Home Visiting Budget Assistance Tool User Guide

Volume I: Instructions for Maternal, Infant, and Early Childhood Home Visiting Awardees

Contents

Exhibits

Introduction

The Home Visiting Budget Assistance Tool (HV-BAT) is an Excel-based instrument developed by the Health Resources and Services Administration (HRSA) to standardize the collection of home visiting program cost data. Local implementing agencies (LIAs) and awardees can use the tool to collect and report comprehensive home visiting program costs incurred by LIAs during a 12-month period. The current version incorporates lessons learned from a pilot test of 45 LIAs in 14 states that received Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program funding to implement at least 1 evidence-based home visiting model.

The HV-BAT can help MIECHV awardees and LIAs in several areas:

- **Program monitoring:** The HV-BAT can help MIECHV awardees monitor costs expended by LIAs with which they contract to provide evidence-based home visiting services.

- **Program and budget planning:** The HV-BAT can be used to develop program budgets, identify trends in the average cost per family served, and estimate the financial impact of expanding services to more families or households.

- **Economic evaluations:** The HV-BAT can inform economic evaluations (e.g., cost-effectiveness, benefit–cost, return on investment, budget impact analyses) that compare program costs to benefits for specific stakeholders (e.g., the federal government, state/territory governments, families).

- **Alternative funding:** The HV-BAT may inform the feasibility of alternative payment approaches for home visiting services, such as Medicaid financing and pay for outcomes approaches.

Navigating the HV-BAT User Guide

This HV-BAT User Guide provides instructions for completing the tool and ensuring accurate data entry and cost analysis. The guide is composed of Volume I: Instructions for MIECHV Awardees and Volume II: Instructions for LIAs. Volume I covers the following topics:

- Implementing the HV-BAT in your state/territory

- Assuring quality of reported data

- Using the HV-BAT data

- Preparing the HV-BAT data for analysis

Awardees will primarily use Volume I but should also familiarize themselves with Volume II, as it outlines the specific data elements LIAs will enter into the HV-BAT and provides instructions on how to complete the tool. Before sharing Volume II with LIAs, awardees should fill in the title and contact information of their MIECHV State/Territory Home Visiting Coordinator in the Questions box at the end of the guide.

Implementing the HV-BAT in Your State/Territory

Awardees should follow the recommendations below to help ensure successful implementation of the HV-BAT.

Recommendation 1. Plan your staffing structure for HV-BAT implementation.

Identify staff who can dedicate time to the following key activities:

- Communicate with LIAs about the purpose of the HV-BAT and distribute the tool.
- Provide technical assistance (TA) to support LIAs as they complete the HV-BAT. (See recommendation 4.)
- Manage and review HV-BAT submissions to ensure data quality and conduct follow-up as needed. (Appendix A provides an Excel-based Submission Tracking Workbook that can be used by awardees to manage HV-BAT submissions.)
- Submit HV-BAT data to HRSA. Requirements and instructions for submission can be found in the most recent MIECHV formula awards Notice of Funding Opportunity.
- Prepare the data for analysis to address your state or territory goals.
- Conduct data analysis.

While awardees should determine the most appropriate staffing structure to support implementation of the HV-BAT in their state or territory, the following staffing configuration suggestions may be helpful:

- Consider having a programmatic staff member who is familiar with the context in which LIAs operate lead LIA communication and TA and conduct data quality reviews.
- A data analyst can provide technical support in preparing the data file for analysis.
- An evaluator or epidemiologist can help conduct data analyses.
- A finance team member may be helpful for reviewing data related to costs and budgeting for future program activities.

Recommendation 2. Develop a timeline for HV-BAT implementation.

Awardees should develop a timeline for completing tasks associated with HV-BAT implementation and communicate it to LIAs preparing for HV-BAT submission. Awardees should build in additional time at each step of the process to accommodate competing demands and unexpected circumstances (e.g., extensions for LIAs to submit completed HV-BATs). A minimum of 15 weeks, if feasible, is

recommended from start to submission of data to HRSA. A sample timeline with suggested milestones and timeframes is provided in Exhibit 1.

Exhibit 1. Sample Timeline for Completing HV-BAT Implementation

Task	Milestones	Timeframe
1. Prepare for implementation of HV-BAT	• Develop staffing plan to implement HV-BAT • Develop HV-BAT timeline • Share information about HV-BAT with LIAs	3 weeks
2. Collect data for HV-BAT completion	• Send out HV-BAT to LIAs • Conduct training webinar with LIAs • HV-BAT submission due date • Extensions (if necessary) • Final due date: All HV-BATs must be received	4–6 weeks plus a 2-week extension, if needed
3. Review data	• Review the data submissions • Follow up with LIAs as needed • Conduct subsequent reviews of re-submitted HV-BATs	4 weeks
4. Submit data to HRSA	• Prepare HV-BAT data file for submission	1–2 weeks

Recommendation 3. Provide TA to LIAs to complete the HV-BAT.

Although most LIAs use financial systems that can minimize the burden of program cost reporting, LIAs may still need extensive TA to accurately and comprehensively report their home visiting program cost data using the HV-BAT. The following types of TA are recommended:

- Training webinars to provide an orientation to the HV-BAT and the cost data reporting process
- A detailed walkthrough of the HV-BAT User Guide for LIAs
- Telephone and email consultations with LIAs while they are completing the HV-BAT (e.g., individual communication, standing meetings)
- Status check-ins and reminders about HV-BAT submission

As always, you should consult with your TA specialist to discuss TA needs and identify strategies for providing TA to LIAs within your state/territory.

Recommendation 4. Allow flexibility in the definition of the annual reporting period.

The HV-BAT is designed to collect costs incurred during a 12-month period. LIAs should be allowed to report costs using their agency's or organization's fiscal year definition. When analyzing costs

from multiple LIAs with different fiscal years, the costs should be converted to the same base year (e.g., October 1 through September 30). For example, if costs are expressed in 2019 dollars, then the base year is 2019. Instructions on how to do this conversion are provided under [Converting Costs to the Same Base Year](#).

Recommendation 5. Identify and report costs incurred by your state/territory on behalf of LIAs.

LIAs are instructed to report all costs used to implement the home visiting model in the HV-BAT, regardless of who pays for them or the funding source (e.g., the LIA, state/territory, county, another organization). If the awardee incurs costs on behalf of the LIA (e.g., costs to conduct trainings for LIAs), these costs should be reported in the HV-BAT. Calculate the portion of the costs incurred for each LIA for each model and provide those costs to LIAs. Directly report the costs in each LIA's HV-BAT or provide the information to LIAs so they can enter the costs themselves.

Recommendation 6. Use the Submission Tracking Workbook to manage HV-BAT submissions.

The Submission Tracking Workbook provided in Appendix A was developed as an optional resource to help awardees manage data collection and provide consistent messaging. The workbook includes a tab for recording dates of HV-BAT distribution, submission from each LIA, and questions received and responses provided during the data submission period.

Prior to disseminating the HV-BAT to LIAs for completion, awardees should assign a unique, numerical identifier (ID) to each LIA. Awardees can record the assigned IDs in the Submission Tracking Workbook provided in Appendix A. Awardees should use this ID to name each HV-BAT file submitted by LIAs before preparing the data for analysis. Numerical IDs (as opposed to LIA names) ensure consistency in naming conventions across LIAs, facilitate data preparation and analysis, and ensure confidentiality when sharing data with stakeholders.

Recommendation 7. Request that LIAs implementing multiple home visiting models complete separate HV-BATs for each model.

Many LIAs implement more than one evidence-based home visiting model. To allow for analysis of costs at the model level, these LIAs should complete a separate HV-BAT for each model. For example, if an LIA is implementing both Parents as Teachers (PAT) and Nurse-Family Partnership (NFP), the LIA should submit two HV-BATs: one reporting costs for PAT and another with costs for NFP.

If analysis of costs at the model level is not of interest to the awardee, LIAs implementing multiple models can report costs for all models in one HV-BAT. Completing one HV-BAT for multiple models may also be acceptable when splitting costs by model creates a significant additional burden for

LIAs. For example, if the same home visitors deliver multiple models, it may be challenging for LIAs to track labor or travel costs for each model separately.

Recommendation 8. In cases where LIAs subcontract with other agencies to deliver home visiting services, request that each agency completes a separate HV-BAT.

Some LIAs may serve as pass-throughs and subcontract with other agencies to deliver home visiting services. In this case, a separate HV-BAT should be completed for each subcontractor agency. The portion of expenses incurred by the LIA that contracts with the MIECHV state/territory lead agency should be recorded in each subcontracting agency's HV-BAT in the Contracted Services tab. The LIA should split the total amount across the participating subcontracting agencies. LIAs can directly report the costs in each agency's HV-BAT or provide the information to subcontracting agencies so they can enter the costs themselves.

Recommendation 9. Follow your state/territory-specific records management policy.

Follow your state- or territory-specific records management policy and require any associated trainings for staff who will be handling the data. The records management policy should include specific guidelines about record retention schedules, handling paper records, and storing electronic records.

Recommendation 10. Specify the HV-BAT transmission process.

Determine and communicate to LIAs the mechanism for transmitting completed HV-BATs to the awardee. Data collected in the HV-BAT do not contain any personal or identifiable information; thus, they align with Federal Information Processing Standards 199 low-risk guidelines. Given the format of the HV-BAT (i.e., Excel file), LIAs can email it to the awardee or upload it to an existing web portal or file-sharing system. For consistency, awardees may choose to follow the process already established for transmitting budget information and invoices.

Recommendation 11. If applicable, consider security protocols in tribal communities and private foundations.

Some tribes/tribal organizations may have local laws and policies that include separate regulations and security protocols specific to grantees operating within sovereign tribal nations and tribal organizations. Engage the tribal organization(s) early in the process to ensure there is time to approve the data collection and that all necessary agreements are in place regarding data use and ownership. Also, there may be sensitive budget and cost data related to collaborations with private foundations. Check with foundation funders to determine if sensitivities exist and whether specific protocols should be followed.

Quality Assurance

Once LIAs complete and submit the HV-BAT, awardees should systematically review the data entered by LIAs in all worksheets, or tabs, of the HV-BAT. The review should focus on implausible data and any potential inconsistencies or inaccuracies, which may require additional input, clarification, or revisions from LIAs. To conduct these reviews, use the Data Quality Review Checklist (provided below), which lists the data elements to review in each worksheet of the HV-BAT. Based on experience from the HV-BAT pilot, the review of each completed HV-BAT should take about one hour or less. The timeline for finalizing HV-BAT data should include additional time to allow for LIA revisions to the data submission and subsequent re-reviews.

The HV-BAT contains a Hidden_ErrorCheck tab that checks the entire workbook for errors in data entry and identifies which tabs contain errors. This error-check tab provides another layer of data quality review for awardees by helping them pinpoint errors. Directions for reviewing this tab are included in the Data Quality Review Checklist.

Data Quality Review Checklist

Reviewer Instructions: Review all entries in the HV-BAT worksheets for completeness and accuracy by answering the questions listed below. If an answer to any question is "No," flag the data element. For each flagged data element, follow up with the respondent to clarify the data entry and, if needed, revise it in the HV-BAT. Reviewers may use the Excel-based version of the Data Quality Review Checklist (Appendix B) to track follow-up queries and responses from LIAs.

1. LIA Characteristics
☐ 1a. Are start and end dates entered for question 1?
☐ 1b. Are the costs reported for the federal fiscal year (October 1–September 30)?
☐ 1c. If not, what is the reporting period?
Note: If the costs are reported for a period other than the federal fiscal year and the dates of the reporting period are provided, no further input is needed from the LIA; however, the analyst will need to convert the costs to the same base year. Instructions are provided under <u>Converting Costs to the Same Base Year</u>.
☐ 2a. Is the home visiting model name selected in question 2?

☐   2b. If "Other," is the model name entered?

☐   3. Is a response entered for question 3?

☐   4a. Is a response selected for question 4?

    ☐ 4b. If yes, is at least one model selected in question 4b?

    ☐ 4c. If "Other," is the model name entered?

☐   5a. Is at least one funding source selected and a percentage entered for question 5?

    ☐ 5b. Is a percentage entered for each selected funding source?

    ☐ 5c. Does the total percentage add up to 100%?

☐   6. Is a response selected for question 6?

☐   7. Is a percentage entered for question 7?

☐   8a. Is a percentage entered for question 8?

    ☐ 8b. Is the sum of percentages entered for questions 7 and 8 ≤ 100%?

☐   9. Is a percentage entered for question 9?

☐   10. Is a numeric value entered for question 10?

☐   11a. Is a numeric value entered for question 11?

    ☐ 11b. Does the value entered appear to be a reasonable number of households served by the model in a year?

    ☐ 11c. Does the number of households served generally align with the contracted caseload?

    Note: Your assessment of items 11b and 11c should consider potential variation resulting from staffing or other program capacity constraints or families dropping out prior to program completion. Variation of +/-20% is reasonable, however, your assessment should recognize that some LIAs may have greater variation because of many factors, such as small caseload, staffing constraints, or high dropout rates for enrolled families.

☐   12. Is a percentage entered for question 12?

☐   13. Is a percentage entered for question 13?

2. Labor Costs

For each job title:

- ☐ 1. Is the full-time equivalent (FTE) number entered?

- ☐ 2. Is the annual salary entered?

- ☐ 3. Is the annual salary a reasonable amount for a <u>per person</u> salary?

- ☐ 4. Is a response selected in column D?

- ☐ 5. Is a value displayed in column E?

  If not, check the formula. The correct formula (for row 15, for example), should be: =IF(D15="No," B15*C15*1.46, B15*C15)

- ☐ 6. Is a response selected in column F?

- ☐ 7. If "Yes, 100%" is selected in column F, is column G blank? (If it shows 100%, then no follow-up is needed.)

- ☐ 8. If "Yes, partially" is selected in column F, does column G have a percentage entered?

- ☐ 9. If "No" is selected in column F, is column G blank? (If it shows 0%, then no follow-up is needed.)

- ☐ 10. Do total allocations in each row (column O) add up to 100%?

- ☐ 11. Are percentage allocations in columns H through N appropriate given the job title? For example, home visitors should have most of their time allocated to service delivery.

- ☐ 12. Are all entries above row 42?

  If not, entries below row 41 will not be automatically included in the total costs shown on top of the worksheet or in the Summary tab. They will also not be captured in the hidden worksheets in the HV-BAT that pool the data from the data entry worksheets. These hidden worksheets can be used for combining data from multiple LIAs into an aggregate data file; if they do not accurately capture the entered data, these data will not be included in the analysis file.

3. Overhead and Infrastructure Costs

- ☐ 1. Are any costs reported in this worksheet?

- ☐ 2. Are the amounts in column B reasonable?

- ☐ 3. Are all costs that were entered contained in the data entry cells in column B (B11–B13; B15–B16)?

☐	4. Is a response selected in column C?
☐	5. If "Yes, 100%" is selected in column C, is column D blank? (If it shows 100%, then no follow-up is needed.)
☐	6. If "Yes, partially" is selected in column C, does column D have a percentage entered?
☐	7. If "No" is selected in column C, is column D blank? (If it shows 0%, then no follow-up is needed.)

4. Contracted Services Costs

☐	1. Are any costs reported in this worksheet?
☐	2. Are the amounts in column B reasonable?
☐	3. Are all costs that were entered contained in the data entry cells in column B (B10–B13)?
☐	4. Is a response selected in column C?
☐	5. If "Yes, 100%" is selected in column C, is column D blank? (If it shows 100%, then no follow-up is needed.)
☐	6. If "Yes, partially" is selected in column C, does column D have a percentage entered?
☐	7. If "No" is selected in column C, is column D blank? (If it shows 0%, then no follow-up is needed.)

5. Model Cost, Tools, and Curricula

☐	1. Are any costs reported in this worksheet?
☐	2. Are the amounts in column B reasonable?
☐	3. Are all costs that were entered contained in the data entry cells in column B?
☐	4. Is a response selected in column C?
☐	5. If "Yes, 100%" is selected in column C, is column D blank? (If it shows 100%, then no follow-up is needed.)
☐	6. If "Yes, partially" is selected in column C, does column D have a percentage entered?
☐	7. If "No" is selected in column C, is column D blank? (If it shows 0%, then no follow-up is needed.)

6. Training Costs

☐	1. Are any costs reported in this worksheet?

☐	2. Are the amounts in column B reasonable?
☐	3. Are all costs that were entered contained in the data entry cells in column B?
☐	4. Is a response selected in column C?
☐	5. If "Yes, 100%" is selected in column C, is column D blank? (If it shows 100%, then no follow-up is needed.)
☐	6. If "Yes, partially" is selected in column C, does column D have a percentage entered?
☐	7. If "No" is selected in column C, is column D blank? (If it shows 0%, then no follow-up is needed.)

7. Consumable Supplies Costs

☐	1. Are any costs reported in this worksheet?
☐	2. Are the amounts in column B reasonable?
☐	3. Are all costs that were entered contained in the data entry cells in column B?
☐	4. Is a response selected in column C?
☐	5. If "Yes, 100%" is selected in column C, is column D blank? (If it shows 100%, then no follow-up is needed.)
☐	6. If "Yes, partially" is selected in column C, does column D have a percentage entered?
☐	7. If "No" is selected in column C, is column D blank? (If it shows 0%, then no follow-up is needed.)

8. Non-consumable Supplies Costs

☐	1. Are any costs reported in this worksheet?
☐	2. Are the amounts in column B reasonable?
☐	3a. Is the number of years entered in column C?
☐	3b. Is the number of years reasonable?
☐	4. Is the annualized cost displayed in column D? If not, check the formula. The correct formula (in row 12, for example) should be: =IF(C12=0, " ", B12/C12)
☐	5. Is a response selected in column E?

- [ ] 6. If "Yes, 100%" is selected in column E, is column F blank? (If it shows 100%, then no follow-up is needed.)

- [ ] 7. If "Yes, partially" is selected in column E, does column F have a percentage entered?

- [ ] 8. If "No" is selected in column E, is column F blank? (If it shows 0%, then no follow-up is needed.)

- [ ] 9. Are all entries above row 25?

      If not, entries below row 24 will not be automatically included in the total costs shown on top of the worksheet or in the Summary tab. They will also not be captured in the hidden worksheets of the HV-BAT that pool the data from the data entry worksheets. These hidden worksheets can be used for combining data from multiple LIAs into an aggregate data file; if they do not accurately capture the entered data, these data will not be included in the analysis file.

9. Travel Costs

- [ ] 1. Are any costs reported in this worksheet?

- [ ] 2. Are the amounts in column B reasonable?

- [ ] 3. Are all costs that were entered contained in the data entry cells in column B?

- [ ] 4. Is a response selected in column C?

- [ ] 5. If "Yes, 100%" is selected in column C, is column D blank? (If it shows 100%, then no follow-up is needed.)

- [ ] 6. If "Yes, partially" is selected in column C, does column D have a percentage entered?

- [ ] 7. If "No" is selected in column C, is column D blank? (If it shows 0%, then no follow-up is needed.)

8a. If "Yes" is selected to the question "Do you want to report travel costs in aggregate rather than by categories shown above?":

- [ ] 8b. Are cells in column B, rows 10–12, blank?

- [ ] 8c. Is there a cost reported in column B, row 14?

- [ ] 8d. Is a response selected in column C, row 14?

- [ ] 8e. If "Yes, 100%" is selected in column C, row 14, is column D, row 14, blank? (If it shows 100%, then no follow-up is needed.)

- [ ] 8f. If "Yes, partially" is selected in column C, row 14, does column D, row 14, have a percentage entered?

☐	8g. If "No" is selected in column C, row 14, is column D, row 14, blank? (If it shows 0%, then no follow-up is needed.)

	Summary of Reported Costs	
☐	1. Are percentages across cost categories in Table 1 reasonable (column C)?
☐	2. Is the total cost per family served in Table 1 reasonable (cell D13)?
☐	3. Are percentages across program activities in Table 2 reasonable (column C)?

	Hidden Error Check	
	Right click on tab names in the HV-BAT to unhide this tab.	
☐	1. Are the error counts in column C all zeroes? If not, unhide tab(s) flagged with errors and investigate the cause of the error(s).

Exhibit 2 reports results from the HV-BAT pilot study that may be helpful in determining reasonable values for cost per family served and cost allocations in the Summary tab of the HV-BAT. The estimates provided are mean values and a range of the mean +/- 1 standard deviation. Please note these estimates are based on a pilot study that had a small sample size (N = 45). Also, questions in the pilot version of the HV-BAT about the number of families served and instructions for entering each resource category were worded differently than in the final HV-BAT. Thus, use your judgment and knowledge about home visiting programs and the particular LIA to determine if the costs reported are plausible and reasonable.

If you use the results from the pilot study as a guide for data quality reviews, flag cost categories that fall outside the ranges shown in Exhibit 2 and further explore cost entries in the HV-BAT associated with that cost category. For example, if overhead and infrastructure costs account for 50% of total costs, then the cost entries in the Overhead and Infrastructure tab of the HV-BAT should be examined for accuracy. If cost per family served falls outside the range included in Exhibit 2, then examine the accuracy of the reported number of families served (question 11 in the LIA Characteristics tab); if that number is confirmed to be correct, then examine the accuracy and completeness of cost data entries.

Exhibit 2. Cost Metrics From the HV-BAT Pilot Study (*N* = 45)

Cost	Mean	Range	
		Mean -1 standard deviation	Mean +1 standard deviation
Cost per family served	$8,500	$3,500	$18,000
Costs by resource category			
Labor	73%	64%	86%
Overhead and infrastructure	13%	4%	21%
Contracted services	6%	0%	20%
Model cost, tools, curricula	1%	0%	3%
Training	2%	0%	3%
Consumable supplies	3%	1%	4%
Non-consumable equipment and supplies (annualized)	1%	0%	2%
Travel	2%	1%	4%
Labor costs by program activity			
Service delivery	48%	30%	65%
Outreach	6%	0%	14%
Program management and coordination	11%	1%	22%
Supervising	10%	3%	19%
Administration/data entry	16%	4%	30%
Executive	5%	0%	11%
Other	3%	0%	7%

Note: Costs are expressed in federal fiscal year 2016 dollars.

Using the HV-BAT Data

This section describes several uses of the HV-BAT data, including monitoring program operations and spending; estimating budget needs and developing LIA budgets; estimating the number of families that can be served with a given budget; and conducting economic evaluations. When considering how to use the HV-BAT data, awardees should identify data use goals that are relevant, feasible, and appropriate for their state or territory.

Please note that before data from multiple LIAs can be analyzed and used, they must be extracted from each HV-BAT and aggregated into a consolidated data file. More detailed instructions are provided in the Preparing the HV-BAT Data for Analysis section, and in Appendices C (Data Preparation Instructions) and D (Data Preparation Stata Program).

Monitoring Program Operations and Spending

Cost metrics from the HV-BAT can be used to monitor LIA program operations and spending; specifically, the data indicate which cost categories (e.g., labor, training, supplies) have the highest and lowest spending levels, so the data can be used to analyze how and why costs differ across LIAs.

The following metrics are calculated automatically in the Summary tab of the HV-BAT:

- **Average total cost per family served for each LIA:** This metric is reported in Table 1 of the Summary tab (cell D13; highlighted in green in Exhibit 3). It can be compared across LIAs delivering the same model to assess whether the average total cost per family is relatively high or low. Cost comparisons can also be made across LIAs with other similar characteristics, such as region or staff make-up.

- **Total costs for each LIA and percentage of costs for each cost category:** For each LIA, total costs and percentage of total costs for each cost category (e.g., labor, model fees, supplies) are reported in Table 1 of the Summary tab (columns B and C; highlighted in orange in Exhibit 3). These metrics can be examined to determine which cost categories make up the largest share of costs and to identify LIAs with higher or lower than average cost shares for specific cost categories.

  For example, if an LIA had a lower than average share of costs going to labor spending, then the awardee could review the cost data the LIA entered in the other tabs of the HV-BAT to assess which specific costs drove this outcome. Specifically, the awardee could identify if other cost categories (e.g., overhead and infrastructure, contracted services) had disproportionally higher costs, then examine specific cost entries in those categories along with LIA context to understand contributing program factors.

- **Allocation of total salary and personnel (i.e., labor) costs:** For each LIA, labor costs by home visiting program activity (in dollars and as percentage of total costs) are reported in Table 2 of

the Summary tab (columns B and C; highlighted in red in Exhibit 3). Looking at this metric across home visiting program activities can help identify which activities have the highest and lowest percentage of labor costs allocated to them. Awardees can use this information to assess the extent to which program costs are supporting core home visiting activities, such as service delivery and outreach.

Exhibit 3. Summary of Reported Costs

Summary of Reported Costs

Home Visiting Model: HFA | Reporting Period: 10/1/2019-9/30/2020

Table 1. Total and Per Family Costs of Home Visiting Model by Cost Category

Cost Category	Total Cost ($)	Total Cost (%)	Cost per Family Served
Labor	$440,097	76%	$14,197
Overhead and Infrastructure	$91,208	16%	$2,942
Contracted Services	$0	0%	$0
Model Cost, Tools, Curricula	$3,100	1%	$100
Training	$7,815	1%	$252
Consumable Supplies	$10,174	2%	$328
Non-consumable Equipment & Supplies	$0	0%	$0
Travel	$29,982	5%	$967
Total Costs	$582,376	100%	$18,786

Table 2. Total and per Family Labor Costs by Program Activity

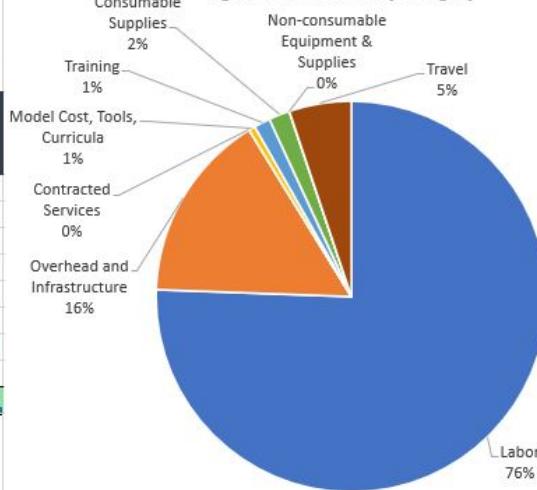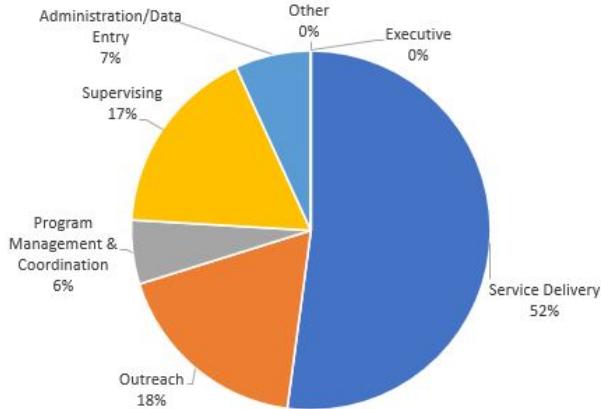| Program Activity	Total Cost ($)	Total Cost (%)	Cost per Family Served
Service Delivery	$229,314	52%	$7,397
Outreach	$79,572	18%	$2,567
Program Management & Coordination	$25,276	6%	$815
Supervising	$75,827	17%	$2,446
Administration/Data Entry	$30,108	7%	$971
Executive	$0	0%	$0
Other	$0	0%	$0
Total Labor Costs	$440,097	100%	$14,197

Figure 1. Total Costs by Category

Figure 2. Labor Costs by Program Activity

Note: Costs and percentages reported in Exhibit 3 are for example purposes only and should not be interpreted as guidance or recommendations for reported costs.

Appendix E (Data Analysis Instructions, analysis goal A) includes instructions on how to calculate and use estimates of average costs across all LIAs. Flagging cost categories that fall outside the calculated ranges will help identify areas that may need additional follow-up with the LIA. Cost data should be interpreted and used in conjunction with other contextual information about the LIA to better understand the financial implications of programmatic issues. For example, an LIA's training

expenses constituting 20% of its total costs can help confirm concerns related to turnover and quantify expenses driven by staff replacement costs.

Furthermore, metrics from the HV-BATs aggregated across LIAs can be used to examine how costs vary by LIA and how population characteristics (e.g., percentage of population living in urban vs. rural areas) contribute to variation in costs. Examples of these types of analyses are described in the next section.

Developing Comprehensive Budgets for Future Program Activities

Home visiting program cost estimates can be used for budgeting future program activities. Awardees can compile cost data from their LIAs to estimate funding needs for their MIECHV grant applications. Awardees using the HV-BAT for budget development will need to analyze HV-BAT data. Simple analyses may yield useful insights into the key factors that drive costs and allow awardees to develop accurate budgets. Being able to use LIA costs to estimate budget needs may be especially useful to awardees if they are planning to expand services with existing LIAs or add new LIAs.

Appendix E includes detailed instructions on how to estimate LIA budget needs based on LIA characteristics (analysis goal B). HRSA recommends conducting a regression analysis to identify and examine the variables that best explain differences in cost per family served. A Stata program that can be used to execute the regression analysis is provided in Appendix F. Statistically and economically significant coefficients from the regression models can then be used to estimate an awardee budget. Appendix E also explains how awardees can use the Budget Planning Worksheet provided in Appendix G to estimate a budget using regression analysis results.

While using regression analysis results can help awardees estimate budgets based on LIA characteristics, HRSA cautions against making funding decisions that may be based on limited explanatory power due to small sample size. Awardees should consider characteristics that are statistically or economically significant. Statistical significance can be determined by p-values ($p <$ .05). Economic significance can be determined by marginally significant p-values (.05 $< p <$ .15) and coefficient magnitude. Appendix E provides additional recommendations on how to determine the coefficient magnitude, or economic significance, substantial enough to make a meaningful impact on costs.

Estimating the Number of Families That Can Be Served

The range of costs (i.e., minimum to maximum) and average cost per family served calculated from the HV-BAT data can be used to estimate the number of families that can be served with a given budget. This information can be used to understand how many programs can be funded and to estimate costs to expand the program(s). It can also help LIAs develop budgets and funding requests. Appendix E includes instructions on calculating costs to provide home visiting services to families in a state/territory and for estimating how many programs can realistically be funded (analysis goal C).

Awardees should remember that costs reported in the HV-BAT include both home visiting costs funded by MIECHV and other local funding sources. If state/territory MIECHV funds were used to cover all costs, then dividing the state/territory MIECHV budget by total cost per family served will estimate the number of families that can be served. To account for other funding streams used at the local level, the MIECHV budget should be divided by the portion of the per-family cost funded by MIECHV, which can be calculated based on the HV-BAT data from all LIAs. This estimate provides the expected number of families that can be served by the available MIECHV state/territory funding and supplemental local funding that LIAs receive.

Conducting an Economic Evaluation of the Program

Metrics from the HV-BAT can be used to analyze how home visiting costs compare with benefits for a state or territory; to estimate the return on investment for the program; or to conduct a benefit–cost analysis. To conduct these types of analyses, cost data from the HV-BAT should be combined with data on program outcomes. Specifically, awardees collect several kinds of administrative, performance measurement, and outcome data that may be combined with cost data to conduct a benefit–cost or return on investment (ROI) analysis of the program or to implement pay for outcomes initiatives:

- **Service delivery data:** Every quarter, awardees collect and report data to HRSA on the number of families receiving services, the number of families that completed the program, and the number of families that stopped services before completion. Data on the number of home visits completed are reported annually.

- **Performance measurement data:** Awardees are required to collect and report data on participant demographics and performance indicators and systems outcome measures to HRSA

annually. Performance indicators include maternal depression, child development, behavioral concerns, intimate partner violence screening; well-child visit receipt and postpartum care receipt; safe sleep; parent-child interaction observation; early-language and literacy activities; and referrals for tobacco cessation and intimate partner violence.

- **Evaluation data:** Many awardees conduct their own evaluations. Some awardees have conducted evaluations using randomized controlled or matched-comparison designs that include outcome data that could be linked with cost data.

When combining cost and outcome data to determine how the use of resources compares with the benefits, it is important to ensure the outcome data measure the benefits produced by the program over time. Awardees can link estimated impact of the program with estimates of implementation cost from the HV-BAT.

- **Note for analysts:** The denominator for calculating per family costs should be considered depending on the type of analysis conducted. The cost per family served reported in the Summary tab of the HV-BAT is calculated by dividing total program costs by the number of unduplicated households served by the model during the reporting period. However, a different denominator, such as caseload or number of families that completed the program, may be a more appropriate metric depending on the type of analysis. For example, when assessing outcomes of program completers in a cost-effectiveness evaluation, total costs should be divided by the number of families that completed the program.

Additional Data Use Considerations

Below are additional considerations for interpreting findings from cost data analysis and sharing them with stakeholders.

Interpreting Findings With Low Sample Sizes

In some states/territories, the number of LIAs may be insufficient to produce reliable estimates of costs. HRSA cautions awardees against making inferences based on small sample sizes, especially when it comes to estimating budgets and making funding decisions. A lack of statistically significant coefficients in a regression analysis that estimates costs based on LIA characteristics may be indicative of inadequate sample size. This limitation would be further exacerbated when attempting to analyze data by subgroups of LIAs (e.g., by model or region). Awardees may consider combining data across multiple years to increase sample size and produce more reliable results with greater precision and power. When data are combined across multiple years, the costs should be converted to reflect the same base year (instructions are provided under Converting Costs to the Same Base Year).

Sharing Findings With Stakeholders

Awardees should consider whether and how results of the HV-BAT data analysis will be shared with LIAs, home visiting model developers, and other stakeholders. Data use goals will help drive dissemination planning, including how best to present the data to LIAs. Awardees should account for sensitivity around sharing LIA-level data with other LIAs. Potential alternatives include sharing the data in a deidentified format or presenting each LIA with only its specific data and the average costs across all LIAs. Caution should be used when comparing costs across LIAs and models, unless factors contributing to variation are identified and discussed. Economic evaluation could be used to assess costs in relation to program benefits. For example, higher costs are not necessarily undesirable if they lead to greater benefits.

Preparing the HV-BAT Data for Analysis

The overall costs of each LIA can be examined using the Summary tab of the HV-BAT. To calculate costs across many LIAs or across LIA subgroups, however, analysts must extract and aggregate data from multiple HV-BATs. This section includes additional information to prepare HV-BAT data from multiple LIAs for analysis. Instructions address how to extract data from multiple HV-BATs and aggregate them into one data file. Instructions also cover how to convert costs to the same base year when expenses from multiple LIAs are reported using different fiscal year definitions.

Preparing Data for Analysis

Data preparation can begin after individual HV-BAT data entries have been reviewed for quality and finalized. Before data from multiple LIAs can be analyzed, the data must first be extracted from each HV-BAT and aggregated into the same data file. Appendix C provides instructions on how to prepare an analysis data file by compiling data from multiple HV-BATs, cleaning the data, and generating additional cost variables. The Stata do-file provided in Appendix D can be run to execute these tasks.

Data can also be extracted manually by copying and pasting data from the Excel files; however, the use of a statistical software program is preferred over manual extraction to minimize errors. The steps for manual data extraction are outlined below if using the Stata program provided in Appendix D (or another program) is not possible. Additional quality checks should be implemented when data are copied and pasted manually to ensure accuracy. For example, once extracted, the data should be compared with the entries in each individual HV-BAT.

Step 1. The HV-BAT contains hidden tabs that store all data entered in the tool. There is one hidden tab for each data entry worksheet in the HV-BAT. To view the hidden tabs in Excel, right click on the worksheet names at the bottom of the spreadsheet and select "Unhide." A popup will appear displaying the list of hidden tab names (see Exhibit 4).

Exhibit 4. List of Hidden Sheets in the HV-BAT
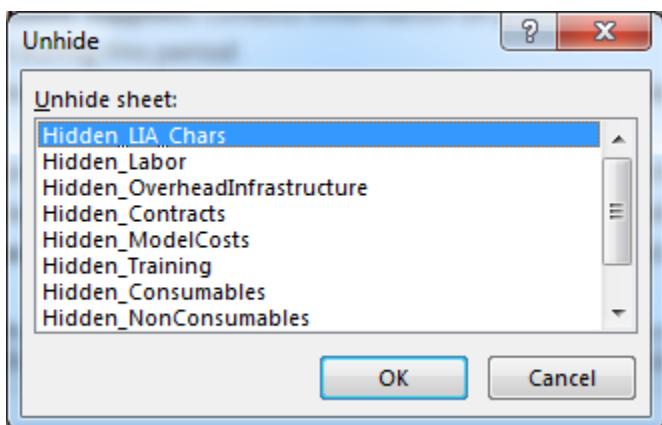
Step 2. Unhide each sheet in the list by highlighting its name and clicking "OK." Repeat for all hidden tabs, except for Hidden_ErrorCheck and dropdowns.

Step 3. Copy and paste the data from each of the hidden tabs into separate data files for analysis. Add a column in the data file for respondent ID if examining the data from multiple HV-BATs. There will be nine data files that include data entered by LIAs: one for each data entry worksheet in the HV-BAT (e.g., LIA Characteristics, Labor, Contracted Services) and a tenth file with data from the Summary tab, which reports calculated costs, such as cost per family served. Values in the Hidden_ErrorCheck tab are solely to be used for the Quality Assurance process and do not need to be copied into a separate file.

Step 4. If data from multiple HV-BATs are being aggregated, and the costs were reported for different time periods, add a time period identifier variable for each HV-BAT. The analyst will need to determine the base year from which to adjust the other costs.

Step 5. Clean the data (e.g., check numeric values are in appropriate ranges, such as percentages not being greater than 100%).

Step 6. Calculate summary statistics. Check that statistics calculated are within reasonable ranges, such as those reported in Exhibit 2 from the HV-BAT pilot study. If any of the summary statistics seem questionable, double-check the calculations and then verify entries from the HV-BATs in question.

Converting Costs to the Same Base Year

If LIAs submit costs using different definitions of a fiscal year, the costs should be converted to the same base year before the data from multiple LIAs are analyzed. For example, if costs are expressed in 2019 dollars, then the base year is 2019. The steps for cost conversion are outlined here.

Step 1. Identify the base year to which all costs should be converted. Use of the federal government's fiscal year definition is recommended, where the fiscal year runs from October 1 of one calendar year through September 30 of the next year. For example, the 2020 federal fiscal year is October 1, 2019, to September 30, 2020.

For costs already reported in the base year, no further adjustments are necessary; for costs reported in periods other than the base year, reported costs should be inflated/deflated based on their reporting period and specifically based on the number of months within that period that fall into each calendar year (because the price index values are estimated for the calendar years).

Step 2. Obtain the price index for the calendar years included in the reporting period. For example, if the reporting period is July 2018 through June 2019, obtain price index values for 2018 and 2019 calendar years. Recommended price index for adjusting the costs is the gross domestic product (GDP) price index from the Bureau of Economic Analysis (BEA). The steps for obtaining the price index for GDP are as follows:

1. Go to https://www.bea.gov/.
2. Under the "Data" dropdown at the top, click "by Place." Under "United States," click on "Gross Domestic Product."
3. Under "Interactive Data**,"** click on "GDP and the National Income and Product Account (NIPA) Historical Tables."
4. Click on "Begin using the data."
5. Expand Section 1 and click on "Table 1.1.4 Price Indexes for Gross Domestic Product (A) (Q)."
6. Use the values reported in the first line (Gross domestic product) for the quarters/years needed. To obtain annual (rather than quarterly) values, click on the "Modify" icon and select "Annual." If the annual value for the year of interest is not yet available, use the value for the last reported quarter.

Exhibit 5 includes GDP price index values from BEA for years 2018 and 2019.

Exhibit 5. GDP Price Index for 2018 and 2019 (Step 2)

	2018	2019
Price index for GDP from BEA	110.322	112.318

Step 3. For each reporting period, determine the number of months that fall into corresponding calendar years. For example, Exhibit 6 shows the number of months that fall into calendar years 2018 (column B) and 2019 (column C) given starting months (i.e., April 2018, July 2018, October 2018, or January 2019) of different fiscal year definitions listed in the rows of the table.

Exhibit 6. Reporting Periods and Calendar Year Months (Steps 3–5)

Reporting period	Number of months in 2018	Number of months in 2019	Price index	Adjustment factor
	Step 3		**Step 4**	**Step 5**
Column A	**Column B**	**Column C**	**Column D**	**Column E**
April 2018–March 2019	9	3	(110.322*9+112.318*3)/12 = 110.82	111.82/110.82 = 1.0090
July 2018–June 2019	6	6	(110.322*6+112.318*6)/12 = 111.32	111.82/111.32 = 1.0045
Oct. 2018–Sept. 2019	3	9	(110.322*3+112.318*9)/12 = 111.82	111.82/111.82 = 1.0000
Jan. 2019–Dec. 2019	0	12	(110.322*0+112.318*12)/12 = 112.32	111.82/112.32 = 0.9956

Step 4. Calculate a price index for each reporting period as an average of the index values for the calendar years in the reporting period weighted by the number of months in that calendar year. For example, if the reporting period is July 2018 through June 2019, then the price index for this period is an average of the price index values for years 2018 and 2019 (because 6 months from the reporting period fall in each calendar year). Column D of Exhibit 6 shows calculations of the price index for each reporting period.

Step 5. Calculate the adjustment factor for each reporting period using the federal fiscal year (i.e., October through September) as the base period. The adjustment factor is equal to the base year price index divided by the reporting period price index. Column E of Exhibit 6 shows calculations of the adjustment factors for each reporting period.

Step 6. Convert the costs to the same base year by multiplying the cost from the reporting period by the adjustment factor calculated in step 5.

Questions?

If you have questions or need additional information, please contact your MIECHV Project Officer.