Step Three	Summarize and Analyze Your Data — *Qualitative Methods*

[reprinted 2008]As with quantitative data, you must develop a plan for compiling and analyzing qualitative data. Analysis may seem overwhelming because of the sheer volume of the information you collect, but it will seem more manageable if you approach it in phases.

Plan. First, during planning and interviewing keep the amount of data you collect under control. As described in Step One, you should check your interview guide against your evaluation questions to make sure you only ask questions that are relevant to your project. This will prevent you from collecting unnecessary data. As discussed in Step Two, you should keep notes that will help you become familiar with your data as you collect it.

Code. Once you have completed most of your interviews, the next step is to *code* the data. In this step, you identify, categorize, and label the themes or patterns in your data. Review your transcripts, reports, and notes, indicating major themes in the margins. Make a list of the themes as you read. You can also read your notes keeping your evaluation questions in mind. For instance, you may have conducted interviews to learn how participants in a training session are using the training and whether they have recommendations for improving future sessions. Therefore, you may read through the notes looking for examples that fit themes related to "results," "unexpected outcomes," "barriers to project implementation," and "suggestions for improvement." It is perfectly acceptable to have a list of themes ahead of time and to add themes as you read.

Once you have reviewed the material and generated a list of major themes, go back to your documents and code more systematically. You do this by identifying "units" of information and categorizing them under one of your themes A unit is a collection of words related to one main theme or idea and may be a phrase, sentence, paragraph or several paragraphs. You can tell you have too many words if you need more than one major theme to categorize the unit.

One simple approach to coding is to highlight each unit of information using a different color for each major theme. You can print the data and use highlighting markers, but the highlighting function of a word processing program also works nicely.

Organize. Next, put all the units with the same highlight color together on one page with a heading that reflects the category they represent. You might want to use bullets to separate the different units. Now, read through each list and see if you can find subthemes. For instance, under results, you might find "results affecting participants" and "results affecting the community." You could use the comment function in Word to note these subthemes, but it might be easier to print the list with a large right margin and write the subthemes in the margins.

Figure 3: Coding Interview Data

The following section is from a fictional interview with a lay health adviser from a faith-based outreach program. It has been coded using the highlighting method described in the text. The colors have the following codes:

🟩 =uses of MedlinePlus	🟨 =outcomes	🟥 = barriers	🟦 = suggestions for improving the program

Interviewer: Describe some ways you have used MedlinePlus in your work here?

Respondent 1: This lady from the community came to see me because she was having terrible heartburn – almost every day. We looked up heartburn on MedlinePlus.

Interviewer: What did you find?

Respondent 1: We found out there are better medicines than what she was taking and she did not have to get a prescription. She talked to the pharmacist because she is on other medication, because MedlinePlus said don't mix these pills with other pills. But the pharmacist told her it was okay for her to take them, but that if the heartburn comes back she should see her doctor.
This woman said the medicine got rid of her heartburn almost immediately.

Interviewer: Do you have any other examples?

Respondent 1: There was a woman whose sister was diagnosed with breast cancer and she was so worried. We read a little bit about it and found out that "stages" tell you now serious the cancer is. She went back and asked her sister about her breast cancer and found out it was stage 1. That means her sister has a really good chance of surviving it.
So this lady was so relieved.
Also, everyone was hearing about this bird flu and we were coming up on Thanksgiving. The ladies who come to our Thursday brown-bag lunch meeting were saying they didn't know if they should serve turkey this year. So the other lay health adviser and I printed some information off of MedlinePlus, passed it around and we discussed it.
We discovered that bird flu is not in the United States, so we can have turkey for Thanksgiving as always!

Interviewer: Have you had any problems finding information for people?

Respondent 1: No, we can always find information on the topics people bring up. But sometimes people don't want to tell us too much about their problems, especially if it is kind of a sensitive topic. We all know each other around here, so people don't always want you to know things about them.

Interviewer: So how do you help them?

Respondent 1: We try to just show them in general how to search for a health topic, then give them privacy with the computer. It works okay as long as they know a little bit about using a computer.

Interviewer: What kind of help could the librarian give you with getting MedlinePlus known in your community?

Respondent 1: We have some new lay health workers starting in a month or so and she does a good job of showing how to use MedlinePlus, so it would be good if she could come to some of their training sessions.

Transcript, Page 4

Figure 4: Organizing and Analyzing the Coded Data

The "Uses of MedlinePlus" theme has been organized onto one page and subthemes have been identified. A description is also provided for each theme and subtheme. Note that the interviewee is identified so that the coder can go back to read the original interview. You might also want to put the page number of the unit.	
Code "Uses of MedlinePlus" Code Description: Uses of MedlinePlus by Health Advisors	
• **Respondent 1:** This lady from the community came to see me because she was having terrible heartburn – almost every day. We looked up heartburn on MedlinePlus.[p4]	Learn about health problem
• **Respondent 1:** We found out there are better medicines than what she was taking and she did not have to get a prescription. She talked to the pharmacist because she is on other medication, because MedlinePlus said don't mix these pills with other pills. But the pharmacist told her it was okay for her to take them, but that if the heartburn comes back she should see her doctor. [p4]	Learn about prescription drug
• **Respondent 1:** There was a woman whose sister was diagnosed with breast cancer and she was so worried. We read a little bit about it and found out that "stages" tell you now serious the cancer is. She went back and asked her sister about her breast cancer and found out it was stage 1. That means her sister has a really good chance of surviving it. [p4]	Learn about a loved one's health problem
• **Respondent 1:** Everyone was hearing about this bird flu and we were coming up on Thanksgiving. The ladies who come to our Thursday brown-bag lunch meeting were saying they didn't know if they should serve turkey this year. So the other lay health adviser and I printed some information off of MedlinePlus, passed it around and we discussed it. [p4]	Learn about current health topics Get information for presentation
• **Respondent 1:** We try to just show them in general how to search for a health topic, then give them privacy with the computer. It works okay as long as they know a little bit about using a computer. [p4]	Teach use of M+
Notes: One of the projected outcomes of teaching lay health advisers about M+ was that people in the community would have better access to useful health information. Our interview with Respondent 1 gave us an idea of how the lay health advisers use M+. Respondent 1 used it one-to-one to help community members find information about health conditions and about drugs. She helped another person look up information about a family member's health condition. This is an important use of M+ because this woman was quite worried but she couldn't go to her doctor to ask about her sister's illness. Because she was not her sister's caretaker, she could not talk to her sister's doctor. Where else could she learn about breast cancer? The lay health workers also used the information to inform a group about a timely topic that has been in the news a lot. Finally, they tried to help community members who do not want to disclose their illness by just giving general instructions on how to use M+.	

Step Three

Qualitative

The process described here is just one of many approaches that can be used. For instance, a method using the "text-to-table" function in Microsoft Word is described in a publication at http://idde.syr.edu/Krathwohl/Chapter14/Considerations.htm [9]. For complicated projects involving a great deal of data there are a number of software packages on the market designed specifically for qualitative data analysis, like ATLAS.ti (http://www.atlasti.com) and NVivo 7 (http://www.qsrinternational.com.)

Interpretation. The interpretation stage involves making sense of the data. The most basic approach is to summarize the themes that you identified in the data. (See "Notes" in Figure 4.) Then, you could use some of the following approaches to further analyze your data:

- Write answers to some of your evaluation questions like "What results did we get?" "What worked well?" "What were the challenges?" and "What can be improved?"
- See if you can come up with a classification scheme for your data. For instance, you might be able to classify your interview data into categories of how MedlinePlus is used after training.

- The analysis might even involve some counting. For instance, you might count how many users talked about looking up health information for themselves and how many used it to look up information for others. This will help you assess which uses were more typical and which ones were unusual. However, remember these numbers are only describing the group of people that you interviewed; they cannot be generalized to the whole population.
- See if the themes differ by group. For instance, you may find that users in the health professions and general public users value different features of MedlinePlus.

There are numerous approaches to analyzing qualitative data. Two excellent resources for beginners are "Analyzing Qualitative Research" at the University of Wisconsin-Extension website, [10] or Glesne's *Becoming Qualitative Researchers*. [11] *Qualitative Data Analysis* by Miles and Huberman [8] also provides methods for analysis, although a little more advanced.

Step Three

Qualitative