



## ***Evidence to support strategic decision making for health care information services: the Effective Methods of Providing Information for patient Care (EMPIRIC) project***

**Alison Brettle, Claire Hulme, Paula Ormandy**

Health Care Practice R&D Unit, Institute of Health and Social Care Research, University of Salford, UK

### **Background and Introduction**

The North West Health Care Libraries Unit (HCLU) leads, co-ordinates and develops NHS library services throughout the North West UK. HCLU is responsible for the strategic direction of library services across the North West and researches and reviews mechanisms of library service delivery to ensure that best value library services are provided at the same time as local ownership is maintained. As a strong supporter of evidence based information practice and believing the nature and extent of library services across North West health libraries to be varied, HCLU funded a project to investigate the effectiveness and cost effectiveness of different approaches to providing information for patient care, namely information skills training and mediated searches. The aim of this was to provide HCLU with evidence based information on which to base strategic decision making.

Six key research questions directed the study. 1. Does information skills training improve the ability of health professionals' to search for evidence? 2. When and why do health professionals rely on librarians to search for evidence? Is this appropriate, acceptable and effective? 3. Are dedicated library trainers an effective method of enabling health professionals to understand and apply their searching skills to locate information? 4. What factors impact on health professionals' ability to locate information for practice? 5. Which is more cost effective – information skills training or librarian mediated searching? 6. How can libraries best meet the needs of health professionals?

### **Methods**

The study was designed in three distinct phases. Each phase informed the next and data gathered was analysed before moving onto the next phase. Ethical approval and individual Trust R&D approval was obtained.

*Phase one* aimed to contextualise the research and involved administering a baseline questionnaire to all the health care libraries throughout the North-West region to provide an overview of library services. A comprehensive literature review was undertaken to examine the effectiveness of information skills training and librarian mediated searches. *Phase two* involved a questionnaire survey to provide details on the nature of searching and training and gain the perspectives of key participants (library staff and dedicated trainers and health professionals). Questionnaires were sent out to a total of 115 library staff, 15 dedicated trainers and 780 health professionals across 26 sites. *Phase three* involved presenting and feeding back the findings to expert workshops comprising of librarians and health professionals. A combination of both qualitative and

quantitative methods was applied within the three phases. Cost analysis was undertaken on the data obtained during Phase two. Data was analysed using SPSS and thematic analysis.

## **Results**

In *Phase one* the baseline questionnaire provided a profile of 102 Health Care libraries in the North West. The literature review highlighted a range of published studies of varying quality and relevance and a number of useful and applicable grey literature reports. The literature provides evidence of satisfaction with training and mediated search services and some evidence that information skills training and dedicated trainers improve confidence and knowledge of resources. There is limited evidence relating to improvement in search skills. There is little information on the cost effectiveness of either information skills training or mediated search services.

In *Phase two* response rates to the questionnaires were library staff – 62%, dedicated trainers – 54% and health professionals 31.5%. Comparison with the baseline data survey showed that the sample was representative. The main findings are presented below.

### ***Key Findings 1: Mediated searches, who, how and why.***

- Over half of (54%) respondents use mediated search services
- Those health professionals who do not use mediated search services either prefer doing searches themselves or they are unaware that the service existed
- The majority of libraries carry out searches for all staff or library users. Some libraries do not provide mediated searches for students
- A third of mediated searches are carried out with the health professional and librarian working together
- 62% of searches are undertaken by library staff with library and information qualifications at a masters, degree or chartered level
- The average amount of time spent on mediated searching is 10 hours per month (however this represents a relatively low percentage of librarians' working week)
- Over half of library staff are not prepared to spend more than two hours carrying out a mediated search, however the remaining respondents are prepared to spend five hours or more carrying out searches

### ***Key Findings 2: Effectiveness of mediated searches***

- The majority of library staff are satisfied with the searches they provide. However, almost half (43%) believe they often locate inappropriate information
- Over 80% of health professionals were satisfied or very satisfied with all aspects of mediated searches

- Successful mediated searches depend on clear search questions or the librarian knowing and understanding what the health professional wants (it is unclear whose responsibility this is)
- Mediated searches save professionals' time, improve knowledge or evidence based practice and in turn improve patient care
- Health professionals provide clear evidence that information from mediated searches have positive or highly positive effects on their continuing professional development, research and patient care

### ***Key Findings 3: Nature of information skills training provision***

- The majority of health professionals received information skills training via small group sessions, however a significant proportion is carried out on a one to one basis.
- Most information skills training is carried out by staff with a professional library and information qualification, however a significant amount (within libraries) is carried out by unqualified staff
- Dedicated trainers spend more time on training provision than library staff (as would be expected). The average amount of time spent on training provision for library staff is just over 3 hours per week

### ***Key Findings 4: Nature of searching following information skills training***

- The majority of health professionals use their information skills frequently (on a weekly or monthly basis) post training
- The most frequently used resource for finding information is electronic databases, however the use of Google or other search engines is almost as high
- Time is the biggest constraint to health professionals using information skills
- One in five health professionals cite poor access to computers/internet as a factor inhibiting searching
- Information is clearly being used to change, influence or inform patient care (both directly and indirectly)
- Barriers to implementing or applying evidence post training include time constraints, the cost of change, restricted resources, a culture resistant to change, lack of authority to implement change, negative attitudes and a lack of confidence

### ***Key Findings 5: Effectiveness of information skills training***

- Training is perceived as most effective in improving knowledge of resources and confidence. It is seen as less successful in improving search skills and reducing the amount of time taken to find information
- Although the majority of library staff, trainers and health professionals believe confidence improves post training a third of health professionals reported their confidence prevented them from using their information skills
- The majority of health professionals are satisfied with the training they receive and use their skills frequently (on a weekly or monthly basis)

- One in three health professionals believed that the training was not successful in helping them formulate search questions, improving their search skills or reducing the time taken to find information
- Almost two thirds health professionals report being satisfied with the information they receive from their own searches
- One in five health professionals indicated their skills remained poor despite training
- There is a split between the number of health professionals who have difficulties in finding information and those who don't – this doesn't appear to depend on whether they have received training or not
- Information gained from searches has a positive or highly positive effect on patient care, research and professional development
- Analysis to determine whether dedicated trainers are more or less effective than other library staff at providing information skills training was inconclusive

#### ***Key Findings 6: Cost analysis – information skills training***

- Cost of different types of training to libraries is estimated at: one to one pre arranged £19.92 per session, one to one ad hoc £13.47 per session, small group training £32.33 per session
- Although one to one ad hoc training is estimated as the least costly per session, it should be noted that health professionals typically attend one to one ad hoc sessions more frequently (mean number of sessions 2.67) than other types of training, thus increasing the overall cost of ad hoc training
- Whilst the cost to the library per session of small group training is the most costly (the time spent on this type of session is longer and sessions are typically delivered by librarians of grade A&C6) the cost *per person per session* is lower. Thus, the cost per person per session of small group training is less costly than one to one pre arranged training
- The total cost to the Trust of small group training has not been calculated as the cost would change depending on group composition

#### ***Key Findings 7: Cost Analysis – mediated searching***

- The mean cost of a mediated search carried out by a librarian without the health professional present (cost of library staff only) is £14.44; this rises to £38.23 if the health professional is present
- Over one third of mediated searches are carried out with the health professional present; this gives an overall mean cost of a mediated search of £23.39
- The mean cost of a search carried out by a health professional is £28.18, but this figure is arbitrary; the true cost will depend upon the composition (in terms of professions and pay scales) of those undertaking the searches
- There is no statistically significant difference in the time taken by a librarian and health professional in carrying out a search; however, typically health professionals are not prepared/able to spend more

than two hours on a search. Thus this finding may be due to time constraints rather than equivalent skills

- Of the 103 respondents who had undergone information skills training within their Trust, 64.07% (n=66) also requested mediated searches from the library. This suggests that health professionals do not consider the two options to be mutually exclusive, nor does it suggest it is possible to favour one service over another on the basis of cost effectiveness

### **Key Findings 8: Cost analysis; searching practice**

- 83.3% of doctors/consultants and 65.9% of nurses who have had information skills training undertake searches regularly (every week/once a month)
- Around one in four nurses and one in three respondents in the grouping professions allied to health use the skills infrequently (once every six months or once a year)
- 75% of doctors/consultants and 68.3% of nurses profess to be either satisfied or very satisfied with the results of their searches but only 50% of professions allied to health gave this answer. This suggests a correlation between how often skills are used and overall satisfaction with the results of the search – but not which way the causality lies

In *phase three* all workshop participants acknowledged and confirmed the findings of the study. A number of issues were questioned and are highlighted in the project report.

### **Conclusions**

The quantitative and qualitative data obtained as part of the EMPIRIC project provide a comprehensive picture of the nature of health library service provision and how these services are perceived from both the library and the user point of view throughout the North West.

The evidence showed that for the majority of those trained, information skills training is effective in that it improves confidence and knowledge of resources. Although there is less evidence relating to improvement in skills, the majority of users are satisfied with the results of their searches and continue to search relatively frequently. There remains a significant number (about one third) however who are less confident, do not perceive their skills to have improved and struggle to find information despite receiving training.

In terms of mediated searches health professionals rely on librarians to search for evidence for information for professional development, research and patient care and because it saves them time. Mediated search services are appropriate, acceptable and effective. Use of mediated search services did not decrease following training as a significant number of staff continue to use mediated searches post training.

The evidence relating to dedicated trainers was shown to be unreliable due to problems defining the term and the inability of health professionals to reliably indicate whether they had been trained by dedicated trainers or conventional library staff. There was satisfaction and evidence of the effectiveness of training

across the board, but there is insufficient evidence to establish whether dedicated trainers are any more or less effective than conventional information skills training.

Users continue to search post training and some prefer to undertake their own searches rather than request mediated searches. However training, practice, enjoyment, time and access to computers affect health professionals' ability to locate information for practice.

Cost analysis is complex and the most cost effective method of providing information depends on whether costs are being examined from a library point of view or cost to the Trust as a whole. From a library point of view small group training is the most cost effective method of providing information for patient care. Ad hoc one to one sessions are less cost effective than prearranged sessions as users return for a number of sessions. Mediated searches are more expensive than one ad hoc training session but cheaper than one prearranged one to one training session. Costs to the Trust vary depending on who is being trained. Providing training above mediated searching does not decrease library costs over the long term as users continue to request mediated searches despite being trained.

### **Recommendations**

Libraries should continue to provide both mediated searches and information skills training for health professionals, whose needs vary considerably. The balance of service provision is likely to be a matter for individual libraries, depending on their circumstances

Health professionals struggle to find time to visit the library or attend training sessions, merely providing access to services or computers is not sufficient. Libraries need to find ways to overcome this problem.

Libraries need to know their users and provide services for different levels of users. It may be necessary to target particular services to particular groups of users.

It is essential that library staff are experienced and highly trained so that they can effectively teach health professionals. Dedicated or specialist roles whose experience is developed over time may help to achieve this

One off sessions of information skills training or one-one searching (particularly ad hoc ones) are not sufficient to sustain or develop the skills imparted. It is recommended that library staff follow up training sessions to identify problems or provide a sustained training program over-time.

Libraries need to be more proactive in getting to know their customers and providing information about their services to their users. Libraries taking services to the user was a theme echoed by both the dedicated trainers and the health professionals.

A standardised system, collecting details of users, mediated searches; one to one training and group training across the region should be established. This would be valuable at an individual library level and on a regional level.

The evidence provided in this study can be used by HCLU in a number of ways. This includes strategic planning, funding decisions, special projects and providing advice and guidance to libraries. Furthermore, there is a key role for HCLU in implementing the study recommendations. HCLU could provide valuable assistance by establishing a region wide system of collecting standardized data, offering training to libraries, help with marketing and funding further research and development projects.

**The information in this paper was taken from the executive summary of the EMPIRIC project. Full project reports can be downloaded from <http://www.fhsc.salford.ac.uk/hcprdu/>**