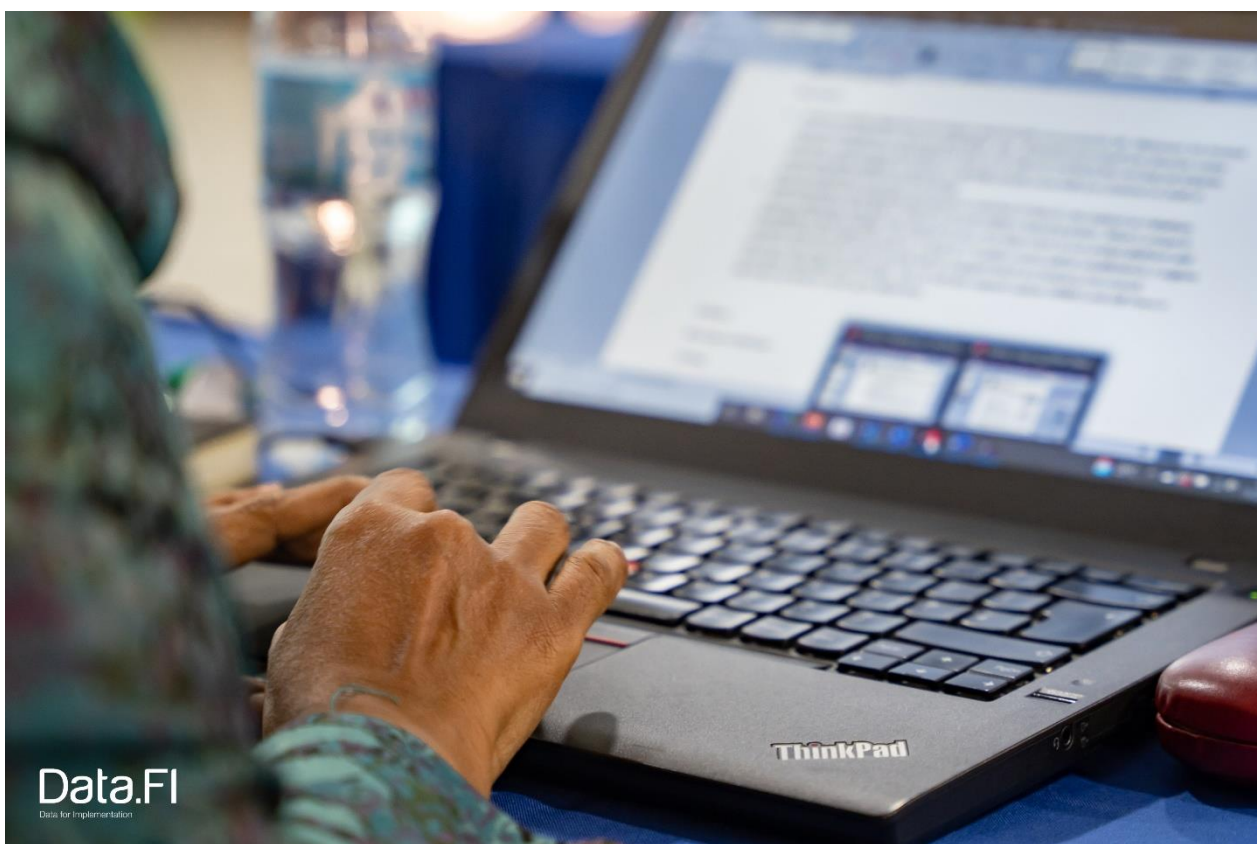


Conducting a Remote Data Quality Assessment on COVID-19 Indicators Reported by USAID Projects

BACKGROUND

In response to the 2020 SARS-CoV-2 (COVID-19) pandemic, the United States Agency for International Development (USAID) supported interventions to assist countries to reduce morbidity and mortality from COVID-19, mitigate transmission, and strengthen health systems, including preventing, detecting, and responding to pandemic threats.

Early in the pandemic, as USAID was organizing interventions to support countries to respond to COVID-19, the agency released guidance on new reporting indicators to monitor progress and inform evidence-based decision making. The guidance was updated as the pandemic unfolded.¹ At the same time, monitoring and evaluation (M&E) systems were devised by implementing partners (IPs) to manage the implementation of COVID-19 emergency response programs.



Data.FI conducts remote data quality assessments to enable partners to pinpoint performance issues and strategize effective actions to address them. Photo by Data.FI/Tanzania, Palladium.

¹ Data for Implementation (Data.FI). (2020). Global health COVID-19 indicators: A compendium of indicator reference sheets for COVID-19 Pillar 2 reporting by USAID projects. Washington, DC, USA: Data.FI, Palladium. Retrieved from https://pdf.usaid.gov/pdf_docs/PA00XBDJ.pdf.

In accordance with USAID's Automated Directives System (ADS) Chapter 1: Operational Policy for the Program Cycle,² data quality assessments (DQAs) are required for any indicator that may be reported outside of USAID. DQAs are also required after the collection of data for new performance indicators (ADS 201.3.5.7).³ Irrespective of these requirements, it is good practice to conduct periodic DQAs to identify the strengths and weaknesses of performance data, enhance the understanding of data collection methods, and determine whether the data are of sufficient quality to influence management decisions. (See USAID guidance on conducting DQAs [here](#).)

A DQA typically involves the deployment of data collection teams to conduct in-person reviews to verify data (i.e., compare primary data collected by IPs and secondary data collected by other institutions) and to check the IPs' understanding of the indicator. Due to COVID-19 international and domestic travel restrictions and social distancing requirements, it was not feasible to conduct in-person DQAs. They had to be conducted entirely remotely, which presented unique challenges.

Data.FI is a USAID-funded global project that helps countries improve their data systems and use program and epidemiological data to expedite the control of epidemics, such as HIV and COVID-19. This technical brief reports on the Data for Implementation (Data.FI) project's experience conducting a remote DQA focused on indicators for activities implemented by USAID IPs in response to COVID-19.

With advances in virtual collaboration technologies, remote DQAs may be relied on with increasing frequency in the future. In this brief, we suggest best practices for conducting a DQA remotely. We describe preparations for conducting the remote DQA, including indicator selection, data collection tool development, and key informant interviews. Last, we share lessons learned from the perspective of the organization conducting the DQA and from the IPs that are subjects of the DQA. Although these best practices are focused on USAID's indicators for the COVID-19 emergency response, we also highlight lessons that may be applicable to remote DQAs on indicators for well-established global health programs, such as HIV, tuberculosis (TB), malaria, and maternal and child health (MCH).

OVERVIEW OF REMOTE DQA METHODS

The USAID COVID-19 DQA focused on three result areas: (1) risk communication and community engagement; (2) laboratory systems; and (3) infection prevention and control (IPC). In collaboration with USAID, we engaged with three IPs carrying out programs in these result areas to select the indicators and to choose the reporting periods to verify. For each IP, we selected three countries for the COVID-19 remote DQA.

The most recent and complete reporting period was selected for verification. Because activities were not uniformly implemented across result areas and countries, the selected reporting periods could vary for different indicators in the same result area and across countries.

The project adapted existing DQA tools for the assessment. The priority was to use a standard tool and approach and to make adjustments, where necessary, to accommodate unique indicators and assessment methods. Interviews were conducted with staff from the IPs' headquarters offices, IPs' country offices, and reporting units in countries for the selected indicators. Interviews were conducted using videoconferencing applications (Zoom, Microsoft Teams, Google Meet, etc.). Source data and

² United States Agency for International Development (USAID). (2021). ADS chapter 201 program cycle operational policy. Retrieved from <https://www.usaid.gov/ads/policy/200/201>.

³ United States Agency for International Development (USAID). (2021). ADS chapter 201 program cycle operational policy. Retrieved from <https://www.usaid.gov/sites/default/files/documents/201.pdf>.

submitted reports were obtained from the IPs in electronic format. They were reviewed and recompiled to compare with reported values for each indicator.

LESSONS LEARNED

DQA Preparation Phase

Indicator Selection

For a remote DQA to succeed, indicator selection is important. For a traditional DQA, indicators are typically chosen based on their programmatic importance for gauging progress or success, the relative investment made in the collection and management of data, and/or known or suspected data quality problems. These criteria are likewise important for a remote DQA, but planners should also consider the suitability of the indicators for remote verification. Not all indicators lend themselves to remote data collection and some may be more informative than others.

Lesson:

Streamline the objectives and scope (e.g., the number and complexity of the indicators) for remote DQAs. Given the need to collect data remotely through videoconferences and telephone discussions, data collectors may not have the access and ability to maintain effective engagement with stakeholders to delve into the details.

Indicators that require extensive review of source documents that are not available in electronic format (e.g., a paper-based register) may be difficult and time consuming to assess using videoconferencing. In general, indicators that lend themselves to remote DQAs are those with source data that can be shared electronically (encounter forms, log sheets, spreadsheets, etc.), whether they are collected electronically (spreadsheet) or made electronic by scanning (paper-based logs, attendance sheets, encounter forms). Large paper-based registers—which may be the primary source for administrative data at the health facility level for service delivery indicators for public health programs, (e.g., HIV, TB, MCH, and immunization), cannot be readily digitized and may not be ideal data sources for a remote DQA.

In addition, indicators that are composed of several parts—each with its own data sources, data flow, and reporting processes—may not be ideal for a remote DQA. For example, in the COVID-19 remote DQA, programmatic indicators for COVID-19 risk communication and community engagement, such as the “number of people reached with social and behavior change messaging,” was comprised of several different components representing a different type of mass media and social media, each with specific methods for estimating reach. Depending on how an indicator is defined and what source data exists, it may not always be feasible or appropriate to assess the accuracy of reported data (e.g., are the reported data an accurate reflection of service delivery as recorded in the source documents?). For specific indicators, it may only be feasible to determine whether reporting practices are methodologically sound.

The number of indicators to assess is also an important consideration. For a traditional DQA focused on evaluating the quality of health program service delivery indicators, a team of two assessors can usually validate three to five indicators in a day at a given facility, depending on the volume of health services provided (and consequently, the volume of data available) at the facility. For a remote DQA, it is advisable

to limit the number of indicators, given the complexities of validating source data using videoconference or other technologies.

Lesson:

Select indicators with a greater return on investment. Identify “tracer” indicators (i.e., those that are indicative of data quality for a larger spectrum of indicators).

When selecting indicators for a remote DQA, planners may need to balance the ease of data verification against the usefulness of the information on data quality gained. Indicators with accessible (and digitized) primary data sources—such as whether commodities and supplies are routinely reported by healthcare facilities—are easy to collect but may not be helpful for understanding the quality of a data system for a specific program area. One needs only to verify in the database that a record was received in the reporting period. However, this does not tell us much about the quality of the data for the result area.

Traditional data quality assurance methods in the health sector have stressed the importance of conducting DQAs for indicators that are representative of data quality for indicators in the program area. For example, the Data Quality Review (DQR) Toolkit⁴ from the World Health Organization is holistic and meant to provide information on data quality for the health management information system as a whole. The indicators selected for the DQR are those that are typical in a program area (such as HIV, TB, malaria, immunization, and MCH). These indicators are neither the easiest nor the hardest to collect, compile data, and report results. For example, Antenatal Care 1st Visit is selected as the indicator “representing” MCH. This indicator is used in every MCH program around the world; is reasonably easy to collect, compile, and transmit; and has standard tools for data collection and reporting. It can be representative of data quality for the program area in that if data quality is good or poor for this indicator, it is likely good or poor for the other indicators in that area. Similar criteria should be applied for the selection of indicators in a remote DQA focused on project-level indicators for the COVID-19 response.

Lesson:

To the extent possible, consult with country-level staff during the planning stage to understand the activities being conducted in the field and—importantly—what exactly is being reported before starting the DQA. What is being reported is not always what is in the performance indicator reference sheet.

The definitions of many global indicators are left intentionally vague to allow for country adaptation. For example, one of the indicators selected for the COVID-19 remote DQA focused on health facilities in compliance with COVID-19 infection prevention and control guidelines. These guidelines varied across countries and compliance thresholds were not always well defined, which led to confusion about what to count for data verification. Ensuring a common understanding of the indicator definitions and their shortcomings by data collectors and IP data managers will save time and effort during subsequent remote DQAs.

IP staff may have needed to adapt the definition of routine global indicators according to the activities supported in their local country contexts. As such, flexibility in remote DQA methods and the approach is

⁴ World Health Organization (WHO). (2017). *Data quality review: a toolkit for facility data quality assessment, Module 1. Framework and metrics*. Geneva: WHO. Retrieved from <http://apps.who.int/iris/bitstream/handle/10665/259224/9789241512725-eng.pdf>.

important because it is possible that operational definitions of indicators may vary from the standard performance indicator reference sheets, and the selected indicators may not actually be collecting the information they are intended to collect.

Country-level staff, who have the best knowledge of the activities and M&E systems being implemented on the ground, can add a valuable perspective on indicator selection and should be engaged during the planning stages of a remote DQA. This adds value to remote DQAs focused both on COVID-19 indicators and DQAs focused on well-established health programs in a country. An advance understanding of the activities producing the data to be assessed will help ensure optimum indicator selection for the DQA. Engaging country-level staff can also help build trust and rapport with assessment participants before data collection is initiated.

Reporting Periods

Traditionally, the most recent and complete reporting period is selected for the DQA because it is the most reflective of current data quality. However, it can also be desirable to select a specific reporting period for which data quality problems are suspected, or to evaluate a change in data collection and reporting practices. Typically, a few months of reported data are sufficient to understand data quality issues; any more than this will only burden the data collectors unnecessarily. The goal of the DQA is to identify data quality issues, not to correct all reported data. Too much data to review can impact negatively on the quality of the information being collected.

Lesson:

Be flexible about the selection of reporting periods because data may not be reported uniformly across result areas and countries. Be aware of the differences in reporting requirements, which may change over time.

The remote COVID-19 DQA focused on assessing data reported for activities implemented during an emergency response. Activities were not always implemented uniformly across countries for specific result areas, and thus the selected reporting periods could vary across indicators in a result area and across countries. For the remote COVID-19 DQA, we had to select the reporting periods that had data to review. Flexibility about the selection of the reporting period may be needed for subsequent remote DQAs on COVID-19 indicators in emergency settings. In addition, be mindful of the differences in reporting requirements because the guidelines may change over time.

Tool Selection/Development

A standard approach to assessing each indicator is important because consistency reduces bias in the data-gathering phase. Many DQA tools exist and use similar methods for evaluating important data quality metrics, such as accuracy and completeness of reporting.

Lesson:

Share data collection tools in advance and ensure access to appropriate staff.

Data collection tools for remote DQAs (both for COVID-19 indicators and for established health program indicators) should be stored in the cloud, with access provided to the appropriate staff to avoid issues of version control and to ensure continual access to those who need them. The tools should be shared in

advance with interview respondents so that they have a chance to gather the required information and ensure an adequate understanding of what is being gathered. For the remote DQA, Data.FI converted MS Excel versions of the hybrid tool to Google Sheets and collected and stored all data on data quality in a central repository (corporate Google Drive).

Lesson:

Use a standard data collection tool but be mindful of the potential diversity in the types of activities implemented and data used to report on the activities. Select similar indicators so that a standard and appropriate DQA method is applied or adapt tools to specific result areas.

For the COVID-19 DQA, a hybrid tool was developed based on MEASURE Evaluation's Routine Data Quality Assessment Tool⁵ and the USAID DQA Checklist.⁶ These tools were designed for use in the health sector (for such programs as HIV, TB, MCH, immunization, and malaria) with traditional government administrative reporting systems and are geared to a reporting structure of subnational reporting units reporting on standard forms on a fixed reporting schedule. Different data collection tools and templates may be required for indicators that are not yet reported through routine administrative systems, or for indicators that are both collected and reported by the national IP level, such as the COVID-19 indicators reported by USAID-funded projects. Good pre-assessment data gathering on the nature of reporting for each indicator will help with the selection of the appropriate approaches and tools for subsequent remote DQAs.

A limitation of the tool used for the remote COVID-19 DQA was that it did not always align well with the information systems being used by the IPs. Because the remote DQA was conducted for activities implemented in an emergency setting, many of the information systems and processes put in place to gather data for reporting were ad hoc. As such, they did not have many of the features of established reporting systems, such as standard guidelines and practices, and integration with national administrative reporting systems. Moreover, most of the data were actively collected by the IP, rather than being reported to the IP by subnational government reporting entities or through national administrative reporting systems.

For remote DQAs of newly established COVID-19 reporting indicators, a final revision to the selected data collection tool (or tools) after completing the initial fact-finding interviews and before starting data collection will help finetune the tool(s) for optimal data collection.

⁵ MEASURE Evaluation. (2017). *Routine data quality assessment tool - user manual*. Pretoria, South Africa: MEASURE Evaluation–Strategic Information for South Africa (MEval-SIFSA) Project. Retrieved from <https://www.measureevaluation.org/resources/publications/ms-17-117.html>.

⁶ United States Agency for International Development (USAID). (2016, September 1). USAID recommended data quality assessment (DQA) checklist. Retrieved from <https://www.usaid.gov/ads/policy/200/201sae>.

Conducting the Assessment

Lesson:

Data verification at service delivery points is extremely difficult to conduct remotely, especially in an emergency setting because staff at these reporting levels are likely involved in response activities in-country.

The remote COVID-19 DQA was time consuming and difficult to implement due to time differences between countries. (The DQA involved countries in East and West Africa, and South and East Asia.) We held many meetings using videoconference technologies to inform the data collection, understand reporting practices, and validate the data.

To facilitate this process, we learned to schedule meetings and communicate expectations well in advance; ensure that the appropriate staff were invited to the virtual meetings and brought the required documentation with them; and kept the objectives for each session to a manageable minimum. We found that it was more productive to schedule more frequent, shorter meetings (e.g., a maximum of one hour) rather than trying to conduct longer meetings with a crammed agenda. We found that assessment team members should be assigned to countries, rather than to result areas, to avoid needing to schedule many meetings in different time zones. Internet connectivity is not the same in all countries and over time, so flexibility in scheduling is essential. Last, sensitivity to the fact that the people invited to the videoconference are similarly busy and that the DQA represents work supplemental to their regular jobs is very important to a successful assessment and to preserving the constructive collaboration of all involved. Ensuring the health and safety of participants are paramount and take precedence over the ability to retrieve and share the required documentation from service delivery points for the DQA. This is especially relevant for remote DQAs conducted for routine health service delivery indicators because fieldwork for these assessments requires engagement and participation of health facility staff (including facility in-charges and data managers), sub-national authorities (such as district or regional health management teams), and government program managers and M&E/ health management information system staff.

After the Assessment

Lesson:

Involve participating DQA respondents in the development of data quality improvement recommendations.

Inherent in remote data collection is the potential for miscommunication due to connectivity challenges, lack of non-verbal cues, and missed opportunities for inquiry and probing follow-up questions. A reduced understanding of context can lead to a biased interpretation or misinterpretation of the DQA results. It is important to build in processes to validate data collected during a remote DQA.

To maximize understanding, the assessment team shared the preliminary DQA findings with the participating IPs, who contributed written comments that confirmed the assessment results and provided additional context to better explain and interpret the assessment findings. The assessment team also organized a virtual meeting with the IPs, which provided an opportunity to further reflect on the DQA

findings and provide input on data quality improvement recommendations in the context of the COVID-19 emergency. For remote DQAs focused on routine health service delivery indicators, meetings with participating government stakeholders should be held to validate and ground truth the assessment findings, and co-create data quality improvement recommendations.

CONCLUSION

The COVID-19 pandemic has resulted in a need by program implementers and their funders to determine a new way to conduct DQAs, a shift that presents both challenges and opportunities. The advent of remote approaches has allowed M&E practitioners to collect data virtually, thereby protecting the health and safety of IP and government staff, and DQA data collectors and supervisors. There may be many advantages to conducting DQAs remotely, including an expansion of the geographical reach of the assessment and a reduction in the cost and time it can take to collect data. At the same time, there are numerous challenges associated with the assessment of data quality in a virtual environment. Close collaboration with assessment participants is key because substantial upfront time investment is needed to fully understand the activities implemented, the data flow, and the M&E systems established by IPs. Collaboration is also essential for effective validation of assessment findings and for DQA stakeholders interested in improving performance on indicators to contribute their knowledge and perspectives to the recommendations for action.

DUC-22-01

Data for Implementation (Data.FI) is a five-year cooperative agreement funded by the U.S. Agency for International Development under Agreement No. 7200AA19CA0004, beginning April 15, 2019. It is implemented by Palladium, in partnership with JSI Research & Training Institute (JSI), Johns Hopkins University (JHU) Department of Epidemiology, Right to Care (RTC), Cooper/Smith, IMC Worldwide, Jembi Health Systems, and Macro-Eyes, and supported by expert local resource partners.

This publication was produced for review by the United States Agency for International Development. It was prepared by Data.FI. The information provided is not official U.S. Government information and does not necessarily reflect the views or positions of the U.S. Agency for International Development or the United States Government.

November 2021

FOR MORE INFORMATION

Contact Data.FI:

Emily Harris, Data.FI AOR
emharris@usaid.gov

Jenifer Chapman, Data.FI Project Director
datafiproject@thepalladiumgroup.com

<https://datafi.thepalladiumgroup.com/>