

MIMM Introduction

Methods in Medicine Module: Information Management Formulating a Well-Constructed Clinical Question

A 35-year-old female who just returned from a trip to Italy has pain and swelling in her left leg. What should you do to investigate the possibility of deep-vein thrombosis in this patient? How can you find the best answer to the questions this problem poses (i.e., the best approach to diagnosis, the best approach to management and prognosis) in a timely manner? Numerous electronic resources are available (e.g., UpToDate, MDConsult, Dynamed) that can provide answers in real time at the point of care, but the fidelity of the answer response depends on the quality of the question.

Bergus and Emerson note that the quality of clinical questions does not appear to improve during a typical 3-year family medicine residency, and that residents can benefit from additional training in this area [1]. Ely and colleagues note that approximately 3 questions arise for every 10 patients seen in primary care practice and that most of the questions do not get answered, although answers probably exist [2]. Fortunately, evidence-based medicine principles provide guidance for formulating questions that will optimize the responses [3, 4], and numerous Web-based resources have become available to assist clinicians in honing these skills [5, 6].

Ely has identified the most frequently asked types of questions, and has created a classification scheme to describe them [7]. His research indicates that three generic question types comprise the most commonly encountered queries: what is the drug of choice for condition [X] (11%); what is the cause of symptom [X] (8%); and what test is indicated in situation [X] (8%). In all, Ely and his colleagues identified 64 generic question types and created a taxonomy (classification scheme) to describe them.

Wedgwood has created software tools that use the Ely taxonomy to craft clearly focused questions from those posed by a user [8]. In his research, he additionally sent these focused questions to on-line medical knowledge resources, and assessed the quality of answers compared to undirected questioning. He found that posing clearly focused questions, using the patterns Ely identified, yielded more useful answers. The ABFM has licensed these tools for use in this Information Management MIMM.

So how does this work? In Phase 1, you will encounter a list of 10 clinical scenarios that includes clinical vignettes in adult medicine, pediatrics, and obstetrics. You will be required to choose 5 clinical scenarios, but you will select and work on them one at a time. After reading a scenario you've chosen, enter a question that the scenario raises for you. Pose the question in any manner you choose. The system will "parse" and process your question, and return feedback with several candidate questions that are restated in a carefully focused format using the Ely classification. Compare your original question with the restated queries. You will probably find that you do better in some areas (e.g., questions of diagnosis) than in others (e.g., questions of prognosis).

In Phase 2, you will utilize the feedback for all 5 scenarios to help you select 2 question types (e.g., questions of diagnosis, involving interpretation of clinical symptoms) in which you would like to improve your skills. Next, the Information Management quality improvement "wizard" will suggest online resources to help you improve your query generation abilities. You will select at least 4 interventions from the list of resources, and then use these activities to help you learn to write more focused questions.

In Phase 3, you will work to master the content in the suggested resources, studying the interventions to learn how to ask well-formulated clinical questions.

And finally, in Phase 4, you will again review 5 clinical scenarios, but now you will utilize the information from the resources you chose in Phase 2 to help you pose well-formed clinical questions. Just like in Phase 1, you will be given feedback on the questions you pose. We anticipate that you will need several on-line sessions to complete the module.

After completing the 4 phases of the MIMM, you will have the option to complete a short activity evaluation and gain access to your CME credits. The feedback you provide will be used to improve this and any future modules.

Reference

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