

## **Health Information Professionals: Roles, Skill-Set and Barriers to involvement in the Cochrane Process**

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**Introduction:** One of the main principles underlying the Health Strategy (2001) is “the development of a quality culture throughout the health system” (p.19) and for clinical practice to be grounded in the best available evidence. Finding the evidence is crucial to this process.

**Objective:** 1) To understand what contribution librarians in Ireland make to the Cochrane Collaboration in Ireland 2) To define the key roles Librarians have in the Cochrane Collaboration, the skill-set librarians possess as well as the skill-set needed in the Cochrane Process 3) What skills do librarians require to enable us to contribute more? 4) To explore the potential barriers that discourage librarians from becoming involved and useful ways that librarians could overcome these difficulties.

**Method:** A short web-based questionnaire was sent to four mailing lists in Ireland and a reminder was sent three weeks later. This was followed by a workshop entitled “Librarians: facilitators in the Cochrane process” held at the Cochrane Colloquium on October 2006.

**Results:** Provision of access to electronic resources and training users to search the Cochrane Library were the primary activities carried out by Librarians on the Island as well as supporting systematic reviewers with their searches. The barriers to greater involvement were lack of time, managerial support and funding as well as misconception of their role by other professionals.

**Conclusion:** Information retrieval of evidence to inform clinical decision-making and ultimately best practice is crucial to the Cochrane process and healthcare Librarians have a valuable role in information retrieval and in utilising specific searching techniques.

### **Introduction**

Systematic reviews arose out of the exponential growth in scholarly research publications and the need for a process to systematically find, evaluate and critically appraise this evidence. In 1979 Archibald Cochrane whom the Cochrane Collaboration was named after wrote "It is surely a great criticism of our profession that we have not organised a critical summary, by specialty or subspecialty, adapted periodically, of all relevant randomised controlled trials." (Cochrane 1979)

The primary output of the Cochrane Collaboration is to prepare and disseminate systematic reviews of healthcare interventions and the Cochrane Library is an electronic

library hosting the Cochrane database of systematic reviews, other reviews, health technology assessments, controlled trials register, methods studies and economic evaluations. Accessibility to The Cochrane Library has been freely available on the Island of Ireland through an initiative funded by Health Research Board, Dublin and the Research and Development Office in Belfast since 2002.

At the heart of the systematic review lies the comprehensive search of the literature. An incomplete search can lead to bias. Interdisciplinary teams are often involved in carrying out systematic reviews with specialists in information retrieval, methods and subject content expertise (McKibbin 2006) and collaborative teamwork is evident from different projects (Swinkels et al 2006, Harris 2005, Mead & Richards 1995). In an observational case study (Beverley et al 2003), a health information review was undertaken entirely by information professionals and identifies a variety of roles and skill-set that librarians possessed in the systematic review process. The roles of librarians in systematic reviews have been highlighted in a number of studies (McKibbin 2006, Harris 2005, McGowan & Sampson 2005, Beverley 2003, Palmer 1996, Smith 1996). Identifying and selecting the information sources, developing the search strategy in order to carry out a comprehensive search of the literature places information retrieval skills as a vital component of the systematic review process. Palmer (1996) describes how an information-seeking culture evolved in the UK through the establishment of the UK Cochrane Centre in 1992, the Centre for Reviews and Dissemination in York in 1993 and more recently the National Institute of Health and Clinical Excellence (NICE) which provides guidelines in public health, health technologies and clinical practice.

The participation of librarians in the Cochrane systematic review is not new as is evident by health information professionals who are involved at every level from trial search co-ordinators to review authors. In meta-analysis projects done at a medical college the librarian is seen as a partner in the research process rather than just a passive provider of information” (Mead & Richards 1995). The author describes the experience and expertise of the librarian in online databases, indexing practices, medical terminology, thesauri, the scientific research process, expert searching skills and document-delivery management skills. In a policy statement, the Medical Library Association defines the key roles and skills of the expert searcher which includes the ability to efficiently and effectively evaluate the retrieved evidence.

**Objectives:** In carrying out the survey, we sought to understand what contribution librarians in Ireland make to the Cochrane Collaboration. either directly or indirectly through their involvement in a variety of activities. A subsequent workshop conducted at the Cochrane Colloquium in October 2006 sought to identify and explore the key roles that librarians have in the Cochrane Process, the skill-set we have and skill-set required to enable us to more fully participate. We also sought to find out what the barriers were that might discourage Librarians from involvement in the Cochrane review process and to examine how we could overcome these difficulties

**Population:** Health Science Librarians on the Island of Ireland.

## **Method:**

In mid-September 2006, a letter and a link to a short web-based questionnaire were sent by e-mail to four different mailing lists in Ireland inviting health science librarians to participate in the survey. The questionnaire was developed using web-based tool surveymonkey.com. A reminder was sent approx. three weeks later. The sample was opportunistic. This method of data collection was chosen as it was cheaper and quicker to disseminate than postal questionnaire and we had access to our target group i.e. health science librarians in Ireland. Participants were informed that their responses would remain confidential. The questionnaire was brief to encourage greater participation and consisted of 4 questions. 1) Where do you work? 2) Year Qualified 3) Involvement in various activities associated with Cochrane Process either directly with the Cochrane Collaboration or indirectly through training their users to search the Cochrane Library or provide them with the skills to search as systematic reviewers 4) Training received by Librarians.

Following on from the survey, we facilitated a workshop at the XIV Cochrane Colloquium which was held in Dublin in October 2006. The workshop was entitled "Librarians: facilitators in the Cochrane process". There were 11 participants who were all librarians or health information professionals working in Canada (4), Germany (1), Ireland (1), Netherlands (1), United Kingdom (4). Three attendees were involved as trial search co-ordinators in the Cochrane Review Groups. The workshop leaders outlined the objectives of the workshop and the attendees were divided into 4 groups. Participants at the workshop were asked to discuss the following 1) key roles that Librarians have in Cochrane Collaboration, 2) the skill-set that Librarians possess that are useful in the Cochrane Process, 3) the skills that Librarians require to enable us to contribute more, 4) the potential barriers that discourage/inhibit librarians from becoming (more) involved and 5) useful ways that librarians could overcome these difficulties. Feedback was recorded immediately afterwards and the results are reported in this paper.

## **Results**

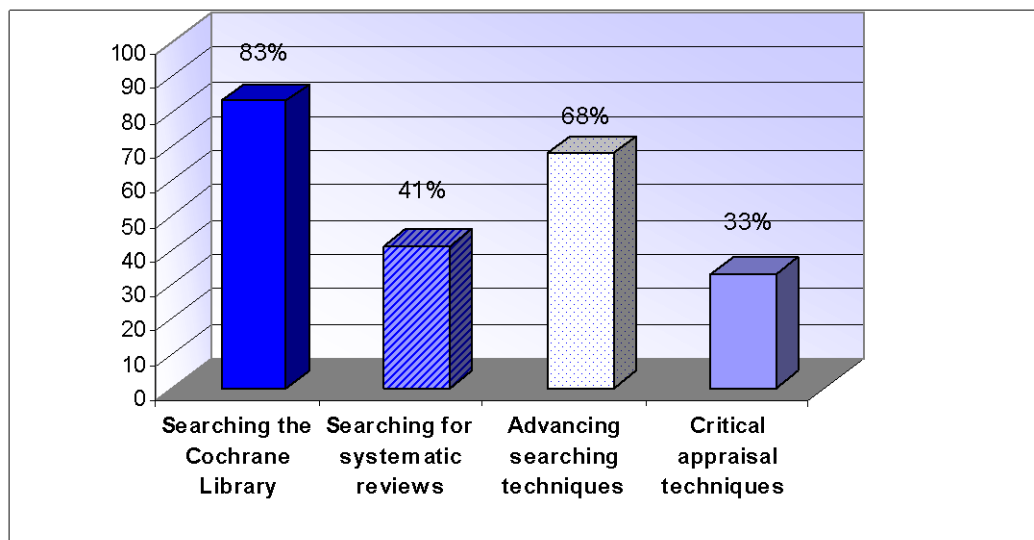
### **Results of Survey:**

Not all of those who received the survey were health science librarians as the survey was also sent to other academic librarians and therefore we couldn't ascertain the response rate to this online survey. Of those who responded (n=77) 23% worked in a third level institution, 22% in a hospital library, 13% in a healthcare library and 19% indicated "Other". 12% of respondents had attained their professional/academic qualification in the 1960/1970's, 26% in the 1980's, 27% in the 1990's, 34% in the 2000's and 1% did not answer the question.

### **Past training received**

The response rate to this question was 70.1%. Of those who responded 83% had received training on searching the Cochrane Library. 41% had received training on searching for

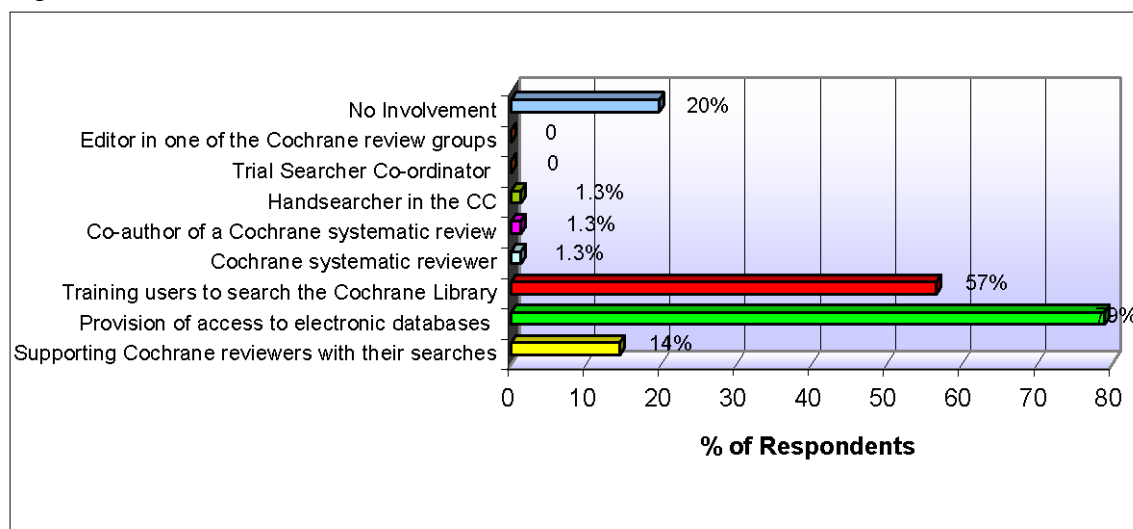
systematic reviews and more than two-thirds (68%) had received training on advanced searching techniques in the past. Only one third had received training on critical appraisal skills.



**Figure I Training received by health science librarians**

### **Involvement in activities associated with the Cochrane Process by Librarians**

The response rate to this question was 98.7%. The predominant activities carried out by librarians in Ireland were provision of access to electronic resources and training users to search the Cochrane Library. 14% indicated that they were currently or previously had been involved in supporting Cochrane reviewers with their searches. Very few indicated involvement as hand searchers (1.3%), co-authors (1.3%) or systematic reviewers (1.3%) in Cochrane reviews. None of the respondents were or had been trial search co-coordinators or editors in any of the review groups and approximately one-fifth of respondents indicated “no involvement”.



**Figure II Librarians involvement in activities associated with Cochrane process**

**Q1 Define the key roles Librarians have in the Cochrane Collaboration**

- Trial search co-ordinators - Register of trials,
- Handsearchers- Hand-searching key journals, proceedings etc.
- Authors- Writing and editing reviews
- Information Retrieval Methods Groups, Cochrane Library user group
- Educator:
  - Training their users to search the Cochrane Library
  - Training / Teaching e.g. review authors to search specific databases
- Focusing the question
- Raising awareness of Cochrane Library
- Developing searches & comprehensive literature searching
- Providing access to databases, e-journals, and other sources
- Collaborating with experts in the field

**Q2. What skill-set do librarians possess that are useful in the Cochrane Process?**

- Ability to formulate research questions- Literature searching skills
- Knowledge of identifying key information resources and other information resources e.g. grey resources
- Developing search strategies
- Searching skills
  - Knowledge of information retrieval and advanced searching techniques
  - Understanding of database structure/language, different interfaces
- Information management & Information literacy skills
- Training skills
  - Training and enabling the other team members to search for evidence
- Document delivery
- Recording and documenting the search results (reference management software)

**Q3. What skills do librarians require to enable us to contribute more?**

- Detailed knowledge of research methodologies including statistics
- Critical appraisal skills
- Detailed reference-interview techniques
- More knowledge of Cochrane Collaboration
- Trainer the trainer sessions - Teaching skills
- Systematic review courses – methods and data extraction
- Bibliographic reference management software
- English for non-native speakers
- Advocating the benefit of involving a librarian
- Inter and Intra-professional support & networking
- Development of professional self-confidence

**Q4. What are the potential barriers that discourage/inhibit librarians from becoming (more) involved?**

- Lack of time
- No funding
- Stereotyping: Perception of others of the librarian's role,
- Subject knowledge
- Lack of inter-professional support
- Lack of funding for training
- Lack of support from managers
- Failure

**Q5 Outline useful ways that we as librarians could overcome these difficulties**

- Seek new funding opportunities
- Participation in collaborative activities
- Network with other systematic reviewers (mailing lists, blogs, conferences, workshops)
- Do research, publish- collaborate –other librarians, interdisciplinary
- Take greater responsibility for our own CPD
- Seek training opportunities
- Share training resources
- Consult
- Marketing our skills and raising awareness of the librarian role
- Accept new roles and opportunities
- Attend Cochrane Colloquium and /or local/ national conferences
- Promote skill-set during training
- Develop self-efficacy

**Discussion**

Attendees at the workshop identified a wide variety of roles that librarians have in the Cochrane Collaboration from working as trial search co-coordinators, authors on reviews, to training library users on how to search the Cochrane Library or training authors to search specific databases. Currently there are no review groups based in Northern Ireland or in the Republic of Ireland and this is reflected in our survey results. There was no involvement by the Librarians as trial search co-coordinators or as editors in any of the Cochrane review groups. Roles that Librarians in Ireland possessed were limited to training users to search the Cochrane Library and provision of electronic resources. A smaller percentage were also involved with supporting reviewers with their searches for Cochrane systematic reviews but we did not examine to what extent this support was offered i.e. training on how to search specific databases, developing the search strategy or a more involved role carrying out the searches. There were very few

involved directly as hand searchers (1.3%), co-authors(1.3%) or Cochrane systematic reviewers (1.3%).

The level of participation by Librarians in Ireland could be attributed to a number of factors. A web-based survey (Smith & Devane 2006) carried out in Ireland in September 2006 identified eighteen reviews and nineteen protocols with Irish authors and concluded that Ireland is at the early stages in terms of output. Lack of time, funding, managerial support as well as the perception of other professionals regarding the role of the librarian within the review process were identified by the participants at the workshop as factors inhibiting Librarians from greater involvement. Lack of domain knowledge was also mentioned by some as a potential barrier. Needless to say, the Cochrane Handbook (Higgins & Green ed.2006) acknowledges that a Cochrane Review should have individuals working on it with different specialties i.e. subject, methods & information and this is often accepted to be the case.

From the survey, a high percentage had received training on searching the Cochrane Library (83%), followed by advanced searching techniques (68%). Training in critical appraisal skills had only been received by one third of respondents. Similarly, librarians at the workshop identified their strengths to be their in-depth working knowledge of information resources, searching skills, provision of access to those resources in a variety of ways as well as other skills in facilitation, communication, report writing, teaching and as been important advocates for evidence-based health care.

One of the difficulties expressed at the workshop was the negative perception and misunderstanding of librarian's roles and skill-set. Willis (2004) found that there was a greater variety in librarians roles associated with evidence-based medicine in the librarian-oriented literature in comparison to health-oriented literature.

The participants also discussed their areas of weakness and similar to the survey critical appraisal skills were prominent. They identified a need for more training in research methodology and a desire to attend training in systematic review courses as well as knowledge of the Cochrane Collaboration. Attendees would like to develop their teaching skills, reference management and reference interview techniques further. Non-native English speakers identified improving language skills as important. Librarians expressed lack of confidence as a stumbling block and the need to promote the role of the librarian in carrying out systematic reviews as important.

## **Conclusion:**

Health Science Librarians in Ireland are primarily involved with the Cochrane Collaboration through provision of access to electronic resources to those who carry out systematic reviews. They are also important advocates for the Cochrane Library and in training and supporting users to locate systematic reviews.

The attendees at the workshop explored the skill-set they felt librarians had which would be essential in undertaking systematic reviews. These included information retrieval skills, identifying key information resources, advanced searching skills, expertise of different database interfaces, reference management and document delivery. They also identified other transferable skills in training, report writing, facilitation, organizational and interpersonal, skills. There is a need for librarians to continually

update their skill-sets. Many health science librarians in Ireland lacked training in critical appraisal skills and similarly those who attended the workshop identified this as an area of weakness.

The attendees identified a number of barriers such as lack of support etc. The participants at the workshop discussed ways to overcome those difficulties from taking responsibility for our own CPD, doing research and collaborating with other librarians, networking with systematic reviewers in other fields, marketing our own skill-set, seeking out funding opportunities and accepting new roles and opportunities. The Cochrane Collaboration offers introductory training courses about the organization, the Cochrane Library and systematic reviews and training days are provided for systematic review authors. The Cochrane Handbook of Systematic Reviews is available online and is the “bible” with regards to carrying out systematic reviews.

In Ireland and elsewhere, health service reforms have emphasized the need for changes in practices in health care delivery. Health information is a critical component underpinning evidence-based decision-making in healthcare organisations and its accessibility and applicability are highlighted as a valuable resource to the public, clients/patients, professionals, planners and policymakers in the Health Information Strategy (DoHC, 2004). Current best evidence should be used to inform decision-making, clinical practice and ultimately improve the delivery of patient care.

Evidence-based practice requires the ability to identify, select, evaluate and synthesize the literature and there is a need for librarians to enhance their skills to contribute to evidence-base practice. Comprehensive searching is vital to the strength of the Cochrane systematic reviews and librarians have a role as active participants in the process.

Within the healthcare setting it has been a core role of librarians to disseminate information, train users in how to find evidence-based sources of information and in doing so we have been important advocates for evidence-based healthcare. Therein lie opportunities for librarians to advocate their own skills within the healthcare community and to acquire new ones.

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## Appendix

### Online Questionnaire sent to Librarians on the Island of Ireland

1) Where do you work? \_\_\_\_\_

- a) Library in a third level institution
- b) Hospital Library
- c) Healthcare Library
- d) Other. Please specify \_\_\_\_\_

2) Year of attaining professional/academic qualification in librarianship: \_\_\_\_\_

3) Are you currently or have you previously been involved in the following?

- |  |                              |                             |
|--|------------------------------|-----------------------------|
| a) Supporting systematic reviewers with their searches                                   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| b) Provision of access to electronic databases<br>i.e. Medline, Cinahl, Embase, PsycInfo | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| c) Training in searching the Cochrane Library  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| d) Contribution as a systematic reviewer   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| e) Handsearcher for trials in journals   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| f) Trial search co-ordinator in one of the<br>Cochrane review groups                     | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| g) Editors   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| h) No involvement  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

4) In the past have you received training on

- |   |                              |                             |
|---|------------------------------|-----------------------------|
| a. Searching the Cochrane Library   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| b. Searching for systematic reviews   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| c. Advanced Searching techniques for<br>i. Embase, Medline, PsycInfo and Cinahl | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| d) Critical appraisal techniques  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |