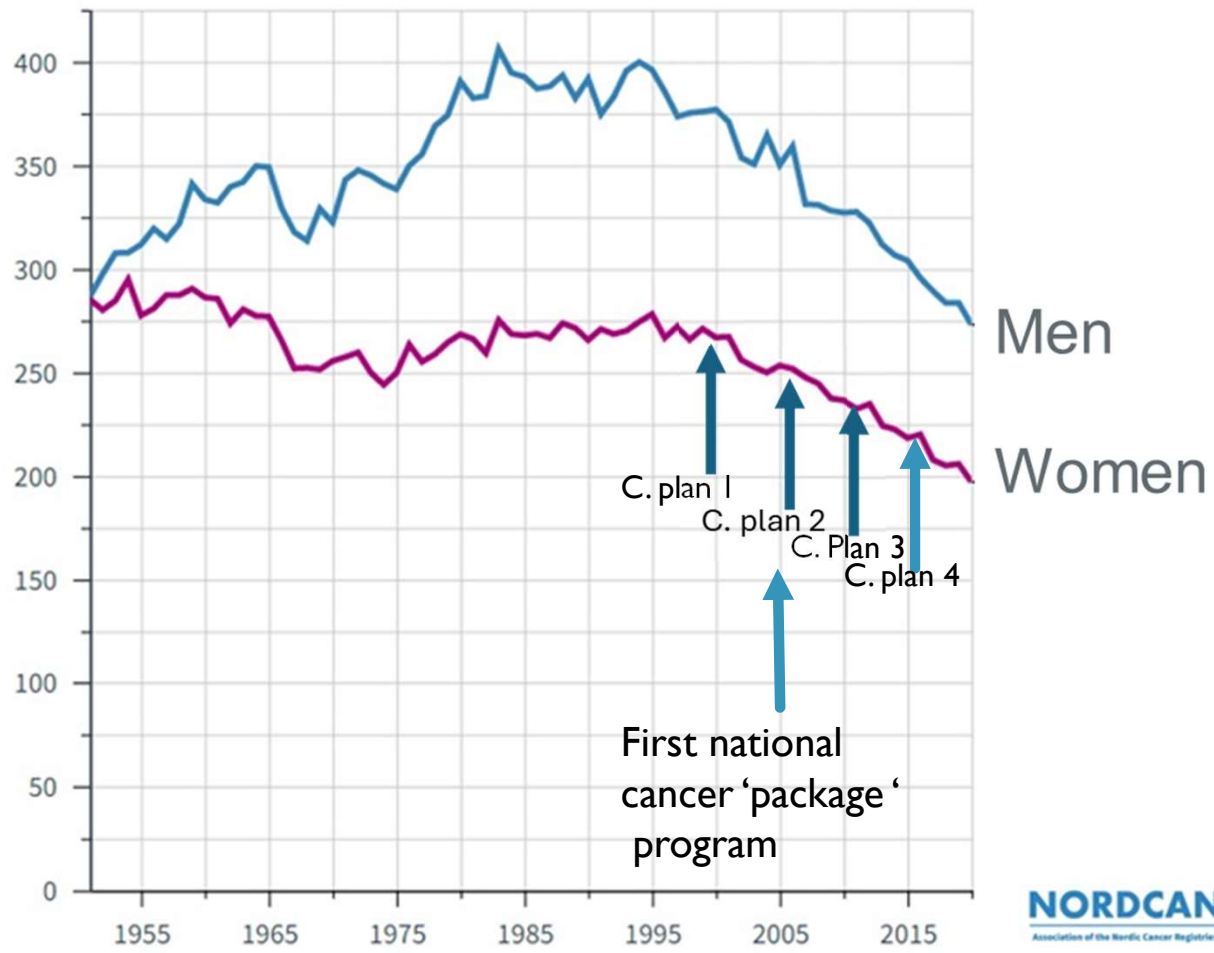


DANISH INCENTIVE PARAMETERS

- Fulfilling of cancer package goals
- Fulfilment of treatment guaranties
 - Avoiding waiting lists
- Improvement of quality of care based on national quality of care reports – app. 80 quality registries
- Providing projects to improve care at lower cost
- Following recommendations from
 - The National board of Health on situation of high-level care
 - The Danish Medicines Council on implementation of new expensive medicine

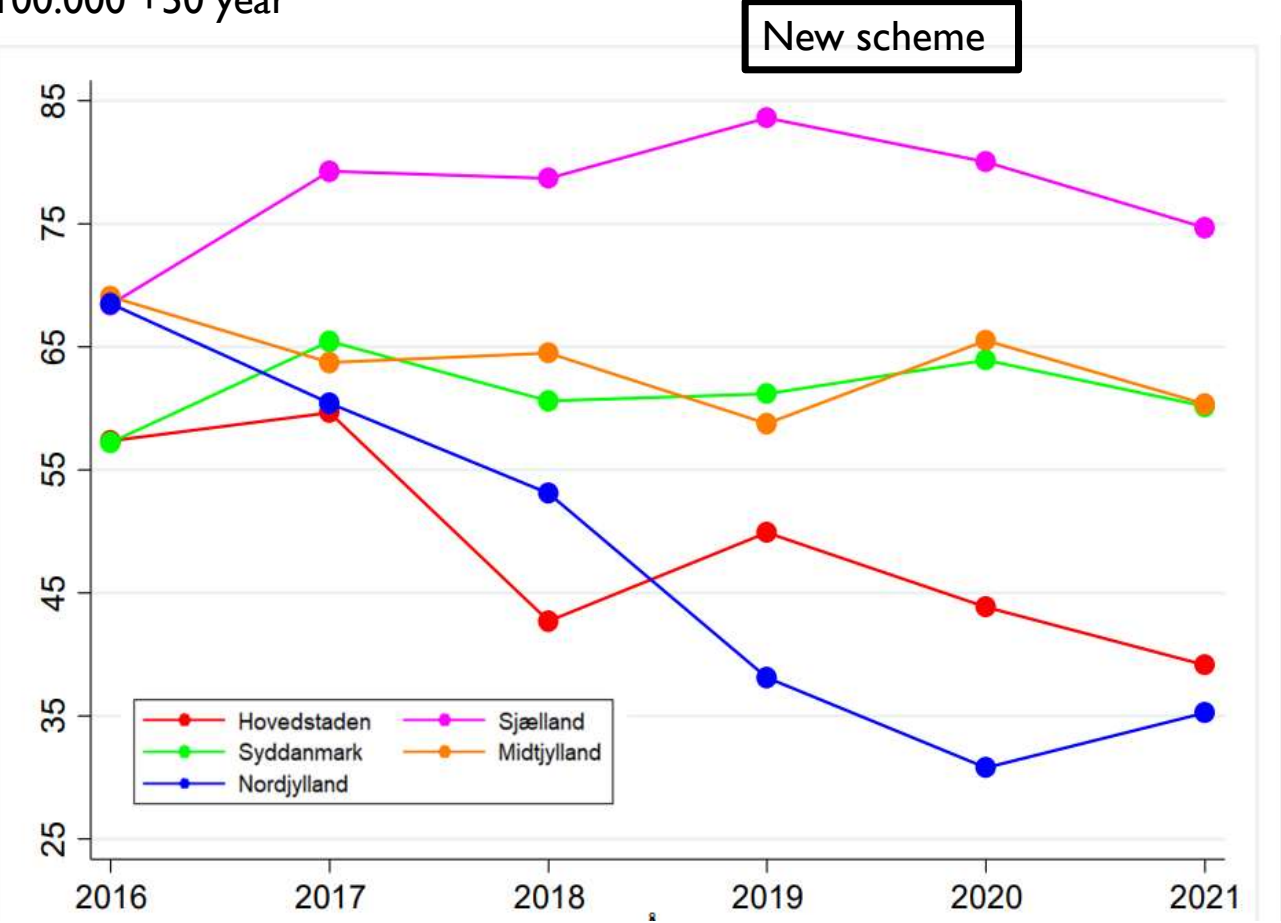
DATA FOR HEALTH PLANNING AND QUALITY MONITORING

Cancer mortality rates in Denmark
Age standardised No of cancer death pr. 100.000 pr year

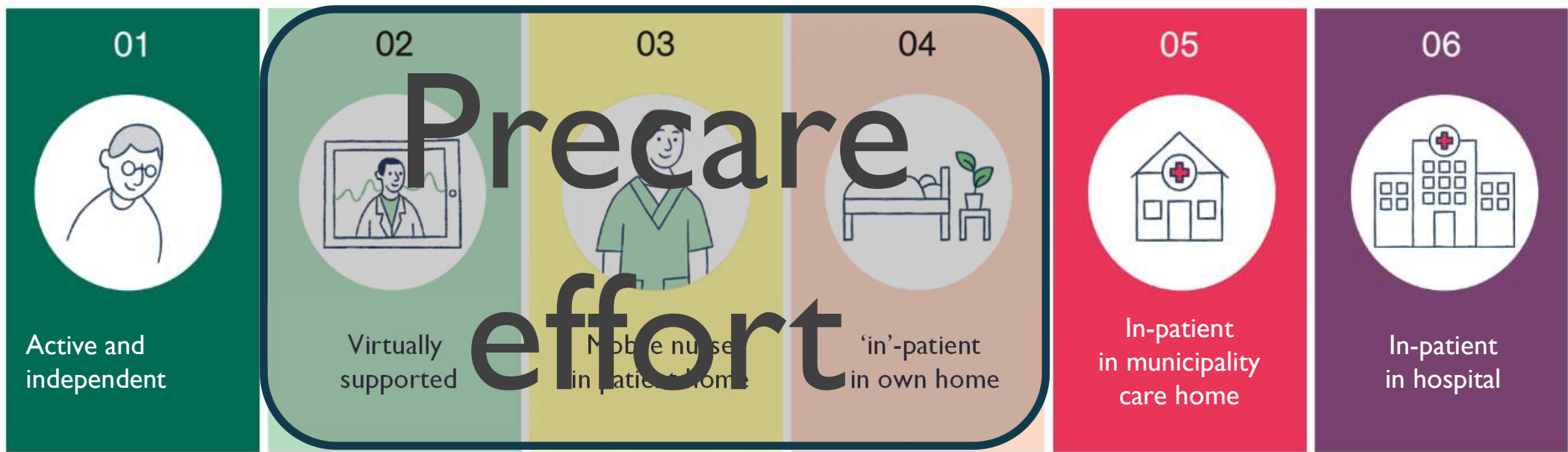


AN EXAMPLE OF A QUALITY REPORT AS BASIS FOR NEW SCHEMES

Amputations pr. 100.000 +50 year



THE PRECARE PROJECT



From the Precare project



LEARNINGS FROM THE PRECARE PROJECT

- It is possible to move from high expenditure care to lower levels of care, using limited resources
 - No serious side effects
- Precare put demands on its set-up and organisation
 - Pushing to existing professional borders
- Financial incentives' should be shared among actors

JMIR Research Protocols - The Epital Care Model: A New Person-Centered Model of Technology-Enabled Integrated Care for People With Long Term Conditions



SPECIALTY PLANNING

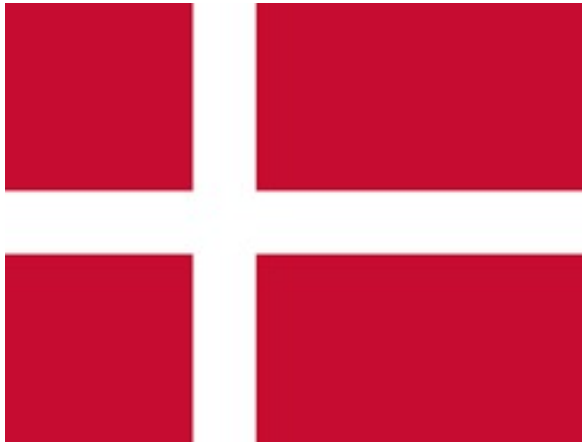
- The National Board of Health is responsible for recommendations and acceptance on where high-level care is situated
 - App 10% of hospital care
- 37 specialty plans with 1000 recommendations on specialty functions
- The basis for specialty plans are a systematic data - based review of every specialty focussing on needs, demands and capacity
- The specialty plans forms the grounds for the fiscal schemes



IN DENMARK DRG IS USED FOR:

- Part of productivity goals
- Shadow accounts in all the hospitals
 - Value based accounts are being tested
- The basis for inter-regional payment schemes and municipality co-financing

KEY LEARNINGS AND TAKEAWAYS FROM DANISH HEALTHCARE





TAKE HOME MESSAGES

It is crucial to have:

- up-to date high-quality data
- a shared national digital infrastructure with
 - Unique identifiers for all actors
 - Shared standards

Cooperation is the key

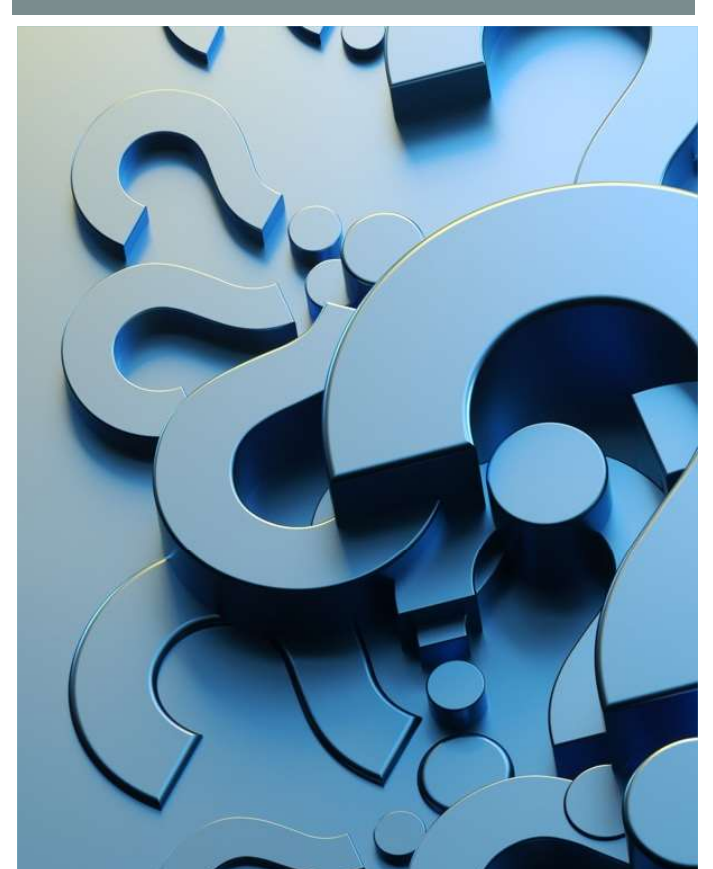
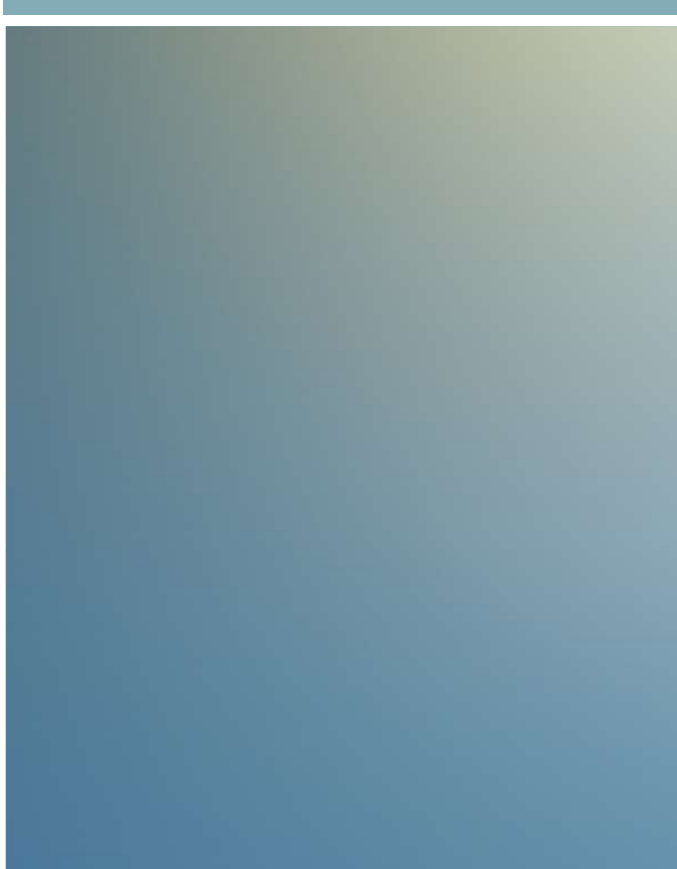
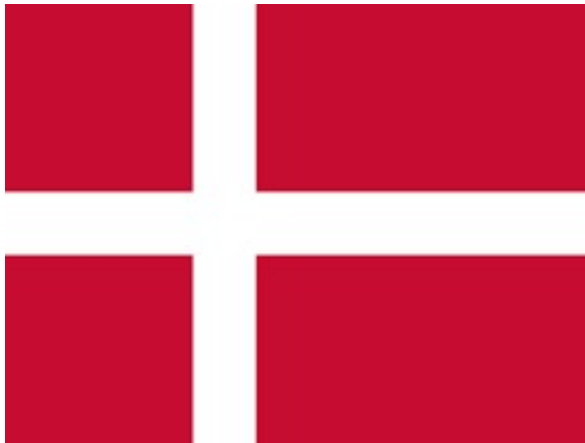
- Work together in a coordinated way
- The governance structure with its boards is where we commit one another based on agreements
- Be patient in order to reach agreement



CURRENT CHALLENGES IN THE DANISH HEALTHCARE SECTOR

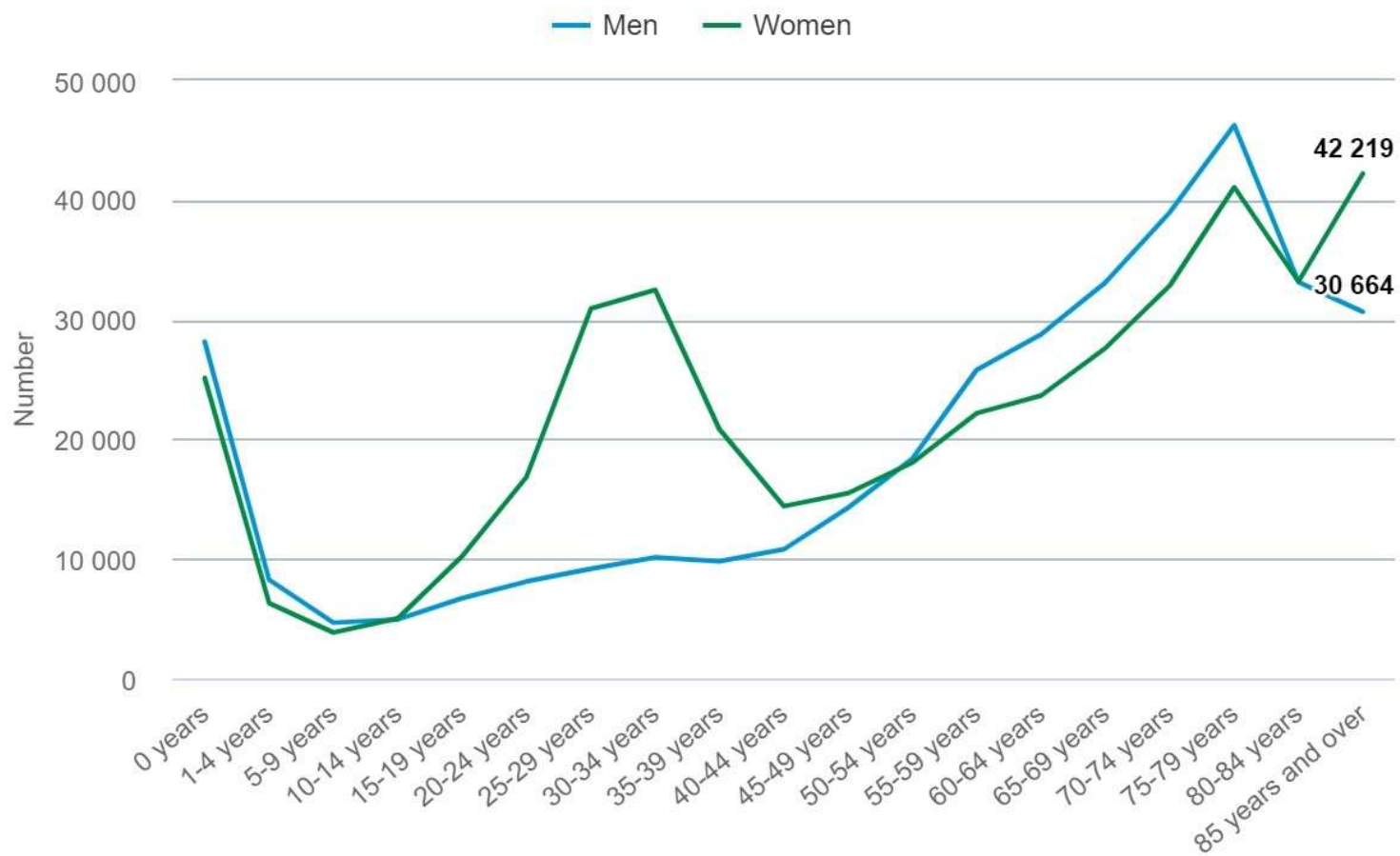
- Increasing number of 80+
- Decline in workforce
 - Growing waiting lists
- Fractioned healthcare sector
 - Awaits a referendum from the healthcare structure commission, June 2024
 - It is expected to focus on strengthening and re-organisation of primary care
- Rising costs
 - Highly specialised hospital care
 - New pharmaceutical specialties
 - Waste and unnecessary examinations and treatments
- Inequity
 - Inequal access to treatment
- Focus on treatment instead of prevention

Q&A



Number of admissions

Time: 2022 | Sex:



LEGAL FRAMEWORK IN DENMARK

Primary use of data

Data used for patient treatment

- The patients consent is implied
- Electronic records can only be accessed by healthcare professionals participating in the treatment of the patient
- Patients have the right to deny access to their health records healthcare professionals
- Patients have access to MyLog, where they can see which healthcare professionals have accessed their health record

Secondary use of data

Data used for planning, management and research

- Data processing does not require consent of the individual for administrative purposes
- For research or statistical purposes data may be processed without consent of the data subject presupposing that the processing of data is:
 - of significant public importance, and
 - the processing is necessary for carrying out these studies
- Approval from a data authority is necessary

THANK YOU

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