Clinical Librarians bring the world of information to the patient's bedside: a UK experience.

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Using the evidence from the literature and our own feasibility study[1] we have been able to develop and offer a Clinical Librarian (CL) Service at University Hospitals of Leicester (UHL) NHS Trust in the UK since August 2000.

In this presentation we will describe the service, giving examples of its impact on patient care. Other important issues will be reviewed, as well as recent developments and future plans.

What does a CL at UHL do that is different?

The objectives of the Clinical Librarian Service are to promote quality patient care by:

- Ensuring that questions that arise in the clinical setting are answered on the basis of research evidence. Quality care as a result of informed decision-making
- Making effective use of clinicians time
- Developing the knowledge base
- Supporting a skilled and informed workforce

In partnership with clinical staff, clinical librarians identify and attend appropriate clinical meetings and ward rounds. Joining the multidisciplinary team, CLs contribute their information skills and knowledge, responding to any information needs that arise.

Quality filtered literature searches provide the evidence to answer clinical questions. Summaries, highlighting the level of evidence found, support the references provided. Information services reach out of the library and to the patient's bedside.

Scenario:
A restless and uncomfortable ITU patient with a tracheostomy tube in place
Clinical Question:
The consultant recalls a recent article suggesting that local anaesthetics can make the tracheostomy patient more comfortable.
The evidence:
The reference was identified as a small RCT that compared the infiltration of the tracheostomy cuff with lidocaine and saline. The results showed a difference in pain levels as measured by a Visual Analogue Scale.
Impact on practice:
Local anaesthetic agents were used to relieve the patient's discomfort.

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[1] Ward, LM. Honeybourne, CJ. Harrison, J. A clinical librarian can support clinical governance. *British Journal of Clinical Governance.* 2001; **6**(4): 248-251.

Why is the clinical setting the best place to be?

There are many issues raised at clinical meetings and ward rounds that impact on patient care and could be addressed by the research literature. That these questions are not always followed up is often reported anecdotally. Marshall[2] found that increased contact with the librarian encourages clinicians to consult the literature more frequently and improve information-seeking behaviour. A randomised, controlled trial confirmed this by showing that removal of the
CL from the clinical setting led to the number of information requests decreasing over time[3]. We also found in our feasibility study that rapid rotation of the clinical staff meant that usage of the CL service was not sustained without a continued presence in the clinical setting. The information professional, as part of the multidisciplinary team, therefore encourages the consultation of research literature and provides a mechanism for getting evidence into practice.

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.

Clearly it is not possible for a CL to be present on every occasion when a question arises. We have adapted other models of Clinical Librarianship[4] to be cost-effective in the UK NHS. In practice, we attend meetings and ward rounds frequently enough to maintain contact with clinical staff and awareness of the service.

The key to the clinical librarian service is to be present at the time when questions regarding patient care are raised. Schnall and Wilson[5] suggest "it may not be necessary to the effectiveness of the service for the CML to be present in the patients room at all, if the CML is involved in routine departmental discussions". Our experience

[2] Marshall JG. Clinical Librarians join the health care team to provide information directly. *Canadian Library Journal* 1979;**36**(1/2):23.
[3] Marshall JG. Neufeld VR. A randomized trial of librarian educational participation in clinical settings. *Journal of Medical Education* 1981;**56**(5):410.
[4] Giuse NB. Kafantaris SR. Miller MD. et al. Clinical medical librarianship: the Vanderbilt experience. *Bull Med Libr Assoc* 1998;**86**(3):412-416.
[5] Schnall JG. Wilson JW. Evaluation of a clinical medical librarianship program at a university health sciences library. *Bulletin of the Medical Library Association* 1976;**64**(3):280.

is that the appropriate place to be will vary according to the working practices of each clinical team.

If clinical staff have the expectation that answers to clinical questions will be sought, a questioning and learning culture is encouraged. Some of the barriers to getting information into practice are overcome. Clinical governance at the trust is supported.

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.

The learning curve. By becoming part of the multidisciplinary team the CL becomes part of the patient care process. Acceptance at the bedside and as part of the team requires the development of trust. Guise[6] argues that this relies on the CL understanding the medical conditions and the information selected to answer questions. Veenstra and Gluck[7] found that it took three to six months for a CL to be of any value to the team as it took this long to acquire a suitable level of knowledge.

We agree that a level of knowledge needs to be built up by the CL, and argue that this can be done whilst carrying out the role. Clinical meetings (audit, case presentations, case conferences, teaching) and ward rounds, offer opportunities for learning and promote an understanding of the context for the clinical questions and of clinical terms. In a recent baseline survey of clinical staff in directorates soon to receive the service, 67% agreed / strongly agreed that CLs could have sufficient subject awareness to select relevant articles. However, clinicians do not expect CLs to have expert clinical knowledge and are happy to work together to identify or suggest appropriate clinical terms.

Underwriting the quality of the service are expert information skills and knowledge and an understanding of research methods and critical appraisal. We are therefore able to highlight, in a summary, the quality of the research found. The clinician is still the judge of its applicability to their patient.

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[6] Guise NB. Advancing the practice of clinical medical librarianship. *Bulletin of the Medical Library Association*. 1997;**85**(4):437.
[7] Veenstra RJ. Gluck EH. A clinical librarian program in the intensive care unit. *Critical Care Medicine* 1992;**20**(7):1041.

In these examples, new information had a direct influence on an individual patient's care. Research evidence is also sought in support of guideline or protocol development.

Scenario Updates to some of the Women's and Perinatal Directorate guidelines are 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: Guidelines have been developed and 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.

Managing the Clinical Librarian Service

Three full-time clinical librarians are now employed to support staff at the three-site University Hospitals of Leicester NHS Trust. They each support a number of directorates working on a cross-site basis, developing subject knowledge of their specialist areas and contacts with the staff in those areas.

From the beginning we have had a CL Project Manager, CL Project Group and a Steering Group in place. Each has an important function. The Steering Group represents the stakeholders in the trust at a high level and has been a sounding board for developing the service and a communication channel with decision-makers. The CL Project group has been a forum for sharing ideas and for mutual support. CLs can be isolated in the work they do and benefit from links with colleagues.

The role of the CL Project Manager has involved, among other things, the co-ordination of the First UK Clinical Librarian Conference, held at Leicester in March 2002[8]. The role also involves preparing bids for continued funding for the service.

Funding is recognised as one of the main reasons CL projects fail. CL services in the UK[9] in the 1980's were abandoned as it was felt that the demand for information did not justify the resources needed. But times have changed and research information has assumed a much higher level of importance in healthcare. The demand for information is certainly there now and new ways of provision need to be found.

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[8] Clinical Librarian Conference. Leicester General Hospital. March 2002. http://www.le.ac.uk/li/lgh/library/confer.htm [accessed 20/08/2002].

[9] Wilkin A. The evaluation of a clinical librarian experiment. British Library Research and Development Report 5731. London: Guys Hospital Medical School, 1982, 104.

The lack of success in earlier CL projects may also be due to the fact that previous posts have been funded exclusively by the libraries concerned. Additional external funding secures the role of the CL by ensuring that the postholder has dedicated time to market the service and be responsive to the needs and working patterns of the clinical teams. Removing the CL from the demands of library-based responsibilities allows the CL to focus and develop the role in the clinical setting. The service at UHL has been funded by a variety of sources: Local Implementation Strategy (NHS Modernisation funding), MADEL (junior doctor education), UHL NHS Trust and Blending Services with Training (medical education).

Measuring outcomes.
Baseline data has been collected, recording clinicians' attitude and use of information in the clinical setting, before the service has been provided.

To track the flow of information, once supplied, the CL sends an evaluation sheet attached to the results of the search request. There is a very low response rate (25%) to these evaluation forms. We have recently decided that it is more useful to collect data by informal discussion with a sample of clinical staff. This 'critical incident' technique will identify if the information the CL provides is disseminated to the team and, more importantly, if there has been a change in practice e.g. through the production of a guideline. We will be collecting this data and reporting to the Project Group every 3 months.

Formal evaluation of the CL service is being carried out by the School of Health and Related Research (ScHARR, Sheffield). They are measuring the clinicians' awareness, attitude, behaviour and perceived benefits of the CL service and will be reporting in September 2002.

One of our principal aims is to provide evidence-based information to support individual patient care. This is a similar ambition to the LATCH[10] project in the 1960's. It was recognized early in the life of our service that there needed to be a record in the patients' notes in order to audit whether information was being provided for named patients, and whether this information was impacting on patient care. We have just had approval for clinical librarians to write in the medical records at UHL. Duplicate Clinical Librarian Summary Sheets have been created that can be slotted into the medical records. By retaining one copy of the form the CL has a record of the patient, the question and the clinical bottom line that will be graded according to the level of evidence available. Clinicians have space to comment on whether they acted on this evidence. This will allow an audit of the use of the evidence provided by the CL service.

The information provided by the CLs often informs the clinical decisions of individual clinicians. However, dissemination of the information to colleagues is not automatic. Busy clinical staff have already moved on to the next patient. Mechanisms need to be

[10] Sowell, SL LATCH at the Washington Hospital Center 1967-75. *Bulletin of the Medical Library Association* 1978;**66**(2):218-22.

in place to encourage the sharing of this evidence and this is only likely to be done when the issue is recognised widely as important or the evidence is of a higher level.

The summary sheets in the patient records will link to the clinical librarian database, available for all staff to view. This database sits on the UHL Intranet and stores search details and summaries of the evidence that answer a selection of clinical questions. The criteria for adding questions to the database are:

- Frequently asked questions (e.g. about MARS, Molecular Adsorbent Recirculating System - a new technology used in intensive care)
- Questions with evidence levels I and II, possibly linked to a CAT (Critically Appraised Topic)
- Locally important questions, whatever the level of evidence. This may feed into the local R&D programme
- Questions related to individual patients

Where appropriate there are links to PubMed search strings that will run a quick update on Medline. Each search has a review date. Previous versions of the database are archived to record an accurate picture of the evidence at the time of the enquiry, important for risk management.

We will be evaluating the usefulness and usability of the database and its value in disseminating the evidence. The long-term aim of this product is to provide a link from the electronic patient record to the knowledge management server storing the evidence.

Future development

Information requests are initiated in the clinical setting and usually answered in the library, with a negotiated response time. The Evidence Cart[11] at Oxford demonstrated that there could be value in having evidence summaries at the patient bedside. We have recruited a number of clinical staff into a trial of Personal Digital Assistants (PDAs) - 'Knowledge in the palm of your hands; PDA's in the clinical setting'.

PDAs are increasingly being used in healthcare. In a study by Straus[12] the resources clinicians identified as useful for PDAs were

1. The clinical bottom line from pre-appraised resources,
2. Management algorithms,
3. Drug dosages and
4. Numerical summaries.

Clinicians did not want traditional practice guidelines on PDAs.

Our trial will be testing the value of various resources in the clinical setting, for both clinical librarians and health professionals. These resources include:

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[11] Sackett DL. Straus SE. Finding and applying evidence during clinical rounds: the"evidence" cart. *JAMA* 1998;**280**:1336-8.

[12] Straus SE. et al. 2001. Bringing evidence to the point of care http://www.cs.toronto.edu/~prg/ [accessed 27/6/02].

Ovid@Hand[13] for Palmtops (one form of PDA) that allow health professionals to find answers to clinical questions, remember important searches relevant to patient care, and stay up-to-date with the latest in medical research.

Clinical Evidence[14], summaries of the evidence on the effects of common clinical interventions, provides the clinical bottom line from pre-appraised resources that the Straus survey identified as relevant in the clinical setting.

The outcomes from the trial will be to:

1. Identify which handheld resources are most useful in the clinical setting
2. Identify the barriers to using handheld resources to support patient care
3. Evaluate the software in terms of:
    - Content
    - Accessibility
    - Ease of use (including an evaluation of the natural language query interface)
    - Relevance in the clinical setting – can questions arising in the clinical setting be answered via the software on the Palmtop

The project is running in Leicester from August 2002 for six months.

As a library service, we need to be alert to changes in technology and ways of satisfying the information needs of our users. The Clinical Librarian Service is one way that we have changed to meet these needs and has proved to be valuable.

Benefits to clinical staff are that they:

- Access the evidence to support their practice
- Save time
- Become aware of the resources available to them
- Can be confident in the quality of the information provided and the thoroughness of the search
- Are encouraged to question the evidence base for their practice

Benefits to libraries are that:

- Use of expensive resources (databases, electronic journals etc.) is maximised
- The profile of library and information services in the organisation is raised
- Acquisitions are influenced by the issues relevant locally

Benefits to the clinical librarians are:

- Continuing Professional Development
- Challenging and satisfying work
- Seeing the impact of information directly on patient care

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[13] OVID@Hand. www.ovid.com/products/hand/index.cfm [accessed 22/08/2002]
[14] Clinical Evidence. London: BMJ Publishing, 2002.