Data-to-Action Continuum

Toolkit and Assessment User Guide

Data-to-Action Continuum

Toolkit and Assessment User Guide

Authors

Jeanne Chauffour, MS

Meredith Silver, MPH

Yanira Garcia-Mendoza, MPH

Manish Kumar, PhD

David Boone, PhD

USAID
FROM THE AMERICAN PEOPLE

TB DIAH
Tuberculosis Data, Impact Assessment and Communications Hub

Acknowledgments

Suggested Citation: TB DIAH. (2023). Data-to-Action Continuum Toolkit and Assessment User Guide. Chapel Hill, NC, USA: TB DIAH, University of North Carolina at Chapel Hill.

Contents

Figures

Tables

Abbreviations

ARC   Assessment of Data Collection, Reporting, and Analysis Capacity

D2AC   Data-to-Action Continuum

HIS   health information system

ICT   information and communications technology

LMIC   low- and middle-income country

M&E   monitoring and evaluation

MESSA   Monitoring and Evaluation Surveillance System Analysis

MOH   ministry of health

NTP   national tuberculosis program

PBMEF   Performance-Based Monitoring and Evaluation Framework

TB   tuberculosis

TB DIAH   TB Data, Impact Assessment and Communications Hub

USAID   United States Agency for International Development

Background

A strong tuberculosis (TB) monitoring and evaluation (M&E) and surveillance system is vital for countries to achieve global goals to end TB. By routinely collecting high quality, detailed data and by effectively integrating various components of routine information systems (e.g., service statistics, disease surveillance, and financial and human resource data), national TB programs (NTPs) are better able to meet the many data demands of stakeholders; better target TB program implementation; improve the quality and efficiency of TB services; and effectively plan and advocate for resources.

USAID Leadership in Ending TB

The United States Agency for International Development (USAID) leads the U.S. Government's global efforts to end TB. USAID's Global Accelerator to End TB is the Agency's programmatic approach to fight TB. The Accelerator increases commitment from, and builds the capacity of, governments, civil society, and the private sector to accelerate national progress to reach global TB targets. The Accelerator focuses on countries with high burdens of TB where the Agency can unite with local communities and partners to deliver performance-based results. To ensure the Accelerator's effectiveness and increased transparency, USAID uses standardized data collection and performance-based indicators that align with the targets.

Under the Accelerator, USAID funds the TB Data, Impact Assessment and Communications Hub (TB DIAH). TB DIAH aims to ensure optimal demand for and analysis of TB data, and the appropriate use of that information to measure performance and to inform NTPs and USAID interventions and policies

TB DIAH and the TB Data-to-Action Continuum

TB DIAH has developed a TB Data-to-Action Continuum (D2AC)—a maturity model and toolkit to identify where a country's NTP resides on a continuum of TB data use for evidence-based programmatic and strategic decision making at different levels. This maturity model outlines the elements and steps required to move from an emerging/nascent capacity to a continuously improving and optimized capacity for an entity or process. At the end of the D2AC assessment, countries have a concrete, detailed implementation plan for strengthening their TB health information system's data use capabilities.

The development of the D2AC Toolkit was informed by a review of peer-reviewed and gray literature. The tool and process build on previous experience with maturity models. A phased review of the Toolkit was also conducted by the D2AC Advisory Group starting in March 2021 through October 2021. The D2AC team has documented and published detailed journal articles on this systematic review and the Toolkit validation process (Kumar, et al., 2021, and Kumar, et al., 2022). More information on the Toolkit can be found at: https://www.tbdiah.org/d2ac

The purpose of the D2AC assessment is to provide a data collection tool and a process which helps countries self-assess their TB health information system's data use capabilities. The output is an implementation plan for next steps in strengthening data use capabilities.

The objectives of the D2AC workshop are to utilize the D2AC Toolkit to:

- Precisely gauge barriers to data use in the TB health information system.
- Help the NTP select appropriate interventions in the context of its health system.
- Develop an implementation plan, based on identified interventions, for strategic planning purposes and decision making.
- Gather baseline data for future assessments.
- Improve the maturity of data use capabilities in the TB health information system.

User Guide – Purpose and Audience

This guide is a practical reference for implementing the D2AC assessment. It provides step-by-step instructions for implementation, from initial stakeholder engagement through dissemination of results. The User Guide will be useful to all low- and middle-income countries (LMICs) planning and leading an implementation of the D2AC Assessment. It can be used by M&E managers, data officers, or policymakers and TB program leaders who are interested in assessing and improving the status of TB data-to-action in an LMIC at the national or subnational level.

Overview

Overview of the D2AC Toolkit

The D2AC Toolkit is composed of the three following components:

1) A **D2AC Data Collection Tool** for collecting individual (referred to in the document as "D2AC Individual Data Collection Tool") and group (referred to in the document as "D2AC Group Data Collection Tool") level data, providing individual summary results and visualizations and further information on the D2AC scale being used, and technical terminology. With the exception of questions about respondents' professional and demographic data and the four individual decision-making ability questions from domain 4 subdomain 3 (questions 41-44), which are only proposed in the individual instrument, the same data collection instrument is used when eliciting either individual level responses or group level responses. A more detailed description of what the D2AC Data Collection Tool contains can be found in Appendix A. The Data Collection Tool is available in digital Excel (offline) or online (web-based) formats on the TB DIAH website.

2) A **D2AC Data Analysis Tool** that aggregates responses from all completed data collection instruments and generates data visualizations and recommended priority actions. This enables decision makers to better understand and apply the findings and develop an implementation plan using the template provided by D2AC. The Data Analysis Tool is available in digital Excel (offline) or online (web-based) formats on the TB DIAH website.

3) A **User Guide** (this document) to facilitate the use of both tools. This guide provides step-by-step instructions for planning and implementing the D2AC Assessment and for

developing a strategic implementation plan. A separate guidance document is available at
https://d2ac.tbdiah.org/ to assist with the use of the online tool.

Concept and Purpose

The conceptual framework (Figure 1) describes organizational, human, technology, and process-related factors affecting data use capabilities. The framework highlights an interlinked and cyclical evolution of the health information systems (HIS) involving TB data collection and reporting, analysis, use, and dissemination-related interventions that build on the leadership, governance, and capacity-building efforts of a given NTP. The framework shows that the interlinked interventions follow a continuous improvement approach to achieve the advanced levels of the continuum (identified by one of the following five descriptors: nascent, defined, established, institutionalized, and optimized), which are associated with an improvement of NTP performance in terms of using data for proactive and responsive clinical, programmatic, managerial, and policy decision making.

Figure 1. D2AC conceptual framework
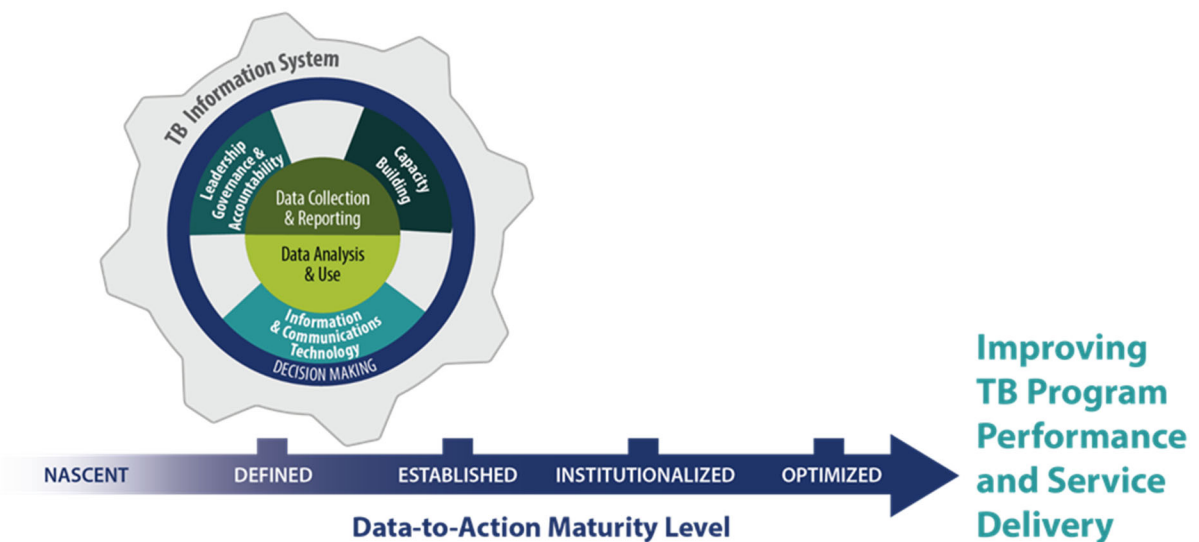
The purpose of the D2AC Toolkit and workshop method is to:

- Gauge the capability of a country and its NTP to translate data into action to improve NTP performance.
- Enable NTP stakeholders to establish goals and a systematic way of measuring progress.
- Allow stakeholders to measure status, identify maturity pathways, and develop an implementation plan to advance D2AC capabilities for achieving the NTP goals.

The workshop process, outlined in the steps of this guide, is represented visually in Figure 2.

Figure 2. The D2AC workshop approach and process

Gather the team that will conduct the D2AC assessment	→	**Assess** the current status of the country's TB M&E and surveillance systems	→	**Identify and prioritize gaps** and areas that need strengthening or further development	→	**Collaboratively design an implementation plan** and prioritize next steps to present to the NTP
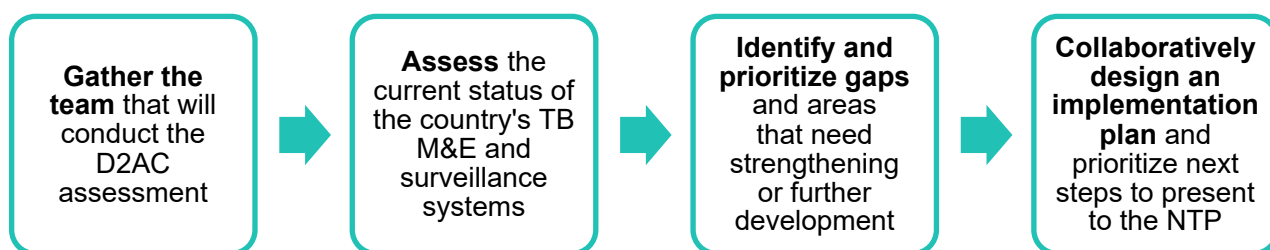
The D2AC Data Collection Tool measures the status of current TB M&E and surveillance system data use capabilities across 18 subdomains, each grouped within five domains. The domains and subdomains are then measured across five continuum levels: nascent, defined, established, institutionalized, and optimized (Table 1).

Table 1. Continuum levels and definitions

Continuum level	General description
1 - Nascent	Formal processes, capabilities, experience, or understanding of data use issues/activities are limited or emerging. Formal processes are not documented, and functional capabilities are at the development stage. Success depends on individual effort (few committed users).
2 - Defined	Basic processes are in place, based on previous activities or existing and accessible policies. The need for standardized processes and automated functional capabilities is known. There are efforts to document current processes and policies, and capacity building needs.
3 - Established	There are approved, documented processes and guidelines tailored to data use. There is increased collaboration and knowledge sharing. The need for external technical assistance is clearly identified.
4 - Institutionalized	Activities are managed using established processes. Requirements and goals have been developed, and a feedback process is in place to ensure that they are met. Detailed measures for processes and products are being collected.
5 - Optimized	Best practices are being applied, and the people and system are capable of learning and adapting. The system uses experiences and feedback to correct problems and continuously improve processes and capabilities. Future challenges are anticipated, and a plan is in place to address them through innovation and new technology. Processes are in place to ensure review and incorporation of relevant innovation.

The five D2AC domains and 18 subdomains are described in Table 2. The D2AC domains and subdomains allow the Toolkit's applicability across countries and all levels of the healthcare system. Each subdomain has a series of corresponding questions for the respondent to rate the capability on the continuum level and consists of five response options with a total of 48 questions (this is the data collection instrument section of the Data Collection Tool).

Table 2. D2AC domains and subdomains

Domain	Subdomain	Definition
Data Collection and Reporting (D1)	Data collection tools and workflow	The tools/devices/instruments and processes used for the ongoing systematic data collection to support analysis, interpretation, and sharing of data according to the NTP guidelines for TB treatment, prevention, and control.
	Reporting	The tools/devices/instruments and processes used for the ongoing systematic data reporting to support analysis, interpretation, and sharing of data according to the NTP guidelines for TB treatment, prevention, and control.
	Data quality	The accuracy, completeness, timeliness, consistency, reliability, and integrity of data.
Data Analysis and Use (D2)	Data integration and exchange	The mechanism for transforming and integrating data from multiple sources into a target destination environment; can also refer to the activities of matching, merging, and deleting records within a single data store.
	Analytics and visualization	The use of analytics and visualization techniques/tools to provide new insights and patterns from data analysis to stakeholders at different levels to enhance health and healthcare decision making.
	Dissemination and communication	The analyzed data are synthesized and can be shared in appropriate visualizations, understood, and used by the target audience.
Leadership, Governance, and Accountability (D3)	Data use guidance	The process, procedures, and actions of an organization associated with collection and sharing of their data.
	Data access and sharing	The disclosure of data from one or more organizations to another organization(s), or the sending of data between different parts of a single organization. This can take the form of routine data sharing, where the same data sets are shared between the same organizations for an ongoing established purpose and exceptional, one-off decisions to share data for a specific purpose or shared with external stakeholders.
	Organizational structure and function	The organizational structures and processes, including job titles and clear descriptions of duties and responsibilities with a focus on data management, data quality, data governance, data analytics, data integration, and exchange.
	Leadership and coordination	The exercise of technical, political, and administrative authority to manage the NTP at all levels of a country's health system. The leadership and coordination structure consists of the mechanisms, processes, and institutions through which actors and stakeholders (both internal and external) articulate their interests, exercise their rights, meet their obligations, mediate their differences, and oversee the performance of the NTP.
	Monitoring, evaluation, and learning	A plan supporting management of program activities and informing the organization about what activities to implement, timelines, resources, responsible party, and whether and how an activity is contributing toward stated NTP goals including equity and inclusion.
	Financial resources	The legal and administrative systems and procedures in place that permit a government ministry and its agencies and organizations to conduct activities that ensure the correct use of public funds and that meet defined standards of probity and regularity. Activities include management and control of public expenditures, financial accounting, reporting, and asset management (in some cases).
Capacity Building (D4)	Data interpretation	The organizational structure and individual ability that enables reading, writing, and communicating data in context, including an understanding of data sources and constructs, analytical methods, and techniques applied—and the ability to describe the use case, application, and resulting value.

Domain	Subdomain	Definition
	Skill and knowledge development	The availability of adequate personnel with characteristics, attributes, and capabilities to perform a task(s) pertaining to the data system, data quality, data analytics, and data use to achieve clearly defined results.
	Decision-making ability	Individual stakeholders' autonomy, capabilities, and motivation to use data for action.
Information and Communications Technology (ICT) (D5)	Hardware	An assembly of tangible physical parts of a system of computers, including servers and virtual private networks (VPNs), that provide services to a user in the health information ecosystem; e.g., computers, printers, and connecting devices.
	Network and connectivity	Network is the disparate elements of a system connected in a way that data and information can be shared among all elements. Connectivity is the ability to access the data in the system.
	ICT business infrastructure	Design and planning, operations management, and technical support for ICT infrastructure maintenance.

D2AC Assessment Scoring

The five continuum levels (Table 1) represent the D2AC measurement scale, which is used to score the assessment. The overall assessment score is calculated by first taking the average of the question scores within a subdomain, and then taking a weighted average of the subdomain scores to determine the score for each domain. The overall score is calculated by averaging the domain scores. It should be noted that if a question is left blank by the respondent, then the question is not counted and therefore does not affect the score. Scores are only used to guide discussions and set baseline data. Scores are a country's self-assessment, not an external one.

D2AC Assessment Process

Considerations in Advance of a Workshop

Country Selection (This section applies only to multi-country implementing agencies.)

Selecting a country to implement a D2AC assessment requires interest and commitment from the government and financing bodies, buy-in from local stakeholders (see more in the next section), and that the assessment timeline be aligned with other NTP meetings or reviews where D2AC workshop findings would be particularly useful to discuss and build upon.

Stakeholder Engagement

In advance of the workshop, a leadership team (e.g., senior NTP staff and USAID country mission representatives) should be convened as the assessment leadership team to plan a workshop that aligns with country and donor priorities (see Step 1: Form an assessment leadership team).

To begin the D2AC assessment, it is important for the assessment leadership team to engage both internal and external key stakeholders working with the NTP. This will help identify the role the workshop can play in strategic planning and guide the process of the assessment. Working with key stakeholders from the beginning is also important to ensure that the recommended priority actions are used after the assessment is completed. Key stakeholders will differ by country and context but should include leadership from the NTP and other senior staff working on HIS and TB, both internal and external to the government. Other stakeholders may include but are not limited to: M&E staff, program managers, clinicians, laboratory staff, pharmacy and logistics staff, implementing partners, foreign government agencies, bilateral and international organizations, and academic institutions. In some instances, it may also be relevant to include civil society and TB advocacy groups. It is encouraged that the invitation to participate be extended to all actors in the country's TB landscape, including representatives from multiple levels of the TB system (see Appendix B for a suggested participant list).

Workshop Design and Planning

Defining the Scope

Another early step should focus on determining the scope of the assessment. Key questions to consider may include:

- Should all levels of the healthcare system be assessed (recommended for first time assessments)? If the country has enough data on the whole healthcare system, is there a certain level that needs more focus?
- How many individuals will be participating in the assessment? Are there certain types of actors within the TB landscape that should specifically be represented? How are we thinking about the diversity of experience of the participants we are targeting?

Defining the scope will help determine which stakeholders should be invited to participate in the D2AC assessment.

Choosing an Assessment Delivery and Design Approach

Planning a D2AC workshop includes considering the funding and timeframe available, participants' availability, potential scheduling conflicts (e.g., there may be a competing event targeting the same participants), and constraints (e.g., the assessment may need to take place before a certain date for the results to be presented and used), as well as restrictions for large gatherings in the context of COVID-19. The D2AC assessment may be delivered either in-person, virtually, or using a blended approach. Each of these approaches has benefits and limitations (Table 3). We recommend conducting in-person or hybrid assessments when possible.

Table 3. Assessment delivery approaches

Delivery Approach	Description
In-person	The D2AC leadership team identifies facilitators that can facilitate an in-person D2AC assessment with the in-country team at a selected venue. This approach is optimal for participant engagement, small group work, and plenary discussions. In-person facilitation is more engaging to participants and allows for facilitators to interact more organically with participants (e.g., knowing when to invite questions, and having a better read on the room to see if participants need more time or if they are ready to move to the next task). It also allows participants to interact among themselves more than in the other two delivery approaches. This option requires there to be funding for the workshop and for participants to be able to travel and assemble. This delivery approach also requires several weeks of logistical preparation and cannot be successfully completed on short notice.
Virtual	The D2AC assessment is conducted completely remotely. The D2AC leadership team identifies one to three people who will facilitate the virtual D2AC assessment. This approach can be adapted to fit the needs of users. The virtual option is preferred if the identified implementing country is not holding in-person meetings, if there is no or minimal funding for the workshop, or if the timeline does not allow for travel or logistical preparations. This option limits the ability of facilitators and participants to interact and may prove more challenging for the group work and plenary discussions.
Blended	This option blends the in-person and virtual options. The D2AC leadership team offers virtual and in-person options for participation in the D2AC assessment at a selected venue. The blended option allows for some interaction among workshop participants but can prove more limiting for facilitators. This option can also be considered if budgetary or logistics prevent facilitators from attending in person.

When thinking about how to design or structure the assessment, the manner in which the data collection will occur is central to planning. For example, some countries may choose to implement the individual data collection process prior to the workshop, thus gathering individual level data in order to present and utilize the findings at the workshop while other countries might choose to include the individual data collection process into the workshop itself, requiring participants to first complete the data collection tool and then to gather in groups to complete the data collection tool for a second time. Both options have important considerations (Table 4).

Table 4. Individual data collection design approach options for the D2AC workshop

Design Approach Options	Description	Considerations
Option 1: Self-administered D2AC Individual Data Collection Instrument	The D2AC Individual Data Collection Tool is emailed as an Excel file or as a link to the online tool prior to the workshop (recommended: one week in advance) to participants (see Appendix C for a sample agenda). Individuals spend approximately two hours of their own time filling out the D2AC data collection instrument, including uploading links and inserting comments. Respondents submit their completed instrument (demographic information, 48 questions, and user role questions) by email to the facilitators (if using Excel) or by virtually in the online tool. The D2AC workshop begins with group work.	• For countries that want to implement a one-and-a-half-day workshop, this approach is designed to have the bulk of day one work (if the individual data collection otherwise takes place in-person) completed prior to the workshop starting. • This allows time for the facilitator to gather links, which serve as evidence and justification for the scores and is presented during the group consensus process. • Participants do not have to fill out the D2AC data collection instrument twice over the course of the workshop. • It is important to note that the assessment works best when individuals fill out the D2AC data collection instrument before the group work commences. If participants are not inclined to do the work prior to the workshop, then option #2 below is recommended.
Option 2: Workshop administered D2AC Individual Data Collection Instrument	The D2AC Individual Data Collection Tool is administered during the D2AC Workshop (see Appendix C for a sample agenda). It can either be emailed to participants at the workshop or shared as a link if using the online tool.	• If it is more likely participants will fill out the assessment tool in the workshop rather than beforehand, this is a good option. • This option will lengthen workshop time as well as require participants to fill out the D2AC data collection instrument twice over the span of the workshop.

It should be noted that if the workshop is in-person or blended, the D2AC leadership team should identify local staff able to support with administrative, financial, and logistical matters related to the workshop.

Timing of the Implementation

The D2AC assessment can be completed at any time, but prior to annual strategic planning is an ideal time to assess capabilities and identify priority actions for implementation. Reassessment(s) can then be conducted at regular intervals to measure TB M&E and surveillance data-to-action progress and review identified priority actions. The D2AC recommends an assessment frequency of every two years (although frequency may differ based on needs or changes to the health system structure). A country can consider the following factors when considering a timeframe for implementing repeat D2AC assessments:

- Has enough time passed since the last D2AC assessment for improvements from the recommended interventions to be reflected in the data captured as part of a new assessment?
- Are the resources necessary to conduct a D2AC assessment available?
- When will an assessment need to be completed in order to inform the next round of strategic planning?
- Are there important opportunities for advocacy that sharing assessment results would benefit?

Answers to these questions will help determine the most suitable timeframe for implementation. In addition to strategic planning, other timing considerations may include the timeline of programmatic work planning; manual, standard operating procedures (SOPs), or guideline development or updates; training; curricula development; and supervision.

Timeline for Planning and Conducting an Implementation

The time required to plan and conduct the assessment depends on the approach and scope. An in-person workshop can typically be conducted with a group of stakeholders in a span of 1–3 days depending on the size of the group, daily duration of the workshop, and translation needs. The planning process should allow time to identify and invite relevant stakeholders, arrange logistics of the assessment venue (e.g., place and time for the workshop, catering, etc.), and coordinate participant transportation and lodging Some components of the D2AC assessment require advance planning and review. Namely, a desk review may be necessary to populate the D2AC country profile, and facilitators may wish to review relevant background materials to identify relevant policy, regulatory, or planning documents that should be discussed or circulated in the workshop. If the individual data collection is conducted prior to the workshop, facilitators will need time to review individual scores, evidence, and comments. More time must be dedicated to preparing for the workshop if the Toolkit requires translation. It is recommended that the D2AC leadership team and workshop facilitators meet at least two to three times to discuss planning, scope and objectives, and assessment participant list elaboration and outreach, regardless of the workshop delivery approach. Table 5 presents the different phases of preparation needed in advance of a D2AC assessment workshop.

Table 5. Estimated time required to implement the D2AC

Activity	Time required	Description
Introduction to the assessment purpose and the Toolkit	2–4 hours	This includes reviewing the slide deck or webinar (available at https://www.tbdiah.org/d2ac/) and exploring the D2AC Toolkit to decide how to adapt any of the materials to better convey your country's priorities, needs, and opportunities, or to meet certain objectives.
Securing support from in-country leaders and stakeholders	Variable	Whether support comes from the most senior levels within the NTP or from a lower, more programmatic level will depend upon the scope of the assessment. Senior-level support is a critical success factor for projects of any kind that involve systemic or national-level change.
Determining the scope and format	2–4 hours	The D2AC leadership team should work to gather donor and in-country counterpart input to determine the purpose and scope of the assessment. Decisions on the meeting length, format, and other political, logistical, and financial considerations should be discussed. The leadership team should agree on who to invite and the process of extending invitations.
Logistical planning	6–12 hours	This step focuses on logistics for the assessment and group work, which can include: 1. Determining roles and responsibilities of staff facilitating and/or planning the workshop. 2. Reserving an appropriate space and making sure everything is discussed and checked in advance of the workshop (e.g., A/V equipment, lights, security, catering). 3. Compiling the list of subject matter experts/stakeholders to invite to the workshop. 4. Developing an agenda and getting it approved. 5. Extending invitations to workshop participants. Senior staff or leaders should also be invited, if only to provide opening remarks at the workshop and show their support and commitment, even if they are unable to attend the full event. 6. Confirming attendance of participants, securing transportation and lodging if necessary. 7. Reviewing the attendee list and designing small groups for different workshop activities based on the workshop objectives (this can include identifying a small group leader).
Desk review	5–8 hours	Workshop facilitators should complete the D2AC Country Profile and review relevant literature (including any ARC assessment) in advance of the workshop
Review of individual submissions	2-4 hours	If Option 1 in Table 4 is chosen for the workshop design, then workshop facilitators will need time to review individual data collection instrument responses. This includes: • Assessing individual overall scores, as well as disaggregated by health care level, domain, subdomain, etc. • Compiling the evidence provided in the individual submissions to be used during the consensus process during the workshop. • Organizing comments provided in the individual assessments prior to the workshop.
D2AC assessment	1–2 days	Facilitators host the D2AC workshop. Facilitators introduce participants to the D2AC concepts, Toolkit, and workshop agenda. Facilitators provide participants with an overview of the workshop process and detailed instructions for the different activities that will take place. Individual and/or group data collection takes place followed by the group consensus process. Participants identify priority actions for the development of an improvement plan, which they work on in groups.
Synthesis and dissemination of findings	8+ hours	This may involve writing a report detailing the assessment results and presenting the findings to a technical working group, government officials, or the NTP and MOH leadership. The technical reports developed by the TB DIAH D2AC team, following their assessments, can be found at https://www.tbdiah.org/d2ac/

Step-By-Step D2AC Implementation Process

Before the Workshop

Steps 1–5 are to be conducted before the start of the workshop.

Step 1: Form an assessment leadership team

The D2AC leadership team will oversee the assessment process. The team will be responsible for the planning process, determining the scope of the assessment, selecting the best approach for conducting the assessment, identifying and prioritizing country specific workshop objectives, and identifying key stakeholders who should be involved. The assessment leadership team, in general, includes the NTP program lead, HIS lead, and implementing partner representatives. If a facilitator has not yet been identified, one should be appointed as part of Steps 1 or 2.

While the process of identifying priority themes, technical areas, or needs does not lead to any modifications in the tool itself, these steps are very helpful for the workshop facilitators to be aware of, as these priorities can be raised in the various group and plenary discussions held throughout the workshop as well as the priority actions selected as part of the group work on the proposed implementation plan.

Step 2: Identify the scope, delivery, and design approach

The first step in completing the assessment is to determine which delivery and design approach you will use (see Tables 3 and 4 for options). Regardless of which customized approaches work best for the specific context and purpose, facilitators should implement the delivery and design approaches in a transparent and consistent manner to achieve results that are both useful and as unbiased as possible. While the rest of this user guide assumes an in-person delivery approach, the following instructions can also be easily adapted to the hybrid and virtual approaches shown in Table 3. Furthermore, determining whether the workshop will be spread out over one and a half to three days will be important for planning purposes (the sample three-day workshop agenda provided in Appendix C can be adapted to a one and a half or two-day workshop if the D2AC leadership team chooses Option 1 as their assessment design [Table 4]).

Note: It may also be necessary to adapt the D2AC Toolkit to the country context. This could entail identifying a few key terms that participants would be more familiar with (e.g., site list vs. facility registry, or province vs. region). The D2AC Toolkit is also currently available in French to allow for wider use beyond English-speaking countries.

Step 3: Select participants

The D2AC assessment is targeted at stakeholders from different levels of the healthcare system (i.e., NTP and other national level TB stakeholders, such as donors and non-governmental organizations [NGOs], as well as regional, district, facility, and community-level stakeholders), and representing different elements of TB program specialization (i.e., TB M&E, management, clinical, pharmacy, logistics, and technical/HIS). A group of 20–40 participants should be identified and invited to participate in the workshop.

Ideal stakeholders will have a range of knowledge and experience with TB program operations, which at different levels could include:

- Facility level:
  - Patient diagnosis, treatment, and follow-up
  - Laboratory support
  - Facility management
- District level:
  - Program management, including logistics and commodities management/tracking, planning, and forecasting
  - Facility management
  - Role and functions of basic health management unit or team
- Regional level (if applicable):
  - Typically involved in program management, and especially finance, human resources (HR), planning, and logistics
- National level:
  - Overall monitoring and evaluation and planning
  - Performance review
  - Policy
  - Coordination with donors and partners
  - HR and training
  - Financing and budget
  - Logistics management

Step 4: Book a venue hall and make logistical arrangements

Facilitators should plan ahead to identify and book an appropriate venue for the workshop. The venue should allow for plenary presentations and discussions, and for small-group breakouts. The room should be equipped with a screen and projector, and there should be microphones for the presenters and to pass around the room for questions and discussion.

Step 5: Confirm participant attendance

Following their invitation and confirmation of attendance, participants should be notified of the documents to be read or reviewed in advance of the workshop, if any are deemed necessary. If the D2AC leadership team has decided to design the D2AC workshop around Option 2 (Table 4), a list of documents participants should consider bringing (or ensuring they have access to in digital format) would also be helpful to be able to quickly link or cite documentation during the individual and group completion stages of the data collection instrument. (If the Option 1 design has been selected, participants can skip this processes as they will have already uploaded their documentation in the tool before the workshop). These documents could include but are not limited to: TB data collection systems inventory; TB service delivery guidance; NTP site list or master facility list; data exchange standards (interoperability and/or health data standards); analytics and visualization requirements; SOPs or guidelines; national health data communication strategy; data use guidance/policy; data access and sharing agreements (e.g., between the public sector and private implementing partners); M&E plan; data use budgeting or financing plan; and information relevant to data use fora, ICT operations, and maintenance plans.

During the Workshop

Steps 6–10 are to be conducted during and immediately after the workshop.

Step 6: Workshop welcome and introduction

Facilitators can provide a printed agenda outlining the full duration and steps of the workshop (see Appendix C for a sample agenda). It may also be useful to print the D2AC concept note or other overview brochures (materials are available in multiple languages at https://www.tbdiah.org/d2ac/), the D2AC glossary, and a table similar to Table 2 (see page 12) that lists domain names, subdomain names, and definitions.

Workshop materials and slides can be found at https://www.tbdiah.org/d2ac/. The D2AC team has developed an animated video that would be useful to play at the start of the workshop as well. This video can also be found at https://www.tbdiah.org/d2ac/.

Step 7: Collect and analyze individual data

Participants individually complete the D2AC data collection instrument. The Excel version of the D2AC data collection tool should be emailed to all participants either prior to the workshop or once data collection begins on the first day of the workshop (following the welcome, introductions, and workshop overview) (Table 4). Participants should familiarize themselves with the various tabs, including Home, Introduction, Continuum Levels, D2AC Scale, and Glossary. Once participants are familiar with the tool and understand how the different components can be helpful as they fill out the data collection instrument, they should click on the "Data Collection Instrument" tab, where they will find 48 questions and subsequent user role questions. On the online tool, the data collection instrument is accessed once respondents enter demographic information, and the appropriate user role questions are automatically generated. Each domain's questions appear on a separate page, as the respondent progressively completes the instrument, and the user role questions are on the last page along with the domain 5 questions. Once respondents have completed all 48 questions and the user role questions, they will each submit an "individual submission" of the data collection instrument (whether by completing it in Excel or online) to the D2AC facilitator.

For the 48 questions, individuals are asked to select the most appropriate response to each, which is equivalent to levels one through five in the D2AC continuum scale. Facilitators should encourage respondents to reflect on the answer options and to choose the most appropriate one, rather than focusing on the continuum level associated with their response. It is important to note that capability statements (answer options 1–5) typically build off of each other starting with statement 3. If a respondent assigns a score of "5" to a question, then statements 3 and 4 are also true (or were true, in the event that the system has since improved). Usually, statements 1 and 2 are illustrative of emergent/ad hoc or basic systems, while statements 3–5 describe progressively more developed systems. For example, in question 5:

Individual respondents are also asked to provide supporting evidence for their responses by inserting a link or note in the comments section located under each question referring to the appropriate documentation. Respondents will also be asked to provide comments on each question as relevant.

Once they have completed the questionnaire and user-role questions, respondents should submit their responses to the facilitator by email (if using Excel) or online (if utilizing the online tool). In both instances, respondents can immediately visualize their responses in the data analysis matrix and on the data analysis dashboard. In the Excel Toolkit, these appear as tabs within the Data Collection Tool, while in the online tool, they are accessible with a password to users who have submitted a questionnaire. The online tool allows for increased functionality and viewing of aggregate results in real-time. More information on the use of the online tool is available at https://d2ac.tbdiah.org/.

For both the Excel-based and online versions, results from the individual assessments will be aggregated by the D2AC Data Analysis Tool (either automatically if using the online tool, or entered by the facilitator by collecting the various Excel files from respondents and then manually importing them into the Excel-based Data Analysis Tool—see instructions in the box below for the latter scenario).

The D2AC Analysis Tool dashboards and tables (available in both formats of the Toolkit) will indicate an overall continuum score, as well as a continuum score for each domain and subdomain. A quantitative analysis complemented by data visualizations will be provided to (1) compare across subdomains, (2) compare across domains, and (3) compare between levels (e.g., responses from respondents at the central level could be compared to responses provided by respondents from the facility level). Data visuals will also allow an examination of the extent to which data needs are being met for different user roles.

Instructions for uploading Data Collection Tools into the Data Analysis Tool for analysis:

1. Gather completed Excel-based workbooks from respondents.
2. Create a new folder on a hard drive in the root directory called C:\D2AC\.
3. Save completed workbooks in the new folder.
4. Click on the "Aggregate Results" button located on the "Start" tab of the Data Analysis Tool to import the data from the Data Collection Tools.
5. Review the dashboard to see aggregated results.

Once individual respondent data have been aggregated, they can be presented in plenary by considering the following themes:

1. Identify any outliers in the data based on health care level, domains, and/or subdomains.
2. Compare individual scores with group scores during the facilitation of the group consensus process
3. Collect supporting evidence to support facilitation of the group consensus process and justify scores.

Note: Unless facilitators decide to form groups based on healthcare level (see scenario 1 in Table 6), this will be the only opportunity during the D2AC assessment to analyze responses by level of the health sector.

In addition to analyzing the quantitative data (scores), facilitators should spend time analyzing the qualitative data supplied by respondents in the data collection instruments submitted. In the Excel tool, these data will appear in the aggregate format in the "List of Comments by Capability" tab in the Data Analysis Tool. More information about analyzing aggregate qualitative data as a workshop facilitator using the online tool is available at https://d2ac.tbdiah.org/. This applies for both individual and group responses. Comments and uploaded files should be reviewed and integrated into the analysis and findings following the workshop.

Step 8: Collect and analyze group data

Participants should next assemble into groups. Table 6 presents the advantages and disadvantages of different strategies that can be adopted when considering group work.

Table 6. Advantages and disadvantages of different options for group work

Group type	Description	Advantages/disadvantages
Groups by healthcare level	Groups can be created based on the healthcare level at which participants work (i.e., national, regional, district, facility, or community).	Groups broken up by healthcare level ensure that each group is able to approach the questionnaire with the expertise within that specific level, working together to identify responses and produce documentation. A disadvantage is that certain levels might need the expertise of other levels to submit informed responses.
Homogenous groups	Once the profile of workshop participants is known, workshop organizers/facilitators can attempt to create homogeneous groups, keeping in mind the following characteristics: sector (public vs. private—i.e., government participants vs. implementing partners, donors, etc.); level of the health system; role/area of expertise (e.g., M&E, supply chain, laboratory, pharmacy, HIS); provenance (distributing participants traveling from the same region or district or from the same organization across different groups); and gender (trying to reach a similar gender ratio across groups).	The advantage of breaking participants into homogenous groups is that there is a continuity of perspectives across groups. As the groups work through the data collection instrument, it is more likely that all areas of expertise are represented in each group. This also allows for a comparison of responses across groups. A disadvantage of this method is that power dynamics might inhibit certain individuals within groups to make their opinions known.
Groups by domain	Participants are able to pick groups based on domains that they feel most inspired to work on or know most about.	Groups broken up by domain have the advantage of focusing on one domain, instead of all the domains, which allow more time for groups to focus on in-depth discussion around a specific topic. A disadvantage is that this method prevents participants from engaging in all five main areas of the D2AC and from contributing to recommendations beyond the sections they have worked on.

In their groups, participants will open a new version of the data collection instrument. Table 7 describes suggested assigned group roles.

Table 7. Suggested group roles for the D2AC group work and discussions

Suggested role	Description
Recorder	• Records group responses to the data collection instrument • Notes comments made by the group in the comment field under each question. • Uploads identified documentation.
Rapporteur	• Takes notes of the group discussions and debates • Reports back to wider group in plenary

If there are disagreements and consensus is not reached, they can make note of that in the comments, review supporting evidence from their individual responses, and take a vote for the response to select.

Following a similar method as in Step 7, group data collection instruments will be collected by the facilitator, with responses aggregated by the Data Analysis Tool to display summary tables and visuals.

A group plenary discussion will then commence, where the rapporteur from each group presents the highlights of group work (e.g., discussions held during completion of the instrument, areas of disagreement, and any other notable observations).

The results from both the individual instruments and the group instrument responses will then be presented in data visualizations and compared. This preliminary analysis will help determine variation across respondents, groups, health system levels, domains, and subdomains.

Following presentation of the aggregate scores, the workshop will open to a plenary discussion where participants will be invited to reflect, discuss, and debate questions, domains, or subdomains of interest or of contention. If one or multiple scores come under question, be sure to review the evidence presented via both individual and group data collection tools to help participants decide on an accurate score. At the end of this discussion, the group as a whole should agree on the subdomain scores, domain scores, and overall score.

What happens if some participants do not agree with the aggregate scores?

Achieving a consensus can be difficult when a group of participants do not agree. Participants may disagree because the same situation may look different from their vantage point or because there may be some exaggerating or downplaying the current situation. Facilitators should encourage discussion, debate, and exchange as long as new and relevant points are being made, and all participants should be encouraged to voice their opinion if it can contribute to the discussion. The facilitators may need to interrupt the conversation, in the interest of time and moving the agenda along. If the participants have not reached an agreement, it may be necessary to convince the room to vote, or to think of a way to select a response (and in so doing, attribute a score) while making sure to include any caveat or disclaimer that may be important to note given the country context or discussion in the room.

As aforementioned, this is not an external value assessment, but a self-assessment of status. Indeed, accurate portrayal of a country's current status is more helpful in identifying fitting and appropriate priority actions rather than overestimating capabilities and potentially missing out on recommendations fit for the actual status of TB data use capabilities.

Note: Trend analysis can be provided at this stage once a baseline assessment has been completed. It is recommended to wait about two years for priority actions to be addressed before another D2AC assessment takes place.

Step 9: Identify priority actions and suggest an implementation plan

Once group consensus is achieved, participants will be asked to vote on their top five to eight priority subdomains. These subdomains will serve as the basis for identifying priority actions for the suggested implementation plan. Once participants have voted, the facilitator(s) will tally votes and present the top five to eight subdomains to the full group. Participants should then choose the subdomain they feel most compelled to work with, and facilitators should instruct participants to form small groups according to their priority subdomain of interest. There should be as many small groups as there are priority subdomains to work on, and facilitators should encourage an even distribution of participants in each small group.

How should participants go about selecting the priority subdomains to work on in small groups?

Selecting the priority subdomains to focus on for the development of suggested priority actions and a joint recommended implementation plan is a crucial part of a D2AC workshop. In this stage, facilitators need to make participants feel comfortable when expressing what, to them, seem to be the biggest areas for improvement. Selecting priority areas (from the 18 subdomains) can be accomplished in a number of different ways.

One way to identify the priority subdomains is by conducting a vote, by show of hands. If facilitators are concerned about participants being influenced by others or not feeling as comfortable voting by show of hands, pieces of paper can be distributed for each participant to write down their vote. In past workshops, a third method has been adopted that has worked well and allowed for participants to mix, mingle, and talk: Facilitators have used flip charts to list the 18 subdomains (e.g., one flip chart for each domain, with all subdomains listed; with two flip charts for Domain 3 as it has six subdomains) and arranged them across the room, with post-its or stickers distributed to participants, who are then instructed to walk around the room and use their post-its/stickers as votes. This allows for a more interactive and visual exercise (see photos below). For this exercise, it may be useful for participants to have a printed handout of Table 2, so that they can refer back to the subdomain definitions.
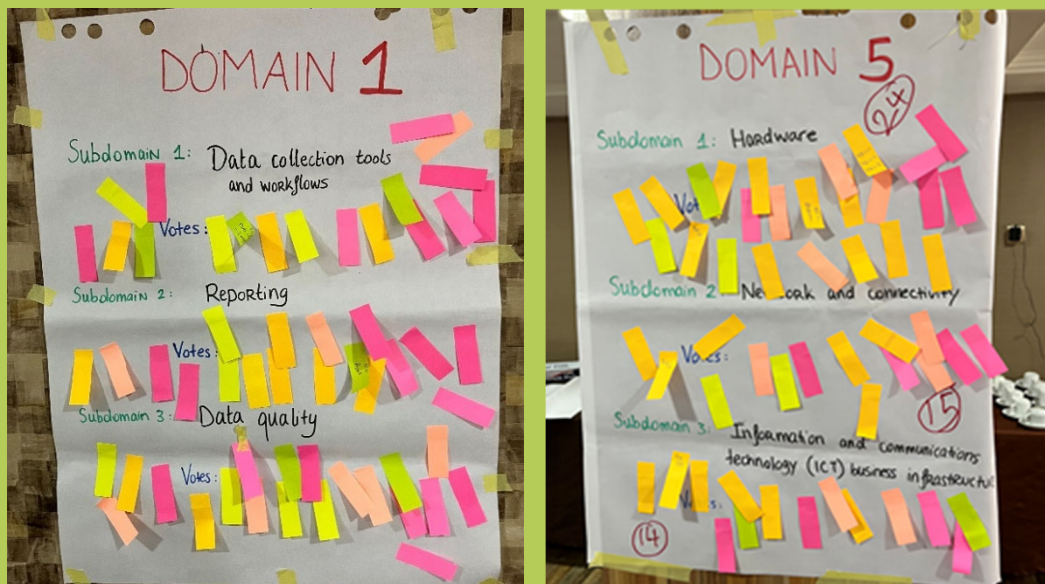
Note: Since there must be multiple subdomains selected to work on in small groups, participants should be given a chance to vote on more than one priority area. In past workshops, giving participants five votes to allot to five subdomains among the total 18 has worked well.

In their chosen small groups, participants should be directed to use the D2AC implementation plan worksheet (Appendix D). This worksheet will help guide the discussion around choosing priority actions for the subdomain they are focusing on. Again, at this stage, each small group should have a recorder (the person who acts as a scribe and writes the group's suggestions on its worksheet, in addition to the group's suggestions for implementing it) and a rapporteur (the person who will report back to the full group on their small group's discussion and final product).

Once groups have determined their priority actions and concluded their brainstorming session, the group recorders will be asked to submit their group's worksheet (one worksheet per group) and the group rapporteurs will then take turns presenting their group's reflections and suggested priority actions for implementation to the larger group.

<div style="background-color:#a5c14a; padding:1em;">

Considerations when thinking about priority actions to recommend:

- What is/are the issue(s) that needs to be addressed?
- How feasible is the action being recommended?
- What is the timeline for the action to be completed? How long will it take to plan, fund, or implement? What happens if the action cannot be completed?
- Is it a no-cost or low-cost solution or does it require more important financial resources to implement?
- What other resources does it require (human, infrastructure, technology, etc.)?
- Who will be responsible for carrying out the actions?
- What is the hoped-for result? Is this result realistic or aspirational?
- What will be the benchmark to assess whether the action has been successful?

<u>Note</u>: Small groups are encouraged to think about priority actions that could be taken at all levels of the health system, or the levels at which one given action could be taken or have an impact.

</div>

If the larger group is in agreement, modifications can be made to the recommended priority actions (e.g., with new priority actions added; certain priority actions modified; some priority actions combined; or some redundant priority actions removed). Once the presentations and ensuing discussions for each small group is complete and the larger group is satisfied with proceeding to the next subdomain/small group, the facilitators should add the suggested priority actions to the combined implementation plan table provided as part of the Data Analysis Tool (in the Excel version) or by email. By the end of this session, the combined implementation plan table will include all suggested priority actions from the small groups, amended or supplemented with input obtained during the plenary presentations. This implementation plan will be the main deliverable and product to result from the D2AC assessment.

Note: The priority action identification process, depending on the number of workshop participants, can either be conducted in plenary or in small-group breakouts to allow and manage more optimal discussions.

Step 10: Next steps and planning for the future

Once the workshop is complete, the assessment leadership team will work to make final touches to the implementation plan to standardize terms and language and present it to the NTP for

strategic planning. Summary results tables (scores by domain and subdomain, participant demographic information) and data visuals (scores by domain, subdomain, health system level, and respondent characteristic; as well as charts related to TB data needs of users) are all available on both the Excel-based D2AC Data Analysis Tool and the online D2AC Tool dashboard. The tables and figures can be saved and downloaded to be inserted into a technical report or a slide deck. Once funding cycles have been identified, the implementation plan can be costed and used to advocate for funding.

A technical report on the workshop and its findings can be drafted, reviewed, published as a global good, and disseminated to identified partners (e.g., TB technical working group, government officials, or ministries). Technical reports should include information about the assessment's purpose, objectives, methods, and process. Information about the participants and their backgrounds are important to contextualize the findings. Findings should include the quantitative scores collected during the assessment. Generally, it is recommended to consider the aggregated group score as the score representing the decision of the workshop attendees as a whole. The quantitative analysis of each capability, by domain, subdomain, and level (scores from the individual instruments), should be supplemented by qualitative information gathered from the respondents' submitted answers for each question, as well as through notes from the workshop's group and plenary discussions. The discussion section should also be informed by the discussions that occur during the workshop, while being mindful of the context in the country at the time of the assessment (political, economic, epidemiological, sociodemographic, etc.). The recommended priority actions should be presented and organized in a clear manner to enable their easy translation into action by decision makers and implementing organizations. It is good practice to request that members of the steering committee or other advisors to the workshop working in the country assessed, and knowledgeable about the topics discussed during the workshop, fact-check the report and provide sources for proper citing, when available. Sections around ethics, strengths, and limitations can also be included based on the workshop context and participant makeup. It is advised to not compare scores across countries, although findings and recommendations can be compared to identify trends and patterns.

Technical reports from all D2AC assessments conducted by TB DIAH are available at https://www.tbdiah.org/d2ac/ and can serve as model templates for future reports, both in content and structure. When referencing our reports, in whole or in part, please refer to the suggested citation provided on page 3 of each report.

> **Tip:** Take numerous photos during your workshop (with participants' consent, of course!). Photos of the group work will serve as good memory aids to reference when transcribing your notes from the workshop, and photos can also make your report look livelier and more engaging!

The overall score and data gathered during the workshop can be saved as a baseline (if this is the first assessment) to compare with future assessments. All D2AC assessment data will be accessible via a link provided on the D2AC page of the TB DIAH website.

Conclusion

The D2AC assessment is meant to be implemented through a collaborative and transparent process. Data use capabilities of a TB M&E and surveillance system are assessed through utilizing the D2AC data collection instrument and D2AC Data Analysis Tool, as well as through the group consensus process. The D2AC assessment informs an implementation and next steps for funding advocacy and improving data use capabilities, as well as baseline data for future assessments.

Want to learn more?
Watch our animated video and discover other D2AC resources by visiting our webpage:
https://www.tbdiah.org/d2ac/

The Data-to-Action Continuum Toolkit

Assessing the capabilities of national TB programs to use TB data
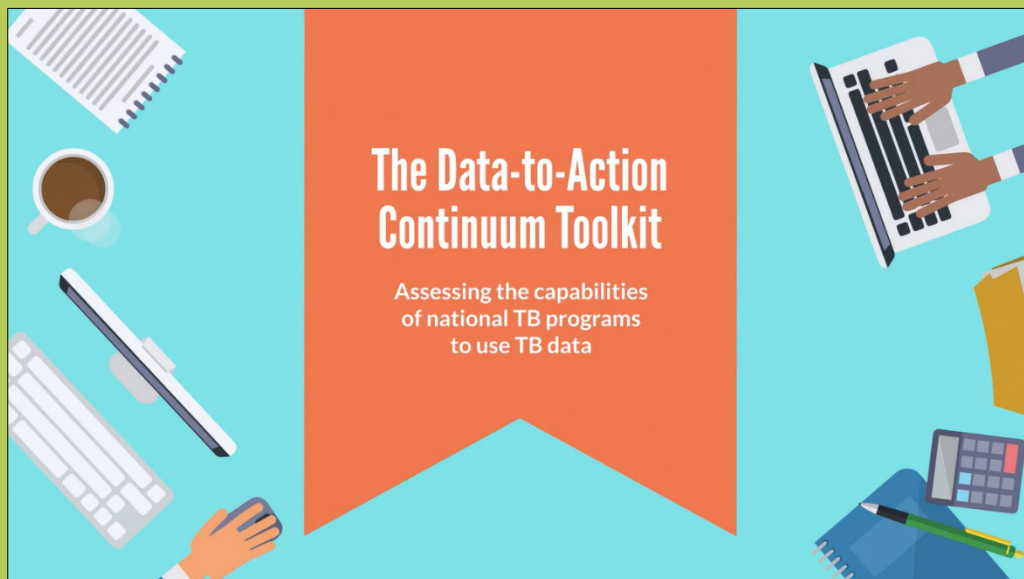
More questions?
For any further unanswered questions, please contact:
hub@tbdiah.org

References

Kumar, M., Silver, M., Chauffour, J., Boyle, C., Boone, D. (2021). Research gaps in transforming tuberculosis data to action for better health outcomes: A systematic literature review. *Journal of Global Health*, 2021 (1). September 18, 2021. Retrieved from https://jogh.org/research-gaps-in-transforming-tuberculosis-data-to-action-for-better-health-outcomes-a-systematic-literature-review/

Kumar, M., Chauffour, J., Silver, M., Garcia-Mendoza, Y., Boone, D. (2022). Development and expert validation of a 'Data-to-Action Continuum' to measure and advance the data-use capabilities of national tuberculosis programs. *Journal of Global Health Report*. 2022;6:e2022058. Retrieved from https://www.joghr.org/article/55760-development-and-expert-validation-of-a-data-to-action-continuum-to-measure-and-advance-the-data-use-capabilities-of-national-tuberculosis-programs

Other Useful Resources

TB DIAH. (2021). Performance Based Monitoring and Evaluation Framework (PBMEF). Available at https://www.tbdiah.org/resources/publications/navigating-tuberculosis-indicators-a-guide-for-tb-programs/

TB DIAH. (2021). Assessment of Data Collection, Reporting, and Analysis Capacity (ARC) Tool. Available at https://www.tbdiah.org/resources/publications/assessment-of-data-collection-reporting-and-analysis-capacity-arc-tool/

MEASURE Evaluation. (2018). Routine Health Information System Rapid Assessment Tool. Available at https://www.measureevaluation.org/resources/tools/rhis-rat/routine-health-information-system-rapid-assessment-tool

MEASURE Evaluation. (2020). HIS Stages of Continuous Improvement Toolkit. Available at https://www.measureevaluation.org/his-strengthening-resource-center/his-stages-of-continuous-improvement-toolkit.html

MEASURE Evaluation. (2018). Performance of Routine Information System Management (PRISM) Series. Available at https://www.measureevaluation.org/prism

Appendix A. D2AC Data Collection Tool Components

The D2AC Assessment Tool consists of 10 sections (or tabs in the Excel-based version):

1. Home
2. Introduction
3. Continuum Levels
4. Country Profile
5. D2AC Scale
6. User Roles
7. Glossary
8. Data Collection Instrument
9. Data Analysis Matrix
10. Data Analysis Dashboard

Please see below for a more detailed description of each of the 10 sections:

Home

The home page is built to help the user visualize the contents of the Tool, navigate from section to section, and explore the Tool. Buttons to all sections of the Tool are displayed, and the user can return to the home page from any other section of the Tool.

Introduction

This page presents the D2AC conceptual framework and also provides the user with a link to this User Guide, where they can find more information about using the Tool.

Continuum Levels

The purpose of this page is to introduce the user to the five continuum levels and provide a description for each. The continuum level is the approach selected by TB DIAH to categorize NTP capabilities for each domain and subdomain. The five continuum levels are:

- Level 1: Nascent
- Level 2: Defined
- Level 3: Established
- Level 4: Institutionalized
- Level 5: Optimized

Each continuum level is accompanied by a description as shown in Table 1 on page 11.

This page may be a useful place to return to for reference during the process of completing the data collection instrument.

Country Profile

The purpose of the country profile is to help contextualize where the country is situated in terms of its demographic, geographic, and socioeconomic indicators; what the TB epidemiological burden and trends are; and what the NTP laboratory and workforce, TB health financing, and research development capacities are. When completing a D2AC assessment, each country has the opportunity to complete a country profile. The country profile can provide useful pointers to better understand findings from the D2AC and can be included as a useful appendix to a D2AC technical report.

D2AC Scale

The purpose of the D2AC scale is to provide a description of the domains and subdomains, and to present what the standard for a given subdomain would be across the five continuum levels (i.e., what would it mean for a country to be at a level 1 on the continuum scale for "data collection and workflows" vs. at a level 5?). The scale presents all the capability statements (which appear as response options in the data collection instrument) organized by domain and subdomain and assigned to the five different continuum levels.

This page may also be a useful place to return to for reference during the process of completing the data collection instrument. The D2AC scale's five domains and 18 subdomains are presented in Table 2 on page 12.

User Roles

The purpose of the D2AC user roles is to present the framework used in selecting the questions asked at the end of the data collection instrument. The page presents a full matrix of all the user roles considered in the data collection instrument drop-down menu and their associated questions, organized according to USAID's TB objectives of reach, cure, prevent, and sustain.[1] The TB data user roles identified by the D2AC have specific needs in data and information based on the role they play in combating TB, and the D2AC Toolkit strives to assess whether these needs are met by the system. The response to the different series of user-role yes/no questions (included at the end of the "individual" submission of the data collection instrument) may inform the quality and extent of data use practices at different levels of the TB information system. This table may also serve as a reference and framework for participants in reviewing the user groups involved in TB prevention, care, and treatment so as to self-identify and reflect on their—or their colleagues'—responsibilities and performance in the context of TB program needs and priority areas.

---

[1] USAID's Global Tuberculosis Strategy 2023-2030 has since added "innovate" as its fourth strategic objective (with "sustain" becoming the fifth).

Glossary

The glossary is a useful built-in resource for any user of the tool wishing to obtain a definition or clarify their understanding of any term used in the tool. The glossary is designed to ensure a consistent understanding of tool terminology and technical language.

Data Collection Instrument

The purpose of the D2AC data collection instrument is to guide the evaluation of data use capabilities to routinely monitor and improve data use attributes associated with TB program management and service delivery at sub-national and national levels. The instrument lists the domain, subdomain (with corresponding definition)—including each question within that subdomain—and five capability statements in the form of answer options for each question. In total, the data collection instrument includes 48 questions. This is the page in the Toolkit where respondents are asked to read, reflect upon, answer, and submit their responses. Only one answer can be selected for each of the 48 questions. Though the instrument does not allow for the selection of an "other" or "N/A" response, the respondent may choose to not answer any given question. After each of the 48 questions, a field allows the respondent to add a comment or to upload a resource that may be useful in complementing or explaining their answer. Before the respondent begins to answer the 48 questions, a section at the top of the instrument will gather data on the type of response (individual vs. group) and, if individual, will prompt the respondent to provide more demographic and professional data. The selection of a user role from the drop-down menu generates customized questions to be completed at the end of the instrument. These yes/no questions are meant to be targeted and appropriate for the level and role played by the respondent.

Analysis Matrix

The analysis matrix presents respondents (either as individuals or in groups) with summary tables for responses to the instrument they completed (for their instrument only). The matrix presents the score for each capability statement, the sum of the capability statements for each subdomain, the average of the subdomain capabilities, the subdomain score, and the averaged domain score. The matrix does not allow one to see an aggregate from multiple responses.

Analysis Dashboard

The analysis dashboard provides respondents with summary tables and data visualizations displaying the results of their completed data collection instrument (for their instrument only). Participants are able to visualize their overall scores, as well as their scores for each domain and subdomain. This can help inform individual attendees' participation in the group consensus process, as providing them with their personal data helps to remind them of their scores. Similar to the analysis matrix, the dashboard does not allow one to visualize an aggregate from multiple responses.

Appendix B. Suggested List of Participants

Health system level	Specific unit of MOH	Type of participants	Total number of participants
National level	NTP	Program manager/deputy	1–2
		Head/focal person of TB M&E	1
		Staff from M&E unit, depending on the size of the team	2–5
	National reference laboratory	Focal person for TB laboratory management information system (MIS)	1–2
	National pharmaceuticals and supply chain management department	Focal person for TB logistics MIS	1–2
	Health management information system (HMIS) department	Head of unit/focal person	1
	World Health Organization	Representative/focal person for TB MIS	1
	TB technical working group	Representative/focal persons for TB MIS	2–3
	Private sector	Representative/focal person for TB MIS	1
	USAID	Representative/focal persons for TB MIS	2–3
	Implementing partners	Representative/focal persons for TB MIS	2–3
Regional, provincial, or state level	Province/Region/State TB program unit	Province/Region/State TB coordinator	1
		M&E focal person	1

Health system level	Specific unit of MOH	Type of participants	Total number of participants
		Laboratory and/or pharmacy representative	1
District or zonal level	District health/TB program unit	District TB /M&E focal person	1
		Laboratory and/or pharmacy representative	1
Health facility level	TB clinic/health unit	TB /M&E focal person	1
		TB unit physician	1
		Laboratory and/or pharmacy representative (if applicable)	1

Appendix C. Suggested Workshop Agenda

D2AC Assessment Workshop Day 1 Date and Location		
Time	**Description**	**Participants**
8:30–9:00	Registration	
9:00–9:45	Welcome Workshop opening addresses Introductions	Hosts/facilitators Country NTP Leadership USAID (or another funder) All
9:45–10:30	Workshop overview	Hosts/facilitators
10:30–11:00	Tea break	
11:00–1:00	Introducing the D2AC assessment approach and Toolkit	Hosts/facilitators
11:45–1:30	Step 1: Individual review of D2AC Toolkit	All (individually)
1:30–2:30	Lunch	
2:30–4:00	Step 2: Present individual data Gather evidence	Hosts/facilitators
4:00	Tea break	

	D2AC Assessment Workshop Day 2 Date and Location	
Time	**Description**	**Participants**
8:30–9:00	Registration	
9:00–9:15	Welcome, day one recap, and overview of day two	Hosts/facilitators
9:15–10:45	Step 3: Group work (building on individual review information)	All (in groups)
10:45–11:15	Tea break	
11:15–1:30	Step 4: Plenary discussion on group work	All (group leads; with facilitator)
1:30–2:30	Lunch	
2:30–3:15	Step 5: Presentation of aggregate group assessment data Gather any additional evidence	All (with facilitator)
3:15–4:30	Step 6: Plenary discussion on aggregate data	All (with facilitator)
4:30	Tea break and closing	

D2AC Assessment Workshop Day 3 Date and Location		
Time	**Description**	**Participants**
8:30–9:00	Registration	
9:00–9:30	Welcome, day two recap, and overview of day three	Hosts/facilitators
9:30–10:15	Step 7: Identify priority action items	All (individually)
10:15–10:45	Tea break	
10:45–12:00	Step 8: Draft implementation plan for priority action items	All (in groups)
12:00–1:00	Lunch	
1:00–2:30	Step 8: Discuss implementation plan and next steps	All (with facilitator)
2:30–3:30	Closing words and acknowledgments Certificate ceremony	Hosts/facilitators Country NTP Leadership USAID (or another funder)

Appendix D. Priority Actions Worksheet

Implementation Plan Worksheet

Subdomain: _____

Current Stage: _____

Goal Stage: _____

Group Facilitator: _____ Group Note Taker: _____

Participants:

-

Highlights from discussion:

-

	Priority action	Specific gap addressed	Party responsible	Resources needed	Expected deliverable	Timeline
Improvement Plan						
#	Priority action	Specific gap addressed	Party responsible	Resources needed	Expected deliverable	Timeline
1						
2						
3						
4						
5						

TB DIAH

University of North Carolina at Chapel Hill
123 West Franklin Street, Suite 330
Chapel Hill, NC 27516 USA
Phone: +1 919-445-6949
Email: hub@tbdiah.org
www.tbdiah.org