M&E for MDA Digitization

NTD Data Use Resource Hub

Acknowledgements

We extend our sincere appreciation to the **National NTD programs from seven countries (Benin, Burkina Faso, Ethiopia, Kenya, Nigeria, Senegal, and South Sudan)** for their unwavering cooperation, leadership, and commitment to public health.

We also thank our **in-country implementing partners** for their vital collaboration, operational expertise, and dedication to delivering impactful interventions on the ground. This work would simply not be possible without their collective support—each contribution has been essential to driving progress and improving lives across affected communities

We acknowledge the generous support of the **Gates Foundation (GF)** and the **Children's Investment Fund Foundation (CIFF)**, whose funding has been instrumental in advancing our shared mission to combat neglected tropical diseases (NTDs).

Lastly, we also acknowledge the **World Health Organization's ESPEN platform** for hosting these resources and making them accessible to the global health community, further strengthening transparency, coordination, and knowledge-sharing across regions.

1 NTD DATA USE RESOURCE HUB

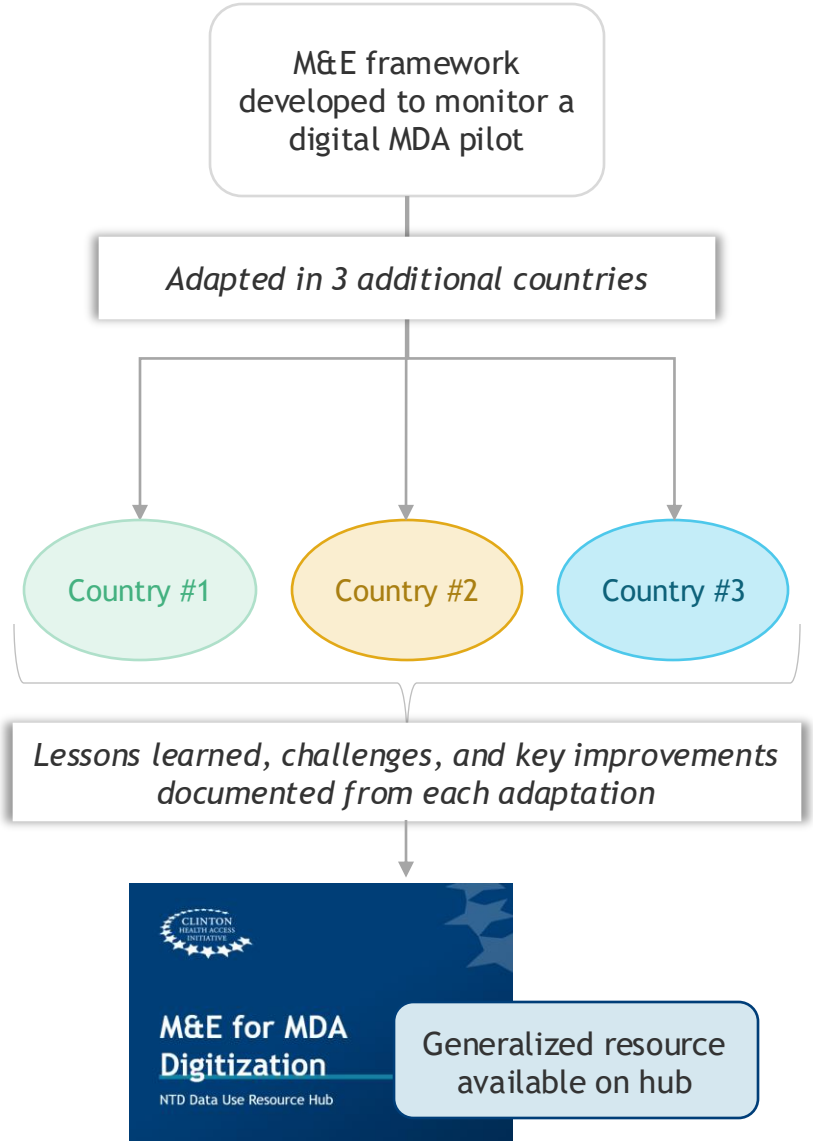
Background: Data use support provided to 6 NTD programs

- In **2021**, CHAI started providing support to **Kenya**, **Benin** and **Nigeria** (Kano) NTD program (2021-2024) with support from BMGF to accelerate elimination of PC-NTDs by:
  - Improving sustainable **access to timely and high-quality information** across relevant levels of the health system.
  - **Capacitating programs** to **routinely use data and generated analytics** such as modeling, integrating it within existing processes and structures.
- In **2022**, the support was expanded to all ARISE countries including **Burkina Faso**, **Ethiopia, Senegal, and South Sudan*** (2022-2025) with support from CIFF and BMGF.
- CHAI staff conducted in-depth country landscaping in 6 countries to identify the specific NTD program data use gaps that were undermining campaign and intervention effectiveness.
- Based on this work, CHAI staff worked in concert with NTD programs and key implementing partners to develop customized solutions to address these key challenges.

- Direct support to 6 countries
- 15 staff embedded in country
- August 2021 – December 2025

**CHAI has no in-country presence in South Sudan. Support consisted of sharing cross-country lessons and deepening engagement through other in-country partners.*

The NTD Data Use Resource Hub: Customized solutions → generalized guidance

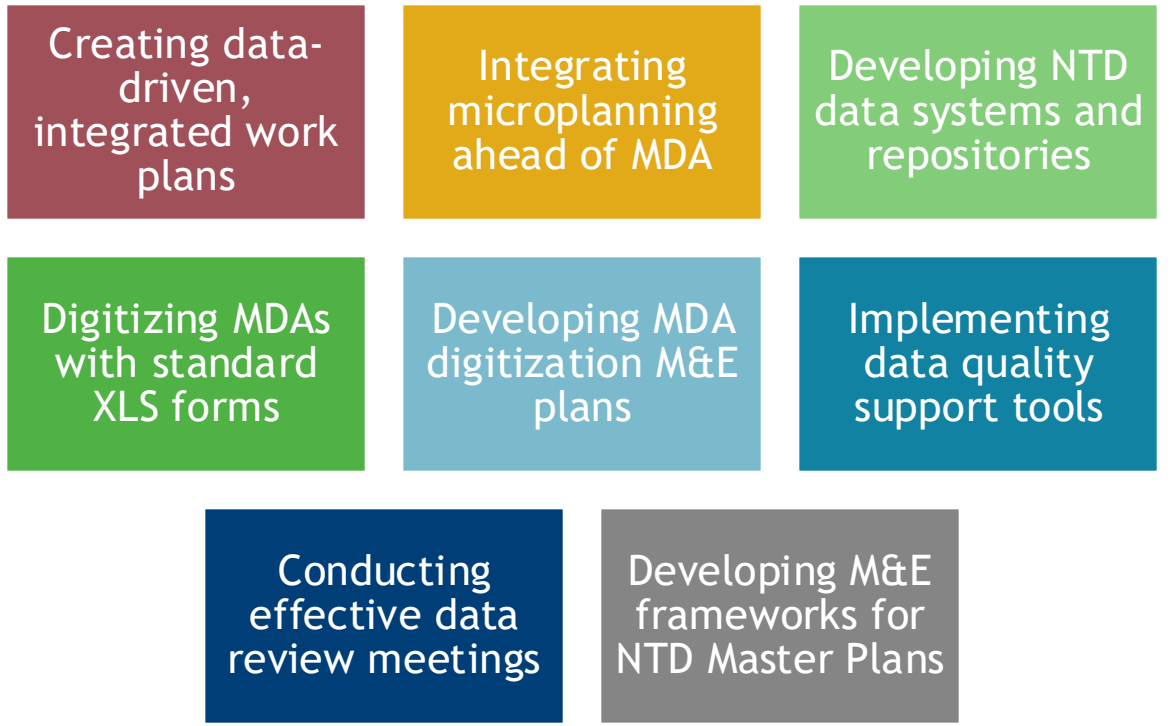


- While solutions were developed for the specific goals and challenges of individual NTD programs supported through the BMGF/CIFF investment, the work revealed **significant overlaps between countries in impactful solutions**.
- Throughout implementation, **CHAI teams actively shared and adapted guidance, templates, and best practices** – showcasing the transferability of learnings and resources across countries.
- To enable broader uptake beyond grant-supported countries, these resources were **standardized and paired with concise "how-to-use" guides** to facilitate adaptation by other NTD programs.
- The tools are designed to **complement existing resources** from the WHO and key NTD partners, with a focus on bridging the gap between technical tools and day-to-day program operations.
- **Emphasis is placed on practicality and usability**: organizing planning meetings, structuring data review discussions, and improving access to and use of routine data without overburdening NTD program staff.

Available resources and intended users

- These tools are designed for NTD program teams—**particularly program managers and M&E officers**—who want to strengthen data use to inform decision-making.
- These resources are designed to help programs **address existing challenges in how they organize, review and use data** for planning and decision-making.
- Each resource includes a brief usage guide to support customization and integration into existing workflows accompanied by generalized templates for adaptation.

Available resources in Hub



The WHO's Roadmap M&E Framework outlines key best practices for managing NTD data. Resources included in the Hub are designed to help programs put those best practices into action.

Available resources in Hub

- Creating data-driven, integrated work plans
- Integrating microplanning ahead of MDA
- Developing NTD data systems and repositories
- Digitizing MDAs with standard XLS forms
- Developing MDA digitization M&E plans
- Implementing data quality support tools
- Conducting effective data review meetings
- Developing M&E frameworks for NTD Master Plans

Data collection	• Integrated and standardized disease-specific and cross-cutting indicators and data collection tools • Mainstreamed into health management information system/integrated disease surveillance and response • Disaggregated by age, gender and location • Recorded and reviewed on the same day that collected • Reported to the next level in a timely manner • Supervised collection of data • Digital health platform used for collection
Data storage and aggregation	• Mainstreamed into health management information system/integrated disease surveillance and response • Secured with defined users and access • Updated at regular intervals
Data validation	• Validated at multiple levels with feedback on data quality • Triangulated from various sources • Checked for internal and external consistency • Routine (e.g., during supportive supervision) and period exercises (e.g., coverage evaluation surveys, data quality audits) conducted
Data analysis	• Viewed through the lens of person, time, place to answer 4/5 Ws: "what, where, when, why and how?" • Analysed at multiple levels (community, health facility, district, national, regional, global) • Advanced analyses used to fill public health data gaps
Monitoring progress towards targets	• Progress measured with attention to geographical areas, population groups and trends over time • Progress analysed as to how and why targets are being achieved or not achieved to inform decisions

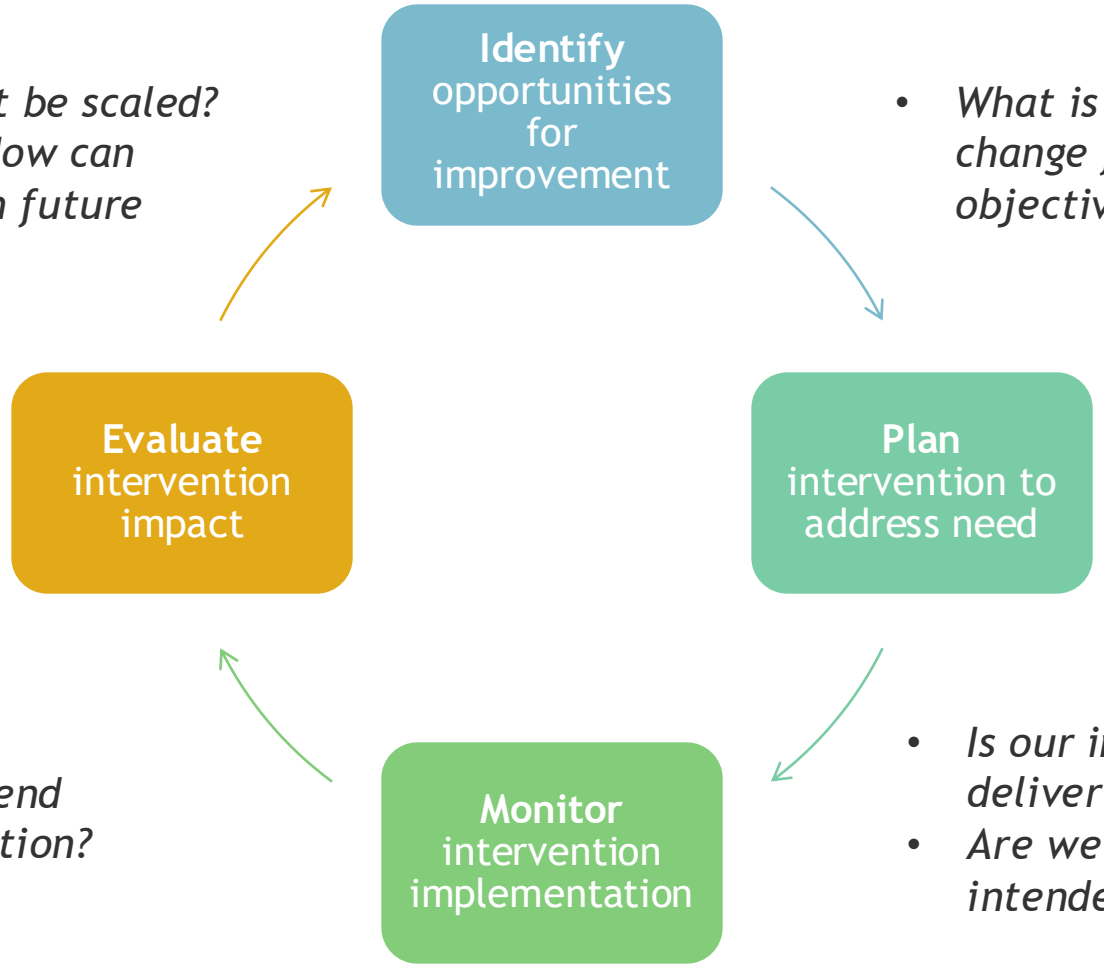
Source: Box 2, Best practices in NTD data process

2 OVERVIEW

Purpose of this guide

- Digitizing MDA campaigns is a significant investment—of time, money, and training. As such, it's important to have a robust monitoring and evaluation (M&E) plan in place to assess whether digitization is helping the program achieve better results and identifying areas for improvement.
- This guide is designed to help NTD program managers, M&E staff, implementing partners, and digital tool stakeholders:
  - Understand how to design a **practical, flexible M&E plan** for evaluating digital data collection during MDA campaigns.
  - Focus on **how** digitization affects outcomes—not just whether the campaign worked.
  - Learn **what's working, what's not, and what's worth scaling**.

Monitoring and evaluation seeks to identify, collect, analyze, and use data to plan interventions, assess progress, measure impact, and identify future areas of work.



- *What worked? Can it be scaled?*
- *What didn't work? How can that be addressed in future work?*

- *What is our theory of change for how our objective will be achieved?*

- *Is our intervention being delivered as intended?*
- *Are we reaching who we intended to reach?*

- *Did we achieve the end goal of the intervention?*

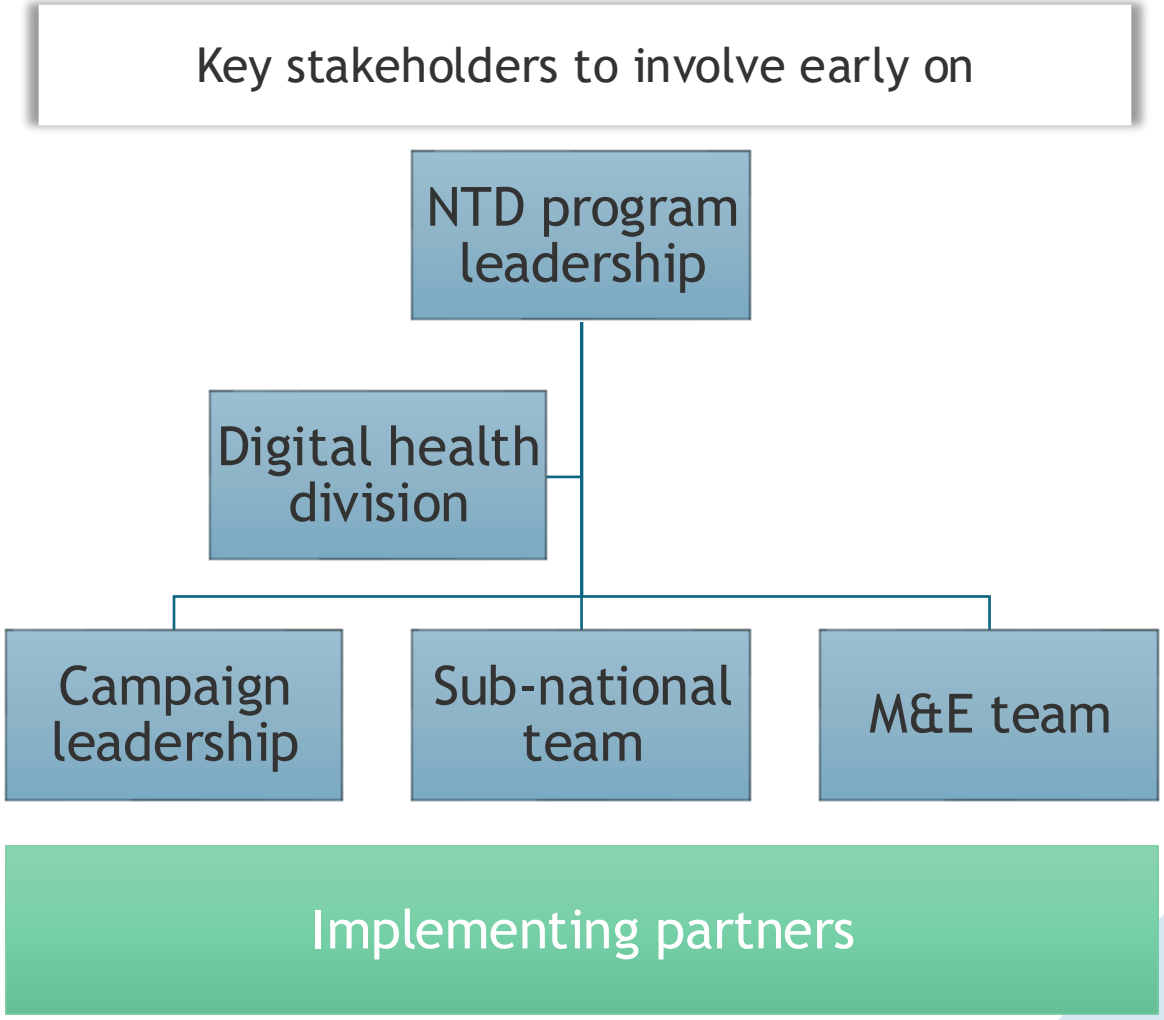
Why do we need a separate M&E plan for digitization?

- You’re not just measuring whether the campaign worked
- You’re asking: Did digitization make a difference? Where, how, and for whom?
- This means different questions, indicators, and comparisons

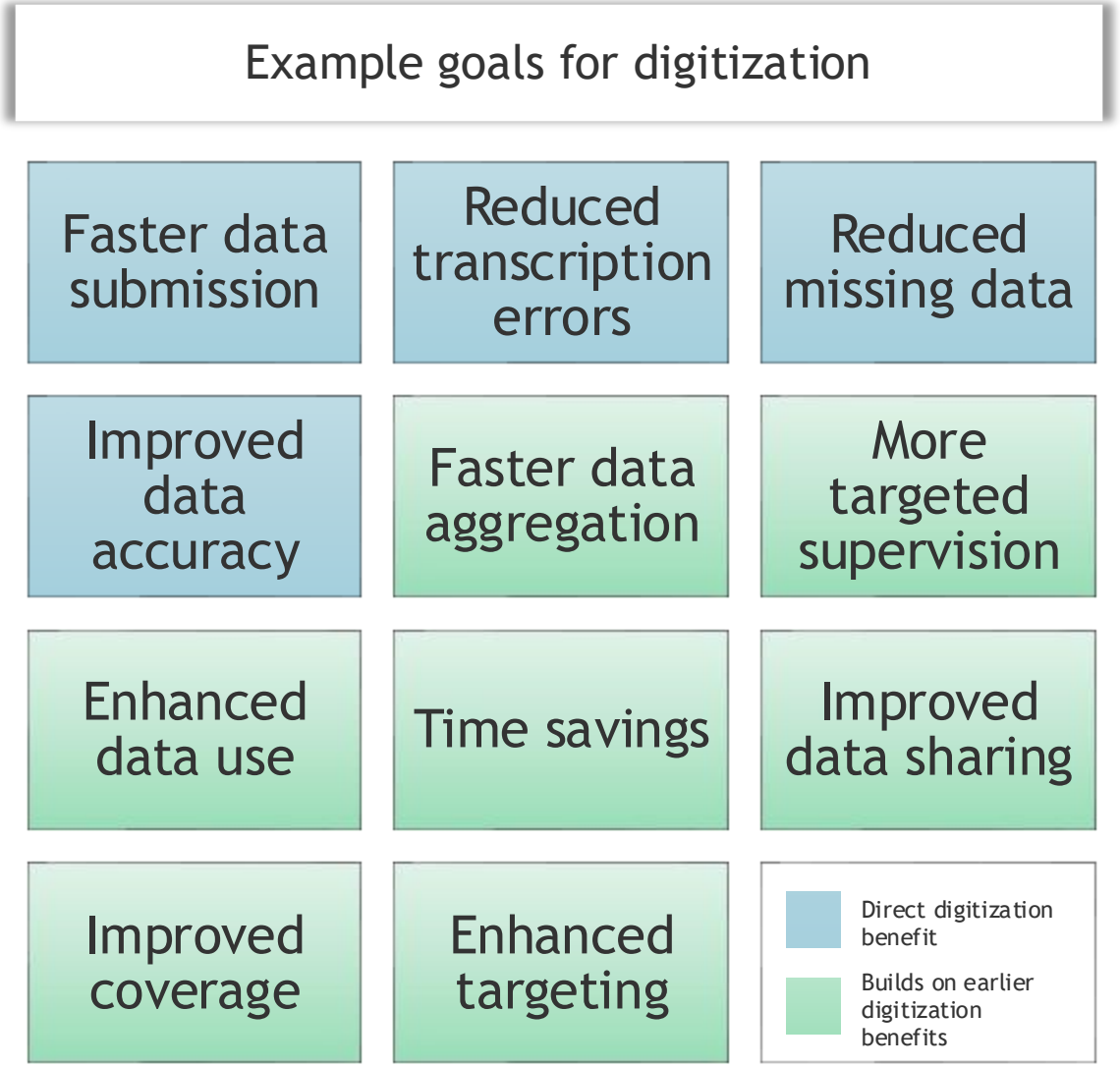
3 DESIGNING AND IMPLEMENTING M&E FOR CAMPAIGNS

Start with consensus: Build your M&E plan collaboratively

- Developing and implementing an M&E plan for measuring campaign digitization is a collaborative process – involving key campaign stakeholders from the start when planning M&E will improve your plan and spread the benefits:
  - Stakeholders with different perspectives can ensure no key questions are missed.
  - Owners of key sources of data / processes are sensitized and involved in the process, minimizing risk of not wanting to share information because they don't know why it's being collected.
  - Responsibility for data collection and analysis can be spread across multiple parties, reducing burden.



Clarify the "Why" of Digitization: Defining the purpose of digitization helps shape the evaluation questions needed to assess whether project goals have been met



- Once the intended goals of digitization are clearly defined, programs can begin to identify the evaluation questions:

Rationale for digitization	Evaluation questions
Faster data submission	Did CDDs submit records more quickly than when using paper forms?
More targeted supervision	Were CDDs struggling identified and offered support more frequently than when using paper forms?
Enhanced data use	Did campaign staff use dashboards effectively to make decisions?
Improved data sharing	Was digital data transferred to HMIS or another shared database?
Improved coverage	How did digitized coverage compare to paper coverage?

Once the “why” is clear, use a logic model to define what must happen to achieve digitization goals—and what to measure along the way.

- Below is a simplified logic model outlining a proposed pathway for how digitization could lead to enhanced data use which could then contribute to better reach of underserved populations.
- Use the logic model to trace the pathway from inputs to outcomes, and identify key points where measurement is needed to track progress and understand impact.

Inputs	Activities	Outputs	Outcomes
• Develop digital forms for data capture • Develop dashboard for data use • Train users and supervisors • Devices and data • IT infrastructure	• Full uptake of digital tools for campaign • Capture and submit data daily • Monitor data submission in real time via dashboard • Provide targeted feedback and supervision based on live data	• Supervisors adjust plans during campaign to reach areas • Increased responsiveness to issues in the field • More accurate final campaign coverage data, especially in underserved zones	• Improved treatment coverage among previously underserved populations • Adjusted future campaign strategy to capture lessons learned about reaching underserved populations

Using the logic model, begin to select / develop indicators based by understanding "What would indicate that this step happened? What would success look like here?"

- Indicators help assess whether the steps in your logic model occurred as anticipated.
- Include indicators across the chain—from inputs to outcomes—to understand where progress is or isn't occurring.
- This helps determine whether outcomes were not reached due to gaps in implementation or because the pathway needs adjustment based on real-world conditions.

See Annex A for a bank of potential indicators used by other programs.

Make sure selected indicators are SMART[1]

S	Specific: The indicator definition must be clear about what is being measured and how the data will be collected.
M	Measurable: The indicator must be quantifiable. The definition should not be open to interpretation.
A	Attainable: The indicator should be possible to achieve within the program parameters (e.g., budget, timeline).
R	Relevant: The indicator should be appropriate for the context and program being evaluated.
T	Time-bound: The indicator should be time-specific.

1. WHO, Monitoring and Evaluating Digital Health Interventions, 2016.

Build out an M&E plan using a structured format that clearly captures the why, what, how, who, and when for each indicator. Having a documented plan helps ensure that key M&E tasks are well-defined, assigned, and carried through to completion.

- An M&E plan should capture:
  - What indicators are measured
  - How and when data will be collected, analyzed, and used
  - Who is responsible for each part of the process
- See below for a sample template:

Evaluation Question	Indicator	Baseline / Comparator	Data Source	Method	Frequency	Responsible
What are you trying to learn? This should reflect the why behind digitizing	*What will you measure to answer the question? Should be SMART and aligned to logic model.*	*What should results be compared against? (past data, paper-based areas, or standard benchmarks)*	*Where will the data to calculate this indicator come from?*	*How will the data be collected?*	*How often will data be collected and reviewed?*	*Who is responsible for collecting, analyzing, and reporting this indicator?*
Is data submitted faster with digitization?	Average time between CDD form completion and sync	Average time before data was available using paper forms	Platform metadata	System log review	Post-MDA	M&E officer

More information on baselines / comparators when it comes to digitization evaluations.

- For many of the indicators to be included in evaluations of digitization pilots, comparisons will be essential to add context to the data. For instance, consider the following presentations of findings – which is stronger?

> On average, the time between recording a treatment and the record syncing to the server was ~4 hours.

> On average, the time between recording a treatment and the record syncing to the server was ~4 hours. In comparison, daily treatment data is not available until 1-2 days after it is submitted.

- Without a comparison to paper-based data or other forms of data collection, users of the data are not able to tell if digitization represents an improvement over other methods of data capture.
- Comparators don't need to be perfect, but they should be thoughtfully chosen. Some example comparisons could include:
  - Comparing campaign data from the same area for the immediate previous campaign that used paper records.
  - Identifying a comparison area that is still using paper records for the same campaign.
  - Collect retrospective information on the situation through user surveys or key informant interviews.

Selected indicators will guide what data collection methods will need to be employed over the course of the evaluation.

Primary

Qual

- **Focus group discussions / key informant interviews:** Understand tool users' perception of tool performance and opinions on how digital tool compares to paper-based systems.
- **Structured observation:** Digitization M&E staff shadow campaign workers and data use sessions to document access to real-time data and how it is used.

- **User questionnaires:** Understand tool users' perception of tool performance and opinions on how digital tool compares to paper-based systems.

Quant

- **Presentations and meeting minutes from data review meetings:** Understand how data is being used.
- **Reports from previous campaigns:** Understand what has changed in how campaigns are delivered to inform confidence estimation of impact of digitization.

- **Digital enumeration, distribution, and stock data collected via digital tool:** Form the basis of analysis of digitization impact on data quality, campaign coverage, and stock management.
- **Digital enumeration, distribution, and stock data collected via paper-based tools:** Serve as comparison for analysis of digitization impact on data quality, campaign coverage, and stock management.
- **Coverage verification survey data:** Serve as a comparison to assess validity of data collected during campaigns.
- **Microplans:** Form basis of analysis of estimation of enumeration and planning accuracy.
- **Alternate population sources:** Serve as a comparison of estimation of enumeration and planning accuracy.
- **Budget data:** Understand the cost of digitization compared to paper-based campaigns.

Secondary

When it comes to analysis, plan for the capacity available, focus on understanding what happened and why, and to tease out lessons learned for future applications

Best practices

Many questions can be answered through simple analysis

Tabulations and simple bar graphs for quantitative data and basic frequency analysis for qualitative data are all appropriate analysis methods for many digitization-related indicators. Don't avoid conducting M&E because the bandwidth for complex statistical analysis isn't available – basic calculations are often sufficient.

Structure analysis to compare "before and after digitization"

Look for differences in values for relevant indicators. Triangulate with qualitative data or observational data to better understand the impact of digitization on any observed differences.

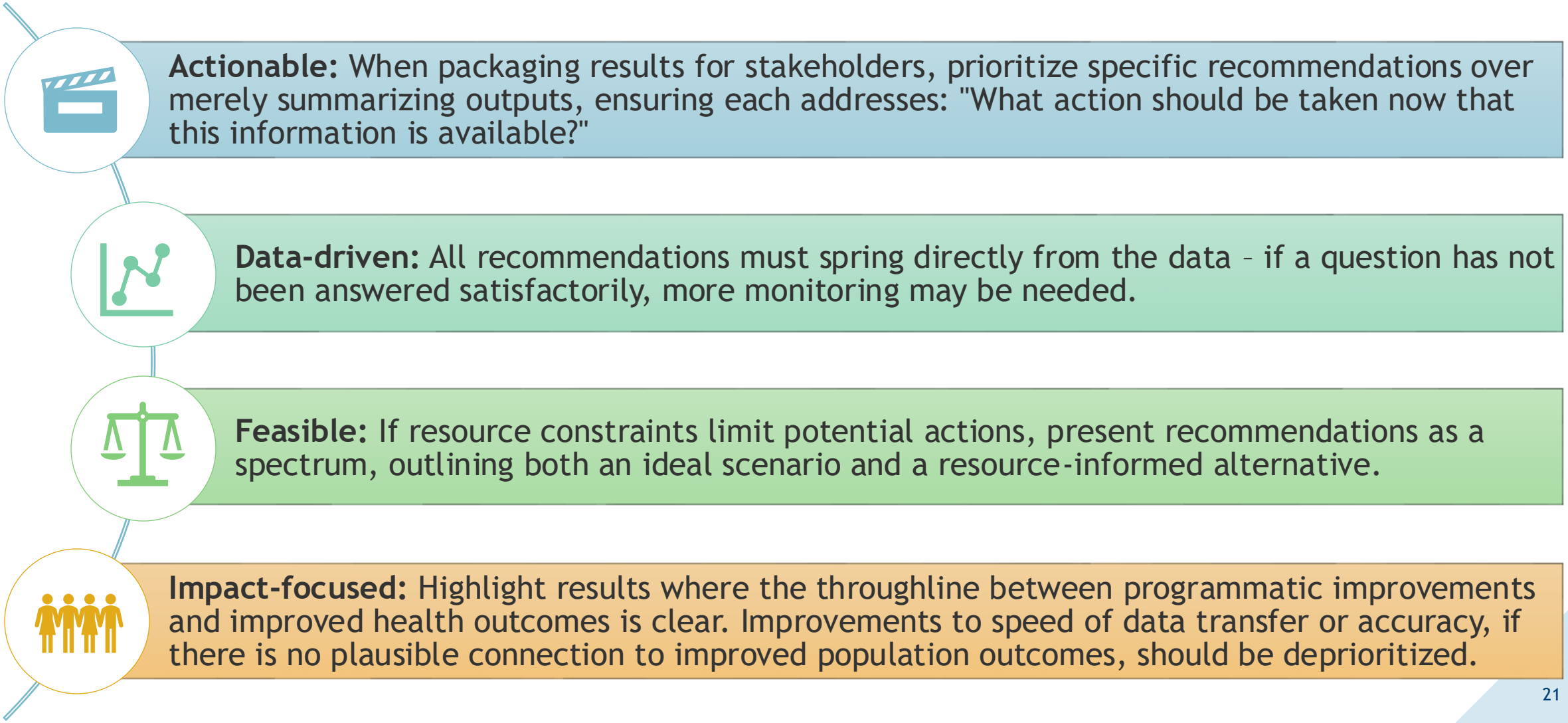
Triangulate findings from different sources of data and indicators

Triangulate across different sources of data to build a case about the effect of digitization. For instance, pairing qualitative feedback about improvements in data quality with positive results on timeliness and completeness quantitative indicators strengthens assertions about digitization's effect.

Take care with attribution and assertions about causality

Unless the evaluation was specifically designed with a strong experimental setup, be cautious about saying digitization was the only reason for any observed changes. Acknowledge that other factors (like new training, increased supervision, or changes in the disease itself) might also have played a role.

From insights to action: Presenting results and recommendations to facilitate decision-making and evidence uptake



Actionable: When packaging results for stakeholders, prioritize specific recommendations over merely summarizing outputs, ensuring each addresses: "What action should be taken now that this information is available?"

Data-driven: All recommendations must spring directly from the data – if a question has not been answered satisfactorily, more monitoring may be needed.

Feasible: If resource constraints limit potential actions, present recommendations as a spectrum, outlining both an ideal scenario and a resource-informed alternative.

Impact-focused: Highlight results where the throughline between programmatic improvements and improved health outcomes is clear. Improvements to speed of data transfer or accuracy, if there is no plausible connection to improved population outcomes, should be deprioritized.

4 RESOURCES

Examples of M&E plans and data collection tools

- Example M&E plan
  - **Original purpose:** Used to draft and document the M&E plan for pilots of digitized campaigns
  - **Features:** Space for linking indicators to theory of change / evaluation questions and planning data collection.
- Example data collection tools
  - **Original purpose:** Used to capture information from pilots of digitized campaigns.
  - **Features:** Tools appropriate for different cadres of workers.

ANNEX

A SAMPLE INDICATORS

Indicatory category	Indicator name	Description	Primary data collection needed?	Comparison / Baseline
Functionality	Tool suitability	% of required workflows/functions included in the digital tool.	No (Tool testing & needs alignment)	Not applicable (new tool assessment)
Functionality	Hardware performance	% of field devices reporting optimal performance (e.g., battery life, GPS accuracy, no crashes).	Yes (Automated device logs/surveys)	Not applicable (new hardware baseline)
Functionality	System performance	Average system lag time and frequency of system crashes during data submission.	No (System log monitoring)	Not applicable (new system baseline)
Data quality	Data completeness	% of essential data fields populated for each treated individual/household.	Yes (Data quality checks on submitted data)	Completeness of key data fields from previous paper-based forms.
Data quality	Data accuracy	% of submitted data points that match verified information (e.g., through spot checks or re-surveys).	Yes (Data quality audits, field verification)	Accuracy rates of data transcribed from paper forms.
Data quality	Data timeliness	Average time from data collection in the field to its availability in the central database.	No (System timestamps on data submission)	Time lag from paper form collection to central data entry/compilation.
Data quality	Data error rate	Number of detected data entry errors per 100 records.	No (Automated validation rules, manual review)	Error rate from manual data entry processes.
Data quality	Geographic data capture rate	% of treated individuals/households with accurate GPS coordinates captured.	No (System checks on geodata fields)	Not applicable (if GPS data was not collected manually), or qualitative assessment of location accuracy.
User experience	User adoption rate	% of trained field staff consistently using the digital tool for data collection.	Yes (Device usage logs, supervisor reports)	Not applicable (new tool introduction)
User experience	User satisfaction	Average score on a satisfaction survey regarding ease of use, training, and support for the digital tool.	Yes (Anonymous user surveys)	Qualitative feedback on previous paper-based system (if available).
User experience	Training effectiveness	% of field staff demonstrating proficiency in using the digital tool after training.	Yes (Pre/post-training assessments, observation)	Not applicable (new training required for digital tool).
User experience	Support request volume	Number of technical support requests related to the digital system per campaign period.	No (Support desk logs)	Not applicable (or qualitative assessment of previous support needs).
Programmatic impact	Campaign monitoring frequency	Number of times real-time data is accessed and used for campaign monitoring and decision-making during the MDA.	Yes (Interviews with program managers, system access logs)	Qualitative feedback on how data was used in previous paper-based system.
Programmatic impact	Resource optimization	% reduction in resources (e.g., paper, printing, manual data entry staff time) due to digitization.	Yes (Cost analysis, staff time tracking)	Costs/time associated with manual data collection and entry.
Programmatic impact	Decision-making timeliness	Average time from data collection to key programmatic decisions being made based on that data.	Yes (Process mapping, interviews)	Time from manual data collection to decision-making.
Programmatic impact	Administrative coverage	Total population treated of the total population targeted	No (System submissions compared to microplan targets)	Comparison to historic or current control coverage
Programmatic impact	Coverage of hard-to-reach / missed populations	Total hard-to-reach population treated of the estimated hard-to-reach population	No (System submissions compared to microplan targets)	Comparison to historic or current control coverage