Introduction to the Norwegian Directorate of e-Health and the forthcoming establishment of a National Service provider

Karl Vestli
Director Strategy Division
Health and care services for all

- Population: 5.3 million
- GP acts as gatekeeper
- Life Expectancy: 82.4
- 4600 GPs
- 10.5% of GDP
- Public Funding: 85%

Source: Statistics Norway (2018) and Norwegian Directorate of Health (2018)
Current situation: Challenge to achieve connected health across the Norwegian health and care services

Nationally

- Ministry of Health and Care Services
- The Parliament
- Ministry of Local Government and Modernization

Regionally/locally

- Regional health authorities
- 422 municipalities
- 1.800 Contracted Specialists and institutions
- 4.600 General Practitioners
- Hospitals and Specialist health care
- Primary health care
Norwegian Directorate of eHealth

The Norwegian Directorate of eHealth
New government agency established January 1st 2016

Two roles

Government
National governance, Coordination and standardization
Catalyst and driver

National eHealth solutions
Citizens, health providers, data
National Governance

Ministry of Health and Care Services

National Advisory Board for eHealth (NEHS)

National Forum for Portfolio Management (NUIT)

Health Professional and Architectural Advisory board (NUFA)
Plans for a national eHealth service provider
Strategy and Action plan for eHealth 2017-2022

Critical infrastructures and common building blocks

National governance of eHealth and increased ability to deliver
A selection of current national activities

- **One Health Record**
- **Common infrastructure**
- **Personal Connected Care**
- **Summary Care Record**
- **Electronic Messaging**
- **Health Data**
- **Health Portal**
- **ePrescription**
The directorate suggested the establishment of a national service provider in a report addressing the organization of IT in the health sector in 2017.
Three recommendations in the report

1. The creation of a national service provider
2. Current and future national products/solutions should be transferred to the service provider
3. The need to use private vendors should be emphasized in the strategy for the national service provider

Next step is to detail the concept and implementation plan.
Why new eHealth organization?

**Speed**
- Increase speed of implementation
- Need for joint efforts

**Rolle**
- Directorate
- Service provider

**Finance**
- Flexibility
- Service pricing
A transition into two strong entities

Tasks and responsibilities for the directorate

National service provider
The national service provider will work closely with several product owners.

Needs and requirements:
- Specialist health services
- Primary health and care services
- Other

Product owner:
Works with the sector to define WHAT to develop

National service provider:
Professional provider responsible for determining HOW to develop/source products and services

Suppliers:
- Software vendors
- Operations
- Other
Programme objectives

- Establish a basis for governmental decision to establish new eHealth organization by Jan 1st 2019.

01 Decision support
- Establishment of a national service provider using Norsk Helsenett (Norwegian Health Network) as an organizational base, and defining the new role for the directorate
- National governance and finance

02 Strategy: Dir. 2.0
- Strategy and governance for the new role for the directorate of eHealth.

03 Road map
- Development of the national service provider.
- Plan for implementation and development according to objectives and roadmap
Deliverables; Programme NEO (New E-health Organization)

- Organization, responsibilities and tasks. Implementation plan for NSP.
- Organization, responsibilities and tasks for «the directorate 2.0»
- Models for governance and finance. Legal structures and clarifications.
- Risk assessments and security plans.
- Plan for transition of existing products and solutions 2019-2024
- Cost/benefit analysis + input for state budget 2019
Key questions

- Who will decide and finance national eHealth products and solutions?
- Governance and priorities?
- Business model?

- Responsibilities and tasks assigned to the directorate and the NSP?
- Ownership of the NSP?
- Company structure?

- Company transition
- What is the first step Jan 1st 2019?
Health Data Programme

National Health Analysis Platform

Marianne Braaten, Assistant Programme Manager
Hanne Cecilie Otterdal, Enterprise Architect
Health data sources in Norway
Health data sources in Norway

- Patient journals
- Central health registers
- National medical quality registers
- Other medical quality registers
- Biobanks
- Other

Questions:
- What does this mean, and is the information about me correct?
- How can I contribute to research on my condition?
- What does this consent or reservation actually entail?
- Who has seen my data and what is it used for?
- How can I restrict access to my data?
- Where is my data?
Norway is comparatively efficient at collecting health data, but less adept at using it than our neighbors.

Source: OECD, HCQI Survey of Electronic Health Record System Development and Use, 2016
The Health Data Program (HDP)

**Mission**
- Improved public health
- Knowledge-based health services and efficient use of resources
- Empowered and involved citizens

**Goals & Objectives**
- More and improved health research
- Efficient health registry management and operation
- Improved data protection
- Improved data quality
- Improved data protection
- Improved data quality

**Results**
- Improved data quality
- Improved data protection
- Improved legal framework
- Semantic interoperability
- Technical interoperability (API)
- Common technical services and national infrastructure

**Administrative services for health data and research**
- Improved data protection
- Improved data quality
- Improved legal framework

**More innovation and business development**
- Efficient reporting and access to health data

**Efficient health registry management and operation**
- Improved data quality
- Improved data protection

**More and improved health research**
- Improved data quality
- Improved data protection

**Empowered and involved citizens**
- Improved data quality
- Improved data protection

**Improved public health**
- Improved data quality
- Improved data protection
Health analysis platform – Concept 7:
Closed analysis, ecosystem & open architecture

API: Access, exploration and dialogue
- Closed / autonomous analysis
- Authorized analysis
- Open analysis and tools

API: Analysis
- Processed, connected health data
- Non-sensitive data

API: Data

API: Administration

Health Analysis Platform (HAP)

Citizens  Health personnel  Health leaders  Government  Researchers  Industry

Processed, connected health data
Non-sensitive data

Health registers, basic data, sensors, citizens and other sources

The Norwegian Directorate of eHealth
What can researchers expect from The Health Analysis Platform?

The Health Analysis Platform

Health research platform (helsedata.org)

- Get an overview
- Receive guidance
- Apply for data in one place
- Execute analysis
- Interact with citizens
- Gain access to data

Identity and access administration, anonymization, aggregation, masking, tracking, logging

Gathering, receiving, validation and transformation

Health registers, basic data, sensors, citizens and other sources
Realization strategy
From data distribution to self-service analysis?

17 months → 17 seconds
One citizen – one record
The Norwegian healthcare sector is facing several challenges (as many others…)

**Increasing senior population**

**Health problems change over time**

**Technology and society is changing**

**Macroeconomic forecast is challenging**

*Current IT is unfit to deal with emerging challenges*
Stortingsmelding no. 9 (2012-2013) defines three objectives for the IT development in the healthcare system (Governmental white paper)

Healthcare personnel shall have user friendly and secure access to patient information

The citizens shall have access to user friendly and secure digital services

Data shall be accessible for quality improvement, health monitoring, management and research
The directorate for eHealth recommends realization of the target for One citizen - one journal through three strategic and parallel initiatives

Three strategic and parallel initiatives

- **Further development of existing solutions in the specialist health services in North, West and South East**
  - Status: Ongoing

- **Establish a national solution for municipal healthcare services**
  - Status: In procurement

- **Establish one common solution for both primary and specialist healthcare services for the health region in central Norway.**
  - Status: Preparing for procurement
One health record across all levels of care
A ground-breaking project in Central Norway

Øyvind Høyland
Prosjektleder teknisk delprosjekt
The programme Helseplattformen

- For the first time, one common EHR solution shall be acquired for both municipality and specialist health care services in one region in Norway
- Central Norway (Midt-Norge) is a tryout arena for the national objective “One citizen – one health record”
- Following a competitive dialogue with the supplier market, a contract with one supplier will be signed in 2019
An EHR solution across all levels of health care – Helseplattformen in Central Norway

- The Central Norway Health Authority and the municipality of Trondheim are owners and customers

- All 85 municipalities have optional agreements

Central Norway

- 85 municipalities
- 8 hospitals
- 720,000 citizens (14%)
- 42,000 health care professionals
A health record that follows the patient

- Specialist health care (hospitals)
- Municipal institutions
- GPs
- Home care and municipal health services

Enabling the patient to take on a more active role, e.g. self-registration, booking, access and insight
Planning the competition
Pre-qualification of suppliers

2016

2017

Dialogue with suppliers
What solutions are available?

2018

Evaluation
Down-selection

2019

Contract signed

2020

Adaptation
Implementation

2021

2022

101 workshops with 400 healthcare workers

Tender deadline
May 3rd

Final version of tender requirements

Parallel national process: «One health record»
The work from Central Norway will be re-used in the development of a national solution for municipal/local health care

Tentative: implementing in Trondheim 2021

2nd phase: 2022
Two suppliers still in the competition

- Cerner
- Epic

Tender documents available online
www.helseplattformen.no
Overall objectives of the procurement

1. Increased **treatment quality** and fewer patient injuries
2. Access to **continuously updated** clinical knowledge based on best practice
3. Provide the citizens with easy access to their own health record and **more influence** on their own course of treatment
4. Increased **interaction** in and between the primary and specialist health care services
5. Improved data and information for use in **research** and innovation
6. Increased **efficiency** and better use of resources
7. Improved management information to aid **quality and improvement** work in daily operations
8. **Reduced time spent** on documentation and search for health information
9. Compliance with **national standards** and requirements
10. Reduced need for municipal services based on **comprehensive assessment** of the patient’s functional abilities through generic pathways
11. The citizens shall be supported to live longer independently in **their own homes**
Broad, cross-disciplinary involvement

- Widely competent project members
- 101 workshops with 400 users
- Collaboration on all levels of authority
- Supplier dialogue
- 4000+ requirements

Documents available online
www.helse-midt.no/helseplattformen
Today: 21 patient record systems
Example: Surgery planning

- Surgical nurse
- Surgeon
- Anesthetic nurse
- Anesthesiologist

Duplicates and sometimes contradictory information
Low degree of integration and communication between systems
New solution:
Different demands depending on role and context

Configurable interfaces towards role and context rather than from the individual systems to context
21 user scenarios describing requirements

- Situations and processes with various patient – health service encounters
- Examples of the desired functionalities
- Demonstrating the need for overall thinking
- Asking suppliers to describe what kinds of support personnel can acquire
- Asking for input on improving and streamlining services, workflows and clinical pathways
- Scenario example; surgery procedure
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Areas of particular focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Information security, privacy and access control</td>
</tr>
<tr>
<td>4.2</td>
<td>Usability</td>
</tr>
<tr>
<td>4.3</td>
<td>Report generator and data retrieval</td>
</tr>
<tr>
<td>4.4</td>
<td>Resource planning, scheduling and work lists</td>
</tr>
<tr>
<td>4.5</td>
<td>Multimedia</td>
</tr>
<tr>
<td>4.6</td>
<td>Closed loop medication</td>
</tr>
<tr>
<td>4.7</td>
<td>Knowledge and clinical decision support</td>
</tr>
<tr>
<td>4.8</td>
<td>Master data, reference data and terminologies</td>
</tr>
<tr>
<td>4.9</td>
<td>Administrative procedures</td>
</tr>
<tr>
<td>4.10</td>
<td>Pediatric care and child health</td>
</tr>
<tr>
<td>4.11</td>
<td>Medical device integration</td>
</tr>
<tr>
<td>4.12</td>
<td>Continuous and comprehensive medical chart solution</td>
</tr>
<tr>
<td>4.13</td>
<td>Specialties and specialised systems</td>
</tr>
</tbody>
</table>
The empowered and contributing patient

We shall actively include the patient in decisions regarding their own health and consider the patient’s experience and knowledge in the treatment.
Technical requirements – ambitions and goals

1. Move from message exchange to information sharing

2. High level of standardisation

3. Stimulate the use of structured data and storage of clinical information throughout the solution

4. Technical platform that enables future technology

- Integrations
- Information content (Reference data, terminologies and master data)
- Operations and maintenance

• Realize the ambition of active, clinical decision support
• Improve data and information base for research and innovation
• Improve administrative information as a basis for quality and improvement work on daily operation

✓ Ability to adopt future technology to interact with Helseplattformen and its information base
Information security – privacy – access control

Confidential
Access control on a need-to-know basis

Available
Always access to what you need

Integrity
The information is trustworthy
For further reading, please visit our homepage
Some content in English, including tender documents and functional requirements
www.helseplattformen.no

Central Norway Health Authority/
Helse Midt-Norge strategy 2030:
https://helse-midt.no/strategi-2030

Directorate of eHealth: https://ehelse.no/
Thank you!
Norwegian Code of conduct for information security in health care

Jan Gunnar Broch
Senior Adviser
The Helse Sør-Øst outsourcing incident

Helse Sør-Øst: Admits that foreign IT-workers could access patient information

The Data Protection Authority found legal breaches: Millions in fines after outsourcing hospital IT
Targeted cyber attack against Helse Sør-Øst

Norwegian health authority hacked, patient data of nearly 3 million citizens possibly compromised
GDPR countdown...

What the new EU GDPR means in 1 minute

The EU GDPR will increase privacy for individuals and give regulatory authorities greater powers to take action against businesses that breach the new laws. Here’s what it means for your business:

Tough penalties: fines of up to 4% of annual global revenue or €20 million, whichever is greater.

The regulation also applies to non-EU companies that process personal data of individuals in the EU.

The international transfer of data will continue to be governed under EU GDPR rules.

The definition of personal data is now broader and includes identifiers such as genetic, mental, cultural, economic, and social identity.

GDPR Ready? Set? Go!

25 May 2018
Code of conduct for information security in health care

Published first in 2006
Now: Version 5.2
Background

- Extensive health and care sector
- Organizationally fragmented
- Sensitive personal data
- Electronic exchange of information
- Complicated legislation
The Code of conduct

*Binding – affiliation agreement with Norwegian Health Network*

Guidelines
Factsheets (best practice routines)

*Not binding*

The Code and some of the guidelines are translated to English
Examples - guidelines and factsheets

- Guideline for remote access between supplier and organization *
- Guideline for privacy and information security in medical devices
- Fact sheet 6b: Security audits - Code compliance checklist *
- Guideline and template for general practitioners and physicians in private practice.
- Guidelines for social media
- Factsheet 42: Use of SMS for patient contact *
  - * available in English
Communication

Annual conference

Newsletter
- 4 times per year
- Subscribe at www.normen.no

Q&A email
sikkerhetsnormen@ehelse.no

Training and talks
- Training
- Conferences
- Lectures and talks

www.normen.no
- The documents
- News
- Training
- Etc.

Social media

The Norwegian Directorate of eHealth
Why has the Code been a success?

- Binding by contract
- Non-bureaucratic – “bottom up”
- The stakeholders are involved
- Practical advices
- Sector specific guidance
- An arena for information security and privacy questions
- In partnership with the legislative authorities
- Financed by the government
- Simplifies, and makes complicated regulation more accessible
Example:
CoC activities on medical devices information security

The «GE-incident»

Tok personopplysninger fra 12 nordmenn

GE Healthcare System hentet ulovlig ut sensitiv informasjon o som ledd i overvåking av røntgenutstyr. Datatilsynet har nå t aktuelle sykehusene og røntgeninstituttene.
Example:
CoC activities on medical devices information security

Define audience
- Needs and risks
- Measures and instruments

Develop and publish guidance material

Communication
- Training
- Talks
- Newsletter and social media

Reference group -> resource network
Challenges

- Different kinds of needs – from small GPs to big regions
- Comprehensive document-portfolio – update and review
- Stricter than the law?
- «Fragile» construction
Focus 2017 and 2018: Make the Code approveable as an article 40 CoC

- The GDPR endorses the use of codes of conduct to provide guidance on the GDPR’s requirements

- Drivers for change
  - New legislation, GDPR and health-legislation
  - New technology
  - New threat assessments

- Expanded scope – information security AND privacy

- Working closely with the health sector and with the Data Protection Authority to prepare for the changes