The objective of this project was to create a provider-friendly terminology for documenting dental procedures most often carried out by dentists at Marshfield Clinic.

Background

The medical providers at Marshfield Clinic (MC) utilize the Marshfield Enhanced Clinical Code Acquisition (MECCA), which is an internally developed terminology. MECCA is a versatile lexicon that provides contextual information surrounding a clinical observation. This clinically relevant lexicon maps to International Classification of Diseases, Ninth Revision (ICD-9®) and Current Procedural Terminology (CPT®) codes without impacting operation systems. On the contrary, MC dentists are currently using a separate module within the Electronic Dental Record (EDR) for documenting the standardized procedure codes developed by the American Dental Association (ADA)3. Unlike physicians, dentists in the United States are not required to document diagnoses for reimbursement, which makes monitoring and evaluating the oral-systemic treatment outcome studies challenging. Currently, MECCA does not contain a complete list of dental procedures. The development of MECCA terminology for documenting dental procedures is part of the Clinical Information Systems redesign at MC to integrate dentistry with medicine.

Method

A list of frequently performed dental procedures (CDT codes) was collected from dental center administrators. Each procedure code was then grouped into categories. For example, the codes D2140 ‘Amalgam - One Surface, Primary or Permanent’ and D2150 ‘Amalgam - Two Surfaces, Primary or Permanent’ were grouped. A unique MECCA term was defined to represent codes corresponding to the categories. Terms were defined as provider-friendly phrases used to describe the dental procedure. Attributes and values were created to represent the unique CDT codes in a post-coordinated way. Attributes were defined as the possible set of options that are paired with attributes. The terminology was then reviewed by two dentists for accuracy and breadth.

Results

The terminology was modeled in a hierarchical format to show the relationships between the terms, attributes and values. The terminology consists of 54 terms, 78 attributes and 238 values. Depending on the combination of the information selected by the dentists, the appropriate CDT code will be mapped and a charge will be generated for the appropriate dental procedure as denoted by the term-attribute-value triplet.

Conclusions

The terminology developed in this project will allow dentists to document procedures more easily. It will also capture more granular details about the procedures carried out in the dental centers and will enable outcome-based dental research. We intend to validate the resulting MECCA dental procedure lexicon with more dentists and will be implementing it in the EDR in the future.

References


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