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Semantic Interoperability of Medical Information Systems and Scientific Repositories

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Presenter

↪ 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)

Данни от престоя на пациента ИЗ : 2008/00004

Основни данни на пациента

Имена на пациента : Христо Антонов Димитров Възраст : 18 год Дата на приемане : 21.05.2008 г.

Приет по клинична пътека : Заболяване на кипф и надбъбр. под 18 год Приемач лекар : Д-р Нато Василевски

Приет с диагноза : **Кръвно налягане и други данни за пациента**

Лекуващ лекар :

Алергичен към :

Ръст (в сантиметри) : 162 Тегло (в килограми) : 54 ИТМ : 20.6

Систолечно : 120 Диастолечно : 60 **Покажи допълнителна информация**

Размер на маншета : Adult

Използван уред : RR

Място на измерване : Right arm

Метод на измерване : Korotkoff - Fourth sound

Събитие : Blood pressure reading after 10 minutes rest

Статус при измерване

Поза на измерване : Standing

Състояние при измерване : At rest

Ниво на усилие : 0

Наклон при измерването : 0

Информация

Систолечно : 120

Диастолечно : 60

Средно артериално налягане : 0

Налягане на пулса : 0.0

Коментар : Без ортостатизъм

отказ от лечение от 330л

Пролежани леглодни : 1 Болничен лист No : Брой дни : 0 Състояние : Одробен

Изпизи пациента от лечебното заведение

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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!

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