In Search of a Controlled Vocabulary for Emergency Department Chief Complaint: A Comparison of Four Published Chief Complaint Lists

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OBJECTIVE

The purpose of this study was to compare the most common chief complaints (CC) from a national emergency department (ED) survey, with four published CC lists in order to identify issues relevant to the creation of a controlled ED CC vocabulary.

BACKGROUND

The lack of a standardized vocabulary for recording CC complicates the collection, aggregation, and analysis of CC for any purpose, but especially for real-time surveillance of patterns of illness and injury. The need for a controlled CC vocabulary has been articulated by national groups and a plan proposed for developing such a vocabulary. To date there has been no comparison of published CC lists. This study lays the groundwork for a controlled ED CC vocabulary by comparing selected terms from several published ED CC lists.

METHODS

We found four published CC lists and included them all [1-4]. We used the top 20 'Reasons for Visits' (RFV) from the 2005 Emergency Department Summary of the National Hospital Ambulatory Medical Care Survey as the reference standard [5]. CC terms from each list were mapped to the RFV 20 terms using matching relationships (synonymous, broader, narrower, related, non-matching) from the National Library of Medicine's Large Scale Vocabulary Test. Proportions of matches of the 20 RFV terms with each of the CC lists were assessed. This study did not qualify for IRB approval or exemption.

RESULTS

25% of the RFVs had synonymous terms on all CC lists: *Abdominal Pain, Chest Pain, Fever, Headache, and Vertigo-Dizziness*. For four of the RFVs (20%) there was at least one CC list with no match (pain, site not referable; accident nos; leg symptoms; and motor vehicle accident type of injury unspecified). All CC lists and the RFV used multiple terms for a single concept (e.g., both *dyspnea* and *shortness of breath* on the same list); pre-coordination of two concepts into a single string (*nausea/vomiting* instead of *nausea* and *vomiting* as separate terms); variance in scope of terms (*back pain* and *back symptoms*); and imprecise use of terms within and between lists (e.g., terms representing types of injury such as *motor vehicle accident, isolated chest trauma,* and *blunt trauma).* The RFVs themselves were problematic, with two of the top 20 being synonyms (*shortness of breath* and *labored or difficult breathing*); one RFV was a broader term of another top 20 RFV term (*symptoms referable to the throat,* and *cough*); and three of the 20 RFVs were related to each other (*lacerations, accident nos,* and *injury other and unspecified type – head, neck, and face*).

CONCLUSION

The four CC lists vary by coverage of the 20 top RFVs and the CC lists and the RFV did not match well. All four lists and the RFV were inconsistent in the use of vocabulary principles. We only analyzed the first 20 RFV so a more extensive evaluation of RFV may have different results. We found: 1) all lists demonstrated deficiencies in adherence to vocabulary principles; 2) the complete agreement between 25% of the top 20 RFV CC suggests that a standardized and practical vocabulary for CC can be developed; 3) the RFV itself is not a good standard for CC list comparisons; 4) further studies are needed to determine if an existing list can be improved, or if a new list should be developed.

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