



WISEWOMAN™

Well-integrated Screening and Evaluation
for Women Across the Nation

Evaluation Toolkit

Section 3: Data Analysis and Reporting

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Step 5. Justify Conclusions



RECAP:

At this point in the evaluation, you have accomplished the following:

- Identified and engaged a group of evaluation stakeholders
- Created a foundation for communication with stakeholders
- Set initial expectations for stakeholder involvement during the evaluation
- Developed a tailored logic model for your program
- Drafted a program narrative
- Defined the purpose of your evaluation and identified process and outcome evaluation questions
- Identified appropriate data collection methods and data sources
- Compiled a comprehensive evaluation plan
- Implemented procedures for data collection and management

In this step, you will accomplish the following:

- Refine and specify the data analysis plan.
- Prepare data for analysis.
- Analyze your evaluation data.
- Work with your evaluation stakeholders to interpret the evaluation findings.
- Justify the conclusions you draw from your evaluation findings.

Prior to this step, you have developed some resources and had discussions with your evaluation stakeholders that will be useful now. In this section of the toolkit, you will find resources to help you execute this step of the evaluation.

Data Analysis

Data analysis involves organizing, tabulating, and examining the information you collected and presenting the results so they can be easily understood by your stakeholders.¹⁰ The goal is to turn the data collected into meaningful, useful, and accessible information for action.³

Helpful Resources

- Evaluation methods matrix (Step 3)
- Dissemination plan (Step 3)
- Quantitative codebook (Step 4)
- Qualitative codebook (Step 4)

As you developed your evaluation plan, you should have given some thought to developing an overarching preliminary analysis plan (Step 3). You may have had to modify your data collection procedures or cut back on some data collection activities due to budget challenges. This is not uncommon. Now that you have collected your evaluation data and managed it to facilitate data analysis, it is time to revisit the preliminary analysis plan to refine and further develop your evaluation plan.

As you review your preliminary analysis plans, consider the following steps¹⁰:

- Determine the type of data analysis you will conduct for each indicator to best answer your evaluation questions.
- Determine whether quantitative or qualitative data analysis needs to be conducted. See below for more information on quantitative versus qualitative data analysis.

Preparing for Data Analysis

It is important that you assign the person(s) responsible for data analysis as well as the timing of analysis to help ensure that you complete your evaluation efficiently and in a timely manner.

- Determine the timeframe in which each data analysis component will occur.
- Assign person(s) responsible for each component of data analysis (e.g., storage, retrieval, coding).

You may wish to note this in a separate work plan. You can also modify your evaluation methods matrix to incorporate this information, as shown in Exhibit 1.

Exhibit 1. Evaluation Plan Matrix (modified)

Evaluation Question	Indicators	Data Sources	Methods	Timing, Duration, and Frequency of Data Collection	Analyses	Person(s) Responsible	Timing (month/quarter) for Analysis

Prior to data analysis, you will need to organize your data for analysis. In Section 2 Step 4 we discussed developing quantitative and qualitative codebooks. Now is a good time to revisit those codebooks to modify them based on changes that may have occurred during pilot testing

Reminder

Keep in mind that this evaluation toolkit is intended to serve as a general resource for Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN) programs. If you have more specific questions, consult with your CDC Project Officer and Evaluation Specialist.

or data collection. These codebooks will help you organize your data for analysis. It is important to build in sufficient time and resources to prepare the evaluation data for analysis, interpretation, feedback, and conclusions.^{3,5} Consider the steps in Exhibit 2 to prepare your evaluation data for analysis.¹⁰

Exhibit 2. Preparing Data for Analysis

Steps to Prepare Data	Quantitative Data	Qualitative Data
1. Transfer or transcribe the data.	For quantitative data, you may want to transfer the data to a new document (e.g., answer sheet) to make it easier to enter the information into a database.	For qualitative data, you will need to transcribe focus group discussions or field notes into a form that you can use (i.e., Microsoft Word).
2. Code the data, if necessary (see Step 4 for more information).	With quantitative data, you should code the information so it can be entered into a database. You may need to revise the codebook to increase the accuracy of coding.	With qualitative data, you will apply the codes you developed to the segments of text that align with your theme(s) of interest. You may need to revise the codebook to increase the accuracy of coding.
3. Use computer software to assist with data analysis.	Quantitative data entry and analysis can be done using <ul style="list-style-type: none"> • Microsoft Excel or Access (http://office.microsoft.com/en-us/support/getting-started-with-office-2013-FX102809998.aspx) • SPSS (www-01.ibm.com/software/analytics/spss) • SAS (www.sas.com/technologies/analytics/statistics) • Stata (www.stata.com). 	Qualitative data can be organized using Microsoft Word, while data analysis can be conducted using <ul style="list-style-type: none"> • ATLAS.ti (www.atlasti.com/index.html) or • MAXQDA (www.maxqda.com) or <ul style="list-style-type: none"> • CDC EZ-Text (free) (www.cdc.gov/hiv/library/software/eztext/index.html).
4. Review the data for completeness and accuracy.	You may need to “clean” your data to ensure it is complete and ready to be analyzed. <ul style="list-style-type: none"> • Verify that the data file has the correct and expected number of participants. • Check for any errors or inconsistent responses in the file. • Regularly review the data to ensure data quality. • Check for missing data and determine how it will be handled. 	You may need to “clean” your data to ensure it is complete and ready to be analyzed. <ul style="list-style-type: none"> • Assess whether the text is legible and recordings are legible. • Assess the quality of open-ended interviews/focus groups/observations. • Have a colleague review the information you have collected for accuracy. • Regularly review the data to ensure data quality.
5. Review your data management system.	Be sure to review the analysis plan prior to implementation (consider having a colleague review it) to identify any potential problems.	Be sure to review the analysis plan prior to implementation (consider having a colleague review it) to identify any potential problems.

Example

For illustrative purposes, in Exhibit 3 we share a completed Evaluation Methods Matrix using example evaluation questions from Exhibit 4 from Step 3 in Section 1.

Exhibit 3. Example Evaluation Methods Matrix

Evaluation Questions	Indicators	Data Sources	Methods	Timing, Duration, and Frequency of Data Collection	Analyses (Preliminary)
Process Evaluation					
To what extent is the risk-reduction counseling component being implemented with fidelity among providers?	<ul style="list-style-type: none"> • Number and percentage of women screened who receive each of the core components of the risk-reduction counseling sessions both in written format and verbally <ul style="list-style-type: none"> ○ Screening results ○ Interpretation of the screening results ○ Recommendations in accordance with national clinical care guidelines 	<ul style="list-style-type: none"> • Program participants • Clinical service providers 	<ul style="list-style-type: none"> • Survey of participants • Administrative forms 	<ul style="list-style-type: none"> • Conduct survey of participants on an ongoing (rolling) basis during Program Years 2–4 • Contact participants by phone within 2 weeks of risk-reduction counseling 	<ul style="list-style-type: none"> • Descriptive statistics • Thematic analysis

Exhibit 3. Example Evaluation Methods Matrix (Continued)

Evaluation Questions	Indicators	Data Sources	Methods	Timing, Duration, and Frequency of Data Collection	Analyses (Preliminary)
Outcome Evaluation					
<p>To what extent does participation in the evidence-based lifestyle program contribute to participant outcomes related to physical activity, sodium intake, and tobacco cessation?</p>	<ul style="list-style-type: none"> • Change in self-efficacy, readiness to change, and intent to engage in 30 minutes of moderate physical activity daily between baseline (pre-lifestyle program participation), upon completing the lifestyle program, and 6 months after completing the lifestyle program • Change in self-efficacy, readiness to change, and intent to reduce consumption of fast foods between baseline, upon completing the lifestyle program, and 6 months after completing the lifestyle program • Change in self-efficacy, readiness to change, and intent to quit using tobacco between baseline, upon completing the lifestyle program, and 6 months after completing the lifestyle program • Change in number of minutes per week spent in moderate physical activity between baseline and 6 months after completing the lifestyle program • Change in the number of fast food meals consumed per week between baseline and 6 months after completing the lifestyle program • Change in tobacco use between baseline and 6 months after completing the lifestyle program 	<ul style="list-style-type: none"> • Program participants who have completed at least one lifestyle program session • Participant behavior/ readiness to change assessments 	<ul style="list-style-type: none"> • Secondary analysis of existing quantitative data • Follow-up telephone surveys with program participants 	<ul style="list-style-type: none"> • Conduct telephone surveys with program participants on an ongoing (rolling) basis during Program Years 2–4 • Contact participants within 3 weeks of completing the lifestyle program • Contact participants 6 months after completing the lifestyle program 	<p>Inferential statistics</p>

Case Study: Things Change

A number of things changed for the XYZ WISEWOMAN program since they developed their initial evaluation plan. Due to budget constraints, the XYZ WISEWOMAN program intended to conduct secondary analysis of quantitative data from data collection instruments already being used. These included the following:

- Participant readiness to change assessment (which were administered at baseline screening).
- Pretest and posttest surveys shared by the lifestyle program.

Betty S., Program Manager, negotiated with the program manager for the lifestyle program, Will W., to obtain data on the pretest and posttest surveys for WISEWOMAN participants. To do this, Will added an item to the form to allow the participant to note whether she was in the WISEWOMAN program as well as questions related to physical activity and diet. Unfortunately, the lifestyle program facilitator forgot that Will made this change, so she continued to use old copies of the pretest and posttest surveys. Fortunately, they did collect information related to self-efficacy in the participant behavior/readiness to change assessments. Unfortunately, these assessments do not include information on the number of minutes of moderate physical activity per week or fast food consumption.

Betty talked to the department epidemiologist, Nora R., about this issue. Nora shared that she could still run inferential statistics using the data from the telephone surveys and the participant behavior/ readiness to change assessments. However, they would need to look at the indicators differently. Betty revised the evaluation methods matrix based on the changes and her discussion with Nora. She then shared the modified matrix with her evaluation stakeholder group via email.

Evaluation Question	Indicators
To what extent does participation in the evidence-based lifestyle program contribute to participant outcomes related to physical activity and sodium intake?	<ul style="list-style-type: none">• Change in self-efficacy, readiness to change, and intent to engage in 30 minutes of moderate physical activity daily between baseline (pre-lifestyle program participation), upon completing the lifestyle program, and 6 months after completing the lifestyle program• Change in self-efficacy, readiness to change, and intent to reduce consumption of fast foods between baseline, upon completing the lifestyle program, and 6 months after completing the lifestyle program• Change in self-efficacy, readiness to change, and intent to quit using tobacco between baseline, upon completing the lifestyle program, and 6 months after completing the lifestyle program• Number of minutes per week spent in moderate physical activity 6 months after completing the lifestyle program• Number of fast food meals consumed 6 months after completing the lifestyle program

Quantitative Data Analysis

In this evaluation toolkit, we focus on common quantitative analyses that WISEWOMAN programs may execute in evaluating their program. There are many different types of statistical procedures that you might consider. For more information on quantitative analysis methods, please consult the Resource Guide in Section 4.

Getting to the Specifics

For descriptive statistics, your indicators as defined in the evaluation methods matrix will provide sufficient detail for you to proceed with analysis. However, for questions that require inferential statistics, you will need to outline more specific details. As you think through specific statistical tests that you may consider, it is critical that you keep your evaluation questions and indicators at the forefront. You may find that you can look at your quantitative data in multiple ways, but it is important that you keep the specific objectives of your evaluation activities in mind. This will help ensure that upon completion of the study you will be able to address your evaluation questions and produce findings that you can use.

To inform your specific analysis plan, clarify the following for each evaluation question:

- Dependent variable.
- Independent variable.
- Covariates.

Key Terms

At this point, it will be helpful to consider a few additional terms that typically are used when conducting quantitative analysis:

- **Dependent Variable.** A variable that is often synonymous with an effect or outcome. Typically, evaluators are interested in observing changes in dependent variables and determining whether a treatment or program intervention may be associated with or have had an influence on the observed change.^{15,21} For WISEWOMAN, a dependent variable could be the number of minutes of moderate physical exercise participants report at a follow-up point after completing a lifestyle program.
- **Independent Variable.** A variable that is believed to have an influence over another variable (or variables). An independent variable may be a treatment or program intervention.^{15,21} For WISEWOMAN, an independent variable could be participation in a lifestyle program.
 - In research and evaluation, independent variables often are thought to have caused an observed change in a dependent variable (see below); however, it is not possible to conclude that an independent variable caused a change in an observed dependent variable without a rigorous evaluation design that permits the evaluator to rule out other potential reasons for the observed change.²¹
 - Evaluators often are able to identify associations between independent variables and outcomes, and at times draw conclusions that highlight plausibility of potential causal influences.
- **Covariate.** A variable that may be related to the dependent variable and may account for some (or all of the) observed change in the dependent variable—beyond what may be associated with the independent variable.^{15,22}
 - For WISEWOMAN, covariates to account for in your analysis may include participant attributes (e.g., age, race, ethnicity) as well as other variables that may be related to the dependent variable (e.g., number days since participants began the lifestyle program; number of minutes of moderate physical exercise participants report engaging in at screening).

Including covariates in data analysis models helps to determine the potential influence of these other variables on your dependent variable and may improve your ability to determine the potential influence of your independent variable on your dependent variable.^{15,22}

The next series of tables will walk you through examples of how you might approach quantitative analysis for inferential statistics. The first example presents a basic approach, and the second example illustrates a more advanced approach.

Keep in mind that this evaluation toolkit is not intended to provide detailed information on the various statistical tests that can be performed using quantitative method. Instead, it is intended to provide you with a framework for thinking through how you might approach quantitative analysis in your program evaluation. In the Resource Guide (Section 4), you will find a number of resources with more detailed statistics guidance. Your CDC Project Officer and Evaluation Specialist also can provide more detailed technical assistance.

Exhibit 4 illustrates a basic approach to addressing an evaluation question about outcomes for the evidence-based lifestyle program. From left to right, the table lays out the evaluation question, dependent variable, independent variable, statistical test, and expected results.

You may wonder why we have included a column for expected results. This is because different statistics will yield different types of information. It is important that you select an approach that will give you the type of information that will be useful to your stakeholders. Notice that for the same question in our example, we present two tests that yield somewhat different results.

Explore the Data

As an initial step, we advise that you take time to examine all of the descriptive statistics for the variables you might want to include in your data analysis. At times, evaluators rush past the step of examining these descriptive statistics—moving quickly to their ultimate data analysis without having a really good understanding of the data. We advise that you take the time to review frequency counts, means, and other descriptive statistics so that you have a sense of what your data may be able to tell you when you start using more advance statistics.

Exhibit 4. Quantitative Data Analysis Plan—Basic Approach

Evaluation Question	Dependent Variable(s)	Independent Variable(s)	Statistical Test	Expected Results
Does participation in the evidence-based lifestyle program contribute to participant outcomes related to physical activity and sodium intake?	Number of minutes per week spent in moderate physical activity 6 months after completing the lifestyle program	Number of lifestyle program sessions attended	Correlation	As the number of lifestyle sessions increases, the number of minutes per week spent in moderate physical activity increases/decreases (X, p -value = X.XX)
	Number of minutes per week spent in moderate physical activity 6 months after completing the lifestyle program	Number of lifestyle program sessions attended	Simple linear regression	For each additional lifestyle session attended, the number of minutes per week spent in moderate physical activity increases/decreases by X (p -value = X.XX)

Exhibit 5 provides a more advanced approach for creating an analytic model to assess the potential effect of lifestyle program participation. You will see that an additional column is included because there will be several covariates to include in your regression model. These covariates may help explain any observed change in physical activity, beyond (perhaps instead of) participation in the lifestyle program.

Exhibit 5. Quantitative Data Analysis Plan—More Advanced Approach

Evaluation Question	Dependent Variable(s)	Independent Variable(s)	Potential Covariates	Data Analysis Method	Expected Results
Does participation in the evidence-based lifestyle program contribute to participant outcomes related to physical activity and sodium intake?	Number of minutes per week spent in moderate physical activity 6 months after completing the lifestyle program	Number of lifestyle program sessions attended	<ul style="list-style-type: none"> • Change in self-efficacy • Readiness to change physical activity behavior • Age • Race/ethnicity 	Multiple regression	For each additional lifestyle session attend, the number of minutes per week spent in moderate physical activity increases/ decreases by X (p -value = X.XX) when you take into account a woman's age, race/ethnicity, change in self-efficacy, and readiness to change

Conduct Data Analysis

Once you have refined your quantitative analysis plan, it is time to actually execute it.

For analyzing quantitative data, you may want to follow the following general steps¹⁰:

1. Tabulate the data to provide information for each indicator.
2. Analyze the data by demographic variables of interest (e.g., participants' age, geographic level, sex).
3. Make comparisons, if appropriate, to describe the groups being studied by the evaluation.
4. Compare the analyzed data over time to see how the results change. If the results are not changing in the anticipated direction, this can serve as a prompt for you to improve your program approach (i.e., interventions).
5. Present and display quantitative findings in a way that is easily understood by the target audience.

Qualitative Data Analysis

Qualitative data are information in the form of text (e.g., notes from focus groups, observations from site visits). Qualitative data analysis involves reviewing the information and organizing it systematically so that you can identify themes (e.g., barriers, facilitators) that relate to your evaluation questions.

Data Reduction

The first step in qualitative data analysis is data reduction. This is generally accomplished by coding your data. A code is a label (word or short phrase) that is used to assign meaning to segments of qualitative data (e.g., interview transcripts).^{17,23} When codes are applied to qualitative data, you are codifying the data, which organizes it and prepares it for analysis.¹⁷ In other words, coding breaks down (reduces) data into more manageable “chunks” of information for analysis. There are different levels at which you can code data, such as line by line or comparing sections within a whole document.

For your program evaluation, we recommend coding by examining a whole sentence or paragraph. This should provide you with sufficient information and context to help you identify themes. In Step 4, you developed a qualitative data codebook. You will need to apply the codes you developed to the segments of text that align with your theme(s) of interest.

Data Display

Once you have coded your data, you should display it in a manner that will facilitate synthesizing and interpreting it. In Exhibit 6, we offer an example data matrix that will help you organize and display your data to facilitate qualitative analysis.

Qualitative Data Analysis Process²³

- Data reduction (coding)
- Data display (data matrix)
- Interpreting the data
- Presenting the findings

Exhibit 6. Example Qualitative Data Matrix

Evaluation Question	Relevant Codes	Data	Themes	Illustrative Quotes
To what extent is the risk-reduction counseling component being implemented with fidelity among providers?	Components	<ul style="list-style-type: none"> • “We pretty much do everything. I have a booklet that I use that I write the woman’s results in. I talk her through the results and the information on how she can get her numbers in control.” (Interview Participant 1) • “For the first couple of months, we didn’t have a standard format for writing down the results and sharing it, but now we have our process ironed out.” (Interview Participant 5) 		
	Challenges	<ul style="list-style-type: none"> • “It takes time to share results because we have to send the labs out for analysis. This can take a couple of days. So, we have to send her the information. I still talk with her based on the questionnaire and the blood pressure. I try to give them a call, but they aren’t always there or the number is disconnected. I never know if she really understands the information we send in the mail—if she gets it at all.” (Interview Participant 3) • “Even though we have a lab onsite it can take a while, and sometimes the woman has to leave to get back to work or something. When that happens, I have to call her. I can’t always reach them then.” (Interview Participant 4) 		
	Facilitators	<ul style="list-style-type: none"> • “We’re lucky. We have lab techs onsite, so we don’t have to send the blood work out to be analyzed.” (Interview Participant 4) • “Now that we have moved to an electronic system I have reminders right in front of me when I talk to the woman to make sure that she gets all of the components.” (Interview Participant 2) 		

Analyze the Data

Often people think that quantitative analysis stops with coding the data. However, coding is not qualitative analysis—you will need to identify themes in the data.^{15,17} For general thematic

analysis, review your data matrix and systematically compare segments of text. As you do this, look for common elements or patterns (themes) in the responses.^{15,17} In Exhibit 7, we add to the example data matrix possible themes that emerge from the coding of the sample qualitative data.

Exhibit 7. Example Qualitative Data Matrix with Themes

Evaluation Question	Relevant Codes	Data	Themes	Illustrative Quotes
To what extent is the risk-reduction counseling component being implemented with fidelity among providers?	Components	<ul style="list-style-type: none"> • “We pretty much do everything. I have a booklet that I use that I write the woman’s results in. I talk her through the results and the information on how she can get her numbers in control.” (Interview Participant 1) • “For the first couple of months, we didn’t have a standard format for writing down the results and sharing it, but now we have our process ironed out.” (Interview participant 5) 	<p>Generally, implement each of the components</p> <p>Standard processes facilitate implementation with fidelity</p>	
	Challenges	<ul style="list-style-type: none"> • “It takes time to share results because we have to send the labs out for analysis. This can take a couple of days. So, we have to send her the information. I still talk with her based on the questionnaire and the blood pressure. I try to give them a call, but they aren’t always there or the number is disconnected. I never know if she really understands the information we send in the mail—if she gets it at all.” (Interview Participant 3) • “Even though we have a lab onsite it can take a while, and sometimes the woman has to leave to get back to work or something. When that happens, I have to call her. I can’t always reach them then.” (Interview Participant 4) 	<p>Follow-up challenging</p>	
Facilitators	<ul style="list-style-type: none"> • “We’re lucky, we have lab techs onsite so we don’t have to send the blood work out to be analyzed.” (Interview Participant 4) • “Now that we have moved to an electronic system, I have reminders right in front of me when I talk to the woman to make sure that she gets all of the components.” (Interview Participant 2) 			

Present the Findings

Once you have identified common themes, it is time to synthesize this information in a manner that can be used by your evaluation stakeholders. A simple way to organize your findings is by evaluation question and overarching theme (see Exhibit 8). In this stage, you should work to synthesize your findings and identify illustrative quotes to present with your findings. Illustrative quotes can help you show how you coded specific data and considered the influence of the quote in identifying themes that emerge from your data. This helps influence the credibility of your findings. If you use quotes, be sure to remove any identifying information (e.g., name of person, clinic, or provider) that can be used to identify a comment.

While quotes are a useful tool, please remember that your ability to use quotes must align with any assurances of confidentiality that you provided to participants before you collected your data. If you obtained informed consent from your participants before collecting data, you should have included specific details for how you would safeguard and share information they provided.

In Step 6, we discuss reporting evaluation findings in greater detail.

Exhibit 8. Example Qualitative Data Matrix with Themes and Quotes

Evaluation Question	Relevant Codes	Data	Themes	Illustrative Quotes
<p>To what extent is the risk reduction counseling component being implemented with fidelity among providers?</p>	<p>Components</p>	<ul style="list-style-type: none"> • “We pretty much do everything. I have a booklet that I use that I write the woman’s results in. I talk her through the results and the information on how she can get her numbers in control.” (Interview Participant 1) • “For the first couple of months, we didn’t have a standard format for writing down the results and sharing it, but now we have our process ironed out.” (Interview Participant 5) 	<ul style="list-style-type: none"> • Generally, implement each of the components • Standard processes facilitate implementation with fidelity • Follow-up challenging 	<p>Generally, implement each of the components</p> <ul style="list-style-type: none"> • “We pretty much do everything. I have a booklet that I use that I write the woman’s results in. I talk her through the results and the information on how she can get her numbers in control.” <p>Standard processes facilitate implementation with fidelity</p> <ul style="list-style-type: none"> • “For the first couple of months, we didn’t have a standard format for writing down the results and sharing it, but now we have our process ironed out.” • “Now that we have moved to an electronic system, I have reminders right in front of me when I talk to the woman to make sure that she gets all of the components.” <p>Follow-up challenging</p> <ul style="list-style-type: none"> • “Even though we have a lab onsite, it can take a while, and sometimes the woman has to leave to get back to work or something. When that happens, I have to call her. I can’t always reach them then.”
	<p>Challenges</p>	<ul style="list-style-type: none"> • “It takes time to share results because we have to send the labs out for analysis. This can take a couple of days. So, we have to send her the information. I still talk with her based on the questionnaire and the blood pressure. I try to give them a call, but they aren’t always there or the number is disconnected. I never know if she really understands the information we send in the mail—if she gets it at all.” (Interview Participant 3) • “Even though we have a lab onsite it can take a while, and sometimes the woman has to leave to get back to work or something. When that happens, I have to call her. I can’t always reach them then.” (Interview Participant 4) 		
	<p>Facilitators</p>	<ul style="list-style-type: none"> • “We’re lucky, we have lab techs onsite so we don’t have to send the blood work out to be analyzed.” (Interview Participant 4) • “Now that we have moved to an electronic system, I have reminders right in front of me when I talk to the woman to make sure that she gets all of the components.” (Interview Participant 2) 		

Interpreting the Evaluation Data

At this point in the process, you have analyzed the evaluation data and now it is time to examine the evaluation results to interpret what they “say” about the program. Interpreting data involves making sense of the data you have collected. Making accurate interpretations can help you identify the factors that facilitate and inhibit the achievement of your program objectives.¹⁰

Be sure to engage your group of evaluation stakeholders and allow plenty of time in this step to ensure the meaningfulness, credibility, and acceptance of evaluation findings and conclusions.^{3,5} Additionally, it is helpful to meet with your stakeholders to gain additional insight regarding the evaluation findings.

Note that it is the responsibility of the evaluator(s) to recognize potential sources of bias and to ensure that the evaluation conclusions are drawn directly from the data.⁵ There can be pressure from stakeholders to reach beyond the evidence when making conclusions.^{3,5} These topics should be discussed with stakeholders during the initial stages of the evaluation and regularly throughout the process.

It may be helpful to consider the following steps when interpreting your evaluation results¹⁰:

1. **Organize your evaluation findings** by aligning your data with the evaluation questions and indicators you developed while planning the evaluation.
2. **Consider larger contextual or cultural issues when interpreting the results** (e.g., variation in program implementation across sites, geographic differences).
3. **Determine the practical significance or utility of the findings** to ensure that results are used to modify the program if necessary, strengthen current interventions, or revise activities that are not working.
4. **Identify the strengths and challenges of the program.** Discuss with stakeholders what is working well and what is not working well regarding the program.
5. **Discuss the limitations of the evaluation** (e.g., evaluation design, time constraints, data collection method).
6. **Synthesize the findings** to tell the “story” of your program. These findings are the basis for developing recommendations for program improvement. Use quantitative data to describe the outcomes achieved and qualitative data to provide context.

Key Tips for Interpreting Evaluation Data³

- Stakeholder engagement is key at this step; they may have insight or perspective to guide interpretation.
- Analytical approaches should be driven by the specific evaluation questions, the type of data collected, and the audience for the evaluation findings.
- Results should be interpreted with the goals of your program in mind, the social/political context of the program, and the needs of the stakeholders.

Justifying Conclusions

Evaluation conclusions are justified when they are linked to the evidence that has been collected and when they are consistent with the agreed-upon values or standards set forth by your stakeholders.³ Justifying the conclusions is important because it relates to the utility and accuracy of the evaluation.

Justifying the evaluation conclusions involves the following³:

- Analyzing the data you collected.
- Interpreting what the data mean.
- Drawing conclusions.
- Making recommendations based on the data.

Case Study: Interpreting Evaluation Data

After working with her evaluation consultant to analyze the data, Betty S., the XYZ WISEWOMAN Program Manager, met with her evaluation stakeholder group to review and discuss the findings. The evaluation stakeholders engaged in an in-depth discussion regarding the results to the following question:

Evaluation question: To what extent is the risk-reduction counseling component being implemented with fidelity among providers?

Indicators:

- Number and percentage of women screened who receive each of the core components of the risk-reduction counseling sessions, both in written format and verbally
 - Screening results
 - Interpretation of the screening results
 - Recommendations in accordance with national clinical care guidelines
- Description of implementation as reported by providers

Findings:

- Based on a sample chart review of clinics, only 65% of women received risk-reduction counseling.
- Clinicians reported that they followed protocols for referring women with one or more risk factors to community-based resources; however, it was not done consistently due to staff changes within one of the referral sites.

Case Study: Interpreting Evaluation Data (Continued)

Discussion:

- Consider larger contextual issues when interpreting the results.
 - It was determined that some clinics were not using the updated/standardized form to document risk-reduction counseling. In addition, clinicians noted that staffing changes at one of the community-based organizations resulted in inconsistency in client referrals.
- Determine the practical significance of the findings.
 - Failure to consistently or accurately document risk-reduction counseling resulted in inaccurate rates for the percentage of women who received risk-reduction counseling. Similarly, the lack of consistency in the referral process resulted in inaccurate rates for the number and percentage of women who were referred to community-based resources.
- Identify the strengths and challenges of the program.
 - It was determined that the standardized form to document risk-reduction counseling is working well and will continue to be used. Going forward, it will be reviewed and revised annually as needed and sent to clinics with guidance on how to use it. It was determined that the referral process is also working well, and that once the new staff received training, the problem was resolved.
- Discuss the limitations of the evaluation (e.g., evaluation design, time constraints, data collection method).
 - It was not possible to review all charts at all clinics due to time and resource constraints, so only a sample was reviewed. There are also issues that may not have been identified.
- Synthesize the findings to tell the “story” of your program.

In summary, the findings show that overall the clinics that participate in the program closely follow the procedures and practices based on the defined indicators. Due to staff turnover and the introduction of a new form, there was some variation in the way the procedures were followed. After these barriers were identified, they were corrected.

Making Recommendations

After interpreting the evaluation findings, you may want to develop recommendations to improve, expand, or continue your program.^{3,10} Keep in mind that recommendations should be made within the larger context in which the program operates, such as budget constraints, staffing turnover, politics, competing interests, or shifts in organizational mission.⁶

Next: In Step 6 you will learn about organizing and presenting your evaluation findings to your stakeholders.

Step 6. Ensure Use and Share Lessons Learned



RECAP:

At this point in the evaluation, you have accomplished the following:

- Identified and engaged a group of evaluation stakeholders
- Created a foundation for communication with stakeholders
- Set initial expectations for how each stakeholder will be involved during the evaluation
- Developed a tailored logic model for your program
- Drafted a program narrative
- Defined the purpose of your evaluation and identified process and outcome evaluation questions
- Identified appropriate data collection methods and data sources
- Compiled a comprehensive evaluation plan
- Implemented procedures for data collection and management
- Refined and specified the data analysis plan
- Analyzed the evaluation data
- Worked with your evaluation stakeholders to interpret the evaluation findings
- Justified the conclusions you drew from your evaluation findings

In this step you will accomplish the following:

- Ensure use of the evaluation results.
- Share the evaluation findings with stakeholders.

Ensuring Use

The main purpose of program evaluation is to use the findings for program improvement or decision-making.⁶ Simply communicating evaluation findings is not enough—evaluators need to proactively take steps to encourage use.³

There are many ways you can use the results from the evaluation^{6,10}:

- **Understand how your program is implemented.** The results from process evaluation can allow you to determine whether or not program activities are conducted as planned, and if not, the reasons why not. You can use these findings to modify your approach to providing services to WISEWOMAN participants.
- **Examine program effectiveness.** You can use the results from outcome evaluations to determine the changes produced in the target population (i.e., WISEWOMAN participants) resulting from your program activities.
- **Identify training and technical assistance needs.** Results from evaluations often provide insight into what is working well and what is not.
- **Allocate program resources** (or justify allocation of resources). Based on the findings from your evaluation, you may decide to increase or decrease funding for a particular program component.
- **Promote your program.** You can use the findings in communications and marketing materials to generate interest in the program.

Engaging Stakeholders to Ensure Use

Throughout the evaluation process you have engaged your stakeholders. Stakeholder involvement is critical throughout the evaluation process to ensure effective and useful reporting of evaluation results.^{3,5} Soliciting input and participation from your stakeholders at key points during the evaluation process can increase the likelihood that evaluation findings will be used.⁵ Keep in mind that the evaluation results may not meet the needs of all stakeholders, and that you may need to prioritize stakeholder needs.

To re-engage your stakeholders during Step 6, you may want to¹⁸

- Revisit how the evaluation findings will be used.
- Reassess what the users or stakeholders want to learn.

Steps to Help Ensure that Evaluation Findings are Used^{3,18}

- Conduct regularly scheduled meetings with evaluation stakeholders as a forum for sharing evaluation findings on an ongoing basis and for developing recommendations for program improvement based on evaluation findings.
- Review evaluation findings and recommendations as they emerge in regularly scheduled staff meetings.
- Engage stakeholders in identifying ways they can apply evaluation findings to improve their programs. Encourage the use of an improvement plan.
- Coordinate, document, and monitor efforts program staff and partners are making to implement improvement recommendations.
- Develop multiple, tailored evaluation reports to address specific stakeholders information needs.

Revisit Your Dissemination Plan

Now that you have evaluation findings, it is a good time to revisit the dissemination plan you started to develop in Step 3. If you have not developed a dissemination plan, review the example in Exhibit 9 below. In this step, it may be helpful to revisit your dissemination plan to ensure that it adequately reflects the changes that may have occurred during the implementation of your evaluation.

Exhibit 9. Example Dissemination Plan (from Step 3)

Audience	Use	Format	Method/Medium	Timeframe	Responsibility
Julia R., CDC Project Officer	Inform technical assistance provided to the program	Full summary report	Attachment to progress report	April	Betty S., Program Manager
Partners	Identify opportunities to collaborate and enhance participant experience	Executive summary	Email blast	April (3 months prior to the start of the new program year)	Program manager
Program staff	Identify areas for program improvement	<ul style="list-style-type: none"> • Executive summary with link to download full summary report • Presentation talking points 	<ul style="list-style-type: none"> • Email • Briefing during a staff meeting 	April (3 months prior to the start of the new program year)	Program manager

Exhibit 9. Example Dissemination Plan (Continued)

Audience	Use	Format	Method/Medium	Timeframe	Responsibility
Providers	<ul style="list-style-type: none"> • Identify areas for program improvement • Implement best practices 	PowerPoint presentation	<ul style="list-style-type: none"> • Webinar for existing providers • New provider orientation 	July (at start of new program year and orientation for new providers)	<ul style="list-style-type: none"> • Jane D., clinical providers advisory group (Webinar) • Program manager (new provider orientation)
Participants	<ul style="list-style-type: none"> • Encourage continued program participation • Promote program to friends and family 	Storyboards/poster series	Posted in waiting rooms of clinical sites	Starting July, throughout program year	Marketing and communications liaison

Sharing Lessons Learned

When implementing your dissemination plan, it is important that you communicate your evaluation findings to program stakeholders in a timely, unbiased, and consistent manner.^{6,18} Your goal for dissemination should be to achieve full disclosure and impartial reporting of the evaluation findings, regardless of the methods used to communicate these findings.¹⁸ Consider the following questions while you planning to share lessons learned^{3,18}:

- How will the evaluation findings be used?
- Who will share the evaluation findings?
- At what stage will you share the evaluation findings (interim or final findings)?
- Which methods will you use to communicate to evaluation stakeholders (e.g., presentations, reports, meetings)?
- How will you tailor the method of communication to your various stakeholders?
- How you will present evaluation findings in connection with recommendations?
- How will you prioritize recommendations, overall and during your communication with specific stakeholders?

Methods for Sharing Evaluation Results

The methods you choose to communicate the evaluation findings should be tailored to meet the needs of your stakeholders.^{5,18} Programs typically develop an evaluation report to share the results of their evaluation. You will need to provide a copy of your evaluation report to your CDC Project Officer. As you develop your evaluation report, keep your target audience in mind. For example, program staff or funders may require more detailed evaluation reports, while other stakeholders may prefer an abbreviated summary. We have also included some alternative approaches to communicating your evaluation findings to program stakeholders below.

Evaluation Report

While evaluation reports can vary in format, the main goal is to ensure that the findings are actually used by stakeholders.^{3,10} A comprehensive evaluation report is the most common method for disseminating evaluation findings.¹⁸ The report should clearly communicate all parts of the evaluation.

An evaluation report typically is composed of the sections listed in Exhibit 10.^{3,18}

Tips for Sharing Evaluation Results¹⁸

- Provide interim findings before final results are available (if appropriate)
- Use active voice
- Use graphics and illustrations
- Be selective in the information presented
- Create different summaries for different audience types
- Avoid jargon and technical language

Exhibit 10. Key Sections of an Evaluation Report

Section	Content
Executive Summary	<p>The executive summary is a synopsis of the evaluation report and includes the most relevant highlights for the following items:</p> <ul style="list-style-type: none"> • Background • Evaluation purpose • Methods • Findings • Recommendations • Lessons learned
Background	<p>The background section presents the following:</p> <ul style="list-style-type: none"> • Baseline information • Context for which the evaluation was undertaken • Evaluation questions • Purpose of evaluation • Intended use of evaluation findings • Stakeholders • Description of the program/intervention that was evaluated
Methods	<p>The methods section describes the approach used to answer the evaluation question, including information about the following:</p> <ul style="list-style-type: none"> • Evaluation design • Data collection methods (e.g., interviews, observation, surveys) • Sample and target population • Procedures for data collection and management • Data analysis procedures • Limitations of the evaluation
Findings	<p>The findings section presents the evaluation results most relevant to your evaluation questions.</p> <ul style="list-style-type: none"> • Be sure to present the complete story of your program—prioritize your findings, but present your results with full disclosure and impartial reporting. • Display and discuss your findings using graphs and charts, along with narrative descriptions. • Include quantitative and qualitative information. • Consider including quotations or brief case examples to add richer detail to your numbers.
Interpretation	<p>Interpretation involves looking beyond the data and asking what the results mean in relation to your evaluation questions. You may wish to review the findings with selected stakeholders to assist with interpretation.</p>

Exhibit 10. Key Sections of an Evaluation Report (Continued)

Section	Content
Conclusion	<p>The conclusion section informs the next steps for the program. There are different approaches to framing the conclusion section of an evaluation report. You may wish to include the following in this section:</p> <ul style="list-style-type: none"> • <i>Recommendations.</i> Ideally, the recommendations you make will be used to modify, strengthen, or improve the program. However, it is important to be mindful that recommendations are <ul style="list-style-type: none"> ○ tailored to specific findings (i.e., what is to be gained from putting recommendations into practice), ○ feasible, realistic, actionable, and tailored to intended users. • <i>Lessons learned.</i> Lessons learned are a retroactive account of a program’s experiences, and can be useful in <ul style="list-style-type: none"> ○ contributing to public health practices, ○ reporting for accountability purposes.
Appendices	<p>Additional sections of the report (e.g., tables, data collection instruments, your evaluation plan) can be placed in an appendix. This provides additional information for those who may be interested, while still keeping the main body of the report succinct.</p>

As you develop your evaluation report, keep the audience in mind. Your evaluation report should be tailored to meet the needs and preferences of the target audience, including the format, tone, timing, and method.⁵ Also, consider the following factors^{3,18}:

- Think about the desired action you want the audience to take and what is within their sphere of influence.
- Consider the audience’s level of technical expertise or comprehension.
 - Tailor the level of language.
 - Avoid jargon.
- Ensure that reports are culturally appropriate.
- Identify the audience’s interest in or perceptions of the program.
- Present findings according to the preferences of the audience.
- Consider how your audience might interpret the findings based on their experiences.
 - Provide context if necessary.
 - Keep the language simple.

Other Communication Methods

Depending on your target audience, you may want to use additional methods of disseminating the results of your evaluation. Some alternative communication methods include the following^{5,10}:

- Web pages
- Presentations
- Journal publications
- Fact sheets/briefs
- Newsletter articles
- Success stories
- Social media
- Posters
- Community meetings

Conclusion

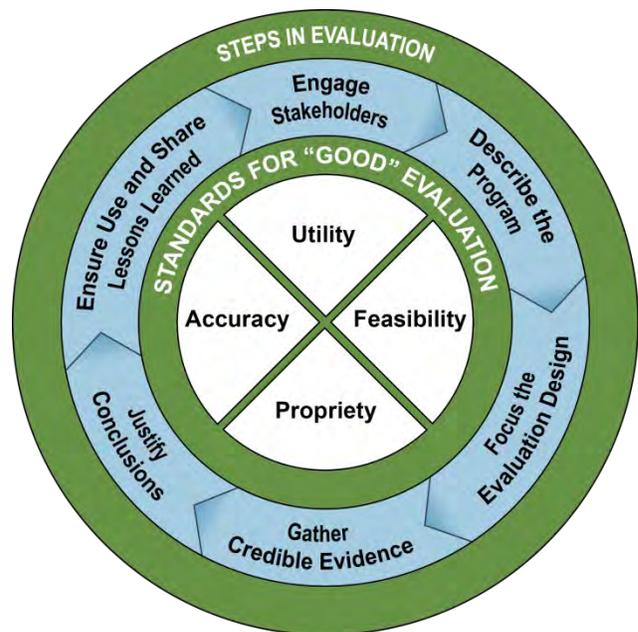
This evaluation toolkit was developed to provide guidance, tools, and resources to WISEWOMAN programs to conduct effective and meaningful program evaluation activities. You now should have insight into how you can accomplish the following:

- Measure progress toward your program’s specific goals.
- Identify opportunities for improvement.
- Demonstrate the effectiveness of your program to stakeholders.

After reviewing the toolkit sections, you should be familiar with the CDC Evaluation Framework¹ (Exhibit 11) and have the information, tools, and resources needed to accomplish key evaluation activities:

- Engage a group of evaluation stakeholders.
- Describe the program.
- Focus the evaluation design (including your preliminary dissemination plan).
- Develop a data collection plan.
- Implement procedures for data collection and management.
- Refine and specify the data analysis plan.
- Analyze the evaluation data.
- Work with your evaluation stakeholders to interpret the evaluation findings.
- Justify the conclusions you drew from your evaluation findings.
- Ensure use of the evaluation results.
- Share the evaluation findings with stakeholders.

Exhibit 11. CDC Framework for Evaluation in Public Health¹



Please review key sections of the toolkit as needed, and continue to communicate with your Project Officers and Evaluation Specialists. Remember that evaluation is an ongoing activity, so be sure to use your evaluation findings to inform your ongoing evaluation work, as well as your program implementation efforts.

Tools and Templates

Qualitative Data Analysis Plan Template

Tips for using template:

A simple way to present your findings is to list the evaluation question along with overarching themes and illustrative quotes. Illustrative quotes can help show how you coded specific data and considered the influence of the quote in identifying themes that emerge from your data. If you use quotes, be sure to remove any identifying information (e.g., person’s name, name of clinic). Refer to Step 5 in the toolkit for more information.

Evaluation Question	Relevant Codes	Data	Themes	Illustrative Quotes
To what extent is the risk reduction counseling component being implemented with fidelity among providers?	Components	<ul style="list-style-type: none"> • “We pretty much do everything. I have a booklet that I use that I write the woman’s results in. I talk her through the results and the information on how she can get her numbers in control.” (Interview Participant 1) • “For the first couple of months, we didn’t have a standard format for writing down the results and sharing it, but now we have our process ironed out.” (Interview Participant 5) 	<ul style="list-style-type: none"> • Generally, implement each of the components • Standard processes facilitate implementation with fidelity • Follow-up challenging 	<p>Generally, implement each of the components</p> <ul style="list-style-type: none"> • “We pretty much do everything. I have a booklet that I use that I write the woman’s results in. I talk her through the results and the information on how she can get her numbers in control.” <p>Standard processes facilitate implementation with fidelity</p>
	Challenges	<ul style="list-style-type: none"> • “It takes time to share results because we have to send the labs out for analysis. This can take a couple of days. So, we have to send her the information. I still talk with her based on the questionnaire and the blood pressure. I try to give them a call, but they aren’t always there or the number is disconnected. I never know if she really understands the information we send in the mail—if she gets it at all.” (Interview Participant 3) • “Even though we have a 		<ul style="list-style-type: none"> • “For the first couple of months, we didn’t have a standard format for writing down the results and sharing it, but now we have our process ironed out.” • “Now that we have moved to an electronic system, I have reminders right in front of me when I talk to the woman to make sure that she gets

		lab onsite it can take a while, and sometimes the woman has to leave to get back to work or something. When that happens, I have to call her. I can't always reach them then." (Interview Participant 4)		all of the components." Follow-up challenging
	Facilitators	<ul style="list-style-type: none"> • We're lucky, we have lab techs onsite so we don't have to send the blood work out to be analyzed." (Interview Participant 4) • "Now that we have moved to an electronic system, I have reminders right in front of me when I talk to the woman to make sure that she gets all of the components." (Interview Participant 2) 		<ul style="list-style-type: none"> • "Even though we have a lab onsite, it can take a while, and sometimes the woman has to leave to get back to work or something. When that happens, I have to call her. I can't always reach them then."

Quantitative Data Analysis Plan Template—Advanced Approach

Tips for using template:

This template is a more advanced approach to analyze quantitative data to assess the potential effect of lifestyle program participation on the change in the amount of moderate physical activity participants report from screening to a follow-up time point after participation in the lifestyle program. This template includes an additional column compared to the more simplistic approach because there will be several covariates to include in your regression model. These covariates may help explain any observed change in physical activity, beyond (perhaps instead of) participation in the lifestyle program. Refer to Step 5 in the toolkit for additional information.

Evaluation Question	Dependent Variable(s)	Independent Variable(s)	Potential Covariates	Data Analysis Method	Outcomes
Does participation in the evidence-based lifestyle program contribute to participant outcomes related to physical activity and sodium intake?	Number of minutes per week spent in moderate physical activity 6 months after completing the lifestyle program	<ul style="list-style-type: none"> Number of lifestyle program sessions attended 	<ul style="list-style-type: none"> Change in self-efficacy Readiness to change physical activity behavior Age Race/ethnicity 	Multiple regression	For each additional lifestyle session attended, the number of minutes per week spent in moderate physical activity increases/ decreases by X (p -value = X.XX) when you take into account a woman's age, race/ethnicity, change in self-efficacy, and readiness to change

Quantitative Data Analysis Plan Template—Basic Approach

Tips for using template:

This template is a basic approach to quantitative analysis for inferential statistics. From left to right, the table presents the evaluation question, dependent variable, independent variable, statistical tests, and expected results. It is important to select an approach that will provide useful information to you and your stakeholders. Notice that for the same question in our example, we present two tests that yield somewhat different results. Refer to Step 5 in the toolkit for additional information.

Evaluation Question	Dependent Variable(s)	Independent Variable(s)	Statistical Test	Expected Results
Does participation in the evidence-based lifestyle program contribute to participant outcomes related to physical activity and sodium intake?	Number of minutes per week spent in moderate physical activity 6 months after completing the lifestyle program	Number of lifestyle program sessions attended	Correlation	As the number of lifestyle sessions increases, the number of minutes per week spent in moderate physical activity increases/decreases (X, p -value = X.XX)
	Number of minutes per week spent in moderate physical activity 6 months after completing the lifestyle program	Number of lifestyle program sessions attended	Simple linear regression	For each additional lifestyle session attended, the number of minutes per week spent in moderate physical activity increases/decreases by X (p -value = X.XX)

Dissemination Plan Template

Tips for using template:

Once you have your evaluation findings, you can revisit the dissemination plan developed in Step 3. If you have not yet developed one, the template below is an example that you can modify for your program. Refer to Step 3 and Step 6 in the toolkit for more information.

Audience	Use	Format	Method/Medium	Timeframe	Responsibility
Julia R., CDC project officer	<ul style="list-style-type: none"> Inform technical assistance provided to the program 	<ul style="list-style-type: none"> Full summary report 	<ul style="list-style-type: none"> Attachment to progress report 	April	<ul style="list-style-type: none"> Betty S., Program Manager
Providers	<ul style="list-style-type: none"> Identify areas for program improvement Implement best practices 	<ul style="list-style-type: none"> PowerPoint presentation 	<ul style="list-style-type: none"> Webinar for existing providers New provider orientation 	July (at start of new program year and orientation for new providers)	<ul style="list-style-type: none"> Jane D., clinical providers advisory group (Webinar) Program manager (new provider orientation)