The need for evidence-based knowledge at the point of care: what problems do general practitioners have?

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Abstract

There is growing pressure for General Practitioners (GPs) to use knowledge that is evidence-based at the point of care. Using quality information sources to obtain knowledge is one way to ensure the validity of the knowledge. However, the current mode of general practice has made it difficult for GPs to work effectively with information support. In this paper, we review the types of problems that GPs have with using information sources to meet their knowledge needs at the point of care. Identifying and lowering these barriers should facilitate the use of evidence-based knowledge and hence improve the quality of clinical care.

Introduction: With the emphasis on evidence-based medicine (EBM), there is growing pressure on GPs to use knowledge that is evidence-based at the point of care (Rosenberg & Donald 1995). Forces from patients and policy makers, and GPs’ concerns are also factors that contribute to this pressure. With patients having better access to medical information, they may make greater demands on clinical decision-makers (Coiera 1996; Coulter 1999). Also, policy makers would like GPs’ processes to be more transparent (Marshall 1999). Moreover, there is increasing emphasis on liability if GPs do not practise in compliance with the available valid evidence – GPs are expressing concerns about medico-legal issues and there is a trend towards the practice of negative defensive medicine (Summerton 2000).

Besides the pressure to practise evidentially, it is increasingly difficult for GPs to keep up to date (Haines & Donald 1998). Studies show that GPs have unmet knowledge needs at the point of care. A study conducted in the US shows that 49% of the causes of family physicians’ errors, as perceived by physicians, is due to a lack of knowledge about the medical aspects of the case (Ely et al. 1995). In another study, Covell et al. (1985) found that 40% of physicians’ clinical questions arising in patient consultations were about medical facts. Also, Ely et al. (1999) found that family physicians do not pursue answers to 64% of their clinical questions, but of those pursued, answers can be found for 80%.

There are many approaches to obtaining knowledge; one can exchange and discuss ideas, collaborate with others, or go to information sources (Jadad et al. 2000). However, the knowledge obtained and used must be valid and accurate. One of the methods preferred by GPs to obtain knowledge is to consult colleagues and specialists (Verhoeven et al. 1995). Yet, the study conducted by Ely et al. (1995) shows that 38% of causes of family physicians’ errors, as perceived by physicians, is due to receiving or anticipating adverse advice from specialists (Ely et al. 1995). Whether the problem was a result of incorrect use of the advice, or the scientific validity of the advice, GPs must use knowledge that is evidence-based – knowledge that is based on the integration of individual expertise with the best external evidence.

Using quality information sources to obtain knowledge is one way to ensure the validity of the knowledge. Study shows that literature can provide “a clear answer” to 46% of GPs’ clinical questions that arise in routine primary care (Gorman et al. 1994).

Methods: This review was carried out by examining the existing literature in general practice, evidence-based medicine and medical librarian studies. The paper does not attempt to cover all the
literature; however, it does attempt to give an overview of the problems that GPs have with using information sources in obtaining knowledge.

What problems do GPs have with using information to answer questions?

Factors that discourage the initiative to pursue information

The conflict between perception and reality
When GPs identify a need for knowledge, their initiative to pursue information is dependent on their perception of whether there is an answer to the question and the urgency of the problem (Gorman et al. 1995). However, a systematic review on the use of Clinical Practice Guidelines (CPGs) found that a median of 54.5% of the time doctors do not follow CPGs because of a lack of awareness of their availability (Cabana et al. 1999). This implies that even when GPs identify an important need for knowledge, if they perceive there is no answer to their question, they usually do not take the initiative to pursue an answer.

Also, GPs’ level of awareness of their knowledge needs can impact on their initiative to pursue further knowledge. This is exemplified in a study by Covell et al. (1985), which shows that some participating doctors believed they only needed information once per week; yet researchers estimated that for every three patients seen, two questions that were raised remained unanswered.

The balance between costs and benefits
The current mode of general practice has made it difficult for GPs to work effectively with information support. GPs are resource-limited and the decision to seek or not seek information can be perceived as a cost-benefit trade-off (Coiera 2001). Personal attributes such as morale, attitudes and human limitations can discourage their initiative to pursue information. Their perceived barriers and the actual costs in seeking information (such as resource availability to support the pursuit, resource conflict in patient consultation, financial matters and misconception of EBM), as well as social, organisational and environmental factors can also impact on their initiative to undertake the pursuit (Gosling & Westbrook 2002; Haines & Donald 1998; Mayer & Piterman 1999; McColl et al. 1998; Young & Ward 2001).

Turning knowledge need into a specific request for information

Conveyance of knowledge need
One of the crucial and difficult steps in defining information needs is conveying the context of the question to the information source (Osheroff & Bankowitz 1993). GPs experience difficulties in translating a problem into a specific information request. Forsythe et al. (1992) found that doctors have information needs that are hard to identify and express. They observed that there are information needs that are difficult to verbalise and express with a grammatical structure. They also found that some of the information needs are only interpretable within the particular context.

This is further exemplified in a trial of doctors using computer software in their practice to answer their clinical questions – one of the difficulties expressed was “in translating the clinical problem into a question that could be posed to the workstation” (Osheroff & Bankowitz 1993). The difficulty in conveying the knowledge need and the context is probably one of the reasons why doctors choose to consult colleagues for advice and answers rather than going to information sources (Verhoeven et al. 1995).

Interpretation of knowledge need
In cases where the clinical question can be expressed, the way the question is interpreted influences the way it is transformed into information needs. A taxonomy of GPs’ clinical questions found that
on average, a generic clinical question might be expressed in 2.7 different ways (Ely et al. 2000). A different interpretation of the question, combined with the many different possibilities of converting the question into information requests, can deliver very different answers. Also, GPs like to phrase their questions according to the patient context (Ely et al. 1999) – this can influence the success of the information search because evidential information is usually found on the population level rather than on an individual level.

Sometimes there are implicit information needs that are not specified (such as auxiliary information needs and data that are necessary but not included in the information request), and attempts to accommodate these deficiencies can lead the pursuit off track (Ely et al. 2002; Hersh & Hickam 1998).

**Modifications and additions of new information needs**
Ely et al. (2002) also found that information needs vary during the information pursuit. Some information needs are not well defined or expressed before the information pursuit because not enough is known about the subject area; in addition, GPs tend to modify their knowledge needs and develop new needs during the information pursuit as they find out more about the subject area.

**Obtaining information**

**Formation of search methodology**
GPs experience problems in obtaining information to answer their questions. When doctors use information retrieval systems, an inadequate search methodology can lead to unproductive results (Hersh & Hickam 1998). An inadequate search methodology may result from an inappropriate or insufficient use of information tools and sources. It can also result from a lack of skills and knowledge required to form a suitable search request and an adaptive search strategy (Ely et al. 2002; Hersh & Hickam 1998).

**Usefulness of information tools**
Problems with information tools (such as information retrieval systems), difficulty in interfacing with different tools and poor source organisation can also lead to unproductive searches (Hersh & Hickam 1998; Ely et al. 2002). The usefulness of a tool directly influences its level of use. This is exemplified in a trial of access to Grateful Med, an information retrieval system that interfaces to different medical databases. A three-year follow-up study found that one-third of the group had discontinued using the system; some of the cited reasons include difficulty of use and poor or irrelevant content (Gorman et al. 1994; Hersh & Hickam 1998).

**Perceived characteristics of expected information**
Not only is it difficult to express information requests and obtain perceived expected information, but also doctors actually require and expect different forms of information in different stages of reasoning (Florance 1992). For example, when doctors are in the decision stage, refresher information is most useful; when they are in the analysis stage, they find personal contacts the most helpful (Verhoeven et al. 1995).

Several studies report that GPs place value in accessibility of information more than quality factors such as reliability and completeness (Verhoeven et al. 1995). Hence, having easy and quick access to relevant information at the point of care may increase the uptake of information seeking in patient consultation (Brassey et al. 2001; Sackett & Straus. 1998). However, there may be other characteristics about the sources that are important. For example, in a trial of a librarian service that retrieves literature to answer clinicians’ questions, there were eight cases out of 48 in which the retrieved material was relevant, but nonetheless clinicians felt that their questions had not been answered (Gorman et al. 1994).
Better accessibility of relevant information reduces the costs in obtaining information; however, it is also important to increase and demonstrate the benefits of information tools (Gorman et al. 1994). In the end, information tool developers must remember that what really matters is not the quantity of relevant articles retrieved or the speed of the process; it is whether the tool efficiently and effectively assists doctors in answering their questions (Hersh & Hickam 1998; Gorman et al. 1994).

**Applying information**

*Interpretation of search response*

When GPs perform a search to retrieve literature to answer their questions, the way they interpret the search response can present a problem. Different interpretations can lead to different clinical decisions. For example, a null search response may be interpreted as a ‘no’ to a question, but this is not necessarily the correct interpretation (Osheroff & Bankowitz 1993).

*Interpretation of information*

GPs experience problems in using information to formulate answers to their clinical questions. Using information requires GPs to “recognise data from a ‘publication-centred’ or ‘basic science’ structure as applicable to the situational model, then extract those data and employ them in a reasoning process” (Florance 1992). This can be a complex undertaking.

- **Ability in using the information**: A study found that GPs’ perceptions of the lack of sufficient skills in using information are potential barriers to applying information in clinical care. These include skills in appraising evidence, applying results from population studies to individual patients and communicating the implications of research to patients (McColl et al. 1998; Ely et al. 2002; Young & Ward 2001). In fact, GPs do experience uncertainty in how to read articles property (Ely et al. 2002). A study conducted by Young & Ward (2001) found that participating GPs had difficulties understanding the technical terms used in literature – only 23% could explain to others the term ‘relative risk’.

- **Information format**: The way information is formatted influences its interpretation. A study by Elting et al. (1999) showed that the format of words and data influences and can manipulate doctors’ decisions. The study also showed that formats preferred by doctors are not the ones that support the best or most accurate decisions.

- **Information content**: Problems with the content of the information make it hard for GPs to apply it in general practice. The systematic review on Clinical Practice Guidelines (CPGs) by Cabana et al. (1999) shows that some of the reasons for the lack of adherence to CPGs relate to problems with the content of the CPGs: they are seen to be contradictory, difficult and inconvenient to use, cumbersome, confusing and not self-efficacious (Cabana et al. 1999). It is suggested that the use of abbreviations in information content should be minimised (Verhoeven et al. 1995).

*Acceptance of information*

GPs’ own experience, their colleagues’ advice and their level of familiarity with the problem domain can influence the acceptance level of the information (Mayer & Piterman 1999; Cabana et al. 1999). In addition, the number of citations associated with the information also influences its acceptance (Hersh et al. 2000). Biased information, an unnecessarily cautious writing style and vague or tangential information can be obstacles to acceptance (Ely et al. 2002). In some cases, information cannot provide answers to GPs’ questions because GPs may be looking for emotional support rather than clinical evidence (Forsythe et al. 1992).

In a questionnaire study conducted by McColl et al. (1998), problems with the evidence itself was the third most selected perceived barrier to practicing EBM in general practice. Some of these
problems include managing the large volume of information obtained, dealing with information overload or the lack of convincing evidence, the quality and credibility of the evidence, the applicability of the information to individual patients and primary care, and the convictiveness of evidence (McColl et al. 1998; Ely et al. 2002; Feinstein & Horwitz 1997). Lack of available evidence in general practice is also a perceived barrier (Young & Ward 2001).

Conclusion: This paper aimed to identify GPs’ problems with using information sources to meet their knowledge needs at the point of care. These problems can be classified into four areas: factors discouraging the initiative to pursue information, turning one’s query into a specific request for information, obtaining information and applying information.

With the rising need for evidence-based knowledge at the point of care, GPs need to use information sources effectively to meet their knowledge needs. Using information sources to formulate answers to clinical questions and applying them in the clinical context is not an easy process. Many GPs face personal, social, organisational and financial barriers in learning, adapting to and accepting this new skill as part of their profession. In addition, there is a lack of available and effective infrastructure support – there is often a discrepancy between supporting the perception of what is wanted and supporting what is really wanted. This misperception in part arises from the fact that the context of a problem is very hard to express and convey, and that obtaining a specific and reliable response from a mass of information is technically difficult.

Overcoming these problems should facilitate GPs’ knowledge needs being better met at the point of care. It should also lower barriers to facilitating evidence-based clinical practice, empowering GPs to practise evidentially and manage their knowledge maintenance problem – thereby leading to better GP-patient relationships, and hence achieving better quality in health care.

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References


