Evaluation of the Clinical Librarian Project:
University Hospitals of Leicester NHS Trust

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Executive Summary

Introduction

The Clinical Librarian Project - University Hospitals of Leicester NHS Trust ("the Clinical Librarian Project") started in August 2000 following a successful scoping study and pilot. Initially involving one post at Leicester General Hospital it later included Glenfield Hospital (February 2001) and Leicester Royal Infirmary (August 2002). Only the first two posts are included in this evaluation.

Project Description

The project aim was "**to develop a clinical librarian service for University Hospitals of Leicester NHS Trust to support clinical governance and provide evidence-based information in the practice of patient care".** Project objectives addressed "Evidence Based Practice and Patient Care", "Information", "Continuing Professional Development", "Promotion of the Clinical Librarian Service" and "Current Awareness.

Project Evaluation

The Evaluation was conducted by the School of Health and Related Research at the University of Sheffield. The Evaluation included a literature review, interviews, questionnaires, observation and diary-keeping.

Outcomes

Respondents were generally aware of all the services that the clinical librarian project provides. The literature search service had the highest market penetration of these services. Direct patient management was the most common specified use for information although multiple other purposes were represented in responses. Evidence for writing guidelines and protocols was volunteered as another major use for information

provided. Numerous specific instances were given the impact of information provided (Box 1).

Information is provided in a timely manner and most respondents agreed that the Clinical Librarian Service has improved their access to information and met their information needs. Many staff remarked upon the helpfulness of the staff.

Interview respondents emphasised the time-saving nature of the role and the added value it provided above what they might have done themselves. Frequent instances were given where information given had impacted upon clinical practice.

Between 20 and 30 literature search requests (average 25.88) can typically be handled each month by a clinical librarian.

Involvement of the clinical librarian by the clinical team is essential to the success of the role. There is some indication that the clinical librarian role might produce cost savings. However it is more likely that the impact of the post is seen in improved effectiveness, particularly in the efficiency and thoroughness of the literature searching process.

There is still potential for ongoing marketing of the service. In particular the service needs to be marketed to funders, rather than just potential users of the service.

Conclusion

The Clinical Librarian Project can number significant achievements including contributions to clinical guideline production, individual patient care, continuing professional development and clinical governance, together with risk management.

Recommendations

- **Funding should be continued for the Clinical Librarian service at Leicester General Hospital**.
- The Project Team should investigate ways to **maximise the strategic impact of the post** within the Trust.
- Costs and benefits of **regular rotation of the clinical librarian post** should be evaluated.
- The comparative benefits between **the clinical librarian as technical support** (i.e. performing literature searches) **and as facilitator and enabler** (i.e. local trainer and change agent) should be investigated.
- The posts at **Glenfield Hospital and Leicester Royal Infirmary should be subject to ongoing evaluation**.
- Mechanisms should be employed to ensure **rigorous ongoing internal evaluation**.
- **Project staff should regularly collect data on resource utilisation in connection with the project** (i.e. staff time spent searching and associated costs).
- The Project staff should regularly **monitor other models of clinical librarianship** and experiment with the effectiveness of different approaches.

Abbreviations

A&E	- Accident & Emergency
ACP	- American College of Physicians
AHPs	- Allied Health Professionals (arts, music and drama therapists, chiropodists & podiatrists, clinical scientists, dietitians, medical laboratory technicians (MLTs), occupational therapists, orthoptists, prosthetists & orthotists, paramedics, physiotherapists, radiographers and speech & language therapists).
BMJ	- British Medical Journal
CATs	- Critically Appraised Topics
CIT	- Critical Incident Technique
CL	- Clinical Librarian(ship)
CML	- Clinical Medical Librarian
CSL	- Clinical Support Librarian
EAHIL	- European Association of Health Information & Libraries
EMU	- Emergency Medical Unit
Gynae	- Gynaecology
ILDS	- Information and Libraries Development Service, Trent
IM&T	- Information Management & Technology
IT	– Information Technology
ITU	- Intensive Therapy Unit
LGH	- Leicester General Hospital
MADEL	– Medical and Dental Educational Levy
MAUs	- Medical Admission Units
MRSA	- Methicillin Resistant Staphylococcus Aureus
NHS	– National Health Service
NICE	- National Institute for Clinical Excellence
NICU	- Neonatal Intensive Care Unit
Obs	- Obstetrics
PID	- Project Initiation Document
PRINCE-2	- Projects In A Controlled Environment (project management technique)
R&D	- Research and Development
RCOG	- Royal College of Obstetrics and Gynaecology
RCTs	- Randomised Controlled Trials
REALISE	- Research Evaluation Audit of Library and Information Services for Evidence based medicine
ScHARR	– School of Health and Related Research, University of Sheffield
SDI	- Selective Dissemination of Information
UHL	- University Hospitals of Leicester
UK	– United Kingdom
USA	- United States of America

1. The Project

1.1 Background

The Clinical Librarian Project - University Hospitals of Leicester NHS Trust ("the Clinical Librarian Project") grew from awareness among library staff of the need to promote the existing literature search service offered by the library and to support implementation of evidence into practice. It was recognised that clinical governance places an imperative on Trusts to ensure that evidence based practice not only be supported but also that it be applied routinely on an everyday basis[1]. Barriers to this, as viewed from the perspective of the individual clinician, include information overload[2], shortage of time, lack of knowledge of relevant databases and limited access to IT facilities in a clinical setting[3]

Provision of a clinical librarian service was identified as a possible solution to these issues. Clinical librarians had previously been tried in the UK in the 1980s but with inconclusive results[4]. However a succession of published studies from the United States in the 1970's and 1980's have served to establish the potential for such a role. In particular a model that involves participation in ward rounds, noting clinical questions as they arise, and responding to the questions by identifying relevant research studies has grown to prominence. With the advent of evidence based practice, placing a greater emphasis on use of the published literature for direct patient care, came a reawakening of interest in the clinical librarian model within the UK. An experiment with David Sackett's own clinical teams at John Radcliffe Hospital, Oxford provided a stimulus for further investigation of the role that clinical librarians might play within an NHS setting[5].

1.2 Scoping study

In June 1998, against this local and national backdrop, the librarians at Leicester General Hospital commissioned a scoping study to try to gauge

the level of clinician interest in the concept of a clinical librarian. The study, conducted by a postgraduate student from Loughborough University, interviewed hospital consultants via face to face interviews using a structured questionnaire and supplemented this using observational techniques[6]. Specialities surveyed included General Surgery, Anaesthetics and Obstetrics and Gynaecology and involved some thirty hospital consultants.

The results revealed the potential for a clinical librarian role. Clinicians recognised that such a role might contribute to clinical decision making and, consequently, patient care. In particular, librarian-mediated literature searching was seen as a preferable to end-user searching. However concern was expressed about the ability of librarians to select the most clinically relevant information for a given request.

An interesting finding from the scoping study was that, in the view of respondents, few questions for evidence based medicine emerge at the bedside. Respondents felt that although it **is** necessary for the clinical librarian to attend complete ward rounds as part of the process of integration and, as not all ward staff are invited to audit/clinical meetings, full integration to a multiprofessional team requires ward based contact this need not necessarily be sustained once integration has been achieved. While they acknowledged that initial participation in ward rounds helps the clinical librarian negotiate the learning curve in focused interview techniques and acquiring detailed clinical query or medical knowledge of specialties to be covered, their overall conclusion was that it would be neither cost-effective nor useful for the Clinical Librarian to attend for the complete duration of ward rounds. In contrast, staff involved in delivering the clinical librarian service believed that it would be useful to attend ward rounds. They also held the basic premise that questions do emerge in a clinical setting, a belief that they were able to explore during the course of this project.

Notwithstanding the above tension, the scoping study concluded that optimal use of a clinical librarian service would be in the clinical audit/clinical discussion area and not the outpatient or ward round setting. The focus would thus be on the atypical diagnosis rather than the more common. A clinical librarian would have to negotiate a considerable learning curve before being able to anticipate the unexpressed information needs of the healthcare professionals in a clinical setting. This would likely accompany full integration of a clinical librarian into the multidisciplinary team

The scoping study recommended that support for the clinical librarian post be secured at the highest strategic level within the organisation. It identified a need to clarify expectations and to move to a greater understanding of the role by both clinicians and information professionals. It suggested that the clinical librarian service be targeted at clinical meeting/discussions. It also proposed that email be investigated as a potential means of improving delivery of the information provided[7].

1.3 Pilot Project

In the light of very positive feedback the Leicester General Hospital library staff decided to embark upon a six-month pilot project involving Claire Honeybourne and Linda Ward. This pilot ran between October 1999 and March 2000 and was evaluated internally[8]. Two Local Implementation Strategy-funded half-time posts were assigned to two departments each (Nephrology & Stroke; Neonatal Intensive Care Unit & Obstetrics and Gynaecology) to attend ward rounds and audit meetings. The results of questionnaires (response rate 19%) and interviews were used to evaluate the service. 73% of respondents felt that the information provided by the clinical librarians had an impact on patient care. Over six months an average of 23 searches per month were conducted by the clinical librarians. The pilot demonstrated the value of a clinical librarian service

resulting in a decision to extend the service to a wider audience across the three sites of the newly merged University Hospitals of Leicester NHS Trust.[9]

1.4 The Clinical Librarian Project

Towards the end of the period of the pilot project funding was secured to continue and develop the service. A first post (Linda Ward) was secured for Leicester General Hospital (part funded by the Trust and the remainder by the Local Implementation Strategy) for a three year period between August 2000 and July 2003. A second post was then obtained for Glenfield Hospital, with a similar pattern of funding (but part MADEL-funded), to run for three years from February 2001. This second post ran for one year (Jacqueline Verschuere) before the postholder was promoted within the Glenfield library service and, following a period of vacancy, the current postholder (Linda Harrison) was appointed in May 2002. Finally a third post, for Leicester Royal Infirmary, began (with part funding from Blended Services) with the appointment of Sarah Sutton in August 2002.

1.4.1 Aims & Objectives

The project aim was:

> **To develop a clinical librarian service for University Hospitals of Leicester NHS Trust to support clinical governance and provide evidence-based information in the practice of patient care.**

The project objectives were grouped around several thematic areas:

EVIDENCE BASED PRACTICE AND PATIENT CARE
> 1. To ensure that questions arising in the clinical setting are answered on the basis of evidence from the published literature.
> 2. To provide evidence based literature searches for patient care queries highlighting the level of evidence found.

3. To have an impact on patient care e.g. changes in practice/treatment/therapy due to information provided by Clinical Librarians, quality care as a result of informed decision making.

4. To prompt clinicians to seek the evidence to support patient care

5. To support future care of patients by providing the evidence for new guidelines

INFORMATION

6. To identify and meet clinical information needs

7. To overcome barriers to information use e.g. time constraints, lack of knowledge re: databases and searching, limited access to IT facilities in the clinical setting.

8. To reduce information overload by providing the most clinically relevant material.

9. To reduce the amount of time clinicians spend away from patients searching for research evidence to support practice.

CONTINUING PROFESSIONAL DEVELOPMENT

10. To contribute to the continuing professional development of the clinical librarians and all other health (i.e. clinical) staff involved in the project, e.g. literature retrieval, increased knowledge of resources, critical appraisal etcetera.

PROMOTION

11. To promote the Clinical Librarian service and its role within the clinical environment to health service staff

12. To increase awareness and usage of evidence based practice, resources available, training opportunities and library services in general.

In addition two subsidiary objectives were identified around current awareness:

CURRENT AWARENESS

– To provide clinicians with information on current awareness/hot topics.

- To provide the Trust with awareness of current issues (risk management) and research gaps.

It was agreed to make these subsidiary objectives incidental to the evaluation itself. However where achievements against other objectives impact upon these they will be mentioned as a useful by-product from the project itself.

2. The Literature Review

2.1 Aims of the review

This literature review aims to identify previous projects and research that may relate to the Clinical Librarian project at the University Hospitals of Leicester NHS Trust. It is hoped that this will assist the evaluation of the project by describing appropriate evaluation methods and highlighting any factors necessary to consider during this process.

This review is by no means comprehensive and is relatively brief in its findings, its purpose being as an evaluation tool rather than an extensive analysis.

2.2 Methods

Searches were conducted using 17 separate search strategies combining terms relating to the project, such as clinical librarian, impact of information on patient care, risk management, clinical question etceteras.

The sole limitation placed on the retrieval of results was to restrict results to articles published in English. It was not necessary to place a time restriction on the publication of articles, as clinical librarianship is a distinct concept with a discrete and identifiable body of literature.

The search strategies briefly described above retrieved a combined total of 590 results (some being duplicate results due to articles containing multiple search terms), of which 145 were initially marked as relevant and on further inspection 50 of these were selected.

In addition to this search, Catherine Beverley and Alison Winning at ScHARR were consulted as they had recently conducted a systematic review of Clinical Librarianship.

2.3 Review articles

The articles retrieved fall into three areas; Clinical Librarian projects in the UK, Clinical Librarian projects abroad, and other research relating to Clinical Librarian projects.

2.3.1 Clinical Librarian Projects in the UK

The articles that described the findings of Clinical Librarian projects in the UK mirrored some of the experiences of the Leicester project team.

Perhaps most relevant is the Forest Healthcare Clinical Support Librarian (CSL) project which began in November 1999. An interim report was published in 2000, describing the first six months of the project. Of relevance here is the initiation of the project, which involved two trusts: Barnet Community NHS Trust and Forest Healthcare Trust along with the support of the Library and Development Unit. The implementation sought to build on existing work so a review of experience at the Cairns Library in Oxford was undertaken to inform their decisions. One of these decisions, which differs from the Leicester project, was to label the post "Clinical Support Librarian" rather than "Clinical Librarian". The project team do not elaborate on their reasons for this decision, other than to say that they believed that this was the most fitting title to describe the role.

The role of the Clinical Support Librarian, described here, reflects the roles of the Clinical Librarians involved in the Leicester project, in that '*The CSL is having to respond to clinicians' needs and is working 'on demand''* and is spending a considerable amount of time in '*ad hoc work with clinicians'*.[10] There was also a focus on information searching skills training sessions and workshops that the CSL has taken over from the Trust's existing library service. This is not a specific focus of the Leicester

project, but the Clinical Librarians are involved in the provision of such training as part of the UHL library service.

The article highlights the importance of the publicity and marketing of the service, a feature of the Leicester Clinical Librarian Project has heavily focused. Methods are described, such as meetings with key managers, distribution of posters advertising the service, attending and speaking at various groups, such as journal clubs etc., reflecting those methods used in Leicester.

The paper discusses feedback to the service so far, and generally this has been very positive. As with the Clinical Librarian Project, evaluation forms were sent out after presenting literature search results in response to a query. One of the most significant findings from this was that *'clinicians are increasingly using the service because a colleague has recommended it to them'*.[1] This "word of mouth culture" has also been recognised by the Leicester Clinical Librarian Project and they have used this to their advantage.

This paper also highlights the importance of forming links with stakeholders and talks of *'valuable professional liaison'* [1] with among others the project at Leicester General Hospital.

2.3.2   Clinical Librarian Projects Overseas

A significant amount of the articles retrieved, described CL projects from outside of the UK. One such project was at the Veterans Administration Medical Center in Hampton, USA, where a Clinical Medical Librarian (CML) program was added to the "morning report" in 1983. The morning report is *'a daily one-hour conference attended by the chief of the medical service, the chief medical resident, all ward residents, and the interns on call the preceding evening'*.[11] Morning report was to be a teaching tool for

the residents and the CML was to assist this process by providing rapid and complete access to relevant reference material.

The decision to include the CML at morning report was based on the realisation that many complicated questions were generated during these discussions. Hearing such questions in person, as they were generated, allowed the CML to assess each question and identify the information required to answer it. The problem of library staff searching the same topic for different residents was overcome by having the CML as a central resource, and their presence at morning report was also found to encourage residents to look for evidence from the literature.

The above project was evaluated by questionnaires distributed to residents. Routine library statistics were also kept in order to measure the impact of the CML program on existing library resources. This evaluation found that all medical house staff used the service to some extent of which a majority found the service *'to be of value in making patient care decisions'*.[2]

A paper published in 1985, discusses five years of experience of a CML program at the Hospital of the Medical College of Pennsylvania. The CML program was reviewed and this paper is the first detailed report of this kind as it is based on a long term experience[12]. The results of the review are based on daily statistics the CML kept on questions asked, i.e. who asked the question, the purpose of the question and where the question was received. Additional data was acquired from a survey of members of departments carried out in 1981 (3 years after the implementation of the service).

The main findings of this review were that the majority of questions asked were patient-related and that it was the house staff that used the CML service most for this type of question. In addition to this, a high

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percentage of both faculty and house staff used the CML for teaching purposes, which *'is evidence of the perception of the program by its users as educational as well as clinical'*.[3] The review also revealed the issue of the acceptance of the CML program. The survey results indicated that the CML was felt to be well accepted by a large number of department members.

A 1998 paper describes a CML program at Vanderbilt University Medical Center, which began in 1996. This program was also evaluated. The evaluation was applied on two levels; by asking attending physicians after information had been provided to rate its relevance and usefulness, and by distributing a ten question survey to all clinicians at the end of each monthly rotation. The main findings of this evaluation were that *'clinicians routinely rate librarians' ability to function in the clinical environment, as well as the utility of the information furnished, at the highest margins'*. [13]

2.3.3 Related Research

Other articles describe research that relates to the Clinical Librarian Project at Leicester. For example, a 1997 paper summarises a research project that informs the relevance of the Clinical Librarian Service. The project, carried out in South Buckinghamshire NHS Trust, aimed to find out about nurses' use of Library and Information Services for patient care purposes, by means of a postal questionnaire[14].

Only a small proportion of those surveyed were library users. This was attributed to the difficulty nurses have in accessing libraries, therefore personal and departmental collections were used more frequently. However the importance of information was valued highly and used for numerous purposes in healthcare delivery. In regard to this, nurses disseminated this information widely, particularly to patients and their

families. These findings highlighted the need for information that is *'accurate, relevant, up-to-date and high quality'*.[5]

Some of the recommendations that followed this survey of nurses are extremely relevant to the services provided by the Clinical Librarian project in Leicester. These include having a librarian invited to and participate in relevant hospital meetings, making top hospital management aware of library developments (i.e. new services such as the Clinical Librarian), evaluating library services, and the idea of the librarian *'to build up a regular presence on the wards and to become known points of contact'*.[5]

The paper concludes with a quotation which relates to Clinical Librarian services, which is that *'in reality we are part of the health care team, here to provide the best possible service to our ultimate customers, the patients'*.[5] The article recommends that the best way to achieve is by marketing and promoting services and being proactive in order to create a level of demand which will justify their existence to funders etc. This is reflected in the aims and objectives of the Clinical Librarian Project.

3. The Evaluation

3.1   Initial Stages

The School of Health and Related Research (ScHARR) at The University of Sheffield has been commissioned by the Information and Libraries Development Service (ILDS) to conduct an evaluation of five projects running in the former Trent region, one of which is the Clinical Librarian Project - University Hospitals of Leicester NHS Trust.

3.2 The Evaluation Team

The evaluation team comprised:

Louise Falzon   Project Manager

Anthea Sutton   Research Assistant

Andrew Booth   Project Consultant

The evaluation was undertaken at two levels; macro and micro.

3.3   Macro Evaluation

The macro evaluation involves all five projects, its purpose to identify similar and divergent issues. This is achieved by applying a common framework across the five project sites. The macro evaluation aims to inform the commissioners of the strengths and weaknesses of each approach and where generalisable lessons can be applied to other initiatives. The macro report should provide evidence to trusts on how these services are contributing to their organisational strategies.

3.3.1 Action Learning

As part of the macro evaluation involving all five knowledge management projects across Trent, the Project Team from the Clinical Librarian Project have attended a series of Action Learning Set meetings running throughout the evaluation period.

Action Learning is *'a process which brings people together to find solutions to problems and, in doing so, develops both the individuals and the organization'*.[12]

The Action Learning Set meetings thus aimed to provide a learning opportunity for the five projects and the evaluation team. The Action Learning Set provided multiple benefits for both the evaluation team and the project teams. For the project teams, the meetings allowed for shared learning and problem solving which is helpful for the development of their projects and for their own professional development. For the evaluation team, the meetings acted as a communication forum offering regular access to project staff. The Project Consultant to the evaluation team (AB) facilitated the Action Learning Set meetings.

The Action Learning Set meetings were held monthly with the venues rotating around the project sites. The initial meeting provided an opportunity for introductions and to define the individual roles both in terms of the projects and the evaluation. Subsequent sessions were on topics identified by the group as issues that would be useful for them to explore. The facilitator prepared the information and group exercises on the topic, making contact with external experts where appropriate. The topics covered to date are; Information Needs, Web Design, Obtaining Funding, Evaluation, Stakeholders, and Marketing.

The group exercise part of the meeting consisted of a problem based scenario, based on the project's real experiences. The participants would then work in small groups discussing possible solutions and then feeding back to the whole group. This group work was an important aspect of the meetings. Participants were encouraged to work with others from different project sites, which allowed for a sharing of experiences and provided a valuable opportunity for additional networking.

In addition to the topic to be covered in the meeting, each site would provide a project update, and the evaluation team would report on progress. This again allowed for the information exchange so vital to evaluation.

3.4 Micro Evaluation

Each project is also being evaluated at micro level as:

> 'It is important to acknowledge the locality-specific factors that have determined both the context and configuration of each individual project and to be sensitive to these when conducting any evaluation.' [13]

The micro evaluation adapts the framework applied at macro level, by working in partnership with the individual projects to identify their specific project aims and objectives. The findings will aim to inform decisions regarding the future continuation of services and their integration into existing local information service provision. This report covers the micro evaluation of the Clinical Librarian Project.

3.4.1 Meetings with Clinical Librarian Project Team

Upon appointment of the Research Assistant initial contact was made to set up an introductory meeting. The introductory meeting with the Clinical Librarian Project team was held at the Education Centre Library, Leicester General Hospital and was attended by the Research Assistant (AS) and Claire Honeybourne, Linda Ward and Jacqueline Verschuere from the Clinical Librarian Project Team. This meeting gave an opportunity for the Project Team to update the Research Assistant on the progress of the project to date, and in turn for the Research Assistant to update the project team on the tasks she had fulfilled since her appointment. The Project Team also provided extra documentation for the project archive.

At the initial meeting the Project Team was asked a set of questions based on an existing framework for evaluation which was produced following work with comparable sites in the Northern and Yorkshire region[14]. This framework covered the topics of Project Involvement, Information Needs Analysis, Specification and Purchase, Installation, Marketing and Publicity, Project Support & Networking, Monitoring, Impact, Staff Development, and Consolidation. This gave the research assistant additional opportunity to glean information on the project and to identify locality-specific factors to be taken into account during the evaluation.

The project revealed high-level involvement with opinion leaders and stakeholders within the Trust, against an ever-changing backdrop of a Trust merger. A presentation had been made to the hospital management board and the steering group included clinical directors and clinical governance leads. The project team were very aware that there was a need to raise awareness on the widest possible scale because they recognised that information on such projects does not usually filter upwards to an executive level.

The project team had conducted an original scoping study, followed by a pilot, so did not see a pressing need to conduct a more formal information needs analysis. The scale of the service, with its personalised attachment to specific teams, provided a unique opportunity to create feedback loops and respond to individualised needs. Nevertheless the team recognised that there was a need to target those people that don't currently use the service.

The technical infrastructure on commencement of the main project was robust with access to the Internet and an efficient PC. The team were planning to investigate the potential for the use of more innovative technology and were involved in a pilot scheme to trial the PalmPilot

hand-held computer with access to resources such as ovid@hand and clinical evidence. The project also placed a strong imperative on providing full-text access to journals with a goal of providing at least one relevant full-text article in response to each enquiry. There were no special requirements for purchase of additional equipment and therefore no problems regarding installation of equipment.

The project team have used a wide variety of methods with which to publicise the project. These have included email and posters, attendance at relevant departmental meetings etcetera. The service had been promoted through a new leaflet, used when presenting the service. The personal touch was felt to be very important with one-to-one meetings having proved particularly productive. In contrast, mailshots had been tried but had elicited a particularly poor response. "Information prescription pads" are placed in all the casenote trolleys. However the team had not received many back via this route: "I tend to get phone calls with requests for info[rmation] rather than via the post".

The team's positive approach to internal marketing is mirrored in their outreach activities within their profession. In addition to a national conference which the team had organised (see below) they had presented at meetings in other regions and had contributed to electronic discussion lists. A member of the team had presented a workshop at the Health Libraries Group Conference and a presentation was scheduled for the EAHIL (European health libraries) conference in Cologne in September 2002. Additionally the team had written up their experience from the pilot in the *British Journal of Clinical Governance*.

The clinical librarian role places a heavy imperative on personal and professional development. This had been recognised by the team and they had had numerous opportunities to participate in professional development through events on critical appraisal and training the trainers.

The challenge of providing clinically relevant material, and the judgements this entails, places a potential additional burden on an already demanding skill set required to carry out this role. A summary of training needs associated with projects of this sort was included as an appendix to the Northern and Yorkshire REALISE report. In addition staff had seen the need to brief other library staff regarding the implications of the project for their own work areas. For example, the need to provide clinically relevant information places a burden on the Interlibrary Loan Service staff from whom support was needed in order to carry out the role.

3.4.2 Project Aims & Objectives

After this initial meeting the Evaluation Team studied the project documentation and compiled a list of aims and objectives, and specific methods of data collection to measure achievement against these aims and objectives. This list was then discussed with the project team during a site visit by the Research Assistant. The project team provided feedback and suggestions with the evaluation team providing clarification where needed.

3.4.3 Design of User Questionnaire

After the project aims and objectives had been agreed upon, a questionnaire was designed to measure how far these objectives have been achieved. Again this process included communication with the project team to ensure all issues of the project were explored.

The questionnaire covered levels of awareness regarding the project itself, specifically asking participants **"Were you aware that the Clinical Librarian service can provide the following information?"** This was followed by a list of types of information, as opposed to specific services, that the Clinical Librarians provided. Respondents were then asked to indicate if they had accessed any of the types of information via the

service and if so, which they had used. This indicated how much each information type had been used among the target group.

A critical incident technique (CIT) was used to assess the usefulness of services to its users. The CIT was developed by John Flanagan, during World War II.[15] The technique involves the collection of detailed reports of instances ("incidents") in which an individual did something that was especially effective or especially ineffective in achieving the purpose of an activity. The incidents must be collected, by interview or written record, from persons who personally observed the actions of the individual. To yield valid data, observers must be qualified, through training and experience, to discern whether the outcome of the action affected the achievement of the given purpose beneficially or otherwise. They also have to assess whether it was the individual's action, rather than other factors, that was in fact "critical" to the outcome. This technique is particularly valuable in assessing the impact of a literature search service where it is not possible to observe the outcome of all interactions between library service and clinicians. It was used for this purpose by the National Library of Medicine to assess the impact of the MEDLINE service on clinical decision-making.

In this context clinicians are in an optimal position to analyse the information with which they have been provided and assess whether the librarian's intervention has made a contribution to patient care. Respondents were therefore asked to indicate whether the information provided by the Clinical Librarian Service had impacted on particular aspects of their work. A standardised list of areas of possible impact was itemised and respondents asked to indicate which of these areas were applicable to their own use of the service. They were asked whether the service used had been useful to them, and to describe a specific instance where the intervention of the clinical librarian had been particularly influential.

The final section of the questionnaire focused on the timeliness and appropriateness of the service to the respondents' information needs. It therefore included such questions as:

- **"Was the information provided in time to meet your needs?"**
- **"Has the Clinical Librarian service improved your access to the information you require?"**
- **"Are your information needs met by the Clinical Librarian service?"**

Users were also asked to indicate on a Likert scale (Strongly Agree/Agree/Neutral/Disagree/Strongly Disagree) their agreement with the statement:

"I am more likely to seek the evidence to support patient care since the implementation of the Clinical Librarian service."

At the end of the questionnaire respondents were given the opportunity to fill in their name and contact details if they were willing to take part in an interview on the Clinical Librarian Project.

3.4.4 Design of User Interview Schedule

The interview schedule was designed in conjunction with the questionnaire to explore further some of the issues raised.

The interview started with a brief introduction to the evaluation and the project, stating the duration of the interview (approximately 30 minutes), assuring complete confidentiality and anonymity regarding responses to questions, and requesting permission to tape record the interview for data collection purposes.

This was followed by an introductory question asking the interviewee to describe how they use health information for their work. The interview

therefore started with a general question that was relatively simple to answer and again assessed the interviewee's general level of awareness and use of health information.

As with the questionnaire, the interview explored awareness of the project and how the interviewee first found out about the project. This would indicate those methods of marketing or publicity that had been particularly successful.

If the interviewee was unaware of the project, the schedule then moved to an alternative set of questions. These briefly covered use of existing library services, use of the Internet and electronic medical databases for information for work, asking if they had any suggestions for services that they would like to receive. These alternative questions served two purposes; they provided insights as to the knowledge and awareness of the respondent, and let the interviewee understand that their contribution to the evaluation was still valued.

Interviewees were asked questions on their access to health information before being asked if the project had improved their knowledge of databases and searching. Their access to IT facilities in a clinical setting was investigated together with whether the project had allowed them to access information more quickly. They were then questioned on "**Are your information needs met by the Clinical Librarian service?**"

The interview schedule also utilised the critical incident technique. Interviewees were asked to think of a specific incident where they were provided with information by the project and to identify for what purpose or purposes they required the information. Participants chose from the list of options Direct Patient Care, Lifelong Learning, Continuing Professional Development, Research, Audit, or other. They were also asked whether information provided was useful, in time to meet their needs and

approximately how much of their time was being saved by the service. If the interviewee indicated that the information was for Direct Patient Care, they were then asked to describe what they planned to use the information for, and whether it did actually have an effect on the direct management of the patient.

The interview closed by asking the respondent: **"Do you think you are more likely to seek the evidence to support patient care since the implementation of the Clinical Librarian service?"**. Interviewees were then asked if there were any other issues not covered that they would like to discuss, before being thanked and provided with a further assurance of confidentiality.

4. Data Collection

Baseline data was collected to establish the size and composition of each of the directorates targeted by the clinical librarian service. Data are given in Table 1. These data relate to the post occupied by Linda Ward only as the other post was on hold. Figures therefore relate principally to Leicester General Hospital although some of the activity was, in fact, cross-site.

Table 1 Baseline figures for clinical librarian service target audience

Directorate/ Unit	Consultants	Other Doctors	Nurses	AHPs/ Pharmacy
Stroke Unit	3	4	55	9
Renal	7	6	60	0
Emergency Medical Unit	5	4	19	1
Obstetrics & Gynaecology	10	15	190	1
Intensive Therapy Unit/Critical Care	6	6	79	7
Orthopaedics/ Rheumatology	27	55	22	1

AHPs – Allied Health Professionals - arts, music and drama therapists, chiropodists & podiatrists, clinical scientists, dietitians, medical laboratory technicians (MLTs), occupational therapists, orthoptists, prosthetists & orthotists, paramedics, physiotherapists, radiographers and speech & language therapists.

4.1 Pilot of User Questionnaire

The questionnaire was piloted to five individuals. A notable feature of responses was the very pragmatic instances respondents gave of using the service. This contrasts with typical responses received by general library services where questions are much broader and less-patient-focused. Examples include:

> **"For the new protocol for tube feeding (nasojejunal) research articles sent me by the library were used to back up change in policy" (Nurse - neonates)**

and:

> **" I have used service frequently and always found it very useful. Information re……..C[ontinuous] A[mbulatory] P[eritoneal] D[ialysis] peritonitis and many more" (Consultant)**

and:

> **"Evidence based research for cognitive screening tests - now in use!" (Allied Health Professional)**

Comments on the service were extremely positive:

> **"I feel that the service offered is great and Leicester General is lucky to have this on offer as the hospital I came from didn't have such a wide variety of services". (Nurse)**

> **"Excellent, thorough, efficient service" (Clinician)**

and:

> **"It is a very accessible, prompt and useful service - excellent I do hope it becomes a permanent feature" (Consultant)**

4.2   User Questionnaire

Randomised stratified sampling was used to ensure coverage of all teams and all staffing groups. A sample of 10% of the baseline population was generally targeted although where the population of a particular cell was only one that individual was included (e.g. 1 Speech and Language Therapist).

Table 2 Distribution of questionnaires by staffing group

	Consultants	Other Doctors	Nurses	AHPs/ Pharmacy
No of	8	12	43	9

Questionnaires				
			TOTAL	**72**

A high response rate (58%) was encountered with all the above staffing categories being well represented (Table 3). The response rate from consultants, a notoriously difficult group to survey, was particularly noteworthy and might be taken as indicative of high-level support for the initiative:

Table 3 Response to questionnaires by staffing group

	Consultants	**Other Doctors**	**Nurses**	**AHPs/ Pharmacy**
No of Questionnaires	6 (75%)	7 (58%)	24 (56%)	5 (56%)
			TOTAL	**42 (58%)**

It is realised that the nature of the service may well result in response bias with staff with particularly strong feelings more likely to respond. Nevertheless the questionnaire did elicit responses from 4 staff (out of 42) who had not heard of the clinical librarian service. There is therefore no particular reason to believe that systematic biases are present in this particular survey.

4.2.1 Findings

Respondents were asked whether they were aware of the availability of specific services and also whether they had used each service.

Table 4 Awareness and use of specific services

Service	Yes	No	No. using service
Answers to questions arising in the	34 (89%)	4	19

clinical setting			(50%)
Evidence based literature searches	38 (100%)	0	30 (79%)
Evidence for new guidelines	35 (92%)	3	12 (32%)
Current awareness for hot topics	33 (87%)	5	8 (21%)
Support for clinical teaching	33 (87%)	5	10 (26%)
Support for Continuing Professional Development	31 (82%)	8	8 (21%)

It can be seen from the above that the project is primarily identified by its evidence based literature searches which have high market penetration. Awareness of all services is very high, attesting to the high profile and intensive marketing afforded the project. Use of the evidence based literature search service is extensive. Use of the current awareness services (already rendered subsidiary for evaluation purposes) though lower is still at respectable levels (87%). Support for continuing professional development (already provided for by the main education centre library) although the lowest of the above services probably still compares favourably with corresponding figures for a general library service. One clinical librarian was able to cite examples where information from an initial ward/meeting query had been used in subsequent teaching sessions as presentations by junior medical staff. One particular meeting at Glenfield Hospital had twice requested that search results provided by the Clinical Librarian be presented at a later meeting to ensure delivery and promote discussion of particular controversial treatment options.

An interesting observation is that the service is seen more in terms of its literature search services than for its clinical question answering facilities. Although this might suggest that the literature searches were not successful in providing answers to clinical questions it is more likely that

clinical staff did not see the output from the service as directly related to clinical question answering. This might suggest that, notwithstanding the evaluative content of the service being provided by the clinical librarian, further work needs to be done on synthesising and distilling the outputs into a format that directly answers clinical questions (compare clinical informaticist services such as ATTRACT[16], Imperial College London and Basildon. Essex[17] and the Centre for Clinical Effectiveness, Monash, Australia[18]).

In response to this observation another of the clinical librarians recounts how they often conduct evidence based literature searches to find overview articles on a particular topic such as for junior doctor presentations. She agreed that, where there is a specific, patient-related question, the team probably need to be more confident about stating the clinical bottom line. Although this would take more time she felt it would probably be of greater value to the clinical staff. She cited the example of the clinical medical librarians at the Eskind Library in Vanderbilt who are assigned to one specialty each and get involved in producing detailed digests. Although the Leicester team try to do similar, when appropriate, they acknowledge that this requires a "degree of confidence and time".

Participants were asked "For which of the following purposes did you require the information from the Clinical Librarian Service?". They were able to select more than one purpose. Categories were selected from the Value Toolkit developed by the team at the University of Aberystwyth[19].

Table 5 No. of people using information for specified purposes

Purpose	No.
Direct Patient Management	20
Continuing Professional Development	19
Audit	14
Clinical Teaching	19
Legal/Ethical Issues	5

Other (please specify)	9

The appearance of direct patient management as the most popular response vindicates the objectives of the clinical librarian service. Nevertheless there are enough responses from the other categories to indicate a wide range of uses for the information supplied. The clinical governance agenda, seen in the references to audit and in legal/ethical issues, is further attested to in the following responses to the 'Other' category:

- **'Evidence to set up guidelines.'**
- **'To write protocol for EMU/MAUs** *(Emergency Medical Units/Medical Admission Units)* **across UHL.'**
- **'Research (Protocol development).'**
- **'Preparing guidelines.'**
- **'National Benchmarking Group.'**
- **'Evidence based practice, formulation of guidelines.'**
- **'Guideline Development.'**

Other responses included writing a chapter for a book and unspecified 'research'. The Clinical Librarians have also been contacted directly by the risk management team in connection with queries relating to current incidents being handled within the Trust.

When asked whether the information provided did, in fact, have an impact it is interesting to observe that direct patient management elicited two additional responses, perhaps indicating that information intended for another purpose ultimately impacted on the care of patients (Table 6).

Table 6 Actual impact of information provided

Purpose	No.
Direct Patient Management	**22**
Continuing Professional Development	**17**
Audit	**11**
Clinical Teaching	**19**

Legal/Ethical Issues	3
Other	7

An impressive number of instances were given where the information provided by the Clinical Librarian Service had had an impact:

Box 1 Specific instances of impact of information provided

- *'Blood pressure monitoring – correct procedure standard for electronic recording'*
- *'Research project in Obstetrics – The librarian at LGH was extremely helpful in getting the articles I required to discuss this research proposal.'*
- *'With the information collected we set up a "Bereavement Service".'*
- *'Search on psychological effects on pts* (patients) *of the ITU environment.'*
- *'Supply of evidence/literature in support of training package for N* (ew*)/Staff.'*
- *'Literature searches and search alerts have enabled me to look up evidence base for practice for treatment of Total Hip replacements & OA Knees* (Osteoarthritis of the knee). *These have since been or are being written up for journals.'*
- *'Use of therapy in hypotensive stroke patients.'*
- *'Evidence on the use of bed rails helped me to deal more effectively with a complaint.'*
- *'Recently asked to prepare guidelines on acute renal failure for medical admissions units. My own search on MEDLINE was not helpful but Clinical Librarian search produced a number of useful items often Internet based sources which were very helpful in finalising guidelines.'*
- *'Searched for evidence to base standards on for audit.'*
- *'Producing patient information – leaflets, info. given at talks etc.'*
- *'In the development of protocols for exercise in pregnancy.'*
- *'Reviewed literature on evidence base for our hypoglycaemia guidelines. This has been used for regular teaching sessions on glucose metabolism and is being used to revise hypoglycaemia guidelines for the neonatal units.'*
- *'Enabled a benchmark to be written and scored so that clinical practice could be updated to current research practice.'*
- *'Injections in Back pain. OA in elderly.*
- *'Very good literature search on multiple myloma (connected to a patient we had) – used for presentation to all junior docs + consultant in medicine.'*
- *'Assistance in formulation of UHL tracheostomy guidelines.'*

> - *'I recently asked for a literature search which showed me that there were set guidelines to observe when performing a task.'*
> - *'Information on evidence for prophylactic antibiotic treatment in prevention of GBS (Group B Streptococcus) transmission in labour, has allowed us to propose several changes to existing guideline.'*
> - *'Pt(patient) Information Leaflets – up to date info – Pt(patient-)friendly.'*
> - *'Evidence gained re nasogastric tube feeding. Teaching packages for parents to feed at home. We are developing a package of our own. Also re: Resuscitation skills for parents and a teaching booklet, which we have now produced.'*

The above list provides powerful testimony to the impact that the clinical librarian service has had within the Trust. Furthermore several of the above instances could be worked up, within the context of risk minimisation or prevention of harm, to provide a very strong economic argument for the value of an individual literature search. More generally one of the clinical librarians describes how "**especially in Obs & Gynae there are lots of issues around risk and it is important that the clinicians that are involved are aware of the best evidence**". Interestingly other clinical librarian projects, such as that at Birmingham Women's Hospital have similarly focused to good effect on this particular area of clinical practice.

Within the wider context of the Department of Health's 'Organisation with a memory'[20] the clinical librarian service provides a "safety net" mechanism to ensure that practice is not harmful and, in fact, is based on good current clinical evidence. That the service provides timely information is attested to by responses to the question **"Was the information provided in time to meet your needs?"**. Thirty responses said "Yes" while no-one said "No" and only 3 said "Don't Know".

On the specific issue of effect on access respondents were asked **"Has the Clinical Librarian Service improved your access to the information you require?".** Thirty three respondents answered "Yes",

one replied "No" and 4 replied "Don't know". One of the respondents who replied "Don't know" clarified their response with 'Certainly made it easier + (and) quicker to obtain.'

A potentially more challenging question was "**Are your information needs met by the Clinical Librarian Service?**". Twenty nine respondents indicated "Yes", none indicated "No", but with 8 answering "Don't know". 1 respondent did not tick any response. Finally respondents were asked to indicate the extent of their agreement with the following statement:

'I am more likely to seek the evidence to support patient care since the implementation of the Clinical Librarian Service' (1 respondent had not ticked any)

Table 7 Agreement with statement on increased likelihood of seeking the evidence as a result of the Clinical Librarian Service

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
11	20	6	0	0

Respondents were also given the opportunity to provide additional comments if they so desired. The most frequent response focused on the helpfulness of the staff:

- **'[Librarian] has been *extremely helpful*. I would like to use the service more proactively in the future.'**
- **'Librarians *v. helpful* and keen. Impressed that they attend our clinical multidisciplinary meeting.'**
- **'Very supportive + *helpful* staff.'**
- **'Always *extremely helpful*, approachful and patient when training people to literature searches, etc.'**

- '**Staff were excellent/***very helpful.***'

Other comments focused either on the time-saving nature of the service:

- '***I used to perform searches myself but very time consuming** and much of the literature is held at the main library away from my site of work.'*
or on its timeliness:

- '**Excellent** *timely service***. I should use it more!'*
However it was also recognised that full exploitation of the service does, itself, require considerable investment of time:

- ***Main problem is finding time to go through the evidence once it has been prepared.'***
Several respondents focused on the increased availability of the librarian:

- '***As visits to the unit were happening and involvement in ward round**, any current issues & supporting literature/research was supplied very quickly.'*
- **Also helpful to have** *direct contact with the librarian***.**

Others sought to convey the impact that the service has had on their ways of working:

- '**This is a brilliant service which has made a vast improvement to the care I give to patients and in teaching new staff. It has also provided me with opportunities for professional development.'**
- **Very useful service for preparing teaching materials and reviewing guidelines. 'It has been an excellent service.'**

Notwithstanding impressive marketing efforts by the Project team there are still indications that there remains potential to improve market penetration:

- **"I am not aware of the contact names or numbers to be able to request any information that might be required"**

Clearly, however, marketing is an ongoing formative task and cannot be definitively captured through apparently summative comments such as this one.

Finally, a balanced perspective can be seen in the juxtaposition of two comments one of which recognises the previous state of clinical activity while the other focuses on the impact of the new service:

- **'On the whole, clinical management is informed by current evidence. However some clinical decisions (how far to investigate potential thrombophilia for instance) can be assisted.**
- **'[Librarian] provides an excellent service, always very prompt with information. Guidance given is excellent. This is the only service of its kind that I have come across and am very impressed.'**

This helps to paint a picture of incrementalism and progression, building on previous information provision, rather than the "big bang" approach that often characterises the introduction of a new service.

4.3   User Interviews

Thirteen people volunteered for follow-up interviews. Of these 5 were actually interviewed, due to time and logistical constraints. Their comments are summarised below.

4.3.1   Findings

4.3.1a Contribution of the role

A major perception of the value of the role is its time-saving nature:

> **"[the Clinical Librarian] has saved me time and given me information that I never would have had before"**

However it was clear from comments such as the above that there is also a value-added role. This is made more explicit in a comment from another respondent:

"When you do literature searches for yourselves you tend to go for articles that support your particular view and because it's so time-consuming you don't get the broad range that [the Clinical Librarian] gets….sometimes she overwhelms me with it….I just wish these services had been around when I was a student"

as well as in a follow-up to the initial comment above:

"Definitely there is not the time to do it to the degree that you know you should do it"

This reveals that it would be simplistic to claim that clinicians would not conduct literature searching in the absence of a clinical librarian. Rather they gain added reassurance and confidence in their care by knowing that this has been done to a high standard on their behalf:

"But now if we have a discussion about a specific aspect of patient care or clinical procedure and we don't have [information] to hand on the wards we find out. We don't just have a discussion about it and just come up with the best option between us – we go find out"

Clinicians also tend to redeploy their time knowing that the searching aspects are taken care of:

"the time that it took me to search it I can now spend reading it – as far as I am concerned my time is much more productive in reading the work that I have got rather than actually physically going out and finding it.….I wouldn't do it to the level that [the Clinical Librarian] does it….I just wouldn't because she does it over several days"

and:

"I was already able to search databases myself but in all fairness it is the time aspect…to have someone do that for you and they

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cannot only search it but also have the time to then access not just the abstract but the whole paper....you get more data".

Furthermore they see the contribution of the clinical librarian in terms greater than just information input:

"She's completely dedicated to improving people's practice and she's a joy to work with"

In contrast an Orthopaedic Consultant who had not had direct experience of the clinical librarian service described how he had **"not really found time for library services"** and tended to only access MEDLINE once a month when there is a **"case [he is] not sure about".**

4.3.1b Impact on practice

Respondents were able to point to instances where information provided had impacted upon some aspect of their practice:

"Information gained from the library service – we use it to put together policies and protocols to make some evidence based practice or to quash somebody's evidence as well – evidence always has two sides to it"

"I can give her some pointers....used it for information on babies on certain types of indicators and she certainly came up with the goods"

"Looking at evidence on problems encountered...number of toys in an incubator because of MRSA – it wasn't the toys that were the problem but problems of handwashing that spread infection. Quite eye-opening"

"Nice to know that you have got data to change the management of babies"

Finally the impact can be seen outside the direct area of patient care. For example one respondent used information to produce a teaching package for nurses. Another described its usefulness for areas of service delivery and organisation; in particular for facilitating her transfer from ward sister to clinical nurse specialist:

"[the literature search] drew up all sorts of things like nurse prescribing and legal aspects...issues about autonomy.... She got me quite a lot of material on the role of the clinical nurse specialist – both current and for future development. It helped to put my new role into perspective a little bit more and made me feel a bit less anxious about it to be honest".

4.4 Routine service statistics

The main source of routine service statistics was the team's records of search requests. This could be used to establish overall demand for the service, together with levels of demand from the participating Directorates.

Totals for the period January 2001 through to July 2002 are as shown in Table 8:

Table 8 Total search requests Jan 2001-July 2002

Month	Total Requests
2001	
January 2001	26
February 2001	22
March 2001	22
April 2001	22
May 2001	Data Not Available
June 2001	42
July 2001	28
August 2001	23
September 2001	24
October 2001	35
November 2001	23
December 2001	16

2002	
January 2002	30
February 2002	20
March 2002	23
April 2002	26
May 2002	32
June 2002	24
July 2002	28
TOTAL	466
Average per month	25.88

The average monthly figure of 25.88 searches is slightly higher than that recorded for the pilot of 23 searches for the month. Nevertheless the similarity between these figures suggests that either demand is limited by

the capacity of the clinical librarian service or by the ability of the teams involved to process the retrieved results. From detailed analysis of the individual figures for the directorates it seems that a directorate cannot generate more than 14 viable requests per calendar month. However the clinical librarian service has demonstrated the capacity to handle quantities of requests in excess of 30 (even excluding the atypical month of June 2001 which may have included requests carried over from May 2001).

The Project Staff were acutely aware of the need to put in place robust systems for the ongoing monitoring and evaluation of the impact of the project on patient care. In talking to clinical staff in order to obtain feedback it became clear that many good examples of the project's impact existed. Some of these were made available to the Evaluation Project team and are included in Box 2 below.

Towards the end of the evaluation period, therefore, the Project Team decided that, in order to capture this information, they would incorporate this type of approach into their routine data collection. Rather than send out feedback forms, with a notoriously poor response rate (approximated at about 25%), they felt that it would be more useful to follow up a proportion of requests by talking to the clinicians themselves. They would seek to optimise the trade-off between allowing enough time for the information provided to make an impact and not leaving too much time to cause recall bias. Information would be collected via a semi-structured proforma with opportunity being given to clinicians to report problems or to suggest improvements to the service.

In addition the Project staff have obtained permission from the medical records manager to include a sheet of information on evidence supplied within the patient records. The intention is that this would link to a planned database that would collect detail on Clinical Librarian activity and

make the evidence summaries produced available to other Trust staff. The Clinical Librarian database would thus allow the Project team to audit the proportion of records affected by such input and also to permit follow-up of specific topics to examine whether information provided is actioned.

4.4.1 Baseline data from Glenfield and Leicester Royal Infirmary sites

The dissertation by Sarah Lewis, the postgraduate student from Loughborough University, provided baseline data for Leicester General Hospital, at least with regard to the views of consultants on teams that were potentially to be included in the Project. The same questionnaire was subsequently used to obtain baseline data for the Glenfield and Leicester Royal Infirmary phases. The following section briefly summarises the main findings of an information needs analysis sent to sent to junior doctors (HO's & SHO's) and senior nurses G grade and above at the Leicester Royal Infirmary site (39 questionnaire responses). This questionnaire was also emailed and posted on the Intranet for the attention of team leaders, general managers and consultants in the following departments/directorates (14 questionnaire responses):

- A&E (part of Medicine and A&E services)
- Diabetes (part of Medicine and A&E services)
- Children's Services
- Cancer services

Questionnaire responses were anonymous with address labels having been printed by the Personnel department according to the above criteria.
In addition the questionnaire was distributed to health professionals who were to be supported by the Clinical Librarian at the Glenfield site (30 questionnaire responses).

The main findings of the survey are included in Box 2 as supplied by Claire Honeybourne:

Box 2 Summary of Information Needs Analysis (Glenfield Hospital and Leicester Royal Infirmary)

* Clinicians seek information to support clinical decision making on average once or twice a month.
* Clinicians' principal source of information is colleagues, closely followed by databases and then journals.
* Lack of time and lack of literature searching skills are the top two barriers to finding information.

Clinicians felt that
* the presence of a clinical librarian would benefit the team,
* it was more useful to have a librarian in the clinical setting than in the library,
* they don't want to do their own literature searching,
* information provided by the clinical librarian could support clinical decision making,
* the clinical librarian would save time,
* the presence of a clinical librarian would not be detrimental the professional / patient relationship,
* the clinical librarian had a significant role in supporting ward based teaching.

40% of respondents felt that the clinical librarian service was essential, 54% desirable and 6% unnecessary.
83% of respondents would use the service.

Among the questions asked, participants were required to rank up to three difficulties that they experienced when finding information from medical literature with *the 1st being the greatest barrier.* The results are shown in Figure 1.

Figure 1 Standardised ranking of difficulties experienced when finding evidence[1]
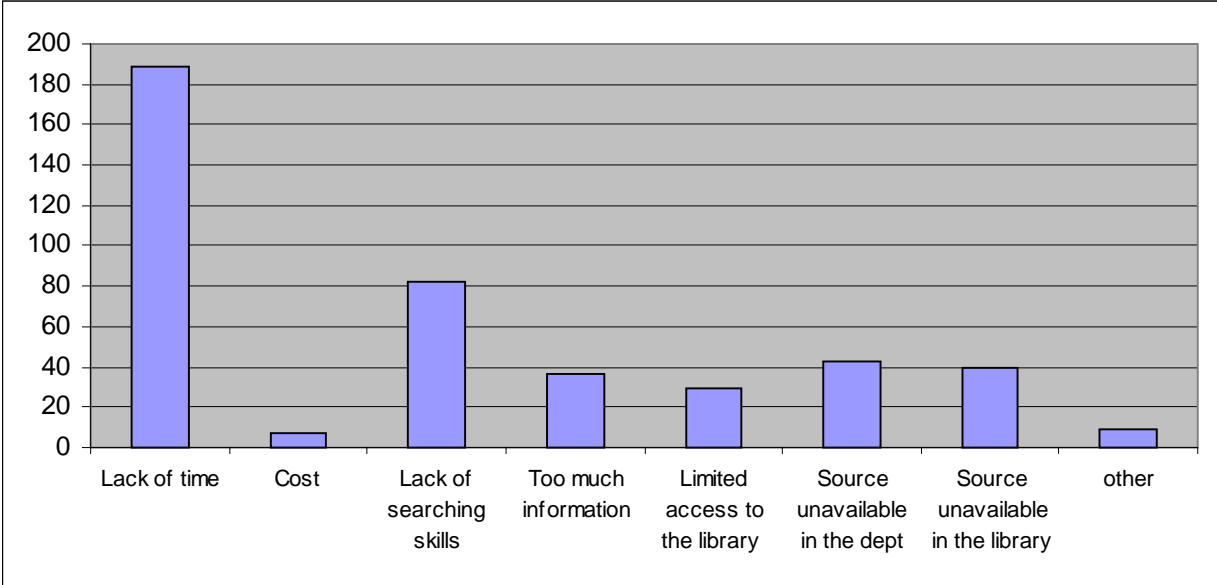
Respondents were also asked to characterise their patterns of information use by answering the following question:

Which sources do you most often use when seeking clinical information to support clinical decisions? From the list please rank three sources you consult most often (1st, 2nd, 3rd).

---

[1] While it is accepted that cumulating ranking totals (1st was scored with 3 points, 2nd scored with 2points, 3rd scored with 1 point.) in such a simplified manner makes no allowance for differential weighting by individual respondents, this graph gives a useful diagrammatic representation of the principal barriers against which the clinical librarian projects have had to operate.

Figure 2 Standardised ranking of clinical information sources[2]
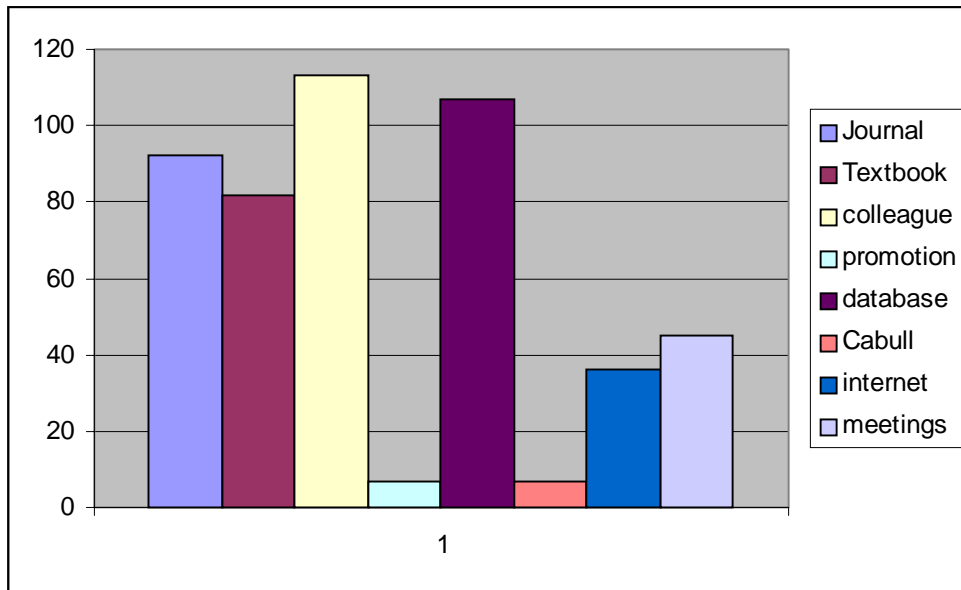
Finally clinicians were asked to indicate their level of agreement with the following statements:

To what extent can the use of information from medical literature assist patient care in the following (Significantly, Moderately, Marginally, Not at all) [Table 9]:

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[2] Again it is accepted that cumulating ranking totals (1st was scored with 3 points, 2nd scored with 2 points, 3rd scored with 1 point.) is a crude measure for differential weighting this figure nevertheless indicates clinicians preferred information sources as a frame of reference for our evaluation.

Table 9 Extent to which information from the literature is believed to assist patient care

	Significantly	Moderately	Marginally	Not at all
Diagnosis	21%	41%	31%	7%
Choice of intervention	39%	46%	12%	3%
Length of stay	10%	19%	34%	23%
Information given to patients	37%	38%	17%	8%
Future clinical decisions	53%	41%	5%	1%
A better understanding of the patient's condition	54%	40%	4%	3%

4.5   Interviews with project team

The project team was interviewed towards the end of the evaluation process to reflect on their experiences of the project to date. The interview was based on seventeen questions covering topics including the creation and initial stages of the project and the extent to which the project team felt that the aims and objectives set out in the Project Initiation Document (PID) had been at achieved. (Different responses were received according to degree of involvement in the project). Marketing and promotion of the project was discussed, particularly those methods that had been the most and least successful. The impact of the project on its target audience, specifically in relation to patient care, and the impact the project has had on existing library and information services were covered. The development of specific services offered by the project was also explored.

The project team was asked to identify the single most critical success

factor that had determined the outcome of the project. The project team were also encouraged to reflect on the impact that the project had had on their own roles, specifically on their professional development and any additional training needs that may not have been satisfied yet. The project team interview ended with a section discussing any difficulties or constraints that the project team had experienced during their work on the project, how these were overcome, and on reflection whether they would have done anything differently to avoid such difficulties and constraints.

At closure of the interview the project team was given the opportunity to share any further observations with the evaluation team.

5. Observation

5.1 Diary

A diary of clinical librarian activity was kept for the months January 2002 and February 2002 (Appendix 2). These months fell within the middle of the evaluation period and the total of 50 searches over these two months is near enough to the average to indicate, that in this respect at least, these months were not atypical.

In order to analyse the data in a meaningful way certain assumptions have been made. First, where several activities are listed for the same session (a.m or p.m.) it is assumed that each session occupies equal time. Second, where only a single activity is given it is assumed to occupy the entire session. Each session is assumed to be equivalent to 3 hours to allow for half-an-hour's downtime (coffee and comfort breaks, interruptions etcetera). Ninety two sessions are covered by the diary, of which two (2%) represent a bank holiday (1st January 2002), two annual leave (2%) and two time in lieu (2%). Two sessions (2%) signify Saturday working (involving searching and clinical librarian administration). Saturday working is occasioned by the demands of the library service as a whole, not specifically the Clinical Librarian service, although it is often less busy and, therefore, a good time to catch up on administration and literature searching, hence its appearance in the diary.

276 possible working hours are therefore represented by the diary. 83 hours (30% of time) is spent doing literature searching with an additional 6 hours (2%) specifically for searches to support NICE guidelines. 61.5 hours (22%) is spent in direct interactions in a clinical environment including ward rounds (36 hours; 12%), clinical meetings (12 hours; 4%), wards (9 hours, 3%) and the Stroke Unit (4.5 hours, 1.5%). 29 hours (10.5%) is spent on administration in connection with the clinical librarian project, a further 1.5 hrs (0.5%) with general administration and 3 hours

(1%) with book buying. Library activities comprise a further 20 hours (comprising library cover (12 hours; 4%) and Reference Desk duties (8 hours; 3%)) Promoting the Clinical Librarian Project to external audiences in Leeds and Newcastle takes 12 hours (4%). Nine hours (3%) are spent in the librarian's own continuing professional development (critical appraisal and training the trainers) and 15 hours (5%) is spent training others (critical reading (6 hours) and GP-net training (9 hours)). 3 hours (1%) are spent on project-related IT matters (the enquiry database and Palm Pilots). Professional meetings and related activities constitute 9 hours (3%). This leaves three hours involved in local and regional evaluation activities (1%).

This diary gives a clear picture of the contribution that the clinical librarian is making in the role as originally designated with almost two-thirds of the time (64%) spent in attending clinical meetings or other clinical interactions, literature searching or in the administration directly involved with the clinical librarian function.

Although, at first, this latter figure for time spent in administration may seem disproportionate it must be appreciated that both the service itself and the evaluation require the creation and maintenance of a database of enquiries. This important audit tool, intended to facilitate clinical knowledge management through documenting previously asked questions, is an important component of the project as originally envisaged. It will also contain questions where there is clear, high-level evidence, with links to critically appraised topics (CATs) where appropriate. In addition it will contain locally important questions where perhaps only low-level evidence exists with a potential to feed into the hospital R&D programme. Finally it will provide an opportunity to present questions relating to specific patients. It is intended that the level of evidence will be highlighted and a link to PubMed for a quick update of each topic will be provided if appropriate. Delays to this project had been experienced associated with

dependence on an external (i.e. to the project) IM&T department although these were being resolved as this report was being written. The database is intended to go 'live' towards the end of the evaluation period. Therefore this evaluation, though having access to the data itself in its pre-online version, has been unable to evaluate the impact of this data on the clinical management of patients. However the project team intends to carry out, at a suitable juncture, a specific evaluation of this activity to establish its cost-benefit.

With regard to literature searching, time spent searching (83 hours) can be compared with the figures attributed for number of literature searches during the two months under surveillance (i.e. 50 searches). This indicates an average of about 100 minutes (99.6) spent in the activity labelled as "literature searching". Evidence suggests that this time is not merely for the interrogation of the databases but would include the following:

– focusing the question,
– several iterations of searching (perhaps with recourse to the instigator), use of multiple sources (e.g. MEDLINE, Cochrane Library etcetera),
– filtering the literature for relevant results, and
– the identification and location of at least one full-text article, together with
– summarising results, ranking them for level of evidence and annotating them with useful notes.

Our own experience suggests that this is, indeed a realistic period of time for such activities.

Separation of clinical librarian activities from the routine library work otherwise carried out within the Education Centre Library is clearly seen in the proportions of time spent in each activity. Only 20 hours, plus a further three hours book buying, is spent in library-related activities with

nearly a quarter of this time necessarily falling within a period of annual leave for another professional member of staff. On the other hand the innovative nature of the project does lead to interest from other librarians and R&D staff leading to time making presentations away from the role. However neither this, nor indeed the necessary time spent in project evaluation, seems a disproportionate use of time and benefits are undoubtedly experienced in terms of professional development, motivation and job satisfaction.

A final observation concerns the demand for the post to demonstrate flexible patterns of working with evidence of occasional Saturday working, evening working and use of time in lieu.

5.2   Shadowing

As part of the evaluation process, a day was spent observing the work of the Clinical Librarian (LW) based at Leicester General Hospital.

5.2.1 Details

Date: Friday 19 April 2002
Morning: Ward Round (NICU)
Afternoon: Clinical Governance in Practice Forum

5.2.2 Preparation

The Research Assistant met the Clinical Librarian at the Leicester General Hospital Education Centre Library prior to the morning's ward round on the Neonatal Intensive Care Unit (NICU).

In preparation for the ward round, the Clinical Librarian was finishing off a literature search for the Consultant in answer to a clinical question. The question was on outcomes of seizures in neonates. Before the Clinical Librarian took the results to the ward round, she wanted to carry out a final check to make sure that she had not missed any references.

In answer to clinical questions, the Clinical Librarian usually provides at least one full text article as recent as possible, accompanied by abstracts of related articles. These are annotated with one or two ticks depending on the relevance to the question and include other important notes, for example; the article also appears in the Cochrane Clinical Trials Register, the article is about an animal study etc. The literature search results have a coversheet attached highlighting the level of evidence found; in this case that the main article is an opinion piece rather than a systematic review.

After doing a final check, in which no extra articles were found, the Clinical Librarian typed out the summary sheet and printed out the results, ready to take to the ward round. In some cases the Clinical Librarian would email the results, it all depends on the preference of each individual clinician.

5.2.3 Ward Round

The Clinical Librarian tries to attend a neonatal unit ward round once a week. The ward round observed was on the Neonatal Intensive Care Unit (NICU), and was lead by a consultant and attended by approximately another eight members of the clinical team.

During the ward round, the Clinical Librarian was asked to carry out a literature search on the topic of the fusion of eyelids up to 30 weeks gestation (usually eyelids open around 24-26 weeks gestation). This question was triggered by a particular case on the ward.

The ward round presents a good opportunity for continued marketing of the clinical librarian service. The Clinical Librarian usually takes along pens advertising the service as clinicians in particular are always keen to receive spare pens. This was indeed observed during the observation and the Clinical Librarian also gave a batch to one of the nurses.

At the end of the ward round, the Clinical Librarian gave the consultant the results to the question on seizures in neonates. He had actually seen the full text article provided before but said that the other articles should be of use to him.

On the way back to the education centre library from NICU, the Clinical Librarian also called in at ITU (Intensive Therapy Unit) to see if any queries had come up for her during their morning's ward round as it takes place at the same time as NICU's. The Clinical Librarian tries to alternate between the two from week to week.

5.2.4 Library

The rest of the morning was spent with the Clinical Librarian in the education centre library learning about her work and updating details of the project.

During this time the Clinical Librarian received a phone call at the library from one of the doctors who had attended the morning's ward round on NICU. He had a clinical question that he had forgotten to ask at the ward round. The questions do not always come from the ward round itself. This reinforces the fact that many avenues should be open for people to ask clinical questions e.g. telephone, email etcetera.

The Clinical Librarian has supplied a print out of the summaries of searches carried out in 2002 so far. This will eventually be put on the University Hospitals of Leicester NHS Trust Intranet. The education centre library uses the UHL Intranet for various purposes, including advertising services such as training sessions etc.

Major developments for the project as discussed by the Clinical Librarian were a meeting with Mary Publicover, Clinical Librarian at Birmingham Women's Hospital, to share experiences, and successful recruitment to Jacqueline Verschuere's vacant Clinical Librarian post at the Glenfield Hospital. Linda Harrison would start in the position on 1 May 2002.

The Clinical Librarian also discussed the 'Critical Reading Made Easy' sessions that the education centre library are running. This series of four workshops introduces methods and toolkits to help appraise various types of information; Clinical Trials, Reviews, Qualitative Studies, Guidelines. Although not strictly a Clinical Librarian Service, this involves the Clinical Librarian as part of the library team.

5.2.5   Clinical Governance in Practice Forum

The afternoon's observation was spent at a Clinical Governance in Practice Forum for the Directorate of Medicine and A & E Services, held at the Leicester Tigers Ground in the Underwood Suite.

The forum is the second in a series. These are cross site meetings, attended by the relevant staff from Leicester General Hospital, Leicester Royal Infirmary and Glenfield Hospital. The Clinical Librarian was also planning to attend the Women's & Perinatal forum to be held the following week.

The forum was divided into three sessions which were: Best Practice Review: Management of Acute Stroke, Learning from Mistakes: Problems with Self Medication, and Effective Clinical Practice: Enteral Nutrition.

The lead for the first session on Management of Acute Stroke, a consultant in the Stroke Unit at Leicester General Hospital, has been a champion of the Clinical Librarian Service and has recommended it to many people.

Acute stroke management is particularly relevant to the Clinical Librarian's work, as the Stroke Unit at LGH is one of those that she serves as a Clinical Librarian.

Two of the speakers in this first section on Acute Stroke Management (a Speech and Language Therapist and a Physiotherapist) had asked the Clinical Librarian to do literature searches for their presentations. They individually thanked the Clinical Librarian for her help and both were extremely pleased with the results.

The forum provided a good marketing opportunity for the Clinical Librarian Service. Prior to the presentations and during the break for tea, the Clinical Librarian used the slot in which to view poster presentations as an opportunity to network with a variety of people from across the three hospital sites. The Clinical Librarian again distributed pens advertising the service.

5.3 Clinical Librarian Conference

The impact that the Clinical Librarian project has made at both a local and national level is attested to by the team's organisation of the first ever Clinical Librarian Conference hosted at the Education Centre, Leicester General Hospital. This innovative event included workshops, poster presentations and teleconferencing in addition to the invited speakers from the UK and the U.S.A. The day started with a personal testimony to the value of the local clinical librarian project from Charles Stewart, Clinical Director of Women's and Perinatal Services and a consultant in Obstetrics and Gynaecology. He described how the project has impacted on the clinical work within the Trust as clinicians are being supported with critically appraised materials for which they previously would have had no time. On the administrative side the service provides a rapid response facility for clinical governance issues within the Trust. He described how

one of his patients had suffered a stillbirth and foetal red cells had been found in the mother's circulation. The clinical team had felt that this was unrelated to a previous intervention but wanted to be sure. They posed the question how long can foetal red cells survive in a mother's circulation. Through the intervention of the clinical librarian service they were able to establish that the previous event was unlikely to have contributed to the stillbirth. Not only was this information able to provide reassurance to the parents but it also prevented the incurring of unnecessary costs as, up to this point, the parents had been pressing for testing for foetal red cells to be made routine in the light of their personal tragedy.

Additional details of the Clinical Librarian conference can be found in Appendix 4 of this report.

6   Discussion

6.1 Relationship with existing library service

One area of interest for those delivering or funding library services is the impact that such projects have on the uptake of existing library services. The Library manager, Claire Honeybourne, felt that the clinical librarian project had had a positive effect. For example, literature search requests continued to increase within the existing library service, in addition to those being generated within the clinical librarian-supported teams. At Glenfield Hospital existing library staff help the Clinical Librarian by handling enquiries in her absence and this requires that they document the enquiries comprehensively and accurately. There are also instances where photocopies of current articles (e.g. from BMJ/Lancet news items from the radio) are required urgently to support the morning's meetings proactively. Library staff members support the Clinical Librarian in doing this. Although the project team has not identified formally a specific requirement for additional clerical support to facilitate the clinical librarian service there is growing awareness of the demands that such a service may place on existing library staff. Funding for the project has only covered salary costs. By operating the clinical librarian service alongside a well-established library service the project has been able to benefit from "the support of the rest of the library team in lots of ways - not least in document supply".

A potential ambiguity within the project arises because two of the three clinical librarians during the life of the project already had identifiable roles within the existing library service. For example, one clinical librarian was the Information Services Librarian prior to being seconded to the Clinical Librarian Project. This could lead to potential confusion of her different roles and could, in fact, underplay the importance of creating networks and relationships as some of these may have been in place before the project began. Describing how one of her original tasks as

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Information Services Librarian upon joining in 1997 was to take library services out of the library into a clinical setting, this postholder stated:

> *"But I never made it because there was so much to do in the Library in terms of setting up training, SDIs [targeted current awareness] and that sort of thing….literature searches that come to the library so in practice I never really got the opportunity to get out of the Library".*

The clinical librarian service has therefore been able to achieve a separate identity and resources for a service that probably would not have been provided within existing library services. Outreach activity requires a tremendous amount of work as other aspects of library work can detract from the pivotal role. The clinical librarian role has also "sanctioned a library presence in the clinical setting", a factor regarded as key by one of the postholders.

6.2 Success factors

As the clinical librarian service is very much a personal service it is tempting to attribute at least some of the success of the project to the personal characteristics of the people involved. Certainly the personal characteristics, skills, knowledge and experience of those involved, important in any library setting, become paramount when a tailored service is involved. However it is easier to isolate the particular contribution of the configuration and delivery of the service, at least for one post in this project, because essentially the same information services were being offered by the same person as Information Services Librarian prior to the clinical librarian service. As that person puts it:

> ***"Taking the service to the clinician overcomes some of the barriers to information service use and targets staff who would not /could not normally make maximum use***

> *of existing library services. It is the service delivery*
> *that is making a difference"*

That this is new, previously untapped, demand is seen by the fact that during the lifetime of the project, notwithstanding the provision of the clinical librarian, levels of demand for the library based literature search service run by an information officer have remained unchanged.

It would be wrong, however, to give the impression that the clinical librarian service is merely a relocation of the existing library service to an outreach setting. The postholders are also making a contribution to the changing culture of evidence based practice:

> *"the presence of the CL [clinical librarian] does*
> *stimulate a questioning and learning culture"*

In addition there is evidence from one librarian informant that, with clinician acceptance, the role becomes much more effective when:

> *"for each directorate, I became accepted as part of the*
> *multidisciplinary team. When clinicians no longer felt*
> *the need to 'think of a question for me - generally after*
> *a few contacts and, importantly, after useful*
> *information has been obtained from the service"*

This was seen by a colleague as a critical moment within the project lifecycle:

> *"the moment that they can reflect that they have the*
> *knowledge to be present in that clinical setting and they*
> *are obviously showing that they have value in that*
> *setting because clinicians are asking them questions*
> *and are using the answers that the clinical librarian is*
> *providing....This is the point at which we realised that*
> *this was working....that we were regularly being asked*
> *specific questions about patient care".*

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Finally the time that such integration takes cannot be over-estimated. One of the more recent appointees itemised all the teams within which she has to operate and the varying degrees to which she felt integrated within each team. It was clear that it is difficult to sustain involvement and, indeed, acceptance across so many fronts.

6.3 Cost savings

A major issue for any clinical librarian project is the perceived cost effectiveness of the intervention[21,22,23]. While a full-scale economic evaluation is outside the scope of this evaluation we can make a crude yet effective assessment of cost savings from the clinical librarian service. Assuming that a consultant would search for up to half-an-hour for an item of relevant literature and assuming that a clinical librarian would spend the same time in meeting an identical request we can compare the cost of time spent based on an hourly rate (salary only):

The medical consultant's time would cost **£40.89** per hour[3].

The clinical librarian's time would cost **£ 17.49** per hour[4]

Therefore the <u>nett saving per hour</u> for each information request would be approximately: **£ 23.40**
and the <u>saving per half-hour search session</u> would equal **£ 11.70**

If salary oncosts are also included (i.e. employer's national insurance plus 4 per cent of salary for employers' contribution to superannuation) the corresponding figures would be:
The medical consultant's time would cost **£46.80** per hour.

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[3] Netten & Dennett's Unit Costs of Health and Social Care, 2001

[4] Based on Admin & Clerical Grade VII, Whitley Council scales, www.unison.org.uk

The clinical librarian's time would cost **£ 20.02** per hour

Therefore the <u>nett saving per hour</u> for each information request would be approximately: **£ 26.78**
and the <u>saving per half-hour search session</u> would equal **£ 13.39**

Our evaluation indicates that in practical terms the librarian's searching is probably more efficient and certainly more thorough than that that might be conducted by a clinician. One clinical librarian described how she conducts a number of other activities, such as filtering and rating the literature, in addition to searching the literature. Anticipated benefits from librarian searching translate into improved retrieval results and better quality of response rather than into crude cost savings. Also if the cost of consultant time is calculated using patient-related hours only **(£ 86/per hour)** the savings are almost tripled.

6.4 Marketing of the service

A significant achievement of the Project has been its marketing. Most notable has been the external marketing seen by the large number of presentations that the project team has been invited to give. This culminated in the organisation of the Clinical Librarian Conference, quite literally an international event.

Within the organisation there is evidence of an entrepreneurial philosophy to what has been described by one Project team member as a "bottom-up approach" to marketing. Marketing has been targeted to

> *"those that we [the team] know that we can reach because we don't want to raise expectations within the Trust when we are not providing a service to the **whole** Trust".*

The need for ongoing marketing of the service is not only attested to by the frequent junior medical staff rotations but also as non-medical staff become more aware of the availability of the service:

> *"I am particularly aware of how important it is to keep marketing because I was on ITU one day and there was a dietitian there and she suddenly realised that the service was for her as well and she hadn't, in all that time she had seen me and known that I was there, realised that she could make use of that service".*

Personal contact (e.g. attendance at the ward round meetings) is seen as the most important feature of the marketing efforts and this is supplemented by practical approaches such as providing a stock of request forms on patient record trolleys and distributing the promotional leaflet to all staff. The success of the clinical librarian pens, attested to earlier, has led the team to explore further approaches such as the use of clinical librarian "Post-it notes and other things we know people will use in clinical settings".

Paradoxically, with the need to secure funds for the continuation of the service, the Project team has realised that it will need to do more "top-down marketing". This decision has implications for the resources utilised within the project as the team sees it as important to target "funders as well as users". The team is therefore seeking to optimise its emphasis on targeting users and targeting funders of its service.

6.5 Impact on Patient Care

In addition to the examples identified from the Evaluation Team's own questionnaire and data collection the clinical librarians had identified a number of specific scenarios within which information provided for clinical care has made an impact.

Scenario

In the Adult Intensive Care Unit there is a confused and disorientation patient, a smoker (10/day), who has been in hospital for some weeks.

Clinical question:

Could his delirium be in part due to nicotine withdrawal? Are nicotine patches still appropriate / valuable so long after the last cigarette?

The evidence:

As is often the case with the questions that clinical staff have 'on the ground', there are no RCTs or systematic reviews. Case series reports suggest that nicotine patches could have a continuing value 12+ weeks after a last cigarette. Also that the effect of nicotine withdrawal is often underestimated.

Impact on practice:

Staff in the unit recognise this problem and are more proactive in considering the use of nicotine patches.

Scenario.

The storage and handling of expressed breast milk is important in the Women's and Perinatal Directorate, especially when mother and baby are separated with the latter on the Neonatal Intensive Care Unit.

Clinical question:

What is the research evidence on the best way to manage this risk issue?

Search results:

Several references retrieved, including some that described practice in other units in the UK

Impact on practice:

Data recording improved with a new form being developed, using the examples of good practice identified. This form is now in use, pending the development of a more formal guideline.

Scenario

A patient with Renal Tube Acidosis Type II has been admitted to ITU

Clinical question:

What is the best evidence on the management of this patient?

The evidence:

Provided new high quality information.

Impact on practice:

Oral potassium bicarbonate was administered to the patient.

Scenario

A patient with borderline renal failure needs a diagnostic procedure involving radio-imaging with contrast media.

Clinical question:

What is the level of risk to their renal function for such patients?

The evidence:

Evidence summarised from *Clinical Evidence* and *ACP Journal Club* suggest that low osmolarity contrast media should be used in such patients to minimise the risk.

In addition, RCT evidence suggests that acetylcysteine could be useful in protecting renal function.

Impact on practice:

This drug and low-osmolarity contrast media are now used as appropriate.

Scenario

Updates to some of the Women's and Perinatal Directorate guidelines were due.

Clinical question:

What is the latest evidence on

A. Prophylaxis against thromboembolic disease following caesarean section?

B. Antibiotic prophylaxis in caesarean section?

The evidence:

References provided including a RCOG Working Party Report and Cochrane Systematic Review

Impact on practice:

Both guidelines have been audited in 2002, highlighting performance against the guideline standards. Both are due to be reviewed in 2002. Updated / new Cochrane systematic reviews have recently been published on both topics.

Scenario:

Restless / uncomfortable ITU patient with Tracheostomy tube in place

Clinical Question:

A recent article suggests that infiltration of the tracheostomy cuff with lignocaine (a local anaesthetic) can make the patient more comfortable.

The evidence:

The reference was identified as a small RCT that did show difference in pain levels via a Visual Analogue Scale

Impact on practice:

Local anaesthetic agents were used to relieve the patient' discomfort.

Scenario

Early treatment of stroke is vital and there is benefit in the assessment and treatment process being started within hours of onset.

Clinical question:

Are there any paramedic assessment scales for stroke?

The evidence:

Examples of protocols from the USA were identified

Impact on practice:

Will contribute to service development as trust merger plans progress

Once again any of the above scenarios could potentially yield improvements to quality of life, functionality or reduced morbidity.

6.6 Impact on the target audience

A major impact of the Project has been that its target audience has felt more comfortable about asking questions about patient care - "not something that they would naturally do". In seeking to clarify this observation it became apparent that it was not the asking of the questions that is, in itself, the innovative aspect but the *following up of these questions via presentation to the Clinical Librarian Service*. As one of the librarians describes:

> *"initially when we ran the pilot is seemed that they were trying to think of questions to ask us so that they would please us….but after a while, probably at about the time we began to fit into the multidisciplinary team, we began to fit naturally within that team and people began asking us [real] questions".*

Otherwise the impact of the clinical librarian service on its target audience is difficult to isolate because over the two year period the whole culture has changed:

> *"now we have guideline officers - so we have people to work with directly…..and the whole idea of questioning patient care has become part of everyday practice especially with risk management such a hot topic at the moment"*

Also comparisons between the baseline data obtained for the pilot project and that obtained for the Glenfield and Leicester Royal services shows a discernible change. More recently staff have seen information as having a *significant* effect on patient care whereas previously they only believed it to have a *minimal* effect on such care. This important change in attitudes can be observed over the two years that the project has been running. In addition the Clinical Librarian project team had found it exciting to witness the growth in the popularity of the clinical librarianship throughout the UK

during the two years of the project - a factor that they believed would strengthen the case for further funding. A newcomer to the post felt that clinical librarianship is

> *"the future...basically we have done loads and loads of training over the years as librarians only to discover that [a large number of] clinicians don't really have time or haven't got the skills…"*

Although the implications of such a statement should not be overstated - the team has always acknowledged that "*there are staff who are able and wish to do their own searches*" **-** it is interesting to observe that this squares quite closely with current views on the feasibility of evidence based practice[24].

One of the clinical librarians (LW) has tried to track the flow of information after it reaches the clinical team. She found that in a number of instances it had been used to develop clinical guidelines and on other occasions it has been shared with the clinical team. However some of the time it has only been kept by the individual themselves, perhaps indicating that more needs to be done with cultivating a climate and incentives for information-sharing. However one possible variable here is the level of the evidence found with the possibility that clinicians are more likely to share high-level evidence (which is more likely to change practice) than where it is low-level or inconclusive evidence.

6.7 Implications of project on librarian personal development

A major training need that is not to be underestimated is that for project management training. The project manager described how she went on PRINCE-2 training and had benefited greatly from it. In fact a frustration had been that this training had not been received early enough to utilise it fully although this did not appear to have had an adverse effect on the project. For the clinical librarians their involvement in critical appraisal had

led to identification of this as a major training need. In addition the project manager felt that it would have been beneficial for all the clinical librarians to have undergone project management training to teach them the "process of going through a project". However such training is quite expensive. Generally however the organisation had been supportive in allowing the clinical librarians to access the training to address such needs that they had identified. Glenfield Hospital did not have an identified training budget to support the clinical librarian post but training needs are addressed according to their relevance to the postholder's job description.

7. Conclusions

It is clear that through the energies of the Clinical Librarian staff and the goodwill of the clinical staff the Clinical Librarian Project can number substantial achievements. The Evaluation team were able to identify a significant number of substantive and identifiable deliverables from the Project. These include contributions to clinical guideline production, individual patient care, continuing professional development and clinical governance, together with risk management. It might be argued by some that a number of these achievements may indeed have been realised without the Clinical Librarian service, with confounders in the form of the development of clinical governance and other organisational initiatives. However from the standpoint of the evaluation, the important point is that it is the users of the service, not the Project staff nor the Evaluation team, who have made the connection between these achievements and the existence of the service. Clearly the users would not feel so strongly motivated in providing evidence of the impact of the service on patient care were it not for the fact that they themselves believe that it has indeed had such an impact.

A major achievement of the project has been its systematic and sustained development commencing with a needs analysis and external evaluation and continuing with a pilot project and internal evaluation before proceeding to a full-scale project with a further independent external evaluation. This coupled with innovative approaches to both internal and external marketing of the project has been the defining characteristic of this project when ranged against other similar activities.

The major shortfall of the Project has been the delay in launching an online version of the clinical questions database. This emphasises the difficulties of achieving success when a project is dependent on the support of external departments, particularly the IT department. Quite clearly, with so many conflicting priorities on such a service department, it

is difficult to secure priority for what is essentially seen as an administrative database. It therefore remains to be seen whether this database of Frequently Asked Queries actually realises the benefits imputed to it.

The Clinical Librarian service is a personalised service where the outcomes delivered are closely identified with the person providing the service. In particular the opportunities for iterative feedback between requester and searcher allow a degree of targeting for clinical queries that would not otherwise be possible for services if they were based in a library. Nevertheless it is clear that the impact of the service is attributable, not to the personality of the postholder but rather to the structures and opportunities created for the post.

One difficulty for the Evaluation was caused by the different stages of development in the three project cycles for the Clinical Librarian posts. For example a large amount of evaluative material is now available on the Leicester General Hospital project and yet the clinical librarian posts at Glenfield Hospital and Leicester Royal Infirmary are still collecting baseline data and initiating (or in the former case re-initiating) their service. The lead-in time for achievement of objectives in the clinical librarian posts is typically 3-6 months. Although, following the internal promotion of Jacqueline Verschuere and subsequent delays in recruitment, searches were still conducted, impact forms were available for evaluation and the service was kept ticking over, it was obviously not possible to deliver it in its full form. However the impact of this disruption was, at least to a certain extent minimised by making all parties aware of the situation and handling urgent queries by phone and e-mail. Fortunately the replacement Clinical Librarian was able to "come up to speed" within a shorter time scale than is typically indicated.

Notwithstanding variable levels of data for the three posts, there is no reason to suspect that experiences at Glenfield Hospital or Leicester Royal Infirmary are qualitatively different from those achieved elsewhere within the same United Trust. It therefore seems valid to extrapolate findings from Leicester General to these other two sites.

8. Recommendations

– It is recommended that funding be continued for the Clinical Librarian service at Leicester General Hospital. However it is suggested that the Project Team investigate ways to **maximise the strategic impact of the post** within the Trust. These might include tying in allocation of the clinical librarian resource to clinical areas identified as priorities through the internal risk management strategies or through external visits from the Commission for Health Improvement. It is recognised by project staff that, although they are probably already serving many of the key areas (e.g. women's & perinatal), making this connection explicit will help in linking to the Trust agenda and securing continued funding for the service.

– Costs and benefits of **regular rotation of the clinical librarian post** should be evaluated in terms of the time taken to gain familiarity with each clinical environment. This could be counterpoised with the time taken following the librarian's departure for attrition of their effect on making sure that the evidence is used and available to take place. Although most of the major clinical areas are already covered by the three clinical librarians rotation into other areas might further maximise their impact.

– The comparative benefits between **the clinical librarian as technical support** (i.e. performing literature searches) **and as facilitator and enabler** (i.e. local trainer and change agent) should be investigated.[17] Although it is clear that there is likely a need for both roles the comparative benefits and relative allocation of time between each role is not yet apparent.

– The posts at **Glenfield Hospital and Leicester Royal Infirmary should be subject to ongoing evaluation**. This should particularly focus on lessons learnt from comparisons between the three Clinical Librarian posts.

– Mechanisms currently being devised by the Project Team should be employed to ensure **rigorous ongoing internal evaluation**. These

would include semi-structured interviewing of a sample of participants and audit of enquiries impacting upon patient notes. Involvement of the Trust's audit personnel, against pre-defined criteria, would ensure an optimal blend of local sensitivity with necessary rigour.

- **Project staff should regularly collect data on resource utilisation in connection with the project** (i.e. staff time spent searching and associated costs). This should be tied in with specific examples of the impact of information provided to allow more detailed assessment of cost-benefit. However the costing model should be sophisticated enough to accommodate non-economic overheads e.g. time spent on professional development and on promoting the service at professional fora.

- The Project staff should regularly **monitor the literature in connection with other models of clinical librarianship** and use the opportunity afforded by the three posts to experiment with the effectiveness of different approaches. The Project staff feel that now their roles have become clearer there is more potential to experiment with different models and to trial different approaches to offering support. They give as an example their adaptation of Glassington's approach[25] whereby the clinical librarian has a base on a ward where they can, at set times, work and / or answer information queries. This physical presence can then serve as a reminder of the service as well as providing a troubleshooting facility. This approach was being trialled with the Stroke Unit and with nursing staff in Orthopaedics.

Appendix 1 - CLINICAL LIBRARIAN SERVICE QUESTIONNAIRE

Please tick the appropriate boxes and add your own comments in the spaces provided.

1) What is your profession?

AHP ☐   Consultant ☐   Junior Doctor ☐

Manager ☐   Midwife ☐   Nurse ☐

Other ☐ (please specify)………………………………………………………………

What is your current speciality?

……

……

2) Have you heard of the Clinical Librarian Service?

Yes ☐   No ☐➜Please go to * over the page

Were you aware that the Clinical Librarian Service can provide the following information?

Answers to questions arising in the clinical setting   ☐
Evidence based literature searches   ☐
Evidence for new guidelines   ☐
 Current awareness for hot topics   ☐
Support for clinical teaching   ☐
Support for Continuing Professional Development   ☐

3) Has the Clinical Librarian Service provided you with any of the above information?

Yes ☐   No ☐➜Please go to question 4

If yes, which? (Tick all that apply)

Answers to questions arising in the clinical setting   ☐
Evidence based literature searches   ☐

Evidence for new guidelines   ☐

 Current awareness for hot topics   ☐

Support for clinical teaching   ☐

Support for Continuing Professional Development   ☐

For which of the following purposes did you require the information from the Clinical Librarian Service?

(You may select more than one purpose)

Direct Patient Management ☐		Continuing Professional Development	☐
Audit	☐	Clinical Teaching	☐
Legal/Ethical Issues	☐	Other (please specify)	☐

...

..

Did the information provided have an impact on any of the following?

(Tick all that apply)

Direct Patient Management ☐		Continuing Professional Development	☐
Audit	☐	Clinical Teaching	☐
Legal/Ethical Issues	☐	Other (please specify)	☐

...

....

Please describe one instance where the information provided by the Clinical Librarian Service had an impact.

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....

....

....

....

Was the information provided in time to meet your needs?

Yes ☐   No ☐   Don't Know ☐

4) Has the Clinical Librarian Service improved your access to the information you require?

       Yes ☐   No ☐   Don't Know ☐

5) Are your information needs met by the Clinical Librarian Service?

       Yes ☐   No ☐   Don't Know ☐

6) Please indicate your opinion of the following statement: 'I am more likely to seek the evidence to support patient care since the implementation of the Clinical Librarian Service'

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
☐	☐	☐	☐	☐

Please provide any additional comments:

....

....

....

....

....

....

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.

*If you would be willing to take part in an interview (approximately 30 minutes) on the Clinical Librarian Service, please write your name and contact details below:

Name…………………………………………………………………………………………...

Profession…………………………………………………………………………………………

Address…………………………………………………………………………………………...

……………………………………………………………………………………………………

…………………………………………………………………………………………………….

Telephone………………………………………………………………………………………

Appendix 2 – Diary

CL activity Jan 2002

W/C	Mon	Tues	Weds	Thurs	Fri	Sat
31/12/01	**AM** Lib cover **PM** Searching	Bank Holiday	**AM** CL admin **PM** CL admin	Annual leave	**AM** ITU / NICU - WR **PM** Searching CL admin	
07/01/02	**AM** Searching CL admin **PM** O&G - CM Searching	**AM** Searching **PM** Searching Ref Desk	**AM** EMU / Renal Wds / Stroke Unit Foetal Diag Group **PM** Ref Desk	**AM** Searching **PM** SHEBANG (CPD)	**AM** Rheumatology - CM **PM** Searching	
14/01/02	**AM** ITU Searching **PM** O&G – CM Searching	**AM** ITU / NICU – WR Searching **PM** Searching	**AM** Searching **PM** Searching Ref Desk	**AM** CL Steering Grp CL admin **PM** Searching O&G evening CM	**AM** LEHLA Lib Mtg **PM** Clin Gov R&DU Searching	

21/01/02 CH on A/L	**AM** Searching / Lib cover **PM** GPNet Training	**AM** ITU / NICU - WR **PM** Searching Lib cover	**AM** Searching **PM** Lib cover	**AM** Renal – CM CL Evaluation mtg **PM** Searching	**AM** At LRI Rheumat. / NNU **PM** CL admin	
28/01/02	**AM** Searching **PM** Searching	**AM** NICU – WR Searching **PM** GPNet Training	**AM** Admin Lib mtg **PM** Searching	CASP Training The Trainers (CPD)	**AM** Searching **PM** OVID Palm Pilot Trent Eval Mtg	***Searching*** CL admin

CL activity Feb 2002

W/C	Mon	Tues	Weds	Thurs	Fri	Sat
04/02/02	**AM** EMU – WR Searching **PM** O&G - CM CL admin	**AM** Searching CL admin **PM** Stroke Unit - CM	**AM** Searching **PM** CL admin	**AM** *LEHLA* IT mtg re database **PM** Searching CL admin	**AM** NICU / ITU - WR **PM** Searching	
11/02/02	**AM** Book buying **PM** Searching CL admin Ref desk	Time Off In Lieu	**AM** ITU - WR **PM** Searching CL admin Ref Desk	**AM** Stroke Unit PG Clinical Mtg **PM** Searching	**AM** NICU / ITU - WR **PM** Searching	
18/02/02	In Newcastle & Leeds presenting CL service to other librarians and R&D staff		**AM** EMU/ Renal - WR **PM** Lib cover	**AM** NICU - WR **PM** Searching CL admin	**AM** Searching **PM** GPNet training	

25/02/02	**AM** NICE guidelines searches for CGR&DU **PM** Critical Reading Made Easy wkshp	**AM** ITU – WR Searching **PM** CL admin	**AM** ITU / Renal wards **PM** Loughborough LIS student visit	**AM** ITU / Renal wards **PM** Searching	**AM** NICE Searching **PM** Critical Reading Made Easy wkshp	

Appendix 3 - Interview schedule

Date

………………………………………………………………………………………………………

Interviewee

………………………………………………………………………………………………………..

Profession

………………………………………………………………………………………………………..

Place of Work

………………………………………………………………………………………………………..

Sex   Male ☐   Female ☐

- **Introduction**

Hello, it's Anthea Sutton, the Research Assistant from the School of Health and Related Research at the University of Sheffield. I'm calling to conduct the interview you agreed to take part in.

First, I'd like to thank you for your time and co-operation, it is greatly appreciated.
I have prepared a list of questions which I think will take us about thirty minutes to get through.

I am currently working on an evaluation of the Clinical Librarian Service at the University Hospitals of Leicester NHS Trust. As part of this evaluation, I am interviewing service users and potential users in order to gain opinions on the project and the services it offers. The information I gain from these interviews will be analysed and a discussion of this will form part of the evaluation report I am writing. I must reassure you at this point that there are no preconceived theories being tested, I am simply interested in your objective opinion of the project and the services it provides.

During the writing up of my research, if I quote or paraphrase information that you have given me, you will remain completely anonymous and I can assure complete confidentiality regarding all of your responses to the questions in this interview.

I would like to tape record this interview for the purpose of my data analysis – do you have any objections to this? *[If interviewee objects, inform that I will be taking notes instead]*

Are there any questions you'd like to ask before we begin?

Q1   First, I would like you to tell me a bit about how you use health information for your work.

> **PROMPTS:**   If unsure: By health information, I mean any information that you may require in relation to your work as a _____ (insert profession).

For example you might have a patient with a certain condition and you might want to find out the most current research that has been done on this etc.

If you need health information for your work, where do you get it from? (Examples - Books/Journals (print and/or electronic)/Internet/Colleagues?)

LINK: **As I said in my introduction, this interview is part of the evaluation of the Clinical Librarian Service at the University Hospitals of Leicester NHS Trust.**

Q2   Have you heard of this service?

PROMPTS: If answer is yes, continue.

If unsure: The Clinical Librarian Service has been running since August 2000 at Leicester General, with the appointment of Linda Ward. Subsequent services have been introduced at Glenfield Hospital in February 2001 (Jacqueline Verschuere/Linda Harrison) and Leicester Royal Infirmary due to start in August 2002. The Clinical Librarian Service can provide answers to questions arising in the clinical setting by attending ward rounds and clinical meetings, evidence based literature searches, evidence for new guidelines, current awareness for hot topics, support for clinical teaching, and continuing professional development.

Were you aware that these services were available to you? If yes, can you remember how you first found out about them? (go to next question prompts, if unsure).

If answer is no, move to alternative interview (see attached)

Q3   Can you remember how you first found out about the Clinical Librarian Service?

PROMPTS: Leaflet/Presentation/Clinical Librarian present at ward round or clinical meeting/Information request form/Word of mouth

LINK: We have already talked a little about your use of health

information in relation to your
work…

Q4   **Would you say that the Clinical Librarian Service has affected your access to health information in any way?**

PROMPTS: **If yes, how has it affected your access?**

If unsure: Since August 2000 when the service began, have you noticed any changes regarding your access to any health information you may need?

Is it easier to get evidence you need for example?
What about if you need to search the literature on a particular topic?

Or have a question that has arisen in the clinical setting that needs answering?

LINK: Part of the aim of the Clinical Librarian Service is to overcome any barriers to information use that may exist for health service staff. For example, time constraints, lack of knowledge of databases and searching them, limited access to IT facilities in the clinical setting. In relation to this…

Q5   **Has the Clinical Librarian Service improved your knowledge of databases and searching for information at all?**

PROMPTS: If yes, in what way has your knowledge been improved?

If unsure: By databases, I mean things like Medline, Embase, Cochrane Library, etc.

If no, is there anything that could be done be done to improve your knowledge if you felt it needed to be improved?

LINK: And…

Q6   **Has the Clinical Librarian Service improved your access to IT facilities in the clinical setting at all?**

PROMPTS: If yes, how has your access been improved?

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If unsure: Since the Clinical Librarian Service has been available (August 2000), have you found it easier to access IT facilities? Not necessarily your own access, but having someone available to search the literature for you etc.

If no, what could be done be done to improve your access?

LINK: Again relating to your access to information…

Q7   **Has the Clinical Librarian Service allowed you to access the information you require more quickly?**

PROMPTS: If yes, in what way?

If no, is there anything that the Clinical Librarian Service could do that would enable quicker access for you?

LINK: I'd like you to think about the information needs you have in relation to your work…

Q8   **Are your information needs met by the Clinical Librarian Service?**

PROMPTS: If yes, how?

If unsure: Have you ever used the Clinical Librarian Service? If so, would you say you received the information you required at the time?

If no, are there any particular reasons why you think this is?

LINK: For this next section, I'd like you to think about the information the Clinical Librarian Service can provide, such as answers to questions arising in the clinical setting, evidence based literature searches, evidence for new guidelines, current awareness for hot topics, support for clinical teaching, and continuing professional development. In particular, thinking about the information you have actually used the service for, and your purposes for using the service.

Q9 **I'd like you to think of a specific incident where you were provided with information by the Clinical Librarian Service. Could you start by telling me for what purpose or purposes you required that information** (referring to the list of purposes on the summary sheet that I sent you):

Direct Patient Care/Management   □➜all questions below

Continuing Professional Development   □➜

Audit   □➜

Clinical Teaching   □➜others – just first two questions on
                                                useful/in time then skip to Q10

Legal/Ethical Issues   □➜

Other   □➜

Please specify……………………………………………………………………………

………………………………………………………………………………………..

Was the information you were provided with useful?

PROMPTS: **If unsure: Was the information what you expected it to be? / Did it fulfil your requirements?**

                If no, how could it have been more useful? / What improvements could have been made in the provision of information to you?

Can you remember whether the information was provided to you in time to meet your needs?

        PROMPTS: **If unsure: Did you specify a date by which you needed the information? / Was this deadline met?**

                If no, what was the problem?

Approximately how much of your time would you say was saved by having the Clinical Librarian Service obtain this information for you?

                                       LINK: You indicated that the information you required was for Direct Patient Care/Management…

Please could you describe what you planned to use the information for?

PROMPTS: If unsure: Was it for example for… (Choice of diagnostic test/Recognition of abnormal or normal condition/Differential diagnosis/Confirmation of proposed therapy/Identification or evaluation of alternative therapies/Minimisation of

risks of treatment/Revision of treatment plan/Audit or standards of care/Improved quality of life for patient and/or family/Legal or ethical issues).

Would you say that the information provided did actually have an effect on the direct management of the patient?

PROMPT: If yes, what was the effect?

If unsure, by direct patient management I mean the actual care and treatment of the patient's condition.

If no, why not?

                                                              LINK: Finally, thinking
                                                              about all the information
                                                              the Clinical Librarian
                                                              Service can provide…

Q10   **Do you think you are more likely to seek the evidence to support patient care since the implementation of the Clinical Librarian Service?**

PROMPTS: If yes, please give your reasons why you think you are more likely.
                 If unsure: If there was a situation where you needed some evidence to support patient care, would you be more or less likely to seek it, knowing you had the Clinical Librarian Service to help you? Or about the same?

                 By "evidence", I mean sources of the current best research evidence required to make decisions about the care of individual patients.

                 If no, do you have any suggestions for the Clinical Librarian Service to make you more likely to use it?

- **Closing** (see below)

Alternative Interview for people who are not aware of the project and/or the services it offers:

Q1   Have you ever used the Library (in the Education Centre) at Leicester General Hospital?

If yes, what for?

If no, why not?

Q2   Do you use any other libraries for work purposes?

Which?

Why this/these particular libraries?

What do you use them for?

Q3   Do you ever use the Internet to find information for your work?

If yes, what kind of information for your work do you look for?

If no, why not?

Q4   Do you ever use electronic medical databases? (For example, Medline, EMBASE, Cochrane Library etc.)

If yes, which do you use?

If no, why not?

Q5   Do you have any suggestions of services that you would like the Clinical Librarian Service to provide?

- **Closing**

Are there any other issues that I have missed or not paid enough attention to that you would like to talk about?

Thank you again for taking part in my research.   I have found talking to you both interesting and helpful.

Appendix 4 - Clinical Librarian Conference Report

Report from the Clinical Librarian Conference – 15 March 2002 – Education Centre, Leicester General Hospital

Linda Ward (Clinical Librarian) and Claire Honeybourne (Library Services Manager) at the University Hospitals of Leicester NHS Trust, organised the first UK Clinical Librarian Conference which took place at Leicester General Hospital Education Centre on 15 March 20002.

The conference was attended by 90 delegates from all over the UK, from the Netherlands and the USA. Invited speakers were also represented on an international level, as the programme included teleconferences from Canada and the USA.

The opening address from Mr Charles Stewart, Clinical Director of Women's & Perinatal Services at the University Hospitals of Leicester NHS Trust and a Consultant in Obstetrics & Gynaecology for more than 25 years, described the value of the Clinical Librarian Service. A champion of the service, Mr Stewart notably described a case where the Clinical Librarian service, had not only helped to diffuse an angry situation, but in turn had potentially saved the hospital a considerable amount of money.

The case involved a still birth. On investigation it was found that the mother had foetal red blood cells in her circulation, which was thought to be the cause of the death. There had been an intervention earlier on during the pregnancy and the parents believed this may have been the cause. The Clinical Librarian service provided evidence on how long foetal red blood cells can survive in the mother's circulation and this proved that it could not have been the intervention that had caused it. The parents went away less angry and in turn the hospital potentially was saved money as had it not been proved otherwise, the parents may have wanted to sue the hospital.

The other part of the day particularly relevant to this evaluation, was one of the afternoon workshops. Running parallel to three alternative sessions, Linda Ward facilitated a workshop on Continuing Professional Development for Clinical Librarians.

One of the Clinical Librarian Project's objectives is to contribute to the Continuing Professional Development of the Clinical Librarians. Linda Ward's workshop involved group discussion on 'What is a Clinical Librarian?' and the qualities and skills required to be a Clinical Librarian.

Findings of the discussion:

What is a Clinical Librarian?

- Proactive
- Outreach
- Understanding of Clinical Context
- Flexible
- Multidisciplinary
- Approachable
- Partnership

Qualities & Skills Required

- Resilient
- Self Confident
- Networking
- Breakdown Barriers
- Interpersonal Skills
- Medical Terminology/Anatomy & Jargon – not necessity, but useful, raises credibility
- Pro-active Learner
- Critical Appraisal Skills – awareness of issues surrounding this

- Teaching Skills

- Marketing Skills

- Literature Searching Skills

- Research & Statistics

- Good Organisational Skills

Participants then took part in an group exercise, using a list of knowledge, skills, experience, deciding whether training would be Formal (Internal or External), Informal, Self-Directed, Networking/the library community, or Other (for example, colleagues & peers).

The session closed with Linda Ward reflecting on some of her own experiences as a Clinical Librarian.

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