

EBM NOTEBOOK

Ask, and ye shall retrieve

Beginning with this issue, *Evidence-Based Medicine* will replace the "Objective" heading in its structured abstracts with a heading called "Question(s)." The sentences under this heading will be in the form of questions that specify the patients and problems under study; the test, risk factor, or intervention being evaluated; and the clinical outcomes measured. Having study questions more explicitly stated should make it easier for readers to match these questions to their own, well-built clinical questions (1, 2).

What is meant by "well-built"? A case from a recent clinical round should help illustrate:

A middle-aged woman was brought to hospital because of 3 days of upper abdominal pain that radiated through to her back. Her epigastrium was firm and tender to palpation. Her serum lipase level was markedly elevated. A clinical diagnosis of acute pancreatitis was made in the emergency department. The team admitting the patient was then asked for questions they had about her illness. The students' questions included

1. What are the causes of acute pancreatitis?
2. When do complications of acute pancreatitis usually occur?
3. How does pancreatic inflammation cause pain radiating to the back?

Meanwhile, the house officers' questions included

1. In patients with abdominal pain and suspected acute pancreatitis, does the serum amylase or the serum lipase level more accurately confirm the diagnosis when compared with a reference standard?
2. In patients with acute pancreatitis, can clinical features, either singly or when grouped, predict the development of complications sufficiently accurately to allow us to decide which level of hospital care

they need (intensive care unit or ward)?

3. In patients with acute pancreatitis, does routine rather than symptom-driven, nasogastric intubation hasten healing or decrease complications enough to be worth the additional discomfort?

Notice that the students were asking general questions about the disorder, acute pancreatitis, seeking what can be called "background" knowledge (3). Well-built questions about background knowledge usually have 2 components: 1) a question root (who, what, when, where, why, and how) with a verb (e.g., "what causes . . .") and 2) an aspect of the health condition at hand. (To check your understanding, re-read the students' questions above to make sure you can spot these 2 components in each one.)

The house officers were asking more specific questions about how best to care for this patient with acute pancreatitis, seeking what can be termed "foreground" knowledge. Well-built questions about foreground knowledge usually have 3 or 4 components: 1) the patient and problem; 2) the intervention of interest; 3) the comparison intervention, when relevant (such as for questions about therapy or diagnostic tests); and 4) the clinical outcomes of interest. (To check your understanding, re-read the house officers' questions above to make sure you can spot these 3 or 4 components in each one.) It is this type of question that will begin appearing in this journal's structured abstracts.

Why do different clinicians ask different questions when faced with the same patient? At least part of the answer is found in differences in what each clinician "sees" in the patient's pattern of illness; what each clinician sees as his or her role or tasks in caring for the patient (e.g., student ver-

sus house officer, in the case above); what each clinician recognizes as his or her knowledge deficits and learning needs, based on the patient's situation; and what each clinician sees as the most interesting, most feasible to answer within allotted time, most likely to recur).

These factors are influenced, in turn, by each clinician's mix of clinical expertise, learning skills, and knowledge of the specific disorder. Given the rapidly expanding universe of all clinically relevant knowledge, each of us has some knowledge deficits. For disorders we see frequently, our questions may be mostly about foreground issues. For disorders we seldom see, we may have both background and foreground knowledge gaps.

No matter *which* questions clinicians choose to ask, the fact that *we* do have learning needs arising from clinical work seems beyond doubt (4). Investigators have studied factors as they work, observing the questions that arise (5-13). Although the rates of questions per patient varied considerably, all studies showed that clinicians can find their knowledge gaps and ask questions to fill them. Being willing to ask takes permission—remember, we've been schooled to hide what we don't know—that only we can help ourselves. Asking questions well takes curiosity, humility, practicality, and some coaching.

Why should busy clinicians bother to build their skills in asking answerable questions? So far, published clinical trials have tested whether doing this leads to evidence being found faster or used more wisely. Nonetheless, we think well-built clinical questions help in 7 ways:

1. Good questions can help us use our scarce reading time for learning that is directly relevant to our patients' illnesses.
2. Good questions can help us keep our scarce reading time directly focused on our own learning needs.
3. Good questions can suggest the forms the answers will take, so we'll recognize them more quickly when we find them.
4. Good questions can lead directly to planning efficient search strategies (14) (hence this essay's title).
5. Asking and answering questions may help us reawaken the powerful curiosity and delight in learning that led us to work in health care in the first place, thereby reinforcing the self-directedness of our own learning.
6. When sending or receiving patients in referral, well-asked questions can help us communicate with other clinicians, which should improve both the learning that occurs and the care the patients receive (15, 16).
7. When teaching clinical medicine, the skilled use of questions may help our learners understand more of the content of our teaching as well as

demonstrating the processes of lifelong learning.

Together, these 7 points should mean that we will waste less time, be more effective, and have more fun in our learning and teaching of clinical medicine.

Now that the editors of *Evidence-Based Medicine* are including study questions in the structured abstracts, what else might be done with questions to help clinicians use research advances in practice? What if Best Evidence, the electronic compilation of *Evidence-Based Medicine* and *ACP Journal Club*, included these questions not only for current and future abstracts but also for past ones? And what if the searching interface of Best Evidence allowed us to enter our 3 or 4 component questions and then searched the database for the best matches? What if *all* medical knowledge databases had search options that let us enter our background or foreground clinical questions and did the spade work of searching for us, using such tools as filters for methodological quality? Well, if we ask, maybe we shall receive.

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References

1. Sackett DL, Richardson WS, Rosenberg W, Haynes RB. *Evidence-Based Medicine: How to Practice and Teach EBM*. New York: Churchill Livingstone; 1997:21-36.
2. Richardson WS, Wilson MC, Nishikawa J, Hayward RS. *ACP J Club*. 1995 Nov-Dec;123:A12-3.
3. Richardson WS, Wilson MC. *Evidence-based Health Care Newsletter*. 1997;17:6-7.
4. Smith R. *BMJ*. 1996;313:1062-9.
5. Covell DG, Uman GC, Manning PR. *Ann Intern Med*. 1985;103:96-9.
6. Timpka T, Arborelius E. *Methods Inf Med*. 1990;29:23-9.
7. Osheroff JA, Forsythe DE, Buchanan BG, et al. *Ann Intern Med*. 1991;114:576-81.
8. Ely JW, Burch RJ, Vinson DC. *J Fam Pract*. 1992;35:265-9.
9. Forsythe DE, Buchanan BG, Osheroff JA, Miller RA. *Comput Biomed Res*. 1992;25:181-200.
10. Dee C, Blazek R. *Bull Med Libr Assoc*. 1993;81:259-64.
11. Gorman PN, Ash J, Wykoff L. *Bull Med Libr Assoc*. 1994;82:140-6.
12. Gorman PN, Helfand M. *Med Decis Making*. 1995;15:113-9.
13. Barrie AR, Ward AM. *BMJ*. 1997;315:1512-5.
14. Snowball R. *Health Libraries Review*. 1997;14:167-72.
15. Goldman L, Lee T, Rudd P. *Arch Intern Med*. 1983;143:1753-5.
16. Marshall MN. *BMJ*. 1998;316:442-5.