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Mapping: Creating the Terminology and Classification Connection

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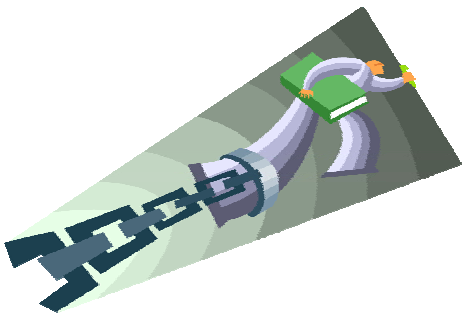
Abstract Maps provide a crosswalk between systems, linking the content from one terminology or classification scheme to another. Valid maps are urgently needed to link from a highly specific terminology to a contemporary classification system in order to allow data collected for one purpose to be used for another, i.e., "enter once, use many times." However, automating the process of mapping from a reference terminology to a classification system is challenging. The National Library of Medicine, a part of the U.S. National Institutes of Health, contracted with AHIMA to perform map validation of the SNOMED CT:ICD-9-CM reimbursement use case map. This poster describes the methodology, results and conclusions from this project.

Introduction

AHIMA believes the adoption of validated automated mappings is integral for the healthcare information infrastructure. If maps are to be utilized in healthcare applications they require validation by knowledgeable, objective third parties.

Clinical information within medical records has many legitimate use communities including care givers, patients, hospitals and healthcare institutions, payers, government and medical researchers.

In order to provide information to all with legitimate need, healthcare data must be translated between core reference terminologies, which maintain highly specific and descriptive patient care data, and administrative/epidemiologic classifications which are organized for aggregate reporting.



At its simplest, mapping is linking content from one terminology or classification scheme to another. It requires deciding how they match or, in some instances, are similar or don't match at all. Mapping considers different purposes, levels of detail, and coding guidelines of source and target.

The mapping process employs a standard method in which the terminology context or classification description principles are interpreted between systems. Fully automating the process of mapping from a reference terminology to a classification system is challenging because of the inherent differences between a terminology and a classification.

Methods & Materials

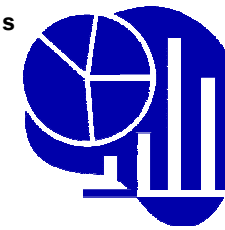


Steps

- Develop a small validation tool in MS Access
- Create a unique list of the concepts needing to be validated
- Assign concepts to AHIMA validators. A certain percentage of the concepts assigned to each AHIMA validator overlapped with the work of two other AHIMA validators.
- Develop a mapping workflow document from the SNOMED Alpha Testing documentation.
- Train the AHIMA map validators
- Place database on an internal AHIMA server supporting version control
- Perform validation
- Complete data analysis using SAS Statistical software
- Calculate interrater reliability between AHIMA validators
- Create AHIMA comparison database
- Compare SNOMED dataset to the AHIMA dataset
- Calculate interrater reliability between SNOMED and AHIMA
- Examine each concept ID with less than 100% agreement
- Determine reasons for variances and identify recommendations for future versions

Results

General Findings



✓ Reproducibility and validation of maps requires more definition and greater specificity of guidelines and heuristics

Example: definition of physiological abnormality

Urine reducing substance

Change in stool consistency

✓ Standardized, open-source tools for map creation/maintenance/ validation need to be developed

Conclusions

Future versions of the SNOMED CT: ICD-9-CM reimbursement use case map could be enhanced by:

1. Use of common conditions and diagnoses consistent with the use case being validated.
2. Further specifying how the concept position in the hierarchy is to be considered in the map.
3. Further specifying the excludes codes instructions and refining their use for added value in the map.
4. Ensuring each ICD-9-CM code utilized in the map is valid by using edit checks against the official code set
5. Clarifying instructions for map creation to ensure consistent E code usage in the map.
6. Continuing the evaluation of the use of specific versus non-specific for reimbursement flags for appropriateness.
7. Focusing future validation efforts on the most pertinent data elements.