# BIOMEDICAL INFORMATICS RESEARCH FOR INDIVIDUALIZED LIFE-LONG SHARED HEALTHCARE

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**Abstract:**

**Aim:** We developed a multimedia electronic health record MUDR and introduced it to the field of cardiology and dental medicine. We developed a graphical component called DentCross supported by automatic speech recognition connected to an electronic health record (BRR) in dentistry. Platform for semantic interoperability was designed utilizing international communication standards.

**Methods:** Our approach consisted of three main steps.

l) Development ofthe multimedia distributed electronic health record MUDR,

2) Development ofthe interactive graphical DentCross component with automatic speech recognition connected to electronic health record in dentistry.

3) Development ofminimal data model for cardiology (MDMC) as the base for studying semantic interoperability issues.

**Results:** Dental health data for more than 100 patients were collected using EHR with the DentCross component, the DentCross component was used in forensic dentistry and for e-Iearning activities. We found that approximately 85% of the MDMC concepts are included in at least one c1assification system. More than 50% of MDMC are included in the SNOMED Clinical Terms.

Conc1usions: Structured representation of information in EHR and use of international standards, classifications and nomenc1atures is a necessary prerequisite to semantic inte-roperability issues as well as to an automatic speech recognition.

**Keywords:** electronic health record, semantic interoperability, dentistry, cardiology