

## DEPARTMENTS / DÉPARTEMENTS

### Editor's message

We are celebrating a very special birthday with the publication of this issue, because the new electronic version of the *Journal of the Canadian Health Libraries Association / Journal de l'Association des bibliothèques de la santé du Canada* (JCHLA / JABSC) is now 1 year old! I would like to thank Karen Neves for her support and guidance over the past year, as I “learned the ropes” in my transition from assistant editor to editor of the journal. I would also like to thank Andrea Hodgson, the Canadian Health Libraries Association / Association des bibliothèques de la santé du Canada (CHLA / ABSC) Board, and Sandra Halliday, incoming editor, for their unwavering support as I begin my term as editor of JCHLA / JABSC.

This issue focuses on information literacy, since it contains two wonderful articles entitled “Preparing entry-level practitioners for evidence-based practice” and “Developing information literacy skills in nursing and rehabilitation therapy students”. You will also find a very informative report from Hakim Bishawi in the United Arab Emirates, on “The Fourth Regional Conference on EMR Health Sciences Virtual Library: Role in e-Learning and Building the Information

Society”. I think it is very beneficial to all of us as information professionals to continue this exchange and sharing of our work with our counterparts in other areas of the globe.

Some of our readers may have noticed the small hiccup in the transition to electronic format, in that the indexing of JCHLA / JABSC is a little behind in the literature. I assure you that this is being attended to, and the new electronic version of the journal will be indexed in the near future.

Everyone is gearing up for the CHLA / ABSC conference in Toronto this year, “The World Around the Corner” (30 May – 3 June 2005), especially since the Special Libraries Association (SLA) conference, “Putting Knowledge to Work”, will also be in Toronto on 5–8 June 2005.

I encourage everyone to consider writing for the journal. Please feel free to contact me with content ideas or thoughts. There are many exciting trends in our field that would make excellent topics for articles, such as open access, PDAs, distance learning, biomedical informatics, etc.

Cheers,  
**Rebecca Zakoob**



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### A word from the President

By the time this is published, spring will have arrived with the happy thoughts of renewal and better weather that come with this change of seasons. And we will be looking forward to the imminent Canadian Health Libraries Association / Association des bibliothèques de la santé du Canada (CHLA / ABSC) Conference in Toronto, 30 May – 3 June 2005. Have a look at the conference Web site to see all the great programs and meetings taking place (<http://chla-absc.ca/2005/>). I invite you to take part in this excellent conference.

CHLA / ABSC had a busy summer and fall. A call for members to work on a task force to revise the *Standards for library and information services in Canadian healthcare facilities* had a very enthusiastic response. At the Winter Board meeting, still to come as I write this, we will have the first report from the Standards Task Force, which is made up of Susan Powelson (Chair), Library Director, Regina Qu'Appelle Health Region, Regina, Saskatchewan; Ana Rosa Blue, Librarian, Lions Gate Hospital, North Vancouver, British Columbia; Anne Allgaier, Librarian, Prince George Regional Hospital, Prince George, British Columbia; Connie Clifford, Coordinator of Library Services, Caritas Health Group, Edmonton, Alberta; Karen Darrach, Library Technician, Health Sciences Library, South-East Regional Health Authority, Moncton, New Brunswick; Elizabeth Lamont, Chief Librarian, Royal Victoria Hospital Medical Libraries, Montreal, Quebec; Tracy Morgan, Library and Information Specialist, Guelph General Hospital, Guelph, Ontario; Joanne Radulovich, Halton Healthcare Services, Oakville-Trafalgar Site, Oakville, Ontario; and Lisa Runions, Librarian, Cornwall Community Hospital, Cornwall, Ontario. This excellent group represents Canada from coast to coast and libraries big and small. The Task Force is committed to seeing new standards completed in time for the 2006 CHLA / ABSC Conference.

Elizabeth Lamont has accepted the appointment as the CHLA / ABSC representative to the Canadian Council on Health Services Accreditation / Conseil canadien d'agrément des services de santé (CCHAA / CCASS). Elizabeth's dual role, as a member on the Standards Committee and as the liaison with the CCHSA / CCASS, will strengthen the bond and facilitate communication with the accrediting body.

The National Network of Libraries for Health / Réseau national des bibliothèques pour la santé (NNLH / RNBS) Task Force has been busy planning a large Stakeholder session that will build on the mini-meeting held on 5 October 2004. The Canada Institute for Scientific and Technical Information (CISTI) is playing a major role in this initiative. Bev Brown has joined the Task Force, and CISTI has agreed to host the Stakeholder event. Plan to attend the CHLA / ABSC Conference to hear the Task Force report and have your input into their plans.

The Ontario government is restructuring the hospitals in that province, and the Board is monitoring the effect on health libraries there. Perhaps as a result of the efforts required on that front, two of the Ontario Chapters — COHLA and KAHLA — have requested a break from Chapter activities. The Board has agreed that the Chapters should suspend their activities for the time being. This has happened in the past with other Chapters, and over time, the Chapters came back with renewed energy. On a similar note, the Board is working with the Ontario Health Libraries Association (OHLA) on developing cooperative models, and there may be opportunities that will help the Chapters throughout Ontario.

All the best for a fine and pleasant spring. See you at the conference!

**Penny Logan**



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### Le mot de la présidence

Au moment où ces lignes seront publiées, le printemps se sera manifesté et les bourgeons de pensées positives de renouveau commenceront à éclater en cette saison d'éclosion. Nous nous activerons déjà avec fébrilité en vue du congrès de l'Association des bibliothèques de la santé du Canada / Canadian Health Libraries Association (ABSC / CHLA) qui se tiendra à Toronto du 30 mai au 3 juin. Jetez un coup d'oeil au site Internet du congrès. Vous y trouverez l'agenda de toutes les activités et des rencontres prévues : <http://chla-absc.ca/2005/>. Je tiens à vous inviter personnellement à participer activement à ce congrès d'excellence.

L'été et l'automne derniers ont été très mouvementés pour l'ABSC / CHLA. La réponse à l'appel lancé de participation à un comité ad hoc chargé de la révision des *Normes applicables aux bibliothèques et services d'information en santé au Canada* a été des plus enthousiastes. Lors de la réunion du Conseil d'administration de l'hiver — qui doit se tenir prochainement, au moment d'écrire ces lignes — nous accueillerons le premier rapport du comité ad hoc sur les normes, comité composé de Susan Powelson (Présidente), Directrice de la bibliothèque de la Regina Qu'Appelle Health Region en Saskatchewan; Ana Rosa Blue, Bibliothécaire, Lions Gate Hospital de Vancouver Nord, en Colombie-Britannique; Anne Allgaier, Bibliothécaire, Hôpital régional de Prince George en Colombie-Britannique; Connie Clifford, Coordinatrice des services bibliothécaires, Caritas Health Group, d'Edmonton en Alberta; Karen Darrach, Technicienne bibliothécaire, Bibliothèque des sciences de la santé de la Régie régionale de la santé sud-est de Moncton au Nouveau-Brunswick; Elizabeth Lamont, Bibliothécaire en chef, Bibliothèques médicales de l'hôpital Royal Victoria de Montréal au Québec; Tracy Morgan, bibliothécaire spécialiste en information de l'hôpital Général de Guelph en Ontario; Joanne Radulovich, Halton Healthcare Services, Oakville-Trafalgar, à Oakville en Ontario; et Lisa Runions, Bibliothécaire, Hôpital communautaire de Cornwall en Ontario. Ce groupe d'excellence représente l'ensemble du Canada, d'un océan à l'autre, des bibliothèques de toutes

tailles. Le Comité ad hoc a pour tâche de rédiger les nouvelles normes à temps pour le congrès 2006 de l'ABSC / CHLA.

Elizabeth Lamont a accepté de représenter l'ABSC / CHLA auprès du Conseil canadien d'agrément des services de santé / Canadian Council on Health Services Accreditation (CCASS / CCHAA). Le double rôle d'Elizabeth auprès du Comité ad hoc sur les normes et de représentante auprès du CCASS / CCHAA renforcera le lien et facilitera la communication avec le conseil d'agrément.

Le groupe de travail du Réseau national des bibliothèques pour la santé / National Network of Libraries for Health (RNBS / NNLH) s'est activé avec vigueur à la planification d'une importante session des parties concernées qui assurera la continuité du travail entrepris lors de la mini réunion qui s'est tenue le 5 octobre dernier. L'Institut canadien de l'information scientifique et technique (ICIST) joue un important rôle au sein de cette initiative. Bev Brown s'est jointe au groupe de travail et l'ICIST a accepté d'assumer la tenue de la session éventuelle. Prévoyez assister au congrès de l'ABSC / CHLA où le groupe de travail déposera son rapport et où il vous sera possible de faire part de vos idées.

Le gouvernement de l'Ontario procède à la restructuration des hôpitaux de la province et le Conseil d'administration garde un oeil vigilant sur les effets possibles sur les bibliothèques en santé. Peut-être en raison des efforts nécessaires à cet effet, deux des chapitres de l'Ontario — COHLA et KAHLA — ont demandé la suspension de leurs activités pour le moment. C'est une situation qui s'est déjà produite auparavant de la part d'autres chapitres et avec le temps, les chapitres sont revenus chargés d'une énergie renouvelée. Dans le même ordre d'idée, le Conseil d'administration travaille actuellement en collaboration avec l'Association des bibliothèques en santé de l'Ontario (OHLA) au développement de modèles coopératifs et il se pourrait que les chapitres de tout l'Ontario y trouvent un intérêt particulier.

Mes meilleurs vœux d'humeur printanière vous accompagnent. Au plaisir de vous rencontrer au congrès!

**Penny Logan**



## Developing information literacy skills in nursing and rehabilitation therapy students

Paola Durando and Patricia Oakley

**Abstract:** The environment in which nurses and rehabilitation therapists practice is rapidly evolving, resulting in changes in the skill sets and competencies required of new graduates. Evidence-based practice models, for example, require that entry-level nurses, physical therapists, and occupational therapists have the ability to identify, locate, and critically appraise research findings. This paper will describe curriculum-integrated, for-credit information literacy programs developed by the authors in collaboration with faculty members from the Schools of Nursing and Rehabilitation Therapy at Queen's University in Kingston, Ontario. The short-term goal of these programs is to teach undergraduate and graduate students advanced search strategy skills and critical appraisal techniques that will enable them to explore the implications of their literature findings. The long-term goal is to graduate practitioners who not only will have the skills to practice evidence-based health care but also will participate in scholarly activities and thus contribute to the evidence base in their disciplines.

### Introduction

New Canadian educational directives for nursing and rehabilitation therapy place a much greater emphasis on critical enquiry and research. Information literacy standards developed by the library profession provide a ready framework for collaboration between librarians and professors [1]. Academic health sciences librarians, therefore, not only can, but also should, play a critical role in these new directives.

The Canadian Nurses Association states that the competencies required by new registered nurses to meet client needs will be most effectively and economically achieved through a baccalaureate education. A degree requirement for entry into nursing has been adopted throughout Canada by all provincial and territorial nurses' associations. The decision was adopted to reflect trends in health care in Canada and the changing role of nurses [1]. By 2010, a master's degree will be the minimum entry requirement to the professions of occupational therapy and physical therapy in Canada, running parallel to a worldwide movement to graduate studies. The professional master's degrees place more emphasis on research and on evidence-based and reflective practice [2].

*Entry to Practice Competencies for Ontario Registered Nurses*, produced as a guide to curriculum development and review, sets out the standards and competencies required for graduating nurses [1]. Professional standard 3 – application

of knowledge, lists the following competencies that are key to contributing to health or nursing research:

- (i) identifying researchable questions
- (ii) reading and critiquing research reports
- (iii) using evidence-based knowledge from nursing, health sciences, and related disciplines to select and individualize nursing interventions

The National Physiotherapy Advisory Group states that the entry-level requirements for physiotherapists are changing because of the large growth of applicable information; the shift from institutional to community-based practice; more physiotherapists working independently and caring for patients with more acute, complex conditions; and the need to develop programs, make evidence-based decisions, and evaluate outcomes on an individual and program basis [3].

The Canadian Association of Occupational Therapists groups information literacy skills under the following professional accountability core competencies [4]:

- (i) demonstrate ability to search for and obtain information
- (ii) demonstrate ability to critically appraise the source and content of the information
- (iii) apply new knowledge and relevant information to practice

The literature identifies a number of barriers to research utilization by practicing nurses. In one study, nurses identified the lack of searching skills and knowledge as well as critical appraisal skills [5]. The ability to locate and critically appraise research articles was the lowest-rated competency identified in a study addressing barriers to research utilization [6].

Welch found that although occupational therapists have positive feelings toward evidence-based practice, the recurring barriers are lack of time; staff shortages; deficits in information technology, literature searching, and research skills; inade-

**P. Durando.** Bracken Health Sciences Library, Botterell Hall, Queen's University, Kingston, ON K7L 3N6, Canada (e-mail: durandop@post.queensu.ca).

**P. Oakley.** National Research Council, Canada Institute for Scientific and Technical Information, Fredericton, NB E3B 9W4, Canada (e-mail patricia.oakley@nrc-cnrc.gc.ca).

quate facilities; isolation from colleagues; and physicians who do not cooperate with change [7].

A study by Jette et al. of 488 members of the American Physical Therapy Association found that the demand for and interest in applying evidence to physical therapist practice had grown in the last decade, yet one quarter of the respondents stated that they used literature in their clinical decision making less than twice a month [8]. The authors found that training, familiarity with and confidence in search strategies, use of databases, and critical appraisal tended to be associated with younger, recently licensed therapists.

A 2003 survey by McNeil et al. provided a snapshot of the integration of information technology into the nursing education curriculum in the United States [9]. Information technology, as defined in this survey, included information literacy skills, as well as computer literacy skills and informatics competencies. The survey attempted to answer several questions, including what specific information technology and computing skills were currently being taught in the United States and to what extent faculty members are prepared to teach this knowledge and associated skills. The findings suggested that current baccalaureate programs were addressing computer literacy skills rather than information literacy skills, and the expectations for information technology skills for students entering both the undergraduate and graduate nursing programs were low. The survey also found that there were gaps in the information technology content taught at both the graduate and undergraduate level. Curriculums had evidence of skills in accessing electronic resources, but content related to evidence-based practice was less visible.

There also appeared to be a gap in the knowledge needed by nursing faculty to prepare nurses to be skilled in information technology and its use in managing clinical information in daily practice. The majority of nurse educators were primarily at the novice or advanced beginner level regarding the use of information technology tools and skills such as word processing, bibliographic retrieval, and presentation software.

These findings reinforce our conviction that a collaborative approach between health sciences librarians and educators is more effective in imparting the needed skill sets and, therefore, addressing the identified barriers to research uptake and knowledge transfer.

## Program description

The Bracken Health Sciences Library at Queen's University in Kingston, Ontario has offered a curriculum-based information literacy program since the early 1990s, particularly in the School of Medicine. Curriculum-based instruction is not a new methodology for teaching information literacy skills. Wallace defined it as "a course-integrated approach to the development of skills and knowledge that is integrated into the teaching, learning and assessment or curriculum objectives and content" [10]. Provision is made for the developmental progression of skills throughout the course, unlike knowledge transmission through stand-alone or discrete subjects or through training programs offered outside the formal curriculum. Wallace argued that this approach allows students to develop the skills and knowledge that are associated with information literacy as part of the learning process itself. This integrated approach also allows information liter-

acy development to occur incrementally at the same time, allowing students to transfer skills and knowledge throughout their undergraduate program. Verhey [11], Jacobs [12], and Shorten [13] all suggest some measure of success in improving the information literacy skills of nursing students.

Comprehensive course integration for nursing, occupational therapy, and physical therapy has developed and evolved in the past 3 years, largely owing to the assignment of liaison librarians to the Schools of Nursing and Rehabilitation Therapy. The Collaborative Nursing Program, established by St. Lawrence College and Queen's University, provided funding for a full-time librarian's position to support the program. For rehabilitation therapy, the new master's program offered literature-dependent courses such as "Evidence-Based Practice" and "Interpretation of Applied Research in Rehabilitation Science" — a perfect opportunity for librarian-educator collaboration.

For both schools, it was decided to integrate information literacy instruction into required courses. Librarians and faculty teaching the course established specific goals and objectives, teaching methods, and assignments for the library component of the course. These meetings ensured continuity between the skills taught by librarians and the overall course objectives.

## Instructional methods

A variety of instruction methods were used and included self-directed workbooks, hands-on database searching sessions, in-class lectures and presentations, and assignments. While it would be admirable to say that the instruction methods employed were always based on the best method for ensuring optimum skill development, other practical factors, such as class size and time allotted to the course, were contributing factors. In reality, the norm was to use a variety of teaching methods.

In-class lectures, while used sparingly, were an important component of most courses. This method was most often used to introduce broad topics and provide the foundation for subsequent uses of self-directed workbooks, hands-on sessions, and assignments. Lectures generally did not include demonstrations of specific library tools such as databases and catalogues.

Workbooks served as a bridge between the presentation and the hands-on database searching sessions and were usually the first point of contact between individual students and librarians. Developed by the liaison librarians and using examples and exercises that reflected course content, the workbooks introduced concepts that required review, such as identifying citation elements, searching the library catalogue for known items, identifying MeSH and CINAHL controlled vocabulary, and evaluating Web sites according to stated criteria. Follow-along and review exercises allowed students to assess their understanding of the material provided to them. A final exercise synthesized the topics covered in the workbook. Workbooks were either included in course packs or distributed in class and were also made available on the library Web site as PDF files.

Students had the option of working independently or in pairs or groups, and it was observed that students benefited from working with others. The workbooks were done outside of class time, usually at the library, and took on average



2 h to complete. Students often requested help at the reference desk.

Public service librarians or, in one instance, the course teaching assistant, corrected the workbooks. Each took about 10 min to correct, and answer keys were used for consistency. Workbooks were not graded (other than pass or fail), but their satisfactory completion was a prerequisite to the subsequent database searching sessions.

Students were asked to complete and return (anonymously) an evaluation form regarding the format and perceived usefulness of the workbook. Feedback was generally positive. Students liked being able to complete the workbook at their convenience and found that their skills were enhanced. Typical comments were, "I liked the self-directed aspect: hands-on, but support available at library"; "took you through the necessary procedures step by step"; "built in a progressive way"; and "all new concepts!" Students liked that they were encouraged to work with others and get to know each other, since this was often their first assignment for the term or program. Negative comments reflected the absence of librarians during evenings and weekends and the length of time to complete the workbook. Some students disliked "that you had to come into the library to complete some sections", although others wrote, "I like that it got us into the library." Comments from students with previous university studies but no former bibliographic instruction seemed to indicate that library instruction was useful: "I've been at Queen's for 2 years, but it's only now that I feel confident using the library."

Corrected workbooks were returned at the beginning of the database searching sessions, and librarians reviewed common trouble spots. Multiple sessions of a class were taught to ensure that each student had their own computer during a database training session. The Bracken Health Sciences Library is equipped with two computer labs, which double as teaching centers, consisting of 30 computers. In larger sessions with 12 or more students, a librarian instructor and a "librarian roamer" were on hand. Based on the feedback, the students appreciated having a second librarian.

Subject-specific database searching examples were integrated into the corresponding course. Each student received a copy of class notes that covered the material presented or had the course notes ahead of time in their course pack. Students were encouraged to refer to class notes to complete the assignments and to keep the notes to refer to in subsequent years and other classes.

Sessions were generally 1–2 h in length. Overall feedback from the sessions was positive. Typical comments were, "Now I am more comfortable searching for journal articles" and "I learn better by doing than by watching." Negative comments mostly reflected the pace of the sessions — too fast for some students or too slow for others.

### Assignments

Library assignments were a critical component of the sessions and were developed in consultation with the course instructor or coordinator. The values of the assignments ranged from 5% to 30% of the overall course mark. The potential of the value of a library assignment to influence the overall course mark was an important, and at first overlooked, consideration.

Occasionally, more than one librarian marked the assignments, and there were subjective differences in awarded points. To prevent this, marking rubrics were developed, and "test" group marking sessions were held to ensure consistency in the interpretation of the marking scheme.

An increase in the number of questions received at the reference desk, e-mail and telephone queries, and one-on-one consultations with liaison librarians were clear indicators of the efforts that students put into the library assignments.

The positive outcomes of the library assignments were increased contact among public service librarians and a higher profile for the information literacy course components. Drawbacks were the time commitment in developing and marking assignments. One course, for example, enrolled 100 students, and assignments took up to 1 h each to mark.

### Program Evaluation

Evaluation is the weakest component of the described programs. There have been some evaluative studies of curriculum-based instruction sessions for information literacy skills, and findings indicate that this method of instruction does have some positive feedback.

A study conducted by Fox et al. compared the information literacy skills of nursing school graduates before and after library instruction sessions were introduced into the curriculum. The study found that graduates who completed library instruction in nursing school read a wider selection of professional journals and participated earlier in scholarly activities than graduates who had not received library instruction [14].

A 2003 survey of Ohio State University's Occupational Therapy division graduates from 1995 to 2000 found that 26% of graduates searched MEDLINE or the Cumulative Index of Nursing and Allied Health Literature (CINAHL) at least once since graduation, and formal library instruction sessions were considered useful by 42% of the graduates [15].

Ducas and Michaud-Oystryk's study of University of Manitoba faculty members found that 41% of the health sciences faculty rated librarians' teaching as having a substantial or very substantial impact on student performance [16].

Anecdotal evidence indicates that the programs developed by the authors are beneficial to students' library research behaviors. Upper-year students asking for reference assistance often refer to earlier information literacy instruction and return to refresh or hone their skills at the time of need. The questions these students ask tend to be very specific and display knowledge of core information retrieval skills. Students will often return to meet with their liaison librarian to discuss projects in other courses. Professors have remarked to us that the information literacy efforts have improved the quality of student assignments. At Queen's, librarians with enough student contact hours can elect to participate in the University Survey of Student Assessment of Teaching (USAT). For a rehabilitation therapy foundation course, 91% of students filled out the USAT survey. Their response to questions such as "I learned a great deal from this course" and "Overall, this is an excellent course" was the same and in some cases higher than the departmental mean. One comment was, "This course was crucial for me — I would have had to learn this somehow — I was very relieved and appreciative. I have used every bit of what was taught and it was extremely helpful."

## Discussion

While information literacy programs developed for the medical curriculum at Queen's University helped to establish a foundation for programs developed for allied health, there was a need to address differences within the disciplines of nursing and rehabilitation therapy.

Nursing and allied health disciplines pose particular challenges for evidence-based practice. Closs summarizes the reservations surrounding the evidence-based nursing movement around several misconceptions — the conflict between generalized versus individualized patient concerns, the apparent lack of recognition of individual practitioners' skills, and the “paradigmatic resistance linked to the proclaimed supremacy of the randomized controlled trial (RCT) as the source of best evidence” [17].

In developing the programs, librarians attempted to address these differences. For example, one key skill used in the Nursing 205 instruction session was developing the clinical question. In information literacy sessions for the medical students, the PICO (patient – intervention or issue – comparison – outcome) model is used to help students develop clinical questions. This clinical question framework, while also used with nursing students, needed to be broadened to include other types of relevant clinical questions that could be developed by a reflective practitioner. Brown's chapter on developing the clinical question was introduced to students as a method of defining a specific clinical question [18].

Occupational therapy is a relatively new discipline, and its literature is extremely interdisciplinary in its scope. The infancy of the discipline is evident in the lack of bibliographic control. For example, the subject heading “Occupational Therapy” in the 2004 CINAHL Subject Heading List has only three more specific headings in the tree structure [19]. Because the literature for occupational therapy is still maturing, it is especially important that students and practitioners have the skills to identify available evidence. After formulating research questions for their “Interpretation of Applied Research in Rehabilitation Science” information literacy assignment, students found that a paucity of evidence often required them to either broaden their research question or use related studies in other disciplines. This is also true of physical therapy: “We already know that the literature is silent on a number of important clinical questions,” wrote Guccione, and “where the literature has ripened, we should be able to draw conclusions about what interventions maybe most appropriate for particular problems in particular populations to achieve certain outcomes” [20].

Ducas and Michaud-Oystryk revealed that a large number of faculty members were unaware of librarians' teaching roles [21]. The authors advocated that librarians should make every effort to interact with faculty members and not assume an awareness of the role of librarians. Apart from meeting with individual professors to plan courses, liaison librarians also attend monthly academic council meetings and report on library activities. At Queen's University, librarians are members of the Faculty Association, which facilitated the librarians' ability to develop in their role as teachers and to participate in formal course evaluation. Librarian–faculty teaching collaboration in allied health has also led to research collaboration; librarians not only perform literature searches but

also partner with faculty members on research projects. Once liaison librarians become familiar with individual faculty members' areas of teaching and research, collection development becomes much more targeted and provides another avenue for collaboration.

A culture of curriculum-based instruction is needed within the library to ensure the continued success and evolution of instruction initiatives. There are changes in the overall work environment of a library, from the daily tasks to the overall strategic plan. The Bracken Health Sciences Library is staffed by 7 professional librarians and supported by a staff of 12 library technicians. The library serves both students and faculty within the health sciences and also has commitments to outreach services in several hospitals. Even though a subject liaison librarian develops the program and assignments, other librarians teach, mark, and answer related queries at the reference desk. All reference librarians must be thoroughly familiar with assignment expectations, a challenge when several assignments for various disciplines have looming due dates.

Adopting a method of curriculum-integrated instruction presents librarians with many additional tasks that are different from past practices. “Meanwhile, the obligatory tasks of the librarian — reference duties, collection development, etc. — have not diminished in importance.” Nor is there a long-term reduction in reference service due to information literacy; instead, “it appears as though instruction in bibliographic skills makes the student a more sophisticated library user, which in turn increases the student's demand for reference services” [22]. In a study that analyzed the data for 83 ARL (Association of Research Libraries) libraries over a 6-year period, each student who received bibliographic instruction increased the reference demand by two to seven questions [23]. Moreover, the reference questions and responses were more complex in nature.

We feel that contact time with students is irreplaceable, and thus we have made a conscious decision not to adopt Web-based instruction, despite current first-year class sizes of 100 students for rehabilitation therapy and 130 for nursing. Web-based course software, such as WebCT, did not seem workable for bibliographic instruction, and moving courses to a Web-based environment is even more labour-intensive [24], despite self-marking quizzes. The Internet did serve as a vehicle for communicating with students; course objectives, database session dates, assignments, and mock assignments (examples of assignment expectations) were provided on library Web pages.

As librarians take on a greater teaching role, our responsibilities are equal to other faculty: class preparation, revising, grading, and dealing with students. Because many librarians “develop their own courses and methods of evaluation”, Brettle suggests “better access to research evidence and mechanisms to reduce duplication” and “sharing of resources and ideas” [25]. See “Course materials” for information about accessing course materials developed by the authors of this paper.

## Conclusion

We stated that the short-term goal of these programs was to teach undergraduate and graduate students advanced search strategy skills and critical appraisal techniques. Feedback

and assignments would seem to indicate that there was some success in transferring search strategy skills to students in these programs. We cannot say with any confidence if students maintained these skills after they completed the course. We do hope that students, at the very least, are more aware of the literature search process and that there is a need for the application of a structured approach in performing searches. We also believe the programs were valuable in allowing students to develop a relationship with the health sciences librarians and increase their comfort level in using the library and its resources.

The long-term goal of the programs, as stated at the beginning of this paper, is to graduate practitioners who not only will have the skills to practice evidence-based health care but will also participate in scholarly activities and thus contribute to the evidence base in their disciplines. Long-term research would be required to provide evidence on the success or failure of the program to address these goals. We do believe that librarians have the ability to transfer skills to students in these practices, and we suggest that current curriculum changes offer an ideal opportunity for librarians to strengthen working and professional relationships with students, as well as with faculty members.

### Course materials

For additional information about the programs or for course materials, please contact the authors (P. Durando for rehabilitation therapy and P. Oakley for nursing). The course materials for first-year rehabilitation therapy students can be accessed on the Ontario Scholars Portal Cooperative Online Repository for Information Literacy (CORIL) at <https://ospace.scholarsportal.info/index.jsp>. The course materials can be used "as is" or adapted for local implementation and integration with course content.

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## Preparing entry-level practitioners for evidence-based practice

Michelle Villeneuve and Suzanne Maranda

**Abstract:** The authors report on a collaborative instructional method used to prepare entry-level practitioners with strategies for systematically employing an evidence-based practice process as an approach to clinical inquiry, while acknowledging the students' shortage of clinical experience and knowledge of critical appraisal. Challenges to evidence-based practice can be categorized as difficulties in obtaining evidence, analyzing evidence, and transferring evidence into practice decisions. For student occupational therapists, additional challenges are encountered as they seek to fill gaps in their knowledge about client-centred occupational therapy (OT) practice, acquire necessary background information regarding clinical conditions, and formulate a clinical question. Students need to develop literature search skills and learn effective strategies to locate appropriate information to answer the clinical question. This paper will encourage OT faculty to begin a dialogue with librarian colleagues at their institution to develop an evidence-based approach to the teaching of both the clinical inquiry and the literature search process.

### Introduction

It is obvious that evidence-based practice is a complex process that relies upon clinical experience and knowledge of critical appraisal. Drawing on the approaches used for evidence-based medicine, Law [1] detailed four steps in evidence-based practice for rehabilitation professionals: (1) questioning, (2) searching, (3) evaluating, and (4) implementing. In dispelling the myth that evidence-based practice is a cookie-cutter approach to rehabilitation, Law noted that evidence-based practice requires extensive clinical expertise. She further described the key features of evidence-based practice as the following: focused awareness of the evidence that bears on clinical practice and the strengths of that evidence, use of the best available evidence in consultation with the client, use of clinical judgment and reasoning skills to determine how to apply the evidence by differentiating how it can be applied to individual clients, and use of insight and creativity to meet the challenges presented by real life problems [2].

From a review of the literature on the application of evidence-based practice in occupational therapy (OT), it is clear that challenges to evidence-based practice exist for experienced clinicians. These challenges can be categorized as difficulties in accessing current research literature, analyzing evidence, and transferring evidence into practice decisions [3,4]. The following have been identified as the reasons for the difficulties encountered by experienced clinicians: (i) lack of time

to search for, read, interpret, and evaluate relevant research findings; (ii) limited knowledge and abilities in appraising research findings; and (iii) individual and systemic resistance to changing current practice in light of research findings [5–7]. In addition, the literature cites the conflict experienced by occupational therapists in their attempts to reconcile holistic, client-centred approaches for evaluation and intervention with the demand for cost-effective interventions based upon scientific evidence supporting clinical decisions [8]. Consequently, experienced occupational therapists have been found to place more emphasis on knowledge from clinical experience, clients, and consultation with colleagues than on scientific literature [9,10]. Despite the wealth of information available to occupational therapists concerning evidence-based practice, ensuring that evidence from scientific research impacts clinical decisions remains problematic for experienced clinicians.

New graduates are also expected to utilize evidence-based practice as the basis for making clinical judgments [11]. For new graduates, the challenges of evidence-based practice are compounded by their lack of clinical experiences and their reliance on rules to help organize their thoughts, observations, and actions [12]. Limited clinical experience restricts the extent to which novice practitioners can use prior experiences with clients as a basis for clinical reasoning and reflective practice, identified by Law as key ingredients in evidence-based rehabilitation [13].

Student occupational therapists are exposed (through course work and fieldwork) to accepted methods of evaluation and intervention for various client problems typically seen in OT practice. Learning experiences are designed to develop technical skills required for performing evaluations and interventions based on client problems [14]. While novice practitioners rely on organizing frameworks that can be applied to each clinical situation, students are still developing their knowl-

**M. Villeneuve.** School of Rehabilitation Therapy, Queen's University, 31 George Street, Louise D. Acton Building, 2nd floor, Kingston, ON 37L KN6, Canada (e-mail: mv6@post.queensu.ca).

**S. Maranda.** Bracken Library, Botterell Hall, Queen's University, Kingston, ON K7L 3N6, Canada (e-mail: marandas@post.queensu.ca).

edge base for understanding client problems and service delivery methods suited to OT practice [15].

Given the advanced skills required of evidence-based practitioners, the question of how to prepare entry-level occupational therapists to provide evidence-based services has been raised [16,17]. In a study examining the perceptions of evidence-based practice by experienced clinicians, Dubouloz et al. [18] suggested that entry-level education programs must (1) prepare occupational therapists to view research evidence as crucial to competent practice, and (2) prepare future occupational therapists to view the use of research findings as a necessary part of a client-centred approach. In addition to developing positive perceptions regarding evidence-based practice, it is imperative that educators provide entry-level practitioners with the opportunity to systematically apply the evidence-based practice process as an organizing framework for approaching client problems during their educational program to foster these abilities for future practice.

The purpose of this paper is to describe a collaborative educational initiative between OT faculty and health sciences librarians at the Queen's University School of Rehabilitation Therapy. The objective is to prepare entry-level practitioners to systematically employ an evidence-based practice process as an approach to clinical inquiry with an emphasis on the first two stages of the evidence-based practice process outlined by Law [19] — questioning and searching. Initial findings from a formative evaluation of both the teaching and evaluation methods will be presented along with recommendations for course development. By sharing this teaching approach, we are encouraging OT faculty to begin a dialogue with librarian colleagues at their institution in an effort to develop educational opportunities that prepare entry-level practitioners for evidence-based practice. With limited literature describing teaching methods used to prepare clinicians for evidence-based practice, this paper aims to fill a gap in the dissemination of information pertinent to OT educators.

With the assumption that novices need organizing frameworks that can be applied to clinical situations, this course component made transparent the evidence-based practice process as a framework for analyzing a case study and making clinical decisions for OT evaluation and intervention. To this end, emphasis was placed on developing procedural knowledge for implementing the evidence-based practice process with clients. A second premise used in the development of this educational initiative was that experience is a strong mediator of clinical reasoning [20]. Having completed only one fieldwork placement, students, as individuals, lacked exposure to varied clinical problems. However, as a collective, students possessed a wealth of previous clinical experiences and approaches to clinical problem-solving. To capitalize on this breadth of experience, this course component demanded that students work together in small groups. Learning activities served to foster knowledge-sharing of the students' earlier clinical experiences and encourage reflection on these experiences in light of new problems presented in this class, in an effort to develop skills in clinical reasoning.

## Teaching method

Guided inquiry was the teaching method used to introduce students to the evidence-based practice process and to guide

students through each of the four stages: questioning, searching, evaluating, and implementing. A collaborative approach to guided inquiry led students through the stages of evidence-based practice from two perspectives: clinical OT and information literacy. The class of 42 students was divided in half so that one group attended the OT session, while the remainder attended the information literacy session. These groups were switched the following week so that each guided inquiry session was completed on two occasions. This was necessary to encourage active learning and optimize participation using whole and small group learning activities.

Each 2-h guided inquiry session began with a referral for OT. The case study (adapted from Copperman et al. [21]) described a 37-year-old woman with relapsing–remitting multiple sclerosis (MS) and included contextual information regarding her impairments as they related to occupational issues. The case study was presented on overhead transparency. The overall objective of the session was to develop an evaluation plan for this client.

Both the OT and information literacy sessions used the same case study to guide students through the stages of evidence-based practice. Each session placed emphasis on different components of the process. The OT session focused on asking clinical questions pertinent to OT practice and grounded in real-life problems presented by the client. Students were guided through a strategy of anticipating findings as a way to enhance clinical reasoning abilities. Anticipating findings was also thought to facilitate the identification of viable sources of evidence and focus their search for research evidence. The information literacy session placed emphasis on turning clinical questions into searchable questions, developing a knowledge of databases relevant to OT practice, and learning efficient search strategies. Both sessions encouraged reflection by asking students to critically review findings in light of the questions asked.

## Occupational therapy session

### Questioning

After being presented with the referral for OT service, students were guided through the questioning phase of evidence-based practice by developing a planning guide (adapted from Andersen [22]). Table 1 presents the learning activities completed by the students at the outset of the guided inquiry.

These learning activities assisted the students as they identified areas where they had clinical experience and areas where there were gaps in their knowledge. Facilitating knowledge-sharing in both small and large group format encouraged collaboration and facilitated reflection on recent clinical fieldwork experiences.

These learning activities also laid the groundwork for the importance of obtaining background information as an essential prerequisite to asking a clinical question. It quickly became evident to the class that there were gaps in their knowledge of MS and the possible roles of an occupational therapist with such clients. In advance of this session, librarians compiled a summary of background information on MS and OT from basic texts on OT and physical function. This two-page summary of background information was provided to the students at this stage of the guided inquiry, and they were given time to read and discuss this new information. Emphasis was placed on the use of textbooks to find this

**Table 1.** Planning guide for gathering background information: examples of information provided by student groups.

Facts/Knowledge	Learning Issues
<b>What do you already know that will help you to evaluate this case?</b>	<b>Where are the gaps in your knowledge?</b>
<i>Examples</i>	<i>Examples</i>
Roles: wife, administration worker, planned motherhood	Learn more about relapsing–remitting MS and role of OT
Diagnosis: MS (×2 years)	What are her coping strategies
Issues: difficulty with vision, frequent falls, fatigue	What financial resources are available
Problems: reluctantly quit job because of fatigue, problems completing ADL tasks owing to impairments associated with MS	What is the fit between her current mobility aids and her level of mobility
	What can the client do
	What are her goals
	What tools are available for evaluation

**Note:** MS, multiple sclerosis; ADL, activities of daily living; OT, occupational therapy.

background information before proceeding with the development of clinical questions. Providing students with a summary of background information on the client’s condition and the role of OT served as a model for retrieving necessary background information presented in textbooks as a prerequisite to asking sound clinical questions and proceeding with the inquiry.

With background information from basic texts, student groups were then re-directed to the case study and guided to specify client issues that require further OT evaluation. Again these brainstorming sessions were completed in small groups and shared with the larger class to encourage collaboration. With a lengthy list of issues to evaluate, students were asked to prioritize the issues and choose one to pursue with this client. Students defended their choice through discussion, first in their small groups and then with the entire class (see Table 2).

This activity provided students with direct exposure to the process of clinical reasoning based on the available knowledge and evidence presented from the literature. Student groups presented different approaches to prioritizing issues during our discussion. Although a number of these approaches could be pursued in OT practice, for the purpose of the guided inquiry session, students were presented with the instructor’s list of priority issues and the rationale for proceeding with the client’s issue of fatigue. To ensure the learning of how to systematically apply the evidence-based practice process with clients, the issue of fatigue remained at the center of the inquiry for the remainder of this guided inquiry session.

**Searching**

At this stage of the guided inquiry, the instructor asked students to identify a series of questions regarding this client and her symptoms of fatigue. Following discussion, the instructor provided students with her list of questions (Table 3). Using the instructor’s list of questions, students were led through the process of anticipating findings for each clinical

**Table 2.** Prioritizing issues for inquiry: an example of the instructor’s list of issues and prioritization.

Issues for inquiry	Prioritizing issues for inquiry
<b>List the issues that should be evaluated by the occupational therapist</b>	<b>Choose one issue that you think is a priority and state your rationale</b>
<ul style="list-style-type: none"> <li>• Fatigue</li> <li>• Mobility</li> <li>• Physical components (balance, tone, strength, ROM)</li> <li>• Dexterity</li> <li>• Sensory systems</li> <li>• Sleep problems</li> <li>• Cognition</li> <li>• Functional capacity and physical demands of work</li> <li>• Occupational performance at work and home</li> </ul>	<p><i>Fatigue:</i> This issue was chosen because it was identified as so severe that it has resulted in the client’s inability to do her normal household tasks, perform her ADL, and work without becoming exhausted. In fact, Katherine has reluctantly resigned from work and stopped adoption proceedings. I wonder to what extent Katherine feels she cannot manage these roles/activities and how they might be altered to support her occupational performance.</p>

**Note:** ROM, range of motion; ADL, activities of daily living.

question before consulting the scientific literature. Anticipating findings was developed as a learning process that could be used to foster clinical reasoning. The process of anticipating findings also provided students with concrete direction in their search for research evidence to answer their clinical questions. For example, one of the questions asked was, “How is fatigue evaluated?” In anticipating these findings, the class expected that evaluations might assess different aspects of fatigue from diagnostic to client perception to the impact of fatigue on activities of daily living (ADL). This provided further direction for developing a search strategy relevant to OT and suggested that the impact of fatigue on ADL and client perceptions of fatigue would be of importance in a search for OT evaluations of fatigue.

Not surprisingly, the next step in the guided inquiry asked students to identify sources of evidence that could be used for finding answers to each clinical question. In the OT session, emphasis was placed on developing a plan for finding evidence from multiple sources, including expert clinicians, the client (via role playing), peer-reviewed research findings, Web-based materials, and critical review of evaluation tools used in OT practice.

**Evaluating**

At this point in the guided inquiry session, students were provided with the results of “their” search for evidence in the form of a two-page summary of findings. This summary was completed in advance of the guided inquiry session by the course instructor and further illustrated how evidence is used as a basis for clinical decision-making. Student groups were given time to review the summary of findings regarding factors influencing fatigue, MS fatigue, the impact of fatigue on occupational functioning, and evaluation tools used in OT practice. Students were then asked to develop their own evaluation plan for this client based on the problem of

**Table 3.** Anticipating findings for priority issue.

<b>Define the priority issue as questions that need to be answered</b>	<b>Anticipate the answers to your clinical questions</b>	<b>For each question, identify your strategy/plan to find the answers</b>
	<i>Examples</i>	<i>Examples</i>
What is fatigue? How does it affect individuals with chronic diseases?	Fatigue is a subjective phenomenon. There are different types of fatigue.	Texts on MS, fatigue, chronic degenerative conditions
Is fatigue in MS different from other kinds of fatigue?	Fatigue affects performance and confidence in the ability to complete tasks, possibly leading to a negative cycle of decreased performance and functioning.	Texts on role of OT in evaluation of fatigue Journal search using database search engines available at Bracken Library
What factors influence fatigue for people with MS?	There is a specific presentation of fatigue in individuals with MS.	Web-based material (e.g., MS Society)
What is the client's experience of fatigue? How does fatigue influence her roles, activities, and tasks?	Evaluations assess different aspects of fatigue (e.g., client perception, diagnostic, impact on ADL)	Texts that review specific evaluation tools for their clinical utility

**Note:** MS, multiple sclerosis; ADL, activities of daily living; OT, occupational therapy.

**Table 4.** Developing an evaluation plan.

<b>Occupational performance issue</b>	<b>Evaluation methods/tools</b>	<b>How will the assessment results be used?</b>
	<i>Examples</i>	<i>Examples</i>
Severe fatigue that had increased in the past year and resulted in her inability to do her normal household tasks, perform ADL, and work without becoming exhausted	Fatigue Impact Scale (Fisk et al. [24])	To identify perceived impact of fatigue on ADL and compare the impact of fatigue on the cognitive, physical, and social dimensions of this client's activities
	Self-Efficacy Gauge (Gage et al. [25])	To measure this client's perception of her confidence in the completion of her daily tasks and compare with clinical observation of her performance and interview information obtained throughout the evaluation

**Note:** ADL, activities of daily living.

fatigue on the client's occupational functioning. Specifically, the client presented with severe fatigue that had increased in the past year and resulted in her inability to do her normal household tasks, perform ADL, and work without becoming exhausted.

**Implementing**

Following a period of active problem solving, as student groups devised their own evaluation plan on short notice with the evidence provided, the instructor presented her evaluation plan, which outlined the methods and tools that would be pursued and an explanation of how the evaluation results will be used by the occupational therapist (Table 4). The evaluation plan was critiqued by the class to identify both the strengths and limitations of the evaluation plan in evaluating the impact of fatigue on the client's occupational functioning in light of the evidence presented in the summary of findings and present knowledge of the case study.

**Review**

The 2-h guided inquiry session ended with a brief review of the evidence-based practice process. The client's evaluation results were presented and each stage of the evidence-based practice was reviewed, from the development of a planning guide for asking clinical questions, to producing a summary of findings and developing an action plan. This review was

used as an opportunity to go back through the process the students just participated in and demonstrate how the process could be repeated using a different set of clinical questions to develop an intervention plan for this client. This was necessary to demonstrate how the students would proceed when they completed their own inquiry as an assignment for this course component.

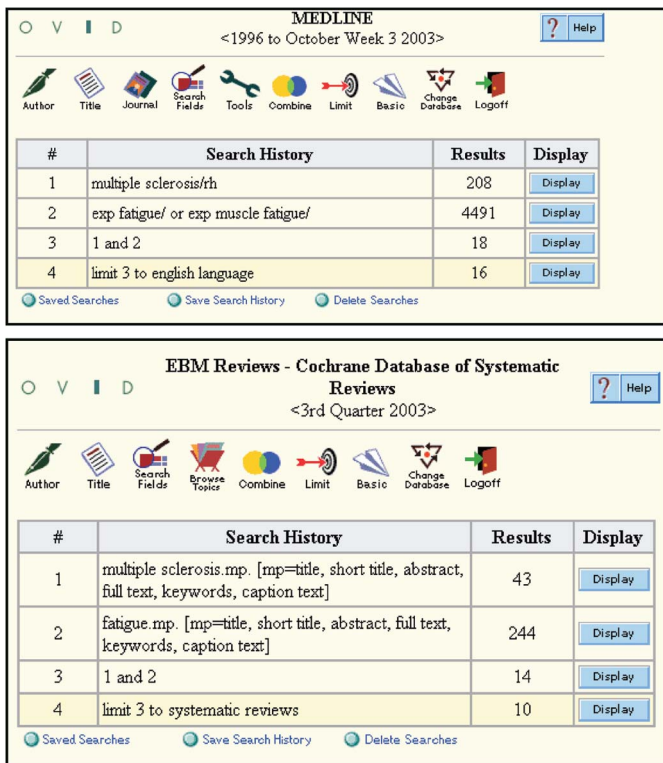
**The information literacy session**

**Questioning**

Librarians introduced the concept of evidence-based practice and how researching the literature fits into the complete process. The elements of a good clinical question were examined as part of the complete literature search process. The students were then divided into small groups of six or seven students, each group working with a librarian. As in the OT instructor's session, the groups were given the same case study to read and then the students worked with the librarians to identify the gaps in their knowledge regarding this case. As predicted, most students did not have much information about MS. The librarians then asked the students where they thought they would be able to locate the needed information. Students identified dictionaries and textbooks readily, and usually one or more in each group thought to search the library catalogue for books on MS. Librarians re-



**Figure 1.** Sample Medline and Cochrane Database of Systematic Reviews searches.



viewed with their group the key features of the online catalogue. This was done mostly to ensure that skills learned the previous year had not been forgotten during the summer months!

In a real problem-based situation, the students would then be sent off to locate the books found in the library catalogue, read their assigned subtopics, and report back to the whole group at a later stage. Since this was not possible in the assigned class time, librarians prepared a summary to give the students enough information to continue with the evidence-based process.

With some background knowledge in hand, it is then possible to look into the formulation of a clinical question that will be the basis for the specific research in a citation database such as Medline. It was decided during the course planning process to focus on the topic of fatigue in both the library session and the clinical OT session.

**Searching**

It is important for students to realize that the question itself can be refined and modified, as they gain more information on the topic. Librarians recommend that students look for review articles as a linking step between the earlier background information found in books and the very specific information found in research articles. This will help to focus the search from “any articles on fatigue in MS” to a search that will answer a sound clinical question such as “Do energy conservation methods, such as time management and work simplification, reduce fatigue in patients with MS?”

Database searching is complex in allied health because there is a diverse number of resources to consult. Medline is, of course, a good choice, but students also needed to search

the Cumulative Index to Nursing and Allied Health (CINAHL), Health and Psychosocial Instruments (HaPI), as well as the Cochrane Database of Systematic Reviews. These were the databases available to Queen’s University health sciences students on the Ovid platform at the time of this class in the fall of 2002. Each of these databases has unique features that are important to use appropriately to ensure effective retrieval. In the library’s computer lab, students were encouraged to try the different databases with the same initial topic to learn these searching variations and apply the most appropriate strategies to the database in question (Figure 1).

**Evaluating**

Evaluating the search can be summarized in one question: “Did I find articles that will help me answer my clinical question?” The databases often offer abstracts of the papers indexed, which are very useful to help determine the need for reading the complete paper. Many journals are now available in electronic format, and the link to full-text can often be made from within Ovid, sometimes directly, sometimes via the link to the university online catalogue. A quick scan is often enough to determine the article’s suitability.

**Review**

The students were asked to practice writing a clinical question using one of the items from the list of “knowledge gaps” prepared at the beginning of the session. Individually or in pairs, they practiced Ovid searching for this new question, and the librarians helped as needed.

**Application: case-based inquiry**

Since the students had been guided through the evidence-based practice process from both the OT and information literacy perspectives, student groups received a referral for OT and proceeded with their own case-based inquiry using information provided in the case study to develop an evaluation plan. They repeated the process during the second half of the course to develop an intervention plan for their client. Student groups were then provided with a summary of evaluation findings so that they could repeat the process, adding new knowledge to their inquiry. Students were evaluated on the preparation of a planning guide, their summary of findings, evaluation and intervention plans, and their critical review of their action plans in light of the presented evidence.

**Outcomes**

Following approval by the Research Ethics Board at Queen’s University, the students were invited to participate in a focus group discussion to provide their feedback regarding the case-based inquiry as a teaching and evaluation method. Ten students participated in the focus group discussion, one from each of the 10 working groups. Students signed an information/consent form and attended a 1.5-h audiotaped focus group discussion at the end of the term (see Table 5 for the interview guide). The focus group discussion was transcribed and reviewed by the authors individually and then together. Feedback from the students was categorized by the stages of evidence-based practice: questioning, searching, evaluating, and implementing. In addition, general comments regarding the use of case-based inquiry as a teaching and evaluation method were grouped together.

**Table 5.** Focus group interview guide.

- 
- (1) What was it like when your group reviewed the case study and prepared for your CBI? How confident were you that you knew how to proceed with your own CBI?
  - (2) What strengths did you and your group members bring to the CBI as you worked to develop a priority issue? Were you and your group members able to identify gaps in your knowledge?
  - (3) Tell me about your development of a priority issue. What sorts of things influenced your decisions?
  - (4) Were you able to turn your priority issue into searchable questions (reminder: searchable questions include situation, assessment or intervention, outcome)?
  - (5) Tell me about your process of anticipating findings based on your questions.
  - (6) How much time did you spend searching for evidence in the library? Were there any roadblocks?
  - (7) Where else did you obtain evidence?
  - (8) Tell me about the process of selecting appropriate evidence to use in your CBI. Was this a smooth process? Did you find conflicting evidence? Was evidence lacking? How much time did this take?
  - (9) How confident was your group with analyzing the evidence for its clinical utility?
  - (10) Tell me about the process of transferring your evidence into the development of an evaluation/intervention plan for your case study. Was your group satisfied with your evaluation/intervention plan?
  - (11) Is there anything else you would like to share about the process of participating in the CBI?
- 

**Note:** CBI, case-based inquiry.

### **Questioning**

Overall, most students had great difficulty identifying a priority issue for their case study. Respondents reported that they used group brainstorming and discussion of the case study to determine the most appropriate priority issue to pursue. Low levels of student confidence with prioritizing client problems related to their lack of clinical experience. For example, one respondent noted:

We ended up choosing aphasia for our priority issue...we thought that we had to address that because we thought there was no point in going through addressing some of the cognitive and physical issues if we couldn't even communicate with her...it was difficult to choose between physical issues or whether we could stick with aphasia.

Similarly, another respondent reported the following difficulties experienced by their group:

There are so many priority issues when dealing with a stroke patient, and we could not decide which one was the most pressing problem at the moment.

There was consensus from all of the focus group participants that they placed emphasis on sharing their collective clinical experiences in an effort to develop their priority issue. For one group, the similarities between clinical placement experiences and the case study assisted the process:

For our group, the biggest strength was that the three of us had worked on placement with individuals with CVA [cerebrovascular accident]. Another factor was that I had worked with clients following cardiovascular surgery. We were able to throw in what we did over the summer. It helped us to form our priority issue because it was similar to what we had seen in placement.

This confirmed our earlier assumption that the structure of the assignment would force students to pool their individual clinical experiences to assist in the development of clinical reasoning skills.

In addition to lacking confidence and relying on the knowledge of the collective group members to support problem solving, eight out of ten respondents reported that it took a

significant amount of time to identify a priority issue during this stage of the inquiry. Two respondents, however, reported a different experience in their development of a priority issue, noting that they relied heavily on the completion of background reading during this stage of the inquiry to get a better picture of the client and the presenting problems:

Nobody in our group had any practical experience with stroke, so it was a huge challenge to even get a concept of what this person was looking like and what the concerns might be. So that was a big research issue for us.

Analysis of findings from the focus group feedback made it clear that for the most part, student groups neglected the need for background information to focus their clinical inquiry. In essence, they were not yet ready to ask the questions. The two groups that took the time to do some background reading on the condition reported that this stage of the inquiry was completed in a timely manner, and they progressed with greater clarity with sound clinical questions. This was in great contrast to the remaining eight groups who complained that they zigzagged back and forth on determining a priority issue because they would identify an issue and head off to retrieve evidence only to find that they had not considered a significant factor presented in the case study. Neglecting the background reading from basic texts cost these groups a significant amount of wasted time during this stage of the inquiry.

We reformulated our focus of the project a couple of times, so we did all these massive searches only to find out we've gone in the wrong direction and then had to start all over again.

There was consensus from focus group respondents that the instructor could assist with the issue of student confidence by providing early feedback regarding the choice of priority issue. It was also evident from an analysis of the focus group data that emphasis should also be placed on ensuring students attend to the importance of background reading at this stage of the inquiry to provide them with the skills needed to analyze client issues and formulate sound clinical questions.

### **Searching**

Most groups did not take the time to anticipate findings prior to the development of a search strategy and heading out to retrieve evidence. Respondents were uncomfortable with the process of anticipating findings, and others felt that it was a waste of time:

If we put it down in the anticipated findings, then it's not a gap in our knowledge because in a sense we do know the answers. On the other hand, we don't want to put down our anticipated findings if we really don't know; we don't want to guess either.

It was hard to do because it was like doing it backwards...we had already asked the questions and knew that we had to finish the assignment, so we just went to find the answers. We didn't see the point of the anticipated findings.

In contrast, two groups used this phase of the inquiry as an opportunity to focus their inquiry and come to a group consensus. Interestingly, these were the same two groups that effectively used background reading in developing their clinical questions.

We found that by anticipating the findings it gave us more direction in which specific things to look for in the literature.

We used it more as a debate where each group member would anticipate findings...it was collaborative and included everyone's point of view. That helped us to focus for the rest of our assignment. It was at that point that we realized what we needed to keep in and what we needed to take out. It was a useful thing for us.

A few search strategies were examined by the librarian upon completion of the course. Students had difficulty using the features of the database, the controlled vocabulary was sometimes ignored, and there were incorrect combinations of terms. Unfortunately, although students were requested to submit their search strategy, formal evaluation of the search strategies and provision of feedback were not the basis for our marking scheme for the assignment. This limited our ability to provide students with feedback early on in their case inquiry.

Respondents concluded that they spent a lot of time in this stage of the inquiry "chasing a lot of dead ends". Groups estimated that just searching and retrieving information took them an entire week collectively. The students needed help in formulating their search strategies and would have benefited from additional feedback at this stage of the inquiry.

### **Evaluating**

Focus group respondents reported that since the course occurred in parallel with another required course on research methodology, they did not experience difficulties in applying skills of critical appraisal to make sense of the studies they were reading.

Respondents reported that they had greater difficulty evaluating the scientific literature with respect to intervention or treatment approaches compared with assessment. Specifically, they experienced difficulty translating intervention guidelines into specific OT intervention decisions.

We found gaps in treatment. We wondered how exactly do you treat these things as an occupational therapist.

While we found a lot on assessment, there is less on treatment, and there are a lot of judgment calls to make. It is hard to find anything more than general guidelines for treatment.

Especially for OT, we were doing postural control, and there is stuff out there but very little on the specific activities of OT. It is hard for us to say without the evidence. I know I've used it in practice, I know occupational therapist's do it, but I don't have the evidence to back it up.

Interestingly, the case inquiry assignment took place in parallel with course content that reviewed the sensory, perceptual, cognitive, and action systems as well as the theory, guidelines, and general approaches used to understand the cognitive-neurological determinants of occupation. The course was structured around the problems of postural control; mobility; reach, grasp, and manipulation; communication; and feeding. Despite the fact that knowledge of OT evaluation and intervention was provided through classroom learning and course readings, student groups seemed to disconnect the material learned in class from the case inquiry assignment itself and therefore neglected this as a source of evidence.

### **Implementing**

As reported by the focus group respondents, students generally fared better in using research evidence to develop an evaluation plan compared with the development of an intervention plan for their case study. Respondents noted that they were challenged when trying to develop an evidence-based intervention plan in light of controversial information provided in the literature:

We found that there were a lot of different treatment approaches. So we developed three different options for each of our treatment goals.

This lack of confidence in making clinical decisions was clear in the instructor's review of intervention plans for this portion of the case inquiry assignment. Generally, students had difficulty integrating the diverse findings regarding interventions into a realistic intervention plan given the specific case scenario provided. As respondents noted, they were challenged by the translation of treatment guidelines into a specific client-centred intervention plan. Students struggled with the integration of multiple factors presented in the case study with the information obtained through the scientific literature.

We were struggling with integrating all the factors. This was the biggest roadblock. Our priority of muscle weakness is the same, but our client also has a lot of cognitive, safety awareness, perceptual, and sensory problems. So we were trying to take all those factors into account when planning interventions for muscle weakness.

While students generally demonstrated creativity in the design of intervention plans targeting the stated problem, they had difficulty articulating their plans in a concise manner and had difficulty using the literature to identify a specific progression and time frame for their interventions. Again, they were more comfortable when developing evaluation methods for their case study.

### **General comments**

Focus group respondents had some positive things to say about the learning experience of utilizing the evidence-based



practice process within this course component. They reported that the learning activities were practical and that the experience heightened their awareness of the use of evidence in making clinical decisions.

I think it is the most practical assignment that we've done. We thought it would be great to build on this course component by completing our own case inquiry as individuals. It is important and practical...once we get out there practicing on our own, if we don't know how to go find evidence or don't know how to do a literature search, you're probably not going to do it. It took a lot of work and time, but I'd rather do it.

The whole process of getting us to think about things has been really good. I had a supervising therapist at my placement who tended to use a cookie-cutter approach. She seemed to do exactly the same thing with all of her clients. I don't want to practice like that therapist, and I worry about how I can learn from that therapist. I need to be able to go out and think on my own.

Respondents also noted that the process was helpful in maintaining a client-centred approach:

It is helpful for communicating with your client. When they ask you why you are doing certain things, you have the information at hand and can clearly explain exactly why you are proceeding that way. It provides justification for your interventions. You have credibility.

Focus group respondents also had constructive feedback regarding the presentation of the assignment in future years. Specifically, students requested earlier feedback regarding their priority issue, which they felt would make them feel more confident in pursuing the remaining learning activities.

## Conclusions and recommendations

Findings of this formative evaluation indicate that this educational initiative was effective in developing positive perceptions regarding evidence-based practice for this group of students, as recommended by Dubouloz et al. [23]. Indeed, students stated that this course component heightened their awareness of the use of research evidence in practice. In addition, students acknowledged the value of using scientific evidence as a necessary part of client-centred practice.

Initial findings of this formative evaluation of the case inquiry as a teaching and learning method also revealed two areas requiring improvement for the development of this course component. First, the need for students to complete background reading at the outset of the case inquiry needed greater emphasis. Students who neglected this component of the process were severely limited in their ability to proceed with both a priority issue and sound clinical questions. The two groups that experienced the greatest success used background reading to develop their basic understanding of the role of OT and were able to use this information to guide their identification of priorities and to anticipate findings for their clinical questions. Second, it is evident that at this early stage in their educational program and with limited clinical experiences, students benefit from feedback at each stage of implementing the evidence-based practice process. This feedback can serve to increase confidence that would come later with greater clinical and information literacy experience.

Evaluation of this course component allowed the authors to identify the following recommendations, which are being used to improve this course component in the fall of 2003.

- (1) Emphasize background reading for three purposes: (i) to identify a priority issue for OT practice, (ii) to develop sound clinical questions, and (iii) to anticipate findings that will further direct their search for evidence in the scientific literature.
- (2) Emphasize the integration of knowledge gained during the course as a source of evidence that should be used in the case inquiry assignment.
- (3) Provide early feedback to student groups on the development of a priority issue and their database search strategies. Timely feedback will mean that students can incorporate the suggestions to increase both their confidence and their success with searching for information.

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## REPORT / RAPPORT

# The Fourth Regional Conference on EMR Health Sciences Virtual Library: Role in e-Learning and Building the Information Society, Cairo, Egypt, 23–25 November 2004

It gives me great pleasure to submit this report to the *Journal of the Canadian Health Libraries Association*.

My membership in the Canadian Health Libraries Association / Association des bibliothèques de la santé du Canada (CHLA / ABSC) and my interaction with Canadian health librarians has helped me enhance my skills and knowledge. When I attended the annual CHLA / ABSC conferences in Edmonton, Alta. (2003) and St. John's, N.L. (2004), I noticed that Canadian health librarians were interested in the activities, facilities, services, and experiences of health sciences libraries in the Eastern Mediterranean region (EMR). At the same time, health librarians in the EMR would like to network and exchange views with librarians in North America.

One of the great achievements of CHLA / ABSC was the creation of interest groups, which took place in July 2004. The sharing of experiences and ideas through networking with librarians from different countries, cultures, and environments will engender a spirit of cooperation. This will lead to the sharing of information and resources among libraries and to the organization of different programs and projects (e.g., donation programs for libraries that lack resources and funds).

Health sciences libraries in the EMR are a community that supports health care professionals by providing library services, activities, and facilities to simplify access to health information. The World Health Organization – Eastern Mediterranean Regional Office (WHO–EMRO) plays an important role in supporting this community. Dr. Najeeb Al-Shorbaji, Regional Advisor, Health Information Management and Telecommunications, organized a series of regional conferences on health sciences libraries in Lebanon, Iran, Pakistan, and Egypt. The number of attendees at each of these conferences was approximately 150–250. Physicians occasionally attend and present talks at these conferences. Dr. Shorbaji established the first Listserv for health sciences librarians in the EMR based on the lists of participants at these conferences. I announce CHLA / ABSC activities on this Listserv, so many librarians are aware of CHLA / ABSC's annual conferences and other opportunities.

The Fourth Regional Conference was organized by the Regional Office in Cairo and was held on 23–25 November 2004. The conference was preceded by a 1-day national congress of Egyptian medical librarians. The national congress was attended by some 140 participants from health sciences libraries affiliated with the Egyptian Ministry of Health and Population, research centers, and health sciences colleges.

All countries in the EMR were invited to nominate participants to the regional conference. A total of 44 participants from 17 EMR countries participated in the conference as well as 4 staff members from WHO Headquarters and regional offices. Dr. Jama, Deputy Regional Director, delivered the Regional Director's message to the conference. Dr. Assaedi, Assistant Regional Director, attended the opening session and welcomed the participants.

Forty-four presentations were made during the conference, including two videoconferences. Enough time was allotted to present and discuss all the presentations that originally appeared in the conference programme. An evaluation form was developed and distributed to participants to acquire feedback on all aspects of the conference. Participants in the two events expressed their gratitude to the Regional Office for organizing the two meetings and for continuing to support health information and health sciences libraries in the EMR.

I presented two papers at this conference. The first was entitled "How can you enhance your skills and library practice at your own desk?" The paper discussed the opportunities for health sciences librarians to learn via distance education (i.e., television and radio broadcast, videoconferencing, on-line learning, and satellite teleconferencing). I included the role of the Medical Library Association and CHLA / ABSC in e-learning opportunities and CHLA / ABSC's future plans in this regard based on the feedback of the CHLA / ABSC continuing education survey.

The second paper was entitled "Virtual reference desk (VRD): @sk a health sciences librarian in the region". I recommended establishing a VRD in the EMR, sponsored by WHO–EMRO through a consortium among several libraries, which would serve health care professionals in the region 24 hours a day, 7 days a week.

Participants at the conference made the following conclusions and (or) recommendations for future actions:

- (1) The conference has established itself as one of the major events in health information management in the region and has been able to bring together health information specialists from across the region. It was recommended that the conference continue to be held on a regular basis and that participation be open to the widest possible range of health information professionals and medical education specialists.
- (2) The training and education of medical librarians have been recognized as major factors in defining the quality of health information services and its impact on health

services. It was recommended that the newly established postgraduate program in medical librarianship in Oman be supported and that other countries in the EMR should be encouraged to establish similar programs. It was recommended that WHO–EMRO conduct a formal evaluation of the program and maintain the quality of the curriculum.

- (3) Although the networking effort led by the Regional Office and the collaboration of many libraries in the region was commended, participants urged the Regional Office to allocate more resources to support national initiatives and requested that all member countries commit resources and more involvement in regional and global efforts.
- (4) The work of the Regional Office in the development of the Union Catalogue of Medical Journals in the EMR was highly appreciated. Participants recommended a specialized short training course on the operation and maintenance of the database, development of training materials that would be available on the Internet, linkage of the database to other databases and resources (especially authors and institutions), and promotion among health care professionals and institutions in the region (the target audience of this service).
- (5) Networking services and information services provided by the Virtual Health Sciences Library have been used extensively by many professionals and libraries. It was recommended that the Regional Office and member libraries publicize these services by promoting them at national and regional meetings, exchanging Web site links, distributing leaflets, encouraging open access, and developing versions in different languages.
- (6) Participants took note of the newly launched initiative on the development of a Global Health Library by WHO. Participants welcomed the initiative and expressed a willingness to be part of this effort. Also mentioned was the need to have more clarity on objectives, methods of work, mechanisms for networking, tools, resources, and role definition.
- (7) Participants appreciated the Health InterNetwork Access to Research Initiative (HINARI), the WHO-led initiative on the access to medical journals, especially for countries in a difficult economic situation. Participants expressed concern that many countries that are entitled to access HINARI, according to the criteria, are not given access. The conference recommended that WHO and its regional offices request that the consortium review its policies and provide some solutions for these countries. These countries expressed a readiness to share the cost.
- (8) The role of the virtual library in e-learning was recognized by information specialists and health care professionals at the conference. Participants recommended that the two groups of professionals work together to develop

materials, improve access to collections, and increase awareness of the value of e-learning. It was recommended that WHO–EMRO develop an inventory of e-learning courses, resources, and events in the region.

- (9) The virtual library can be fully functional and operational only if information resources are made available electronically and in digital format. Participants urged all libraries in the region to develop plans and implement digitization projects for their collections. The conference recommended that all medical journals in the region publish their electronic equivalent on the Internet.
- (10) The emergence of the information society and knowledge economy is both a challenge and an opportunity for health information professionals and medical librarians. To ensure that health information and e-health information are well represented at the World Summit on the Information Society (WSIS), participants recommended that ministries of health and medical education institutions in the region ensure a strong presence at the Regional Commissions and at the WSIS. Since content is what matters in the information society, the role of health information professionals in collaborating with health care professionals should be enhanced through institutional and national efforts to make health information available on the Internet in appropriate formats and languages.
- (11) The conference took note of the forthcoming Ninth International Congress on Medical Librarianship (ICML) to be held in Brazil on 20–23 September 2005. Participation in ICML by librarians from the region should be supported by the EMRO, governments in the region, and health care institutions.
- (12) The results of the survey entitled “Use of Internet and e-mail by physicians in the region” revealed that most physicians use the Internet at home, which was interpreted as indicating a lack of Internet access at the physicians’ workplaces. Participants recommended that efforts should be made by all health care institutions and medical education institutions to provide an information and communication infrastructure and specifically to link their libraries to the Internet. These efforts should be encouraged and supported by WHO and EMRO. Access to the Internet would provide access to free, high-quality health information resources.

For more information about EMRO’s continued support of health sciences libraries in the region, please visit <http://www.emro.who.int/>.

**Hakim Bishawi**

*Medical Librarian*

*Tawam Hospital*

*P.O. Box 15258*

*Al-Ain, United Arab Emirates*

*E-mail: hakim@tawam-hosp.gov.ae; hbishawi@yahoo.com*



## Consumer health information

Compiled by Susan Murray

### Canadian Health Network (CHN)

The Canadian Health Network ([www.canadian-health-network.ca](http://www.canadian-health-network.ca)) is an excellent source of reliable, primarily Canadian e-health information from nonprofit organizations. It cannot be recommended more highly as a quality information resource for personal (yourself, family, and friends) or professional (your organization and users) use.

CHN continues to grow and improve. Three new disease prevention areas have been added: diabetes, cardiovascular diseases, and respiratory diseases. A Health Promotion Affiliate has also joined CHN, so you will be seeing substantial changes to that topic area, as well as a reflection of health promotion principles on the other health centres on CHN.

The design of the *Healthlink* newsletter has also been improved. To sign up for biweekly updates on what is being featured on CHN, click "subscribe to our *Healthlink* newsletter".

If you would like to promote CHN to your organization and your users, please contact me at [smurray@torontopubliclibrary.ca](mailto:smurray@torontopubliclibrary.ca). I would be happy to provide more information about CHN and arrange for promotional materials to be sent to you. The materials include CHN brochures, bookmarks, fact sheets, calendar strips, and pens, and all materials are bilingual.

### Consumer Health Information Service (CHIS) – Updated guides

Several CHIS guides have been updated recently:

- *Consumer Health Information – Selected Bibliography of Readings*
- *Core Collection of Recommended Titles or Consumer Health Books – If You Have \$1700*

The CHIS periodicals list and *Consumer Health Collection* Guide should be updated later this year. We also have been updating and adding new "healthnavigators", our annotated resource guides.

Please note that the URL for the Toronto Public Library and CHIS Web sites has changed. The new CHIS URL is [http://www.tpl.toronto.on.ca/uni\\_chi\\_index.jsp](http://www.tpl.toronto.on.ca/uni_chi_index.jsp).

### Collection development

Just a reminder that Alan Rees, author of the *Consumer Health Source Book*, publishes a column in *A Majors Scientific Books Report for Medical Librarians*, which is available at <https://www.majors.com/libraries/majrep.htm>. Similar to

the entries in the *Consumer Health Source Book*, Rees provides extensive annotations that are arranged by subject.

### New Web sites

NIH Word on Health, a new consumer health information source from the National Institutes of Health (NIH), is available at <http://www.nih.gov/news/WordonHealth>. The site contains health information based on research conducted or supported by NIH. The information is not copyrighted and may be freely used.

Public Libraries and Community Partners: Working Together to Provide Health Information, a new Web site from the National Network of Libraries of Medicine (NN/LM), is available at <http://nmlm.gov/libinfo/community>. The site is intended to serve as a guide to encourage health information partnerships among public libraries, members of the NN/LM, and local health or community-based organizations. It includes background information about consumer health, suggestions for providing health information services, and six guides with extensive information for organizations that are interested in preparing health outreach projects in their local communities.

### MedlinePlus

MedlinePlus has a new page for librarians and trainers: <http://www.nlm.nih.gov/medlineplus/training/trainers.html>. It includes links to training materials from the National Library of Medicine (NLM), NN/LM, and a zipped sample Interactive Health Tutorial for use in demos when there is no Internet connection available. A downloadable version of the MedlinePlus tour will be coming soon.

### Medical Library Association (MLA) Conference 2005

"Futuro Magnifico! Celebrating our Diversity" is the theme of this year's MLA conference in San Antonio, Texas, 14–19 May 2005. In addition to invited and contributed papers, role-playing skits will also be featured. There are several programmes on CHI and complementary and alternative medicine (CAM) topics:

- Diversity in collection development (I will be addressing CAM).
- Medical diversity — What are integrative practices and how are CAM practitioners trained?
- Reaching out magnificently to all at all points of care or

- need — Explores innovative methods and unique experiences in delivering information to diverse constituencies.
- Challenging patrons/challenging questions — How do we conduct a reference interview with an emotionally distracted, mentally ill, or mentally challenged patron? How do we handle our own emotions with patrons whose questions we find offensive? Experts from the counselling field will provide insights about the psychology of handling difficult customers through acted-out contributed scenarios.

## Mentoring

The MLA has updated the mentoring site, and it now includes consumer health libraries as both a sign-up and a search option. You can sign up as a new mentor at [http://www.mlanet.org/mentor/mentor\\_add.php](http://www.mlanet.org/mentor/mentor_add.php).

## Consumer health bibliography

The MLA recently published the second edition of *Consumer Health: A Guide to Internet Information Resources* (MLA BibKit #7), compiled by Jana Liebermann. This 213-page consumer health bibliography includes disease-specific Web sites, special populations, drug information sources, quality filters, medical news sites, and much more. Print versions of the kit come with a disk with hyperlinked URLs. The kit can also be purchased as a PDF file with embedded links. For table of contents, prices, and order information, see <http://www.mlanet.org/order/store/cat/default.php>.

## CHI readings

Check the quarterly publication *Journal of Consumer Health on the Internet* for recent articles on consumer health. You can request a sample issue and view the table of contents at <http://www.haworthpress.com/web/JCHI/>. Issue 9/1(2005) will include articles such as “Growing a Virtual Consumer Health

Library: A Decade of Experience” and “The National Network of Libraries of Medicine and Consumer Health Outreach 1998 – Present”.

- Coming soon are two issues of *Library Trends* focusing on consumer health:
- Consumer Health Issues, Trends, and Research, Part I: Strategic Strides Toward a Better Future, Edited by Tammy Mays, Fall 2004;53(2).
- Consumer Health Issues, Trends, and Research, Part 2: Actionable Research in the 21st Century, Edited by Tammy Mays, Winter 2005;53(3).

Getting health information into communities: Diana Grimwood-Jones on models for bringing health information to the general public. *Library + Information Update*. December 2004;3(12). Available from <http://www.cilip.org.uk/publications/updatesmagazine/archive/archive2004/december/grimwood.htm>.

British consultant Diana Grimwood reports on these four models of CHI services:

- (1) The branded health information service
- (2) The “department store franchise”
- (3) The medical prescription service
- (4) The supermarket concession

## Doody's Core Titles in the Health Sciences (DCT)

With the discontinuation of the Brandon/Hill core lists, the first edition of *Doody's Core Titles in the Health Sciences* (DCT) became available in December 2004. It is a listing of selected titles for small medical, nursing, and allied health libraries and covers 119 specialties. DCT is available by subscription to individual libraries for US\$49.50, and new editions will be issued annually with frequent bibliographic and pricing updates. Access is available from Doody Enterprises or through medical book distributors. Matthews, Majors, Rittenhouse, and Login Brothers Canada offer direct access from their Web sites.

## Current research

Compiled by Sandra Halliday

Harrison J, Sargeant SJ. Clinical librarianship in the UK: temporary trend or permanent profession? Part II: present challenges and future opportunities. *Health Info Libr J*. 2004 Dec;21(4):220–6. PMID: 15606879 [PubMed – in process].

**Background:** This article is the second part of a two-part series reporting a study of the role of the clinical librarian (CL) in the UK. **Methods:** A qualitative method of semi-structured interviews was used to explore in-depth the role of the CL. The interviews provide a rich source of data and give insight into this new and emerging role as practised in the National Health Service (NHS). Similarities and differences are examined between the CL population and reported within themes, specifically personal qualities and skills required, training for the CLs, marketing the CL service, working in the clinical environment, monitoring and evaluation, and the acceptance of the CL in the NHS. **Results:** A common understanding of the skills and knowledge required to undertake the CL role was shared by the respondents. However, practice differed as this was often dictated by local circumstances. The study confirmed the need for the CLs to work with clinical colleagues in the clinical setting to enhance patient care. **Conclusion:** The importance of using best evidence to support patient care is a message that is slowly becoming the norm in the NHS and the CL role in this practice is demonstrated by this study.

Wakeham M. Marketing and health libraries. *Health Info Libr J*. 2004 Dec;21(4):237–44. PMID: 15606881 [PubMed – in process].

**Aim:** To present an overview of the concepts of marketing and to examine ways in which they can be applied to health libraries. **Methods:** A review was carried out of literature relating to health libraries using LISA, CINAHL, BNI, and Google. **Results:** Marketing is seen as a strategic management activity aimed at developing customer relationships. Concepts such as the “four Ps” (product, price, place, and promotion), marketing plans, marketing mix, segmentation, promotion, and evaluation are identified and discussed in relation to health libraries. **Conclusion:** In increasingly complex health service and information environments, the marketing and promotion of library services is becoming more important if those services are to justify the resources given to them. Marketing techniques are equally applicable to physical and digital library services.

Gentry M, Marone RK. The virtual medical library: resources at the point of need via a proxy server. *Journal of Electronic Resources in Medical Libraries*. 2004;1(1):3–20.

Most academic health sciences libraries have developed impressive digital collections of journals and books over the past few years. These resources constitute a strong core collection of library resources, easily accessible to campus users anytime, day or night. Remote access proxy servers and other remote access technologies allow affiliated students, staff, and faculty to use these resources from the home, office, or remote clinical locations, virtually anywhere there is access to the Internet. This paper provides an overview of issues related to implementing, promoting, and supporting remote access technologies. This paper also provides an overview of issues related to implementing, promoting, and supporting remote access via a proxy server and selected issues related to licensing and managing electronic resources. The particular experiences of the Yale University’s Cushing/Whitney Medical Library are highlighted.

Wilczynski NL, Haynes RB, Lavis JN, Ramkissoonsingh R, Arnold-Oatley AE, HSR Hedges team. Optimal search strategies for detecting health services research studies in MEDLINE. *CMAJ*. 2004 Nov 9;171(10):1179–85.

**Background:** Evidence from health services research (HSR) is currently thinly spread through many journals, making it difficult for health services researchers, managers, and policy-makers to find research on clinical practice guidelines and the appropriateness, process, outcomes, cost, and economics of health care services. We undertook to develop and test search terms to retrieve from the MEDLINE database HSR articles meeting minimum quality standards. **Methods:** The retrieval performance of 7445 methodological search terms and phrases in MEDLINE (the test) were compared with a hand search of the literature (the gold standard) for each issue of 68 journal titles for the year 2000 (a total of 25 936 articles). We determined sensitivity, specificity, and precision (the positive predictive value) of the MEDLINE search strategies. **Results:** A majority of the articles that were classified as outcome assessment, but fewer than half of those in the other categories, were considered methodologically acceptable (no methodological criteria were applied for cost studies). Combining individual search terms to maximize sensitivity, while keeping specificity at 50% or more, led to sensitivities in the range of 88.1%–100% for several categories (specificity ranged from 52.9% to 97.4%). When terms were combined to maximize specificity, while keeping sensitivity at 50% or more, specificity of 88.8%–99.8% was achieved. When terms were combined to maximize sensitivity and specificity, while minimizing the differences between the two measurements, most strategies for HSR categories achieved sensitivity and specificity of at least 80%. **Interpretation:** Sensitive

and specific search strategies were validated for retrieval of HSR literature from MEDLINE. These strategies have been made available for public use by the US National Library of Medicine at [www.nlm.nih.gov/nichsr/hedges/search.html](http://www.nlm.nih.gov/nichsr/hedges/search.html).

Wagner KC, Byrd GD. Evaluating the effectiveness of clinical medical librarian programs: a systematic review of the literature. *J Med Libr Assoc.* 2004 Jan;92(1):14–33.

**Objective:** This study was undertaken to determine if a systematic review of the evidence from 30 years of literature evaluating clinical medical librarian (CML) programs could help clarify the effectiveness of this outreach service model. **Methods:** A descriptive review of the CML literature describes the general characteristics of these services as they have been implemented, primarily in teaching-hospital settings. Comprehensive searches for CML studies using quantitative or qualitative evaluation methods were conducted in the medical, allied health, librarianship, and social sciences literature. **Findings:** Thirty-five studies, published between 1974 and 2001, met the review criteria. Most (30) evaluated single, active programs and used descriptive research methods (e.g., use statistics or surveys and questionnaires). A weighted average of 89% of users in 12 studies found CML services useful and of high quality, and 65% of users in another overlapping, but not identical, 12 studies said these services contributed to improved patient care. **Conclusions:** The total amount of research evidence for CML program effectiveness is not great and most of it is descriptive rather than comparative or analytically qualitative. Standards are needed to consistently evaluate CML or informationist programs in the future. A carefully structured multiprogram study including three to five of the best current programs is needed to define the true value of these services.

Abels EG, Cogdill KW, Zach L. Identifying and communicating the contributions of library and information services in hospitals and academic health sciences centers. *J Med Libr Assoc.* 2004 Jan;92(1):46–55.

**Objective:** This article introduces a systematic approach to identifying and communicating the value of library and information services (LIS) from the perspective of their contributions to achieving organizational goals. **Methods:** The contributions of library and information services (CLIS) approach for identifying and communicating the value of LIS draws on findings from a multimethod study of hospitals and academic health sciences centers. **Results:** The CLIS approach is based on the concept that an individual unit's value to an organization can be demonstrated by identifying and measuring its contributions to organizational goals. The CLIS approach involves seven steps: (1) selecting appropriate organizational goals that are meaningful in a specific setting;

(2) linking LIS contributions to organizational goals; (3) obtaining data from users on the correspondence between LIS contributions and LIS services; (4) selecting measures for LIS services; (5) collecting and analyzing data for the selected measures; (6) planning and sustaining communication with administrators about LIS contributions; and (7) evaluating findings and revising selected goals, contributions, and services as necessary. **Conclusions:** The taxonomy of LIS contributions and the CLIS approach emerged from research conducted in hospitals and academic health sciences centers and reflect the mission and goals common in these organizations. However, both the taxonomy and the CLIS approach may be adapted for communicating the value of LIS in other settings.

Sherwill-Navarro PJ, Wallace AL. Research on the value of medical library services: does it make an impact in the health care literature? *J Med Libr Assoc.* 2004 Jan;92(1):34–45.

**Objective:** To evaluate the impact in the health care literature of research articles that provided evidence of the value of library services (including MEDLINE) as an element of quality health care. **Data sources/selection:** Four research articles on the relationship between use of library services and quality health care were selected as "primary articles" from a MEDLINE search using appropriate the Medical Subject Heading. Primary articles met the following criteria: written in English, reported research, related to clinical care, and published before 1995. **Data extraction:** The technique of citation analysis was used to measure the impact of the primary articles on the subsequent literature. The number, authorship, type, and publication venue of articles citing the primary articles were determined using ISI Web of Science, MEDLINE, other electronic resources, and the citing articles themselves. For the 146 English-language citing articles, the article type (i.e., advocacy, instructional, research) was noted; and for those that reported research, the use to which the author put the cited material was determined. **Results:** The primary articles were cited more often than the average articles published that year in the same journals. At the time of the study, each article had been cited almost every year since publication. Of the 146 citing articles written in English, 43% were written by librarians, 38% by physicians, and 12% by librarians with physicians. The majority were published in medical journals, followed in order of decreasing frequency by the *Bulletin of the Medical Library Association*, information science journals, and health administration journals. **Conclusions:** The results of this study demonstrate that published research on the value of medical library services has an impact on the literature. These articles are read and cited and continue to be of value.

REVIEWS / CRITIQUES

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## REVIEWS / CRITIQUES

### **Medicare myths: 50 myths we've endured about the Canadian health care system. Dennis J. Furlong.** **Saint John, N.B.: Dreamcatcher Publishing, 2004. 156 pages.** **ISBN 1-894372-39-5.**

Dennis J. Furlong has been a family doctor in rural New Brunswick for 30 years. He has also been a Member of the Legislative Assembly, Minister of Education, and Minister of Health for the province of New Brunswick. Furlong's book, *Medicare myths: 50 myths we've endured about the Canadian health care system*, is a timely one, encouraging dialogue on our health care system after the rampant discussions about the 2002 *Commission on the Future of Health Care in Canada* (the Romanow Report) have seemingly stopped. However, it should be noted up front that this book is essentially an opinion piece catering to a general audience, its main impact purely anecdotal.

The book is laid out quite simply — no bells or whistles such as an index, bibliography, or even a table of contents. It does, however, contain a forward by Gary Mar, Minister of Health and Wellness for Alberta, as well as a preface and introduction, followed by 10 individually themed chapters. This is a quick read, with large print and an overreliance on emphatic fonts. Every page is peppered with statements in boldface type, lest one miss the essential points the author is trying to make. This is one of the main drawbacks and annoyances of the book.

Furlong does not actually tackle each of the 50 myths that the title implies. Rather, the myths are listed in the last chapter of the book, almost as an afterthought. Instead, the book is primarily focussed on what is wrong with the Canadian health care system as a whole, and what the author thinks needs to be done to save it. Furlong's overall opinion of the current state of the Canadian health care system is "Don't trade it in — fix it." He asserts that the Canadian health care system is one of the best in the world, albeit one in dire need of repair — repair that cannot come by simply throwing more money at the system as it is currently operating.

Furlong prefers a business model for health care, and his main fix for the system is "prorated patient participation". In his view, if patients are made accountable through an income-based, prorated system in which visits to the family doctor

would require payment, people would think twice before making appointments. This prorated participation model stems from Furlong's belief that Canadians currently "overutilize" the system, running to their family doctor at the first sign of a runny nose. This transforms the main problem with the Canadian health care system to one of demand, not of supply, as was laid out in the Romanow Report. In sum, Furlong believes that by making patients more fiscally responsible for their health care, such overutilization would cease, leaving more money for the currently underfunded areas in higher-level medical care, such as surgeries, cancer therapies, etc.

While the book does address other issues, such as the perceived shortage of doctors and nurses in Canada (a notion Furlong denies), drugs, long-term care, etc., it continually harkens back to the main theme of prorated patient participation. This is the author's panacea for health care in Canada, and nothing less will do.

The most significant feature of this book is its contribution to the ongoing dialogue about the Canadian health care system as a whole. Based on Furlong's experiences both as a doctor and as a politician, the book offers a unique perspective. However, although this book is overall a useful addition to writings and discussions regarding Canadian health care, it is essentially a monologue, and nothing more. The book is recommended reading for those who want another spin on the fiscal aspects of problems within the Canadian health care system, but its practical use is limited at best.

#### **Megan L. Crouch**

*Health Sciences Librarian/Library Web Coordinator  
 Liaison Librarian for Statistics and Actuarial Science  
 WAC Bennett Library  
 Simon Fraser University Library  
 8888 University Drive  
 Burnaby, BC V5A 1S6, Canada  
 E-mail: mcrouch@sfu.ca*

**Web Search Garage.** Tara Calishain. Upper Saddle River, N.J.: Prentice Hall Professional Technical Reference, 2005. 236 pages (soft cover). ISBN 0-13-147148-1.

*Web Search Garage* is intended for Web searchers who want to refine their searching methods to get better results in better time. Although this book focuses on topics that may be considered outside of a health sciences library's domain, the principles discussed can easily be applied to a variety of topics. The book is organized into eight main parts:

- (1) Introduction to Web searching — Different types of search engines and Internet browsers are discussed. The reader is introduced to searching syntaxes and Boolean modifiers. Other tools, such as plugins, bookmarklets, and other "online gadgets", are also included in this section.
- (2) Principles of Web searching — Strategies that make searching more fruitful are described for different types of searching. A chapter on evaluating Web sites is also included.
- (3) Searching the Web — Searching for news, jobs, and local information is discussed.
- (4) Searching for multimedia — Searching for images and audio files is examined.
- (5) Searching for people — Searching for contact information for individuals, conducting genealogical research, and using online resources, such as dictionaries, encyclopedias, and almanacs, are addressed.
- (6) Consumer searching — Finding help on consumer issues, searching for consumer health information, and "kid-safe searching" are discussed.
- (7) Technical support — Finding help with computer problems (and even finding computer game cheat codes) through the online community is addressed.
- (8) Searching the world — Searching for information about other countries is examined.

Each part contains clear, succinct explanations of the topics presented, and examples illustrating searching strategies and techniques are scattered throughout the text for the reader to follow along with and test on their own. The URLs for useful Web resources are provided throughout the book, and the benefits and drawbacks of each resource are discussed. The examples and Web resources are very "American focused", but the odd Canadian Web site is included.

*Web Search Garage* covers an enormous amount of ground. The topics included are not discussed in great detail, but the information included is a good starting point for the reader to begin exploring and experimenting on their own. This is the type of book that one would likely need to refer to over and over again, but it is very well organized, and the index makes finding specific topics easy. The author also makes good use of subheadings and colour coding to make things easier for the reader to follow. The tone of the book is quite informal, which will appeal to some readers, but not to others.

Tara Calishain, the author of *Web Search Garage*, is an Internet enthusiast who edits the e-newsletter *ResearchBuzz*. She has previously coauthored a number of publications including *Google Hacks*, *Official Netscape Guide to Internet Research*, and *The Lawyer's Guide to Internet Research*.

**Christine Marshall**

*Librarian*

*Health Quality Council*

*Saskatoon, SK S7N 3R2, Canada*

*E-mail: cmarshall@hqc.sk.ca*

## **The Librarian's Guide to Writing for Publication.** **Rachel Singer Gordon. Lanham, Md.: Scarecrow Press, 2004.** **190 pages. ISBN 0-8108-4895-3. US\$34.95.**

Rachel Singer Gordon is singularly qualified to write the *Librarian's Guide to Writing for Publication*. She has authored or coauthored books for information professionals and published in many library-related journals. Gordon publishes *Info Career Trends*.<sup>1</sup>

In *The Librarian's Guide to Writing for Publication*, Gordon provides excellent advice on getting published. One senses her enthusiasm for the profession of librarianship and her genuine interest in getting colleagues to write and contribute to the body of literature on which they all can rely. Gordon calls on her colleagues to contribute and share their expertise with others. This book contributes much to librarianship literature, because it speaks directly to information professionals. Gordon's sound advice covers every detail to consider when writing either for a journal or a book. This book contains the following chapters:

- (1) Getting started in library publication — Topics covered include getting started, handling rejection, finding ideas, association assistance, and professional advantages. The author stresses the importance of not letting rejection stand in the way of moving forward and continuing to write and get published.
- (2) Submitting your work — Discusses choosing an outlet, familiarizing yourself with journals, familiarizing yourself with publishing houses, and finding and following guidelines. Also provided is a series of questions to ask yourself before choosing an article publication outlet. These questions are presented in a table format, one of the many useful tables throughout the book, highlighting important points.
- (3) Queries and proposals — Examines query letters, book proposals, and following up. Typical of the useful tips provided in her book, Gordon not only outlines what is required in a query letter, but also provides a sample letter to illustrate her points.
- (4) Increasing your odds — Topics include increasing your odds of acceptance, working with your editor, and defining your audience. The table of tips and tricks for publishing success advises, "Follow guidelines. Publishers provide these for a reason; ignore them at your peril" and "Deliver what you promise." Writers are reminded to never turn in the first draft of anything you write for publication. Instead, remember to edit, rewrite, and edit again.
- (5) Writing and editing your work — Discusses time management; organization and research; "details, details, details"; editing your work; cultivating clarity; and getting help. A useful checklist of guidelines for formatting your work is also provided. The bottom line is to make manuscripts look standard and straightforward.
- (6) Networking and collaboration — Examines collaborating, conferences and workshops, surveys and interviews, and advice and feedback. Gordon encourages collaboration with a previously published colleague and provides a checklist of issues that "you must agree on before proceeding with the project". The issues include whose name will come first on the finished work, how will you split the proceeds, and will copyright be registered jointly.
- (7) The academic environment — Topics include peer review; research articles; and research funding, support, and awards. Typical of the very practical and useful tips offered, the author writes, "If you do intend to write for the academic environment, be sure to keep up with the scholarly literature in your field. Read the major journals and watch for new titles that address your interests."
- (8) Related opportunities — Examines speaking and presenting, related library writing opportunities, and opportunities outside the library literature. In a profession where collection development is an important component, book and electronic resource reviews are encouraged.
- (9) Writing a book — Discusses developing a topic, choosing a publisher, the acceptance process, the writing and editing process, and the publishing process. A list of selected publishers in the library field, including postal and e-mail addresses, is provided. Steps to expect after submitting a manuscript to a publisher are discussed, and readers are advised, "If your proposal is rejected, dust yourself off and move on."
- (10) Marketing and promotion: yourself and your work — Topics covered include working with your publisher and marketing through professional activities. Also provided is the marketing questionnaire that publishers will typically request from you to promote your book.
- (11) The electronic environment — Topics include communicating professionally online; publishing in e-journals and newsletters; self-publication online; research, reading, and peer review; and electronic ethics. Gordon describes the advantages of electronic publishing, including self-publication online.
- (12) The business of publishing — Discusses the book contract, taxes and accounting, and copyrights and permissions. Gordon does not take for granted that readers have previous knowledge about the process of writing or getting published. For example, she reminds writers

<sup>1</sup>For more information on Rachel Singer Gordon, please see <http://www.lisjobs.com/resume.htm>.



to properly cite their sources and declare as income any payment received for articles written. A sample permission letter, for copyright reproduction, is included.

In Appendix A – Writing for publication survey, the survey questions that were used as a source for quotes and information throughout the book is provided. In Appendix B – Publisher interview, readers are treated to interviews with Leonard Kniffel, editor and publisher, *American Libraries*; Heather McCormack, assistant managing editor, *Library Journal Book Review*; John B. Bryans, editor-in-chief, *Information Today Books*; Gloriana St. Clair, managing editor, *portal: Libraries and the Academy*; Dan Marmion, editor, *Information Technology and Libraries*; and William Hann, founder and managing editor of *Free Pint*.

*The Librarian's Guide to Writing for Publication* includes a bibliography and index. The book is recommended reading for anyone contemplating taking the plunge and writing for publication. Gordon's enthusiasm for writing is contagious. Here's hoping more information professionals catch the publication bug!

**Ana Rosa Blue**

*Librarian*

*Lions Gate Hospital*

*231 East 15th Street*

*North Vancouver, BC V7L 2L7, Canada*

*E-mail: [anarosa.blue@vch.ca](mailto:anarosa.blue@vch.ca)*

NEWS AND NOTES / NOUVELLES ET NOTES

Compiled by Sandra Halliday

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## NEWS AND NOTES / NOUVELLES ET NOTES

### **CHLA / ABSC 2005 Annual Conference**

<http://www.chla-absc.ca/2005/>

Have you visited the Canadian Health Libraries Association / Association des bibliothèques de la santé du Canada (CHLA / ABSC) 2005 Annual Conference Web site lately to discover the dynamic program and entertaining events planned? CHLA / ABSC's 2005 Annual Conference will be held from May 30 to June 3 in Toronto, Ontario. The theme of the 2005 conference is "The World Around the Corner".

### **20th Annual Computers in Libraries Conference**

<http://www.infoday.com/cil2005/default.shtml>

The Computers in Libraries Conference will take place in Washington, D.C., 16–18 March 2005. For more details check out the conference Web site.

### **3rd International Evidence Based Librarianship Conference**

3rd International Evidence Based Librarianship Conference will be held on 16–19 October 2005, in Brisbane, Australia. The conference theme is "Evolution of Evidence: Global Perspectives on Linking Research with Practice".

### ***PloS Medicine***

<http://www.plosmedicine.org>

*PLoS Medicine* (eISSN 1549-1676; ISSN-1549-1277) is an open-access, peer-reviewed medical journal published monthly, online and in print, by the Public Library of Science (PLoS), a nonprofit organization. The inaugural issue was launched on 19 October 2004. The Web address for PLoS Medicine is <http://www.plosmedicine.org>. (Accessed on 28 January 2005 at <http://medicine.plosjournals.org/perlerv/?request=get-static&name=information>.)

## **Have you hugged your librarian today?**

<http://www.jhu.edu/gazette/2004/06dec04/06brody.html>

This question was asked by Dr. William R. Brody, President of The Johns Hopkins University, in a recent article. If you are interested, read the article entitled "Thinking Out Loud" by Dr. Brody at the following address: <http://www.jhu.edu/gazette/2004/06dec04/06brody.html>.

## **Clinical Queries Page redesign**

[http://www.nlm.nih.gov/pubs/techbull/nd04/nd04\\_technote.html#clinical](http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_technote.html#clinical)

The PubMed Clinical Queries page will be redesigned to provide an improved interface to the specialized PubMed searches for clinicians. The new design will retain the basic functionality currently used, and the search strategies for the queries will not change. The new design will have three search options:

- (1) Search by Clinical Study Category (old name: Clinical Queries using Research Methodology Filters)
- (2) Find Systematic Reviews
- (3) Medical Genetics Searches (which is a new option)

The three options are displayed as jump links at the top of the page and each has its own query box. The Medical Genetics Searches were developed in conjunction with the staff of GeneReviews: Genetic Disease Online Reviews at GeneTests, University of Washington, Seattle. (Accessed on 28 January 2005 at [http://www.nlm.nih.gov/pubs/techbull/nd04/nd04\\_technote.html#clinical](http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_technote.html#clinical).)

## **My NCBI Replaces the Cubby: Includes automatic e-mailing of search updates and filters**

[http://www.nlm.nih.gov/pubs/techbull/jf05/jf05\\_myncbi.html](http://www.nlm.nih.gov/pubs/techbull/jf05/jf05_myncbi.html)

The PubMed Cubby will soon be replaced by My NCBI. My NCBI works similarly to the Cubby in that it retains user information to provide additional services. To use My NCBI you must sign in. You can sign in using an existing Cubby account, or if you do not have an account, you can register for a My NCBI account. (Accessed on 28 January 2005 at [http://www.nlm.nih.gov/pubs/techbull/jf05/jf05\\_myncbi.html](http://www.nlm.nih.gov/pubs/techbull/jf05/jf05_myncbi.html).)