



#### One health record A ground-breaking project in Central Norway

*September 01, 2017* 

# Agenda

- 0830: Welcome / Presentation round quick tour de table
- 0850: Helseplattformen. The programme and the national "One patient one health record" strategy
  - Willy Eidissen, assistant programme director, Helseplattformen
- 0910: The municipal health care services in Central Norway and expectations to Helseplattformen
  - Helge Garåsen, chief excecutive of health and welfare, Trondheim municipality
- 0940: The ongoing Social and Health care reform in Finland. Mr Vesa Lipponen Senior Adviser, Ministry of Finance
- Discussions
- 1015 coffee break/refreshments
- 0
- **1040: Helseplattformen scope, architecture and services.** *Torill Kristiansen, enterprise architect, Hemit/Helseplattformen*
- **1100:** Technical solution, Medical Device Integration and Personal Connected Health and Care. Øyvind Høyland, technical project manager, Helseplattformen
- 1120: The ongoing Apotti project in the Helsinki region. Mr Jyrki Soikkeli, Development Manager, Architecture HUS Apotti project, http://www.apotti.fi/sv/
- 1140: The UNA -Project, building a health IT solution for the regional Finland Programme Director Erkki Kujansuu https://www.kommunforbundet.fi/aktuellt/2016/samarbetsprojektet-una-fortsatter
- o 1200: 10 minute break
- 0
- 1210: Patient functionality The Patient's health record. Tori Berge Almaas, the functionality project, Helseplattformen
- **1230: Clinical decision support data driven decisions and how it is described in Helseplattformen**. *Nina Kongshaug, oncologist, Helseplattformen*
- 0
- 1300: Lunch in Ranheimsveien 10
- 1400: Departure to St Olavs hospital
- 1430 1530: St.Olavs University Hospital and Øya Helsehus (smaller group). Tove Røsstad, Senior Medical Officer, City of Trondheim

HELSEPLATTFORMEN for pasientens helsetjeneste



Helseplattformen

Willy Eidissen, assistant programme director



#### Helseplattformen



- For the first time, one common EHR solution shall be acquired for both municipality and specialist health services in one health region in Norway
- The programme and its organization
- Overall objectives
- User involvement
- Functional and technical requirements
- Areas of particular focus
- The patient and citizen perspective



# The procurement of a new EHR solution across all levels of health care

- The Central Norway Health Authority, Helse Midt-Norge, and the municipality of Trondheim are owners and customers
- 84 municipalities have optional agreements
- 8 hospitals
- 720,000 citizens (14%)
- New IT tools for 42,000 doctors, nurses and health care personnel
- A regional pilot for the national objective «One citizen – one health record»







#### National attention to Helseplattformen

«(...) Helseplattformen in Helse Midt-Norge RHF will be carried out as a regional trial programme for the national objective of «One citizen – one health record» and a possible starting point for a common national solution for municipal health and care services.»

*Source: Protocol from corporate meeting in Helse Midt-Norge RHF, June 22 2016. Unofficial translation.* 

- The assignment requires close cooperation with the Norwegian Directorate of Health and Care Services
- Focus on national involvement and anchoring
- Experiences and material from the work with Helseplattformen could be the foundation for future acquisitions

HELSEPLATTFORMEN for pasientens helsetjeneste



#### Following the patient across all levels of health care



for pasientens helsetjeneste

Н

#### Following the patient across all levels of health care





#### Overall objectives of the procurement

- 1. Increased **treatment quality** and fewer patient injuries
- 2. Access to **continuously updated** clinical knowledge based on best practice
- Provide the citizens with easy access to their own health record and more influence on their own course of treatment
- 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

- Improved management information to aid quality and improvement work in daily operations
- Reduced time spent on documentation and search for health information
- 9. Compliance with **national standards** and requirements
- Reduced need for municipal services based on comprehensive assessment of the patient's functional abilities through generic pathways
- The citizens shall be supported to live longer independently in their own homes

#### A long-lasting and complex acquisition process



of a national solution for municipal/local health care

HELSEPLATTFORMEN for pasientens helsetjeneste

#### Four supplier consortia in the competition

- Cerner
- DXC Technology (formerly CSC)
- o Epic
- Tieto Norway

Documents available online www.helsemidt.no/helseplattformen



Helseplattformens konkurransegrunnlag (68 dokumenter)



#### Broad, cross-disciplinary involvement



## 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





#### Involvement – how to tell the story





www.helse-midt.no/helseplattformen

The tender documents are published on our website www.helsemidt.no/helseplattformen



A poster exhibition is touring hospitals, combined with seminars





Functional scope *Torill Kristiansen, Enterprise Architect* 



# Defining scope - approach

- What to procure for whom?
  The complexity demanded a structured approach to define the functional scope
- Securing stakeholder involvement
  Chief Medical Officers from both hospitals and municipalities were central in the work of defining the scope





## Use of models to express functional scope





#### Functional scope

Areas to be considered, minimum and maximum level



• Functional scope including areas to be considered, i.e. agreed upon during the dialogue phase, is described in *Appendix CO Statement of Intent* 





## Functional scope-<u>Actors</u>





# The **Actors** minimum and maximum levels are also described in *Appendix CO Statement of Intent*





### Functional scope- Enterprise capabilities



**No support.** The EHR solution is not exptected to include any functionality to support the enterprise capability

**Full support.** The EHR solution shall include all functionality to support the enterprise capability.

**Partial support.** The EHR solution shall include some functionality to support the enterprise capability

**Integration.** The enterprise capability will be supported through integration with external systems.

**To be considered.** The level of ICT support (functionality) in the EHR solution for this capability, will be considered. The choices to be considered are described as a minimum and maximum level, cf. T Appendix 1B, Chapter 2.



Different support for municipalities (left) and hospitals (right).
 h When a figure consists of two colours, it implies different functionality support for municipalities (m) and hospitals (h).
 Look at the figure edges (not in the middle) for the correct colour

- Functional scope including areas to be considered, is described in Appendix CO Statement of Intent
- Minimum and maximum levels of functionality are described in *T Appendix 1B Functional Requirements*

HELSEPLATTFORMEN for pasientens helsetjeneste



#### Functional scope- Enterprise capabilities



HELSEPLATTFORMEN for pasientens helsetjeneste



#### Functional scope- Enterprise capabilities





#### Relation between capabilities and the functional model

 The functionality required to ensure that the enterprise capabilities are sufficiently supported by the EHR solution is defined by referring to functions and conformance criteria in the HL7 EHR-S Functional Model, Release 2







#### Use of EHR-S FM in the requirement specifications

#### • Why EHR-S FM

Promote a common understanding of EHR functions upon which developers, vendors, users and other interested parties can plan and evaluate EHR-S functions.



 Some functions in RI and TI will be a subject for both technical and functional considerations





#### Functional scope summary







Technical solution

Medical Devices Integration

Personal Connected Health and Care

Øyvind Høyland, technical project manager



# Technical requirements – ambitions and goals

	(
1	

Move from message exchangeto information sharing

High level of standardisation

	_	
	2	
	D	
$\sim$		

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

<u>ן</u>	Technical platform that enables	
<u>ן</u>	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



#### Technical requirements – more details



- support mobile and handheld clients with intuitive user interfaces
- support apps designed for multimedia devices, ID readers and voice recognition
- provide easy and functional connectivity with peripheral units, medical devices and PCHC technology
- provide functional distribution of apps to all types of clients
- provide fast, virtualised applications based on streaming technology

HELSEPLATTFORMEN for pasientens helsetjeneste

- be able to run on a virtualised and high available server platform
- store data synchronous in several datacenters and automatically switching of datacenters
- se able to upgrade software without affecting the operational status
- se scalable in line with increased use and need of performance
- se able to detect resource and performance issues before they grows into incidents

#### Information security – privacy - access control





#### Integrations

#### Helseplattformen ESB (Enterprise Service Bus)

- A shared integration service for the different actors in the regional health services
- Manages integrations and message exchange with Helseplattformen
- Data exchange with local and regional systems or services, interaction with other external actors, national registries, shared components and services



#### **Medical Device Integration**

- Helseplattformen shall make a new extended understanding of the term MDI
- Not only medical devices like
  - Patient monitoring
  - Smartpumps
  - Anesthesia apparatus
- All medical measurements shall automatic be transferred to EHR
- Standarised and structured data, to contribute to CDS
- Requesting international standards for integrations



#### All data in same solution



#### Personal Connected Health and Care

- Helseplattformen shall facilitate increased use of Personal Connected Health and Care
- Support the recommendations by Helsedirektoratet and Direktoratet for e-helse for the use of Personal Connected Health and Care
- Asks the contractors for solutions that give the opportunity of solving challenges in Personal Connected Health and Care in the future
- Citizens should be able to:
  - Use current and future solutions
  - Share data with health workers
- Shall not be the citizens personal health archive/record, but shall be able to receive data from such systems.



#### As a part of the health service





#### Among the population



# National guidelines

- National Welfare Technology Program (Nasjonalt velferdsteknologiprogram)
- Direktoratet for e-Helse og Helsedirektoratet have some reports with recomandations
  - (IS-2225, IS-2534, IS-2402, IS-2552)



(Illustration from Direktoratet for e-helse)







HELSEPLATTFORMEN - for pasientens helsetjeneste

### Overall objectives of the procurement

1. Increased treatment quality and7. Improved management information

3. Provide the citizens of Central Norway with easy access to their own health record and a higher degree of influence on their own course of treatment.

access to their own health record9and more influence on their own1course of treatment1

- 9. Compliance with **national standards** and requirements
- 10. Reduced need for municipal services

8. **Reduced time spent** on documentation and search for health information.

- 5. Improved data and information for use in **research** and innovation
- 6. Increased **efficiency** and better use of resources

#### patnways

11. The citizens shall be supported to live longer independently in their own homes

#### Patient communication

- General health information
- Individually customised communication
- Education of patients and their relatives
- The recieving and handling of complaints



#### 11 User scenarios from citizen perspective



## General health information

- Quality assured health information
- Appointment scheduling
- Digital citizen services





## Individually customised information

- Personalised information and services
- Self produced information
- Communication with health personnel
- Support for decision making





#### Education of patients and their relatives

- Quality assured knowledge support
- Support for self care
- Relevant educational materials





# The recieving and handling of complaints

- Submit complaint
- View status





National health portal

# helsenorge • no





#### Patient portal



HELSEPLATTFORMEN for pasientens helsetjeneste

### Requirements first draft







## Ambitious requirements









#### **Clinical Decision Support in Helseplattformen**

01.09.2017

Nina Kongshaug , MD Oncology

#### Clinical decision support - why?





# **Background information**



Workshops



CDS Report – Directorate of Health

## 

Other

documents:

One citizen – one health record



#### **Robert Greenes**



# The principles of CDS





#### Management of clinical content





## CDS in the requirement specification

#### **High level requirements**

- Flexible and configurable solution
- Incorporate international, national and local knowledge
- Build on existing initiatives regarding quality and patient safety
- Tools for management and maintenance of the clinical content
- CDS which can be configured increasingly sophisticated as the organisation matures

#### **Detailed requirements**

- Detailed requirements from the HL7 EHR-S
- The Contractor's description of ex.:
  - The solution's included knowledge and rules content
  - The visualisation of recommendations and alerts
  - How the underlying knowledge of recommendations intuitively can be visualised
  - The Contractor's plans for further development of their CDS solutions





#### Knowledge management in the Norwegian health care



for pasientens helsetjeneste

#### The landscape of clinical knowledge in Norway

- High number of actors
- Little or no clearly defined hierarchy or responsibilities
- Mix of government and private companies
- Helseplattformen is currently doing a mapping of the actors in collaboration with the Directorate of Health

What will be the base for knowledge content in the new EHR solution?



# How to manage clinical decision support in Norway?



How? Who?



# **Thanks for your attention!**

# **Further reading on Helseplattformen:**

#### HELSEPLATTFORMEN

for pasientens helsetjeneste

Programme homepage: www.helse-midt.no/helseplattformen

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

Directorate of eHealth: <a href="https://ehelse.no/">https://ehelse.no/</a>

One Citizen – one health record: https://ehelse.no/strategi/n-innbygger-n-journal



Helseplattformens konkurransegrunnlag (68 dokumenter)

HELSEPLATTFORMEN for pasientens helsetjeneste