Title: Deploying SNOMED CT longitudinal history data for clinical research

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# Audience

Research data warehouse managers; Electronic health record data managers; Clinical researchers; Medical information officers; Healthcare policy leaders

# Objectives

* Understand and recount an interoperable information model for past medical history, family history and social history data employing post-coordinated SNOMED CT attributes and value sets
* Appreciate the mapping and data extraction challenges to populating the data warehouse with longitudinal data from one common EHR vendor
* Review and understand decision analytical and clinical research use cases for employing longitudinal history data in support of enterprise and national objectives

# Abstract

Debate continues within the IHTSDO and healthcare communities as to the proper roles of SNOMED CT in serving clinical data management in the electronic health record (EHR). This is especially true for information records which have not been historically required for reimbursement. In the United States, Meaningful Use stage 3 is requiring that EHRs deploy structured longitudinal health data employing SNOMED CT terminology standards. This has required enterprise data managers to map legacy datasets and enhance the detail of their reference information models. Medical Information Officers are coming to understand the value of these data to clinical researchers and are exploring data extraction methods and models for their data warehouses. For the IHTSDO community, this has led to questions regarding formalization and use of interoperable models for Clinical Observable entities and Clinical observation results which have been the stepchildren of the SNOMED CT concept model and not widely deployed in EHRs.

We present the Nebraska experience working to extend the use of LOINC, SNOMED CT Observable entities and Situations in deployment of interoperable models for past medical history, family history and social history data within our enterprise Epic EHR. We have extracted these datasets from the EHR to our i2b2 data warehouse for integrated access by the research community across our Clinical Data Research Network, the Greater Plains Cooperative. We will explain and discuss the EHR legacy data structures, the i2b2 information model and the SNOMED CT valuesets that we have employed. We will recount use cases developed by our research and quality assurance communities and the requirements that these use cases have imposed upon our models. Technical resources and time permitting, we will provide a demonstration of the use of SNOMED CT for longitudinal health data within our i2b2 research data warehouse.