INTERNATIONAL HEALTH TERMINOLOGY STANDARDS DEVELOPMENT ORGANISATION

Pre-configured Post-coordination: an Approach for Implementing SNOMED CT in an EPR System

Presenters: Dr Nilesh Jain, Dr David Robinson, CSC

Audience

Anyone interested in implementing SNOMED CT in an EPR system.

Objectives

To provide an insight into a way of implementing SNOMED CT post-coordination. To show the importance of the information model for the correct recording and storage of structured patient data using SNOMED CT.

Abstract

SNOMED CT is a comprehensive clinical terminology facilitating the recording of structured patient data. Unlike most clinical terminologies and classifications which provide a single code to represent a structured entry in the patient record, SNOMED CT includes qualifying relationships which enable clinicians to record further details about a structured entry. For example, clinicians can record severity of a diagnosis, with both the diagnosis and its associated severity recorded as SNOMED CT concepts.

LORENZO is a multi-professional multi-specialty electronic patient record system that provides one complete patient or user record that can be accessed across all care settings. LORENZO is currently deployed in a number of healthcare organisations in England and the Netherlands. A key guiding principle underpinning the structured patient data in LORENZO is the use of clinical terminologies.

From the outset, SNOMED CT was chosen as the clinical terminology to be used within LORENZO in England for the recording of coded clinical data. During the design phase, the designers were grappling with the challenges posed by post-coordination, especially the potential for varying number of qualifiers based on the selected concept and the consequent impact that this could have on the user interface as well as on clinician training and acceptance. A decision was taken to use the SNOMED CT relationship model as a way of designing the LORENZO information model to come up with a fixed user interface embodying the principles of post-coordination, but in a unique and innovative way.

SNOMED CT was chosen for recording problems and procedures. LORENZO problems equated to the SNOMED CT domains Clinical Findings and Diseases; LORENZO procedures equated to the SNOMED CT domain Procedures. These three SNOMED CT domains were examined by a team of clinicians, and key qualifiers were chosen to be included in the LORENZO information model for problems and procedures. Additional non-SNOMED CT based attributes were also identified. Thus, the challenge posed by a dynamic user interface based on post-coordination was converted into a fixed user interface based on pre-configuring the relevant SNOMED CT post-coordination qualifiers into the LORENZO information model. From the perspective of the user interface, once the clinician selects a problem or a procedure, the possible values for all the other SNOMED CT based attributes were populated based on the SNOMED CT qualifying relationships or further constrained using subsets. This approach ensures that LORENZO always presents a consistent user interface to the clinician while recording problems and procedures, while at the same time also ensuring that the structured data entered by the clinician is coded at the point of entry using SNOMED CT.