Representation of Patient Terms for Symptoms and Health-Related Problems Using SNOMED CT(R)

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Abstract

Given the increase in consumer-facing health-related systems, there is a need to link the interface terms used in such systems with formal representations of healthcare terms to facilitate communication with clinician-facing systems. Seven expert practicing oncology nurses used a Web-based terminology assessment and mapping application to evaluate 53-54 of 107 symptoms or problems on the "patient-friendliness" of the term and to determine the quality of match between the source terms and SNOMED CT concepts. Of 104 terms rated as user-friendly, 24 mapped to a single concept with a match quality of ≥6 for 19; 80 patient- reported multiple- term concepts mapped to SNOMED CT concepts with varying levels of match quality and; 23 terms had no appropriate matches. Single terms often present only a partial representation of a patient symptom/problem term. Reference terminology models provide a structure for concatenating concepts for complex patient terms that require multiple concepts for representation.

Keywords:

Patient symptoms, Shared decision making, Reference terminology, Interface terminology

Introduction

Patients and clinicians often have differing terms and meanings in describing symptoms and treatments. Given the increase in consumer-facing systems such as personal health records and self-management tools there is a need to link the interface terms used in such systems with formal representations of healthcare terms to facilitate communication with clinician-facing systems such as electronic health records.

Methods

The source terminology comprised patient terms for symptoms and health-related problems that were collected from a support system for cancer patients. [1] The target terminology was Systematized Nomenclature of Medicine - Clinical Terms - (SNOMED-CT), a concept-oriented health care terminology containing more than 310,000 unique concepts and more than 1.3 million links or relationships between them.[2] Seven expert practicing oncology nurses used a Web-based terminology assessment and mapping application to evaluate 53-54 of 107 symptoms or problems on the "patient-friendliness" of the term and to determine the quality of match between the source terms and SNOMED CT concepts. The median of the raters scores for friendliness and concept match for each described patient symptom were assessed.

Results

Only three of the 107 source terms had low median friendliness ratings (<4 out of 7): 1) Difficulty having intercourse; 2) Difficulty being close to my partner; and 3) Reduced sex drive or potency. Of the remaining 104 terms, 24 mapped to a single concept (Table 1) with a match quality of ≥6 for 19 of these; 80 mapped to multiple concepts with varying levels of match quality for individual concepts; and 23 terms had no appropriate matches.

Table 1 - Single Concept Match Examples

Patient Term	Concept	Match Rating
General body pain	Generalized aches and pains	7
Headache	Headache	7
Fever	Fever	7
Chills	Chills	7
Grief	Grief reaction	7
Weight gain	Weight gain	7
Painful urination	Dysuria	6

Conclusion

Single terms often present only a partial representation of a patient symptom/problem. A reference terminology model that can represent concatenated concepts is needed to better obtain and assess term matches to the often complex and multi-concept patient reported problem terms.

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References

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