



# Standards supporting healthcare professionals' work and data quality



**Nordic Council of Ministers eHealth standards group work in progress**

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# Overview of this presentation

- Professionals' work and data quality
- e-Health standards
- NCM eHealth standards group
- Standards and specifications in lifecycle of systems and data
- Contribution of e-Health standards to supporting health professionals' work and data quality?
- Conclusions



# Case COVID-19 lab data quality vs. professional workload

Health professionals focus on their main job during pandemic – systems and data collection not a main priority

Quick changes were needed in systems. Samples were sometimes sent to THL, sometimes to our own lab, sometimes somewhere else.



Device malfunction did reduce the capacity and then we had to figure out how to decongest.



Samples have been taken in patient's home and nursing home.



In HUSLAB we analyse almost 3000 samples a day.



Drive-in sample collection points were set up. Personnel was moved to these points from different units and wards from their basic work. Not everyone could use the systems and enter data at the same level.

New instructions have been received frequently and there has been a lot of work of adjusting work practices according to them.

Sample collection is tough because of protective gear and working conditions. Gear can not be removed for data entry in systems.



In addition to EHR systems, new lab systems and other new systems have been introduced which are new to me.





# Features of systems and data collection are increasingly based on e-Health standards

- Standards are among topics of several sessions in this observatory...
- Standards: documents for general and repeated use, accepted by consensus, specifying rules, guidelines or features for products, processes or services
- In e-Health, many technical and cross-domain standards are used, but specific standards have been produced for *interoperability*, in particular

standardization relevant to eHealth and HIS																						
medicine and healthcare				healthcare IT and IS						IT, domain-neutral and cross-domain												
quality of care	processes, pathways	guidelines, knowledge	terminologies, classifications, codes	information models and elements	architecture	data types and formats	electronic clinical documents	message interfaces	archiving and long term storage	service and API interfaces	support for processes	security and confidentiality	electronic health records	data communications	identification	eGovernance and architecture	electronic documents	messaging and enveloping	interface technologies	process description and definition	security	software production / development

Concept models

Electronic health records

Interface specifications

Security requirements

Glossaries

Code systems

Domain models

Terminology standards

Data models

Functional requirements

APIs

Classifications

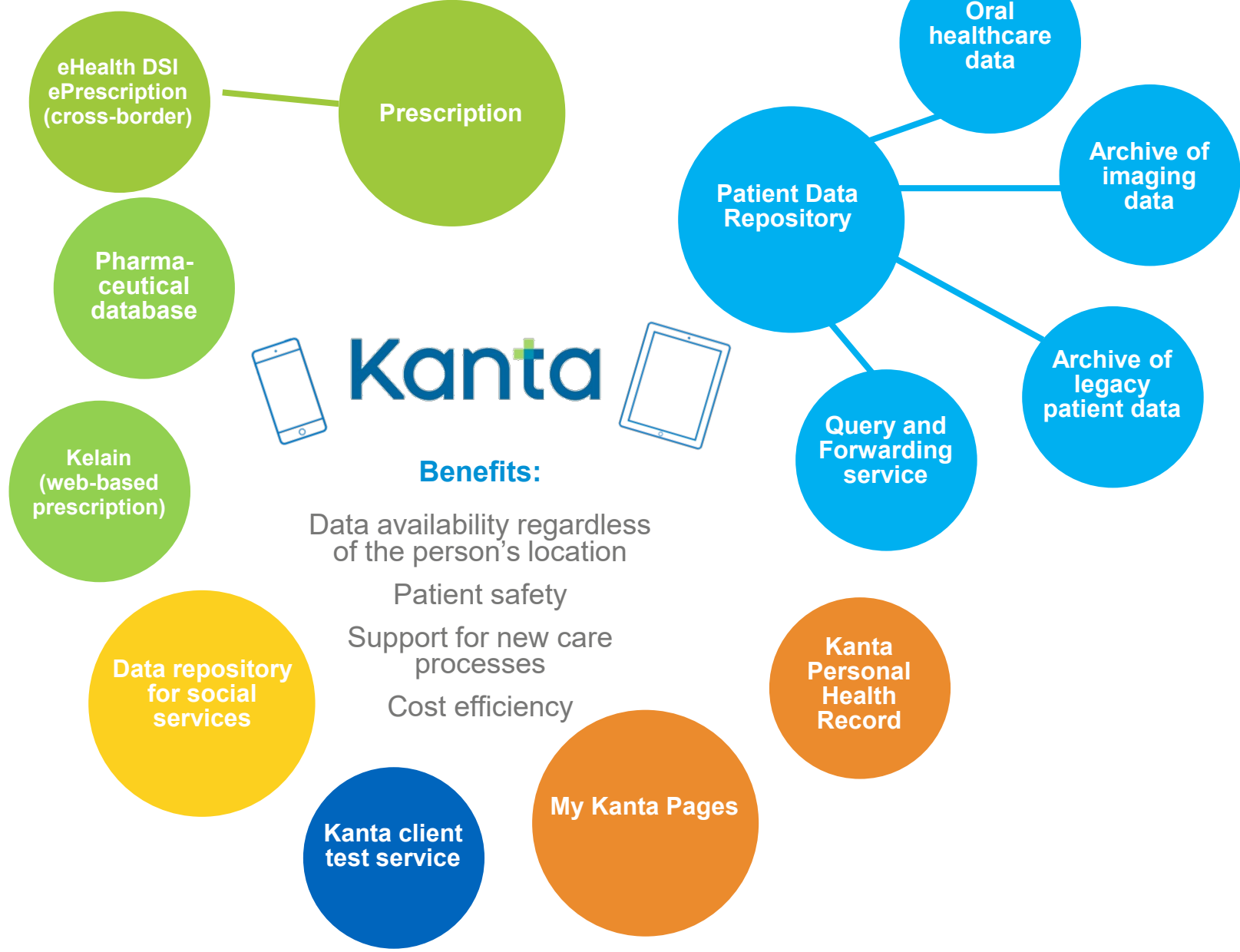
# National infrastructure in Finland: Kanta

Type:  
**Centralized**

Coverage:  
**National**

Operational since:  
**2010**  
(ePrescriptions)

Use: through  
**local systems**  
and portals



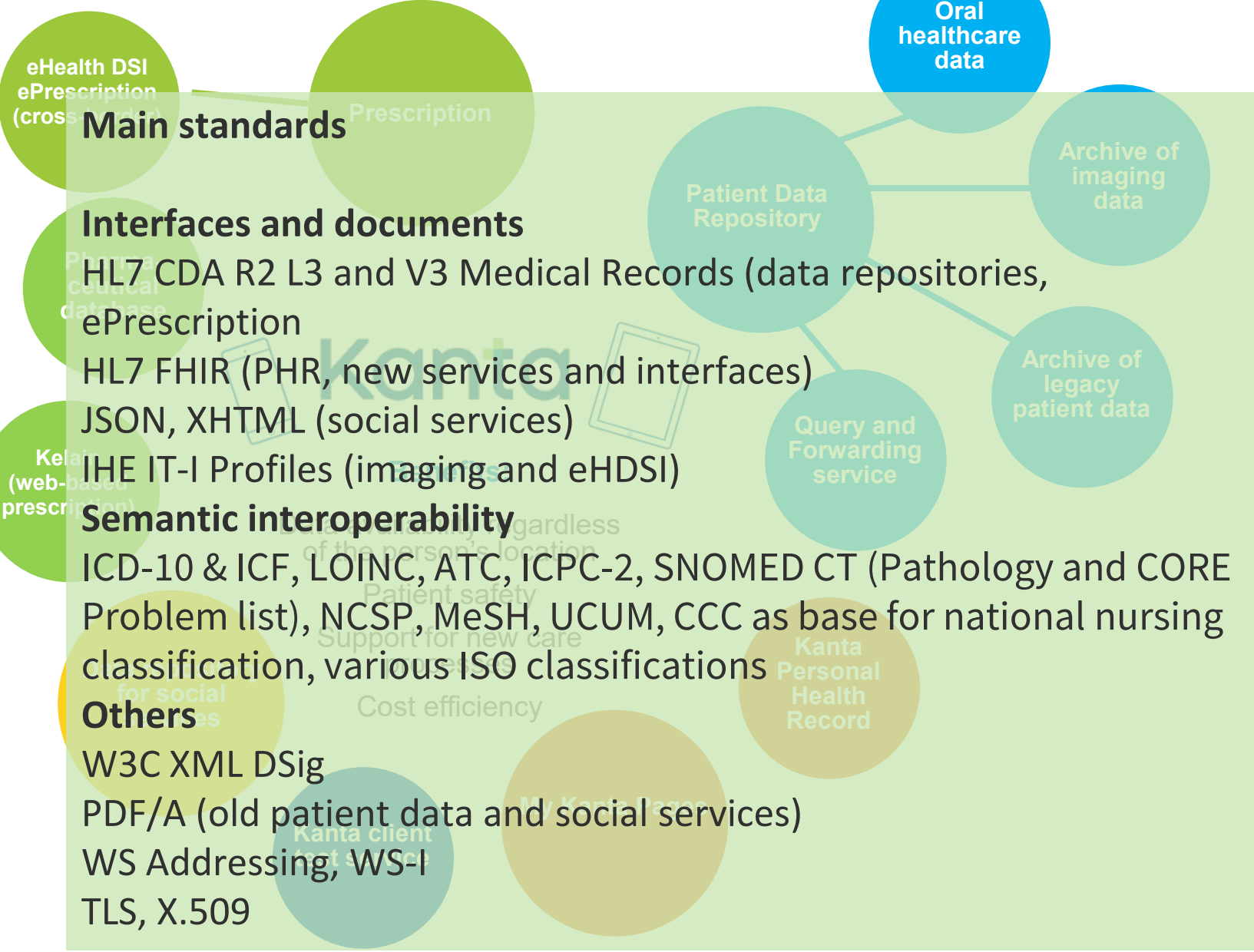
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# The Nordic Council of Ministers eHealth standardization group



## Mandate 2023-2025

The main tasks for the Nordic Council of Ministers eHealth Standardization group are to serve as an arena for enhancing Nordic understanding, knowledge sharing and collaboration on specific e-Health standardization issues, and participation and positioning towards the ongoing international work on standardization at the European and global level.

## Topics 2023-2025

1. Cooperate with relevant national affiliates of the standardization organizations such as CEN, ISO, HL7, IHE and GS1 on joint Nordic-oriented standardization work and main priorities within it.
2. Contribute and communicate that the **Reducing Clinician Burden - initiative** is considered in standardization work in Nordic countries.
3. Discuss and give advice about the significance and consequences of EU joint actions in Nordic context. For example, MyHealth@EU and European Health Data Space.
4. Strengthen, highlight and communicate the Nordic eHealth Standardization group's role as adviser in Nordic Standardization cooperation and for the Nordic Council eHealth- group
5. Investigate and describe how standardization is organized and coordinated in each Nordic country between the different actors such as governance, hospitals, municipalities, standardization organizations and user representatives. An assessment of whether it is useful to look into similar organizing in other countries outside the Nordic countries will also be part of this task.

# Why should we have a guideline?

The background for the guideline is **twofold**:

On one hand, **data quality** is increasingly considered as a critical success factor for primary and secondary use of health information.

On the other hand, there is a growing interest in standardization organizations (users & developers of standards) across the world on the topic how to **reduce healthcare professionals' work burden** in different ways.



## Raise...

...awareness of data quality and support for professionals' work topics...

...the bar for e-Health standards use and development...



# Challenges / case electronic health records

Electronic health record (EHR) originally intended to facilitate patient care and management

nowadays used for many other purposes: enforce compliance with organizational directives or regulation, collect data for public health purposes or research and, as a source of billing documentation

All these other purposes and requirements on EHR systems have increased  
the healthcare professional's burden

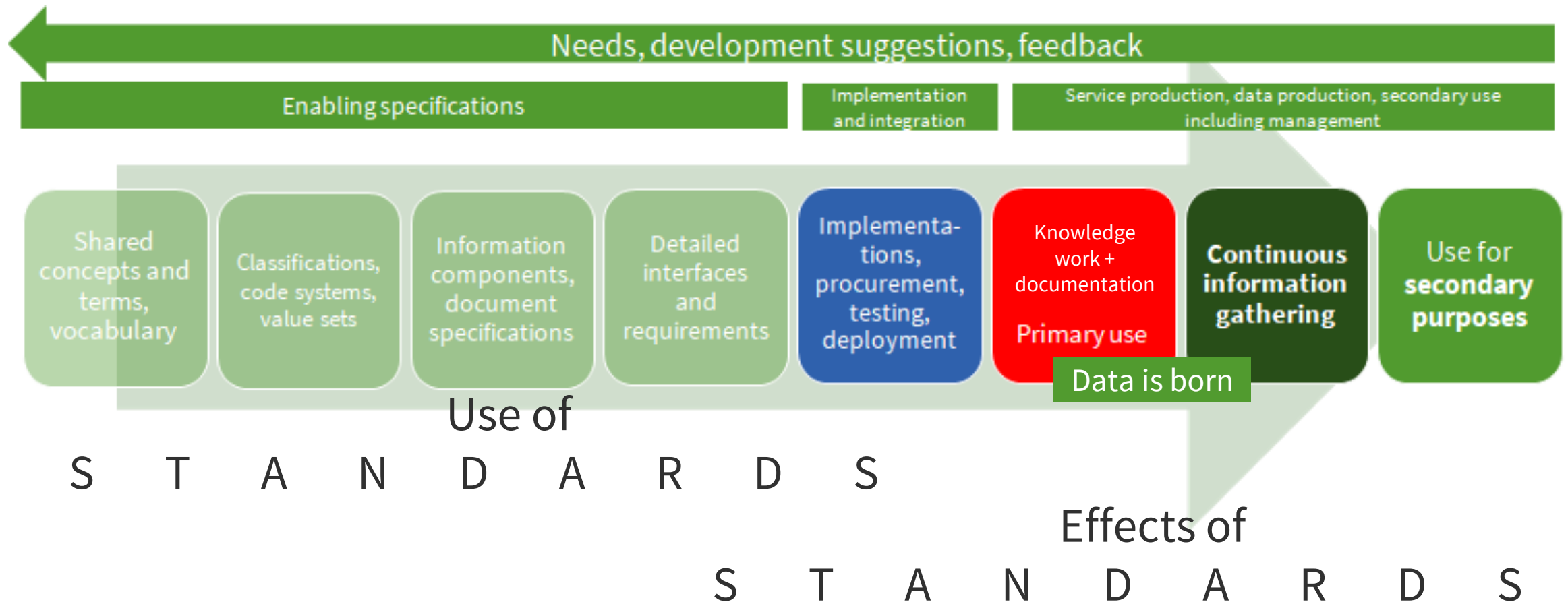


- Information overload
- Documentation burden
- Alert fatigue

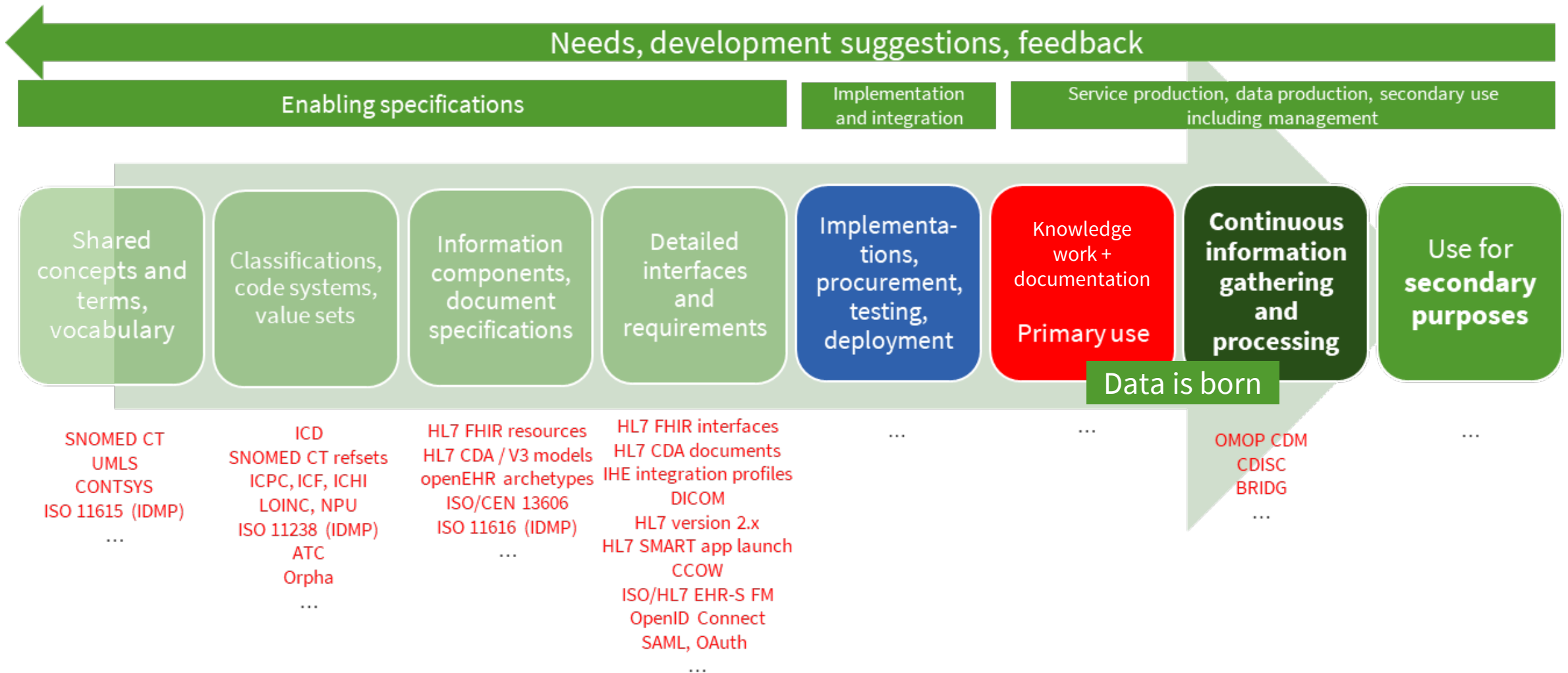
Challenges which create cognitive barrier to accessing and using patient information effectively include

- Lack of standardization
- Interoperability issues
- Data entry errors

# Role of standards in the lifecycle of systems and data in healthcare



# Role of standards in the lifecycle of systems and data in healthcare



# eHealth standards supporting daily work and data quality?

Data availability as a prerequisite for both fulfilling professionals' needs and data quality

- Healthcare professional's needs
  - eHealth standards effect on usability
  - eHealth standards effect for on user know-how and motivation
  - eHealth standards effect in information systems and applications
- eHealth standards effect on data quality
  - Completeness
  - Accuracy
  - Timeliness
  - Consistency
  - Reliability



Standards have both direct and indirect effects





Recommendations



## • Recommendations

- General recommendations
- For vendors
- For health service providers
  - Management level
  - Care professional level
- For national authorities and governments
- For standards developers (SDOs)

# Candidate recommendations for different stakeholders (in progress, subset of recommendations...)

## General recommendations for all actors

- Specify desired **outcomes** in the development and use of standards
- Reduce healthcare professional **data entry effort** - reuse and automation
- Use semantic standards to promote **understandability of data** (explanations of terms / code values, ontologies etc.)

## Health service providers (e.g. hospitals, health regions) – general and IT services management

- Acquisitions – use standards which support clear **semantic understanding** by users
- Define system usability and user interface requirements in terms of **user goals** in system acquisitions and projects
- **Choose systems with e-Health standards** promoting goals of users such as data availability and integration
- Involve users (healthcare professionals and patients) in **procurement decisions**

## Health professionals patient and user organizations

- **Participate** in SDO's and user organizations who are working with e-Health standards
- Propose **clear usability and outcome requirements**

## System developers and vendors

- Build user interfaces and use standards for **reuse of data to minimise repeated data entry**
- Help systems to **facilitate terminologies, synonyms, mappings**, e.g. using standardised terminology services and terminologies / mappings
- Set gradual improvement goals for data quality and utilise interoperability e-Health standards to **assess data quality through key indicators**

## Standards developers - SDOs

- **Involve health professionals** to agree on terminology and use cases of standards
- Promote participation of end users in standards development

## National authorities / governments

- **Evaluate, recommend and mandate** standards which support **fluent work** by professionals
- Utilise standards for guidelines and instructions to support **high quality data entry**

# Some observations and key principles

e-Health standards should be developed and used based on healthcare professional's needs

e-Health standards should support both documentation and efficient use of information in healthcare professionals' daily work

e-Health standards should be developed and used to foster better data quality

there is no data reuse without use and data entry – utilise e-Health standards to reward good data entry immediately to the user

high quality data for one purpose may be poor quality for another purpose – use features of e-Health standards to enforce quality level of specific sets of data

# To be continued...



- Finalisation and selection of key recommendations underway
  - Sharing of experiences, best practices
  - Discussing shared priorities in Nordic countries
- Good collaboration and discussions between policy and research stakeholders under Nordic Council of Ministers
- Promotion and execution through national level roadmaps and strategies in Nordic countries(?)
- Activation of discussion on European and standards development level: more emphasis on supporting the work of professionals and data quality
- Continued standardisation collaboration between countries





**Thank you!**

 **Nordic Council  
of Ministers**