

EVIDENCED-BASED HEALTHCARE – IS IT HAVING AN IMPACT ON CLINICAL PRACTICE AND PATIENT CARE?

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INTRODUCTION

Evidence-based healthcare has now become an established approach to clinical practice in the UK and many library resources and tools support its use and teaching in hospitals and academic institutions. However, there are still many barriers to its effective use in everyday clinical practice and there is a continuing need to encourage and promote the principles of an evidence-based approach to healthcare practitioners. Healthcare librarians and information professionals often have an important role in this promotional activity.

One method of promoting evidence-based healthcare is to highlight the success stories, where its application has led to an improvement in the health and wellbeing of patients. However, quick searches through the medical literature are generally disappointing, failing to identify many cases of a genuine evidence-based methodology, directly leading to changes in practice and consequent improvements in patient health.

As the publisher of *BMJ Clinical Evidence* and having an overall interest in promoting good clinical practice for doctors in the UK, the BMJ Publishing Group is interested in using any successful reports on the use of evidence-based medicine in practice, to illustrate its value to clinicians. So in order to understand this lack of published research, it was decided to investigate further.

AIM

To explore the reasons behind the apparent lack of published articles reporting on the successful implementation of evidence-based healthcare in clinical practice and to consider alternative approaches to identifying and providing examples to promote its use to healthcare practitioners.

METHODS

Published Articles

To confirm the status of published literature on the successful application of evidence-based healthcare in clinical practice, a literature search was undertaken. The Medline and Embase databases were searched via OVID online, for relevant articles from 2004 to January 2008. The Cochrane Methodology database was also searched on the Cochrane Library (2007, issue 4) for any additional items. It was designed as a practical search to give an indication of the state of the published literature, rather than an exhaustive search (as would be required for a systematic review).

Search Strategies

Medline via OVID online

- 2 exp Health Plan Implementation/ (630)
- 3 1 and 2 (70)
- 4 exp Physician's Practice Patterns/ (9887)
- 5 exp Health Planning Guidelines/ (627)
- 6 1 and 4 (519)
- 7 1 and 5 (42)
- 8 3 and 4 (4)
- 9 (implement\$ or succes\$).tw. (136572)
- 10 1 and 9 (1651)
- 11 10 and 2 (58) - **saved for appraisal**
- 12 10 and 4 (86) - **saved for appraisal**
- 13 10 and 5 (6) – **saved for appraisal**

Embase via OVID online

- 1 exp Evidence Based Medicine/ (240735)
- 2 exp Evidence Based Practice/ (243346)
- 3 (implement\$ or success\$).tw. (298214)
- 4 (1 or 2) and 3 (17973)
- 5 exp Clinical Practice/ (65895)
- 6 exp Health Care Planning/ (16557)
- 7 exp Health Program/ (43013)
- 8 4 and 5 (1178)
- 9 limit 8 to em=200401-200803 (499)
- 10 4 and 6 (450)
- 11 limit 10 to em=200401-200803 (209)
- 12 4 and 7 (1109)
- 13 limit 12 to em=200401-200803 (531)
- 14 limit 8 to em=200501-200803 (312)
- 15 Evidence Based Practice/ (3100)
- 16 Evidence Based Medicine/ (35048)
- 17 15 or 16 (37983)
- 18 17 and 3 (3408)
- 19 18 and 5 (673)
- 20 limit 19 to em=200401-200803 (305) – **saved for appraisal**
- 21 18 and 10 (225)
- 22 limit 21 to em=200401-200803 (114) – **saved for appraisal**
- 23 18 and 12 (399)
- 24 limit 23 to em=200401-200803 (238) – **saved for appraisal**

In order to keep the total number of references to a reasonable level, MeSH terms and combinations were used to make the results more focused and to try and replicate the sort of approach taken for a general enquiry search.

Appraisal

The identified references were loaded and de-duplicated on Reference Manager and a bibliography was generated. This resulting list of references was appraised to identify any articles that appeared to illustrate the successful application of evidence-based healthcare in clinical practice. During and after the appraisal process, a qualitative assessment was also

made of the overall 'message' or impression that was generated by the subject matter of the references.

Alternative Strategies

After the appraisal of references, consideration was given to any possible solutions that might provide different ways to find relevant literature, or address any broader issues surrounding the implementation of research into clinical practice. This was primarily a process of checking resources known from previous work experience, with some internet searching and follow-up.

RESULTS

Search and Appraisal

The literature search generated a list 645 references, of which 29 were considered to possibly demonstrate the successful use of evidence-based healthcare in clinical practice. The overwhelming impression generated from going through the references, was that implementing evidence-based research in clinical practice was extremely difficult. Particular themes that came through were identification of barriers to implementing evidence-based research in practice, the ongoing need for evidence-based research to be applied and various strategies and ideas to overcome the problems associated with applying and sustaining the use of evidence-based research amongst clinicians.

Alternative Strategies

Knowledge gained from previous work experience and initiatives that have been undertaken more recently, did suggest a number of different approaches that would help provide UK examples of successful evidence-based research in practice. These were specific awards which highlighted the application of evidence-based research into clinical practice and had an information/library component. Winners and entry submissions to these awards provide excellent case studies to illustrate how evidence-based research can make an impact on patient care. There were also ad-hoc collections of unpublished implementation projects, one particular case specifically relating to a BMJ Publishing Group information resource, which allows relatively easy access and searching of the data they have gathered.

The general evaluation of the references found by our search, led to consideration of a rather different aspect of the lack of published articles. It suggested a further role for library and information professionals in supporting the implementation of research into clinical practice, by finding relevant research application studies and in promoting evidence-based methodology beyond assessing interventions, right the way through to changing patient care.

These ideas are elaborated on in more depth in the following discussion section.

DISCUSSION

Search Results

The results of the quick search done in this case, confirm the finding that it is difficult to find published articles that illustrate the successful implementation of evidence-based research into clinical practice.

This may be due to a number of reasons, which are grouped into four main points:

- 1) These types of studies are not well indexed in the general medical databases and therefore require more extensive searching and appraisal

- 2) Formal evaluation of evidence-based healthcare, when used in clinical practice, is not being undertaken
- 3) Evidence-based healthcare doesn't deliver successful results when applied in clinical practice
- 4) Reports of studies successfully applying evidence-based healthcare in practice are not being published

The overall impression generated after looking through the references identified, was that although making the search deliberately restrictive to minimise the total number of abstracts identified for appraisal, it was still finding studies addressing the desired issue. Articles were found discussing the problems of implementing evidence-based research and the ongoing need to get evidence-based research into practice. So the search strategy was picking up studies in the correct subject area and it should have been adequate to find evaluations of evidence-based healthcare applied in clinical practice.

It would seem unlikely that no formal assessment of evidence-based research in practice is taking place, due to the problems and difficulties associated with its implementation, being widely discussed and analysed in the literature. This clearly indicates that clinicians and hospital managers are trying to apply research into practice, but are encountering barriers along the way.

The idea that there is some fundamental flaw in the evidence-based healthcare philosophy that will prevent its use in routine clinical practice seems somewhat pessimistic. There may be more scepticism amongst clinicians about the evidence-based movement, but there are also plenty of enthusiasts and the difficulties with its application would seem to extend across all forms of research. Taking research from an 'artificial' clinical environment and then applying it in a real world setting, with all the different financial, staffing and organisational aspects that may need to be resolved, is always likely to generate difficulties which aren't going to be addressed in a smaller scale clinical trial. None the less, research does get taken up into clinical practice eventually, as seen historically through the many new developments in medical care. The main concern for the evidence-based healthcare movement, would be reducing the time-lag, so that where strong research evidence is available, there is minimal delay in its introduction into clinical practice.

It is more likely, that examples of successful implementation are not getting published in the general medical literature. Simply confirming that an intervention works in clinical practice (after that fact has been established through systematic review and/or incorporated into evidence-based clinical guidelines) may seem rather redundant. Many applications of research will be on a small scale, so on a single ward, or clinic and may only directly involve a small number of staff, so could seem insignificant. Many journals will be looking for new cutting edge research, challenging current thinking or announcing new breakthroughs and developments. Many potential authors of an implementation evaluation, will be full-time practicing clinicians, working long hours in often difficult and stressful circumstances. The opportunity to write up an ongoing assessment and present it as a paper for submission to a journal, may not realistically be available, or be a particular priority. The motivation for these healthcare professionals, will be to see improvements for their patients and any academic acknowledgment will be secondary, or of little interest.

Combining these considerations with the difficulty of taking research and easily putting it into practice would provide a reason why relatively few studies can be found through general literature searching.

Implications for promoting evidence-based healthcare

The lack of published articles on the successful implementation of evidence-based research in clinical practice, obviously make it more difficult to illustrate the overall delivery of improved patient care from evidence-based practice. However, initiatives such as the UK Cochrane Health Libraries Group Prize [1] (which is no longer contested, but has to some extent been replaced by the UK Clinical Librarian organised, Evidence in Practice Award [2]) do indicate that evidence-based research is being applied in clinical practice with successful results. Both competitions were designed to highlight situations where the use of evidence-based research has led to significant improvements in patient care. Past entrants and winners, provide examples of how implementing evidence-based research makes a difference, even when applied on a small scale. Finding other such examples of unpublished implementation studies is difficult, but it has been tried at the BMJ Publishing Group.

For one of its new experimental products, *BMJ Health Intelligence*, it has been attempted to identify initiatives and projects undertaken in the UK which involve implementing research in clinical practice [3]. The focus has been on the primary care sector and is self-selecting, as groups were invited to submit details of their projects on a voluntary basis, but none the less, it has still provided a useful collection of data. The information collected was designed to be succinct, but also informative and helpful for any other clinicians or managers who may wish to apply that research in their setting. The collection of local project information has not been peer reviewed and may not always follow an evidence-based methodology, but there is a question on the evidence behind the initiative, so its status should be clear to anyone viewing the data.

There will be other collections of small-scale, unpublished implementation projects in existence and calls for details of projects to be registered [4], do appear on evidence-based health email-lists, so there is scope to find and access these types of resources and they may help to identify implementation projects on specific issues or in select geographical locations. There is a role for librarians in alerting those interested in their institution to these requests for project information, to ensure that any localised implementation research can be submitted and presented to a wider audience, when appropriate. Also, supporting any institution based events designed to highlight research currently being undertaken by clinicians in their hospital, is another way to encourage any local success stories to be advertised and discussed.

Perhaps the most direct role for library and information professionals is in addressing the issues surrounding the problems of implementing research in clinical practice. As our literature search indicated, there is plenty of discussion and debate about how to ensure that evidence-based research results in appropriate changes to clinical practice. The Cochrane Effective Practice and Organisation of Care Group [5] have published and are undertaking a number of systematic reviews, looking at interventions designed to support the continued improvement of clinical practice and improve patient care. So there is evidence continually being gathered on which strategies work best when trying to implement clinical change and how to overcome barriers or problems that will prevent success. Healthcare librarians and information professionals are well placed to inform clinicians about these studies and extend their library's role beyond direct clinical queries, into the identification of strategies and

methods that should enhance and sustain changes in clinical/organisational practice to improve patient care. Forming new partnerships with hospital research committees and promoting the concept that evidence-based practice extends beyond identifying beneficial interventions into how to apply those interventions, with the support and commitment of the whole clinical team, is another opportunity for healthcare libraries to raise their profile. This sort of initiative will hopefully help to ensure that in future, there will be more evidence-based healthcare success stories, both in the published literature, but also acknowledgement of successful local, small-scale projects, which also illustrate the value of evidence-based practice.

Overall, there is an ongoing need to keep promoting the idea of evidence-based healthcare and its ultimate aim of improving patient care, so that clinicians are encouraged to apply interventions in practice and use the resources provided by their library and information staff to ensure this happens effectively, with the same research and rigor which is applied to identifying beneficial interventions. Librarians and information professionals should be advertising their role, not only in identifying and highlighting examples of the successful application of evidence-based research, but also in providing information needed to support the successful transfer of research into clinical practice in their own institutions.

CONCLUSIONS

Evidence-based clinical practice has the potential to deliver major improvements in patient care. At the moment, that potential is restricted by the problems of getting beneficial interventions into practice and maintaining their application across large numbers of healthcare providers. Examples of successful application into practice do exist, but they tend not to be published and are subsequently difficult to find.

Solutions to these implementation barriers are being investigated and healthcare librarians and informational professionals have an opportunity to extend their role in the evidence-based practice cycle, not only identifying beneficial healthcare interventions, but also evidence-based methods to assist in the successful implementation of these interventions into clinical practice.

There is a long way to go in improving patient care, but healthcare librarians and information professionals have an important role to play in making a difference.

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