

Perspectives on SNOMED CT Implementation in Indian HMIS

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Audience

The intended audience of this presentation includes developers and users of Electronic Health Record (EHR) and Hospital Management Information Systems (HMIS), along with clinicians and researchers involved in the health informatics domain.

Objectives

The presentation aims at providing a bird's eye view of the challenges faced, resolutions adopted and impact of implementation of SNOMED CT on CDAC's Hospital Management Information System (HMIS), which has been deployed and operational on a nation-wide scale in Government medical facilities in India. We identify and present the key challenges faced during efforts to integrate SNOMED CT with large-scale legacy systems, followed by the strategies adopted for resolving them.

Abstract

In developing countries like India, healthcare is an evolving domain and digitization of healthcare services and records are still ongoing. Early HMIS systems developed primarily aimed at automation of clinical processes, and digitization of restricted aspects of EHR. With the evolution of health standards and the need for HMIS systems' compliance in this era of big data and computational intelligence, a significant challenge is presented in the task of implementing these standards. These include identification of data types and forms, understanding of standards' specifications, development efforts in making systems compliant and finally, enforcing their compliance.

To this end, this presentation aims to showcase a case study involving the challenges faced in integrating SNOMED CT in the HMIS developed by CDAC, which is operational in several government medical facilities in India. These systems have multiple clinical and non-clinical modules which cater to various operations in the hospital environment. It may be noted that a low doctor-to-patient ratio in countries such as India presents a formidable challenge in enforcing the use of SNOMED CT. Further, data is stored across disparate databases in varying formats and structures, depending on the nature of the process employed in the respective hospital. As a result, implementation of a consolidation platform for standards compliance presents a comprehensive challenge. Data identification and mapping (content selection) is one of the key challenges, as well as data entry methods, low-effort user interfaces, handling free-text entries and system updation and maintenance with respect to standards such as SNOMED CT.

In this presentation, we elaborate on the specific aspects of these challenges we faced in making our HMIS systems compliant with SNOMED CT. Steps taken for their resolution and lessons learnt would also be elaborated upon, which would help clinicians and healthcare practitioners, especially from developing countries where such systems are in a nascent stage, understand the nuances of SNOMED CT implementation and consolidate their efforts based on our findings.

References

1. Lee, Dennis, et al. "A survey of SNOMED CT implementations." *Journal of biomedical informatics* 46.1 (2013): 87-96.