

Program Evaluation Guide

Module 5: Collecting Data



**DEFENSE CENTERS
OF EXCELLENCE**

For Psychological Health
& Traumatic Brain Injury

Table of Contents

Overview of the Program Evaluation Guide	1
Purpose and Use of the PEG	1
Purpose and Use of this Module	2
Training Personnel to Collect Data.....	2
Develop Standard Operating Procedures.....	2
Conducting Quality Assurance Checks	3
Making Use of Existing Data Sources	4
Collecting Data from New Sources	4
Quantitative Data Collection Methods	4
Qualitative Data Collection Methods.....	6
Data Storage.....	9
Procedures for Handling Data.....	9
Creating and Maintaining Databases.....	10
Protecting Participants' Privacy and Confidentiality.....	11
Conclusion	12
Key Takeaways.....	13
References.....	14
Selected Resources for Additional Study	14
Appendix A. Data Storage Example	15
Template A. Data Storage	16

Overview of the Program Evaluation Guide

This Program Evaluation Guide (PEG) is developed and published by the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE). Program evaluation is an important part of the DCoE mission and helps military program administrators and leadership assess and improve service quality and outcomes. By making program evaluation an inherent part of everyday program activities, we create a culture of effectiveness to better build a sustainable, efficient and well-integrated continuum of prevention and care services for military members, their families and veterans.

The first edition of the PEG, published in July 2012, provided a standardized approach to program evaluation for psychological health and traumatic brain injury (TBI) program leaders. This version of the PEG (2nd Edition) has been updated and revised to reflect the most current needs of psychological health and TBI programs. This edition of the PEG is organized as a series of modules containing content specifically designed for use by program administrators or other staff members tasked with internal program evaluations as part of their duties within Defense Department psychological health and TBI programs. This PEG is designed for those who have limited prior knowledge and experience with the conduct of program evaluation activities.

Purpose and Use of the PEG

This PEG is one part of a collection of trainings, toolkits and support services offered by DCoE to assist personnel at the program level in developing their capabilities to conduct internal program evaluation activities. The PEG is designed for use in coordination with other training materials, such as the DCoE program evaluation and improvement webinar series, references provided in the PEG and webinar series, consultation with experts and other resources that may be available to program personnel.

The modules in this PEG are not intended to serve as a substitute for formal coursework on evaluation methods, statistics or data management. In addition, because the PEG is intended for use by a wide variety of programs, it will not provide specific guidance to programs on best practices for clinical or non-clinical services. Finally, the PEG is not intended as a manual for how evaluators who are external to a program should conduct their activities. However, the information herein will generally be useful in helping program personnel become more familiar with the evaluation process and consequently more effective in responding to external evaluation initiatives.

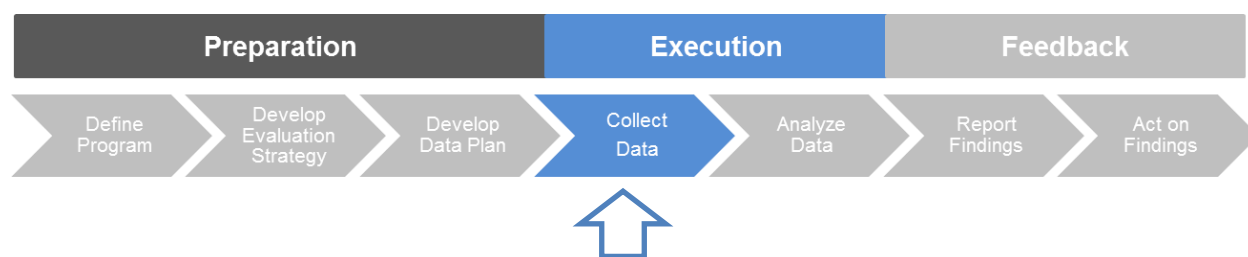
Collecting Data

Purpose and Use of this Module

Once a plan for data collection and analysis has been developed, the program evaluation effort is ready to move to the next phase of the evaluation process, Execution. The first step in the execution phase is collecting data.

This module, “Collecting Data”, is designed to assist program personnel in their efforts to identify and make use of existing data sources or to begin collecting new program data across key dimensions to answer the evaluation questions developed during the preparation phase of the evaluation process. Finally, this module will discuss the creation of databases that may be used to store data and later conduct data analysis procedures.

Because data collection processes will differ across every program, this module provides broadly applicable guidance on procedures used to collect and store data as part of a program evaluation effort.



Training Personnel to Collect Data

Specific personnel should be designated to carry out data collection procedures based on relevant skills and experience. Program administrators should ensure that personnel who carry out data collection activities receive proper training and ongoing supervision and support. This is important in order to protect the validity and reliability of the data and to maximize consistency throughout the data collection process.

Before beginning data collection, make sure that personnel who will be collecting data complete any institutional training that may be required (e.g., privacy requirements, data security). In addition, ensure that all program evaluation personnel are aware of applicable institutional, Federal and Defense Department rules and regulations.

Develop Standard Operating Procedures

The steps and processes for data collection, data entry, secure storage and maintenance should be formalized in standard operating procedures (SOPs), which will serve as the framework for carrying out all activities related to data collection. SOPs provide personnel with a written protocol to follow and a reference to consult when questions arise. Well-defined SOPs provide consistent direction, reduce training time, and improve work consistency throughout the data collection process. SOPs are particularly relevant for program evaluation efforts that will involve a large number of personnel, coordination of multiple activities and lengthy evaluation periods during which personnel are likely to change.

SOPs for collecting data may include instructions for using data collection instruments or scripts to follow when interacting with participants. Likewise, SOPs should include instructions for data entry, secure data handling and data storage that will help preserve the integrity of the data that is collected. SOPs should also contain guidance on personnel requirements, such as procedures for obtaining clearances or training required for data collection or storage. The more detailed and explicit the SOPs, the less likely evaluation personnel will be to make errors or add unwanted variation to data collection procedures during an evaluation effort. Finally, it is important to update SOPs over time as procedures change and as instruments and technology are updated. Table 1 contains a brief list of best practices pertaining to training in data collection.

Table 1: Best Practices for Training Personnel in Data Collection

Check	Best Practice
<input type="checkbox"/>	Provide clear instructions and/or a script (as appropriate) for personnel who will collect the data
<input type="checkbox"/>	Review example(s) of completed instrument(s) or interview transcript(s)
<input type="checkbox"/>	Rehearse procedures to promote consistency
<input type="checkbox"/>	Ensure proficiency in data collection procedures prior to beginning an evaluation
<input type="checkbox"/>	Provide appropriate supervision and support, and use quality assurance checks to monitor quality on an ongoing basis
<input type="checkbox"/>	Ensure personnel are aware of and have up-to-date training on applicable regulations

Conducting Quality Assurance Checks

An individual with experience and understanding of program evaluations should also be assigned to monitor compliance with the data plan throughout the collection process. This individual should conduct quality assurance checks before data collection begins and regularly throughout the overall evaluation process (SRA/Abt Associates, 2014).

Prior to initiating data collection, personnel should be proficient in administering the data collection measures, scoring and entering data, and maintaining data security. If feasible, program evaluators should conduct pilot tests of the data collection instruments and their associated procedures, particularly if instruments are new or require specific skills for administration. Pilot testing may involve practicing data collection procedures live with program participants or as a role play exercise with other program personnel. Pilot testing helps to identify potential problems that may arise so that they can be addressed prior to beginning the actual data collection.

During the evaluation process, ongoing support and quality assurance checks should be applied to support consistency as well as compliance with applicable rules and regulations (e.g., informed consent, Health Insurance Portability and Accountability Act of 1996, or HIPAA). Depending on the evaluation timeline and personnel changes, it may also be necessary to review training certifications to ensure personnel remain up-to-date on any requirements. Finally, because personnel directly involved in data collection activities are in the best position to monitor how well the process is working, evaluators should consider soliciting their feedback to guide modifications to data collection practices.

Making Use of Existing Data Sources

All data sources should accurately represent the areas that are most relevant to the evaluation questions designed earlier in the evaluation process. The evaluation strategy and data plan dictate the type of data to be collected, but in general data will include a mix of data already available in existing sources and new data collected for reasons specific to an evaluation effort. For example, consider an evaluation designed to answer the question, “Does the program have an effect on its participants?” Data collected to address this question might include existing sources of administrative data, such as records of participant demographics, outcome measures or a personnel database containing information about work functioning (e.g., performance ratings, number of days of work missed per year). In addition, new information may be collected through qualitative interviews or focus groups (e.g., explore program effects on family relationships).

At the start of data collection efforts, it is useful to identify existing data sources that appropriately address the evaluation questions. Readily available administrative records typically contain:

- Organizational data and personnel records, which often include contact information for important points of contact and stakeholders with decision-making authority
- Utilization data (e.g., number of participants served by the program, number and type of services provided, rates of completion and/or attrition, etc.) required by the many stakeholders for reporting
- Output data and progress reports used to provide program updates to leadership (e.g., data that justify additional program resources and/or personnel)

In addition, some programs may collect ongoing information from participants about their satisfaction with activities and services provided. By identifying existing data sources at the outset of an evaluation effort, personnel can better determine what additional data are needed and thereby better determine what resources are needed to collect data in support of program evaluation efforts.

Collecting Data from New Sources

New sources of data are often highly specific to the purpose of a particular evaluation effort. As discussed in previous PEG modules, it is important to use metrics and procedures with established validity and reliability whenever possible, two to three metrics for each area of interest, and varying methods and sources of information. As such, evaluation efforts are likely to include both quantitative and qualitative methods. Provided below is guidance related to the use of common types of quantitative and qualitative data collection methods. You may also wish to consult the “Suggested Resources for Additional Study” section at the end of this module (e.g., Centers for Disease Control and Prevention, 2011).

Quantitative Data Collection Methods

Quantitative data collection methods are generally more objective and structured than are qualitative data collection methods. As discussed in previous PEG modules, quantitative evaluation methods are useful in that they allow for direct comparisons across programs, can be used to analyze trends over time and may be used to provide concrete information about who is served by the program and the outcomes produced.

Questionnaires: Questionnaires can be used to efficiently gather data from large numbers of participants and can be administered electronically (i.e., through Internet-based media), by telephone, by mail or in face-to-face encounters. Mail and electronically administered questionnaires have a wide reach, are relatively inexpensive to administer, collect standardized information and can accommodate privacy protections (e.g., automatically assign identification numbers). In addition, questionnaires can incorporate free-response areas in which participants can provide qualitative explanations to complement quantitative data. They can, however, suffer from low response rates as participation is generally voluntary. In addition, because questionnaires are designed to address specific questions, they generally cannot be modified during the course of an evaluation. Finally, some variability in responses may arise from misunderstandings, so it is important that instructions and item language be as clear as possible.

Questionnaires that collect quantitative data may include a variety of formats, such as multiple-choice scales in which participants choose from several response options or choose all applicable responses. In addition, participants may be asked to respond to a forced-choice item, such as true-false or yes-no. However, it is important to note that such forced-choice items contain limited information, since they cannot assess relative amounts or degrees. In addition, many questionnaires include a “does not apply” option.

Quantitative rating scales are useful when assessing participants’ attitudes. For example, to examine an evaluation question about the participants’ satisfaction with the program, a questionnaire might request responses to questions using a rating scale with responses ranging from 1 (Very Dissatisfied) to 5 (Very Satisfied). In addition, questionnaires are often appropriate for gathering outcome data (e.g., how often does a symptom occur, how much did participants learn).

Whether developing a questionnaire or using an existing instrument, other formatting considerations include: question sequence (e.g., sensitive questions should be placed near the end of the questionnaire rather than at the beginning), layout, appearance, length, language and instructions for completion.

Structured Screening Protocols: Structured screening protocols include standardized data collection instruments, such as intake or behavioral screening forms. These forms are often administered using a structured interview procedure in which codes are assigned to certain characteristics, symptoms or categories of behavior. For example, a participant may be asked to provide demographic data (e.g., categorical information about gender, age or service branch), information about personal or family history and information about baseline functioning that could be used to identify needs for future program services (e.g., as part of a diagnostic interview or post-deployment screening interview). Often, program personnel administer screening protocols using a script that may be required as part of the user license for the instrument. This structure minimizes variability related to data collection procedures and can generate consistent responses from participants over time. In addition, many structured protocols have been researched extensively and have documented evidence of validity and reliability.

Learning Assessments: Learning assessments are used in programs with primary activities consisting of training (e.g., building resiliency, early recognition of potential problems, stress management skills). Learning assessments are appropriate for evaluation questions that seek to determine whether participants gain knowledge in

accordance with a program's objectives, teaching strategies and services. They typically use a standardized quiz- or test-like format to assess knowledge, skill, performance or awareness related to established program objectives. They are often administered in written form but can easily be converted to and collected in electronic formats. Learning assessments should ideally be administered both before and after training when feasible, using assessments with similar content, in order to best assess the degree of changes in knowledge. For example, a 10-item quiz might be administered to unit leadership participating in an awareness training focused on identifying TBI symptoms among service members under their command. Each item in the quiz would have a single correct answer, and the change in number correct from pre- to post-training would serve as an indicator of learning outcomes resulting from the training.

Quantitative methods are both structured and standardized and therefore can rarely be modified during the process of data collection. Thus, whether using existing or new data sources, it is vitally important to the success of the evaluation effort that the reliability and validity of any quantitative methods to be used in evaluation are determined prior to conducting data collection activities. Quantitative data collection instruments that are not reliable or valid can produce results that are of limited value to program evaluation efforts.

Qualitative Data Collection Methods

Qualitative methods in program evaluation can be especially useful for understanding the meaning, context and processes of a program. Qualitative methods are appropriate for answering evaluation questions related to the "hows" and "whys" of the program. For example, qualitative methods can provide a wealth of information to address program evaluation questions such as, "How do participants perceive the program's services and staff?" or "How can service quality and outcomes be improved?" In addition, qualitative methods often allow program evaluators flexibility to probe into different directions as new insights are discovered during the data collection process. Noted below are additional details on qualitative data collection practices.

Interviews: Interviews involve a personal conversation between a single interviewer and a single respondent. As a result, the interviewer can explore a topic in a great level of detail. Thus, the interview method is appropriate when the subject matter is complex and the respondent is particularly knowledgeable about the topic of interest. Interviews can be completed quickly and inexpensively and may be conducted in-person or through phone and internet-based media. Be aware that coordinating interviews for qualitative data collection can be challenging when the people to be interviewed are busy (e.g., key informants or stakeholders). In addition, both interviews and focus groups require a private meeting space and a method of recording information (e.g., note-taking, audio or video recording). Interviews are recommended over focus groups when group interaction is likely to be a limiting factor, such as when peer pressure or rank would inhibit responses.

Program evaluators should develop a script or guide to structure the conversation, including prompts for additional information (e.g., "Please tell me more about that."). However, an interview guide should allow for some degree of flexibility, such that it may be altered for subsequent interviews based on themes that arise over the course of an evaluation. It is important that evaluators monitor their own responses during the interview so as to remain neutral, as the point of conducting interviews is to access the interviewee's knowledge or perspective, rather than that of the person conducting the interview.

Like other qualitative data collection, data obtained through a one-on-one interview can help you understand not just what a person thinks, but why they think the way they do. However, it is important to select interview participants carefully and make efforts to hear from multiple perspectives, as individual interviews represent only one person's opinions or viewpoints.

Focus Groups: Focus group discussions are useful for exploring issues such as awareness, behavior, concerns, beliefs and motivation relevant to the program evaluation. A focus group may contain as few as four and as many as a dozen individuals and should be led by a moderator skilled at facilitating a candid and comprehensive discussion of salient issues (Krueger & Casey, 2010). Focus groups are typically conducted in person, although phone and Internet-based forums may be appropriate in some circumstances.

As with interviews, a focus group moderator uses a guide during the discussion to access information relevant to one or more evaluation questions. The guide will help the moderator to identify not only what participants think but also why they think the way they do, and it may be modified for subsequent focus groups based on themes identified. Data collected during focus groups should include sources of agreement as well as areas of disagreement or diversity.

Because the discussion occurs in a group setting, each group should have an open, safe and permissive quality and should allow input from each and every group member. Accordingly, the integrity and dignity of all participants must be respected and valued. The structure should be relatively free-flowing and interactive – a skilled moderator will ensure that all members of the focus group have an opportunity to contribute to the conversation. The moderator must encourage an emotionally “safe” environment that is open and receptive to all views, including those that differ markedly from others. As such, it is advisable that focus groups consist of individuals who are similar to one another in terms of characteristics like status or rank in addition to having relevant knowledge and experience. As with interviews, it is also recommended that focus groups be conducted with multiple groups of interest to provide a comprehensive picture of the program. For additional guidance on focus groups, see also R. A. Krueger's (2012) guide listed in the Suggested Resources section at the end of this module.

Open-ended Responses: Open-ended comments may be used in conjunction with quantitative data collection methods (e.g., a questionnaire). They call for a written response to open-ended prompts, such as, “Use this area if you would like to say more,” or “Do you have any suggestions?” or simply, “Explain.” These prompts should be specific to evaluation questions, but they should be written in a neutral manner so as not to bias responses. The free-text response area allows respondents to communicate their thoughts, feelings and suggestions.

In addition to questionnaires, open-ended responses may also be retrieved from a blog discussion, social media page (e.g., Facebook, Twitter), or obtained from an on-line feedback form. Because of the personal effort a participant uses to convey this data, it is important to carefully consider each response. Open-ended comments are generally voluntary, and if a respondent takes the time to write an open-ended comment, it may be because the subject is significant or important to that person. Caution should be exercised in that open-ended responses may not be representative of a larger group,

especially when the overall response rate is low.

Observational Techniques: Observation is the most direct method for measuring actual behavior as it occurs in a natural setting (i.e., what people do rather than what they say they do). Observational techniques can occur in person or they may rely on audio or video recordings. Likewise, observations vary in the degree to which those being observed are aware of the observer versus having the observer concealed in some manner to reduce the potential influence on the behavior being observed. For example, some clinical settings offer one-way mirrors or closed-circuit video displays for training purposes. Observational techniques are most relevant when there is a need to understand how people actually behave in natural settings or when other means (e.g., self-report) may be overly biased.

Use a checklist when conducting observation as part of an evaluation effort to ensure that important information is collected consistently. In addition, observers should minimize their interactions with program staff and participants and maintain a neutral stance if asked questions. If the observer is visible to program personnel or participants being observed, it is important that the purpose of the observation is made clear and that they are informed about how data will be shared. Moreover, special protections may apply when conducting observations in health care settings (e.g., HIPAA) or in environments with sensitive information (e.g., military installations).

After-Action Reviews: After-Action Reviews (AARs) are post-event process reviews, or “hot washes,” in which a group of individuals (e.g., program personnel) meets to discuss impressions of how an activity occurred in real time. The discussion and any resulting summary document should focus on the most important aspects of the process, including strengths and opportunities for improvement. In addition, AARs should generally focus on whether the activity (e.g., a training event) met its objectives.

AARs are often time-limited or constrained and depend on the accuracy of meeting notes as the basis for a report and analysis. While generally more efficient, AARs lack the ability to detect nuances that can be achieved through individual interviews, and the presence of individuals with varying status could lead to deferral to more senior individuals. Likewise, a risk of any group-based evaluation activity is that group members tend to agree with others to maintain consensus rather than present differing opinions or beliefs.

Case Studies: Case studies are in-depth examinations that allow for a detailed account of important experiences over time. Case studies provide compelling accounts, or stories, focused on a single individual or a small group of individuals and may be either *prospective* in nature (i.e., followed over a specified period from a baseline time-point) or *retrospective* (i.e., whereby historical records or subjective accounts are examined).

The targets of case study methods are generally individuals or groups of individuals who offer something of relevance to the purpose of an evaluation. For example, a case study method that seeks to examine the long-term effects of a therapeutic intervention for posttraumatic stress disorder (PTSD) may prospectively examine or retrospectively review information about select service members from a particular cohort (e.g., unit members who participated in a group treatment) for a specified period of time. This method can be time-consuming, but is especially compelling when seeking to convey the importance of an intervention or activity to others (e.g., key stakeholders).

In sum, qualitative data collection methods are particularly useful for providing depth and richness to the understanding of a program's context, processes and outcomes. Proper execution of qualitative methods in a program evaluation can complement or supplement quantitative information and provide useful information to guide decision-making and program improvement efforts.

Data Storage

After data have been collected using the quantitative and qualitative methods described above, proper handling and storage are necessary to ensure the accuracy and integrity of the data for current and future applications. This is especially important because errors and security breaches often occur in this stage of the evaluation process as a result of easily avoidable mistakes.

Procedures for Handling Data

Proper procedures for handling data serve to maintain confidentiality (e.g., maintaining the anonymity of participants) and security (e.g., allowing access only to those with proper authorization and a valid need-to-know) of data and preserve the collected data in a readily accessible form. SOPs for handling data should specify how data will be stored (e.g., electronically vs. hard copy), the location(s) in which they will be stored, and who will be responsible for storing and ensuring data security. It is highly recommended that both primary and backup data storage be used (UK Data Archive, 2011), which may consist of paper and electronic media (e.g., video, hard drive, network, storage disc). All hard copy data should be stored in a locked room and/or locked file storage system. All data stored electronically should be password protected and encrypted.

In the case of data handled electronically, proper data handling procedures are necessary to ensure that recorded data are not altered, erased, lost or accessed by unauthorized users. It is advisable, therefore, to consult with IT professionals to safeguard against these threats and to ensure personnel who collect and/or maintain data are trained in procedures for handling data securely.

A key data handling concept for storing or archiving data is *configuration management*, or keeping track of data across different media throughout the program evaluation process. For example, raw data could be recorded in a notebook or binder, and then transferred to an electronic data file for analysis. Data analysis will result in output data (e.g., plots, graphs) that can be stored in the same location as the original data files. Configuration management helps to keep track of files (e.g., paper and electronic formats) during the life of an evaluation project.

In general, procedures for handling data-should consider the following factors:

- The type of data being collected and stored
- The type and capacity of media used to store and maintain data
- Reliability of storage media and ability to upgrade over time
- The length of time the data will be stored and how it will be destroyed
- Selection and training of personnel to collect, score, enter and/or store data
- Access to data – only authorized personnel with a need-to-know who have

undergone appropriate training should be granted access to raw data

When data are no longer needed for program evaluation efforts, they should be disposed of safely and securely to reduce the possibility of unauthorized access. This means destroying the data files to ensure that the information cannot be reconstructed from the disposed media. Deleting files from a computer's hard disk, for example, may not effectively prevent it from being reconstituted or put back together. We recommend consulting state or federal guidelines for disposing of sensitive information, such as erasing the computer hard disk several times to ensure the disk is free of recoverable data. Likewise, any paper copies should be securely shredded.

Applicable federal regulations or institutional guidelines should always be followed in data handling procedures and practices. If an evaluation effort collects personally identifiable information (PII) or protected health information (PHI), HIPAA regulations apply, and additional training may be required. Deciding how long data should be kept may depend on the nature of the evaluation effort, sponsoring agency's guidelines, ongoing interest in or need for the data, cost of maintaining the data in the long run, and other relevant considerations.

Creating and Maintaining Databases

Computerized databases are the most common method for storing evaluation data. Commonly available software programs include Microsoft® Access and Excel, as well as several software packages that combine data storage and analysis functions (e.g., IBM's® Statistical Package for the Social Sciences). When choosing or developing a database, the following are important considerations:

- The type and amount of data to be stored in the database
- How data will be entered or imported into the database
- Security options for the database
- Ability to merge data from different sources or match to existing databases
- Compatibility of the database with any software to be used for analyses

Databases may be either in flat-file or relational file format. A *flat-file database* uses a single table as its data source. In flat-file databases, evaluators can establish categories as well as individual participant entries, but these data cannot be shared or merged across other tables or databases. One commonly used example of a flat-file database is the Microsoft® Excel spreadsheet software package. *Relational databases*, on the other hand, have established procedures that allow data to be merged from multiple data sources or tables (e.g., one can match participant data according to an identification number or birthdate). A commonly available example of a relational database is the Microsoft® Access software application. Each type of database has associated benefits and challenges, so it is important to consider database options carefully. Keep in mind that while relational databases are more robust in terms of capabilities, they can also be more complex to create and maintain.

Both flat-files and relational databases offer data-validation options that should be used in data entry. Microsoft® Access has an *input mask* feature that guides data entry into database fields using pre-determined rules. For example, forcing rank to be entered as a letter-number combination (e.g., E4, E7, O3 and O6) standardizes data entry and increases consistency. Likewise, Microsoft® Excel has data validation capabilities that restrict the type

of data or the values that can be entered into the cells. Appendix A provides an example of how a database could be organized for a non-clinical program, and Template A provides a blank Microsoft® Excel worksheet that may be modified for individual programs.

Once a preferred database type has been identified, the database can be prepared for data import or input prior to data collection. Before data collection begins, the database can be designed, labeled, and formatted according to the specifications determined during the development of the data plan (e.g., the amount and type of data). This will facilitate the rapid availability of data for analysis once collection has been completed. As described above, we recommend regular ongoing quality assurance checks to ensure accuracy in data entry.

Protecting Participants' Privacy and Confidentiality

Privacy and confidentiality are important security concerns when collecting data. The risks of breaches may include damage to a participant's well-being and career, violation of the trust between program personnel and participants, and heightened risk for identity theft. In addition, a program found to be in violation of privacy and confidentiality regulations may be subject to fines or other sanctions that may impact its sustainability. Ethical considerations should guide evaluators to protect program participants from harm during the course of data collection for a program evaluation effort. There are three ethical principles that can help guide data collection: autonomy, beneficence, and justice (Orb, Eisenhauer, & Wynaden, 2001):

Autonomy: The principle of autonomy emphasizes that participants are free to decide whether or not to participate in the program evaluation based on informed consent. *Informed consent* requires the evaluator to provide a clear and complete description of the process, including the purpose of data collection, how the data will be used or shared and the possible risks of participation (e.g., their identities may be revealed) in advance. This will allow participants to make an informed decision whether or not to participate (Inter-university Consortium for Political and Social Research, 2012).

Beneficence: The principle of beneficence requires evaluators to take precautions to protect participants from harm. Of great importance in conducting program evaluations, evaluators must make efforts to protect the identities of the participants. This can be especially challenging when qualitative methods are used, such as observations or focus groups, or when recordings are made. Evaluators should specify ground rules for participants not to repeat what is discussed during a focus group but also make clear that there are no guarantees that other participants will comply. In addition, when reporting the results of evaluation efforts, it is advisable to provide minimal detail regarding the participant's identify (e.g., provide a rank and service branch, rather than a name or other more specific details). Finally, it is essential that evaluators and other personnel maintain data security at all times.

Justice: The ethical principle of justice refers to fair treatment of participants and avoidance of possible abuse or exploitation. Justice intends to protect vulnerable participants and their contributions to the evaluation. For example, reporting a statement or quotation from a participant should only be allowed when the evaluator has obtained permission from the participant to use his or her data in this manner. Likewise, because there is a strong emphasis on following orders in the military, it is important to clearly differentiate between any mandatory activities versus voluntary activities.

Below in Table 2 are several suggestions for minimizing risks related to privacy and confidentiality. By following the recommendations below, as well as those from accreditation bodies and service-level command, it is possible to reduce the likelihood of most ethical risks.

Table 2: Best Practices for Protecting Privacy and Confidentiality

Check	Best Practice
<input type="checkbox"/>	Avoid any unnecessary disclosures of information
<input type="checkbox"/>	Do not collect unneeded data
<input type="checkbox"/>	Prohibit staff members from taking data off-site
<input type="checkbox"/>	Use encryption software or a lockbox if data transfer is needed
<input type="checkbox"/>	Ensure data storage areas or computers remain locked
<input type="checkbox"/>	Create standard operating procedures (SOPs) for data collection, storage and use in alignment with existing policies
<input type="checkbox"/>	Ensure all staff members who access data receive ongoing training and support
<input type="checkbox"/>	Conduct regular quality assurance checks for data accuracy and security
<input type="checkbox"/>	Seek consent from participants and approval by internal review boards and chain of command as required
<input type="checkbox"/>	Destroy data securely following any mandatory storage period
<input type="checkbox"/>	Track adverse events and lessons learned
<input type="checkbox"/>	Deidentification – use participant identification numbers and separate any information that could be used to identify specific participants
<input type="checkbox"/>	Anonymous data – in rare circumstances use forms or data collection procedures that do not include identifiers
<input type="checkbox"/>	Pilot test the data entry and storage procedures before use

Conclusion

At the conclusion of this module, Collecting Data, program evaluators should be equipped with foundational knowledge and guidance needed to carry out the data plan developed using the guidelines provided in Module 4. In addition, evaluators should have developed a strategy for training and supporting quality in data collection and storage, and selected appropriate team members to assist with data collection activities. Program evaluators should be able to identify the relative strengths and limitations of both quantitative and qualitative data collection methods. Likewise, evaluators should have an awareness of key considerations involved in proper data handling and storage procedures, as well as ethical factors related to data collection.

Key Takeaways

- Identify data collection personnel and conduct training to prepare assigned individuals to effectively accomplish data collection, storage and maintenance
- Identify and incorporate available data from existing sources relevant to an evaluation effort
- Develop standard operating procedures to maximize validity and reliability in collecting data from new and existing sources
- Continually monitor procedures for handling data to support of an safeguard participants' privacy and confidentiality

References

- Centers for Disease Control and Prevention (2011). *Introduction to program evaluation for public health programs: A self-study guide*. Retrieved from: <http://www.cdc.gov/eval/guide/>
- Krueger, R. A., & Casey, M. A. (2010) Focus group interviewing. In J. S. Wholey, H. P. Hatry, & K. E. Newcomer (Eds.) *Handbook of practical program evaluation* (3rd ed., pp. 378-403). San Francisco: Jossey-Bass.
- Office of Research Integrity (2014). *Responsible conduct in data management*. Retrieved from U. S. Department of Health and Human Services website: http://ori.hhs.gov/education/products/n_illinois_u/datamanagement/dmtopics.html
- Orb, A., Eisenhauer, L., & Wynaden, D. (2001). Ethics in qualitative research. *Journal of Nursing Scholarship*, 2000, 33, 93-96.
- Inter-university Consortium for Political and Social Research. (2012). *Guide to social science data preparation and archiving: Best practice throughout the data life cycle* (5th ed.). Ann Arbor, MI: University of Michigan. Retrieved from: <http://www.icpsr.umich.edu/icpsrweb/content/deposit/guide/index.html>
- SRA/Abt Associates (2014). *VA data guide – FY 2015: Data collection and reporting guidance for SSVF grantees*. Retrieved from Department of Veteran's Affairs website: https://www.va.gov/HOMELESS/ssvf/docs/VA_Data_Guide_FY2015_September_2014.pdf
- UK Data Archive. (2009). *Managing and sharing data: A best practice guide for researchers*. Colchester: University of Essex. Retrieved from: <http://www.data-archive.ac.uk/media/2894/managingsharing.pdf>

Selected Resources for Additional Study

- Administration for Children and Families, Office of Planning, Research and Evaluation (2010). *The program manager's guide to evaluation* (2nd ed.). Retrieved from U.S. Department of Health and Human Services website: <http://www.acf.hhs.gov/programs/opre/resource/the-program-managers-guide-to-evaluation-second-edition>
- Krueger, R. A. (2002). *Designing and conducting focus group interviews*. Retrieved from: <http://www.eiu.edu/~ihec/Krueger-FocusGroupInterviews.pdf>
- U.S. Department of Health and Human Services, Health Information Privacy: <http://www.hhs.gov/hipaa/index.html>

Appendix A. Data Storage Example

Below is an example of a Microsoft® Excel database that could be used to organize data entry for a resiliency training program, including data about participants, the date of presentation and the staff member who delivered it, outcome data from learning assessments (five-item pre- and post-event learning assessments), satisfaction ratings (out of 5) and open-ended comments.

	A	B	C	D	E	F	G	H	I	J	K	L
1	ParticipantID	ServiceBranch	DutyStatus	Rank	Sex	Age	PresentationDate	Presenter	Pre Test	PostTest	Satisfaction	Comments
2	1	Air Force	Active	E3	Female	21	3-Apr-14	Johnson	3	4	4	[None]
3	2	Air Force	Active	O4	Female	32	3-Apr-14	Johnson	4	5	5	Informative presentation
4	3	Navy	Active	E8	Male	46	3-Apr-14	Johnson	2	4	4	Would like more examples
5	4	Marine	Reserve	O2	Male	25	3-Apr-14	Johnson	3	4	3	Boring but useful
6	5	Marine	Active	E5	Male	23	3-Apr-14	Johnson	4	4	4	Good work
7	6	Air Force	Reserve	E4	Female	27	3-Apr-14	Johnson	1	3	4	[None]
8	7	Army	Guard	E6	Male	24	3-Apr-14	Johnson	3	5	5	Very applicable
9	8	Marine	Active	W1	Male	23	3-Apr-14	Johnson	4	5	5	Great!
10	9	Air Force	Active	E8	Female	36	3-Apr-14	Johnson	2	3	2	Difficult material
11	10	Air Force	Reserve	E9	Male	39	3-Apr-14	Johnson	5	5	4	[None]
12	11	Marine	Active	O5	Male	56	7-Nov-14	Smith	3	4	4	Accessible and useful
13	12	Army	Guard	E3	Male	35	7-Nov-14	Smith	4	5	5	Excellent!
14	13	Army	Reserve	O3	Male	48	7-Nov-14	Smith	4	4	3	Need more resources
15	14	Army	Active	W4	Male	45	7-Nov-14	Smith	3	3	1	Not at all engaging
16	15	Marine	Active	W3	Female	36	7-Nov-14	Smith	3	4	4	[None]
17	16	Navy	Active	E4	Female	25	7-Nov-14	Smith	4	5	5	Enjoyable-will tell others
18	17	Army	Active	O3	Male	28	7-Nov-14	Smith	2	4	5	Fantastic content
19	18	Navy	Reserve	E8	Female	50	7-Nov-14	Smith	1	3	3	[None]
20	19	Navy	Active	O2	Male	29	7-Nov-14	Smith	4	5	5	[None]
21	20	Air Force	Guard	O1	Male	24	7-Nov-14	Smith	5	5	4	Good but needs examples

Template A. Data Storage

Below is a blank example for how a Microsoft® Excel database entry could be organized for a program, based on the example presented above. Modify this template to your own program's specifications using available software (e.g., Microsoft® Excel or Access, IBM's® Statistical Package for the Social Sciences).

	A	B	C	D	E	F	G	H	I	J	K	L
1	ParticipantID	ServiceBranch	DutyStatus	Rank	Sex	Age	PresentationDate	Presenter	PreTest	PostTest	Satisfaction	Comments
2	1											
3	2											
4	3											
5	4											
6	5											
7	6											
8	7											
9	8											
10	9											
11	10											
12	11											
13	12											
14	13											
15	14											
16	15											
17	16											
18	17											
19	18											
20	19											
21	20											