

Addressing Missing Data and Improving Program Performance by Susan Zaid, DOHVE-TA

All MIECHV grantees have worked hard to develop data plans, CQI plans, and other reporting requirements to help strengthen their programs. Reviewing and monitoring the data collected by programs is critical in order to continuously improve those programs over time. By looking at the data regularly and using strategies for improvement, grantees will be able to find ways to modify program processes in ways that will drive improvements in program performance over time. Having a significant amount of missing data can make it problematic for grantees to accurately draw inferences from the data and develop the right strategies for improvement. This article highlights the importance of addressing missing data on DGIS-HV Form 1, as well as how CQI principles can be used when reviewing the data from DGIS-HV Form 2 to improve program performance.¹

Strategies to Minimize Missing Data on Form 1

While data might be missing for reasons beyond the scope of the program (i.e., participant opts not to respond to question(s)), there are often reasons for missing data that are within the program's control. Missing data was a common issue many grantees faced with their DGIS-HV Form 1 data submissions. There could be multiple reasons for missing data on Form 1. A few reasons might be:

- The data were never collected.
- The data were collected, but not according to the categories specified on Form 1.
- There was a specific issue with data collection related to a particular site or home visitor.
- There was a data entry issue or a problem transferring the data from the site to the state level.

MIECHV grantees are responsible for exploring the data and identifying reasons for the missing data. In many cases, this will mean that grantees should be working closely with their local implementing agencies (LIAs) to explore the reasons for the missing data and collaborate with those agencies to develop an action plan to address the issues. For example, if the data are missing because the data collection forms do not capture all of the required variable categories on Form 1, the grantee will need to modify the data collection forms to add the missing variables. If the data collection forms contain all the required data elements, but the home visitors are not collecting the data consistently, the grantee may need to consider training or re-training the home visitors on the appropriate data collection protocols. If data is missing because of the configuration of the data system, the data system may need to be modified so all variables can be entered and analyzed for reports. These are just a few examples that illustrate the importance of understanding the factors that contribute to missing data in order to develop successful strategies for improvement. Further, while this section addresses missing data in

¹ In the month of August, DOHVE participated in two MCHB webcasts related to the DGIS-HV system. During the August 8th DGIS-HV webcast, *What has Changed? What Stayed the Same? Updates on the Discretionary Grants Information System-Home Visiting*, DOHVE discussed lessons learned from the DGIS-HV review process and we noted that on Form 1, grantee submissions tended to experience similar issues around missing data, some of which are noted in this article. In the second webcast on August 16th, *Strategies to Minimize and Address Missing Data for MIECHV Grants*, DOHVE addressed strategies to minimize missing data on Form 1, as well as how CQI principles can be used when reviewing the data of Form 2 in order to improve performance over time. This article highlights some of those strategies discussed in the previous DGIS-HV webcasts.

relation for Form 1, grantees should work to identify reasons for missing data and develop strategies to minimize the extend of missing data across their entire program.

Strategies to Improve Program Performance using Form 2

MIECHV grantees report benchmark construct data on DGIS-HV Form 2. In addition to meeting federal reporting requirements, each grantee's benchmark plan should serve as a performance monitoring tool and grantees should carefully monitor the data they collect from their LIAs to assess program performance.

Why is continuous quality improvement (CQI) so important to a home visiting grantee? CQI strategies are a great way to use the data to monitor performance and make data-driven decisions about programs. By looking at the data regularly and using strategies for improvement, grantees will find ways to adjust program processes in ways that meet their community's needs while at the same time improving outcomes.

The first step is always to explore the data and ask questions. By monitoring the data, grantees will naturally find some indicators that represent program successes and some that suggest room for improvement. Monitoring the data closely will help grantees identify sites and home visiting program staff that are doing an exceptional job. By investigating what they are doing and asking questions, grantees can identify best practices that can be shared with other sites and home visiting program staff.

Exploring the data will also help programs identify indicators for which there is room for improvement. When performance is less than satisfactory, it is an opportunity to investigate all possible underlying causes and brainstorm strategies for improvement. Strategies should be evaluated and tested one at a time, the results analyzed, and conclusions made as to how successful the strategy (or strategies) is when implemented.

Whenever a program identifies an indicator where there is room for improvement, here are a few steps to keep in mind:

1. Identify the problem clearly and specifically. It is difficult to determine the underlying causes and brainstorm effective strategies for improvement if the problem is hard to identify or if people are defining the problem differently.
2. There may be more than one root cause for an issue. Programs should identify all possible causes of a problem.
3. It is best to establish a sequence of events or timelines to understand the relationships between causes and contributing factors to the problem. (A process map can help to visualize the sequence of events².) By identifying a sequence of events, it is easier to identify exactly where a breakdown in the system is occurring (i.e., is it at the home visitor level; is it at the supervisor level; is it at the data entry process or related to the MIS?). Before implementing strategies for improvement, the grantee must first understand the program processes and where in the process the system is not functioning well or could be improved.

² Additional information on process maps can be found on the DOHVE resource page: http://www.mdrc.org/dohve/dohve_resources.html.

4. After potential causes and contributing factors are identified, program staff should brainstorm strategies for improvement. A Plan-Do-Study-Act (PDSA)-cycle or a similar strategy can be used to learn what works. There may be more than one strategy for improvement. The ultimate goal is to identify successful strategies for improvement at the lowest cost and using the simplest methods.
5. Finally, it is important to keep in mind that these CQI principles are most effective in an environment or organization that fosters a culture of quality. Organizations or environments that do not promote quality and learning may resist change. For CQI strategies to be effective, management support and policies that encourage staff to identify and address problems are critical.

Example: Maternal Depression Screening Rates. If a program goal is to systematically screen all mothers for depression, and the screening rate of all eligible caregivers is 58% in fiscal year 1, there is clearly room for improvement. The first thing a grantee will want to do is to work with the LIAs and start asking questions. Are screening rates consistently low across all sites? Are the rates lower among some sites and higher in others? When are home visitors administering the screenings? Have they all been trained in data collection protocols? And so on... Through further investigation, a program might find that home visitors know they are supposed to be administering the depression screener, but when they go out to the home for the visit, they are often forgetting to take the screener with them. Knowing the reason why the screener is not being administered will help the grantee identify the right strategies for improvement. For instance, in this situation, the grantee might consider adding a checklist to remind home visitors what activities and forms need to be completed during specific home visits. By implementing a checklist completed by home visitors and reviewed by supervisors, home visitors will be reminded that during a specific home visit, a given screener should be administered, therefore, they are more likely to take the screener with them to the home visit.

Although a grantee might develop a long list of strategies that could help improve screening rates, the grantee does not need to test all the strategies at once. Rather, the program should identify the one that seems most promising, easy, and relatively low cost. Once the most promising strategy is identified, the strategy may be tested with only one site, or with only a couple of home visitors, and then the data should be monitored for change. If the strategy is getting the desired results with only a few home visitors or with one site, then the grantee might not want to test other strategies and may consider implementing the strategy on a wider scale.

Concluding Thoughts

In summary, grantees should be reviewing their data and monitoring performance regularly. They should be monitoring the amount of missing data and working with their sites to determine why they have missing data and to implement strategies to address and minimize missing data in future reports.

Also, grantees should be monitoring the data they have in order to identify where their successes are and where performance can be improved. Implementing CQI principles and strategies can improve a program's outcomes. Monitoring the data closely will help programs to identify sites and home visiting program staff that are doing an exceptional job and provide you an opportunity to investigate what exactly they do that works so that those best practices may be shared with other sites and home visiting program staff.

Monitoring the data will also allow grantees to identify areas for improvement. By identifying the root cause of a problem, grantees can figure out where in the system processes can be improved or strengthened, and then test strategies for improving those processes. If those strategies are successful on a small scale, they can be rolled out program-wide. Testing new strategies that work and that help to improve a program's outcomes will help the program be more effective in serving families and more efficient over time.

Ultimately, all MIECHV grantees are tasked with demonstrating improvement across benchmark constructs by the end of the third fiscal year. Using the data submitted in the first year DGIS-HV submission provides a great opportunity to improve program performance over time.

If you would like additional information on how to address missing data or on using CQI strategies to help improve program performance, please contact your DOHVE Liaison. You may also visit the DOHVE resource page to view resources on CQI (http://www.mdrc.org/dohve/dohve_resources.html).