

**Welcome to the Evaluation  
Coffee Break Mini-Training**

February 8, 2011

**How do I develop a survey?**



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National Center for Chronic Disease Prevention and Health Promotion



Welcome to today's Coffee Break presented by the Evaluation and Program Effectiveness Team in the Division for Heart Disease and Stroke Prevention at the Centers for Disease Control and Prevention. We are fortunate today to have Dr. Jan Losby as today's presenter. Dr. Losby is from CDC's Division for Heart Disease and Stroke Prevention and is a Behavioral Scientist on the Evaluation and Program Effectiveness Team.

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## **Survey question construction—what we'll cover today**

- ❑ **Survey approach**
- ❑ **Close-ended and open-ended questions**
- ❑ **Pitfalls to avoid**
- ❑ **Examples of good questions**
- ❑ **Pilot testing**
- ❑ **Modes of survey administration**
- ❑ **Formatting tips**
- ❑ **Resources**

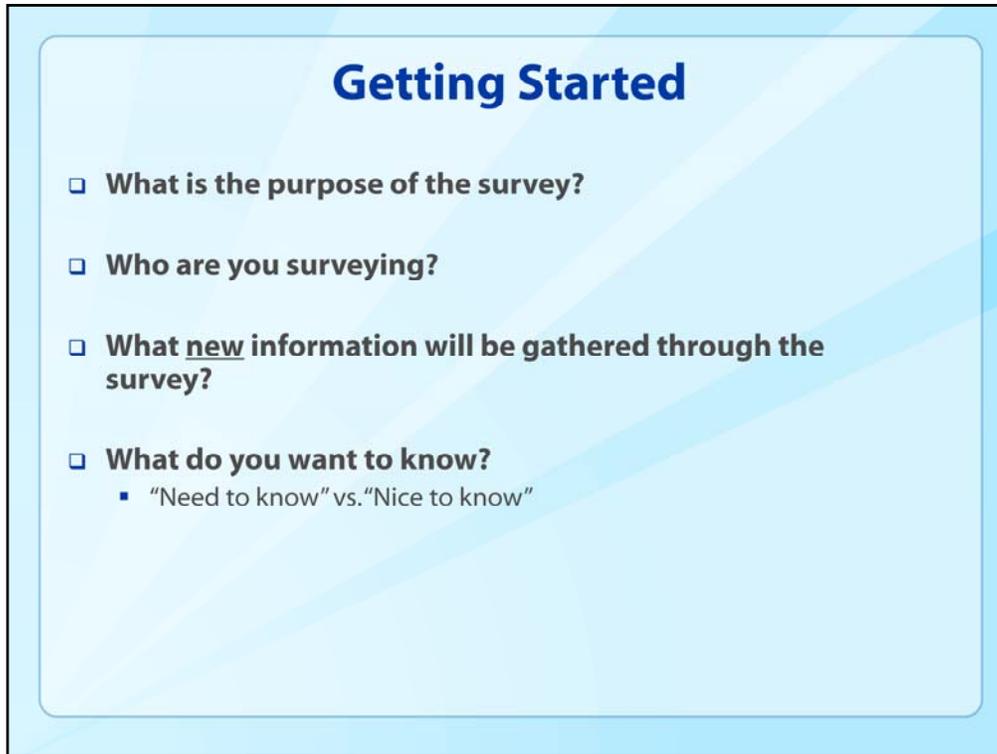
In our time together today I will focus on survey question construction.

We will spend just a little time on the survey approach as a data collection tool, then we will jump into the specifics of designing good survey questions by looking at close-ended and open-ended questions. We will discuss four pitfalls to avoid when designing your survey questions and offer some examples and offer some tips throughout.

We will also discuss the importance of pilot testing and the different modes of survey administration such as web, phone, mail, and in person.

I also offer some formatting tips and at the end of the presentation I will include some links to resources.

We won't be able to go into all of the various aspects of surveying such as sampling, response rates, reliability, and validity. If you are particularly interested in these topics, some of the resources listed at the end of today's presentation may be of help to you.



So let's assume that you've made the decision to conduct a survey. A few key questions you will need to consider are:

- What is the purpose of the survey? What questions do you intend to answer with the survey data you plan to collect?
- Who are you surveying? Staff, partners, recipients...
- What **new** information will be gathered through the survey? The key here is **NEW** information—if you are already doing some data collection and you feel confident in it, it isn't necessary that you duplicate efforts through a survey. So if you are trying to compare it to administrative data you may specifically want to have the same items on the survey. But in general if you already know a person's name, age, and race/ethnicity or any particular demographic information—you would not need to duplicate those survey questions on your questionnaire.
- It is also important before you begin your survey construction to make the comparison of "need to know" to "nice to know." We all have long wish lists of things you would like to know when conducting a survey. But it is really essential that before you begin the survey effort, go through that list carefully and identify what are the "need to know" parts.

## Response Categories for Close-Ended Questions

### □ Close-ended with ordered choices

- Example: “Do you disagree or agree with the following statement: Our community needs more sidewalks.” (select only one)
  - Strongly disagree
  - Disagree
  - Agree
  - Strongly agree



#### Tip:

- It may be a good idea to not include a neutral point such as “Neither disagree nor agree” for Likert scales.
- As in this example, respondents are urged to have an opinion and make a selection.
- However, do keep in mind if you have a particularly sensitive question, it may be important to keep a “no opinion” option.

With the next several slides we will look at the difference between close-ended response categories and open-ended response categories. On this slide we see close-ended with ordered choices. In this example, there is a certain order to the response categories—going from strongly disagree to strongly agree. This example uses a four-point Likert Scale—a Likert Scale is one where respondents specify their level of agreement to a particular statement.

At the bottom of this slide, you will see some tips.

## Response Categories for Close-Ended Questions

### ❑ Close-ended with unordered choices

- Example: “What sort of physical activity or exercise do you do each week?” (select all that apply)
  - Walk
  - Jog/run
  - Yoga
  - Swim
  - Bicycle



#### Tip:

Provide instructions so your respondents know how many answers to check.

In this example, respondents can select as many responses that apply.

If you wanted only one response, then note “select only one” and you may need to re-word the question to ask the person to consider only one.

Here we see a close-ended response with **unordered** choices. So in this example, the responses are in no particular order. “What sort of physical activity or exercise do you do each week?” (select all that apply)

The tip here shows that it is important to provide instructions so your respondents know how many answers to check. In this example, respondents can select as many responses that apply. If you wanted only one response, then note “select only one” and you may need to re-word the question to let the person know that they are only selecting one.

## Response Categories for Close-Ended Questions

### □ Partially close-ended

- Example: “What sort of physical activity or exercise do you do each week?” (select all that apply)
  - Walk
  - Jog/run
  - Yoga
  - Swim
  - Bicycle
  - Other (please specify \_\_\_\_\_)



#### Tip:

The “other” category will need to be coded. Sometimes these answers may fit into existing categories—or you may need to add new categories to capture these responses.

If we turn to partially close-ended answers, you will see that this is the same question from the previous slide: What sort of physical activity or exercise do you do each week? The difference here is that we’ve added the “other please specify” category. So we’ve opened up the opportunity for people to write in a particular response.

The tip here is that when you do add the “other” response category as an option, you will need to do some coding. This means that you will need to carefully look at all of the written in answers and determine if the response may fit into existing categories. For instance, if someone wrote in “I take a walk with my dog.” You may determine that this is a category you already have—walk. If someone writes in “rollerblading”—this would be a new category and you would need to capture that information.

## Open-Ended Questions

**Open-ended questions do not provide choices from which to select an answer. Instead, respondents formulate an answer in their own words.**

- Example: "In your opinion, what should be done to improve your community?" (write in your response)
- Example: "What state do you live in?" (write in your response)

Now if we turn our attention to open-ended questions. For these questions you do not provide any response categories and you are asking the respondent to write in their own answer. You may choose this option because you really want to have answers "in the respondents' own words"—maybe you are looking for quotes or key phrases. The purpose of your survey may lend itself to open-ended questions. Maybe you are gathering ideas and exploring options—this would fit nicely with an open-ended format.

Also as you can see from the second example on this slide, you may choose an open-ended format if you already know what the answers might be—but you have decided not to provide all of the possible responses categories because you don't have enough room. So for instance if this was a question on your survey "What state do you live in?"—you may not want to include a list of all possible 50 states; you would just ask people to write in—especially if you know that your respondents are just from a handful of states.



**Tip:**  
Remember that every survey question has implications for time, resources, and staff involvement.  
This is especially true for open-ended questions.

- ❑ Coding
- ❑ Data entry
- ❑ Analysis
- ❑ Writing up findings

When you are trying to decide between open- and close-ended items or some combination of these two, it is important to remember that every survey question has implications for time, resources, and staff involvement.

And this relates to coding, data entry, analysis, and writing up your findings.

## Consider making open-ended into close-ended

- “What policies are in place in your State Health Department’s cafeteria?” (write in your response)
  
- Which of the following healthy food policies are in place at your State Health Department’s main cafeteria? (mark all that apply)
  - Providing healthy (low-cal, low salt, low fat) options
  - Providing nutrient labels/information for all food items sold
  - Always offering fresh fruit
  - Always offering a vegetable of the day
  - Other (please specify)\_\_\_\_\_

As you work on your questions, you may decide that some of your questions could be changed from an open-ended format to a close-ended format or vice versa. This slide shows how this might be done moving from an open-ended question to a close-ended one. So we see from the first example: “What policies are in place in your State Health Department’s cafeteria? Write in your response.”

The second re-write adds some specificity to the question (health food policies and main cafeteria) and uses a partially close-ended format.

## Pitfalls to Avoid: #1

- Double-barreled items (asking two or more things in one question)
  - Example: “Do you like the services and the staff of your local health department?”
  - Solution: Separate question into two questions.
    - “Do you like the services of your local health department?”
    - “Do you like the staff of your local health department?”

These next four slides illustrate some common pitfalls that occur when constructing survey questions. Many of these you may have encountered yourself as you have been asked to fill out surveys—at hotels, conferences, or restaurants.

The first one is double-barreled items—which means that two or more things are being asked in one question. So the question: “Do you like the services and the staff of your local health department?” A solution would be to separate question into two questions.

## Pitfalls to Avoid: #2

- Response categories not included for all possible answers
  - Example: “In a typical year, how often do you visit your doctor?”
    - Weekly
    - Monthly
  - Solution: “In a typical year, how often do you visit your doctor?”
    - More than once per week
    - Once per week
    - One time each month
    - Two times each year
    - One time each year
    - Never

The second pitfall to avoid is not providing enough response categories. In this example, the question is: “In a typical year, how often do you visit your doctor?” And the only response categories are weekly and monthly.

The question as it is currently constructed would likely frustrate respondents because there aren't as many responses as people would like to pick. So if you would do a re-write and keep the same question: “In a typical year, how often do you visit your doctor?” And then add additional response categories:

- More than once per week
- Once per week
- One time each month, and so on

This would give you enough response categories so that you are able to capture their information.

## Pitfalls to Avoid: #3

- Negative items can be confusing
  - Example: “Do you typically not eat vegetables each day?”
    - Always
    - Sometimes
    - Never
  - Solution: “Do you typically eat vegetables each day?”

This third pitfall is one that I personally find confusing. Questions that are worded in the negative can be very confusing. I don't know quite how to answer them. I have to pause and figure out what is being asked and then pick the answer I hope really reflects my situation.

So for this example, the question is: “Do you typically not eat vegetables each day?” Let's assume that our respondent does eat her vegetables every day. Now, she would need to select “never” as her response. If you are using a question that causes some confusion or causes your respondent to pause and wonder how to respond to the question, the respondent may skip the item entirely—so you would have missing data—or they may not read the question correctly and give you incorrect information.

## Pitfalls to Avoid: #4

- Leading or loaded items
  - Example: “Exercising every day is important—do you exercise every day?”
  - Solution: “Do you exercise every day?”
  
  - Example: “Partnerships can be a great way to learn new things and share ideas. What has been your experience with this partnership?”
  - Solution: “What has been your experience with this partnership?”

Leading or loaded items introduce bias. For these examples, we have included some information that influences or urges the respondent to answer in a particular way.

## **Pilot Test Your Questions**

- Words, terms, and questions clearly understood**
- Sensitive questions**
- Culturally appropriate**
- Flow of questions**
- Response categories adequate**
- Format or layout easy to follow**
- Skip patterns make sense**
- Length of time to complete**
- Revise based on feedback (if major revisions made, may need to pilot again)**

When you arrive at the state where you are fairly happy with the questions you have created, an important next step is the pilot test. This is the stage where you gather a group of people together who are similar to your intended survey respondents and ask them to complete your survey.

## Deciding Which Method of Survey Data Collection Best Fits Your Needs

- ❑ Web (such as Survey Monkey)
- ❑ Mail
- ❑ Telephone
- ❑ In person



### Tip:

Regardless of which method you select to administer your survey, you still need clear, concise, well-worded questions.

For example, selecting Survey Monkey does not eliminate the need for careful planning, pilot testing, and refinement.

A final topic for today's call is to understand what options you have for the actual method of survey administration. As you know there are many different ways to administer a survey—electronically over the internet using a software package such as Survey Monkey, by mail, over the telephone or in-person. Regardless of which method you select to administer your survey, you still need clear, concise, well-worded questions. For example, selecting Survey Monkey does not eliminate the need for careful planning, pilot testing, and refinement.

### **What to consider when selecting a survey method:**

- Characteristics of sample**
- Survey topic**
- Types of questions**
- Response rate**
- Cost**
- Staff**
- Time**

To help you decide which method to use you may wish to consider these specific areas.

## Comparison of Data Collection Methods

	Web	Mail	Phone	In Person
Cost	M	L	H	H
Time to administer	L	M	H	H
Response rate	L/M	L	M	M/H
Staff needed	L	M	H	H
Control participation of others	L	L	H	H
Length of Questionnaire	Short	Short	Moderate	Long
Sensitive questions	Best	Best	Moderate	Poor
Many response categories	H	M	L	L
Complexity of Questionnaire	L	L	M	H
Possibility of interviewer bias	L	L	M/H	H

Scale = L=Low, M=Moderate, H=High

This chart can serve as a quick reference for you as you move forward with your own survey efforts and you are ready to decide how exactly you will administer your survey. This table compared four survey administrative methods on key areas such as cost, time, and response rate.

## Formatting Tips



- ❑ **Include introduction that explains purpose and confidentiality**
- ❑ **Introduce major section changes**
- ❑ **Provide response instructions for questions (select all, select one, etc.)**
- ❑ **Keep plenty of white space**
- ❑ **Use font that is easy to read and large enough**
- ❑ **Place demographics at end of survey**

Here are few general tips as you create your survey.

## Survey Resources

Tutorials on survey design

<http://www.statpac.com/surveys/index.htm#toc>

Online survey design guide:

[http://lap.umd.edu/survey\\_design/indx.html](http://lap.umd.edu/survey_design/indx.html)

Variety of topics on survey methods:

<http://www.socialresearchmethods.net/kb/survey.php>

Evaluation resources (including surveys) at University of Wisconsin Cooperative Extension:

<http://www.uwex.edu/ces/pdande/evaluation/index.html>

Evaluation resources (including surveys) at Pennsylvania State Cooperative Extension:

<http://extension.psu.edu/evaluation/data.html>

BRFSS:

<http://www.cdc.gov/brfss/questionnaires/questionnaires.htm>

NHANES:

[http://www.cdc.gov/nchs/nhanes/nhanes\\_questionnaires.htm](http://www.cdc.gov/nchs/nhanes/nhanes_questionnaires.htm)

Fink, A. and Kosecoff, J. (1985). How to Conduct Surveys: A Step-by-step Guide. Beverly Hills, CA: Sage.

On this slide several resources are listed. Some are specific on survey design—how to create good questions—and others are more general about survey methods that may address sampling and response rates. Unfortunately, there isn't a site that has all of the possible example survey questions you might be of interested to you—very often the best surveys are ones that you have created to meet your exact needs and ones that have been carefully prepared. It can be helpful to review existing surveys and see if you can adapt the question for your use or take the question as is. I've listed BRFSS, the Behavioral Risk Factor Surveillance System, and NHANES, the National Health and Nutrition Examination Survey as possible resources.

# Thank you

**If you have questions, please contact:  
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**For more information please contact Centers for Disease Control and Prevention**

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