Department of Mathematics, Statistics and Computer Science
St. Francis Xavier University
Presents

Topic Maps for Exploring Semiotic, Semantic, Lexical, and HL7 Structures for Clinical Data

by
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Monday April 14th, 2008 at 10:30am in NH18

A topic map is implemented for learning about clinical data associated with a hospital stay for patients diagnosed with Chronic Kidney Disease, Diabetes and Hypertension. Topic maps allow us to use concepts and relations among concepts to express statements about the way we organize subject matter. The question posed is: How might a topic map help bridge perspectival differences among communities of practice and help make commensurable the different classifications they use? The knowledge layer of the topic map was generated from existing ontological relationships in boundary objects. The boundary objects included terminological systems (SNOMED 3.5, SNOMED CD, ICD-9, ICD-10-CA), lexicons (UMLS, English, French), semantic indices and HL7 Clinical Document Architecture (CDA) markup standard. Discharge summaries, patient charts and clinical data warehouse entries reified the clinical knowledge used in practice. The topic map makes explicit the clinical semiology embedded in curriculum content, by associating clinical-laboratorial evaluations with disease. Semiotic processes are used in the interpretation of knowledge. This clinical data was normalized to HL7 CDA and stored in the Clinical Document Repository. Each CDA entry was given a subject identifier and linked with the topic map. The ability of topic maps to function as the infostructure "glue" is assessed using dimensions of semantic interoperability and commensurability.

Refreshments will be served before the talk in AX24A