Accessing Patient Information for Probabilistic Patient Models Using Existing Standards

eHealth 2016

jan.gaebel@iccas.de
Presentation Outline

- Probabilistic models for clinical decision support
- Restricted integration into HIS
- System architecture for integrating CDSS
- Benefits and weaknesses
Decision support for laryngeal cancer
Probabilistic disease models

Disease modeling using MEBN
Restricted information access

- Direct information access needed
- No efficient solutions for utilizations of patient data*
- European Commission: 27 IHE-Profiles to be referenced

Requirements for information access

- semantic description and interpretation

- structural description and communication
Previous system development
Architecture concept for integrated system

(e) Patient database  (d) MLM repository  (a) disease model

Architecture concept for integrated system

- Public FHIR test server
- Exemplary data for TNM staging
- myCare2x
  - http://mycare2x.net/
Conclusion

- Limited integration of CDSS into HIS
- Arden Syntax for information description and processing in probabilistic decision models
- FHIR suitable tool for identifying and communicating
- Routinely recorded patient data available for CDSS

- Different descriptions for information possible, various terminologies to be considered
- Further data processing needed depending on the data structure in HIS
- Increased complexity in modeling and maintenance
- Application of FHIR by vendors
Acknowledgement

The Innovation Center Computer Assisted Surgery (ICCAS) at the Faculty of Medicine at Leipzig University is funded by the German Federal Ministry of Education and Research (BMBF) and the Saxon Ministry of Science and Fine Arts (SMWK) in the scope of the BMBF - innovation initiative “Unternehmen Region” with the grant numbers 03Z1LN11 and 03Z1LN12.