

Work in Progress: What is "Enough"?

ABSTRACT

This poster presents dissertation work in progress on the question of "enough." The research focus is the assessment of "enough" information to make a decision, in particular a medical decision determining the diagnosis of a patient. "Enough" is considered "enough" information to facilitate making a decision or taking an action. Qualities of qualities of "enough" are identified and described by analyzing case reports published in the *New England Journal of Medicine*. Findings are reported, and contribute to the development of a conceptual model of factors contributing to "enough."

Categories and Subject Descriptors

D.H.1.1 (Systems and Information Theory)

General Terms

Human Factors

Topics

Information Seeking and Use, Health Informatics

Keywords

Enough, Information Behavior, Clinical Informatics

1. Introduction

The focus of dissertation research is the assessment of "enough" information to make a decision, in particular a medical decision determining the diagnosis of a patient. In information science, the determination of "enough" information to traverse gaps (Dervin, 1992) and make progress has important implications for the design of information retrieval systems, particularly the presentation of retrieved results. "If the United States is to realize the full value of biomedical knowledge..., the mechanisms through which that knowledge is operationalized and care is delivered must be radically redesigned." (Shekelle, Morton, & Keeler, 2006, p. 28). Assessing "enough" information to make a decision is intrinsic to efficient and effective use of clinical information.

1. Objective

The objective of my research is to examine and to explore the assessment of "enough." For the purposes of this project, "enough" is considered enough information to facilitate making a decision or taking an action by an individual or a team. The goals of the initial phase of qualitative research, which involved studying standardized case reports published in the *New England Journal of Medicine* (NEJM), are to:

- 1.1 Describe specific characteristics of "enough" as revealed in the process of making a diagnosis.
- 1.2 Identify problematic situations or patient cases, which have similarities, and in which similar qualities of "enough" resolve the situation.
- 1.3 Identify problematic situations that vary, and in which "enough" presents unexpected characteristics to resolve the situation.
- 1.4 Develop a conceptual model for describing the inter-relationships of the characteristics of the problematic situation and

related work tasks and information behavior that influence the medical decision-making.

2. Methods

The medical arena provides an excellent ground for the study of "enough" as the specific actions taken to achieve "enough" are specifically documented in patient records, and "enough," the equivalent to a diagnosis in this study, is clearly delineated in patient records.

Case reports published in the *New England Journal of Medicine* provide the initial information for analysis. Each case report is broken down into episodes of care; each episode of care typically includes a variety of work-subtasks. Written descriptions of each case report are prepared, consisting of four elements: a description and discussion of the problematic situation, a description and classification of the work task and its sub-tasks, a description and discussion of the linked information behavior, and an interpretation of "enough" in each episode of care.

3. Preliminary Results

Findings concerning the inter-relationships between the problematic situation, work task, and information behavior leading to "enough" contribute to the development of a conceptual model. (See Figure 1.) The conceptual model demonstrates the interaction of factors involved in assessing "enough."

The model will be applied to characterizing and analyzing problems, work tasks, and information behavior in continued research on assessing "enough" information to make a medical diagnosis. (Note: The conceptual model will be included in the poster.)

Findings will also be used to extend the Li and Belkin (2008) task classification scheme to incorporate qualities of "enough." (Note: Additional findings will be reported in the poster.)

4. Conclusions

The next phases of my dissertation research involve:

4.1 Developing a new methodology, which would determine how to use clinical data to study an information science problem. This is a new approach to clinical informatics, involving use of clinical data repository as the information required to reach each decision can also be clearly defined in medicine. These elements, which are necessary in studying the assessment of enough, are recorded in a patient chart.

4.2 Conducting qualitative research in which a group of working physicians in a specialty such as cardiology will be presented with a case study of a patient along with a set of materials (patient history, reports of diagnostic tests, articles from medical journals, copies of recent medical journals, etc.) related to this patient as well as Internet access. Study participants will be

asked to classify and evaluate each item the portfolio, and to select and determine what will be “enough” information to develop a diagnosis. Physicians will also be interviewed to obtain more information on their process assessing what is enough information to diagnose the patient.

REFERENCES

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Figure 1: Conceptual Model of “Enough”