

140: THE JCAHO PATIENT SAFETY TAXONOMY: A UNIFIED NOMENCLATURE AND FRAMEWORK FOR EXPRESSING HEALTH CARE ERROR AND SYSTEMS FAILURE DATA

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Objective:

To develop a common classification schema (taxonomy) for collecting and organizing patient safety data in a fashion suitable for application in any defined service delivery setting.

Methods:

The work comprised a systematic review of the literature; integration of disparate classification systems into the taxonomy; use of a nominal workgroup to assess face and content validity of the taxonomy; gathering of input from patient safety stakeholders in multiple disciplines; and preliminary assessment of the taxonomy's comparative reliability when applied to an incident reporting system.

- Seven medical/medication error classification systems (5 U.S, 1 Netherlands, 1 Australian) identified through computerized MEDLINE searches and the data categories from four major national voluntary and one mandatory external reporting systems identified by an Institute of Medicine report were reviewed and compared for homogeneity.
- Starting from the classifications of a prototype health care error and systems failure taxonomy derived from human factors research, the semantic relationships between these classifications and corresponding classifications in each of the other classification schemes were examined to identify common and equivalent terms or categories, and their linkages.
- The nominal workgroup involved seven opinion leaders and academics having interest in patient safety.
- Input from patient safety stakeholders were drawn from medical specialty groups, business groups, government health care agencies, and health care organizations.
- The comparison of data elements between the taxonomy and an active incident reporting system was undertaken in one U.S. children's hospital.

Results:

Data elements or categories identified from extant classification schemes/reporting systems could be grouped into one or more 4 root nodes (primary classifications) of the taxonomy: 1) Impact – the outcome or effect of health care error and systems failure; 2) Type – the perceptible or visible process that failed; 3) Domain – where an error and failure occurred and the type(s) of individual involved; and 4) Cause – the factors and agents that lead to an error or failure. With the creation of the root nodes, it was possible to segment corresponding concepts that are key to understanding what variables or interaction of variables affect patient safety into 15 secondary classifications. These were refined to produce 140 coded categories, and the ability to include unlimited free text below the coded categories. Actual medical conditions and diseases resulting from adverse events and iatrogenesis were listed by ICD-9-CM codes, and were associated with the categorical codes. The coded categories of the taxonomy demonstrated acceptable comparability with the categorized data requirements of the incident reporting system. Thirteen (12%) categories were identical, 42 (38%) were synonymous, 45 (41%) were related, and 6 (5%) had to be extrapolated. Five (4%) categories were unmatched – date and time of incident, patient or family dissatisfaction, and 2 patient identifiers purposefully omitted from the taxonomy. The workgroup concluded that the taxonomy would be well suited to meet the need for seamless integration of patient safety data from disparate sources. The workgroup also recommended inclusion of external factors that are perceived to influence patient safety. The patient safety stakeholders concurred in the taxonomy's suitability and

feasibility for application in error investigation, reporting, tracking, and analysis in U.S. hospitals and elsewhere.

Conclusions:

This work has produced a taxonomy that integrates multiple, interacting classification schemes for health care errors and systems failures, and is capable of ordering complex information in a logical and reproducible fashion. The variable-level classification framework and the shared language of the taxonomy can be adapted to match the patient safety needs of any international health care setting. Using the JCAHO taxonomy as a benchmark system, it is possible to map and visualize the entire structure of alternative classifications; to combine and track aggregate data from the "real world" over time; and to establish consistency across reporting systems.