CDC's Public Health Data Modernization Assessment

User Guide

v1.1

CDC's Public Health Data Modernization Assessment User Guide is a resource that will assist your jurisdiction as you complete the annual public health data modernization assessment data collection and reporting process. The User Guide explains how to:

- Engage stakeholders in the data collection process.
- Develop a summary report of your assessment findings.
- Engage stakeholders in the interpretation of the assessment findings and prioritization of data modernization efforts.

This guide provides explanations, resources, and example templates to walk you through each step of the process.

Contents

Introduction

CDC's Data Modernization Initiative (DMI) marks the first comprehensive, cross-cutting effort to improve data at CDC and in public health departments jurisdictions by modernizing tools, technology, strategy, attitudes, and culture around data. This initiative supports upgrading and modernizing infrastructure with new technologies and functionality, identifying data needs to answer priority public health questions, providing data strategy planning and decision support to stakeholders, making comprehensive data available for partners and decision makers, and strengthening the public health workforce.

DATA MODERNIZATION RESOURCES

CDC's Glossary of Data Modernization Terms defines common terms used throughout this user guide related to data modernization. For more resources related to DMI assessment and planning, visit CDC's Data Modernization Implementation Guidance Portal for Public Health Departments.

This public health data modernization self- assessment documents the status, needs, and opportunities specific to public health data modernization and workforce development for jurisdictional public health departments.

The findings from this annual assessment will help identify your jurisdiction's strengths, areas for improvement, and technical assistance needs. In addition, assessment findings should inform your Data Modernization Roadmap (i.e., modernization plan for information technology [IT] and informatics infrastructure, and workforce development plan).

The data modernization lead in your jurisdiction will coordinate and lead the assessment process; However, the assessment will require input from multiple stakeholders in your jurisdiction. This User Guide explains the steps of the assessment process, which include:

1. Obtaining support from jurisdiction leadership and engaging stakeholders.
2. Developing a summary report of assessment findings.
3. Sharing and confirming assessment results with stakeholders using participatory data interpretation (PDI).
4. Using the results of PDI to inform your Data Modernization Roadmap.

Overview

This section provides a broad overview of the assessment, reporting, and data interpretation process. The purpose of the Public Health Data Modernization Assessment is to provide CDC and your jurisdiction with a comprehensive understanding of your jurisdiction's capabilities and capacities related to public health data modernization. When answering the questions, consider the capabilities and capacities across your jurisdiction. The findings from this annual assessment will help you identify your jurisdiction's strengths; areas for improvement; and staffing, training, and technical assistance needs. **Exhibit 1** lists the desired outcomes of the assessment.

Exhibit 1: Desired Outcomes of the Assessment

- Identification of needs and opportunities related to improving systems, processes, and workforce capacity for the following:
  - Assessment and evaluation of data and IT systems
  - Data exchange and data system interoperability
  - Data and IT governance
  - Data analytics, visualization, and reporting
- Collection of information to inform the development of a Data Modernization Roadmap that includes short-, intermediate-, and long-term goals and objectives.

Your jurisdiction could complete the assessment once per year or at a frequency appropriate for your jurisdiction. After completing the assessment, you can create a summary report that allows you to confirm and share data with stakeholders, identify gaps and areas of need, and plan your jurisdiction's future data modernization activities and workforce development. The assessment process consists of four steps:

Step 1: Engaging Stakeholders. The assessment will require input from multiple stakeholders in your jurisdiction. Prior to filling out the assessment, the data modernization lead within your jurisdiction should review the entire assessment, identify the appropriate staff within your jurisdiction who can provide information to answer the questions, and engage key stakeholders who will provide support for the assessment process.

An [assessment worksheet] is available to download on [CDC's Data Modernization Implementation Guidance Portal for Public Health Departments]. You can use this worksheet to collect data from stakeholders within your jurisdiction. The assessment is organized by the following sections:

- Project Introduction
- Section 1: Overview of Data Modernization Efforts
- Section 2: Assessment and Evaluation (Domain 1)
- Section 3: Data Exchange and Systems Interoperability (Domain 2)
- Section 4: Data and IT Governance (Domain 3)
- Section 5: Data Analysis, Visualization, and Reporting (Domain 4)
- Section 6: Conclusion

Sections 2 through 4 include questions related to processes, systems, workforce, facilitators, barriers, needs, and opportunities.

Step 2: Developing a Summary Report Once you have completed the assessment worksheet, you will develop a summary report. A summary report template is available for download.

Step 3: Sharing and Confirming Assessment Findings With Stakeholders. Once you have developed a summary report of your assessment data, you are encouraged to share the results with stakeholders using a participatory data interpretation process to confirm the findings, prepare for future modernization efforts, and develop your Data Modernization Roadmap.

Step 4: Developing Your Data Modernization Roadmap. After you have confirmed your assessment results with stakeholders, you will use the information to update or develop your Data Modernization Roadmap.

The following sections of this User Guide provide more information about the steps for completing the assessment process.

Engaging Stakeholders

Before starting the assessment, it is vital to identify the key stakeholders who will support the assessment information-gathering process, have an interest in the assessment findings, and will help plan for the future. Engaging stakeholders in the assessment facilitates the data collection process, enhances understanding and acceptance of the assessment findings, and helps plan and implement activities based on assessment results.

Obtaining buy-in and support from your jurisdiction's leadership before engaging stakeholders will be important for facilitating the assessment implementation process. We recommend informing leadership about the purpose of the assessment and requesting support for the data collection effort. Data modernization leads will need the authority to request information from stakeholders throughout the jurisdiction.

Identifying Stakeholders

Stakeholders should represent organizational units from across your jurisdiction's health department. It is important to include individuals who can provide information on workforce capacity, data and IT systems, data and IT governance, and data analytics and reporting.

It may be a challenge to identify the right number and mix of stakeholders. You may consider using a prioritization process focused on identifying stakeholders who are most critical to the success of your jurisdiction's data modernization and workforce development efforts. Consider stakeholders who can provide a broad, yet integrated, perspective on data modernization and workforce needs across the agency. **Exhibit 2** lists the types of stakeholders who may be helpful for the assessment process.

Exhibit 2: Examples of Stakeholders in the Assessment Process

- Health Department Lead/Health Official (e.g., Director, Commissioner, State Health Officer, Secretary, Chief Medical Officer)
- Organizational Unit Leads (e.g., Division Directors)
- ELC program point of contact
- IT Lead/Chief Information Officer
- Informatics Lead
- State Epidemiologists
- System Managers or Administrators
- Public Health Laboratory Information Management System Administrators
- Cloud Leadership
- Electronic Laboratory Reporting Director/Lead
- Health Information Exchange Partners
- Messaging System Manager/Data Exchange Manager
- Human Resources Representative

Depending on their availability, role, and expertise, all stakeholders will not need to be engaged in the entire assessment process. Engagement may range from responding to some of the assessment questions to assisting with the data collection, reporting, and data Interpretation. **Table 1** indicates the states and components of the assessment process, along with space to identify who your jurisdiction would like to engage to support the process. The assessment worksheet provides more insight on who you will need to involve in the data collection process.

Table 1. Identifying Stakeholders Involved in the Stages of the Assessment Process

Stage	Component	Stakeholder(s) to Involve
Pre-Assessment	Request permission or authority to collect assessment information.	
Data Collection	Section 1: Overview of Data Modernization Efforts	
	Section 2: Assessment and Evaluation (Domain 1)	
	Section 3: Data Exchange and Systems Interoperability (Domain 2) • Electronic Laboratory Reporting • Electronic Case Reporting • Immunization • Syndromic Surveillance • Case-Based Reporting • Vital Records • Contract Tracing • Shared Services	
	Section 4: Data and IT Governance (Domain 3)	
	Section 5: Data Analytics, Visualization, and Reporting (Domain 4)	
	Questions related to workforce proficiency and staffing *(Subsections within Sections 2–5)*	
	Section 6: Conclusion	
Assessment Data Reporting	Use assessment data to populate report template.	
Interpreting the Data	Data sense making/interpretation (i.e., participants in the participatory data interpretation sessions)	
	Communicate the assessment findings.	

Reporting Assessment Findings

Once you have completed the assessment worksheet, you are ready to develop your Public Health Data Modernization Assessment Report. This report is designed to help you summarize and share data from your annual assessment. The report can be used to:

- Identify technical assistance and support needs.
- Prioritize data modernization efforts and develop your Data Modernization Roadmap.
- Facilitate discussions during participatory data interpretation meetings with stakeholders.

Using the Public Health Data Modernization Report

The Public Health Data Modernization Assessment Report can help you confirm the results of the assessment with stakeholders and turn data into knowledge and action.

How To Use the Public Health Data Modernization Report

To Identify Technical Assistance and Support Needs

Your report can help you summarize gaps, barriers, and areas of opportunity for your data modernization efforts. By reviewing this information, you can identify where your jurisdiction needs additional support.

To Prioritize Data Modernization Efforts

The report can be a starting point for team discussions about goals for data modernization and strategic, actionable, next steps, including development of your IT modernization infrastructure and workforce development plans (i.e., Data Modernization Roadmap).

To Facilitate Discussions During Participatory Data Interpretation Meetings with Stakeholders

Participatory data analysis and interpretation is a method that involves bringing a group of stakeholders, such as program staff or leadership, into the data interpretation and meaning-making process. More information about how to use the report and how to conduct participatory data interpretation meetings with stakeholders is provided in the **Sharing and Confirming Assessment Findings with Stakeholders** section of this user guide.

Sharing and Confirming Assessment Findings with Stakeholders

Once you have developed a summary report of your assessment results, you are encouraged to share the results with stakeholders during participatory data interpretation (PDI) sessions to confirm the findings and prepare for future modernization efforts. PDI and analysis is a method that involves bringing a group of stakeholders, such as program staff and leadership, into the data interpretation and meaning-making process.

PDI increases stakeholder participation, understanding, and support of the data, and will achieve more meaningful results and useful recommendations. Input from the PDI sessions will help your jurisdiction finalize the assessment data, prioritize data modernization efforts and activities, and identify human resources and technical assistance needs. The outputs from the PDI sessions will help inform the development or updating of your Data Modernization Roadmap. Below are steps on how to prepare for and conduct successful PDI sessions.

Participatory Data Analysis

- **Who?** – You and your key stakeholders.
- **What?** – One or more facilitated discussions where stakeholders interact, learn about the draft assessment findings, confirm the results, and provide input into the final conclusions and recommendations.
- **When?** – After the assessment is complete and the draft report is created.
- **Where?** – Virtual or in-person.
- **Why?** – To provide stakeholders with an opportunity to confirm the assessment findings, create a shared understanding of assessment results, and build consensus for the next steps.
- **How?** – Pose reflective questions about the findings and allow participants to discuss them. We recommend that your PDI sessions last no more than 2 hours. ***You may need to schedule more than one session to discuss all of the assessment findings.***

Preparing for the PDI Sessions

Step 1: Prepare Data for Use

Populate the summary report template with your jurisdiction's data. More information on how to develop the summary report is included in Reporting Assessment Findings section of this User Guide. If you choose to report your data in another format, remember to:

- Present the data without interpretation so that guests can draw their own conclusions.
- Do not overlook qualitative data as it provides context to your numbers.
- Prioritize your data and be thoughtful about what you include based on guests' information needs.
- Leave adequate white space to avoid clutter.

Due to the large amount of information in the assessment, we recommend discussing the findings in two or three PDI sessions. The following steps should be completed for each PDI session.

Step 2: Identify PDI Session Facilitators and Notetakers

Facilitators are essential for constructive participation in PDI sessions. Facilitators plan, guide, and manage the session to ensure that the objectives are met effectively and that participants are engaged. Although the data modernization lead will play a significant role in planning the PDI session, they may wish to ask someone else to facilitate so that they can focus on participating in the session.

One of the meeting organizers should be assigned the role of notetaker. The notetaker will outline the decisions made during the sessions, as well as emerging questions or areas for follow-up.

Exhibit 3: Example PDI Session Discussion Questions

- WHAT?
  - Are the assessment findings accurate?
- SO WHAT?
  - Why are these findings important?
  - What do they suggest?
  - Where are we making the most/least progress?
- NOW WHAT?
  - What are the implications of these findings?
  - Where do we need additional data?
  - What changes do we need to make?
  - What are our top priorities?
    - Short-term
    - Intermediate-term
    - Long-term
- What are our options for addressing challenges?
- What are our next steps?
    - Who is responsible for acting on our next steps?
    - What resources are needed?

Step 3: Develop a Facilitator's Guide, Participant Agenda, and Session Materials

A Facilitator's Guide is an in-depth agenda that is a resource for facilitators during the session. It provides information about the meeting objectives, flow, and participant roles and responsibilities. The guide should include a list of discussion questions that participants should consider regarding the assessment findings. Example discussion questions are included in Exhibit 8. An example Facilitator's Guide is located in Appendix B. Review the guide with the facilitators before the PDI session to ensure that the information is easy to follow.

A participant agenda is a pared down version of the Facilitator's Guide that provides information about the session objectives and the topics that will be discussed. The agenda and orientation materials should be shared with participants prior to the sessions.

If PDI session participants are new to the Public Health Data Modernization Assessment process, or did not participate in data collection, the PDI session organizers should share orientation materials to provide background information about the assessment process. Orientation materials may include the goals and purpose of the assessment, who participated in the completion of the assessment, the name and contact information of a designated person who can answer questions, and information about how the assessment findings will be used.

Step 4: Gather Materials and Identify a Technology Platform
PDI sessions can be held virtually or in-person. Exhibit 9 shows some of the materials that you will need for the PDI session.

If you are meeting in-person, you also will need a laptop computer, projector, hard copies of the materials, markers, sticky notes, and flip charts.

If you are meeting virtually, you have the option of various presentation platforms (e.g., Zoom, Microsoft Teams). If you are working with a large group, breakout rooms will help to simulate an in-person experience. ICF also recommends using an online, interactive platform such as Ziteboard, RealtimeBoard, Mural, or Microsoft Whiteboard. These platforms allow participants to create notes and post ideas.

Exhibit 4: PDI Session Materials

Facilitator and Meeting Organizer Materials	Participant Materials
• Facilitator's Guide • Public Health Data Modernization Report • PDF of the form filled out with your responses or the CSV export (for reference) • Data Modernization Roadmap or workforce development and modernization plans	• Participant Agenda • Public Health Data Modernization Report • Public Health Data Modernization Assessment Glossary • Data Modernization Roadmap or workforce development and modernization plans

Step 5: Invite Participants and Conduct the PDI Sessions
Share any orientation materials and the Public Health Data Modernization Report with participants and facilitators in advance so they can become familiar with the draft findings. If your jurisdiction has a Data Modernization Roadmap (also called a modernization plan for IT and informatics infrastructure or a workforce development plan), you may wish to include this document in the invitation materials. Sharing and asking participants to review the materials prior to the sessions will allow for more time to discuss and interpret data during the PDI session.

After the PDI Sessions

After your PDI session, prepare a brief summary of what you learned. If the PDI sessions identified errors in the assessment findings, you should update the data entered in the report template. This will facilitate future assessments. Update the Priorities section of the report with your jurisdiction's data modernization priorities, needs, and next steps.

Developing Your Data Modernization Roadmap

The ultimate goal of the assessment is to identify your jurisdiction's data modernization and workforce capacity needs and opportunities, and plan for the future. Once you have confirmed the assessment findings and identified your jurisdiction's priorities during the PDI sessions, you are ready to create or refine your jurisdiction's Data Modernization Roadmap.

Each jurisdiction's Data Modernization Roadmap will differ according to the jurisdiction's needs, but should include (1) a modernization plan for IT and informatics infrastructure used to support epidemiology and laboratory work in a jurisdiction that includes forward-looking use of scalable, sustainable shared services and cloud-infrastructure, and (2) a workforce development plan that includes how existing gaps will be addressed and how modernization efforts will be supported.

Data Modernization Roadmaps may include short-, intermediate-, and long-term objectives that will assist your jurisdiction in making decisions for allocating resources, present a shared vision for your modernization strategy goals and objectives, and provide structure to track progress and success.

For more resources related to data modernization implementation, visit CDC's Data Modernization Implementation Guidance Portal for Public Health Departments.

Appendix A: Participatory Data Interpretation Session: Sample Facilitator's Guide

Public Health Data Modernization Assessment Findings: Session 1 of X.

[Date] [Time]

Objectives: 1–3 objectives that you wish to achieve during the meeting, for example:

1. Present and confirm assessment findings related to data analytics, visualization, and reporting with stakeholders.
2. Identify action items to address gaps and needs identified by the assessment.
3. Identify elements to include in the Data Modernization Roadmap.

Participants: A list of invited participants and their roles

Facilitators: Name of the session facilitator(s)

Notetaker: Name of the session notetaker(s)

Participatory Data Interpretation Agenda

Agenda Item	Time	Facilitator
Introductions and Overview • If participants do not know each other, allow time for introductions of all facilitators and participants. • Provide a brief background on the Public Health Modernization Assessment.	15 min.	
Small Group Work *Objective:* Break into smaller groups to answer the discussion questions and prioritize next steps. Each group will examine a different set of findings and then switch to review the responses of the first group and provide their own reactions. If in-person, have the findings and flip chart paper posted around the room. Allow participants to add their responses using sticky notes. If virtual, use a whiteboard feature to allow participants to record their reactions so that others can see. Discussion questions – 30 minutes per rotation 1. Review the assessment findings.	60 min. total 30 min. per rotation	Group 1: Group 2:

Agenda Item	Time	Facilitator
2. Ask open-ended questions. For example, Do these findings seem reasonable? What may need to be updated? What are these data telling us? What are the possible implications of the data/findings? Were you surprised by these findings? How do these findings inform our next steps? 3. Tips: a. Note any obvious patterns in the findings. b. Ask probing questions (e.g., is there anything important that we have not already recorded?) 4. Recommendations and Next Steps a. For each finding, ask open-ended questions. For example, What is the appropriate action step? b. How do we move forward? What support do we need? c. What do we need to make significant advances related to this finding? Where do we want to be in 5–10 years? d. How does this finding inform our Data Modernization Roadmap? e. Record the recommendations.		
Large Group Reflections *Objective:* Bring the two groups back together to discuss the findings and identify areas of consensus and disagreement between the two groups. Finalize the recommendations and action items.	30 min.	
Conclusion and Wrap-Up *Objective:* Solicit final thoughts from the participants. Discuss next steps (e.g., future sessions to discuss other sections of the assessment), sharing the results of the sessions with stakeholders.	15 min.	

Small Groups

Group Number	Findings	Discussion Questions	Group Actions	Members	Facilitator
Group 1	Key findings (or sections of the summary report) that the small group will discuss	Discussion questions that you would like the group to discuss	Add reflections via sticky notes to the findings.	Names of the participants	Name of facilitator
Group 2	Key findings (or sections of the summary report) that the small group will discuss	Discussion questions that you would like the group to discuss	Add reflections via sticky notes to the findings.	Names of the participants	Name of facilitator