

APPENDIX C: DATA COLLECTION PLANNING AND IMPLEMENTATION ISSUES

Introduction

Appendix C is intended to help organizations become more informed consumers of survey- and records-based data collection. It is meant mainly for providers who have not yet collected information on their DCWs using a questionnaire or records-based data. However, it may also be valuable for providers who have been collecting data (either themselves or working with researchers) to enhance their data collection efforts or understanding of these activities.

As noted previously, this Guide is not a “how to” manual that will enable organizations to conduct a data collection effort from start to finish. Organizations may opt to partner with a reputable researcher (consultant, in-house if organizations have such services, or university-based) and/or data collection vendor to collaborate in data collection, analysis, and use of the data to inform workforce improvement efforts. Working with a third party viewed as independent and impartial can also help convey to employees that it is safe to provide honest answers to survey questions.

Having a better understanding of standardized measurement approaches can help organizations collaborate more productively with researchers¹ they work with in data collection efforts. Appendix C provides an introduction to a variety of issues that organizations and the researcher(s) will need to decide as they plan their work. A number of issues in this chapter are relevant to both questionnaires and records-based data collection. Where there are differences (e.g., particularly in how data are collected), some differences are highlighted.

Issues to Consider in Planning the Data Collection Effort

Specify the purpose for the data collection effort

As noted in Chapter 2, data collection can be a useful tool to help organizations address a variety of workforce-related purposes and problems. Focusing on the key purpose for doing data collection and a short list of the problems or questions organizations want to address with the data will become invaluable to the team as it moves forward in its efforts. Since everyone works in an environment of limited resources, organizations will likely find that they need to make numerous trade-offs as they plan for and collect data. Having developed a clear sense of the key problem/purpose and short set of questions to answer will enable organizations to make these trade-offs more easily because they

¹ The terms “researchers” and “data collection vendors” are used throughout this chapter because it is assumed that most providers will work with such partners in their data collection and use efforts.

will have set the boundaries for what they will (and will not) do. At a minimum, the key purpose and questions will drive what topics organizations measure and what measures they include.

Answering these questions will help organizations to specify their main purpose for the data collection effort:

- Why are you collecting the information?
- What do you want to learn from the information collected?
- How do you intend to use the information you gain?
- Who are the intended audiences for the results?
- What changes, if any, do you hope to bring about as a result of what you learn?

Answering these questions should help organizations be able to focus on key goals for the effort. Examples of possible goals include:

- To help the organization's management team understand how employees feel about their jobs and about the organization.
- To help the organization's management team see areas where employees may not be satisfied or areas where employees are having problems with the work environment.
- To help the organization's management team see how well a new workplace initiative is doing in improving employees' work experiences and retention.
- To enable HR staff to share information with the employees on a regular basis about employee satisfaction and work experiences.
- To help potential residents/clients and their families see how well the organization does at keeping employees, as a measure of the positive environment it supports.
- To help potential workers see how well the organization does at keeping employees, as a measure of the positive work environment it supports.

Specify the target population for data collection

As noted in Chapter 1, this Guide focuses on DCWs in a variety of settings, including nursing assistants (NAs, CNAs), home health and home care aides, personal care workers and personal care attendants. In many cases, the target population for questionnaires or records-based data collection is an entire group of CNAs, for example.

However, there may be times, depending on an organization's purpose, when it may want to focus on a subset of DCWs. For instance, if an organization wants to see how well a new peer mentoring program is doing in helping keep new CNAs longer, the target population would be new CNAs, rather than all CNAs employed. Organizations may want to track retention rates among the new CNAs. Another target population of interest may be the experienced CNAs who were mentors, and organizations may want to track their retention before and after the program started as well.

Within an organization's target population, it may want to be able to compare between subgroups of workers. For example, it may want to understand whether younger workers differ from older workers in their satisfaction and commitment, or whether workers on different units or at different locations differ in their responses. Organizations will need to see whether they have enough workers in each subgroup to make meaningful comparisons between them. Determining the minimum number of people needed to make appropriate comparisons (while ensuring confidentiality) depends on a number of factors, including the measures used, how big a difference an organization expects there to be between groups, how confident organizations want to be that they will see a subgroup difference in the results if it really exists and having a large enough number of workers to ensure confidentiality. A researcher well-trained in statistics and survey design may help organizations make these decisions.

Once organizations define a target population for data collection, it is important to try to ensure that results that are representative of the larger target population. For example, if the population for a worker questionnaire is all CNAs, then when it is administered in an organization, CNAs on all shifts should know about the questionnaire and the importance of completing it.

Determine project team, budget, and schedule

A data collection effort usually requires a team effort, at a minimum including representatives from the provider organization and persons with research skills to design, implement, and analyze the results. As an organization plans for the data collection effort, it should determine what is available, including staff resources with relevant expertise, financial resources to conduct the data collection, and time to complete the work. All three types of resources may determine what can realistically be done in the data collection effort.

Designing and managing a data collection effort is not simple. To ensure that data collection efforts run smoothly and that organizations are able to handle unexpected problems, it is important to establish a project management strategy early in the effort. This strategy might include specifying what needs to be done, who needs to do it (assignments), and the timing of each task/step. It is also important to address how team members will communicate, clarify expectations for costs and timing, and, perhaps, opt to develop a good working relationship with a researcher and/or data collection vendor.

Two key parts of an effective data collection effort are a clear budget and a realistic schedule. Both will evolve as organizations go beyond the planning phase into the implementation phase. However, keeping the budget and schedule in mind as organizations develop their data collection design may help ensure that plans are feasible within the time and resources organizations have. One way to begin may be to list out the key set of activities involved; each set of activities has budget and schedule implications. Organizations might start with a budget and schedule that they would

ideally like to carry out and then adjust as needed. They may also include a cushion for unanticipated costs and build in some time for activities that might take longer than expected.

For budgeting and scheduling purposes, organizations may consider grouping activities into these categories:²

- Project planning and coordination
- Consulting with researcher(s)/data collection and analysis vendors
- Instrument design and pretesting
- Developing list of workers on whom to collect information
- Determining strategies to increase awareness about upcoming survey
- Data collection (typically conducted through researcher/vendor)
- Data preparation and analysis (typically conducted through researcher/vendor)
- Dissemination of results to key audiences, including employees
- Developing and implementing ways to use the results to inform workforce improvements (this step contains multiple activities whose cost and budget will depend on what is done)

Examples of the variety of design decisions that will affect schedule and budget include: how many workers organizations will collect information for; how large the audience is for receiving the results; and, whether there is in-house expertise (in-kind contribution) that may be able to conduct some activities versus having to hire a researcher/vendor. If organizations will conduct a survey, additional considerations might include: whether questionnaires will be collected by mail, telephone, or in-person; how long the questionnaire will be; and, how much follow-up effort will be done to increase the number of responses to the questionnaire.

If organizations are collecting records-based information, an additional consideration may be how many measures are to be collected from records (which will affect how much time it will take to collect the information and how much staffing effort is needed to collect the information). Another issue that will affect budget and schedule for records-based data collection is whether records are computerized or paper only. If records are in a computer-readable form, there may be ways to create an electronic data set from the relevant information in records that can be analyzed using either a basic spreadsheet software package (e.g., Excel) or statistical package (e.g., SAS, SPSS). Organizations may choose to talk with their research partner about these issues, preferably someone who has some experience working with records-based information.

² This section on budgeting and scheduling is excerpted from “Chapter 2: Preparing for a CAHPS® Health Plan Survey,” from the *CAHPS Survey and Reporting Kit 2.0*, developed by Westat, Rockville, MD.

Decide whether to include all members of the population or a sample

When collecting data through a survey or records collection, organizations may either collect it from all members of the target population (a census) or from a systematically chosen sample drawn from the full population. Either way, organizations will work with a list of eligible target population members, often called a “frame.” When generating a frame, it is important to review it carefully to ensure that the frame is inclusive of all employees who meet an organization’s definition of eligible members of the target population while excluding those (e.g., agency staff) who may not meet the definition. It is also important to avoid duplication of the same employee (which can happen if an employee leaves and returns and employment records system counts these changes as two separate records).

Many data collection efforts used today employ a sample because the full population is too large to pursue given the resources available. However, with an employee survey, there may be a real benefit in giving every employee a chance to be heard. Conducting a census conveys an important message to staff -- no one should feel like their employer does not care what they think because they were not surveyed. This is especially true if organizations conduct a periodic staff survey (e.g., yearly), report the results back to staff, and use the results to inform management and work environment changes.

Another benefit of using a census rather than a sample is that organizations do not need to be concerned about “sampling error,” a type of error that occurs because the sample drawn does not accurately reflect the target population. There are various types of error that can occur in the process of going from framing the purpose and questions to developing the instrument to developing the frame to drawing the sample to collecting the data to analyzing the data. An “error” in data collection is anything that lessens the ability of a data collection effort to provide an accurate reflection of the population on the measures of interest.

If organizations use a sample, it is important not to use a “convenience” sample, for example giving an employee questionnaire only to those workers on a certain shift or those who happen to be around on a certain day. Organizations can never know whether the findings from a convenience sample represent the larger employee population or not. In contrast, a systematic random sample that gives each member of the population an equal chance of being included in the sample enables organizations to draw a sample that is representative of the target population.³

Not having to be concerned with sampling error as one form of error is helpful. However, organizations still need to be concerned about error introduced because the workers who complete the questionnaire are somehow different from the workers who do not. That is why, regardless of whether a sample or census is used, it is critical that

³ For more information on sampling, Chapter 2 of *Survey Research Methods*, 2nd edition, by Floyd J. Fowler, Jr. (Sage Publications, Newbury Park, CA; 1993), provides a good overview of a variety of sampling issues and the relationship between sample size and the precision of results.

management emphasizes the importance of completing the questionnaire and that every effort is made to facilitate workers completing the questionnaire. This will be addressed further in the section below on “For a questionnaire, decide how it will be administered and set the response rate goal.”

If organizations have records-based data collection using paper rather than computer records, error can be introduced if the staff collecting relevant information from the records (called “records abstraction”) do not do so consistently. Training is an important step for this process.

If organizations have 300 or fewer DCWs in their target population, they might consider using a census. However, if there are more than 300 employees in the frame, organizations may consider using a sample. Organizations may choose to talk with a research partner about the comparative benefits of a sample versus a census and which better fits their situation.

Issues to Consider in Designing the Data Collection Instrument

Decide the topics, subscales, and/or formulas on which to collect information

There are 34 instruments covering 12 topics in this Guide. Nine of these instruments measure four worker outcomes topics based on records-based data collection (i.e., using data organizations may already collect). Twenty-five of these instruments measure eight job characteristics or organizational characteristics topics based on worker questionnaire-based data collection (i.e., requiring new data collection). Given constraints on budget, staffing, and time, and the need to minimize burden on employee respondents to a questionnaire, organizations are unlikely to measure all of these topics.

Using an organization’s purpose and key questions or problems to steer them, they may review the topics in Chapter 3 of this Guide with an eye toward which are most relevant to addressing the organization’s specific needs for this data collection effort. Once organizations have narrowed down the topics to a subset, they might look at the instruments and measures (subscales or formulas) in selected topics to see which are most relevant to address information needs. Using a team approach can be very valuable in this narrowing down process, since the different perspectives can help clarify core needs and which topics and measures are most appropriate. Especially when creating a questionnaire, it is not uncommon for a team to develop an initial list of measures then realize it needs to be shortened because the questionnaire is too long (burdensome) to ensure that workers will complete it.

For a questionnaire, decide how it will be administered and set the response rate goal

A questionnaire of workers can be administered in a variety of ways (or “modes of data collection”), including self-administered (by mail or in a small group setting), by telephone, in-person, or on-line via the Internet. Organizations may use one mode or multiple modes. For example, it is a common approach when using a mail questionnaire to follow-up with telephone interviews with non-responders, to increase the percentage of people completing the questionnaire (the “response rate”). The choice of mode to use depends on a number of factors including schedule, budget, the reading level and complexity of the questionnaire, and employees’ reading and writing skills. There are numerous differences among the modes, but these are some key ones organizations might consider:⁴

Mail mode tends to take longer to complete than telephone, on-line, or group administration modes. In-person (one-on-one) interviews can tend to take longer than telephone, on-line, or group administration, depending on staffing available to conduct the interviews.

- In-person interviewing tends to cost more than the other modes, followed by telephone, mail, and on-line approaches.
- If organizations have workers for whom English is a second language or have concerns about their ability to understand and complete a questionnaire, in-person interviewing or telephone interviewing enables the interviewer to help clarify questions (placing less burden on the worker’s reading and writing skills). However, it is important that interviewers convey the questions as intended, so as to minimize error introduced because of interviewer behavior.
- In-person and group administration modes tend to get higher response rates, followed by telephone, mail, and on-line approaches.
- Workers may feel more obliged to give more positive responses (called “socially desirable” responses) when they are talking with someone, as occurs in interviewer-administered modes of telephone and in-person data collection.

The questionnaire items in Chapter 3 can be used in a self-administered format, where a worker completes the questionnaire on her own. These questionnaire items generally tend to be simple and straightforward with a readability level that is generally within range for someone who has completed high school. Organizations may find different results with their employees. That is one of the reasons why it is important to pretest a questionnaire before administering it to employees larger scale. Workers are the best experts to let organizations know if the questionnaire is understandable or not, as well as in what mode(s) they would prefer to complete the questionnaire.

⁴ Chapter 4 (pages 64 – 67) of *Survey Research Methods*, 2nd edition, by Floyd J. Fowler, Jr. (Sage Publications, Newbury Park, CA; 1993), provides a nice summary comparison of the potential advantages and disadvantages of in-person interviewing, telephone interviewing, mail questionnaires, and group administration.

Another administration issue to consider is whether the survey will be anonymous. That is, workers will not put their names on the questionnaire and there will be no way to link a person's answers with her/him. Some employers do this with their periodic surveys, so that instead of tracking change over time in individual workers, they track change among their workers in general.

One administration approach to consider, especially if the questionnaire will be administered anonymously at a facility, is to administer the questionnaire in a common area over a day or a couple of days. Each worker gets a questionnaire when they get in (across all shifts), they complete the questionnaire at a pre-appointed time in a common area, and then place the questionnaire in a locked box or mail bag (so it does not go to another employee). Providing light refreshments might make the experience more inviting. Employers using this approach tend to have high response rates (nearly 100%), with non-response usually due to absenteeism or scheduling (out sick, days off). One issue to consider in using this approach is whether, even if done anonymously, employees will feel comfortable being completely honest in their responses if required to complete the questionnaire at work in a group setting. Having the locked box or other neutral repository for returning the completed questionnaire might help address this concern.

Response rate is a concern for a well-designed survey because it can affect how representative findings are of a target population. The response rate for a survey is the total number of completed questionnaires (or interviews) divided by the total number of respondents who were selected to be surveyed. The more people who respond from among those whom are surveyed, the more representative findings will be. The more representative the findings, the more confidence organizations may have in using them to inform workforce initiatives.

There are steps organizations can take to help improve response rate. For example, if organizations use mail to administer a questionnaire, here are some steps they may opt to take that have been found to help increase response rates:

- sending an advance letter (this can also work well with a telephone survey)
- following up with a postcard reminder about a week after sending the questionnaire
- sending a second questionnaire packet to non-responders sometime after the initial questionnaire package
- having telephone follow-up to non-responders.

These additional actions obviously have associated costs, so it is important to be clear about the trade-offs being made between cost and response rate. For an employer survey, announcing that the survey is being conducting and having the management team convey the importance of completing the survey can help increase response rate.

Organizations may decide to talk with a research partner about the trade-offs of different modes, realistic and acceptable response rates for their purposes, how they calculate

response rate, and what data collection and response rate enhancement approach(es) make most sense for their needs.

Design and pretest the questionnaire

Chapter 3 includes 25 instruments across 8 topics that look at DCW job and organizational characteristics. These instruments contain question wording for many separate subscales among which organizations can choose to include in their own worker questionnaire. While they may choose to use an entire instrument that measures one main topic, organizations need not do so. Organizations might want to review the instruments within the topics they chose earlier (see “Decide the topics, subscales, and/or formulas on which to collect information”) and carefully select those subscales that they believe best meet their needs.

Organizations may need to balance their desire to measure a variety of topics with the need to create a questionnaire short enough to be completed by respondents. It is important to include all items in a subscale because the findings on the properties of the instruments reported in this Guide are based on the entire subscales (not individual items within each subscale). If organizations choose to take only some items from a subscale, the properties reported in this Guide (e.g., reading level, reliability, validity) do not apply to the individual items.

Once organizations have chosen subscales, they will need to decide in what order to include them in the questionnaire. Because many of the instruments included in Chapter 3 were simply item wording and response scale wording (rather than a complete ready-to-administer questionnaire), organizations may wish to work with a research partner to ensure that the questionnaire has the following elements:

- an appropriate, brief introduction that is meaningful and understandable to workers and explains how to complete the questionnaire (if self-administered)
- transitional text, as needed, to lead from one section of the questionnaire to others
- correct and understandable skip instructions,⁵ if not all respondents are intended to answer all questions
- appropriate formatting of question wording and response scale wording
- correct sequential numbering of questions
- a brief yet compelling cover letter (if self-administered) or interviewer script (if in-person or telephone) conveying the importance of completing the survey and

⁵ Skip instructions are directions used in self-administered questionnaires to direct respondents where to go next in the questionnaire. Skip instructions are used when, based on a particular response, not all respondents should go to a subsequent set of questions. For example, say one has a questionnaire for DCWs and they want to ask workers who have been with them for at least three months the main reason why they have stayed while they do not ask that of workers who have been with them less than three months. Those DCWs who answer question #1 about how long they have been with them by choosing “less than 3 months” should follow the direction (usually written to the right of the response category) to “GO TO QUESTION 3” because they should not answer question 2 asking why they have stayed this long. Part of data cleaning is to determine whether a respondent should have skipped but did not or should not have skipped but did, and correct for this in the data where possible.

how its results will benefit workers (having the letter come from the CEO/Director or person who is most influential to workers can be beneficial). (Examples of cover letters used by others and other resources for employees considering using survey questionnaires can be found in Appendix D.)

All of the questionnaire items in the Guide are in English only. If organizations will need to translate their questionnaire into another language, they might consider using professional translators who are native speakers of that language. Organizations should make sure that the translation is both culturally and linguistically relevant as well as a true and accurate translation of the English questionnaire. Organizations may ask translators to produce colloquial translations that will be understood by the general public. At the same time, the meaning of the translated questions should be the same as that of the English questions. After the questionnaire has been translated, it is recommended that organizations back-translate it into English. The back-translation is a control mechanism that allows organizations to judge if the translated version is true to the original English questionnaire. One source for professional translation is the American Translation Association directory, which can help organizations identify a translator in their city or county.

Producing culturally and linguistically appropriate research instruments should be viewed as a process. Ensuring an adequate translation is only the first step. Ideally, the translated instrument should be subject to testing to analyze the reliability, validity, and equivalence of the instrument in measuring workers' perceptions.⁶ However, such extensive testing is not always possible. Even if organizations cannot conduct testing to examine the reliability and validity of their translated instrument, pretesting the instrument with some workers who speak the language will provide helpful information on how they interpret the questions and whether the translated version of questions has the same meaning as the original English version. Organizations may choose to talk with a research partner about translation issues and how they recommend to proceed, if a questionnaire needs to be translated for workers.

While pretesting requires additional time and resources to conduct, it need not be cumbersome and can provide tremendous benefits in creating a questionnaire that is understandable and likely to be completed by workers. Pretesting is one of the least expensive ways to reduce error in measurement and results.⁷ If time is short, organizations can conduct 1 or 2 small focus groups (ideally 6 - 8 workers, but less is okay if that is what is available) with workers. It is better to conduct a couple of small rounds with questionnaire improvements between rounds than one larger round without being able to test changes. Organizations may have workers complete the questionnaire first and then discuss their experiences. They might focus on finding out what workers thought about the questionnaire, what they thought of specific questions,

⁶ This section on questionnaire translation into other languages is excerpted from "Article 6: Guidelines for Translating CAHPS[®] into Other Languages," from the *CAHPS Survey and Reporting Kit 2.0*, developed by Westat, Rockville, MD. If you have any questions about this section, please contact their SUN Help Line at 800-492-9261 or via e-mail at cahps1@westat.com.

⁷ *Survey Research Methods*, 2nd edition, by Floyd J. Fowler, Jr. (Sage Publications, Newbury Park, CA; 1993).

any comments they had about particular questions or words used, the appropriateness of the response scales used for questions, and any thoughts they have on how best to administer the questionnaire.

If organizations have more time, they might consider conducting some one-on-one pretest interviews (sometimes called “cognitive testing”). A one-on-one interview allows organizations to probe on each question and get some more in-depth information on how well individual items are interpreted by workers. When possible, organizations might try to pretest using the mode in which they plan to administer the questionnaire during the full-scale data collection.

For records-based data collection, determine what information organizations need to include in their data set and how it will be obtained

The benefit of using records organizations already maintain (or have another entity maintain, for example as some providers do with payroll records) is that organizations will not have to spend resources on new data collection. However, organizations need to keep in mind that the records are kept to meet a purpose other than their own. Therefore, the information organizations need from the records may not appear in exactly the form needed. In addition, records can contain a good deal of missing information. It is important to understand how good the data in records are for the information organizations need and to think through (perhaps with a research partner, records vendor, and/or data collection vendor) how to get the information needed from the records.

Obtaining the appropriate information from records will be easier if the records are computerized. If they are only available in print form, then staff will need to review the print records and transfer the needed information from the records into a form (often called an “abstraction form”) that can then be used to enter the information into a computerized data set. For both print and computerized records, an important step is to learn which type of information that is needed for the employees is available in the records. For example, for measures of retention and turnover, organizations will want to know the start date for every employee, the type of position they hold (e.g., CNA, LPN, RN), and their status (part-time, full-time).

Teams from the organization will also need to decide what reference period will be used for measuring work outcomes topics. Measures of turnover, retention, vacancies, and illnesses/injuries are all defined in terms of a specific time frame. Such measures often use the calendar as a starting point, but that not need be the case, as long as a consistent reference period is used. For example, if comparing turnover from 2001 to turnover in 2002, organizations will want to use the same 12 month period for each year.

Other issues for organizations to talk about when using records-based data that have been collected for another purpose (e.g., payroll, human resources) include:

- how to handle DCWs who quit and are rehired during your reference period
- how to handle temporary staff
- how to handle staff on a leave of absence
- ensuring that staff who get married and change names are still considered the same person in the records
- deciding how to handle cases (which can often occur in home care) where aides may declare a leave of absence but then never return to work
- deciding to handle situations where home care aides can refuse work for several weeks or pay periods without actually resigning.

Issues to Consider in Collecting Data

Monitor data collection

For the purposes of this Guide, it is assumed that someone other than organizational teams will be collecting the questionnaires and/or the data from records (i.e., the researcher or data collection vendor). In this case, organizations will want to monitor the progress of the vendor. The following tools are especially helpful if the data collection will take place over an extended period (such as with a mail, in-person interview, or telephone survey). This approach is generally used for questionnaire data collection but may also be applied to records-based data collection. These tools can help organizations oversee the monitoring process:

- a project timeline from the vendor that organizations can monitor for adherence to ensure the data collection is proceeding on time
- weekly data collection reports from the vendor (number of completions, including by key subgroups of workers if any, e.g., mentors versus mentees)
- if the data collection runs for over a month, monthly progress reports, which include status of data collection, a cost report to date, and a report of any deviation from the project's response rate goals
- weekly conference calls with the team and the vendor/researcher to discuss the project's status, next steps, problems, and plans to resolve them. This will help keep organizations updated and bring early attention to any potential problems.

Maintaining confidentiality

Just as it is important to protect the private information of residents/clients, it is vital to ensure that individual employees' survey answers do not get linked to their names or work records. Organizations should let employees know that they will protect their confidentiality and that what they say in the survey will never be used against them at work. Clearly explaining how organizations will keep their answers confidential may help increase their likelihood of giving honest responses. Organizations may opt to talk

with a research partner/vendor to determine how this will be accomplished for the data collection effort.

Issues to Consider in Data Preparation, Analysis, and Use

Identify ineligible questionnaires, code, clean, and enter collected data

If using a data collection vendor or research partner, they will need to conduct several steps to prepare the data received from completed questionnaires from worker surveys or abstraction forms from records-based data collection. These steps include identifying and excluding ineligible cases, coding, data entry, data cleaning (e.g., check for out-of-range values, check for skip pattern problems), and handling missing data. Organizations may talk with a vendor/research partner about all of these steps, how they will handle them given the choice of data collection mode or source of records-based data (i.e., computerized versus print records), and what questions organizations may have about them.

Analyze data and present findings

Questionnaires

All questionnaire items in Chapter 3 that measure DCW job characteristics use a type of response scale called a “Likert scale.”⁸ The Likert scale is the most common form of an intensity question, where a respondent is asked to rate a concept, event, experience, or situation on a single dimension of quantity or intensity ranging from less to more. Here are examples of the Likert response scales used among the questionnaire items in Chapter 3:

- strongly disagree to strongly agree
- extremely concerned to not at all concerned
- no knowledge to know a lot
- none to a lot
- no confidence to complete confidence
- rarely to very often
- not at all true to extremely true
- very little to very much.

The Likert scales used in these instruments have either five, seven, or 11 points in their response scale. For example, the Role Overload Scale from the Michigan

⁸ The Nursing Home Adaptation of the Competing Values Framework (CVF) Organizational Culture Assessment, an instrument in Chapter 3 that measures organizational culture, does not use a Likert scale and is not analyzed in the same way as the other instruments. Respondents assign a total of 100 points among four types of nursing homes in each of six sets of questions. The summary chart for this instrument in Chapter 3 describes how the results are to be analyzed.

Organizational Assessment Questionnaire (MOAQ) (to measure workload) uses a 7-point Likert response scale, where strongly disagree is assigned a “1” and strongly agree is assigned a “7.” Each of the five points in between has its own label.

All subscales in Chapter 3 that measure DCW job characteristics are created in one of two ways -- taking either an **average** or a **sum** of the scores of everyone on the items in the subscale. Appendix A provides simple scenarios that provide examples of how to score results from employee surveys. One example includes a single topic questionnaire and the other shows how to score across different subscales.

When using different subscales, it may be sufficient to only look at how workers score on each of the subscales of interest. However, organizations may also want to look at whether there is a relationship between measures. For example, do empowered workers show greater commitment? There are a number of ways that this can be examined, depending on the skills and resources of the team member(s) doing the analysis. For example, with Likert response scales organizations can look at a measure of association statistic such as a correlation.

The “Pearson product-moment correlation” (or “Pearson’s R”) is the most commonly used measure of correlation. It ranges from -1.0 (strong negative relationship where the value of one measure goes up as the other goes down) to + 1.0 (strong positive relationship where the value of one measure goes up as the other goes up). A correlation of .55 indicates a stronger relationship than a correlation of .25. A value of 0 means that there is no relationship between the two measures. In the example given, this would mean that an employee’s sense of empowerment has no relationship to their sense of commitment to their employer. Organizations may choose to talk with a research partner about which statistics would be appropriate to analyze results.

If organizations have subgroups of interest (e.g., new workers and experienced workers, different units of a facility, different facilities within a multi-facility provider), it may be valuable to compare their scores on selected measures to see the extent to which there are differences.

Records

Just as worker questionnaires are used to collect information at the worker level, so records-based information can be collected at the worker level. In both cases, information at the worker level can be examined at the organizational level (i.e., “aggregated”). For example, organizations can find out from employee records when each DCW started with the organization. This can be used to develop a measure that shows how long each employee has been with the organization as of a certain date. Organizations can then average (summarize across) DCWs to find out what percentage of workers in the organization have been with them less than three months as of a certain date. Alternatively, organizations can see what the average length of time is for DCWs in them. This can be helpful if organizations decide that one of their goals is to increase the average length of employment among DCWs (as a measure of retention).

An advantage of obtaining both survey results and records-based information at the individual worker level is that both types of data can be included in the same data set. That way, organizations can look at the relationship between records-based and survey-based measures (e.g., empowerment and turnover).

The analysis discussion above for questionnaires applies also for analyzing records-based data. Organizations may decide to talk with a research partner about which statistics would be appropriate to analyze results.

Most of the results organizations report to their team (both survey- and records-based) will likely be in the form of frequencies and percentages, arranged by measure or subscale. If organizations are using data collection as a tool to benchmark performance or to evaluate a particular initiative, it can be helpful to display this information over time in the form of bar or line graphs. Organizations may opt to consult with their team on the best way to present the findings in a way that is easy for the audience(s) to understand and use for decision making. Organizations may also include a brief methods section describing any issues the team should be aware of on how the data were collected, prepared, or analyzed.

Decide how to use the data to answer questions and next steps

Return to the organization's key purpose, goals, and problem/questions. As a team, organizations may think about how the results can help answer questions or begin to develop an action plan to address the problem. If organizations are benchmarking, they may look at the direction of the measures -- are they improving, maintaining the course, or is it time to take some action (and what will that be)? If they are trying to understand what DCWs think about their jobs, their supervisors, and/or their employer, what have organizations found? Is there room for improvement? Do the findings suggest that there are particular aspects of the workplace or jobs that could be targeted for change? What type of change might be needed?

If organizations are evaluating the effect of a new way of doing things to improve the workplace, how well did it do? Did it result in improvements in the outcomes they selected to measure (e.g., reduced turnover, increased retention) or workers' perceptions of their jobs that they surveyed (e.g., empowerment, satisfaction, commitment)? If so, organizations should gain greater confidence that the initiative they are pursuing is worthwhile and worth investing in (or worth repeating in other locations). If not or, if often occurs, the results are mixed, organizations might see if can figure out what happened.⁹ Are there aspects that should be tweaked or is this initiative just not worth pursuing further?

⁹ Using focus groups or in-depth interviews with staff may help shed light on how an initiative was implemented. This qualitative information can be a good complement to the quantitative findings from surveys or records-based data.

While the data cannot tell organizations what steps to take in response to the findings, data collection is a valuable tool in helping them see where they are and how they are doing along their path toward workforce improvement in the organization.

MEASURING LONG-TERM CARE WORK: A Guide to Selected Instruments to Examine Direct Care Worker Experiences and Outcome

PDF Files Available for This Report

Cover, Table of Contents, Acknowledgments and Executive Summary

<http://aspe.hhs.gov/daltcp/reports/dcwguide.pdf>

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CHAPTER 2: How This Guide Can Help Organizations Use Information to Address the Challenges of Job Retention and Performance Among DCWs

<http://aspe.hhs.gov/daltcp/reports/dcwguide2.pdf>

CHAPTER 3: Ready to Use Instruments <http://aspe.hhs.gov/daltcp/reports/dcwguide3.pdf>

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