Automated regulatory constraints and data governance in healthcare.

Milen G. Kebede, Giovanni Sileno, Tom Van Engers

Background

Current regulations and data sharing agreements between institutions puts limitations on data sharing process. Access control method in EHRs are not sufficient to implement regulatory constraints.

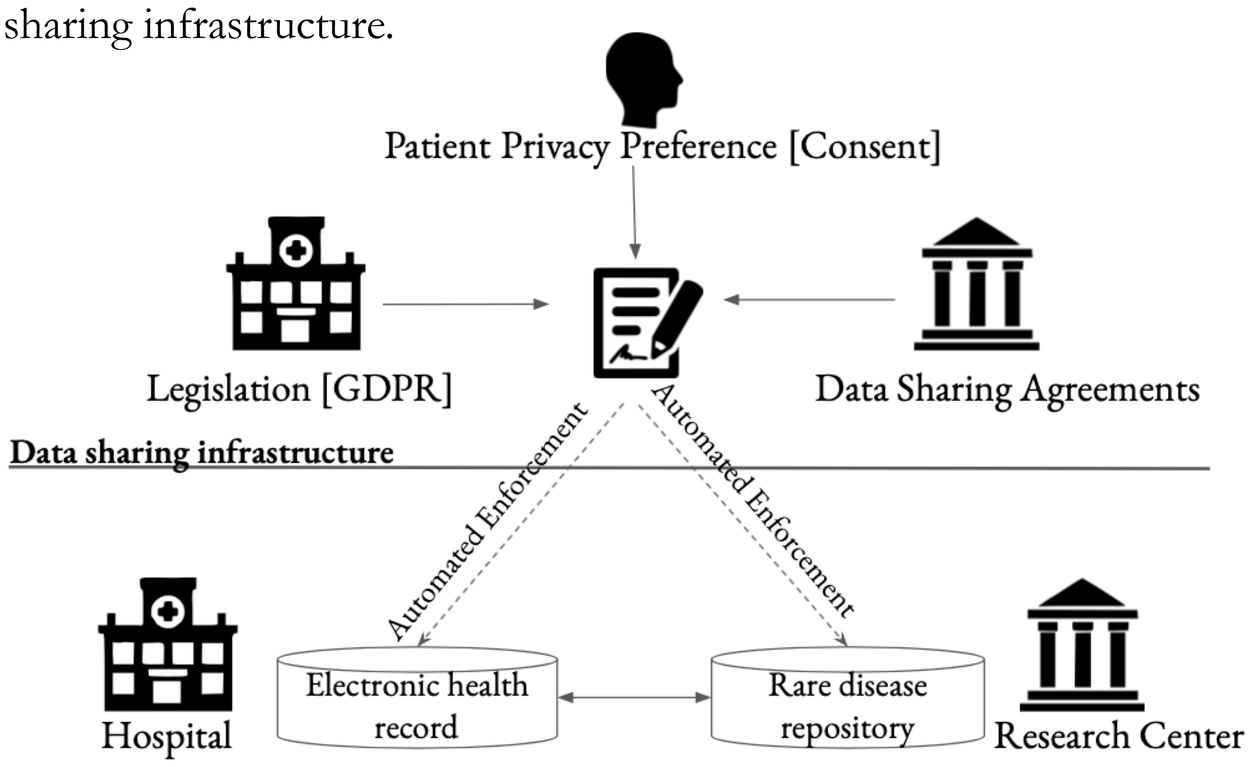
- No mechanism to engage in the reasoning process as to which policy to comply to and which policy to override depending on who requests access to what data

Research Questions

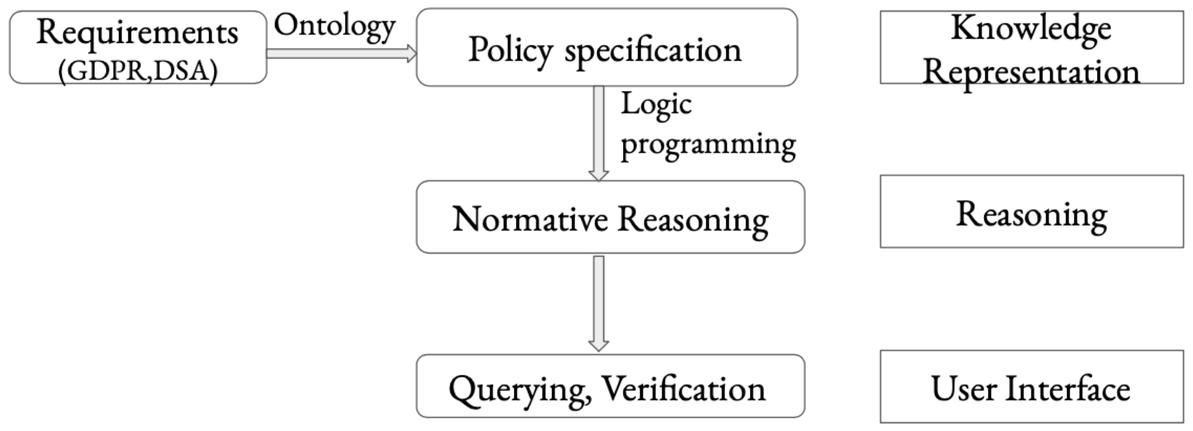
1. What are the key concepts and patterns for modeling consent, data sharing agreements, relevant regulations for an effective and compliant processing of data in healthcare?
2. What are the infrastructure and organizational requirements necessary to develop and maintain a legally-aware data sharing infrastructure in healthcare?

Approach

Develop a framework that aims at integrating a novel access control model with normative reasoning by enabling the automatization of regulatory constraints in a heterogenous data sharing infrastructure.

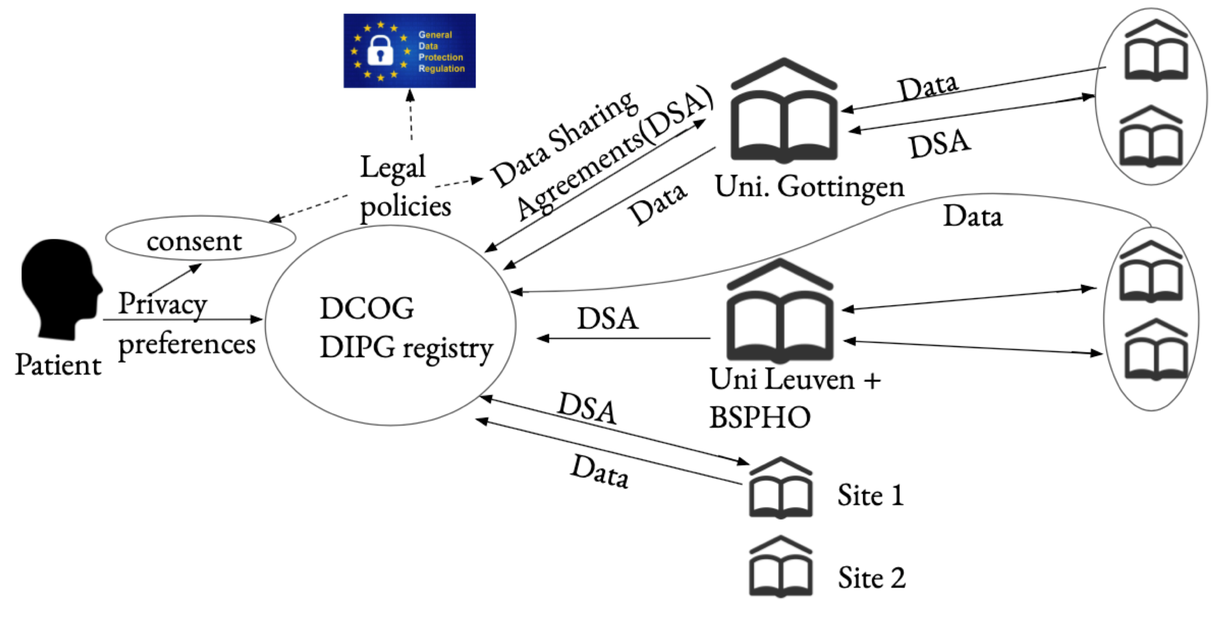


- Derive requirements from regulatory constraints
- Reason when policies need to be conformed to and when they need to be violated .
- Design a user interface to generate queries and visualize polices



Logic based access control policy reasoning

Use-Case



Expected Outcome

scalable data sharing framework that capture legislation, contractual agreement and patient preferences into the data sharing process.

Ontology for regulatory constraints such as consent, data sharing agreements

Consent Aware authorization for sharing and accessing patient data

Map ontologies of regulatory constraints to automated normative reasoning for data access

Acknowledgment

This work is part of the project Enabling Personalized Interventions (EPI). The project is supported by NWO in the Commit2Data –Data2Person program under contract 628.011.028.

For more information see: enablingpersonalizedinterventions.nl

Project coordinator: Marloes Bons, bons.marloes@kpmg.nl, +31 6 23593759

Principle Investigators: Prof.dr.ir. C.T.A.M. de Laat, delaat@uva.nl, prof. dr. Sander Klous, Klous.Sander@kpmg.nl