# Chapter 9: Data Collection

Previous chapters have emphasized designing and planning an evaluation. This chapter focuses on developing the data collection protocol and actually collecting data. Evaluation data can be any information about the program or its participants, taken from a variety of sources: program records (data already being collected, such as the number of families served); official records from Child Protective Services (CPS), law enforcement and prosecution agencies, or mental health professionals (although there may be some confidentiality concerns with sharing these records); information from specific individuals, such as participants, parents, teachers, and representatives of other agencies; and information obtained by trained observers who rate behavior, facilities, or environments.

> "We decided to assess our program because I believed the CAC was helpful to kids, but there was no way to articulate the quality of the CAC without concrete data. We then partnered with researchers, which helped us become enthused."

Any type of evaluation requires data collection. If data are collected, ethical considerations require that the data be used to monitor or change the program. That is, do not gather data—especially personal information from individuals—simply for the sake of doing so. Evaluation information does not have to be made public, but it does have to be used in some manner.

## Sources of Information

A number of data sources are useful for the evaluation. The data gathered can be divided into two categories: qualitative and quantitative. Qualitative data include participants' thoughts or observable behaviors, obtained from personal interviews, focus groups, and direct observation. Qualitative data can be converted into quantitative data by assigning numerical values to the qualitative data (however, this kind of data must be interpreted very cautiously).

Quantitative information uses numerical values to represent information, allowing for statistical analyses. The main forms of quantitative data collection are questionnaires, ratings by trained observers, and service records. When determining which source of information to use, consider the following:

- Which source is the most accurate.
- The burden the source places on participants.
- The availability and accessibility of the source.
- Whether existing resources would work as well.

### Collecting data from the multidisciplinary team

CAC directors have reported that at some point in an evaluation, they have difficulty collecting information from representatives of the various agencies participating on the multidisciplinary team (MDT). Several data collection strategies may be useful in these situations.

**Obtain information at case review.** Obtaining information at case review can be done either informally or formally. Some directors simply listen passively and take down the information, while other directors ask agencies to make a formal report (written or verbal) at the start of each meeting.

**Make providing information a funding requirement.** Inform the agencies that this information is a funding requirement. Ask all agencies to submit a written monthly report to the center.

**Call the agencies for the information.** Agencies can provide evaluation information over the telephone.

**Send case tracking forms to agencies.** One strategy is to send color-coded tracking forms to the various agencies (e.g., pink for law enforcement and green for prosecution). Agencies fill in the requested information and return the form to the center. (See appendix D for examples of case tracking forms.)

**Incorporate into the interagency agreement that the agency will provide this information.** Write a paragraph in the interagency agreement stating that the member agencies will provide periodic reports to the center for evaluation purposes.

**Go to the agency and ask the appropriate individual for the information.** Although this method is time consuming, one is sure to obtain the needed information.

**Obtain information about the outcome of a case at the court hearing.** Many centers have personnel who attend court hearings with families. While at the hearing, make a record of the case outcomes for later entry into the database.

**Obtain information while talking informally with MDT members.** For example, the MDT members will often arrive at the center before the family. While casually talking about the weather, staff can also get needed information from the MDT members.

**Make arrangements to use the agency's computers to access the needed information.** Currently, few systems have coordinated computer networks. In Oregon, the district attorneys are adopting a State model that will integrate all the agency's computers to track cases more easily. A common problem with computer networks, however, is that each agency uses a different case-tracking system. In addition, although networking community agencies seems like the best solution, many agencies are concerned with confidentiality issues, which must be resolved before computer networking can be a viable solution.

## Developing Instruments

It is relatively easy to write the first draft of a new instrument. However, it will likely take several drafts to develop a satisfactory instrument. Instruments are often blamed when no differences are found between or among groups, particularly if the measure was developed by the investigator and not tested on a large number of people. When developing a new instrument, take the following precautions:

- Word questions carefully. Research has demonstrated enormous differences in results of studies based on how questions are worded (Schwarz 1999).
- Make the survey as short as possible.

- Ensure that early questions do not affect later questions.
- Test the survey before administering it to the target population.

Two methods for obtaining information are available, each of which has certain implications (Yates 1996). Everyone can answer the same questions, allowing data from all the clients to be combined to allow for powerful statistical analyses and providing generalizable results. However, the unique types of outcomes experienced by the clients cannot be determined, and valuable information may be missed. Alternatively, each person can answer a set of individualized questions to maximize detection of improvements in individual lives. However, these outcomes cannot be generalized to other groups. Another approach is to begin with individualized questions to define the outcomes; then, when the important outcomes have been identified, use a more general level of measurement.

## Timing of Data Collection

The timing and frequency of collecting information for the evaluation depend heavily on expectations about how people respond to the agency's program. For example, if children attend court school, how long after court school would one expect children to feel less anxious about testifying? Both theory and practical experience will help determine the appropriate timing for data collection. Timing is critical because effects may be missed if the timing of data collection is unsuitable for the evaluation or if the program takes effect at some point after the evaluation has been completed. Keep in mind that program effects can work in any of the following ways:

- **In a stairway fashion.** The effect increases, but incrementally in stages. For example, clients in therapy often experience plateaus and breakthroughs.
- **A gradual increase.** The effect increases steadily. For example, a medical examination may make children feel their bodies are physically healthy, which may help them deal more effectively with any psychological scars.
- **A quick increase and then a decrease.** The effect is seen initially, but then dissipates over time. For example, some directors have noted that participants are satisfied with the Child Advocacy Center (CAC) while they are participating in the center, but note that the positive effects decrease over time.
- **An increase after a long period of time.** The effect is delayed for some period of time (referred to as the "sleeper effect") and manifests at some point in the future. For example, the effects of therapy on revictimization likely fit this description (although no studies are currently available).

### When to administer parent satisfaction questionnaires

CAC directors disagree about when to administer parent satisfaction questionnaires. Among the several choices, directors indicate that asking parents to complete the form just before leaving the center is the most effective way to ensure that participants complete the instrument. Exhibit 9.1 describes the advantages and disadvantages of each choice.

### When to stop recruiting a family

To obtain trustworthy results, the CAC needs to collect information from all families seen at the center. However, at some point staff will need to cease trying to contact particular families. Paying attention to the family's cues can help determine when to stop trying to contact a family. For example, stop calling a family if a number of messages have not been returned. If staff make contact with families, but they are always too busy to talk, stop trying to recruit them. After giving a persuasive pitch about why their participation is critical to the evaluation, give families an opportunity to decline and respectfully thank them for their time. Some families may not want to cooperate with the evaluation, and that is their right. However, be sure to collect some data on these families (e.g., information taken from the intake form) for subsequent comparison with those clients who did agree to participate to determine how these clients differ from those who participated in the evaluation. This information will help when interpreting the results and will point to ways to recruit these individuals in future evaluations.

> "Explain the hazards of intrusion and tell people not to invade people's lives. For instance, you can't call families any time you want to. And you have to give families an opportunity to decline."

## Protocol for Data Collection

Consistent data collection is critical to a good evaluation. One way to achieve consistent data collection is to develop a data collection protocol that outlines and describes the steps to be taken in collecting information for an evaluation. This ensures that everyone who collects information for the evaluation does so in exactly the same way (i.e., the protocol is standardized), both in the beginning (as staff are learning to implement the protocol) and in the future (in determining whether staff have deviated from the protocol).

Data collection needs to be standardized because variations between groups could be due to variations in data collection procedures, not to the intervention. Therefore, it is critical to conduct pilot tests (discussed later in this chapter) and to adjust the protocol prior to beginning the actual evaluation.

The following issues should be addressed in any data collection protocol. The first four items are discussed in this chapter and the remaining items are discussed elsewhere in the manual:

- Administering the evaluation and collecting the data.
- Training in data collection.
- Data monitoring.
- Data storage.
- Data entry into a computer and data cleaning (chapter 10).
- Why the evaluation is important (chapter 1).
- Who will recruit participants (chapters 4 and 7).
- Who will participate (chapters 4 and 7).
- Where participants will be recruited (chapters 4 and 7).
- What data will be collected (chapters 4–6).
- Confidentiality (chapter 7).

### Periodic reassessment of the protocol

An evaluation protocol ensures that procedures for gathering information are the same for all individuals in the evaluation.

Although pilot testing will prevent many problems, environments and priorities may change over time, requiring modification of your procedures, protocols, and expected outcomes after the evaluation has begun. Some programs reassess their protocol on a regular schedule (e.g., quarterly, semiannually, annually). Regardless of how often the agency chooses to reassess its protocol, a periodic formal review of the evaluation protocol is crucial. Be sure to involve the evaluation team in the reassessment, which should ask the following questions:

- Which aspects of the evaluation are working properly?
- Which aspects of the evaluation are not working well?
- Which aspects of the evaluation continue to be troublesome?

Although it is important to maintain stability in the program for purposes of an evaluation, program changes may be necessary after the evaluation has already begun. If changes are made in either the program or the evaluation protocol, be sure to identify key changes and when those changes occurred. This information can help identify types of project variations and take them into account when interpreting results and writing the evaluation report.

## Training in Data Collection

### Data collectors

The value of the data ultimately depends on the quality of the information collected, which is affected by the quality of the data collectors. Therefore, only designated and trained individuals should administer the questionnaires and interviews to participants. Data collectors must be able to follow procedures carefully. To prevent bias in data collection, avoid having program staff who work with participants collect the data. Data collectors may be program staff who do not work directly with participants, such as volunteers or university students.

Because consistency in data collection is critical to a good evaluation, procedures for data collection must be developed and followed uniformly by data collectors. Therefore, data collectors need to be trained in the data collection protocol. Data collectors can practice their skills by performing mock data collection exercises and role playing. Consider training data collectors in the following issues.

### The importance of data collection protocols

Research has shown that variations among data collectors can affect the results of an evaluation. Therefore, it is important that all protocols for data collection are in writing and are followed explicitly. This method will ensure that how one data collector interacts with one participant is the same as how all other data collectors interact with all participants. With a written data collection protocol, the results can be attributed to the program and not to variations between and among the data collectors.

### Confidentiality

Because confidentiality is such an important requirement in evaluation, data collectors will want to be well versed in issues of confidentiality (see chapter 7).

### Ground rules for handling difficult situations

It is quite likely that at some point the data collector will encounter problems collecting data from participants. Therefore, anticipate problems and establish ground rules for dealing with particular and recurring problems. For example, train data collectors how to handle outbursts of anger by clients. Visiting the CAC is a very tense time for most people and some people may be uncooperative with any evaluation efforts. It will be up to the data collector to defuse these situations.

### Refusal to complete the questionnaire

Some clients will refuse to complete the questionnaire. However, staff can do several things to encourage their cooperation.

- Reiterate the importance of the evaluation and how the data are being used.
- Offer them the opportunity to complete the questionnaire at a more convenient time.
- Offer to send the questionnaire home with them to fill out at their leisure (although this strategy is not advised).
- If they still refuse, graciously thank them for their time.

### Nondirective responding to questions

Data collectors can affect a participant's reports by the way they respond to questions. Therefore, data collectors need training in how to respond to questions in a nondirective manner (see Groves 1989 for a discussion of interviewer training). For example, if a participant is unsure how to answer a question, the interviewer should say, in a nonjudgmental tone of voice," There are no right or wrong answers, just choose the answer that best describes how you feel," or "Answer the question however you interpret it."

### Child abuse reporting laws

Data collectors will be interacting with victims of abuse or parents of victims of abuse. Because these cases are governed by State child abuse reporting laws, it is imperative that the data collectors be aware of relevant State laws.

### Responsibility for quality control

Data collectors are in the best position to observe problems, as they will have continual access to the data (i.e., completed questionnaires). Therefore, data collectors will need to continuously assess the data collection procedures. For example, it is quite possible that a particular question is always left blank on a questionnaire or that most participants fail to complete the back side of a questionnaire. One possible solution is that data collectors could say to participants prior to handing them the questionnaire, "Please note that this questionnaire has two sides." Quality control is critical to a successful evaluation because the results of the evaluation could be adversely affected if a considerable amount of data are missing. When problems are discovered, a method should be in place for bringing these problems to the attention of the evaluation team, proposing solutions, and adjusting the protocol as necessary to rectify the problem.

## Issues Related to Completing Questionnaires

Administering questionnaires might seem simple at first: Hand a questionnaire to an individual and that person fills it out. However, centers need to be aware of a number of important issues.

## Length of time

Throughout the evaluation, staff should collect information on how long it takes participants to complete questionnaires or interviews. To do this, record the date, the time started, and the time stopped on each questionnaire. If sending a mail survey, request information from participants on how long it took them to complete the survey.

Information about how long it takes participants to complete questionnaires is beneficial for several reasons. It allows the staff to—

- Determine when there is enough time during the CAC visit for participants to complete the survey. For example, is there enough time to complete the questionnaire while the child is being interviewed?
- Inform future participants of approximately how long it will take them to complete the questionnaire. Many participants will ask how long it will take them, and staff will need to be able to give a realistic approximation.
- Summarize in the evaluation report how long it took participants to complete the questionnaire. Readers of the evaluation report will want to know this information because if the questionnaire took a long time to complete, participants may have become fatigued or may have completed the questionnaire in a careless manner, affecting the results.

## Administrators' proximity

While participants are completing questionnaires, staff should be nearby in case they have any questions, but staff should also give clients enough privacy to feel comfortable answering the questions honestly.

## Checking for completeness

When the participant has completed the questionnaire, the data collector may want to look it over quickly to be sure it is complete. If there is missing information, the data collector might say, "I see here you have missed this question," and hand back the questionnaire. If the person does not want to answer the question, simply respond with "I understand," take back the questionnaire, and graciously thank the participant for his or her time.

## Assurances of confidentiality

Assure participants that the team members working on their case do not have access to the questionnaires (if this is indeed the case). As further evidence of the center's commitment to confidentiality, when the client completes the questionnaire, place the questionnaire in an envelope, seal it, and place the envelope in a large sealed box with a slit in the top. This will help reassure clients that the information they provide is anonymous and confidential.

## Comments on questionnaires

Most evaluations use quantitative questionnaires, which are readily transferable to a computer database, but leave no space for participants' comments. Even so, participants often write revealing or informative comments on forms. Keep track of these comments because they often provide valuable information for understanding why someone completed a questionnaire in a particular way. Also, this information may be useful when interpreting the results and writing the evaluation report.

## Literacy

Literacy will be an issue for some families, and staff may need to administer the questionnaire in a different manner. One way to do this and still maintain confidentiality is to give one questionnaire to the client and one to the data collector. The data collector then reads the questions and possible responses while the client indicates (writes/circles/checks) on his or her copy the desired response.

> "Families have a low literacy rate, so our rate of return is higher with face-to-face interviews (and many families don't have phones)."

### Translation of standardized or commercial questionnaires

Unfortunately, most questionnaires are available only in English, which presents some difficulties for those centers with many non-English-speaking clients. Many standardized questionnaires have only been tested (i.e., established reliability and validity) on Caucasian populations; therefore, the questionnaire may not work the same way for a non-Caucasian population. Although some centers have bilingual staff who translate the questions from English to Spanish, the reliability and validity of the instruments may be compromised when they are translated. Also, many words and phrases cannot be translated directly from English into other languages.

## Data Monitoring

Someone needs to monitor the data collected from participants; this person is often referred to as the data monitor. Ideally, one person acts as data monitor and is responsible for all the data monitoring tasks: receiving collected data, recording incoming data, controlling quality, and storing data. There are several methods to monitor the data; computer or paper tracking forms are the most effective and efficient.

The CAC will need to develop a data monitoring protocol. For example, a completed questionnaire should be turned in to the data monitor immediately and then logged into a data tracking form. If a completed questionnaire is missing, this tracking method will enable the data monitor to determine whether (a) the individual actually completed the questionnaire, which was subsequently lost, or (b) the individual never completed the questionnaire. Once the questionnaire has been logged in, it can be properly stored until data entry.

Throughout the data collection process, the data monitor should conduct routine quality control checks of the data and schedule meetings with data collectors to ensure that data collection procedures continue to be consistently followed. The data monitor should also check incoming questionnaires for quality (e.g., no items are missing, copied questionnaires look clean and readable). If lapses in quality are detected, the data monitor can inform data collectors of these problems and take steps to rectify them.

A list of data monitoring responsibilities should include the following:

- Conducting random observations of the data collection process.
- Conducting random checks of respondents' completed questionnaires.
- Ensuring completed questionnaires are kept in a secure place.
- Looking for anecdotal information written by participants on questionnaires.

### Data tracking forms

Data tracking is an important part of organizing the data. Some methods, however, make tracking data easier. One method is to use paper or computer tracking forms, which can be developed to fit the agency's needs. Data tracking forms often include the following information:

- Participant number.
- Date administered (or sent).
- Name of person who administered the questionnaire.
- Date received.
- Date entered into computer.
- Name of person who entered the data.

Exhibits 9.2 through 9.5 illustrate sample data collection tracking forms that can be tailored as needed. The forms may be combined or kept separate, whichever is more efficient for the purposes of the evaluation.

## Data storage

Data monitors are also responsible for proper storage of the data. Two types of data will need to be stored.

**Data that have been collected from participants, but not entered into a computer.** Store completed questionnaires in a secure location, preferably where only the data collectors, data monitors, and data entry personnel have access to the questionnaires. This will prevent breach of confidentiality and loss of questionnaires. A data tracking form will allow staff to check which questionnaires should be in the CAC's possession at any given time.

**Data that have been collected from participants and entered into the computer.** Once the data have been entered into a computer, a computer security system can ensure that only the data monitor and data entry personnel have access to the files. Including a column on the data tracking form for the date a questionnaire was entered into the computer will allow staff to easily compare stored questionnaires with what has been entered into the computer. Once information from the questionnaire has been entered, questionnaires should be stored in a secure location for up to 7 years (depending on the State institutional review board requirements). Thereafter, the questionnaires should be destroyed.

## Data entry

Data entry means transferring the information (most typically numbers) recorded on questionnaires or from coded interviews to a computer database. Data entry sounds relatively simple; however, a number of easy-to-make mistakes can affect the results of the evaluation. Thus, it is important to establish a data entry protocol, which might require the following steps.

**Defining evaluation concepts.** Each variable to be entered into the computer must be defined. For example, does tracking how many interviews are conducted with a child include only the number of interviews at the center, or does it include the number of "noninterviews"? For example, is it an interview when law enforcement personnel report that they had a short informal talk with the child, but state that it was not an "investigative interview"? Be sure to record these definitions for inclusion in the evaluation report.

**Creating rules for entering data.** Rules must specify what to do with problems such as missing data or when two items on a line are circled. A statistician can help identify the best way to handle missing data.

## Data entry training

Errors in results can occur at any point in the evaluation process. Improper or careless data entry can seriously impair the results. Therefore, select one or two conscientious individuals to enter the data, and invest in training these individuals. Each person who enters data must understand the following:

- How to use the computer system.
- Definitions of the concepts contained in the data entry protocol.
- The rules of data entry defined in the data entry protocol.
- Their role in implementing the evaluation.

## Pilot Testing

No matter how carefully the data collection is planned, unforeseen problems are likely to arise. Therefore, after the planning phase is complete, the entire evaluation must be tested on a small subset of individuals selected from the group who will potentially participate in the evaluation (e.g., parents). This process is referred to as a pilot test. Either the entire protocol may be tested or, as segments of the evaluation are sufficiently developed, each segment may be tested individually.

Pilot testing identifies problems before the evaluation begins, thereby ensuring that the protocol will succeed and decreasing the need to change the protocol during the evaluation. A pilot test helps identify what the data collection system requires in terms of time, money, and other resources.

A pilot test can answer some important questions that will be helpful once the evaluation begins:

- How long does it takes participants to complete the instruments?
- Can self-administered questionnaires be completed without staff assistance?
- Can the instrument be completed in the allotted time frame?
- Are the procedures and instruments culturally appropriate?
- Are the notification procedures (letters, informed consent) easily implemented?
- How long will data collectors spend on each protocol?
- What are the response rates on first, second, and third mailings (for mail surveys)?
- How easily are former participants located?
- What is the refusal rate for in-person or telephone interviews?
- What data are frequently missing in program records?
- What data collection errors are common (e.g., missed questions)?
- What data are needed for analysis, but unavailable?
- What are the printing, postage, and other costs (beyond staff time)?
- When and how should staff follow up with participants?

### Pilot testing the instruments

If the evaluation includes a questionnaire, at least six people representative of the pool of evaluation participants should complete the questionnaire. These participants will need to know that they are part of a pilot test. When instruments have been completed, inspect them for completeness and see whether the participants followed the instructions. Then ask for feedback on the following issues:

- The wording of questions (less of an issue with standardized measures).

- The content of the questions. Did some questions make participants uncomfortable?
- The adequacy of the response categories.
- The clarity of instructions.
- The layout and format of the instrument. Is it easy to miss a question? Is there enough space to write comments?

It is better to adjust the protocol during a pilot test than after the evaluation has begun.

If a protocol or instrument is changed, the revised protocol or instrument must be retested to ensure that the solutions corrected previous problems and did not cause any new problems. A little time at this stage will avoid considerable difficulty later in the evaluation. Also, these issues should be monitored throughout the entire evaluation.

### Pilot analyses

Chapter 10 discusses data analysis in detail. However, it is worth noting here that some preliminary analyses of the pilot data can ensure that the planned core analyses are possible (Boruch 1997). Data from the pilot study can be used to—

- Refine the primary questions.
- Conduct quality control checks on the data.
- Lay out the tables that will summarize the final analyses.
- Compare groups on the basis of pilot data (if possible).

## Management Information Systems

The best advice for developing a case-tracking system is to use a management information system (MIS). These systems organize information using computers and allow the information to be accumulated and displayed in a variety of ways. A variety of computer software programs can be purchased already programmed. With a little patience and training, staff can customize this kind of software to meet the CAC's specific needs. After the initial frustration of learning to program software, enter the data, and produce reports, case-tracking tasks will be much simpler.

It is possible to improve the accuracy of data entry through the use of an MIS. For example, drop-down menus can streamline data entry. Nonetheless, data entry is time consuming, and even drop-down menus are subject to error. The development of scannable questionnaires will reduce human data entry error and resources. Large amounts of data can be entered relatively easily, quickly, and accurately.

Many centers that get involved with an evaluation will probably continue to engage in some type of data collection once the formal evaluation has been completed. Thus, they need to be able to continue to collect and organize incoming information. Developing an MIS will allow them to generate periodic and ongoing reports quickly and easily. These reports provide up-to-date information that strengthens decisionmaking.

> "I would really like someone to set up the evaluation, then we could keep it going long term."