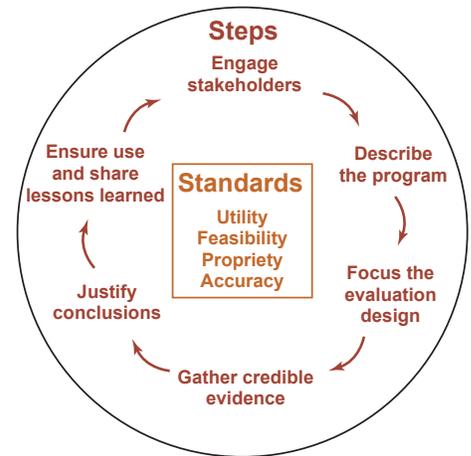# Data Collection for Program Evaluation

## Introduction

This toolkit offers some additional information, templates, and resources to assist you in planning your own data collection for program evaluation.

## General Evaluation

Program evaluation is a systematic way to collect information about the characteristics, activities, and results of a program in order to make decisions about the program. Evaluating a program helps you determine whether it is functioning as intended, or meeting its goals and objectives, and may help you identify areas for improvement. At NWCPHP we use the CDC's Evaluation Framework to guide our practice. The **CDC Evaluation Framework** is described in our online module Program Evaluation in Public Health. Information about the framework and related resources are at www.cdc.gov/eval/framework.htm#summary.

**Steps**

- Engage stakeholders
- Describe the program
- Focus the evaluation design
- Gather credible evidence
- Justify conclusions
- Ensure use and share lessons learned

**Standards**
Utility
Feasibility
Propriety
Accuracy

## Resources

**Introduction to Program Evaluation for Public Health Programs** The CDC also offers a 92-page self study guide, which includes worksheets and checklists for implementing the steps in the framework.
www.cdc.gov/eval/evalguide.pdf

**Public Health Agency of Canada's Evaluation Toolkit** includes specific information about how to plan for, design, conduct, and use the results of program evaluations. The toolkit is divided by topic area, and includes many worksheets and tools that you can print out for use in your organization.
www.phac-aspc.gc.ca/php-psp/toolkit-eng.php

The site also has blank worksheets to help you establish your evaluation questions and your data collection plan, identify stakeholders, and interpret your findings.
www.phac-aspc.gc.ca/php-psp/pdf/toolkit/Appendix%20B.pdf

**The Practice of Health Program Evaluation (2001)** For more advanced evaluators, or for people interested in further study, Dr. David Grembowski's book provides a thorough and academic discussion of program evaluation. The chapters most closely related to this course are: Chapter 3—Developing Evaluation Questions, Chapter 8—Measurement and Data Collection, Chapter 9—Data Analysis, Chapter 10—Disseminating the Answers.

## Example

**Evaluation Plan**

Program: _____

Date: _____

| Evaluation Question | Indicators | Data Source/ Method | Person Responsible | Timeline |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Word version of sample template

# Overview of Data Collection

This course focuses on step 4 of the CDC Framework: Gather Credible Evidence. There are many different methods for gathering data. You should select the method that best suits your needs.

## Resources

**Kellogg Foundation's Evaluation Handbook** describes data collection methods in more detail than this course was able to cover.
www.wkkf.org/pubs/tools/evaluation/pub770.pdf (see pages 69–96)

**The Power of Proof: An Evaluation Primer** provides information about preparing to collect data, the different methods for collecting data, as well as tips for best practice. While this resource is designed for evaluating tobacco prevention and cessation programs, it is applicable to other areas of public health practice.
www.ttac.org/power-of-proof
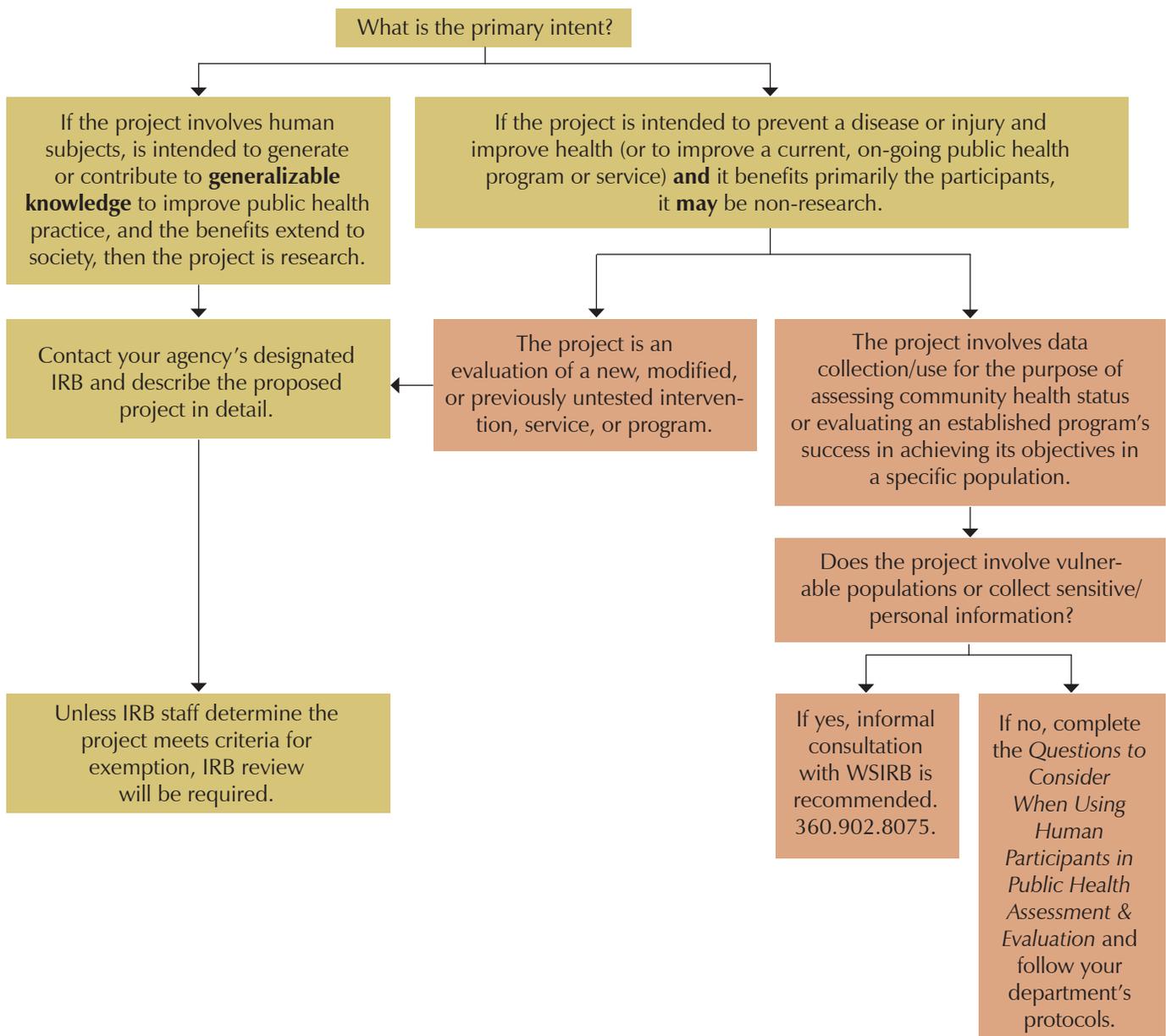www.ttac.org/power-of-proof/data_coll

# Institutional Review Boards

When you design your program evaluation, it is important to consider whether you need to contact an Institutional Review Board (IRB). IRBs are found at most universities and other large organizations that receive federal funding (such as hospitals, research institutes, and public health departments). An IRB is a committee of people who review proposed projects to ensure that the principles of autonomy, beneficence, and justice are honored.

It is a fine line between evaluation and research, so it is important that you consider human subject protections every time your evaluation involves observations of people, interviews, surveys, or the collection of people's personal health information. The Washington State Department of Health developed the decision tree below to illustrate the difference between research and non-research. In general consult an IRB if

- Your evaluation involves getting information from or about people

- Your institution or any of your collaborators receive federal funds

- You hope that the findings of your evaluation can inform other programs

## Is It Research or Public Health Practice?

What is the primary intent?

If the project involves human subjects, is intended to generate or contribute to **generalizable knowledge** to improve public health practice, and the benefits extend to society, then the project is research.

If the project is intended to prevent a disease or injury and improve health (or to improve a current, on-going public health program or service) **and** it benefits primarily the participants, it **may** be non-research.

Contact your agency's designated IRB and describe the proposed project in detail.

The project is an evaluation of a new, modified, or previously untested intervention, service, or program.

The project involves data collection/use for the purpose of assessing community health status or evaluating an established program's success in achieving its objectives in a specific population.

Does the project involve vulnerable populations or collect sensitive/personal information?

Unless IRB staff determine the project meets criteria for exemption, IRB review will be required.

If yes, informal consultation with WSIRB is recommended. 360.902.8075.

If no, complete the *Questions to Consider When Using Human Participants in Public Health Assessment & Evaluation* and follow your department's protocols.

They will help you determine whether you are doing research, whether your research actually involves human subjects, and whether your research may be exempt from human subjects regulations due to lack of risk to participants.

## Resources

**Washington State Department of Health Human Subjects Guide**
www.doh.wa.gov/Data/Guidelines/HumanSubjectsguide.htm

**University of Washington Human Subjects Division**
www.washington.edu/research/hsd/index.php

UW Human Subjects Division FAQ
www.washington.edu/research/hsd/faq.php

**The Belmont Report** discusses U.S. law related to ethical treatment of human subjects.
ohsr.od.nih.gov/guidelines/belmont.html

## Data Collection Methods

| Method | Use when | Advantages | Disadvantages |
| --- | --- | --- | --- |
| Document Review | Program documents or literature are available and can provide insight into the program or the evaluation | • Data already exist<br>• Does not interrupt the program<br>• Little or no burden on others<br>• Can provide historical or comparison data<br>• Introduces little bias | • Time consuming<br>• Data limited to what exists and is available<br>• Data may be incomplete<br>• Requires clearly defining the data you're seeking |
| Observation | You want to learn how the program actually operates—its processes and activities | • Allows you to learn about the program as it is occurring<br>• Can reveal unanticipated information of value<br>• Flexible in the course of collecting data | • Time consuming<br>• Having an observer can alter events<br>• Difficult to observe multiple processes simultaneously<br>• Can be difficult to interpret observed behaviors |
| Survey | You want information directly from a defined group of people to get a general idea of a situation, to generalize about a population, or to get a total count of a particular characteristic | • Many standardized instruments available<br>• Can be anonymous<br>• Allows a large sample<br>• Standardized responses easy to analyze<br>• Able to obtain a large amount of data quickly<br>• Relatively low cost<br>• Convenient for respondents | • Sample may not be representative<br>• May have low return rate<br>• Wording can bias responses<br>• Closed-ended or brief responses may not provide the "whole story"<br>• Not suited for all people—e.g., those with low reading level |
| Interview | You want to understand impressions and experiences in more detail and be able to expand or clarify responses | • Often better response rate than surveys<br>• Allows flexibility in questions/probes<br>• Allows more in-depth information to be gathered | • Time consuming<br>• Requires skilled interviewer<br>• Less anonymity for respondent<br>• Qualitative data more difficult to analyze |
| Focus Group | You want to collect in-depth information from a group of people about their experiences and perceptions related to a specific issue. | • Collect multiple peoples' input in one session<br>• Allows in-depth discussion<br>• Group interaction can produce greater insight<br>• Can be conducted in short time frame<br>• Can be relatively inexpensive compared to interviews | • Requires skilled facilitator<br>• Limited number of questions can be asked<br>• Group setting may inhibit or influence opinions<br>• Data can be difficult to analyze<br>• Not appropriate for all topics or populations |

# Document Review

When evaluating a program it is helpful to review existing documents to gather information. You can review meeting minutes, sign in sheets, quarterly or annual reports, or surveillance data to learn more about the activities of the program and its reach. You can also review related scientific literature or Web sites to learn how other similar programs work or what they accomplished. This can help inform your evaluation design.

## Resources

**CDC Evaluation Brief** has more information about using existing documents to collect data for program evaluation.
www.cdc.gov/healthyyouth/evaluation/pdf/brief18.pdf

## Example

**Practical Evaluation: Beginning with the End**
**Session III: Giving Data Meaning**

Type and source of data for possible use in practical evaluation or community health assessment

- Birth certificates
- Death records
- Disease incidence and prevalence rates
- Divorce rates
- Education levels of population (number and percentage of adults completing highschool, dropout rates)
- Environmental health issues (water and air quality)
- English as a Second Language
- Health services available in community, proximity to hospitals, social services, etc.
- Barriers to accessing services (transportation, hours, language)
- Hospital discharge data
- Past decision-making in the community

- Indicators of cultural communities (community centers, theaters, museums, festivals, dance, ethnic heritage centers or celebrations, cultural organizations, houses of worship)
- Indicators of social health (e.g., substance abuse, crime, child abuse cases)
- Leading causes of death with age, race, and gender specific data where possible
- Leading causes of morbidity with age, race, and gender specific data where possible
- License data
- Literacy rates
- Locally owned businesses
- Mean family size
- Median family income by race

- Percent of community who are Medicaid eligible
- Percentage of households who rent or own their homes
- Persons below the poverty level (number and percentage) by race
- Poison control center data
- Population distributed by age, race, and gender
- Property assessments

- Registry data
- Single heads of household (number and percentage)
- Surveillance data
- Transportation issues related to healthcare (indicator = miles of public transit per capita)
- Un/employment rates by race
- Vacant land

Sources

Minkler, M. (Ed.), (1997). Community Organizing & Community Building for Health. New Brunswick, NJ: Rutgers University Press.

Quinn, S., (1997). Unpublished syllabus. Chapel Hill, NC: University of North Carolina.

# Observation

Observation gathers information about a program as the program's activities occur. Examples could be observing services being provided, training sessions, meetings, or special events. Observation done in an unobtrusive manner can provide important information about what really takes place.

## Resources

**Collecting Evaluation Data: Direct Observation** The University of Wisconsin Extension published a number of brief summaries about program evaluation and methods for evaluation. This segment has sample observation checklist templates, a list of aspects of programs that can be systematically observed, and sample field notes.
learningstore.uwex.edu/pdf/G3658-5.pdf

**The Power of Proof** also offers a relatively brief overview of how, when, and why you might use observation for evaluation.
www.ttac.org/power-of-proof/data_coll/observation

## Example

As we discussed in the course, it's important to decide what you need to observe before you collect data by observation. It is helpful to make a checklist of things you need to look for during the observation period. This is the observation checklist that Anita developed to assess the Brief Preparedness Assessment and Intervention.

| BPAI Observation Checklist | Patient visit 1 (✓ done) | Patient visit 2 (✓ done) | Patient visit 3 (✓ done) | Patient visit 4 (✓ done) | Patient visit 5 (✓ done) |
|---|---|---|---|---|---|
| **Assessment** | | | | | |
| Awareness | ☐ | ☐ | ☐ | ☐ | ☐ |
| Planning | ☐ | ☐ | ☐ | ☐ | ☐ |
| Actions taken | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Intervention (key points)** | | | | | |
| Emergency/disasters | ☐ | ☐ | ☐ | ☐ | ☐ |
| Local/county response | ☐ | ☐ | ☐ | ☐ | ☐ |
| Personal planning | ☐ | ☐ | ☐ | ☐ | ☐ |
| Supplies/equipment | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Written materials provided** | | | | | |
| Preparedness Plan booklet | ☐ | ☐ | ☐ | ☐ | ☐ |
| What to Do booklet | ☐ | ☐ | ☐ | ☐ | ☐ |
| Public Info Program card | ☐ | ☐ | ☐ | ☐ | ☐ |
| Emergency phone number card | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Patient interest level** | | | | | |
| High | ☐ | ☐ | ☐ | ☐ | ☐ |
| Medium | ☐ | ☐ | ☐ | ☐ | ☐ |
| Low | ☐ | ☐ | ☐ | ☐ | ☐ |
| Total time | _____ | _____ | _____ | _____ | _____ |
| Notes | | | | | |

Word version of checklist

# Surveys

Surveys allow data to be collected from a large group of people and, depending upon how the survey is administered, can allow people to remain anonymous. Survey instruments or questionnaires ask questions in a standardized format that allows consistency and the ability to aggregate responses. Potential questions can focus on the collection of qualitative or quantitative data.

## Resources

**Social Research Methods** is a useful site for learning about surveys, interviews, and focus groups.
www.socialresearchmethods.net

The Survey Research section is most relevant to surveys, interviews, and focus groups.
www.socialresearchmethods.net/kb/survey.php

**Collecting Evaluation Data: Surveys** explores reason to use surveys, alternative to surveys, survey methods (e.g., self-administered, mail, telephone, Web-based), advantages and disadvantages of each, and survey planning and implementation. It also includes a sample cover letter, follow-up post card, and press release.
learningstore.uwex.edu/pdf/G3658-10.pdf

**Questionnaire Design—Asking Questions with a Purpose** covers the pros and cons of questionnaire use, example questions, a comprehensive formatting guide, and a reference list.
learningstore.uwex.edu/pdf/G3658-2.pdf

### Write more effective survey questions

Pamela Narins, Manager, Market Research
Ryerson University, Toronto

**Tips and rules to help you improve your survey question writing**
Naturally, no question is "good" in all situations, but there are some general rules to follow. Using these rules and examples will help you write useful questions.

1. **Remember your survey's purpose**
   All other rules and guidelines are based on this one. There was a reason you decided to spend your time and money to do your survey, and you should ensure that every question you ask supports that reason. If you start to get lost while writing your questions, refer back to this rule.

2. **If in doubt, throw it out**
   This is another way of stating the first rule, but it is important enough to repeat. A question should never be included in a survey because you can't think of a good reason to discard it. If you cannot come up with a concrete research benefit that will result from the question, don't use it.

3. **Keep your questions simple**

   Compound sentences force respondents to keep a lot of information in their heads, and are likely to produce unpredictable results. Example: "Imagine a situation where the production supervisor is away from the line, a series of defective parts is being manufactured, and you just heard that a new client requires ten thousand of these parts in order to make their production schedule. How empowered do you feel by your organization to stop the line and make the repairs to the manufacturing equipment?" This question is too complex for a clear, usable answer. Try breaking it down into component parts.

4. **Stay focused—avoid vague issues**

   If you ask "When did you last see a movie?" you might get answers that refer to the last time your respondent rented a video, when you are really interested in the last time the respondent went out to a movie theater. Consider too, "Please rate your satisfaction with the service you have received from this company." This is a fine general question, but will not likely lead to any specific action steps. Particular elements of service must be probed if responses are to result in specific recommendations.

5. **If a question can be misinterpreted, it will be**

   "What time do you normally eat dinner?" will be answered differently by people living in different regions; "dinner" can refer to either the midday or the evening meal. Be clear, concise, always beware of imprecise language and avoid double negatives.

6. **Include only one topic per question (avoid "double-barreled" questions)**

   How would you interpret the responses to "Please rate your satisfaction with the amount and kind of care you received while in the hospital." or, a question asking about speed and accuracy? If you want to be able to come up with specific recommended actions, you need specific questions.

7. **Avoid leading questions**

   It is easy, and incorrect, to write a question that the respondent believes has a "right" answer. "Most doctors believe that exercise is good for you. Do you agree?" is an example of a leading question. Even the most well-meaning researcher can slant results by including extraneous information in a question. Leading questions can be used to prejudice results.

8. **Consider alternate ways to ask sensitive questions**

   Some questions are obviously sensitive. Income, drug or alcohol consumption and sexual habits are clear examples of topics that must be asked about carefully. The question: "Did you vote in the last election?" has an element of sensitivity in it as well. Respondents might be unwilling to admit that they did not vote, because of civic pride or embarrassment. To avoid respondent alienation, it can be useful to mitigate the cost of answering "No" by including a way out. For example: "There are many reasons why people don't get a chance to vote. Sometimes they have an emergency, or are ill, or simply can't get to the polls. Thinking about the last election, do you happen to remember

if you voted?" Also, people are less likely to lie about their age in face-to-face interviews if they are asked what year they were born, rather than how old they are.

9. **Make sure the respondent has enough information**
   Asking respondents "How effective has this company's new distribution program been?" may not be as effective as "Recently, we implemented a new, centralized distribution system. Did you know this?" Followed by "Have you seen any positive benefits resulting from this change?" It can be beneficial to break down questions that require background information into two parts: a screening item describing the situation which asks if the respondent knows about it, and a follow-up question addressing attitudes the respondent has about the topic.

## Five rules for obtaining usable answers

Useful answers are just as important as good questions. Here are some rules:

1. **Response options need to be mutually exclusive and exhaustive**
   This is the most important rule to follow when providing response options. If response options are not mutually exclusive, the respondent will have more than one legitimate place for their answer. The response choices, "1 to 2," "2 to 3" and "More than 3" pose a problem for someone whose answer is "2."

   You must also ensure that the response options you provide cover every possibility. Asking "Which of the following beverages did you drink at least once during the past seven days?" and providing a list of coffee, soda and tea might be sufficient if you were doing a study on the consumption of caffein-ated drinks. But, they would not work if you wanted to know about broader consumption habits. If you are unable to provide a complete list of options, at least provide an "Other" choice. If the list of choices is too long, an open ended-question might be a better option.

2. **Keep open-ended questions to a minimum**
   While open-ended (or verbatim) questions are a valuable tool, they should not be over-used. Not only can they result in respondent fatigue, but they pose problems in terms of coding and analysis.

3. **People interpret things differently, particularly when it comes to time**
   Trouble-spots include responses such as "Always," "Sometimes" and "Never." You must build in a temporal frame of reference to ensure that all respon-dents are answering in the same way. As in this example from an interviewer-administered questionnaire, "I am going to read a list of publications. For each one, please tell me whether you read it regularly. By regularly I mean, at least three out of every four issues."

4. **Consider a "Don't Know" response**
   It is useful to allow people to say they simply do not have an opinion about a topic. However, some investigators worry that people will opt for that choice, reducing the ability to analyze responses. Evidence shows that this fear is

largely unfounded. The goal of your research should help you decide if a "Don't Know" option would be wise. For example, if you only want information from those with an informed opinion or higher interest, offer a "Don't Know" choice.

5. **Provide a meaningful scale**

   The end points of response scales must be anchored with meaningful labels. For example, "Please rate your satisfaction with customer service. Let's use a scale where 1 means 'Very Satisfied' and 5 means 'Very Dissatisfied.'" You could also give each point on the scale a label. The number of scale points (3, 5 or 7) can have little effect on the conclusions you draw later. Choosing how many points, then, is often a matter of taste. There are three things to remember when constructing a response scale. First, an odd number of points provides a middle alternative. This is a good way to provide respondents with moderate opinions a way out (similar to the "Don't Know," choice above). Secondly, if measuring extreme opinions is critical, use a scale with a greater number of points. Finally, you generally gain nothing by having a scale with more than 7 points and will probably find that you will collapse larger scales when it comes time to analyze the data.

**The price of poorly written questions**

Well-written questions are critical. Participants must stay interested. If your respondents start to feel alienated by threatening, emotional or difficult questions, response rates are likely to go down and response bias will probably go up.

   Also, respondents can get frustrated if your questions do not provide answer choices that match their opinions or experiences. The quality of your collected data will suffer; your analyses will be less meaningful; and the whole research process may prove useless or harmful. So think carefully about the questions you write, look at reputable examples of questions, and refer to the rules above. If you follow these guidelines, you'll do fine.

# Examples

Questionnaire template in Word

# Interviews

Conducting interviews is a method that, like open-ended questions in a questionnaire, allows you to obtain an individual's response in their own words. Interviews differ from questionnaires in that they elicit more detailed qualitative data and allow you to interact with the person to better understand their response. Interviews may be conducted in-person or over the phone. Interviewing is useful when you want more in-depth information about a person's attributes, knowledge, attitudes/beliefs, or behaviors.

## Resources

**Key Informant Interviews** by the University of Illinois Extension provides an excellent resource for learning more about key informant interviews.
ppa.aces.uiuc.edu/KeyInform.htm

**Research Methods Knowledge Base** provides a great introduction to interviewing.
www.socialresearchmethods.net/kb/intrview.php

## Examples

Interview Documentation Word template

# Focus Groups

Like an interview, a focus group allows you to collect qualitative data. However, unlike interviews, in which data are collected by one-on-one interactions, focus groups provide data about a particular topic through small group discussions. Focus groups are an excellent method for obtaining opinions about programs and services. They produce information from many people in a short period of time, so can be an effective method when information is needed quickly.

## Resources

**Performance Monitoring and Evaluation Tips** is a very simple four-page guide to conducting focus groups.
www.usaid.gov/pubs/usaid_eval/pdf_docs/pnaby233.pdf

**Using Focus Groups** by the University of Toronto Health Communication Unit is a more thorough review of focus group design and use.
www.thcu.ca/resource_db/pubs/982989842.pdf

# Sampling

When you collect data, you should think about your sample. Who will you recruit to complete your questionnaire or participate in a focus group? How will you recruit participants? How many should you recruit? As we discussed in the course, some of the answers to these questions depend on the sort of information you need.

## Resources

**Sampling and Sample Size Guide** / **Logistics Guides** by the Public Health Agency of Canada offers an excellent and brief description of sampling techniques.
www.phac-aspc.gc.ca/php-psp/pdf/toolkit/Appendix%20D%201-3.pdf

**Sampling**, a 12-page guide by University of Wisconsin Extension, has a table of random numbers and suggested sample sizes needed to detect change.
learningstore.uwex.edu/pdf/G3658-03.pdf

# Data Analysis

## Resources

**Analyzing Qualitative Data**
learningstore.uwex.edu/pdf/G3658-12.pdf

**Analyzing Quantitative Data**
learningstore.uwex.edu/pdf/G3658-6.pdf

**Problems With Using Microsoft Excel for Statistics** explains why Microsoft Excel should not be used for more complex statistical analysis.
www.stat.uiowa.edu/~jcryer/JSMTalk2001.pdf

# Other Helpful Resources

**SMART objectives**
www.marchofdimes.com/files/HI_SMART_objectives.pdf

www.cdc.gov/healthyyouth/evaluation/pdf/brief3b.pdf

**Reading levels**
school.discoveryeducation.com/schrockguide/fry/fry.html