TITLE
Exploring the impact of the information professional on evidence based practice

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ABSTRACT

Introduction: Health librarians and health information specialists play a key role in evidence based practice. This can include training health professionals to undertake literature searches or critical appraisal or being part of teams of subject specialists conducting systematic reviews. Increasingly health librarians are being encouraged to evaluate the impact of their services and demonstrate the value of the services they provide.

Methods: Presentation of a portfolio of evidence based projects undertaken by one health information specialist, in collaboration with a range of clinicians or health service researchers. The projects include systematic reviews in health and social care that have contributed to the development of national guidelines, systematic reviews and evaluation projects which provide evidence of the impact of health libraries and projects that demonstrate the need for expert searchers within the field of evidence based practice.

Conclusions: The projects demonstrate how information professionals provide expertise and can enhance their role in evidence based practice. Evidence is synthesised on the best ways of doing this and the impact of the health information specialist on evidence base practice is critiqued. Viewed as a whole the portfolio demonstrates the variety of team roles health librarians can play and the positive impact made.
Introduction
With its emphasis on ‘finding evidence’, Evidence Based Practice (EBP) has offered information professionals a wide range of opportunities for using and promoting their skills and expertise.

The five steps of the evidence based process\textsuperscript{1,2} include:

1. Defining the question (recognising there is a need for evidence)
2. Searching the evidence (to answer the question)
3. Critically appraising the evidence (evaluating evidence for its relevance and validity)
4. Integrating the evidence (applying the evidence to practice)
5. Evaluation of the process
The framework will be described in more detail at the ICML conference and shows that HIPs play four roles within EBP, including:

- A supportive role using traditional skills and expertise to train clinicians to find evidence for practice, to find evidence on behalf of clinicians to facilitate their EBP or to provide expert searching and guidance in relation to systematic reviews (capacity builder and evidence facilitator roles)
- A supportive role using the enhanced skills to teach critical appraisal (perhaps as part of collaborative programmes) or to critically appraise search results or the research literature to support health professionals in their EBP (capacity builder, evidence filterer and critical appraiser roles)
- An active role using enhanced skills of critical appraisal and research in the library or health information domain; for example to conduct systematic reviews or engage in Evidence Based Library and Information Practice (critical appraiser, researcher and systematic reviewer and disseminator roles)
- An active role using enhanced skills outside the library and information domain; for example taking a more substantive role in systematic reviews of health or social care interventions (informationist, systematic reviewer, disseminator).

In practice, it is believed that the majority of HIPs currently operate in a supportive manner as capacity builders or evidence facilitators to help clinicians find and use evidence in their own practice. The active role within library and information practice is increasing as more information professionals seek to ensure that their practice is evidence based.

The next section of this paper highlights a number of projects where the author as a HIP acts as researcher and systematic reviewer in order to provide evidence about the effectiveness and impact of training within EBP, ie playing an active evidence based role within the library and information professional domain. The active role of systematic reviewer outside the information domain is not described in the literature, but has been undertaken by the author on several occasions within systematic reviews of health and social care. The framework demonstrates that HIPs have the potential to play wide ranging and key roles throughout all stages of the evidence based process using a variety of generic and transferable skills. As librarians in other sectors also possess similar ranges of skills, they too have the potential to take on a wider range of roles making use of these skills.

Measuring the effectiveness and impact of the roles played by HIPs within EBP
As noted above HIPs play a number of roles (or deliver varied interventions) within EBP. Examining the roles played by HIPs does not tell us whether they perform these roles effectively or whether the work they do makes a difference (or impact). HIPs both in hospital and academic library settings in the UK are strongly encouraged to evaluate the impact of their services. In order to do this they need to demonstrate effectiveness, measure the outcomes of their practice and examine how this affects the populations they serve. However evaluation can be complex and needs to take into account contextual and practical issues. Furthermore the terminology and definitions used throughout the literature can be at worst contradictory and at best interchangeable.
For the purposes of this paper, the following definitions have been adopted.

<table>
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<th>Term</th>
<th>Definition</th>
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<tr>
<td>Effectiveness</td>
<td>a focus on what works and what works best[^18]</td>
</tr>
<tr>
<td>Impact</td>
<td>sums up a range of dimensions concerning effectiveness of services, encompassing the effects of actions and services on those served including users, organisations and wider stakeholders [^{19,p1} ]</td>
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<tr>
<td>Impact measures</td>
<td>concerned with whether users do anything differently as a result of retrieving information or information provided [^{20} ]</td>
</tr>
<tr>
<td>Evaluation</td>
<td>a study with a distinctive purpose which can focus on effectiveness and whether something meets its objectives [^{21,p202} ]</td>
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Given the different roles played and the different settings that HIPs work in within EBP, one study or even one systematic review is unlikely to establish their overall effectiveness, impact or contribution. A collection of studies may go some way towards establishing the effectiveness of various aspects of services, but it is difficult to represent or demonstrate the overall contribution that HIPs make or may potentially make to EBP. To illustrate this complexity, four studies are described below which evaluate different aspects of training performed by HIPs in the context of EBP.

**EMPIRIC Project[^22,^23]**
Using descriptive survey methodology this study (EMPIRIC) aimed to compare the effectiveness and costs of providing information skills training and mediated searches by hospital libraries. It also explored the views of library and health professionals regarding effectiveness and use of these approaches (or impact). HIPs acted as *capacity builders*, teaching clinicians to find evidence for practice and *evidence facilitators*, providing evidence via searches to clinicians. Using satisfaction and use of skills as outcome measures, both mediated searches and information skills training were demonstrated to be effective. Providing information skills training appears not to reduce the demand for mediated searches. Cost effectiveness depends on whether costs are viewed from a library or hospital point of view. Qualitative data supported these conclusions with all groups believing that both training and mediated searching were effective. Evidence from both mediated and clinicians’ own searches is being used for continuing professional development, research, direct patient care and EBP. The majority of health professionals are satisfied with the results from their own literature searches and use their skills frequently. Health professionals believe training is successful in improving knowledge of the available resources and confidence in searching.

**Developing and evaluating an online tutorial[^24]**
This was a quasi experimental study which aimed to develop and evaluate an online tutorial to teach literature searching skills to a cohort of Masters level students undertaking an EBP course in a university setting. Skills were tested before the session and immediately post session and over the longer term by means of a search assessed by a skills checklist; 85% of students improved their overall searching skills. The tutorial was
successfully developed and integrated into the curriculum and was well received by students who developed core generic searching skills and demonstrated short and longer term improvement. The HIPs in this study played the role of *capacity builder* and using *enhanced skills* demonstrated collaborative working with other professionals.

**Systematic review of information skills training** 25

This systematic review aimed to determine whether information skills training undertaken in a health setting improved search skills. It also sought to identify effective methods of training and establish whether training affects patient care. The systematic review drew together evidence from a wide range of library studies to conclude that there was limited evidence to show that training improves skills (based on 3 studies), insufficient evidence to determine the most effective methods of training (lack of comparative studies or incomplete description of training) and limited evidence (two studies) to demonstrate that training affects patient care. The review also concluded that there was a need for objective methods of evaluation in future studies to improve the quality of the evidence regarding training. Within the studies described by the review HIPs acted as *capacity builders*, teaching clinicians to find evidence for practice.

**Evaluating information skills training** 26

This systematic review focused on the evaluation of information skills training and arose from the conclusions of the review described above 25 with the aim of helping librarians to evaluate their training. The review concluded that there is little evidence that the measures that have been used in previous studies are valid or reliable (ways of assuring the integrity of the measures). It also highlighted a lack of reliable and valid “off the shelf” instruments that librarians can use for future evaluations and there is scope for further development of instruments to measure the effectiveness and impact of training. Within the studies described by the review HIPs acted as *capacity builders*, teaching clinicians to find evidence for practice.

Each of these studies provides some evidence of effectiveness or impact, but not the whole picture relating to the HIP contribution. For example one study is in a hospital library setting and provides evidence relating to practising clinicians 22 23, whereas a second provides evidence about a particular training method on masters level students in a university setting 24. Furthermore the contribution that information professionals make to EBP may not have immediate, tangible or direct outcomes, and as was demonstrated by another, evaluation of training is complex and at present valid and reliable methods have not been established 25 26.

The results of the studies together demonstrate that the outcomes to which HIPs contribute are:

- Improved knowledge of searching, increased satisfaction with search results, improved skills, costs of training affected by range of variables (short term) 22 23 25 26
- Implementation of evidence from searches into individual patient care and continuing professional development, improved search skills with practice over time, increased mediated searches (medium term) 22-24
- Implementation of evidence from searches to improve patient care, evidence based local guidelines, teaching and education (long term) 23 27
However these outcomes are affected by a range of external factors including the library setting, teaching methods, subjects taught, use of skills, access to resources, time to search, culture of the organisation and the costs of training provision. These factors have been examined in a number of studies within this portfolio, but questions regarding the extent to which these factors impact on the highlighted outcomes still remain. Furthermore, these issues are unlikely to be resolved until reliable means of measurement have been established.

These outcomes (or impacts) are represented graphically in figure 2 below, a logic model which

“Establishes the relationship between an intervention and desired results by describing the theory and assumptions underlying the provision of services and identifies the activities, resources, outcome and impact measures associated with an intervention” 28, p50.

and provides a means of illustrating the complex relationships between an activity and its intended outcomes (or impacts). In this case the logic model is populated by evidence from the studies described above to demonstrate the evidence relating to the effectiveness and impact of the HIP role in training clinicians to find evidence for practice.

**Conclusion**

This paper outlines different roles that HIPs play within the evidence based practice and suggests that the role of the HIP within EBP continues to develop and evolve. At present the majority of HIPs continue to work in traditional supportive roles, with a number of projects in the literature demonstrating how the enhanced skills possessed by HIPs can be utilised within EBP. What is not demonstrated is the extent to which HIPs are involved in any of these roles. The literature documents individual projects or instances where individuals or groups of individuals are using these skills but does not necessarily provide a comprehensive or necessarily balanced view of the extent to which these roles are actually being performed in practice.

It is important that HIPs evaluate the effectiveness and impact of the roles that they play and the work they undertake. Four studies are presented that evaluate the HIP role as capacity builder in training health professionals to find evidence for practice. When the results of these studies are presented graphically in the form of a logic model (figure 2), they demonstrate the potential effectiveness and impact of the HIP contribution. This model could be adapted to demonstrate the impact made by information professionals in whatever roles they play.
References


