

Public Health Outreach Project Description

Title: Neighborhood Health Centers Biomedical Information Access Via the World Wide Web
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Date: October 1, 1997 through June 30, 1999

Objectives:

1) To integrate use of WWW resources into the information seeking behavior of Neighborhood Health Center (NHC) staff; 2) to promote National Library of Medicine health information products and services, with emphasis on *PubMed*; 3) to strengthen the role of the Prior Health Sciences Library in providing health information to unaffiliated health care professionals.

Target Audience:

The target population for this project included health care professionals at the six (later seven) Columbus Neighborhood Health Centers. These health centers primarily serve the health care needs of the working poor and medically indigent. The NHC network provides adult and pediatric primary health care, laboratory services, immunization and nutrition counseling, prenatal care, and pharmacy services. The staff includes physicians, registered nurses, practical nurses, nurse practitioners, medical/lab assistants, social/outreach workers, dieticians and support staff.

Needs Assessment (methodology and results):

As a result of another project to identify and document the Health Sciences Library's major institutional affiliations, the principal investigators determined that the original six NHC's had limited and inconvenient access to biomedical information resources. Discussion with the Columbus Health Department's Director of Clinical Preventive Services revealed that none of the Health Centers had a library or access to the Internet.

The principal investigators visited the administrator at each NHC site to determine interest and need for WWW access; potential placement of equipment; technical support capabilities; and administrative support for implementing a project that would entail some financial and time costs for the NHC's. After explanation of the proposed project and the possible financial impact, all administrators expressed great interest and support for their staffs' participation.

Although most NHC staff members had limited WWW or other Internet experience, several administrators were able to identify at least one individual with some knowledge: a nurse practitioner who uses the Web at home; a social worker who was in the process of investigating Web access for her NHC through American Online; and a physician who received weekly CDC updates via a personal e-mail account. The site visits also

revealed preliminary information needs: MEDLINE access, ICD-9 coding information, CDC preventive health information, and patient education materials.

Intervention

Our initial plans included a Web-based information needs survey. It was originally offered on the project home page. However, early on we discovered that the majority of our project participants were not familiar with the Windows environment and were not comfortable using a computer mouse. It made it very difficult for them to complete an electronic form. Although we switched to a paper based form for the remainder of the project, it remained difficult to gather completed forms. Primarily, we relied on our site contacts to identify training interests and needs.

At each site, we taught one designated staff member how to use our written instructions to turn on the equipment, dial into the ISP, disconnect from the ISP, and turn off the equipment. We also prepared a notebook for each site that included:

- Connecting and disconnecting instructions
- Contact information for the principal investigators
- Contact information for the ISP, *NetSet*
- Contact information for the equipment vendor, *Auro Computers* (all computers are protected by a 3 year warranty)

We included four types of training opportunities: Web based tutorials and handouts/tip sheets, group orientations, one-on-one training and phone consultation. Most training opportunities focused on basic computer and Web skills. Although we were open to offering hands-on training off-site at the Library, there was little interest or support for this type of training. Our orientation sessions taught us that group training on-site was difficult to provide due to work schedules.

The project main Web page included a major category "Education and Training." There were six links within this category: *net.Tutor*, *PubMed Help*, a tip sheet on connecting and disconnecting from the Web (also included in project notebook), and handouts on locating resources, evaluating resources and a glossary. The handouts were also distributed in print during orientations. OSU Libraries staff developed *net.Tutor*, a Web-based interactive instructional program. Given the rudimentary Web skills of the majority of project participants, several *net.Tutor* modules were recommended to them:

- Getting started on the Web
- Evaluation of Web sites
- Searching 101
- Using Web Search Tools

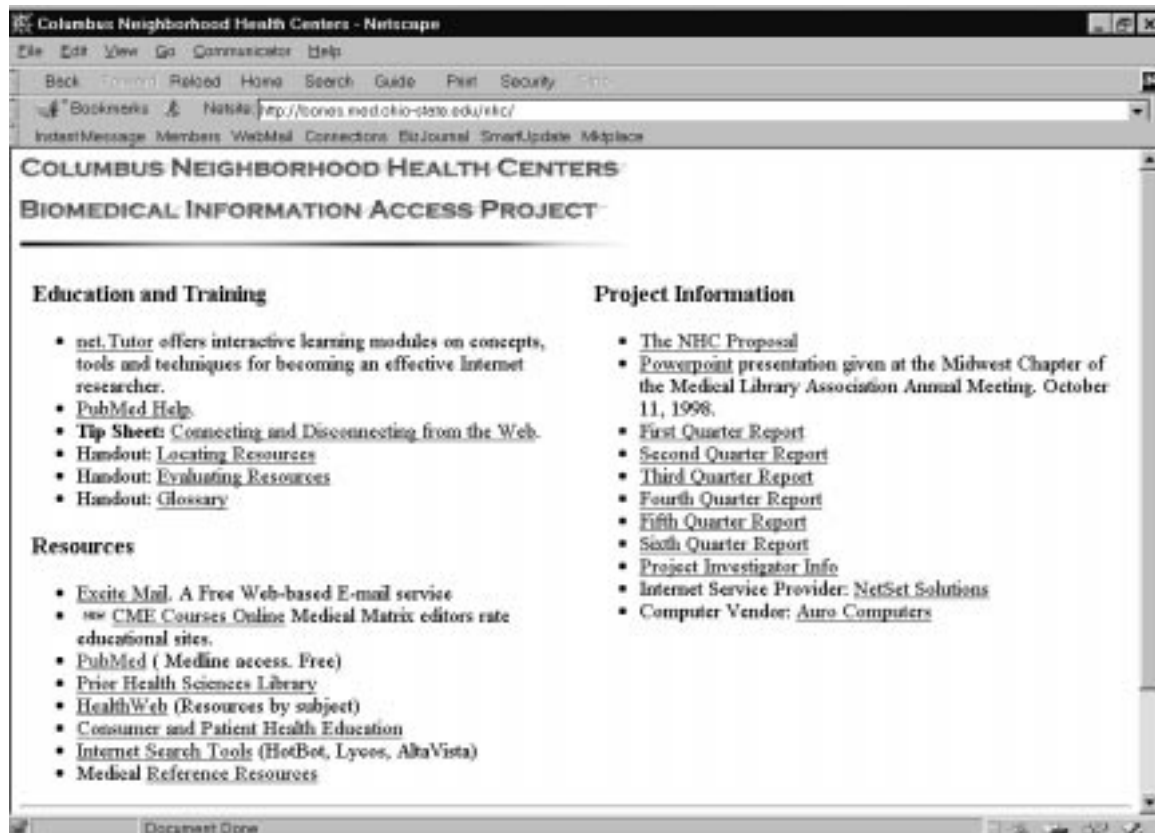
A ninety minute orientation program was designed to introduce the project goals/objectives, equipment, and NHC Web pages to project participants. The project coordinators team-taught the ninety minute sessions on-site.

Our individual training sessions focused on basic Web browser orientation and e-mail training. We selected the free Excite Mail service for project participants and provided a printed copy of the "Help" information from the Excite service, as well as simple written instructions for using the service.

Website (developed as part of project and how maintained)

A copy of the project home page appears below. It evolved from a listing of a few helpful links to a home page reflecting the interests of health center staff. Three links were particularly requested: the link to Excite e-mail, a selected list of patient education materials, and CME materials. In our post project evaluation, the patient education materials and *PubMed* links were most frequently identified as most useful. "Project information" was most frequently identified as not useful, or not used, by participants.

Project participants also used the evaluation forms to suggest adding links to specific associations. We still maintain the page. However, the NHC's are now formally part of the Columbus Health Department, which has upgraded the information infrastructure at the health centers.



Evaluation:

Two evaluation survey forms were developed and administered to project participants. One form was intended for use by health center staff members who used the project workstation. The other form was created for those who have not participated to date.

An appropriate supply of each type of form, along with self-addressed, stamped envelopes, was delivered to the project contact at each site for his/her assistance in distributing the surveys.

As part of our project evaluation survey, project participants were asked to rate several barriers to using Web resources. Four of these barriers could be described as learning needs. Health center staff members continue to need very basic training in both computer skills and basic Web use:

| Barrier | Project Workstation Users | Project Workstation Non-users | All | Count |
|--|---------------------------|-------------------------------|-----|-------|
| Technical skill with computer equipment and software | 2.9 | 2.7 | 2.8 | n=22 |
| Knowing how to effectively find information | 2.6 | 2.5 | 2.6 | n=23 |
| Understanding how the Web and Internet work | 2.7 | 3.1 | 2.9 | n=23 |
| Confusing or irrelevant search results | 3.3 | 2.4 | 2.8 | n=22 |

Scale: Items rated on scale of 1 to 5 with 1 assigned to an item being a significant barrier and 5 not a barrier at all.

Since the unsuccessful needs assessment was to serve as a pre-test, it was difficult to measure the impact of training and project Web page development on these variables.

Two items included in the project evaluation survey involved training as a barrier to effective use of the Web. Respondents' ratings are summarized in the table below:

| Barrier | Project Workstation Users | Project Workstation Non-users | All | Count |
|------------------------------------|---------------------------|-------------------------------|-----|-------|
| Support for questions and problems | 3.0 | 2.8 | 2.9 | n=23 |
| Training | 2.5 | 2.7 | 2.6 | n=22 |

Scale: Items rated on scale of 1 to 5 with 1 assigned to an item being a significant barrier and 5 not a barrier at all.

Although we were unable to track login time for our project (*NetSet* could not provide this level of detail), we have been able to track recent use of some of the Web pages developed for the project, most notably the project home page and the patient education page. While we cannot guarantee that only project participants are using the pages, it is likely they are the primary users.

| Description | Hits 03/04/99 – 05/04/99 | Hits 05/05/99 – 07/03/99 |
|--|--------------------------|--------------------------|
| NHC Web pages developed specifically for this project (does not include direct links to other resources, e.g. PubMed, HealthWeb, etc.) | 521 | 797 |

As part of the project evaluation survey, we asked workstation users to identify the types of health information for which they searched on the Web. Patient care information was ranked first, followed closely by consumer health information, and continuing education. Project participants were not searching for administrative/management information.

Poster Sessions/Exhibits/Presentations/Publications

Schnell E. Connecting Neighborhood Health Centers to the World Wide Web. Presented at the Annual Meeting of the Midwest Chapter of the Medical Library Association. Lexington, Kentucky. October 11, 1998. (PowerPoint presentation available at <http://bones.med.ohio-state.edu/nhc/mcmla.ppt>)

Sprague MW, Schnell E. Connecting Columbus Neighborhood Health Centers to the Web." *3 Sources* 17 (December 1999/January 2000): 3,7. (also available at <http://www.nlm.nih.gov/gmr/3sources/9912.html#columbus>)

Sprague MW. Connecting Columbus Neighborhood Health Centers to the World Wide Web. Presented at the NN/LM Greater Midwest Region Outreach Evaluation meeting. Chicago, Illinois. July 30, 1999. (PowerPoint presentation available at http://bones.med.ohio-state.edu/nhc/outreach_evaluation.htm)

Partnerships:

In addition to subcontract and Library support, Region 5-A of the Ohio Area Health Education Centers Program (AHEC) and the OSU College of Medicine and Public Health contributed funds. AHEC funding supported training and College funding support purchase of a workstation for the Columbus Health Department.

Marketing:

Contacts at each site were used to arrange our group training sessions, and, in some cases, also to identify training needs. For example, the contact at Hilltop contacted the project coordinators to request basic e-mail training for many members of the health center staff.

The project Web site was also used as a way to notify project participants of new features and resources.

Administrative Issues and Challenges Faced:

- Midway through the project, the Neighborhood Health Centers were reorganized under a new administrative structure. Health center staff and administrators were very involved in creating this new organization. It was difficult to focus participants' attention on learning to use the Web. In addition, none of the individuals who served as our original site contacts are still on-site.
- All project sites were extremely busy. In addition, project equipment was often located in busy, common use areas, making it difficult to conduct training, or for participants to practice.

- We underestimated the need for basic computer training. Most participants were unfamiliar with the Windows environment and the Web. As a result, our Web-based electronic needs assessment was a failure.
- Given the need to provide on-site, individualized instruction, much more personnel time should have been planned for this project.

Were Project Objectives Met?:

| Objective | Comments | Status |
|--|---|--------------|
| Provide appropriate equipment and communications for Internet access. | Quality of Internet service provider and hardware reliability exceeded expectations; equipment placement was sometimes a problem/barrier. | Accomplished |
| Evaluate learning and information needs. | Basic learning needs were identified, although not in the orderly, comprehensive manner we had envisioned. | Incomplete |
| Design individual learning agreements with NHC staff members. | Too time intensive to implement; would probably have required dedicated project personnel devoted to this aspect. | Discarded |
| Provide a variety of training opportunities tailored to learning needs. | There is a continuing need for training; NHC staff members had little uninterrupted time to devote to this aspect; much remedial computer training was needed. | Incomplete |
| Create a series of web pages to organize access to the Internet, focusing on resources of interest to NHC staff members. | We have continued to maintain these pages. Project participants requested development/linking of three resources: Web-based e-mail, patient education materials, and CME materials. | Accomplished |
| Provide courtesy library borrowing privileges for eligible NHC staff members. | Lack of interest. | Discarded |
| Increase NHC staff members' awareness and use of electronic health information services. | Connections to the project web pages increased throughout the project; positive comments from project participants indicate increased awareness and acceptance. | Accomplished |
| Develop evaluation tools and collect data to evaluate the project. | We surveyed not only staff members who participated actively, but also those who did not. | Accomplished |

Sustainability:

With the reorganization of the Neighborhood Health Centers within the Columbus Health Department, the information infrastructure at the sites has improved greatly. While we stand ready to assist the staff with their information needs, the NHC's are now well supported by the Health Department.

Anecdotes or Other Observations:

- Be realistic about need for staff time to implement project.
- Avoid implementing projects at sites which are undergoing major changes Plan for basic computer training (Windows and Web 101)
- Time is on your side: Internet has become pervasive in daily life.
- Time is a barrier: difficult for staff to dedicate time to play and experiment online.
- Gather needs assessments in person.
- Work with site contacts, but use "direct marketing."