

# Genetic Information in MUDR Record

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**Abstract:** *The important research task of the European Centre for Medical Informatics, Statistics and Epidemiology – Cardio is the applied research in the field of electronic health record. The article describes how genetic information is included in the developed pilot EHR application MUDR and how it is evaluated.*

**Keywords:** Genetic Knowledge Base; Medical Guideline Modules; EHR MUDR

## 1. Introduction

The important research task of the European Centre for Medical Informatics, Statistics and Epidemiology – Cardio (EuroMISE Centre – Cardio) is the applied research in the field of electronic health record (EHR). In this frame, a pilot 3-tier EHR application named “MULTimedia Distributed Record” (*MUDR*) [1] was developed. Relations among collected attributes in this application are described by so-called knowledge base and the record itself is represented by a graph structure, where the knowledge base nodes are referenced from.

## 2. Applied Methods

*Cardiological knowledge base* [2] has been extended to enable representation of *genetic information*. On selected patients and control groups we monitor the polymorphism of APOE (*19q13.2*), LPL (*8p22*) and FABP2 (*4q28-q31*) genes. Knowledge nodes describing corresponding alleles have been added.

Medical guideline libraries form an integrated part of the MUDR application layer. We are developing a MUDR application layer module in the form of a MUDR guideline dynamic library to access and evaluate genetic information in the record. This module compares records with information received from the *GenBank* and searches for dependences between patient’s attributes in order to find significant results. We look for the relationship among stored genetic information and patient’s biochemical and clinical data.

## 3. Conclusion and Discussion

We expect to find significant associations between polymorphism of the mentioned genes and biochemical and clinical data. Greater knowledge of these variations may be of considerable importance in understanding genetic predisposition to cardiovascular diseases in Czech population [3].

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### References

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