Methods for Testing SNOMED CT in a Defined Clinical Domain

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Abstract. This paper presents the results of a study in which SNOMED CT has been tested in clinical practice by combining quantitative and qualitative methods. An application has been developed for registration of vascular diseases and procedures using SNOMED CT concepts. We conclude that it requires clinical and technical insight to adapt the terminology to a defined clinical domain.

Keywords. SNOMED CT, clinical experiment, vascular surgery

Since 2005, the Danish National Board of Health has worked on an interpretation of the international terminology Systemized Nomenclature of Medicine – Clinical Terms (SNOMED CT) in order to achieve a national health terminology, Sundterm (Health Term). The challenge when introducing a national health terminology is to integrate the terminology in the existing practice for registration. However, limited scientific studies address methods for the usage of SNOMED CT in clinical practice [1].

The underlying idea of the method is to use the SNOMED CT model to structure and represent a defined clinical domain. The outcome is integrated in a computer system, called KARTAS. The clinical data content is based on The Danish Vascular Registry, called Karbase. This is used by all vascular surgery wards in Denmark to register information about patients and surgeries. A clinical experiment within vascular surgery was performed by three surgeons to test the functionality and usability of KARTAS consisting of a total of 170 SNOMED CT concepts, divided into 28 subsets. Data from 34 patients was recorded and used for quantitative assessment of the applicability of the concepts. Usability science was used to assess the application of SNOMED CT in KARTAS [2].

Results show that inclusion of subsets in the design ensures an efficient use. The mapping results show an overall coverage of 89% (ICD-10 covered by 98%).

In KARTAS the concepts and the structure of these in the designed subsets reflects the domain of vascular surgery. The basic method for system development and integration of SNOMED CT may be adapted and reused in other clinical domains. However, continuous communication between clinicians and system developers is essential when testing the application of SNOMED CT in a defined clinical domain.


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