Outreach to Public Libraries, Senior Centers, and Clinics to Improve Patient and Consumer Health Care: An Update

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ABSTRACT. The medical library of the Pacific College of Oriental Medicine in San Diego developed a community outreach project to provide computer training on how to access electronic health information using the NLM and related databases. The goal is to enable local senior residents to improve their health and health care by accessing authoritative information. The original project plan was described in "Senior Health Goes Electronic: Partnership on Access to Health Senior Health Information Services" *JCHI* 9(2) 2005. This paper is a companion update of that publication covering the project implementation, progress, and its recent expansion.

The library consumer health outreach project evolved into a broad environment for teaching health information access to a diverse population at multiple local San Diego community settings. Insights about the library

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outreach efforts, attendee participation, and the senior health Web page are discussed. Conclusions include the evaluation approach and population diversity of over 3,500 participants (community patients and residents), and over 425 hands-on class attendees from varying ethnic backgrounds, minority groups, low income to middle class adults and seniors. Health professionals (nurses, allied health personnel, and physicians) have also been class attendees. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: http://www.HaworthPress.com © 2006 by The Haworth Press, Inc. All rights reserved.]

KEYWORDS. Community outreach, electronic access, alternative and complementary medicine, acupuncture, Oriental medicine, Web page links, resource links, wireless communication

INTRODUCTION

This paper describes a unique library outreach project implemented in 2004 at the Pacific College of Oriental Medicine (PCOM) in San Diego. The PCOM library created an overall environment to improve patient and consumer health by using digital library resources to provide instruction on how to find authoritative health information. With continued future support, it is hoped that this outreach environment service could emerge as a Consumer Health Informatics Center based at the PCOM library to serve multiple community groups, including health professionals.

The Library's outreach program began primarily as an 18-month information service for senior citizens launched in partnership with two community locations in September 2004 as the "Senior Health Project: Access to Electronic Health Information" with funding from a Pacific Southwest Region Medical Library National Network of Libraries of Medicine (PSRML NN/LM) contract award. It subsequently evolved into an expanded program when the library was granted an additional Consumer Health Information Community Service 12-month express award in February 2005 from the PSRML, NN/LM program. This support enabled the library to establish a community-based environment to conduct consumer health informatics workshops/classes for adults of all ages, including seniors, at additional locations. Consequently, the library now operates two consumer health teaching programs held at

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multiple sites, which include the original First Lutheran Church-based senior clinic and Riford Senior Community Center, plus the Clairemont Senior Center and two San Diego public libraries (Pacific Beach Taylor Library and the La Jolla Riford Library). While each project is committed to its established goals and objectives, the overall service programs benefit from each other to enrich the teaching and learning experience of the project participants and class attendees.

Generally, everyone who hears about the evolution of this consumer health outreach program is impressed by the unique partnerships and success of the two services, because they bridge the gap for seniors and adults from diverse geographic areas and varying ethnic groups and economic status. Attendees participate in the computer classes to learn about the resources of the National Library of Medicine (NLM), to gain knowledge about health information, and to help improve their personal health and health care. In the spirit of the NLM's efforts to provide equitable information to the "haves" as well as the "have nots," this program focuses on developing a consumer health infrastructure for the local community.

OUTREACH BACKGROUND

As described in "Senior Health Goes Electronic,"¹ the National Library of Medicine's (NLM) outreach programs inspired the development of the PCOM Library community service. The long-term outreach initiatives of the National Library of Medicine, implemented by the NN/LM and its library network, have made a positive impact on the entire health sciences library community. It created a national awareness among libraries to serve consumer health information needs. Highlights of the outreach programs extend from experiences with the early use of Grateful Med, use of full MEDLINE, and currently to the use of advanced information technology including access to MedlinePlus.²⁻⁴ The NLM pilot project study reported by Wood in 2000 indicated that the NLM should continue outreach to the public and public libraries through the regional library programs (NN/LM), resource libraries, and network member libraries.⁵

Additionally, the NN/LM has traditionally fostered consumer health information services and programs to targeted rural health, underserved, minority, and unaffiliated populations and health professionals. It is through this dedication that many libraries, including PCOM's library, have received NN/LM awards to conduct community information ser-

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vices. The NLM support has provided the financial means for many of these library service programs to incorporate the latest technological applications including use of the Internet and advanced communications systems.

The importance of consumer health information is overwhelmingly attested by the magnitude of medical literature, which undoubtedly substantiates the NLM's role in promoting these services. A recent PubMed literature search on "consumer health information" retrieved over 21,825 articles covering various aspects of the topic.⁶ In addition, the national media, printed newspapers, and television programs cover health information news of interest to consumers on a regular, almost daily, basis. However, because it is essential that the public receive non-commercialized and reliable information, a major critical role and responsibility rests with the NLM and medical libraries to assure that the public receives access to the most authoritative and authentic information available.

Historically, since its founding in 1986, the Pacific College of Oriental Medicine (PCOM) has been committed to community outreach services. The college is known in the community for regularly participating in health fairs, conducting Open House programs, hosting the annual Pacific Symposium conference, and conducting internship training at several free community-based health clinics such as church-based senior clinics and homeless clinics. The Pacific Symposium promotes professional information exchange and brings together health professionals in Oriental medicine for continuing education. This meeting attracts national and worldwide leaders as speakers and attendees. Currently, some of PCOM's community clinical training programs are also conducted in affiliation with the University of California San Diego, and Children's Hospital of San Diego.

The existing community clinical affiliations provided a foundation for the PCOM Library to launch the original consumer health information project in 2004 at the church-based clinic and senior community center. This facilitated the natural subsequent expansion in 2005 to another community center and two public libraries. As a consequence, the Library's role in the community outreach services is now recognized at the college, and was also broadly extended to conferences and classroom instruction. Recently, the Library was given space to demonstrate at the annual Pacific Symposium and invited to conduct health informatics literacy seminars in clinical research and nutrition classes. The Library's increased responsibilities and natural progression through the outreach programs has resulted in a new consumer health information role.

GOALS AND OBJECTIVES

In 2005, the library broadened its goal to create a consumer health information services environment for the community by developing a program to educate and train adult patients, local residents, and health professionals to seek and find authoritative medical information using the latest technologies. The purpose was to improve patient health and health care by providing training to access reliable health information. To implement this expanded goal the Library engaged in the following objectives:

- Develop and implement an extended partnership with community centers and public libraries to provide computer workshop classes on access to health information.
- Increase the number of attendees by adding adult consumers and clinic patients in the instructional classes on how to find evidence-based medical information about their health conditions.
- Enhance the PCOM Library Web Page and related resources.
- Cover unique features and a broad range of topics.

All of the objectives including several tasks and steps conducted during the project period are discussed in the sections below. Minor modifications and adjustments have been made to meet the needs of project participants/attendees.

Develop and implement an extended partnership with community centers and public libraries to provide computer workshop classes on access to health information.

Initially, the workshops began with patients of PCOM's churchbased senior clinic at the First Lutheran Church in San Diego and seniors who attend the Riford Community Senior Center in La Jolla. Then six months later, the workshops were extended to include residents and health professionals at two San Diego public libraries, the Taylor Pacific Beach Library and the Riford La Jolla Library, and at another senior center, the Clairemont Senior Center in San Diego. Publicity, posters, tri-fold brochures, and flyers were developed for distribution at each of the locations. Workshop/class attendees are given workbook manuals used during class instruction. The workbooks cover how to access MedlinePlus in English and Spanish; how to search for health topics and drug information; how to use the encyclopedia and the dictionary;

and how to navigate special features such as Clinical Trials, NIH Senior Health, Tutorials, and Videos.

Increase attendees by adding adult consumers and clinic patients in the instructional classes on how to find evidence-based medical information about their health conditions.

The extension of the consumer health information service, made possible by the second NN/LM award, included additional locations, thus offering an incentive and opportunity to expand and broaden the classes to the general public. Instead of limiting the classes to seniors, the additional locations provided a basis to add adults of all ages, more underserved minority groups, and local health professionals. The two local public libraries serve to attract the general public including a varying ethnic population of healthy citizens as well as people seeking information about their health conditions. The population attending the classes is representative of the community residents, which include Asian, Hispanic, Filipino, African, and Caucasian. The ages range from late forties to mid-eighties. The gender base is approximately three to one, female to male. Many of the women mention they want their husbands to attend.

Staff trained at both libraries were fast learners and easy to teach. They were already familiar with the Internet and use of databases, so they proceeded through the workbooks quite quickly. They benefited mostly from learning the various components of MedlinePlus and Pub-Med searching techniques, so they could guide patrons and help them find answers to complex reference questions.

Physicians and medical clinics that serve predominantly minority populations in the eastern area of Pacific Beach were sent letters inviting them to participate in the consumer health information computer classes. They were given MedlinePlus tri-folds, MedlinePlus bookmarks, and information about the classes. Offers were made to visit their offices. A few people have taken the class, and follow-up telephone calls were placed to the others.

Generally, the databases used in the classes contain well-established evidence-based medical information. The workshops rely primarily on MedlinePlus, PubMed, including the NCCAM alternative medicine subset, academic medical center, and government-based medical science databases. Basically, the contents of these databases include proven diagnostic approaches and treatment modalities accepted by the medical scientific community.

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Enhance the PCOM Library Web Page and related resources.

The library emerged as a Digital Library in 2001, when it implemented an integrated library system, online catalog, and access to multiple databases to meet the patient care, education, and research needs of the college's programs. By 2002, a Library Web page was developed with access to multiple databases, full-text journals, and online tutorials. A major objective of the library's outreach program has been to extend the existing online resources by adding new databases, more full-text journals, and the senior health database page. Other additional online resources developed for the outreach program include links to nutrition, public health, and health organizations.

The outreach effort began with the existing library Web page, which included Health Databases and Complementary Medicine Databases comprising the NLM, NIH, government, and academic medical center health databases. The NLM and NIH databases, especially MedlinePlus, have been the primary teaching resources. The first enhancement to the PCOM Library Web page resources for the senior project was implemented in February 2004, when the Alt HealthWatch database was added. Then, in September 2005, the library developed the Senior Health Database Web page and a Nutrition section in the Complementary Medicine Database page. This was followed by additional links to public health and health organizations of interest to the general public. These new resources are being used daily as part of the community computer outreach classes. Plans are to continue to add resources as appropriate and as they become available. Details of the new Web pages and resource links are discussed in the methodology section.

Cover unique features and a broad range of topics.

The computer classes begin with western medicine, drug information, public health, Medicare, and health organization subjects. However, because the program is based at PCOM, an oriental medicine college, and because the patient clientele is inclined toward East-West Medicine (integrative medicine and alternative medicine), the class instruction also includes searches about acupuncture, herbals, and massage therapy. There is no other known consumer health outreach program nationally that covers East-West Medicine.

The instructional program is flexible in order to accommodate the varying interests and needs of class attendees. Some attendees request information peripherally related to the standard medical questions, which

may include various topics such as Medicare, health insurance, longterm care and nursing home information, and health organizations and societies. Therefore, instead of a rigid instruction pattern, it is advantageous to deviate from the class manual and dedicate sessions to the topics requested by the participants.

The original project, "Senior Health: Access to Electronic Health Information," serves as a model for current classes, as it utilizes technology and tempers instruction with hands-on human contact to provide the electronic-based information service. One-on-one instruction is often necessary, especially for seniors who do not know how to use the computer's advanced capabilities. Wireless communication and laptop computers were incorporated for seniors to access information at the church-based senior clinic. The mobility provided by the project laptops accommodates the small group classes at the church senior clinic and demonstrations at conference exhibits.

METHODOLOGY

There are numerous tasks with steps and activities involved in achieving the library's goals and objectives. The tasks include plans for expansion, development of new instruction criteria for the diverse population, design and technical implementation of the new Web page and resource links, establishment of methods for data gathering and evaluation questionnaires, and a review of the library's role in community outreach.

Planning Project Expansion

As reported in the earlier paper,¹ each new task required initial planning with the participating centers and libraries, plus internal planning at PCOM with library staff and the information technology staff. The expanded effort required a review and update of technical and logistical planning. Meetings were held with the directors of each of the new locations, including the community center and the two libraries. In addition, staff at an existing senior center was replaced and new staff required orientation. New publicity materials and class announcements to promote the program had to be developed. Announcements were prepared and distributed to local newspapers and newsletters. Technical changes included purchasing an additional computer and a stronger, high performance wireless modem and repeater to handle the increased workload. The public libraries generously provided and reserved their Internet-based computers for the weekly classes. They also maintained a weekly registration sign-up list. Instruction and staff schedules were arranged to accommodate the additional classes.

Extension of Project Services

When other potential partners approached the PCOM Library to provide computer classes at their locations, an application for an express award was submitted and subsequently awarded by the NN/LM PSRML. This provided the necessary funds to extend the consumer health information service further into the community.

The project was extended to include the Clairemont Senior Center and two San Diego Public Library branches (Taylor Pacific Beach and La Jolla Libraries) as new workshop/class sites. This provided an opportunity to increase enrollment by widening the target population. Economic income levels vary from low to middle class. Furthermore, the new locations helped to attract diverse populations including minorities and varied ethnic groups which comprise the local residents. The class content now includes MedlinePlus *en espanol*, which the Spanish speaking enrollees appreciate. An added feature is the opportunity to invite community health professionals to attend class sessions held at the two public libraries. Mixed professional attendees include nurses, physicians, surgeons, chiropractors, and other allied health workers.

Overall, the program participants have increased to over 3,500 and class attendees to over 425 people as a result of the project extension to the new sites. The project also benefits from word of mouth recommendations. The new sites have their own computers and teaching facilities, which has made implementation and access easier. The public libraries generously set aside computers solely for the PCOM one-hour classes that are held one day per week. The community center also has a computer classroom, which their staff reserves exclusively for the hands-on sessions.

The new attendees have varying levels of computer experience. Navigating the mouse is a major challenge for seniors and novices. However, the majority of the new attendees are more advanced than the seniors, and the classes move along faster. This provides time to cover additional questions, which attendees often ask.

Enhancement of the Library Web Site and the Senior Health Database Page

The primary task is to add new resources to strengthen the teaching aspects of the program and to provide access to a broader range of consumer health information to meet user needs. A major Web page enhancement began in 2003, as a prelude to the first NN/LM sponsored project. At that time, the PCOM Library Web page http://www.pacificcollege.edu/library/index.html was completely redesigned to include specific categories for Health Databases and Complementary Databases. When the NN/LM project was initiated in September 2004, the Web page was further enhanced with the following additions.

Alt HealthWatch Database. Alt HealthWatch was added to the Complementary Medicine Database section in January 2005 (see Figure 1). This system includes online full-text articles to over 250 journal titles and citations to many more journals, newspapers, and proceedings in the field. It is extremely useful to users at the senior health clinics, who

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FIGURE 1. PCOM Complementary Medicine Web Page with Alt HealthWatch

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need to explore Eastern medicine topics including acupuncture, herbal medicine, and massage therapy. Figure 2 shows a search on acupuncture and pain management in Alt HealthWatch.

The Senior Health Database. This Web page was designed and implemented by December 2004 and released for use in January 2005. The search criteria for useful links entailed hours of professional searching and screening for reliable and authoritative database links useful to seniors, which are free and easy to use. To assure authoritativeness, criteria were established requiring that the resource links come from government health databases and/or health organizational databases derived from academic medical centers, health associations, societies, and authentic community sites. This Web page continues to grow and new links are added every quarter. See Figure 3 from the Senior Health Database section.

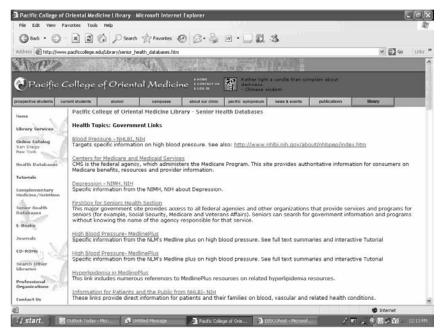
Nutrition and Other Public Health and Organization Links. These were added to complement the outreach program. The announcements of the new Nutrition Food Pyramid by the government gave the project

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FIGURE 2. Alt HealthWatch Search on Acupuncture and Pain Management

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FIGURE 3. Senior Health Databases



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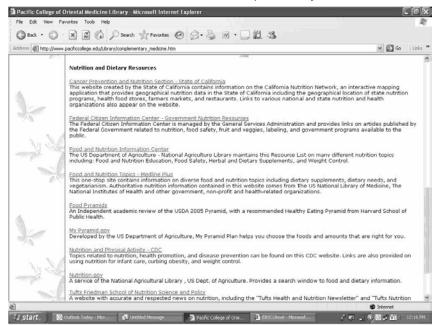
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an opportunity to emphasize the Nutrition links and other resources added to the Complementary Medicine Databases section of the Web page. The Food Pyramid protocol is used in the class instruction and users have fun looking up ways to improve their personal eating habits. The new Spanish version is appreciated by many of our users. These nutrition links are used extensively also by health professionals who want their patients to add specific natural foods and vitamins to their daily intake. The addition of calcium for both men and women is a favorable outcome of our program. See Figures 4 and 5 from the Nutrition site and Food Pyramid.

Range of Topics Covered

In many ways the PCOM program is unique because of the disparate topics and subject content covered during instruction. The clientele and location often determines the direction the computer class will emphasize. Generally, the prepared workbooks set the stage for instruction, which

FIGURE 4. Nutrition Links on PCOM Complementary Medicine Section

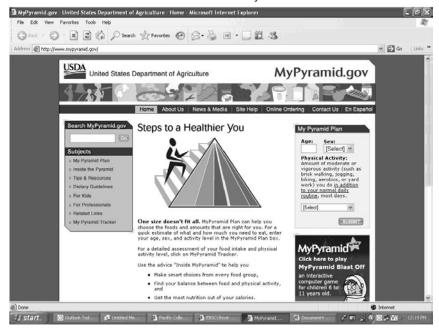


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include sample searches from MedlinePlus and class exercises using the sections on health topics, drug information, the medical encyclopedia, the dictionary for spelling aid and definitions, the directory, and current news. Major features are the number of electronic Tutorials, which once taught, participants could also explore on their own. As the group becomes more proficient, they are taught to access the NIH Clinical Trials and PubMed. A popular service, which many request, is help with establishing an e-mail account to get "my cubby" notifications from PubMed. Once they have an e-mail account, users can go to the public library on their own to receive and send mail. To comply with attendee interests, a few modifications are often made to class sessions as follows.

Searching in Alt HealthWatch and NCCAM (National Center for Complementary and Alternative Medicine) was incorporated to cover integrative and alternative medicine topics. Once shown, users can look up topics of interest independently. Of special interest are topics in natural medicine and oriental medicine including acupuncture, herbs, massage, and Eastern exercise techniques. Many of the PCOM clinic patients

FIGURE 5. Food Pyramid



are treated for pain management conditions and use of Alt HealthWatch and NCCAM databases typically result in more successful searches for these topics. The recent MedlinePlus addition of Herbs and Supplements in the Drug Information Topics section is very useful.

Searches for a broad range of general health information included adding nutrition, health insurance, long-term care insurance plans, finding physician specialists, public health, immunization for travel, and recently Medicare and prescription drug programs. This need has prompted the library to expand the Web page by adding useful links for the new clientele. Because of questions raised by attendees, the NLM was asked to add some additional MedlinePlus topics, which they responded to quickly and positively.

Responsiveness to user needs is an important feature of the project's computer classes. On many occasions, attendees raise technical computer questions concerning the type of computer or software they want to purchase, an Internet service provider, or technical issues with their computers. While these do not fall within the class content, at minimum,

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attendees are given general guidance to sites where they can do comparative shopping for best prices, and they are provided some computer tips to help solve their problems. Any technical assistance beyond the regular instructional program is preceded with a caveat excluding the PCOM library of any responsibility.

MEASURING OUTCOMES

One of the most challenging parts of a service of this nature, involving multiple sites and diverse population, is to gather information and data to evaluate the program with some degree of uniformity. The typical way to determine successful teaching is usually through testing, but this is not a useful mechanism for this program. Also, another challenge is that attendance is voluntary, not mandatory, and based on interest or need, not required. The typical clientele are primarily adults, seniors, and retirees, which means they are independent and do only what they want; they cannot be pressured. The attendees are at different levels of computer expertise, ranging from beginning, to mid, and to advanced levels. This makes measurement of skills learned through class attendance even more difficult to assess. Therefore, skills assessment is primarily measured by observation and degree of assistance required by attendees. The measurement assessment is scientifically skewed by the very nature of the attendees and the multiplicity of topics being covered.

Recognizing this, simple pre-registration sheets were developed for participants to complete when they attend a class, and then later they are given a simple questionnaire. Post-class, it was important to conduct a telephone survey using a sample group; this met with some degree of success. Most of the attendees were pleased to answer the questions, if they were home to answer the call. A few repeat calls were made as time permitted. Of the 30 plus contacts, all were extremely positive about having attended the classes. The questions asked which components or topics were most helpful to them. This input is invaluable as it helps direct the choice of topics and resources to cover in class.

Responses to the general questionnaire given at the end of class were unanimously positive. Basically, the query responses verify if they learned what they needed, if it was new knowledge, and if it is useful. Some attendees are exuberant about their new knowledge and they become class enthusiasts. Ideas to improve the classes are often input from many excited attendees. On the other hand, there are some quiet, more conservative attendees who do not complete the evaluation and are reluctant to

reveal any information. This may be due to stolen identity issues, especially prominent among seniors. The basic questionnaire and data response chart developed for the evaluation appear as Appendices I and II.

DISCUSSION AND LESSONS LEARNED

Among the many lessons learned about providing consumer health information classes is that flexibility and trustworthiness are the most essential features. Participants need to feel comfortable coming to the classes and raising a variety of health questions. Also, because they are novices, they do not know where else to go for technical guidance. The library is a place where people can ask questions and, at least, receive some direction of where to get answers. This approach has paid off many times because it results in repeat customers and benefits from word-ofmouth publicity.

As indicated by the attendee study, publicity is an essential factor in generating class participants. Publicity avenues are primarily the local newspapers, flyers, word of mouth, and presentations to local groups. In the 12 months of conducting the workshop/classes, over 3,500 participants attended the speech presentations, demonstrations, and exhibits. Approximately 350 people of very diverse groups have attended the class sessions to date. Thus far, the results are successful. The Spanish component of MedlinePlus is used extensively with several Hispanic attendees.

The project is labor intensive as it involves several miles of travel to the sites and one-on-one individual instruction. PCOM medical interns were hired and trained to assist with the individual instruction and this is very popular with the attendees. Also, a Librarian practicum student joined the project for a few months and he helped at one of the senior centers.

Initially, there were technical issues at the church-based classes with the recommended wireless communication system which was frustrating, but once it was replaced the modems and booster problems were resolved. Unanticipated needs arose because the librarian and project staff were often asked to double as computer consultants. The novice attendees have no one else to help them with technical computer problems. Many people enroll in the class to get health information, but later their lack of computer skills hampers their ability to work independently. Then they are given individual basic skills training. This has been reported by other projects as well.⁷ It is important to be receptive by being "all things to all people" and to help steer the users in the right direction.

CONCLUSION

One of the most rewarding aspects of the community outreach/information access program is the elevated status and recognition the library has received both at PCOM and the community. Many people were unaware that the library had this expertise and the resources to help improve health and patient care. The Library as an environment for teaching health information in the community to improve health care is a new role that needs to be continued. The Library plans and hopes, depending on available funds, to develop a Consumer Health Information Center to serve an even broader segment of the community when the project period ends.

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APPENDIX I

CONSUMER HEALTH INFORMATION QUESTIONNAIRE Class Evaluation Form

Nan	ne Date	e						
	er completing the Health Information Class, please a stions.	answer the	following					
1.	Can you use a computer?	Yes	No					
2.	Can you use a mouse?							
3.	a) Have you previously searched the internet for							
	health information?	Yes	No					
	b) Can you now search the internet?	Yes	No					
4.	Can you find MedlinePlus on the internet?	Yes	No					
5.	Where do you go to get help in spelling a medical MEDLINE Medical Dictionary	term?						
	Encyclopedia All of the above							
6.	Can you look up drugs on MedlinePlus?	Yes	No					
7.	Did you think the Interactive tutorials (PowerPoir							
	informative and helpful?							
8.	Do you know how to find additional information on							
-			No					
9.	What was most useful from the class?							
-	Find medical summaries Drug inform	nation						
	Senior health Tutorials _							
	All of the above							
10.). What should be added or changed from the class?							
	0							
11.	Will you recommend the call to a friend?	Yes	No					
12.	Have you told others about the MedlinePlus Web	site?						
		Yes	No					
Thank you for taking the time to complete this questionnaire.								
Pacific College of Oriental Medicine - Library								
7445 Mission Valley Road, Suite 101								
San Diego, CA 92108								

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619-574-6909

APPENDIX II

Consumer Health Information-Telephone Interview Responses

30 of the participants completed the telephone survey. (68 participants were called, 39 were successfully contacted.)

27/30 participants stated they can use a computer.

29/30 stated they can use a mouse.

14/30 stated they had previously searched for health information on the Internet.

26/30 stated they can search the Internet now.

24/30 stated they can find MedlinePlus on the Internet.

20/30 are now familiar with the different parts of the MedlinePlus Web site.

27/30 stated they could look up drug information on the MedlinePlus Web site.

18/30 stated the interactive tutorials were helpful or informative.

10/30 stated they could find PubMed on the MedlinePlus Web site.

Of the 30 participants who completed the survey, 28 commented on what was most useful from the class.

3/28 participants found the medical summaries to be the most useful part of the class.

7/28 participants found the drug information to be the most useful part of the class.

2/28 participants found the senior health information to be the most useful part of the class.

2/28 participants found the interactive tutorials to be the most useful part of the class.

16/28 participants stated all of the options were the most helpful.

30/30 participants would recommend the class to a friend. 20/30 participants have told others about the class.

Of those who commented on something they would add/change, the following was said:

More MAC specific classes and more variety of location sites.

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