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Snomed CT Survey: An Assessment of Implementation in EMR/EHR Applications

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Abstract

A much-needed start to facilitating the linkage between vendor willingness to adopt SNOMED CT and actually implementing it in electronic medical record (EMR)/electronic health record (EHR) systems is to gain knowledge about the current use of SNOMED CT in applications. A descriptive study on the status of adoption and implementation of SNOMED CT in EMR/EHR systems by health information technology (HIT) vendors was conducted in late 2006. This study consisted of a Web-based survey of 25 questions. Results revealed that 42 or 58.3% had obtained a SNOMED CT license. The most common reason given for not making plans to obtain a license was no market demand. In addition, only 14 or 19.4% of the respondents had SNOMED CT currently operational. Twenty, or 27.7%, of the respondents indicated SNOMED incorporation into applications is currently being developed, is planned for 2007, or is planned for 2008 or beyond. All told, less than half, 47.2%, of the respondents have incorporated or plan to incorporate SNOMED.

Keywords:

SNOMED CT, computerized patient records, terminology, standards

Introduction

The new millennium ushered in the unprecedented national consensus that the widespread use of technology for the electronic health record (EHR) will lead to reduced medical errors, higher quality care, and improved efficiency in the healthcare industry.[1] To accomplish this it will be necessary to move beyond the administrative data currently accepted as the standard for clinical data in many health services research projects.

The National Committee on Vital and Health Statistics (NCVHS) study identified SNOMED CT as one of the core set of Patient Medical Record Information terminology standards.[2] SNOMED CT was also adopted as a Consolidated Health Informatics (CHI) standard for the following domains: lab result contents, non-laboratory interventions/procedures, anatomy, diagnosis/problem lists, and nursing.[3] In May of 2006 SNOMED CT was identified as one of the preferred terminologies in the American Society for Testing and Materials (ASTM) Continuity of Care Record.[4]

Also in 2006, the Healthcare Information Technology Standards Panel (HITSP) recommended SNOMED CT in their Interoperability Specifications.[5] Then in January, Secretary Mike Leavitt, Department of Health and Human Services, accepted the standards recommended by HITSP for the Electronic Health Records, Biosurveillance, and Consumer Empowerment use cases.[6] One of the terminology standards named was SNOMED CT.

Four years ago SNOMED CT became available to U.S. users at no cost through the National Library of Medicine's Unified Medical Language System®. However, the enablers or impediments regarding implementation of SNOMED CT into EHR systems are relatively unknown. A NLM representative, upon questioning during the July 2005 NCVHS Subcommittee on Standards and Security, recognized the need to find out what the barriers are to EHR vendors adopting SNOMED CT.[7]

With the U.S. government acknowledging the need to gain a better understanding of vendor concerns regarding integration of SNOMED CT into their clinical information systems, identifying the barriers to SNOMED CT adoption is critical. Learning what prompts vendors to include SNOMED CT in EHR systems could help draw up strategies to accelerate use and encourage implementation.

Methods

The Foundation of Research and Education of the American Health Information Management Association (AHIMA) conducted a descriptive study. This study was designed to determine the status of adoption and implementation of SNOMED CT in EMR/EHR systems by health information technology (HIT) vendors and discover the available applications for SNOMED CT in EHR systems. An additional objective included learning what prompts vendors to include SNOMED CT in EHR systems.

A list of HIT EHR vendors was created from the following sources:

- HIMSS EHR Vendor's Association

- EHRs certified by CCHIT
- Winners of TEPR awards for the past five years
- AC Group's 2006 EHR/PMS survey
- EHR/EMR category of the Healthcare Informatics 2006 Resources Guide
- EMR category of the Health Management Technology Online Resource Guide
- 2006 13th annual Healthcare Informatics 100
- Exhibitors at the 2006 HIMSS Exhibition
- AHIMA vendor director
- Commercial sites

A survey consisting of twenty-five questions was developed. Face validity was performed by AHIMA and FORE staff in order to ensure the items addressed the important aspects of determining SNOMED CT implementation in EMR/EHR systems. A group of nursing informaticians conducted content validity.

Results

The survey was e-mailed to 408 HIT vendors. Out of 408 HIT vendors who received the survey, 72 were returned with a response rate of 18%. Forty-two or 58.3% had obtained a SNOMED CT license. Thirty or 41.7% stated they have no current plans to obtain a SNOMED CT license. The most common reason given for not making plans to obtain a license was no market demand.

To address the survey's objective of identifying the prevalence of SNOMED CT integration in EHR products, recipients were asked about their plans for implementation of SNOMED CT in their product. Implementation was defined in the question to mean SNOMED CT is a part of or used in the EMR/EHR application. As shown in figure 1, only 19.4% of the respondents had SNOMED CT currently operational. Twenty, or 27.7%, of the respondents indicated SNOMED CT incorporation into applications is currently being developed, is planned for 2007, or is planned for 2008 or beyond. All told, less than half, 47.2%, of the respondents have incorporated or plan to incorporate SNOMED CT.

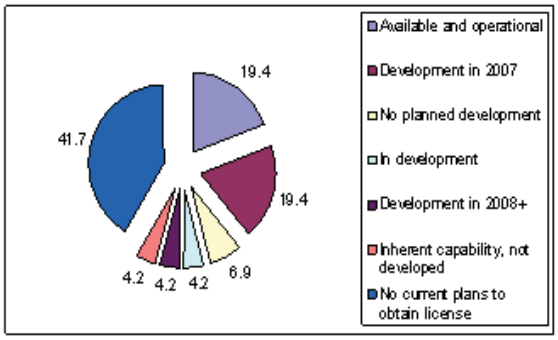

Figure 1 - Prevalence of SNOMED CT Integration

Discussion and Conclusion

Obtaining a complete a representation of HIT vendors is made difficult by the enormous volatility in the field. An additional complicating factor is finding the knowledgeable person within the company to receive the e-mail. Both of these factors may have accounted for not receiving a response to the request for survey completion.

In order for SNOMED CT to be successfully adopted and implemented, vendors need a business reason (mandate or end-user demand) to deploy it. Ultimately, adoption and implementation of SNOMED CT depends upon its ability to address very practical needs. Without incentives or drivers finding less than half of the respondents to this survey having incorporated or planning to incorporate SNOMED CT in EMR/EHR applications is not surprising. The most common reason for not making plans to obtain a SNOMED CT license was no market demand. Ways in which this demand could be created is through the inclusion of terminology for certification of electronic health records and use case requirements.

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