

New concept proposal

Electrocardiographic Procedure and Electrocardiogram

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1 Rationale

Concepts related to electrocardiographic procedure (ECG procedure) have been developed by the SWISSHEART project in cooperation with the SPHN Data Coordination Center (DCC). During the process of conceptual modeling separate concepts have been identified that are not only relevant to the SWISSHEART project or cardiology only. Other medical specialties, such as oncology and intensive care monitor and consider cardiology parameters when treating patients. In intensive care for example close monitoring of cardiovascular parameters focusing on ECG or pump function is required. Similarly, in oncology, certain therapies can have an effect on the heart electromechanical function and related side effects need to be monitored carefully. Therefore, the concepts *ECG Procedure* and *Electrocardiogram* are of general interest and should be added to the SPHN Dataset.

2 Comparison to other standards/data models

2.1 LOINC

LOINC provides several codes for results that can be obtained from an electrocardiogram, e.g.: 8625-6 P-R Interval or 8632-2 QRS axis.

2.2 SNOMED CT

SNOMED CT defines the ECG as a procedure: 29303009 [Electrocardiographic procedure (procedure)], which can be further specified, e.g. as 447113005 [12 lead electrocardiogram at rest (procedure)].

3 Concept information

Concept name	Description	Type	Standard	Value set or subset	Meaning binding
Electrocardiographic Procedure	electrographic procedure on the heart which results in a graph of voltage versus time visualizing the electrical activity of the heart muscle using electrodes placed on the skin	Procedure			SNOMED CT: 29303009 Electrocardiographic procedure (procedure)
code	code, name, coding system and version describing the electrocardiographic procedure	Code	SNOMED CT	descendant of: 29303009 Electrocardiographic procedure (procedure)	
body site	body site where the electrocardiographic procedure was performed	Body Site			
start datetime	datetime at which the electrocardiographic procedure started	start datetime			
end datetime	datetime at which the electrocardiographic procedure ended	end datetime			
coding datetime	datetime the electrocardiographic procedure was coded	coding datetime			
intent	intention for the electrocardiographic procedure	Intent		360156006 Screening - procedure intent (qualifier value) ; 261004008 Diagnostic intent (qualifier value)	

number of leads	number of leads used for the electrocardiographic procedure	Quantity			
physiologic state	physiological condition of the patient during the electrocardiographic procedure	Physiologic State	SNOMED CT	128975004 Resting state (finding) ; 128976003 Exercise state (finding)	
output	output of the concept	Electrocardiogram			

Concept name	Description	Type	Standard	Value set	Meaning binding
Electrocardiogram	output of an electrocardiographic procedure				
file	data file containing the output of the electrocardiographic procedure	Data File			

4 Discussion

The Electrocardiogram is the output of the electrocardiographic procedure and allows the ECG Procedure to be linked to an electronic file containing the raw data.