

# APPENDIX II-F

## SURVEY DEVELOPMENT

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### *What is a health care-related survey?*

- A systematic collection of information, usually accomplished by means of an interview or questionnaire administered to a sample of people
- A *direct* method for acquiring information
- A method to find out about a variety of factors that influence, measure, or are affected by people's health

### *Do you really need a survey?*

- What do you want to know?
- Is a survey the best method to obtain information?
- Are the data available from other sources?
- What decisions/actions will follow?
- How much time and money can be spent?

## **GOOD SURVEY DESIGN IS A MATTER OF GOOD PLANNING**

### *Steps for Survey Development*

- STEP 1 Develop objectives to guide the survey process
- STEP 2 Develop the survey questions
- STEP 3 Select a high-quality sample to survey
- STEP 4 Develop a protocol
- STEP 5 Obtain informed consent and cooperation from respondents
- STEP 6 Train staff and obtain cooperation and assistance

## **STEP 1: DEVELOP SURVEY OBJECTIVES**

Study objectives help clarify what you need to do in order to answer your research question. Hypotheses are statements about what you *expect* to find in answer to your questions.

### *Research Question*

The first step in choosing the appropriate design for a survey is to formulate the research question to be addressed, on the basis of what and who will be the focus of the survey, when and where it will be conducted, and what you expect to find and why.

Different survey designs are used for addressing different "research" questions.

## *Formulating the Questions or Hypotheses*

What? Who? When? Where?

- What are you interested in finding out?
- What do you expect to learn and why?
- Who do you want to survey?
- When do you want to do the survey?
- Where are these people located?

Consider what your survey will produce:

- *A description* of something?
- *An explanation* of something?
- *A test of the impact* of something on something else?

### ***Example***

If you are interested in breastfeeding, what is it you are interested in: Who is most likely to breastfeed? How can you encourage breastfeeding? Why do women breastfeed (or why not)?

## **STEP 2: DEVELOP THE SURVEY**

1. Consider the format, order, and context in which questions are asked before making final decisions about the form and content of the survey questionnaire
2. Pilot test different approaches to formatting or ordering questions to determine which are best for your target group
3. Include an introduction to describe the purpose of the survey; at the end, include a thank you
4. Order questions in a logical manner
5. Group questions related to the same topic together
6. Use one idea per question
7. Number all questions to provide clear references for every item in the survey – for interviewers, respondents, data processing staff, and analysts
8. Indent and assign letters to sub-sections
9. Use instructions for "skip patterns" within the questionnaire to help the respondent know how to answer the question
10. Provide sufficient space for writing answers
11. Present the response categories in a clear and consistent manner when writing close-ended questions. For example, yes/no or male/female should be in the same order throughout.
12. Assign code numbers to close-ended questions to facilitate coding and data entry
13. Do not split questions between pages
14. Use large and clear type
15. Consider how information will be obtained
  - Self-administered, on-site, or by mail
  - Self-administered with assistance from staff

- In person
- By telephone

## STEP 3: DEVELOP A HIGH QUALITY SAMPLE TO SURVEY

### *Common Alternatives to Good Samples*

Alternatives	Common Results
<b>Census</b> (survey everyone)	Exhaustion Poor quality information Really just a large convenience sample
<b>Convenience Sample</b> (survey everyone handy)	No standard errors possible Can't generalize

### *Advantages of Random Sampling*

1. Lower Cost
2. Quicker
3. Higher quality information
  - Spend more time on preparation
  - Spend more time per subject
4. Better response rate and better control of non-response
  - Can pursue the selected subjects by scheduling them and giving them incentives
  - Can sample non-responders
5. Adaptable – can focus on specific groups
6. Reduce conscious and unconscious selection bias
  - Random numbers select the people to sample
  - The people who are most difficult to interview may be the very people who can give you the information you need. By focusing on people who are easy to survey, you create a selection bias. It may be worth the extra effort to get responses from those people who are difficult to interview.
7. Known precision (standard error)
8. Avoids survey staff exhaustion and is more efficient

### *Myth of the BIG “N”: How big an “N” do you need?*

When deciding on how big a sample you will need for your survey, there are many things to consider, including acceptable error levels and the availability of resources (money, personnel, and time). The larger your sample size, the more certain you can be that the data you collected represents the population you are studying. However, selecting a sample that is larger than what you really need is wasteful of resources, and sample sizes of 500 can be equally effective for a state of 14,000,000 as for a city of 100,000.

The sample size decision focuses on three main things: the size of the population you are interested in, the confidence level, the confidence interval, and the standard error or sample error. In general, it is best to pick a sample size that allows for a confidence level of 95%, meaning that there is only one chance in twenty that the data you gather is simply due

to chance and does not represent your underlying population. The confidence interval is the range in which the true answer falls, and is the +/- figure that is often reported in television and newspaper polls. Many researchers will decide on a range of plus or minus 5%, so that when they are asking a question like 'Do you have health insurance?' and 45% of the respondents say yes, they can be 95% confident that if we had asked the question of the entire population, between 40 - 50% would have said yes (45 +5% and 45 -5%). As your sample size increase, the standard error decreases.

To help you determine the sample size you need, you can visit the following web sites, which have sample size calculators that allow you to plug in your population size and your desired confidence level. The calculator will figure out how many people you will need in your sample or you can use the chart below.

<http://www.surveysystem.com/sscalc.htm>

<http://www.pearsonncs.com/research-notes/sample-calc.htm>

### Sample Size Selection Chart

Recommended sample sizes for two different precision levels					
<i>Adapted from: Isaac and Michael, 1981; Smith, MF, 1983</i>					
	Sample Size			Sample Size	
Population size	95% Confidence Level	90% Confidence Level	Population size	95% Confidence Level	90% Confidence Level
10	10		275	163	74
15	14		300	172	76
20	19		325	180	77
25	24		350	187	78
30	28		375	194	80
35	32		400	201	81
40	36		425	207	82
45	40		450	212	82
50	44		475	218	83
55	48		500	222	83

60	52		1000	286	91
65	56		2000	333	95
70	59		3000	353	97
75	63		4000	364	98
80	66		5000	370	98
85	70		6000	375	98
90	73		7000	378	99
95	76		8000	381	99
100	81	51	9000	383	99
125	96	56	10000	385	99
150	110	61	15000	390	99
175	122	64	20000	392	100
200	134	67	25000	394	100
225	144	70	50000	397	100
250	154	72	100000	398	100

***What is a random (probability) sample?***

1. Lets you know anyone's chance of selection
2. No discretion about who gets interviewed. Protocol and random numbers determine who is sampled.
3. Basic concepts
  - a. Target population
  - b. Frame – A list or rule to identify population members drawn by the random numbers. Examples are:
    - File drawer of folders
    - Clinic appointment markers in a tickler file
    - Birth certificates in AVSS and a pile of those not entered
    - Half-hour intervals of the day
    - A computer print-out
  - c. Problems with using frames:
    - Items may be omitted
    - Duplicates may be overlooked
    - Skips (items in frame but not numbered) – items may be missed if not

- numbered
- Ineligible items may be included

## STEP 4: DEVELOP A PROTOCOL

Developing a protocol, pilot testing and revising the survey are all very important. Be sure to schedule them into your plan!

<i>Definition</i>	
<b>Protocol</b>	Written step-by-step instructions for study procedures
<b>Pretest</b>	Practice questionnaire drafts on yourself and clients
<b>Pilot Test</b>	Dress rehearsal for full study (often on portion of main sample)

### *How to Pilot Test*

1. Divide the sample selections into 10 random groups
2. Pilot test on group 1
  - Check all the procedures for the sample. Include: attempts to contact, follow-up for non-responses, required assistance for questionnaire completion, data quality control. Get advanced estimates of eligibility and time needed for survey.
3. Pause and revise as necessary
4. The pilot test should be a fine-tune. If you see a lot of breakdowns, go back to the drawing board. **DO NOT** continue.
5. Use data from the pilot in your analysis
6. Do the full survey on as many of the sub-samples for which you have time

### *How to Minimize Effects of Non-Response*

- Give attention to individuals
- Schedule appointments for sampled people
- Compensate participants

An acceptable standard for a response rate depends on the outcomes. If the non-responders are exactly those you want to find, then even 10% non-response can be too high.

### *Protocol for Non-Responders:*

1. Make at least 3 attempts to contact – (appointment, mail, phone)
2. Declare a "non-responder" after 3 failed attempts
3. Determine a methodology for performing intensive follow-up and tracking of non-respondents. For example, choose 1 in 3 or 1 in 5 non-respondents for follow-up and tracking. Remember that this will involve additional staff time.
4. Give proper weight to non-responder answers (Check with your statistician)
5. Give extreme responses to FINAL non-responders & report: (e.g., all breastfeed or all do not)

## **STEP 5: OBTAIN ENTHUSIASTIC COOPERATION AND INFORMED CONSENT FROM CLIENTS**

### *Participants are Eager to Take Part if You:*

1. Ask for participants' help
2. Explain why you are gathering the information
3. Persuade participants that the information is important – to them as well as to you
4. Explain random selection - we don't have time to ask everyone

### *Explain Confidentiality Protections*

Participants have the right to:

1. Refuse without consequence
2. Not answer any question
3. Assurance that their responses will remain confidential
4. Assurance that data will remain anonymous

## **STEP 6: TRAIN STAFF COOPERATION AND ASSISTANCE**

### *Staff are More Likely to Cooperate if You:*

1. Ask for their help
2. Explain the purpose of the study
3. Gather Information that is useful to staff
4. Don't overburden them
5. Provide clear written directions
6. Communicate the results

### *Staff Responsibility to Respondents*

Staff must communicate their willingness to listen to negative feedback in order to assure honest answers from respondents.

### *State Approval*

Remember, you may need approval of your survey from the State Committee for the Protection of Human Subjects. If you are not sure, ask.