Developing a primary care knowledge base

National electronic Library for Health – Primary Care (NeLH-PC) EBM Search Function

Dr Adrian Brown
Primary Care Informatics, Department of General Practice, St George's Hospital Medical School, London
abrown@sghms.ac.uk

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- *How can the usefulness of searching be measured?*
- *Do users find what they are looking for?*
- *If they don't, is it because the information is not there, or they are not searching correctly?*
- *Are there other sources of information that should be included as useful and are not?*

Most people will use search functions that they find are useful, but is there a way of defining this? Whilst medical interventions can be looked at in terms of sensitivity and specificity, it would be interesting to apply similar rationales to searching for information.

For the National electronic Library for Health –Primary Care (NeLH-PC) <http://www.nelh-pc.nhs.uk> search function (EBM Search) we wanted to search sources of evidence-based practice. For primary care, there is an increasing amount of information that comes in different formats. We wanted to reflect the different ways that evidence-based-medicine (EBM) is presented –from the most distillate form of guidelines through to original papers.

Search queries can be entered as free text or up to two phrases can be searched for using double inverted commas. Additionally, Boolean operators ('and', 'or', 'not') can be used. The results of the search are grouped into three types: Guidelines, EBM reviews and the option to 'Try MEDLINE Clinical Queries'.

The search function thus comes in three tiers. The first tier covers **guidelines** –the PRODIGY, SIGN, NICE, and NeLH databases. The second level covers **evidence-based reviews** –Clinical Evidence, Bandolier, ACP Journal Club, Effectiveness Matters, Cochrane Abstracts and MeReC Bulletin. The third carries the search forward to **MEDLINE.** Thus, if the user does not find what they want in the first two sets of sources, they can look at relevant MEDLINE clinical queries (selected randomised controlled trials). Built-in search filters are used. The user can select one of four categories –therapy, diagnosis, aetiology, prognosis –and emphasise sensitivity or specificity. This three-tiered approach gives the user the ability to see evidence-based practice in stages of distillation from guidelines to the raw material of MEDLINE.

Whilst in some sense the choice of sources is somewhat subjective in what is available on the Web and what is technically feasible, we wanted to reflect what is of use to, and used by, primary care professionals. The idea though is not to have a static resource, but for the sources to change to reflect how useful they are at giving users what they require. We are trying to measure this by having a large 'Did you find this search useful? Yes/No' button on the search results' page. The responses, along with the search, are stored in an SQL database. From this, we would hope to see what clinical areas are covered by the current selection of sources and where there are gaps.

The search terms used may well be an abbreviation of what the user wants (*e.g.* the user may type in 'uti and pregnancy', but their actual clinical question would be 'what is the treatment for uti in pregnancy when the patient is allergic to penicillin'). Obviously, the clinical question could be entered directly, but there may be an implicit abbreviation by the user to shorten the question to increase the possibility of returning a positive response.

We have tried to explore this by a short online questionnaire. When users click on the 'Did you find this search useful? Yes/No' button, they are asked if they will complete the questionnaire. Respondents are asked: 'What was the original question that you wanted answered? (as opposed to the search terms used)', 'What is your profession? (with a list of options to select from)', 'Any further comments? (with a section for a free text response)'. These questions appeared to us to be those that defined the usefulness of the search without making the questionnaire too long.

By researching what were the most useful search results, and why, we hope to make the results more sensitive to future users. This could be by adding additional information sources that cover gaps identified by the feedback. Or over time, if there are consistent gaps, by answering the EBM questions from primary sources and putting the answers back into the database. These could be weighted so that they appear as the top result if a similar search is made again. A measure of the sensitivity of previous searches could also be given.