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Appendix A

COMPUTERS AND ELECTRONIC COMMUNICATIONS

Adopted from a survey developed by the National Association of County & City Health Organizations (NACCHO)

Please answer the following questions describing your local public health department's access to computers and electronic communication/information services.

LOCAL HEALTH DEPARTMENT INFORMATION

Name of local health department (LHD):

Street/P.O. Box:

City: _____ State: _____ Zip: _____

Telephone #: _____ Fax #: _____

E-mail address:

Name and position of person completing this form: _____

Number and Types of Employees in LHD - please include all sites:

Full-time employees: _____ Part-time: _____ Contract: _____

Number of sites: _____

Estimated population of your jurisdiction: _____

LOCAL HEALTH DEPARTMENT EQUIPMENT

1. Does your LHD *have access* to a facsimile (fax) machine? Yes _____ No _____

2. Please estimate the number and types of computers available in the LHD: _____

If no computers are available, please go to question 15.

	Number
PC Compatible (earlier than 486)	_____
PC Compatible 486 or Pentium	_____
MacIntosh (earlier than System 7.0)	_____
MacIntosh System 7.0 or higher	_____
Terminal or Workstation	_____
Other (<i>please specify</i>)	_____

3. How many of these computers have *RAM memory* equal to or greater than 8 MB:

none _____ all _____ some _____ don't know _____

How many have a *modem* equal to or greater than 14.4 Kbps:

none _____ all _____ some _____ don't know _____

LOCAL HEALTH DEPARTMENT ELECTRONIC SERVICES

4. Do any LHD staff *have access* at the workplace to the Internet or other online services?

yes _____ no _____ don't know _____

If yes, please go to Question 5.

If no, please go to Question 6.

5. What is the name of your Internet Service Provider?

6. Does your LHD have a policy that limits or prohibits access to the Internet?

yes _____ no _____ don't know _____

7. Please *estimate* the number of staff who use: (*Circle most appropriate response*)

a. E-mail none all some don't know

b. Listservs/discussion groups none all some don't know

c. Telnet/FTP none all some don't know

d. World Wide Web (WWW) none all some don't know

e. Other (*please specify*)
none all some don't know

8. Does your LHD have its own home page on the World Wide Web?

yes (*please list URL*)

no

9. If information was sent to a designated e-mail address at your LHD, how often would a staff member be likely to check for messages?

At least once a day _____ At least once a week _____

Rarely or never _____ Not applicable _____

10. Is your LHD's computer system linked to any of the following? (*Please check all that apply*)

County government _____ Field offices / clinics _____
Other LHDs _____ Regional / district health department _____
State health department _____ Other (*please specify*) _____

11. Do you or your staff use online bibliographic databases or services to find information in: (*Please circle all that apply*)

- a. Medical literature using MEDLINE or other National Library of Medicine databases
- b. CDC Wonder
 - c. INPHO
 - d. EPI Info
 - e. Other (*please specify*)

12. If you are searching online resources, where do you seek assistance in solving problems encountered in using these resources? (*Please circle all that apply*)

- a. No help is available
- b. Vendors
- c. Local library
- d. Regional Medical Library
- e. Other (*specify*)
- e. Online tutorial
- f. Printed manuals
- g. On-site computer person
- h. Colleagues

13. If you do not use online databases or services, what are your reasons for *NOT* using them? (*Please circle all that apply*)

- a. No online access
- b. No equipment
- c. No training
- d. No time
- e. Unsatisfactory results in the past
- f. Cost
- g. Don't know what is available
- h. Other

14. Other than online resources, do you or your staff obtain information through: (*Please circle all that apply*)

- a. State health department
- b. Medical or public library
- c. Personal/office collection of books and journals
- d. Colleagues/specialists available locally
- e. Consultation with remote specialists
- f. Other sources (*please specify*)

15. Does your LHD have plans to network or enhance its electronic communications capacity within the next year? If so, please describe.

TRAINING FOR LOCAL HEALTH DEPARTMENT STAFF

16. Have you or your staff participated in learning opportunities within the past year using: (*Please circle all that apply*)

- a. Teleconference
- b. Audioconference
- c. Mixed media
- d. Satellite broadcast
- e. Other (please specify)
- f. Audio cassette tapes
- g. Instructional videotapes
- h. Packaged computer-based course
- i. Internet course

17. Would you be interested in having your staff learn more about searching MEDLINE (biomedical literature) and other National Library of Medicine databases?

Yes No Don't know

18. Would you be interested in having your staff learn more about using technology to locate resources on the Internet which might be useful for public health workers?

Yes No Don't know

Comments: *(Please continue on another sheet if necessary)*

Thank you for taking the time to complete this survey. Please fax to *Elaine Martin, University of Illinois at Chicago Library of the Health Sciences, (312) 996-9584*, or mail in the self-addressed envelope to: *Elaine Martin, Assistant University Librarian for the Health Sciences, 1750 West Polk Street, University of Illinois at Chicago, Library of the Health Sciences, Chicago, Illinois 60612-7223.*

Appendix A1

Question Formats

Simple, direct questions – measure a complete thought with a specific list of responses

- Do you have Internet access at home?
 Yes
 No

Checklist questions – measure multiple thoughts in the same question and respondents can check all applicable responses. Essentially, checklist questions are a series of single, direct questions.

- What kinds of information do you need to support your work? (check all that apply)
- Consumer/patient information
 - Medical research
 - Drug information
 - Health statistics
 - Federal/state legislation
 - Policy issues
 - Funding sources
 - Health status indicators
 - Other – please specify

Scales –Consist of a series of questions (usually four or more) which measure different aspects of a thought (concept). Scales combine multiple measures because it is sometimes difficult to find that one perfect measure which will adequately represent the concept. By using multiple measures, you can feel more comfortable that you have “captured” the concept one way or another. Likert scale items are commonly used, with each item getting at a different dimension of the concept.

Consider the following example of a scale to measure the abstract concept **self-esteem** where response choices are “strongly agree” (SA), “agree” (A), “neither agree or disagree” (N), “disagree” (D), and “strongly disagree” (SD).

	1	2	3	4	5
a) At times I think I am no good at all	SD	D	N	A	SA
b) On the whole, I am satisfied with myself	SD	D	N	A	SA
c) I often feel lonely	SD	D	N	A	SA
d) My social life is very complete	SD	D	N	A	SA
e) My friends admire my honesty	SD	D	N	A	SA

It is considered desirable that some of the statements be stated positively and others be stated negatively, to avoid unthinking, automatic responses. When analyzing the data, reverse the scoring for negatively stated items and sum the scores by person. That is, we want *high* scores associated with positive self-esteem, so for items “a” and “c,” change 1 to 5; 2 to 4; 3 stays as 3;

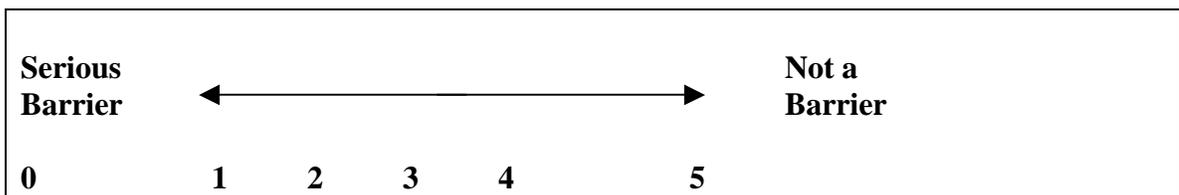
4 becomes 2; and 5 becomes 1. Record a scale score for each person, expressed as a mean computed from summing the student's responses and dividing by the number of items.

Thus, a person who responds with a 1 (Strongly Disagree) on item "b" and a 4 on the other four items would have a score of .68 (17 divided by 25).

Indexes-Similar to scales, indexes consist of a series of statements, each of which has the same intensity in representing the concept to be measured. Unlike a scale, an index does not require a combination tally of the responses to represent the final score. In an index, the mean score for each response item is compared to the mean score of the other items. Patterns in the data is analyzed (i.e. responses clustered closely together).

Consider the following example of an index intended to measure **barriers** to Internet access.

Using the index below, please rate the following barriers which might affect your library's ability to connect to the Internet.



- a) Cost of staff training and education
- b) Long-distance charges
- c) Capabilities of local phone service
- d) Availability of in-house technical expertise
- e) Level of management support
- f) Other (please specify)

Consider the following hypothetical results:

BARRIER	Mean Score
Level of management support	4.212
Cost of staff training and education	3.970
Long distance charges	1.436
Availability of in-house technical expertise	1.425
Capabilities of local phone service	1.291

There are different ways to interpret the data, but the clusters suggest that logistical issues (such as long distance charges, phone service, and in-house expertise) are less problematic than motivating support for implementation and training.

Appendix A2

Sampling

Sampling is a procedure by which to infer the characteristics of a large body of people (a population) by surveying only a few (the sample). Selecting a truly random and representative sample is called *probability sampling*, which is a sophisticated technique that requires time and resources, but permits confident generalization from the sample to a larger population. *Non-probability sampling* is easier and cheaper to do but you cannot use sample findings to infer to the larger population, nor can you evaluate the risks of error involved in making inferences.

Sampling techniques can save time and money and reduce data analysis errors (because there is less data to collect and analyze) if the alternative is to survey the entire population. Evaluation (such as needs assessments) done in many outreach settings will lack adequate time and resources to accommodate a rigorous sampling design. However, effective evaluations can still be conducted using less sophisticated sampling techniques, depending on the degree of confidence and error that is acceptable [Hernon, 1990 #11].

Sample Design

According to Hernon (1990), sample design involves the following steps:

- Defining the universe and the sampling frame
- Choosing the sampling strategy and type of sampling
- Determining the size of the sample

Defining the universe and the sampling units

The universe is the group of people (population) or items that the sample will represent. For example, the universe or population of interest could be family practice physicians in rural settings that have been selected for outreach. Or, perhaps the program has yet to be defined, and the research is at the needs assessment phase. In this case, the population might be more diffuse, such as all health providers in rural settings.

The sampling frame is the actual list of units from which the sample will be selected. For example, the list might be individuals, households, public libraries or journals in a library collection. If the universe or population for an outreach needs assessment is health providers in rural settings, the sampling frame would be a list of practicing health providers as of the date of the study within the geographic area of interest. The list is useful to identify, because it will provide the units from which to draw the sample.

Choosing the sampling strategy and type of sampling

When choosing a sampling strategy, several factors should be considered. First, is a sample needed or is the universe small enough that it makes more sense to research the whole population? For a targeted community of rural health clinics, for example, the total number of health providers might be small enough that trying to select and get results from a representative sample might be more work than simply assessing the whole group. However, if a community profile has determined a priority need for outreach by family physicians in any rural practice

setting, conducting an audience profile of a sample selected from the list of physicians in the state academy of family practitioners might save time and money.

Second, if a sample will be selected, will it be necessary to conduct probability (statistical) sampling? If it is not feasible to compile a list of sampling units, random selection (required for **Appendix A2, cont.**

statistical samples) will not be possible. In addition, if one does not intend to generalize to a universe, probability sampling is not necessary. Non-probability samples may provide enough information and are less cumbersome to select. Some types of non-probability samples are:

Convenience sample: Cases (the units of study) are selected as they become available until the sample reaches the desired designated size. For example, you might select people stopping by an exhibit booth.

Quota sample: A variation of convenience sampling, in a quota sample you would attempt to include significant elements of the population in some proportion. For example, if you wanted to survey visitors of an exhibit booth at a public health conference, you would try to get 80% professionals and 20% students (if that is the distribution of these categories in the conference registration).

Volunteer or self-selected sample: As the name suggests, the respondents select themselves for inclusion in the study. For example, volunteers who would be willing to test a new long distance learning module about searching PubMed.

If you do intend to make generalizations from your study, probability samples are preferred so that you can make reliable estimates of the whole population. In a probability sample, every element in the population has a known probability of being included in the sample. There are several types of random samples, such as:

Simple random sample: Units are selected so that every one has a known and equal chance of being selected. It is like a lottery, and can be done in various ways such as using a random numbers table, or a randomized computer selection, or simply pulling names from a hat.

Systematic random sample: This method is considered simpler and more convenient than random sampling, especially for long lists. Once the first member of the population is chosen other members are automatically determined. For example, every 30th name on a page.

Stratified sampling: This technique first divides the list of units into two or more parts, and a sample is selected from each. The parts may be selected in proportion to their numbers in the population itself.

Determining the size of the sample

The following discussion is excerpted, with permission (have to get it) from course curricula by Alexandra Dimitroff (1997):

The goal in selecting an appropriate sample size is to minimize sampling error but to keep costs within reasonable limits.

Four criteria need to be considered when looking at sample size:

1. Degree of precision needed: If you are willing to tolerate less accuracy, the sample can be smaller.
2. Variability of the population: The greater the variability within the population, the larger the sample needs to be to insure adequate representation of all segments. The more homogeneous the population the smaller the sample can be.
3. Method of sampling: Stratified random sampling requires fewer cases to achieve a specified degree of accuracy than does simple random sampling and systematic random sampling usually requires a larger sample than both stratified and SRS.
4. Method of analysis: Very small samples will limit the types of statistics that can be used in analyzing the data.

Non response

Whatever is determined to be an appropriate sample size must be increased by the estimated non-response rate. For example, if you want a sample of 100, you need to draw a sample of 100 plus an additional number to cover non-responders. You are assuming you will have a 75% response rate so you need:

$$\frac{100 \text{ (desired sample size)}}{1 - .25 \text{ (estimated nonresponse)}} = 133$$

You need to mail out 133 questionnaires to get your sample of 100 if you are lucky enough to get a 75% response rate.

Determining sample size

There are statistical formulas for calculating appropriate sample sizes. However, an easier alternative is to use a table, available in standard statistical textbooks, and also included as Appendix A3 in this manual. To determine the required sample size you need only find your population size (N) and note the adjacent sample size (S). It is clear that as population size increases the rate of increase in sample decreases.

APPENDIX B

Nome Evaluation Plan

Goal

Norton Sound Health Corporation will provide Internet connectivity to and among its service population of 14 village clinics.

Primary health care and education will be decentralized to the villages to better serve local residents.

Process objectives

During the next 18 months, the Norton Sound Health Corporation will be equipped with antennas, cables, routers, wireless pairs, and an 8 port hub as part of an overall plan for connecting 14 villages to the Internet via satellite.

Educational objectives

- Awareness level: After PubMed (or a community-based Website) has been described on promotional materials for the demonstration sessions, at least 20% of tribal health providers will be able to identify it as an Internet site for health information.
 - Outcome (what):* Will be able to identify Pub Med
 - Target population (who):* Tribal health providers
 - Conditions (when):* After distribution of promotional materials
 - Criterion (how much):* 20%

- Attitude level: After each class session, at least one out of three participants will report an improved attitude toward the usefulness of PubMed.
 - Outcome (what):* Will report an improved attitude toward the usefulness of PubMed.
 - Target population (who):* Class participants
 - Conditions (when):* After completing a class session
 - Criterion (how much):* At least one out of three

- Belief level: After each class session, at least one out of three participants will report an increase in level of confidence about their own ability to use PubMed (or another specific Internet site) for health information.
 - Outcome (what):* Will report an increase in confidence in Pub Med
 - Target population (who):* Class participants
 - Conditions (when):* After completing a class session
 - Criterion (how much):* At least one out of three

- Knowledge level: One month after training, at least one out of three respondents will be able to accurately describe how to access one health information resource via the Internet.
 - Outcome (what):* Able to describe
 - Target population (who):* Class participants
 - Conditions (when):* One month after training
 - Criterion (how much):* At least one out of three

- Skill development: After viewing a hands-on demonstration of searching for health information, at least one out of three participants will be able to access a health resource via the Internet and find the accurate answer to a question.

Outcome (what): Able to access a health resource via the Internet and find the accurate answer

Target population (who): Class participants

Conditions (when): During a class session

Criterion (how much): At least one out of three

Behavioral and Environmental Objectives

- One month after training classes have been completed, 30% of those who participated will report increase use of PubMed or another appropriate Internet resource.

Outcome (what): Will report increase use of Pub Med

Target population (who): Class participants

Conditions (when): One month after training

Criterion (how much): At least one out of three

- By the end of year one, at least six out of sixteen tribes will have doubled their access to full text resources, as measured by increases in Loansome Doc requests.

Outcome (what): Will double access to full text

Target population (who): Tribes

Conditions (when): By the end of year one

Criterion (how much): At least six tribes

Program Objectives

- One month after training classes have been completed, at least 25% of participants will report that outreach training influenced what information they obtained for a patient care decision.

Outcome (what): Will report outreach training influenced information obtained for patient care

Target population (who): Class participants

Conditions (when): One month after training

Criterion (how much): At least 25%

- By the end of year one, at least six out of sixteen tribes will demonstrate commitment to a budget for maintaining information services.

Outcome (what): Will commit to an information services budget

Target population (who): Tribes

Conditions (when): By the end of year one

Criterion (how much): At least six tribes

- By the end of year one, at least six out of sixteen tribes will have increased their online resources addressing local health issues.

Outcome (what): Will have increased online resources for local health issues

Target population (who): Tribes

Conditions (when): By the end of year one

Criterion (how much): At least six tribes

- By the end of the project, at least 30% of village clinic offices will report improved data communication reliability

Outcome (what): Will report improved data communication reliability

Target population (who): Village clinic offices

Conditions (when): By the end of the project

Criterion (how much): At least 30%

Appendix C

Diffusion of Innovations Theory

According to Diffusion of Innovation, people adopt innovations more rapidly if they are perceived as having greater relative advantage, compatibility, trialability, observability, and less complexity than other innovations. You have conducted a needs assessment of your targeted audience which revealed their barriers, beliefs, and attitudes about using the Internet. Based on principles from Diffusion of Innovations theory, your class strategy will focus on:

Advantage: You will illustrate how current information-seeking methods compare to the Internet, such as: “Right now you’d have to drive two hours to the nearest hospital library and spend the day copying articles and pamphlets. With the Web you will be able to stay in your own office.” Or “With access to your office’s Web-accessible informational materials, people can find the AIDS information they need in the privacy and security of their own home.”

Compatibility: You will translate—very directly—a current manual system with an automated one. “Now you have pamphlets in the office for your patients, but you don’t know if there’s a new edition, you don’t know how many you’ll need to order from the federal government, and the pamphlet you have in Spanish for your Hispanic patient population. With the Internet, you can link to the most recent edition of pamphlets, print only as many as you need, and even edit another agency’s pamphlet to give details your patients need about local services.”

Complexity: You are concerned about piling on too much, too fast. So, you start with a simple example. “You can’t live without the phone book, but it’s just one book. Start on the Internet by finding just one resource that is very useful. For the first week use that one. You might find it just as important to your work as the phone book! The Internet is useful even if you just use a few good sites. Bookmark them and return to them; don’t try to find everything on the Web the first week, just like you wouldn’t expect to find everything in a new city the first week. Go to the familiar places!”

Trialability: You will use “supervised play” and work to find the right balance of independent exploration and help. With a new group you stay available, but don’t hover and correct. You wait for an invitation to help, which usually comes at some critical moment of exasperation. Most importantly, you do not grab the mouse and do it yourself! You also encourage peer-to-peer help.

Observability: You will provide a slow demonstration to the group, then follow with a simple exercise that has no guesswork—an exercise that gives all the steps and brings the learner to something useful. You assess the group ahead of time about skill level so that the exercises build on current skills. However, you also observe people doing the exercises and modify learning objectives if necessary, so that you can be sure that what is learned will be well learned.

Appendix D

Self-efficacy Measure

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The first questions ask you to record how confident you feel about performing different tasks involved in conducting a CD-ROM literature search, at this point in time, that is, before commencing the task. For each question, you are asked to make two responses:

- 1. Could you perform the task if you wished to? If your answer is **Yes**, please list a **Y** in the **CAN DO** column. If you **do not** believe you could, please list an **N** for **No** in this column.*
- 2. For each task, you are also asked to indicate how confident you feel concerning your ability to perform the described task. Using the scale below as a guide, select the appropriate number and enter it in the **CONFIDENCE** column.*

LEVEL OF CONFIDENCE:									
1	2	3	4	5	6	7	8	9	10
Totally Unconfident		←			Reasonably Confident		→		Totally Confident

CAN DO
(Yes or No)

CONFIDENCE
(1-10)

I can:

1. Use a thesaurus to identify key words for use in the search. _____
- 2.. Determine the appropriate key words to use in the literature search statement. _____
3. Identify the major requirements of the search from the initial statement of the topic. _____
4. Use connecting terms like "and", "or" and "not" when designing a search statement. _____

CAN DO
(Yes or No)

CONFIDENCE
(1-10)

I can:

- | | | |
|--|-------|-------|
| 5. Correctly develop a search statement to reflect my requirements. | _____ | _____ |
| 6. Evaluate the resulting list to monitor the success of my approach. | _____ | _____ |
| 7. Develop a search strategy which will identify a large number of appropriate resources. | _____ | _____ |
| 8. Complete a CD-ROM search in 30 minutes, with the use of published manuals to guide me. | _____ | _____ |
| 9. Obtain a printed list of resources with titles similar in quality to those obtained by a professional searcher. | _____ | _____ |
| 10. Perform a search which will result in at least twenty valid references on the stipulated topic. | _____ | _____ |
| 11. Efficiently structure my time to complete the task in the stipulated time period of thirty minutes. | _____ | _____ |
| 12. Devise a search which will result in a very small percentage of irrelevant items on the list. | _____ | _____ |
| 13. Produce a print-out of my search which includes at least some titles which are the same as those obtained by a professional literature searcher. | _____ | _____ |

CAN DO
(Yes or No)

CONFIDENCE
(1-10)

I can:

- | | | |
|--|-------|-------|
| 14. Produce a list which does not include any irrelevant titles. | _____ | _____ |
| 15. Use manuals on searching to help me structure my approach. | _____ | _____ |
| 16. Use guidelines effectively when developing my search strategy. | _____ | _____ |
| 17. Identify a solution to a problem using the published aids on literature searching. | _____ | _____ |
| 18. Complete the CD-ROM search competently and effectively. | _____ | _____ |
| 19. Complete the individual steps of the CD-ROM search with little difficulty. | _____ | _____ |
| 20. Structure my time effectively so that I will finish the search in the allocated time. | _____ | _____ |
| 21. Apply the guidelines I receive in an appropriate fashion, in order to complete the task correctly. | _____ | _____ |

Appendix E

Sample Formative Evaluation Questions for Behavior Change Theories

Social Learning Theory:

self efficacy, or the degree of perception of one's ability to find useful information

On a scale of 1-5, how confident are you in your own ability to find information on the Internet? (*Circle the number of your choice*)

1	2	3	4	5
Not at all		Reasonably		Totally
Confident		Confident		Confident

expectations, or the degree of confidence that relevant information is available

On a scale of 1-5, how confident are you that the Internet has information you need? (*Circle the number of your choice*)

1	2	3	4	5
Not at all		Reasonably		Totally
Confident		Confident		Confident

Extended Parallel Process Model (EPPM)

threat; including severity of and susceptibility to threat. The degree of belief about the seriousness of a problem, and the degree that one feels at risk for experiencing the problem

What negative consequences for you, if any, come from lacking information or being misinformed? (*determines audience perceptions of the threat*)

What is the best way to prevent experiencing the negative consequences just identified? (*determines audience perceptions of the "best" recommended response*)

How likely is it that you will experience the negative consequence from not accessing resources for current health information? (*perceived susceptibility to the threat*)

efficacy, including self-efficacy and response efficacy. The degree to which one feels able to access resources for current health information to avert the negative consequences; and the degree to which one feels that the resources will have information that is needed

Accessing health resources on the Internet will keep me from experiencing negative consequences identified above. Why or why not? (*perceived response efficacy*)

I am easily able to access health resources on the Internet. Why or why not? (*perceived self-efficacy*)

Stages of Change

Determines which stage of readiness the audience is in.

Choose the statement that best represents your thoughts and actions:

1. Yes No I have yet to think about using Pub Med. (*precontemplation*)
2. Yes No I have thought about using Pub Med but have not taken any steps to use it yet. (*contemplation*)
3. Yes No I have not yet used Pub Med but have taken steps so that I will be able to use it soon (e.g., hooked up to internet, signed up for training, sent away for information). (*preparation – never used*)
4. Yes No I have used Pub Med. (*action*)
5. Yes No I regularly use Pub Med. (*maintenance*)
6. Yes No I have used Pub Med before but currently do not use it. (*relapse -> go to either preparation or contemplation stage*)

Diffusion of Innovations Theory

critical mass; the point at which enough individuals have adopted an innovation that any further rate of adoption becomes self-sustaining. Early adopters and opinion leaders are critical in getting an innovation to the point of critical mass.

Please list the people or groups who you consider to be local opinion leaders in your [community, profession]

Appendix F

Internet Skills Training Workshop Audience Profile

1. **What is your *primary* interest in health resources on the Internet?** (*check only one*)
 For my role in health care as a _____ (*please describe your work*)
 For personal health information

2. *Skip to question 3 if you do not work in health care.* **What kinds of health information do you need to support your work?** (*check all that apply*)

- Consumer/patient information
 Diagnosis and treatment information
 Medical research
 Drug information
 Health statistics
 Federal/state legislation
 Policy issues
 Funding sources
 Health status indicators
 Other - please specify: _____

3. **What barriers to information use do you see as a problem** (*check all that apply*)

- Cost
 Geographic isolation
 Document delivery delays
 Inadequate technology
 Inadequate staffing
 Knowledge of sources available
 Time
 Other - please specify: _____

- 3a. **Now, from the above list, please circle the most critical barrier to information use for you**

4. **On a scale of 1-5, how confident are you that the Internet has health information you need?**

1	2	3	4	5
Not at all confident		Reasonably Confident		Totally Confident
←				

On a scale of 1-5, please rate your ability to do the following tasks:

<u>Level of Ability</u>				
1	2	3	4	5
←				→
I don't know how		I think I can		I'm sure I can

Ability

(1-5)

- a. I can use a computer keyboard _____
- b. I can use a computer mouse _____
- c. I can send or receive email _____
- d. I can use bookmarks _____
- e. I can find consumer information about diabetes on at least one Internet site _____
- f. I can find medical research about diabetes on at least one Internet site _____
- g. I know what PubMed is _____

5. Please list one site on the Internet that contains health information

_____.

6. In the past month, how often have you used the Internet to gain needed health care information?

- ___ 1-4 times
- ___ 5-9 times
- ___ over 10 times
- ___ none at all

7. “Speaking for myself, the benefits of using the Internet to access health information outweigh the disadvantages.” Does this statement ring true for you? Please describe why or why not, specifically listing what you perceive as the benefits and disadvantages.

8. Was there a time during the past week when you needed a piece of information and couldn't find it readily? If so, please describe the kind of information you needed.

10. Is there anything that you particularly want covered in this workshop?

Appendix G

Implementation Plan Outline

Name of Outreach Program: Outreach to Mason and Ortega County clinics

Program Goal: Onsite access and use of electronic resources by health professionals in rural Eastern Washington will improve patient care for the area's minority and rural populations.

Objective #1 (Administrative) : During the next twelve months, four clinics in the medical underserved area of Mason and Ortega counties will implement technology to support desktop Internet access for their health providers.

Strategy: Based on *Community Organization*, involve stakeholders in a technology needs assessment and subsequent decisions about where and what hardware and software should be provided.

Activity: Based on results of the needs assessment, implement hardware, software, and connectivity at the clinics, with convenient access by health professionals

Evaluation task: Develop and conduct interview or survey of stakeholders regarding wishes/needs for information access and technology requirements

Objective #2 (Administrative) : During the next twelve months, 30 of the total 60 health professional in all four clinics will participate in one of the outreach program's promotional or educational activities

Strategy: Based on *Stages of Change Model*, conduct a survey of the outreach audience to determine their level in the process of change, interest in training, and appropriate placement in educational activities

Activity: Based on results of pre-training survey results, schedule and conduct appropriate demonstration or training workshops at each clinic

Evaluation task: Work with site contacts to develop a list of potential outreach participants who will receive promotional literature and pre-training survey. Develop the survey questions, to include variables from Stages of Change, Diffusion of Innovations, and EPPM, as noted in strategies for objectives 2, 3, 4, 6, and 8.

Activity: Outreach staff will exhibit at a minimum of one annual meeting that draws primary health professional from the area.

Strategy: Based on *Diffusion of Innovations Theory*, identify opinion leaders and early adopters who will endorse the use of Internet resources for information important to patient care decisions.

Activity: Develop and distribute promotional flyers with endorsements from opinion leaders about the usefulness of Internet resources for patient care decisions and that health care providers are encouraged to participate in outreach educational activities

Objective #3 (Awareness) : After PubMed has been described on promotional materials for the demonstration sessions, at least 20% of health providers will be able to identify it as an Internet site for health information.

Strategy: Based on the *Diffusion of Innovations Theory* about influence of opinion leaders, quote opinion leader endorsements of PubMed on promotional materials for outreach activities

Activity: Identify and recruit opinion leader cooperation in promoting outreach activities and endorsing the usefulness of PubMed.

Objective #4 (Attitude) : After each class session, at least one out of three participants will report an improved attitude toward the usefulness of PubMed.

Strategy: Based on the EPPM Model, ask formative evaluation questions on the pre-training survey to assess threat and efficacy variables and develop a message about effective ways to avoid negative consequences of being misinformed (e.g. “Stay ahead of your patients with easy access to current clinical care information on Pub Med”)

Activity: Use EPPM survey results to add threat/efficacy message about Pub Med, to training class discussions.

Objective #4 (Beliefs) : After each training workshop, one out of three participants will report an increase in level of confidence about the usefulness of Pub Med for their needs.

Strategy: Based on the *observability* variable in *Diffusion of Innovations Theory* (extent to which the innovation provides tangible or visible results), add questions to pre-training survey to determine specific information needed by audience.

Activity: Use survey results to add Pub Med queries in class examples that are tailored to actual need of audience for patient care decisions

Objective #5 (Skills) : After viewing a hands-on demonstration of searching for health information, those participating will be able to access a health resource via the Internet and find the accurate answer to a question.

Strategy: Based on the *observational learning* variable in *Social Learning Theory* (also known as modeling, the extent that people learn about what to expect through the experience of others), develop a short video clip to show a primary care physician doing a search on a computer in her office that influenced a patient care decision.

Strategy: Based on using *proximate goals* to increase *self-efficacy* (from *Social Learning Theory*), develop hands-on exercises designed to help students master skills progressively.

Activity: Use the video clip to demonstrate search skill techniques and to reinforce the belief that answers can be found conveniently. Follow-up with hands-on exercises.

Objective #6 (Behavioral) : One month after training classes have been completed, 30% of those who participated will report weekly use of PubMed literature to make patient care decisions.

Strategy: Assume that skills training include activities that predispose changes in behavior (awareness, knowledge, attitude and beliefs). Based on the *Diffusion of Innovations Theory*, recruit opinion leaders to be class participants and to encourage others to adopt use of Pub Med for decision making.

Activity: Ask opinion leaders to volunteer during class with patient problems they would like to answer through research in the literature on PubMed..

Objective #7 (Environmental) : By the end of year one, two out of four clinics will have doubled their access to full text resources, as measured by increases in Loansome Doc requests.

Strategy: Be persuasive and demonstrate the ease and convenience of getting full text information, even in a remote and rural area.

Activity: Provide an in-class demonstration plus a handout with step-by-step instructions about how to use Loansome Doc, including the Lib ID number for your library (or the library that is willing to provide document delivery). Gather baseline data about volume of Loansome Doc requests from each clinic. Capture data on volume of requests at one-month intervals for the rest of the year.

Objective #8 (Program) : One month after training classes have been completed, increase to at least 25% the proportion of participants who report that what they learned in outreach training influenced how or what information they obtained for a patient care decision.

Strategy: Refer to strategies outlined in the learning objectives that focus on increasing the use of resources featured in outreach training for the purposes of patient care decisions.

Activity: Add question about current use of electronic resources for patient care decision making in pre-training survey.

Objective #9 (Program) : By the end of year one, two out of four clinics will demonstrate commitment to a staff person for maintaining information services access or support.

Strategy: Follow lessons learned from outreach studies showing that personal contact between the target audience and librarians helps sustain changes in information seeking habits (Dorsch, 1997; Burnham and Perry, 1995).

Activity: Work closely with stakeholders in clinics to identify and support designated staff person about who will receive “train the trainer” training for an ongoing role in helping troubleshoot local information access problems or questions.

Appendix I

Sample Evaluation Objectives for Process Evaluation

ACCOUNTABILITY

Think through: Will I be accountable for documenting what occurred as the program happened? If so, what is most important to document?:

- a. Briefly, describe the program's goals and objectives (*Ask evaluation stakeholders to verify or modify*)

EXAMPLE:

Goal 1: *At least ten NW tribes will have new or enhanced access to Internet resources that benefit tribal health concerns.*

Goal 2: Health providers and community health professionals serving these tribes will benefit from access to health information resources at point of local need.

Objectives (brief)

- *To improve information access infrastructure through increased connectivity and/or hardware*
- To provide effective skills training
- To raise awareness, skills, beliefs, and attitudes of health providers about Internet resources for exchange and access to health information
- To increase professional use of Internet resources for health information
- To increase community-based involvement and support of health information access needs

- b. What do you see as the most important results or outcomes of the program? (*Ask evaluation stakeholders to verify or modify*)

- Optimal leveraging of current infrastructure
- Technology improvements implemented and functioning
- Ensured continuation after NN/LM funding expires
- Designated onsite staff to maintain technical support
- Effective educational activities
- Significant participation in outreach educational activities
- Increased use of Internet resources to access health information
- Increased use of health information resources for patient care decisions
- Increased recognition of value of librarian and/or access services

- c. How will the program be implemented? Describe the resources, activities, services, and administrative arrangements that compose the program.

Example: Each tribe will define their current resources and technology needs for new or enhanced telecommunications access that will benefit tribal health concerns.

Tribal objectives for technology implementation will be agreed upon and listed per site.

Each tribe will propose equipment needs, which will be assessed for feasibility under budget restrictions, and purchased at the best price, by NN/LM.

Sample Evaluation Objectives for Process Evaluation, cont.

A timeline for equipment and connectivity implementation will be established for each tribe

NN/LM staff will work with each tribe to identify opportunities for effective promotional and educational activities about the availability of networked health information sources relevant to their needs. Activities might include:

- NN/LM exhibits at tribal events (e.g. Pow Wows or Native American health conferences)
- Educational articles distributed through tribal channels (e.g. newsletters)
- Training workshops
- Development of locally-based health information sources for tribes that designate the need

Determine accountability objectives to obtain periodic updates on characteristics of the program (activities and best practices) that will most determine its success. (*Determine in advance what the report questions will include. Ask evaluation stakeholders to verify or modify*)

Activities: how the program is being implemented?

- *Procedures staff follow to understand participants, including their number, why and how they are being targeted (understanding of need), and level of readiness. Are these procedures working?*
- *Procedures staff follow to leverage effective and timely implementation of equipment and connectivity. Are these procedures working?*
- *Promotional activities being conducted. What is being done?*
- *Educational activities being conducted. What is being done?*
- *Other* _____

Best practices: what evidence is there in the process of implementation that best practices are being used, such as:

- *Attempts to identify mutual outreach objectives with targeted community.*
- *Attempts to involve opinion leaders, such as tribal leaders in planning and promotion.*
- *Attempts to coordinate with site liaison to plan and promote promotional and educational activities. Are contacts effective?*
- *Attempts to provide followup feedback or training.*
- *Attempts to motivate interest in conducting literature searches as a basis for clinical decision-making (see process evaluation measures for theory-based strategies below)*
- *Attempts to ensure sustainability of activities and services after project ends.*
- *Other?* _____

Sample Evaluation Objectives for Process Evaluation, cont.

PROGRAM IMPROVEMENT

Think through: Will there be an opportunity to make adjustments to the activities and strategies targeted at program objectives (if progress toward the objectives is inadequate)? If so, how can progress toward objectives be tracked?

Determine measures for program objectives. Process improvement evaluation objectives is to track progress toward objectives and make mid-course adjustments if needed.

Think through:

- a. What are the outcomes listed in each objective?

Example from the Sample Plan for Measuring Outcomes(Appendix J):

Objective After each class session, at least one out of three participants will report a reduced fear of being overwhelmed by information overload when using Internet resources for health information.

Outcome: Reduced fear

- b. What indicators will provide measurable evidence of those outcomes?

Indicator: Participants' fear level

- c. How can those indicators be tracked?

Measure: Pre and post question about level of fear

Think through: What theory-based variables can be measured to show whether the theory-based strategies are working? (Review objectives and strategies identified in the implementation plan outline developed in Stage 3)

Example from Sample Implementation Plan Outline (Appendix C1).

Outreach objective: After each class session, at least one out of three participants will report an improved attitude toward the usefulness of PubMed.

Strategy: Based on the Extended Parallel Process Model, ask formative evaluation questions on the pre-training survey to assess threat and efficacy variables and develop a message about effective ways to avoid negative consequences of being misinformed (e.g. “Stay ahead of your patients with easy access to current clinical care information on Pub Med”)

To measure: Conduct a post- survey (end of class) to track scores about perceptions of threat and efficacy. Results will determine whether the intervention was promoting danger control actions (i.e., adoption of the recommended response) or fear control

fail because it would be promoting fear control responses (such as defensive avoidance and reactance) resulting in the failure of the intervention to produce behavioral changes.

REPLICATION

Think through: Is the outreach program considered a pilot project, or is it likely to be replicated at another site? If so, what types of information would be most useful to track for eventual documentation? Check off the types of information to track from the following list, and ask relevant stakeholders to add other data you may want to collect:

- Where exactly has the outreach program been implemented and what was done?
- How many and what sorts of people participated in the outreach? (e.g. age, sex, health profession)
- What are the characteristics of their information needs? (e.g. type of practice, types and purposes of information needed, frequency of information need, sources used, etc.)
- What are the socioeconomic characteristics of the setting?
- What does (do) the outreach site(s) look like?
- What are the programs' greatest successes? What facilitated each one?
- What are the programs' biggest challenges (frustrations, barriers, or disappointments)? What caused each one?
- What sociopolitical factors may have impacted the outreach?
- What were the outreach costs in staff time, materials, equipment, and facilities?
- Other questions?

Appendix J1
Sample Ways for Measuring Process

Activities, Best Practices, Theory-based Strategies	What will be measured?	How will we measure it?
Understanding of need, behavior, and readiness regarding electronic access to health resources	Method used to collect information for audience profile	Qualitative evaluation by project personnel --observation/journal about usefulness of method and results
Effective and timely implementation of equipment and connectivity.	Procedures expected to work (e.g. coordination with onsite technical support)?	Qualitative evaluation by project personnel --observation/journal --project timeline compared with initial action plan --feedback from site
Effective planning for promotion and implementation of activities	Assumptions about how plans will be implemented (e.g. level of onsite support and cooperation, administrative impact at site)	Qualitative evaluation by project and onsite personnel --observation/journal --feedback from site personnel --comparison between plans and what happened
Mutual outreach objectives identified with targeted community	Assumptions about how objectives would be discussed with site contacts	Qualitative evaluation by project and onsite personnel --observation/journal --feedback from site personnel
Involvement of opinion leaders in planning and promotion	Strategies for recruiting opinion leader participation	Qualitative evaluation by project and onsite personnel --observation/journal --feedback from site personnel
Class messages using Extended Parallel Process Model to change attitudes about the usefulness of PubMed	Attitudes about threat of being misinformed and efficacy of PubMed	Post- survey (end of class) scores about perceptions of threat and efficacy
Programs' greatest successes? Greatest need for improvement?	Client satisfaction Project personnel satisfaction	Satisfaction measures on post-class survey Feedback from site personnel Feedback from project personnel

Appendix J2

Sample Ways For Measuring Outcomes

Objectives	What outcome will we measure?	How will we measure it?
During the next six months, ten tribes will implement technology to support desktop Internet access for their health providers	Infrastructure improvements as designated by each tribe (e.g. connectivity)	Functional testing
During the next twelve months, at least one promotional and one educational activity will be conducted for health providers at each of the ten tribes.	Implementation of activities	Log of activities scheduled and conducted
During the next twelve months, at least 50% of health providers among the ten tribes will participate in one outreach promotional or educational activity.	Participation in outreach activities	Tally of outreach activities Attendance counts
By the end of year one, at least one liaison will be designated as an onsite resource for follow-up training and questions	Development of onsite personnel as liaison or technical support	<ul style="list-style-type: none"> • Feedback from site and outreach staff • Participation by liaison in training • Participation by liaison as a trainer
Awareness level: After PubMed (or a community-based Website) has been described on promotional materials for the demonstration sessions, at least 30% of outreach participants will be able to identify it as an Internet site for health information	Identification of PubMed by population of tribal health providers	Survey question on class registration to identify PubMed and to ask whether heard of PubMed before class promotion
Attitude level: After each class session, at least one out of three participants will report a heightened threat of not staying current (e.g. patients are becoming more informed) <i>and</i> a heightened confidence that learning Internet-based resources will be helpful.	Participants' level of threat of being ill-informed and level of efficacy (or confidence) in averting the threat by learning Internet skills	Pre and post question about level of threat and efficacy
Belief level: After each class session, at least one out of three participants will report an increase in level of confidence in their own ability to use PubMed.	Participants' level of confidence in own ability to use PubMed	Pre- and post-question about level of confidence

Appendix J2
Sample Ways For Measuring Outcomes

Objectives	What outcome will we measure?	How will we measure it?
Knowledge level: One month after training, at least one out of three respondents will be able to accurately describe how to access one health information resource via the Internet.	Participants' knowledge about where to access an Internet health resource	Post-class question and followup question testing knowledge of way(s) to access Internet resource
Skill development: After viewing a hands-on demonstration of searching for health information, at least one out of three participants will be able to access a health resource via the Internet and find the accurate answer to a question	Participants' ability to find an accurate answer on an Internet resource	Post-class question testing ability to find accurate answer
One month after training classes have been completed, 30% of those who participated will report increase use of PubMed or another appropriate Internet resource.	Use of PubMed	Pre-class and Followup question about frequency of use
By the end of year one, at least six out of ten tribes will have doubled their access to full text resources, as measured by increases in Loansome Doc requests.	Numbers of Loansome Doc requests	Baseline and followup data on numbers of Loansome Doc requests
One month after training classes have been completed, at least 25% of participants will report that outreach training influenced what information they obtained for a patient care decision.	Value or usefulness of information obtained for patient care decisionmaking	Followup question about satisfaction with results for decisionmaking
By the end of year one, at least six out of ten tribes will demonstrate commitment to maintaining information services.	Administrative support for information services	Mid- and end-of-project interviews about impact of outreach on administrative support for information access. Administrator/supervisor participation in promotion or skills training activities
By the end of year one, all ten tribes will provide feedback about outcomes realized , as a result of outreach, not measured in objectives.	Unintended outcomes, both positive and negative	Mid- and end- of project interviews with site contact

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