



Norwegian Centre for  
Integrated Care and Telemedicine

**NST**

# The Learning Healthcare System: Challenges and Opportunities for Health Informatics

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# The Limitations of EBM

The main limitations documented by Djulbegovic et al. are related with:

- reductionism in the scientific method;
- the lack of importance to the patient view and the clinician tacit knowledge;
- the lack of effective measures to demonstrate EBM improvements over patient outcomes.

(Djulbegovic, Guyatt, & Ashcroft, 2009)



# The Learning Healthcare System

Concept born in the IOM Roundtable on Evidence-Based Medicine in 2007

New paradigm states that new health systems should allow:

- (a) the fast progression of the knowledge produced in clinical research to its use in routine clinical practice;
- (b) the empowerment of a culture of shared responsibility;
- (c) facilitate the public engagement of patient and doctors for evidence production and dissemination

(Institute of Medicine (US) Roundtable on Evidence-Based Medicine, 2007)  
(Friedman, Wong, & Blumenthal, 2010)



# What is the place of eHealth in the LHS paradigm?

- Data reuse mechanisms to reduce the period that elapses since new knowledge is validated to its application in routine care.
- Communication and collaboration between clinicians and patients aiming for shared responsibility.
- Providing tools for engagement of health professionals and patient for knowledge dissemination.



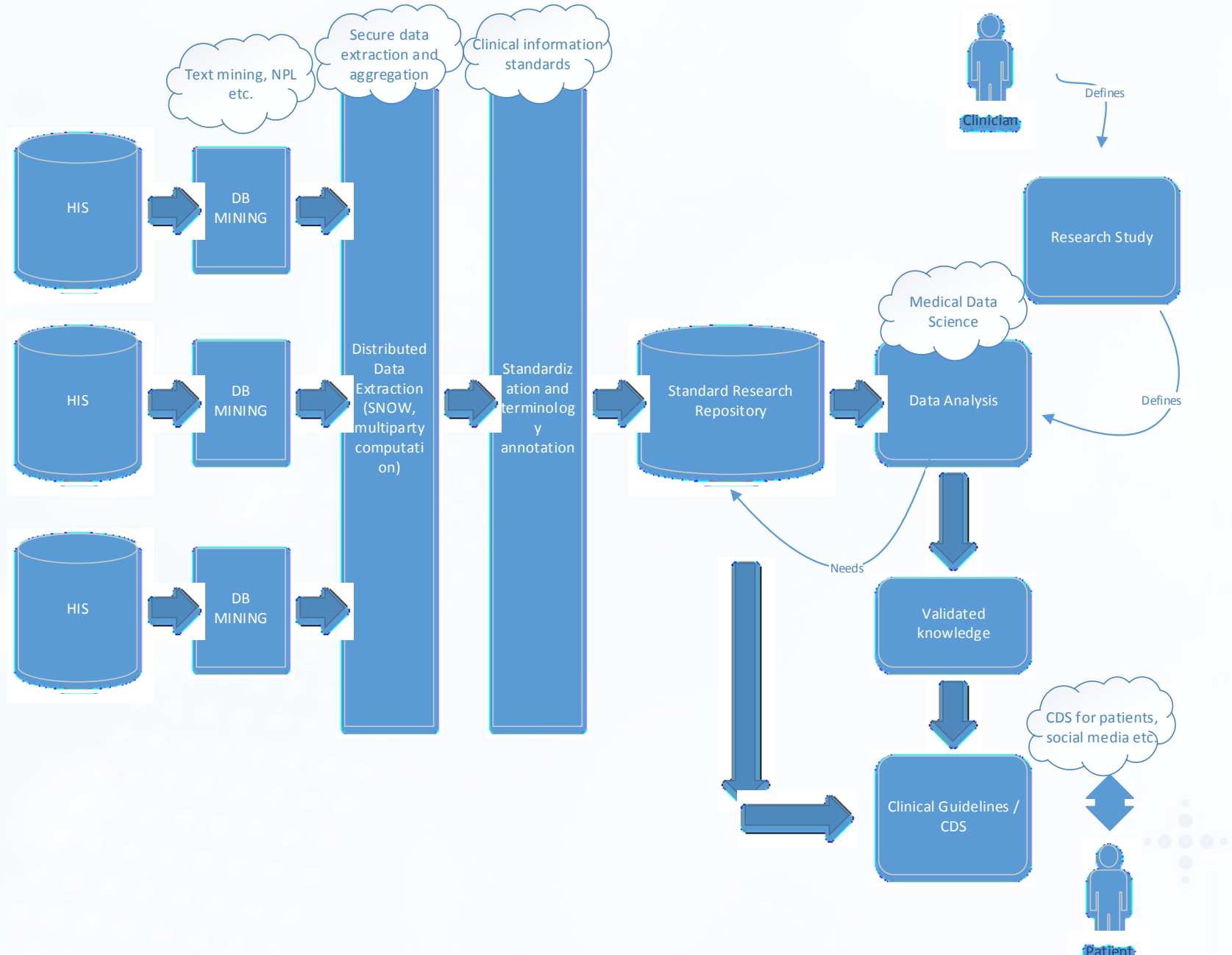
# Some research directions involving eHealth in the LHS

- Informatics
- CDS
- Data Warehousing
- Data science
- Social media
- Ontologies

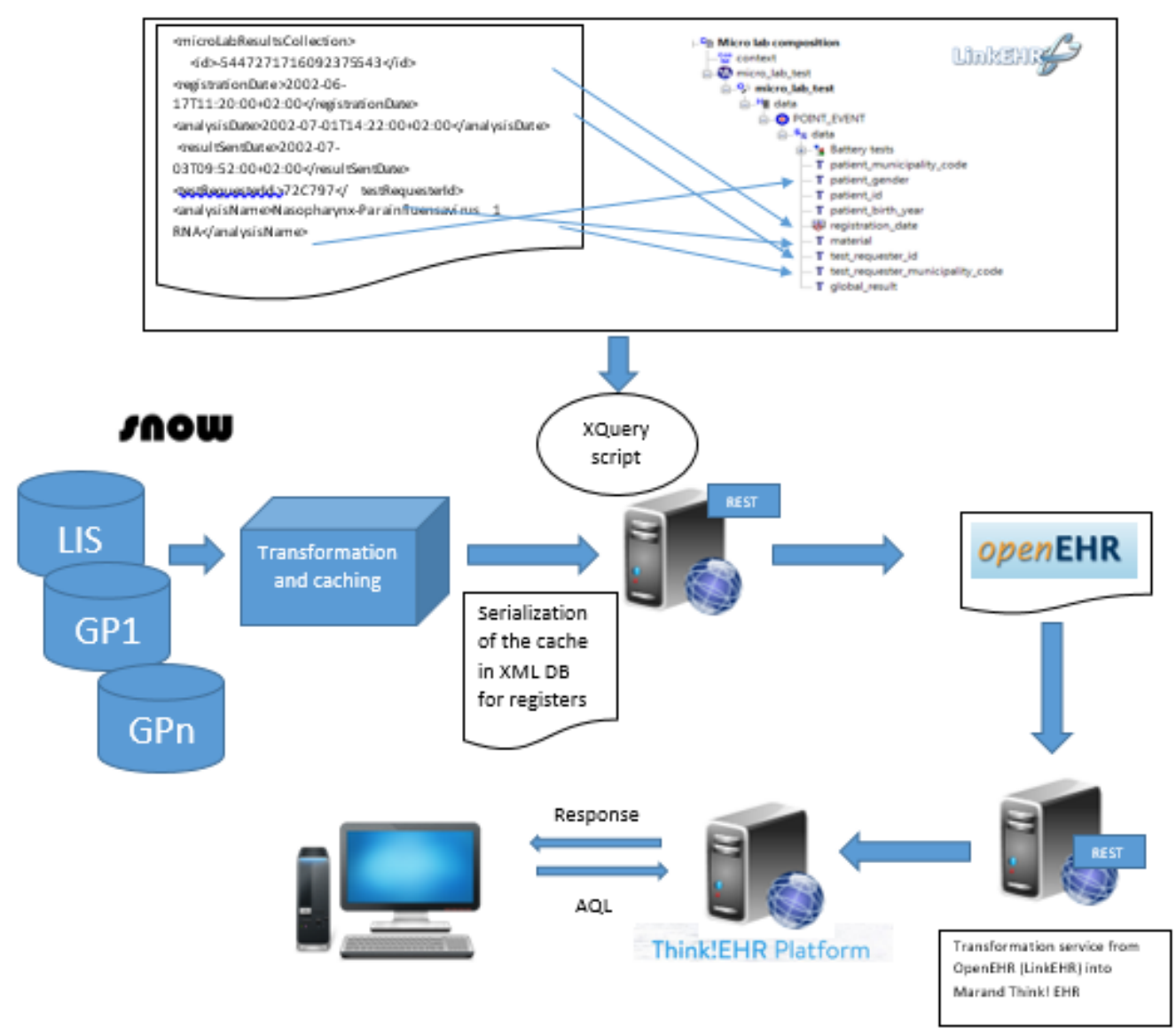
Many others...



# Relationships among current research fields



# Use case: reuse of microbiology data



# Conclusions

- The Learning Healthcare System paradigm sets a framework to all our research directions in medical informatics
- Current technologies and standards are in a maturity state to enable the data reuse that the LHS needs
- Still challenges in the incorporation and modelling of patient preferences and lifestyle





# Q & A...

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