

Standardized Coding and Classification Systems

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It is common place among all industries in society to seek to measure performance. To be able to measure something a base set of agreed upon principles or metrics must be established. These agreed upon standards become the building blocks where subsequent work can be controlled and compared with. Such defining standards help set boundaries and aid in keeping systems uniform and within operating boundaries.

Within the medical industry many standards govern the way the industry operates. There are many roles and systems that interact with one another in the process of delivering quality services to the individuals that seek out care. Health care professionals perform procedures, prescribe therapy and prescriptions daily in the treatment of patients. From start to end, the whole process involves patients, physicians, providers, health plans, employers and more. Patients want to be taken care of. Providers want to be paid. Employers want take care of their employees health so they can produce more and keep their premiums low. Insurance providers want to minimize outgoing expenses in covering their members. There are many cogs and wheels that interact in the overall system to keep the gears moving together in an efficient and reliable way. Standardized coding and classification systems are a means that help in delivering consistent results to the disparate systems involved. The end goal is to improve patient outcomes.

According to the American Health Information Management Association, “Health information coding is the transformation of verbal descriptions of diseases, injuries, and procedures into numeric or alphanumeric designations. As the basis for reimbursement, appropriate medical coding has become crucial as healthcare providers seek to assure compliance with official coding guidelines.” (AHIMA, 2010)

In defining standardized codes and classifications, a number of important elements make up the greater whole. These are nomenclature, taxonomy, ontology and standard terminologies. To understand these better we will go into each in more detail.

Nomenclature is a system of terms used in a particular science (speaks to the formatting and assigning of unique names. (Merriam-Webster, 2010) According to the Association for Healthcare Documentation Integrity (AHDI), they believe “that there are critical areas of a patient record where standardized nomenclature and formatting will ensure these consistent and safe patient outcomes”. (AHDI, 2010) A couple examples taken from the ADHI’s statement on common Nomenclature and Formatting illustrate how Nomenclature is used for medications.

- Avoid using all capitals because they are disruptive to the reader and emphasize other parts of the information than the drug name.

Example: Correct: Imipramine HCl 50 mg Tablet;2 tabs p.o.q. h.s.

 Incorrect: Imipramine HCl 50 MG Tablet; 2 TABS PO QHS RX

- Avoid lowercase abbreviations without periods because some may be misread as words.

- Example: Correct: Tylenol 2 pills b.i.d.
 Incorrect: Tylenol 2 pills bid

Taxonomy is a system of orderly classifying objects according to their natural relationships. (Medline, 2010) In a medical coding context this would involve classifying similar diseases in a hierarchical structure together. For example, respiratory diseases might lump bronchitis and pneumonia together.

Ontology can be viewed as a declarative model of a domain that defines and represents the concepts existing in that domain, their attributes and the relationships between them. It is typically represented as a knowledge base which then becomes available to applications that need to use and/or share the knowledge of a domain. Within health informatics, an ontology is a formal description of a health-related domain. (Open Clinical, 2010)

From the same source, the use of ontologies within medicine is further described. The use of ontologies in medicine is mainly focused on the representation and (re-)organization of medical terminologies. Physicians developed their own specialized languages and lexicons to help them store and communicate general medical knowledge and patient-related information efficiently. Such terminologies, optimized for human processing, are characterized by a significant amount of implicit knowledge. Medical information systems, on the other hand, need to be able to communicate complex and detailed medical concepts (possibly expressed in different languages) unambiguously. This is obviously a difficult task and requires a profound analysis of the structure and the concepts of medical terminologies. But it can be achieved by constructing medical domain ontologies for representing medical terminology systems. (Open Clinical, 2010)

Standard Terminologies assist in the industry in establishing a common set of definitions associated with terms within that field. Examples of organizations that define common terminology are SNOMED, ICD and MeSH to name just a couple. SNOMED is an acronym for the Systematized Nomenclature of Medical Clinical Terms. It is a standardized computer language that facilitates between healthcare professionals in clear and unambiguous terms. (SNOMED, 2010) SNOMED defines standardized terminology in a clinical context as “a structured list of concepts and their associated descriptions for use in clinical practice. These describe the care and treatment of patients and cover areas like diseases, operations, treatments, drugs, and healthcare administration.” (SNOMED, 2010) The importance of such standardized terms is further defined by SNOMED. “By using the terminology and the computer system the clinician can record patient information in a consistent manner. Clinical data can be communicated efficiently and unambiguously between healthcare workers to cover, for example, prescribing, referrals, hospital discharges and business processes.” (SNOMED, 2010)

As expressed already from a quote from the ADHI, coding and classification systems play a vital role in ensuring “consistent and safe patient outcomes” (ADHI, 2010). With such systems in place we can more accurately measure and report on the care that is being provided to patients.

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