Semantic Interoperability of Medical Information Systems and Scientific Repositories

Presenter: Prof. Dr. Dimitar Tcharkhtchiev
Medical University - Sofia, Bulgaria
dimitardt@gmail.com
Dimitar Tcharaktchiev is professor at the Medical University – Sofia, Bulgaria

Scientific areas of interest:
- Clinical Information Systems
- e-Health
- Telemedicine
- Clinical and Epidemiological Registries
- Big Data
- Clinical Decision Support Systems

Memberships and awards:
- Member of Bulgarian Institute for Standardization
- Bulgarian representative in CEN TC251
- Member of Bulgarian Medical Association
- Member of Bulgarian Union of Scientists
- Chairman of Association ProRec - Bulgaria
- Rolf Hansen Memorial Award (2011)
Introduction

This study presents:

- the implementation of European health informatics standards in the Hospital Information System (HIS) and the Scientific Repositories working in the University Specialized Hospital for Active Treatment of Endocrinology (USHATE)
- the transfer of clinical data between the HIS and the Scientific Repositories preserving their clinical context

This approach enables to transfer several medico-administrative, clinical and laboratory data from the Hospital Information System to the Register of rare endocrine diseases
Methodology

- The patient is in the center of the integration of all clinical and administrative data
- Documentation and messages conforming to the United Nations rules for Electronic Data Interchange for Administration, Commerce and Transport (UN/EDIFACT) are created
- The standard EN ISO 13606 for Electronic Health Record (EHR) communication and archetype paradigm is applied
- Roger’s definition for Minimum Basic Data Set (MBDS) is adopted including core of information with the most commonly available set of items and most extensive range of usages
Results

Several medico-administrative, clinical and laboratory data can be transferred from the Hospital Information System to the Register of rare endocrine diseases, keeping the context of their registration, structuring the measured results, used nomenclatures and methods in archetype concepts satisfying the Archetype Object Model of EN ISO 13606

In this register, the ICD 10 codes are mapped to the Orphanet nomenclature of rare diseases and respective ORPHA codes
Blood Pressure Archetype (HIS of the University Specialized Hospital for Active Treatment of Endocrinology – Sofia, Bulgaria)
The figure displays patient’s names, sex, age and several anthropometric data - Height, Weight, Body Mass Index.

The records concerning the blood pressure include the systolic and the diastolic blood pressure, the method and the place of measurement and the technical details as type of device, position, level of the patient effort, inclination of the patient, and other conditions.
Conclusion

This approach of standardization at all stages of data transmission gives the possibility to transfer the data between our national register and the international repositories, using the European standard for an International Patient Summary (IPS) (EN 17269)

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Thank you for your attention!

Contact email: dimitardt@gmail.com