Consumer health information provided by library and hospital Websites in the South Central Region*

By Pauline O. Fulda, MS, AHIP
pfulda@lsuhsc.edu
Associate Director

Hanna Kwasik, MA, MLIS, AHIP
hkwasi@lsuhsc.edu
Serials Librarian

John P. Isché Library
Louisiana State University Health Sciences Center
433 Bolivar Street
New Orleans, Louisiana 70112

INTRODUCTION

Consumers are using the Internet more frequently to locate health information. According to the Pew Internet & American Life Project report from July 2003, ''80% of adult Internet users, or about ninety-three million Americans, have searched for at least one of sixteen major health topics online'' [1]. This number represents an increase of 18% over the results from a similar survey reported in May 2002 [2].

Through an examination of Websites, the authors of this brief communication studied if, and how effectively, selected hospitals and libraries are meeting consumer health information needs and expectations.

METHODOLOGY

Hospital and library Websites were chosen to determine the availability, type, and quality of health information. Forty-nine Websites in the five-state area (Arkansas, Louisiana, Oklahoma, New Mexico, and Texas) comprising the South Central Chapter Region of the Medical Library Association (MLA) were analyzed. The forty-nine Websites represented resource and access libraries, state libraries, and hospitals (Figure 1). The authors consulted the Website of the National Network of Libraries of Medicine, South Central Region, and selected the sixteen resource libraries and the three access libraries.† This group of libraries was selected based on the assumption that they would be leaders, setting the standard for developing portions of their Websites devoted to consumer health. The hospital Websites were selected based on bed size as provided in the 2002–03 *American Hospital Association Guide to the Health Care Field.* The authors thought that hospitals with the largest number of beds would have the financial resources, technological support, and corporate missions to develop Websites with consumer health information. The five largest hospitals were selected in each state, with the exception of Texas. In that state, the first four of the largest eight were Department of Veterans Affairs (VA) hospitals. The authors selected the largest VA hospital, assuming that it would be representative of the other three, and then added the next four largest non-VA hospitals. Other libraries and smaller hospitals do have quality sites, and these may have been omitted based on the selection criteria.

The next step was to determine the factors to examine on each Website. Varied resources were consulted in the process [3–5]. Microsoft Excel spreadsheets were devised incorporating the forty-nine Websites and the following factors to study: presence of designated section for consumer health, accessibility of information, source of funding for online resources, presence of MLA's ''Top Ten'' resources, site index, search feature, disclaimer, and endorsement of information quality.

The analysis was conducted during the first two months of 2003. The authors worked together to evaluate each Website. This approach provided opportunities to discuss differences in opinions and to arrive at a consensus. In this way, objectivity and consistency in observations were increased, particularly for factors of a qualitative nature. At the completion of the analysis, the authors tabulated the results using basic statistical methods.

RESULTS AND DISCUSSION

Thirty-four of the examined Websites have a designated section for consumer health information. Additionally, four library sites provided some consumer health information, and eleven did not provide any (Figure 2).

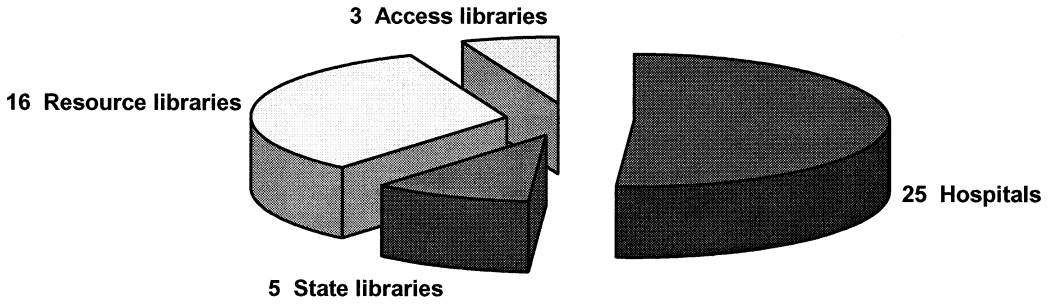
Accessibility of information was another factor examined on each Website. The authors considered the ease of use of each site, simplicity of design, satisfaction with using the site, and efficiency in maneuvering around the site. Twenty-nine of forty-nine sites (59%) provided easily accessible information. Twenty sites (41%) were more difficult to use in locating consumer health information (Figure 3).

A trend was noted by the authors among the hospital Websites. Library Websites were characterized by a format of listing free sites using a very plain layout lacking graphics. This practice differentiated significantly from hospital sites, which were frequently noted for their professionally packaged formats. Among the hospital Websites, thirteen of twenty-five (52%) used fee-based, commercially prepared resources. The most popular were HealthVision and Cerner Multum. Others included Animated Health Library, healthwise, HealthGate, My MD.com, ehc.com, and Adam. Health

* Based on a poster presentation at MLA '03, the 103rd Annual Meeting of the Medical Library Association, San Diego, California; June 2, 2003; and a paper presented at SCC/MLA 2003, the Annual Meeting of the South Central Chapter of the Medical Library Association, Shreveport, Louisiana; October 6, 2003.

† The lists of libraries may be viewed at the National Network of Libraries of Medicine South Central Region Website, http://nnlm.gov/scr/.

Figure 1
Analyzed Websites



sciences libraries and state libraries did not incorporate those types of resources in their sites. In the hospital environment, Websites are often part of the overall marketing effort and receive emphasis and funding. Packaging of the content with appropriate graphics appeals to the consumer and can be used skillfully for directing users to resources and services. Library communities frequently do not have the same level of financial support for Websites and do not employ full-time Web developers. Their sites usually put more emphasis on content than graphics.

Surprisingly, MLA's ''Top Ten'' most useful Websites [6] were not widely incorporated. Only one Website out of the forty-nine examined incorporated all ten. The most frequently used were MEDLINEplus, healthfinder, and the Centers for Disease Control (Figure 4). Lack of inclusion of the ''Top Ten'' by developers of hospital and library Websites may be due to a lack of awareness of this highly selective but reputable list, especially among hospital Website coordinators. In the library communities, Web developers used these sites sparingly. Academic libraries, in particular, do not have core missions to provide an abundance of consumer health sites. This overall lack of inclusion of the ''Top Ten'' would indicate that MLA needs to publicize this resource even more aggressively.

The presence of several special features was noted on the forty-nine Websites.

Figure 2
Provision of consumer health information

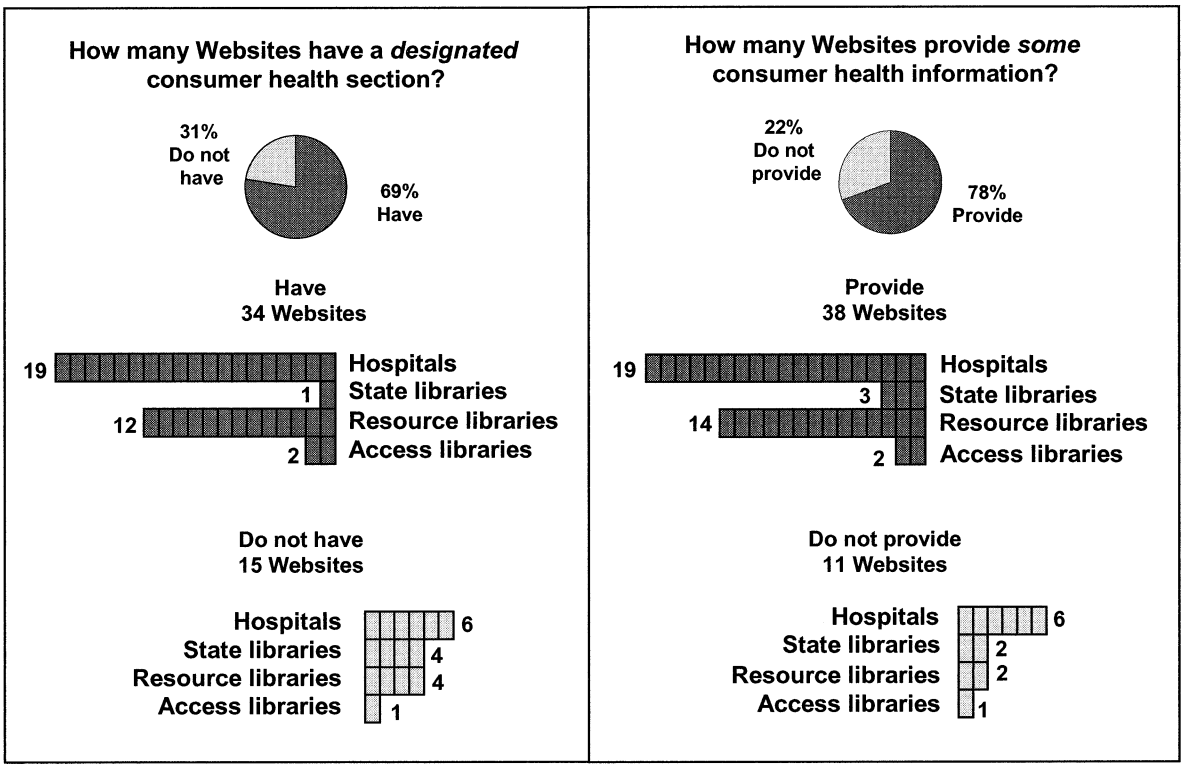
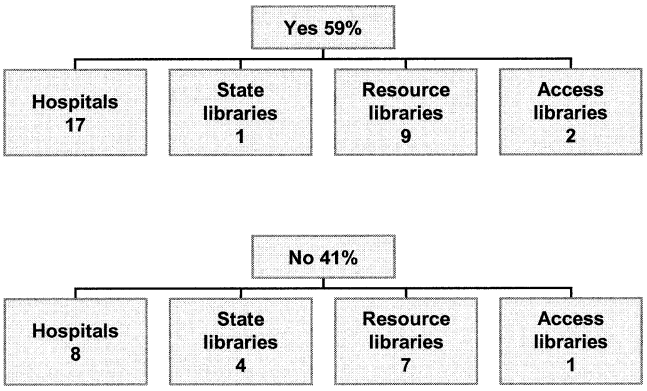


Figure 3
Accessibility of information



- 38% of sites had a site index
- 69% of sites had a search feature
- 68% had a disclaimer regarding responsibility for providing accurate information

The site index and the search feature were selected as factors, because they are effective tools used to navigate within sites and locate content. Many sites now include disclaimers, because it is considered good practice. The authors were interested in seeing how pervasive this element was among the forty-nine sites.

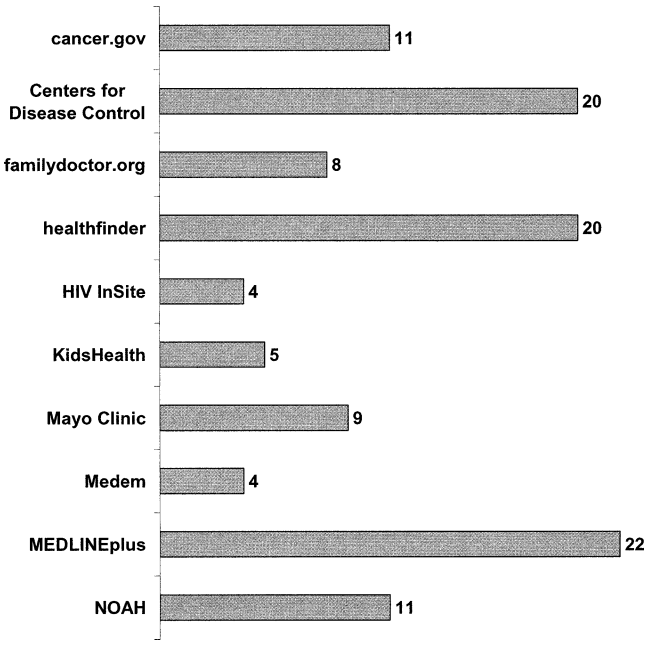
Another factor noted on sites was the presence or absence of approval or endorsement of information quality by agencies such as URAC and Hi-Ethics. Developers of Websites often claim to be mindful of emphasizing quality. The authors were interested in how many Websites actually made the effort to obtain endorsements by established agencies. Quality indicators were found only sporadically.

Finally, among the forty-nine sites examined were six that incorporated sites funded by the National Library of Medicine and other organizations. These were the following:

- Arkansas HealthLINK‡
- Health e-Links§
- Oklahoma's Comprehensive HIV/AIDS Information Network (CHAIN)**
- The Oklahoma Health Connection††
- Consumer Health Information Project (CHIP)‡‡
- Houston Healthways§§

‡ Arkansas HealthLINK may be viewed at http://www.arhealthlink.org.
§ The Health-e Links Website may be viewed at http://www.healthelinks.org.
** Oklahoma's Comprehensive HIV/AIDS Information Network (CHAIN) Website may be viewed at http://chain.ouhsc.edu.
†† The Oklahoma Health Connection Website may be viewed at http://okhealth.ouhsc.edu.
‡‡ The Consumer Health Information Project (CHIP) Website may be viewed at http://www.library.uthscsa.edu/chip/consumerhealth.cfm.
§§ The Houston Healthways Website may be viewed at http://hhw.library.tmc.edu.

Figure 4
Frequency of use of the "Top Ten" consumer health sites recommended by MLA



CONCLUSIONS

Despite the differing missions between hospital and library Websites, the majority sought to provide basic consumer health information that was reliable and of high quality. Providing such information on the Websites is a natural expansion of the libraries' and hospitals' services to patients and consumers.

Technology changed the delivery of information and information-seeking behaviors. For many, the Internet became the first and most important source of information. Sciamanna and his coauthors emphasize the importance of identifying the *opportunity gap* (the difference between what people are doing and what people are interested in doing on the Internet) when developing or expanding health-related activities for consumers and patients [7]. Some of the most significant desired activities identified by their research were related to health care quality, such as determining if consumers' health care providers are using appropriate treatment protocols, how their quality of care compares to other providers, or what questions to ask a provider. One readily available method to help provide such resources would be to include sites for medical licensing boards, accreditation boards, and evidence-based clinical practice guidelines.

Regional variations in Internet use must be considered as well. These disparities reflect differences in education and income levels. According to a recent Pew Internet & American Life Project report from August 2003, the states with the highest Internet access in the South Central Region are as follows: Texas and New

Mexico with 60% access, Oklahoma follows with 55%, and last are Louisiana and Arkansas with 48% [8].

As libraries and hospitals continue to improve designing Websites for those who use them, ''it is important to highlight that 24% of Americans live lives far removed from the online world'' [9]. Therefore, it is important to keep in mind consumer health information needs of those who do not have access to the Internet and address those needs as well.

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Delivery of Web-based instruction using Blackboard: a collaborative project

By Virginia L. Stone, MLS, MS
vstone@hshsl.umaryland.edu
Information Specialist and Liaison to the School of Pharmacy

Health Sciences and Human Services Library
University of Maryland, Baltimore
601 West Lombard Street
Baltimore, Maryland 21201

Rachel Bongiorno, PharmD
rbongior@rx.umaryland.edu
Assistant Professor

School of Pharmacy
University of Maryland
20 North Pine Street, Room 761
Baltimore, Maryland 21201

Patricia G. Hinegardner, MLS, AHIP
phinegar@hshsl.umaryland.edu
Coordinator of Specialized Information Services/Web Manager

Mary Ann Williams, MLS
mwilliam@hshsl.umaryland.edu
Information Specialist

Health Sciences and Human Services Library
University of Maryland, Baltimore
601 West Lombard Street
Baltimore, Maryland 21201

INTRODUCTION

The development of writing skills is an important component of the pharmacy curriculum. Recognizing the importance of communication skills, the American Council on Pharmaceutical Education (ACPE) incorporated oral and written competencies in its standards [1]. Studies, such as those by Holiday-Goodman [2, 3] and Ranelli [4], report the results of several programs incorporating writing skills into the pharmacy curriculum.

To address some of the writing skills competencies, a Web-based tutorial, ''Introduction to Writing a Research Paper,'' was developed as a collaborative project with faculty from the University of Maryland School of Pharmacy and the Health Sciences and Human Services Library. The tutorial was designed as a component of the school of pharmacy's ''Population-Based Medical Information Analysis'' course during the fall semester of 2001. Because its content is cross-disciplinary, the tutorial was subsequently incorporated into the communication skills training for medical residents in the spring of 2002 and promoted to the campus at large.

''Introduction to Writing a Research Paper'' is delivered through the campus's Blackboard portal. Blackboard, a software platform for course management, has been adopted as the campus standard for the University of Maryland, Baltimore.

ADVANTAGES OF USING COURSE-MANAGEMENT SOFTWARE

Piermatti observes that computer-based instruction helps overcome limitations of staffing, scheduling, and large group instruction when teaching library skills to busy pharmacy students [5]. Whelan notes that computer-assisted instruction can also enhance uniformity, relevance, comprehensive coverage, and independent learning skills [6]. Incorporating the instruction in a course-management package facilitates this process in several ways. First, it allows efficient and easy organization of the various course components. Sections for course announcements, lecture notes, assignments, and bibliographies are predefined by the platform and can be integrated with less technical expertise than would otherwise be required. Also, the software allows tracking of student accesses and individual assessment of student performance on practice exercises. Group statistics can be readily monitored.

Another advantage of using Blackboard is the opportunity for increased collaboration between pharmacy and library faculty. Because this was a relatively new format for offering library tutorials, the developers met regularly. The pharmacy faculty pinpointed common writing problems, which were then included in the tutorial's content.

For students, there are other advantages. Using Blackboard as a platform for the tutorial provides a familiar interface because the software is also used in other courses. Incoming PharmD students are required to purchase laptops and are trained to use Blackboard. The writing tutorial is available to them anywhere, anytime. This availability is especially useful for distance-learning students, such as nontraditional pharmacy students, residents, and those on clinical rotations. Students can also review individual components of the tutorial in later semesters, when needed. The assignments component of Blackboard allows instructors to incorporate immediate online feedback for practice exercises.

METHODS

A committee was formed that included library information specialists, the library Web manager, and faculty from the school of pharmacy's drug information service. Coordinating meeting times for this group sometimes proved challenging, but the group met on a regular basis over a three-month period. They revised a tutorial that previously had been presented to pharmacy students as a lecture and PowerPoint presentation. The director of the university's writing center reviewed the tutorial and provided feedback. Based on her suggestions, the tutorial was fine tuned and enriched with additional content and practice exercises.

The tutorial and resource pages were placed within Blackboard's organizational structure. The Blackboard interface has general sections for Announcements, Course Information, Assignments, Books, Course Documents, and External Links. Developers used the Announcements section to remind users to take the survey evaluating the tutorial. Tutorial objectives were placed in Course Information. The tutorial itself was located in Course Documents and was divided into four sections: Steps in Preparing the Paper, Style and Grammar, Citing Resources, and Resources. Students may enter and exit each of these various sections separately. A bibliography of print resources was placed in Books, and a list of Web resources was placed in External Links. DreamWeaver was used to prepare the material for the Web.

Practice exercises were created using Blackboard's Assessment Manager. By placing questions and answers in the framework of the Assessment Manager, students receive immediate feedback. Two practice exercises were developed using this feature. Instructors can review results of exercises and determine whether concepts need better explanations or further student practice.

An important task was the development of a script to be used as a voice-over for the Web pages. The script enhanced the explanations of concepts already included on the slides. Developing a script of the appropriate length was a challenge; it needed to be concise but with enough detail to explain the concepts sufficiently. The audio portion needed to be easy to download. Soundforge was used for the recording, and staff from the library's information technology (IT) department coordinated the voice-over with the corresponding tutorial page.

After the first semester, the module was made available to the entire campus community for independent student use. The tutorial was evaluated using data gathered from Blackboard's tracking features, student assignments, and a user survey. The online user survey was made available in January of 2002.

RESULTS

More than 200 participants accessed the tutorial from September of 2001 through April 2003. Responses to the brief online user survey have been favorable. Since the user survey was posted in January of 2002, 137 participants have accessed the tutorial and, of these, 34 (24.6%) have filled out evaluations. Few problems in accessing the tutorial were reported. Overall, respondents found the sections that describe steps in preparing research papers and citing references the most helpful. Table 1 shows the survey results for how much the tutorial helped participants understand the concepts it presented. Forty-four percent strongly agreed that it was helpful. The survey also examined the tutorial's organization and found that 70.5% of re-

Table 1
Survey question responses to ''The tutorial helped assess my understanding of the concepts''

Strongly agree	Somewhat agree	Agree	Somewhat disagree	Disagree	No response
44.11%	17.64%	29.41%	2.94%	—	5.88%

spondents strongly agreed that the organization was easy to follow.

Student comments from the survey include the following:

Great help. I will refer back to it during my semester I am sure.

I would like to know if this can be downloaded to my desktop for future reference? I also think it was *very* helpful as a refresher to writing a paper for students who have been out of school for awhile.

DISCUSSION AND FUTURE PLANS

Student and faculty feedback indicates that ''Introduction to Writing a Research Paper'' has been a useful tutorial for UMB students. Offering the instruction in Blackboard has allowed instructors to improve its comprehensiveness and provide exercises for reinforcement. Although it took time to prepare the tutorial, format it for Web presentation, and add the audio component, the effort has been worthwhile. Instructors appreciate the ability to track usage and offer the program campuswide in a password-protected environment.

Future plans are to continue revising and updating the tutorial, add exercises, and provide more printing and downloading capabilities. As faculty and students become more familiar with Blackboard, it is important that the library use the system to provide tutorials on various aspects of library research. Plans have been made to develop additional tutorials and to market them to specific audiences. Written communication skills are important to health professionals, and instructors hope that ''Introduction to Writing a Research Paper'' will continue to help students improve this critical skill.

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