



# Guidelines for Developing Monitoring and Evaluation Plans for Human Resources for Health

July 2015

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## **ACKNOWLEDGMENTS**

The authors would like to thank IntraHealth International colleagues Kate Gilroy, Claire Viadro, and David Nelson for valuable comments and editing as well as Lois Schaefer, Temitayo Ifafore, Diana Frymus, and Jessica Rose from the US Agency for International Development for their thorough review and insightful suggestions on earlier versions.

## TABLE OF CONTENTS

List of Acronyms .....	iii
Why a Monitoring and Evaluation Plan for HRH?.....	1
What are Monitoring and Evaluation? .....	1
Monitoring and Evaluation in the Context of HRH .....	2
Purpose and Structure of this Document .....	3
Steps to Develop a Monitoring and Evaluation Plan for Human Resources for Health.....	4
Step 1: Convene a Stakeholder Working Group .....	4
Step 2: Understand the Human Resources for Health Context.....	6
Step 3: Define the Monitoring and Evaluation Plan’s Goals, Objectives, and M&E Framework..	9
Step 4: Identify Indicators .....	15
Step 5: Review Existing Monitoring and Evaluation Systems and Identify Sources of Data.....	19
Step 6: Monitor HRH Program: Putting It All Together .....	22
Step 7: Evaluate HRH Program: Study Design and Methods .....	25
Step 8: Draft the Monitoring and Evaluation Plan and Obtain Consensus.....	30
Step 9: Disseminate the Monitoring and Evaluation Plan and Conduct Periodic Reviews .....	32
Step 10: Conduct Systematic Training on Implementation of the Monitoring and Evaluation Plan.....	34
References.....	35
Appendix A: What to Include in a Monitoring and Evaluation Plan .....	38
Appendix B: Resources, Guidelines, and Examples of Health Sector Monitoring and Evaluation Plans .....	39

## LIST OF ACRONYMS

DHS	Demographic and Health Survey
HIS	Health information system
HMN	Health Metrics Network
HR	Human resources
HRH	Human resources for health
HRIS	Human resources information system
M&E	Monitoring and evaluation
PMP	Performance monitoring plan
SARA	Service Availability and Readiness Assessment
USAID	United States Agency for International Development
WHO	World Health Organization

## WHY A MONITORING AND EVALUATION PLAN FOR HRH?

A human resources for health (HRH) monitoring and evaluation (M&E) plan is a fundamental component of national efforts to strengthen the health workforce. The purpose of a national M&E plan for HRH is to guide the measurement of and monitor progress in the implementation of a country's HRH strategic and/or operational plan. Monitoring and evaluation are both critical to assessing programmatic progress toward national goals, objectives, and targets. M&E can measure progress, identify areas for improvement, explain why a strategy is or is not working, and suggest corrective strategies.

Most importantly, strong capacity in M&E is a prerequisite for ensuring the sustainability of a highly functioning and high-quality health workforce. If human resources (HR) managers do not know how many health workers are employed and at their posts, whether their competencies meet the needs of their catchment populations, and other key information, then health workforces may be understaffed, poorly distributed, unqualified, or imbalanced. If HR managers lack information on what motivates health workers, they cannot offer incentives that persuade them to stay. Understanding patterns in health service and health workforce data can improve decision-making around all aspects of the health worker life cycle.

### What are Monitoring and Evaluation?

**Monitoring** is an ongoing process that provides routine information on whether a program is making progress toward its objectives. Monitoring is the continuous measurement of the knowledge, behaviors, and/or skills that an intervention or program is attempting to influence, measured through the tracking of changes in program **inputs**, **activities**, and **outputs** over time (Measurement, Learning & Evaluation Project 2013).

This tracking of changes is done on an ongoing basis and is fundamental to know whether the desired processes and procedures laid out beforehand are being accomplished according to benchmarks established and at the time they should occur. For some, monitoring is done to verify that a program is *complying* with such procedures, as well as with rules, regulations, and policies (Forman 2013). In this sense, monitoring can be seen as equivalent to *auditing* a program.

Similarly, monitoring can be used to “permit stakeholders to make informed decisions regarding the effectiveness of programs and the efficient use of resources” (Frankel and Gage 2007). Typical national HRH program inputs might include funding to develop HRH units (a financial input) or even new health workers (a personnel input). Activities could include training courses completed or supervisory visits undertaken to health workers. Outputs might comprise increased knowledge and skills, or greater satisfaction in the workplace.

## Monitoring and Evaluation in the Context of HRH

The World Health Organization's 2009 M&E handbook for HRH uses the concept of the "working lifespan" and its stages as a framework to discuss **monitoring** strategies for HRH (WHO 2009).

Active monitoring of entry into the workforce starts with components of preservice health education, including the pool of applicants, the enrollment of students, student outcomes/graduation, and the licensing of professionals before entering the workforce. HRH monitoring then shifts to the recruitment process and entry into the active health workforce. Once health workers are employed, there may be transitions within the sector (e.g., promotions) or outside it (e.g., moving from public to private practice) as well as international migration. Finally, there are exits due to changes of career, death, and retirement.

Data from population censuses, labor force surveys, and payroll and professional registries can be used to assess the stock and distribution of the health workforce. However, some stages (such as a change in sector of employment) are more difficult to follow up than others, particularly if information systems are not maintained or integrated, or are based on different software platforms and thus are unable to communicate.

**Evaluation** is a systematic approach to attributing changes in specific outcomes to program inputs and activities (Measurement, Learning & Evaluation Project 2013). For example, an HRH evaluation might use interviews and observations of client-provider interactions to assess health worker performance following the introduction of supportive supervision. Such an evaluation might find that health workers' fulfillment of standard tasks on a checklist improved by 25% as a result of the program's introduction of a supervisory scheme.

Together, monitoring and evaluation form a continuous process for capturing program and population-level information to inform decision-making. In general, monitoring and evaluation involve the following steps, which will be elaborated upon further within this document:

- Defining the scope and objectives of the M&E plan
- Selecting indicators
- Regularly collecting information on the indicators
- Analyzing the information obtained in comparison to the program's goals and objectives
- Sharing this information and revising the program as necessary and appropriate.

All national and subnational HRH implementation or operational plans should include a costed M&E plan that describes program priorities and associated activities for data collection, analysis, and use.

Table 1 further outlines the differences between monitoring and evaluation.

**Table 1: Differences between Monitoring and Evaluation: Key Characteristics and Questions**

Monitoring	Evaluation
Used for program management	Used for strategic planning and program design
Describes	Explains or predicts
<b>Key Questions:</b>	
Are we on the right track? Should we take a different road?	Did we get where we wanted to go? If yes, why and how? If not, why not?
Is the program being implemented as planned?	Which program activities were more effective, and which were less effective?
How much does implementation vary from site to site?	Did the target population benefit from the program and at what cost? Can improved health outcomes be attributed to program efforts?
<b>Common data sources:</b>	
Program-based data such as routine information systems (health management information systems, HR information systems), facility or institutional assessments, surveys; qualitative research	Population-based surveys, special studies, and qualitative research

*Source: Adapted from Frankel and Gage 2007*

## Purpose and Structure of this Document

These guidelines are intended to give stakeholders an overview of the process for developing M&E plans that are an integral component of HRH plans. This document complements existing M&E resources, such as national and regional M&E plans for malaria and HIV/AIDS, in that it provides the general steps required to develop an M&E plan while also paying particular attention to HRH-specific considerations, challenges, and indicators. The guidelines focus on national-level M&E plans for HRH, but they can also be applied at regional, district, and subdistrict levels. While this document lays out the principles and provides illustrations of steps and components involved in developing an M&E plan for HRH, it is not intended to be a thorough M&E training module for users. Likewise, it does not make recommendations for specific content of an M&E plan for HRH, as countries and institutions should determine what is most appropriate for their own context.

## LEARN MORE

For more detailed information and additional examples, consult the references listed for each step and in the references and Appendix B, as well as the World Health Organization's [Handbook on Monitoring and Evaluation of Human Resources for Health](#), which provides additional information on HRH measurement issues, strategies, and indicators across the working lifespan (entry, active workforce, and exit) (WHO 2009).

## STEPS TO DEVELOP A MONITORING AND EVALUATION PLAN FOR HUMAN RESOURCES FOR HEALTH

There are ten steps involved in developing an M&E plan for HRH, described in detail in the following sections.

- Step 1 Convene a stakeholder working group
- Step 2 Understand the HRH context
- Step 3 Define the M&E plan's goals, objectives, and M&E framework
- Step 4 Identify indicators
- Step 5 Review existing M&E systems and identify sources of data
- Step 6 Monitor the HRH program: putting it all together
- Step 7 Evaluate the HRH program: study design and methods
- Step 8 Draft the M&E plan and obtain consensus
- Step 9 Disseminate the M&E plan and conduct periodic reviews
- Step 10 Conduct systematic training on implementation of the M&E plan

### Step 1: Convene a Stakeholder Working Group

HRH is a cross-cutting area that involves stakeholders from numerous sectors, levels, and functions. Producing, analyzing, and using high-quality HRH data for decision-making is, therefore, in the interests of—and requires the commitment of—a broad range of stakeholders.



As such, engaging stakeholders to contribute to the development of an M&E plan for HRH increases ownership of the plan and the requisite follow-up actions needed to implement it.

If a health sector HRH M&E working group, HRH observatory, or other HRH leadership group already exists, this group can lead the process and include additional key stakeholders with HRH and M&E or data use responsibilities. If no such group exists, the Ministry of Health could convene the appropriate stakeholders—including those involved in developing and implementing the national HRH plan—to develop the M&E plan for HRH.

### **Key stakeholders**

Key stakeholders might include Ministry of Health HRH managers and staff, Ministry of Education staff, M&E staff from different organizations, as well as representatives from professional councils, nongovernmental organizations, bilateral and multilateral organizations, civil society, health training institutions, the private sector, and other partners. The composition of this working group should be well balanced and sufficiently well versed in the current HRH and M&E landscapes. This will help ensure that members' skills are complementary and that the group has the ability to address issues such as features and limitations of the existing M&E system, resource gaps, and M&E training and capacity-building needs.

### **The role of the secretariat**

The working group should appoint or establish a secretariat that will manage development of the M&E plan and the consensus-building process. The secretariat should consist of one or more persons who will carry out the day-to-day work of planning and arranging meetings, managing information, and communicating with members.

Another critical action to be carried out by the working group is to set a timeline by which the M&E plan will be developed, including dates for each specific step and output. The secretariat can help to manage this timeline.

### **Human resources for health considerations**

The working group plays a critical role in articulating a conceptual approach to achieving HRH goals and setting forth a plan for demonstrating progress toward those goals. Because M&E systems for HRH may be limited, the working group must determine what reporting structure, indicators, benchmarks, and mechanisms for data collection and use are both relevant and feasible within the country's specific context. Given the scope of this work, some training in basic M&E and/or HRH concepts may be helpful for members of the working group who have had little or no previous exposure, if resources allow it. For example, some members may have experience in the country's M&E systems for health but may not have worked in HRH. Similarly, an HRH manager may be able to provide insights into HRH initiatives but may not be trained in M&E. Both skill sets should be represented in the group and be further built as necessary.

## LEARN MORE

CapacityPlus's [Guidelines for Forming and Sustaining Human Resources for Health Stakeholder Leadership Groups](#) provide a roadmap for establishing functioning national-level working groups and can be adapted to a specific area, such as M&E of HRH (Gormley and McCaffery 2011).

## Step 2: Understand the Human Resources for Health Context

Understanding the context in which the M&E plan for HRH will operate is an essential step in its development. An M&E plan for HRH should be closely linked to the national HRH strategic and operational plans and maintain consistency with any existing M&E plans and systems for the nation's overall health sector.

It is not recommended that an M&E plan for HRH call for the creation of a reporting system separate from the existing health sector reporting system, as reporting may become duplicative, fragmented, and inefficient. At the same time, health data that are currently collected or methods that are currently used may not necessarily help to measure progress against HRH objectives. It is, therefore, important to assess a country's M&E needs and challenges specific to HRH before developing the M&E plan.

### Create a conceptual framework

A conceptual framework, also known as a theoretical or causal framework, makes explicit connections between relevant environmental or contextual factors and public health programs. In doing so, conceptual frameworks guide a program's design by both clarifying assumptions that underlie program activities and articulating the factors those activities are expected to affect.

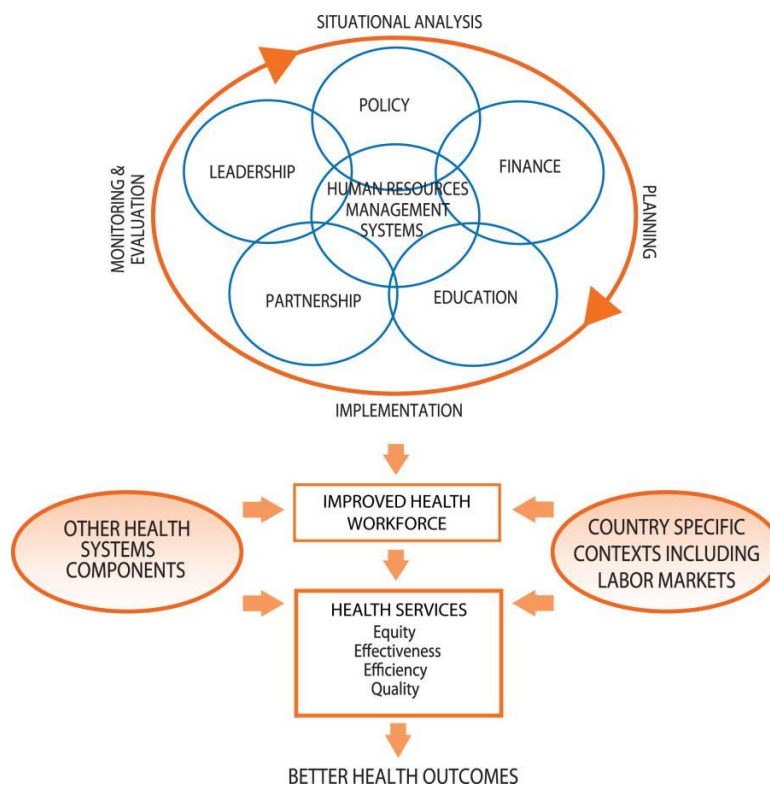
A conceptual framework for HRH typically starts by identifying the key elements influencing the health workforce, which in turn will affect the provision of health services. A common HRH framework is the [HRH Action Framework seen in Figure 1](#), developed as an initiative of the Global Health Workforce Alliance in collaboration with the United States Agency for International Development (USAID) and the World Health Organization (WHO).

The HRH Action Framework shows how policy, finance, education, partnership, and leadership interact with each other and human resources management systems. This interaction, supported by a continuous action cycle of situational analysis, planning, implementation, and M&E, contributes to an improved health workforce, which achieves better health outcomes through the improved provision of health services.

Creating a conceptual framework is the first step to understanding the national context in which HRH programs operate. Such frameworks provide structure to HRH program design and ultimately guide the selection of appropriate indicators for the monitoring and evaluation of

HRH programs. Indicator creation, along with the M&E frameworks they support, will be discussed in Step 4.

**Figure 1: HRH Action Framework**



Source: Global Health Workforce Alliance, USAID, WHO n.d.

### Review existing documents for HRH information

Information-gathering on the HRH and M&E landscapes should also be conducted, typically through a documentation review in consultation with stakeholders. Documents that may be useful for the working group to review include:

- National HRH strategic and operational/implementation plans
- National health sector strategic plans and associated operational plans
- National health sector M&E plans
- Assessments and reports on national, regional, or other level health sector M&E systems, whether conducted by the government, international organizations, or implementing partners
- Health sector sources of data such as surveys, health information systems (HIS), human resources information systems (HRIS), data collection tools, and reporting forms
- Annual health sector reports and periodic health sector evaluations and assessments.

If the development of the M&E plan is occurring as part of the development of a national HRH plan, the M&E plan working group should conduct its information-gathering in conjunction with those leading the development of the HRH plan. A more detailed discussion of how to review an M&E system's capabilities can be found in Step 4 of this document.

## QUESTIONS TO ASK

- What are the HRH objectives and priorities over the designated time period?
- Which agencies have key responsibilities under the national HRH plan and the national health sector M&E plan?
- How is HRH incorporated into the national M&E plan for the health sector, if at all?
- What indicators, benchmarks, and targets have already been selected?
- What information exists on the availability of HRH data?

### **Human resources for health considerations**

As HRH is still a relatively young field within the health sector, HRH issues may be incorporated into the strategies and plans of other health areas. For example, a national plan for HIV/AIDS may include objectives, indicators, and/or targets for provider training and task sharing. Therefore, it may be helpful to review the national operational and M&E plans for different health areas such as HIV/AIDS, family planning, malaria, and orphans and vulnerable children to identify sources of HRH information and possibilities for collaboration across health sectors.

## LEARN MORE

The following HRH assessment tools list key questions and data sources that may be helpful for understanding the HRH context:

- CapacityPlus's [Human Resources Management Assessment Approach](#) provides guidance for stakeholders interested in assessing HR management or HRH systems and processes (Marsden et al. 2013). The tool identifies key questions, areas of investigation, and potential information/data sources for each of four major HRH functional areas.
- In the Health Systems 20/20 Project's [how-to manual](#) on conducting health systems assessments, [section 3, module 3](#) provides guidance on assessing HRH, including potential data sources, suggested stakeholders to interview, lists of issues to explore, and potential indicators to use (Health Systems 20/20 2012).
- The WHO's [guide to rapid assessment of HRH](#) offers key questions to consider when assessing six major HRH topics, as well as a list of additional resources and tools (WHO 2004).
- The WHO's [Assessing Financing, Education, Management and Policy Context for Strategic Planning of Human Resources for Health](#) assists users in making recommendations to improve HRH system capacity (WHO 2007).

### Step 3: Define the Monitoring and Evaluation Plan's Goals, Objectives, and M&E Framework

The goals and objectives included in an HRH plan form the basis of the program's M&E effort and are typically presented through an M&E framework. Each is an expression of the HRH outcomes the program is trying to achieve, as described in detail below.

#### M&E plan's purpose

National M&E plans for HRH will guide the measurement of progress and results in the implementation of a country's HRH plan, as well as provide a framework by which to incorporate feedback and make continuous program improvements. Whether or not the working group defines a more specific or more comprehensive purpose, the final M&E plan should articulate its purpose and its relationship to the national HRH plan.

#### Defining goals and objectives

The M&E plan should also outline its goals and objectives, setting expectations for what the program hopes to accomplish and providing the user with an idea of the types of information contained within the document.

A **goal** is a broad statement that describes the overall impact a program hopes to achieve. HRH programs often have general goals, such as improving the provision of health services through a strengthened health workforce.

An **objective** is a statement that explicitly describes desired program results in terms that are specific and measurable. Program objectives should be conceptualized in terms of program targets because the way in which objectives are written will frame a program’s activities.

Using the format in Table 2, “To increase the deployment of nurses to 25 rural communities in Kenya by 45% by the end of project year 2” is an example of an HRH program objective.

**Table 2: Format for HRH Program Objectives**

Component	Function	Example
To	[action]	“To increase”
The	[specify knowledge, skills, attitudes, behaviors]	“the deployment of nurses”
Among	[specific population or segment]	“to 25 rural communities in Kenya”
from – to	[from baseline to desired level]	
or by	[x percent]	“by 45%”
or to	[specific level]	
By	[time frame]	“by the end of project year 2”

Source: Adapted from “Introduction to Monitoring and Evaluation of MCH Programs” course at the University of North Carolina at Chapel Hill Gillings School of Global Public Health.

The commonly used mnemonic acronym detailed in Table 3, SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) further illustrates criteria for writing good objectives.

**Table 3: SMART Objectives**

<b>S</b>	<b>Specific:</b> Impacts and outcomes and outputs must use change language—they must describe a specific future condition (e.g., improved performance [defined]).
<b>M</b>	<b>Measurable:</b> Results, whether quantitative or qualitative, must have measurable indicators, making it possible to assess whether they were achieved or not.
<b>A</b>	<b>Achievable:</b> Results must be within the capacity of evaluators to achieve.
<b>R</b>	<b>Relevant:</b> Results must make a contribution to selected priorities of the national plan.
<b>T</b>	<b>Time-bound:</b> Results are never open-ended—there is an expected date of accomplishment (e.g., at year’s end).

Source: Adapted from UNDP 2009

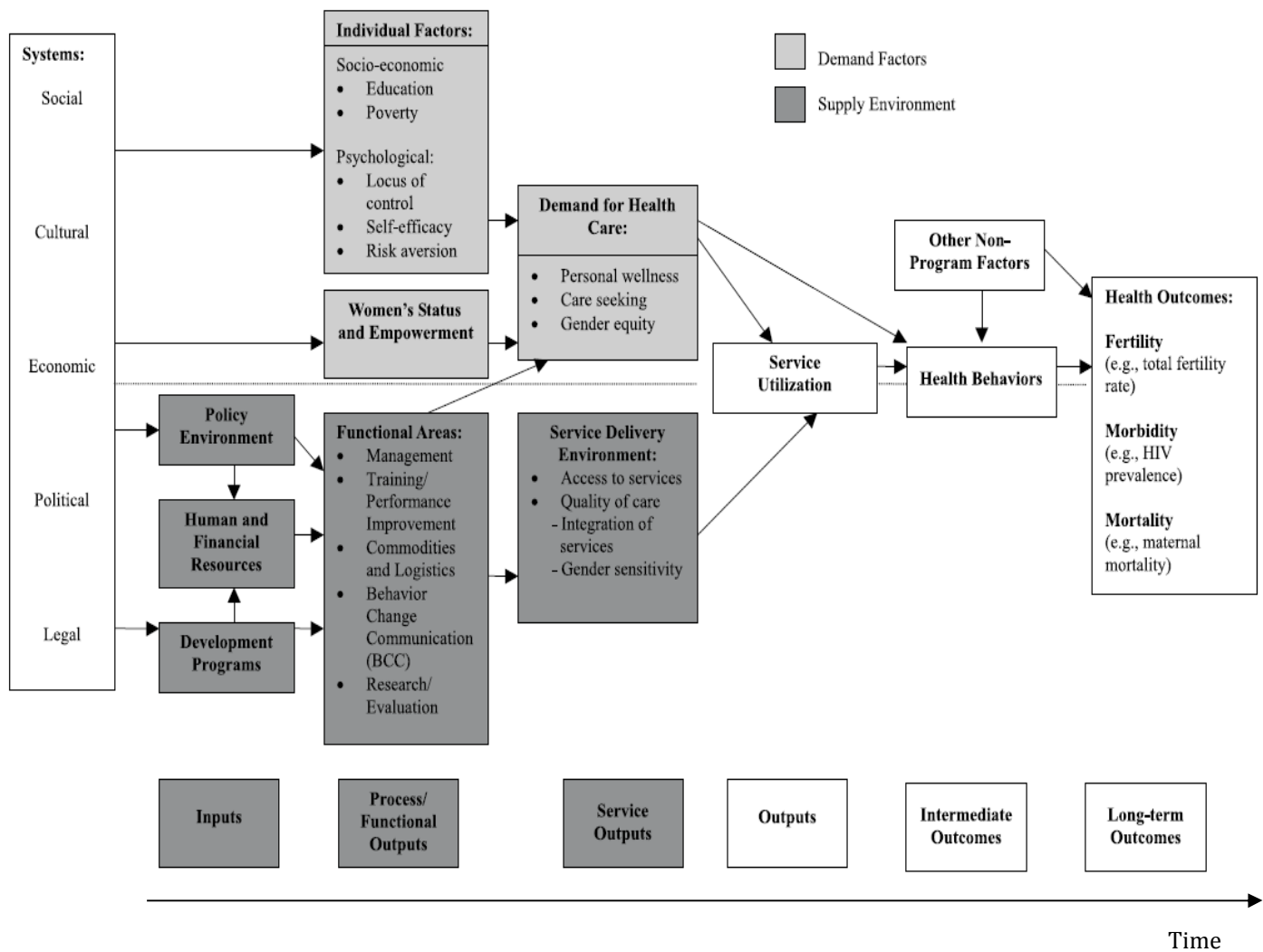
To determine whether program objectives are met and activities successfully accomplished, an HRH M&E plan will also include a series of **indicators**, or program-specific measurements. A

more detailed explanation of indicators, as well as how to develop them, is included in Step 4 of these guidelines.

### Create an M&E framework

Finally, the M&E plan should include an M&E framework, often referred to as a logic model or logical framework, which allows users to understand how the components of the national HRH plan contribute to achieving health goals. M&E frameworks are typically presented in matrix form and illustrate the relationships between program goals, objectives, activities, and their expected results. Figure 2 shows an example of an M&E framework for reproductive health programs.

**Figure 2: A Monitoring and Evaluation Framework for Evaluating Reproductive Health Programs**



Source: Bertrand and Escudero 2002

In the framework shown in Figure 2, the continuum of measurement flows from inputs to processes, outputs, and outcomes:

- **Inputs** are the resources, programs, and interventions that are put in place to modify a given health situation.
- **Processes** are the specific activities and actions carried out with the inputs at hand.
- **Outputs** are the results of these processes. They can be broken down by place or time of measurement. For example, in Figure 2 outputs are divided into facility-level service outputs and broader community-level outputs such as service utilization.
- **Outcomes** are results that occur in the medium- or long-term period. Intermediate outcomes might measure health behaviors such as the percentage of women with a sick child that visit a health provider, or the percentage of deliveries attended by a skilled birth attendant. On the other hand, long-term outcomes, often called impacts, are the ultimate expressions of results at a population level (national or subnational), such as fertility or mortality rates.

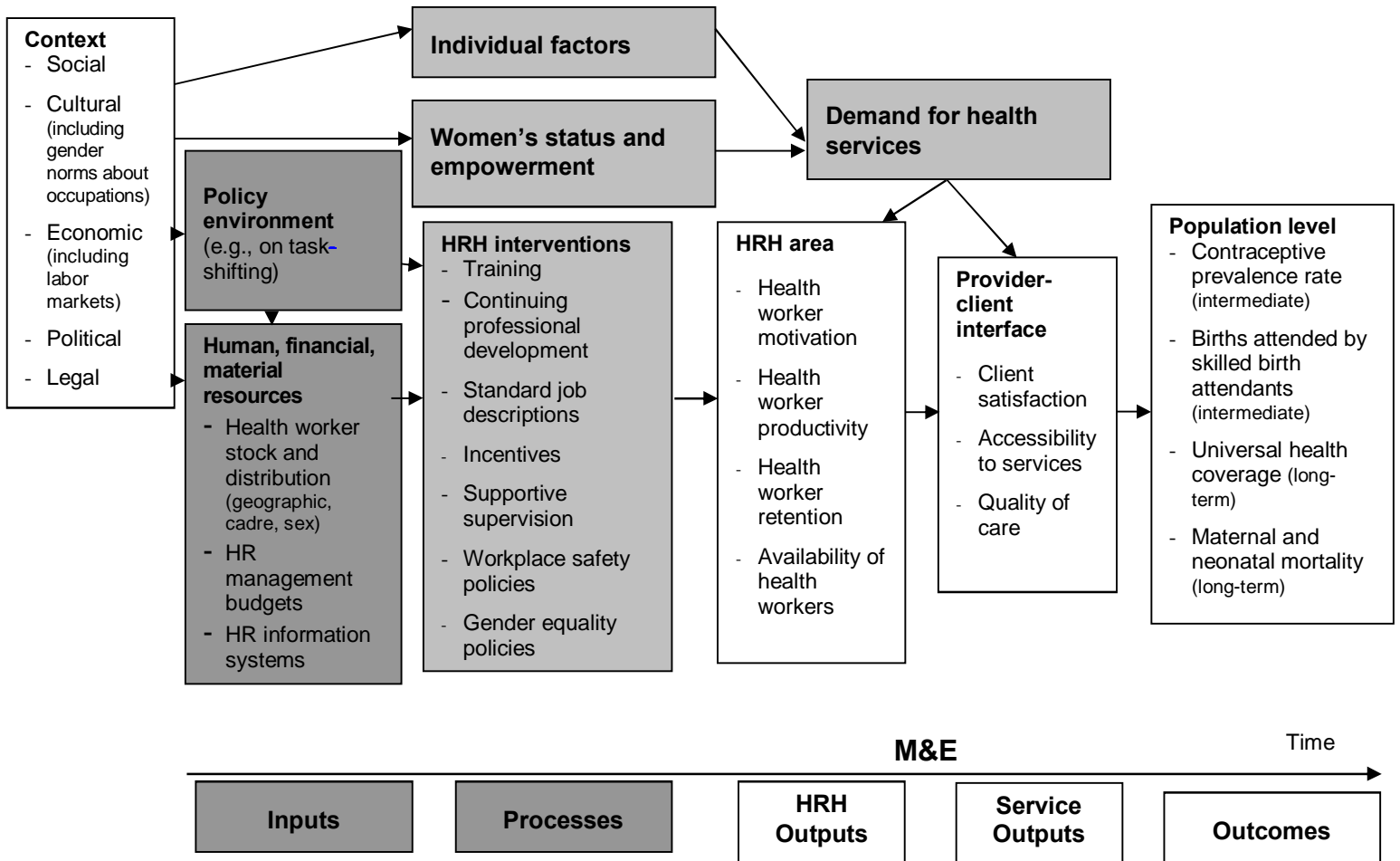
An HRH M&E framework should focus on the specific HRH-related components that will lead to the desired outcomes. For example, an HRH M&E framework could follow the WHO's health worker lifespan model (entry, active workforce, exit) (WHO 2009). However, each country should develop a framework that aligns with its own HRH objectives and strategies. An illustrative framework for an HRH program focused on improving health worker performance to attain better service delivery can be seen in Figure 3.

Figure 3 highlights the importance of contextual factors influencing both the demand and supply sides of health worker performance such as labor markets, which contribute to determining the number of health workers available for employment and service delivery. The **inputs** may be the number, distribution, and types of health workers, as well as HRH funding and systems such as HRIS. For shorter or more specific interventions, these inputs could also become immediate outputs.

Continuing with the logic model over time, the HRH M&E plan might measure **processes**, or activities, such as the production of new graduates from health training institutions, the creation of standard job descriptions for hired positions, the implementation of supportive supervision and HR incentive packages (e.g., wage increases, housing, training), and the creation and enforcement of workplace safety and gender equality policies.



**Figure 3: Illustrative Health Worker Performance Monitoring and Evaluation Framework**



Source: adapted from Bertrand and Escudero 2002

In this illustrative model, most **outputs** can be measured at facility, subnational, or national levels. This framework can be used to show the intended effects of the processes—HRH interventions—on health worker motivation, productivity, and retention. This should positively affect client satisfaction and increase the number of clients accessing services.

The results shown in the illustrative framework should ultimately be reflected in **long-term outcomes** at the population level, such as an increased contraceptive prevalence rate or more births attended by a skilled birth attendant, contributing to the achievement of universal health coverage. Ultimately, these may also contribute to lower maternal and neonatal mortality rates.

## QUESTIONS TO ASK

Laying out the sequence of activities and expected results in an HRH M&E framework can help determine how these components relate to each other. Some questions that may be useful to consider during the formulation process include:

- What are the overarching goals and objectives of the national HRH plan?
- What priorities does the national HRH plan outline?
- What are the inputs, processes, outputs, intermediate outcomes, and long-term outcomes that are *explicitly* articulated in the national HRH plan? Are there any inputs, processes, outputs, outcomes (intermediate and long-term) that are not specified in the plan but would be required for the HRH interventions to have an impact on health outcomes?
- What are the interactions between different components (such as HRIS, education, performance) and how do they affect the HRH plan's ability to achieve its objectives and goal?

### Human resources for health considerations

While the purpose and objectives of an M&E plan for HRH may be similar to other types of M&E plans, the conceptual framework may not be as transferable. Because HRH is a cross-cutting area, demonstrating how HRH inputs, interventions, and outputs contribute to achieving national health goals and objectives is not as direct as it might be for a service delivery program. Some elements, such as the stock and distribution of health workers, could potentially be considered inputs as well as desired outputs of HRH interventions. Thus, it is preferable that the M&E framework be developed during the process of developing the national HRH plan, as the framework can guide the identification of key strategies and priorities.

## LEARN MORE

The HRH Global Resource Center offers a free, self-paced eLearning course, [An Introduction to Monitoring and Evaluation of Human Resources for Health](#). The course, developed by CapacityPlus, includes sessions on HRH conceptual frameworks and indicators.

The Johns Hopkins Bloomberg School of Public Health offers a self-paced course on program evaluation. It includes a [presentation](#) on how to develop a conceptual framework.

When developing HRH M&E frameworks, it may be helpful to draw on different models, such as the WHO health worker lifespan model described in the [Handbook on Monitoring and Evaluation of Human Resources for Health](#) (WHO 2009) or the [HRH Action Framework](#) (GHWA, USAID, and WHO n.d.). Both suggest frameworks that can help stakeholders understand and address HRH issues.

Appendix B lists examples of health sector M&E plans that contain purpose statements, objectives, and/or conceptual frameworks. The examples are listed for illustrative purposes only and are not necessarily recommended as models.

### Step 4: Identify Indicators

Once the program's overarching goal, objectives, and framework have been determined, it is time to develop **indicators**, or measurable statements of program objectives and activities. An indicator does precisely what it says it does: it "indicates" or points to a particular area of measurement. Indicators are at the heart of M&E, as they are used to both determine whether a program is meeting its stated goals and how to amend program activities if deemed necessary.

For program monitoring, indicators should directly align with identified inputs, processes, and outputs, all of which should correspond to specific program objectives. One approach to the development of indicators is to consider each HRH functional area (e.g., HRH management, preservice education, health workforce productivity) or each major level of the conceptual framework at a time, selecting indicators accordingly. This facilitates continuity, breadth, and depth in the indicators. However, including multiple indicators addressing one functional area runs the risk of cluttering the plan and confusing users, and the data collection required may prove costly. In addition, M&E research has shown that two or more indicators measuring the same thing do not necessarily make an analysis stronger.

With HRH cutting across many health systems components, it is tempting to include numerous indicators to ensure that every aspect of the HRH plan is covered. However, carefully selecting a smaller number of high-quality indicators can lead to more targeted program monitoring, reduce the burden on M&E and other program staff, and enable resources to be focused on ensuring high-quality data. For example, an HRH strategy might include a preservice component that calls for curricular updates, school management reform, and, most significantly, assistance to health professional graduates in finding employment. Rather than including indicators for

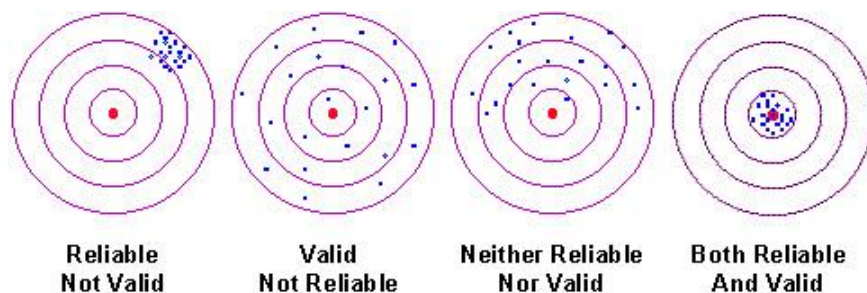
each of these subcomponents, the corresponding M&E plan might only include one key indicator on graduate absorption into the workforce (e.g., percent of graduated and licensed health workers who are employed within six months of graduation).

When identifying indicators for any M&E plan, keep in mind two important attributes of high-quality indicators:

- **Validity:** An indicator should measure what it is intended to measure. Evaluators should take into account the ways in which an indicator might not be valid. There could be *biases* that affect the measurement or the interpretation of the measure. For example, workload measures and provider-to-patient ratios are affected by the time of day the measurement is being taken. Bias could also affect questions that ask health workers whether they feel they have the necessary skills to do their job; respondents might not respond truthfully if they feel that answering negatively would jeopardize their jobs or, conversely, that answering positively would reduce their chances for further training. The subjective and sensitive nature of such questions has the potential to lead to incorrect conclusions and interventions.
- **Reliability:** This is the extent to which the indicator produces the same results by repeated measurements of the same phenomena, either by the same or by a different evaluator (i.e., *interrater reliability*). Reliability also has to do with how robust, stable, or consistent an indicator is. Unreliable indicators are often subjective or imprecise, producing different results. Imprecisely worded questions such as “How long have you worked here?” may be too open-ended. Some people may round their answers up or down, while others may only provide a qualitative response (e.g., “too long”), making analysis of the responses ineffective. A faulty instrument (e.g., an uncalibrated scale) will also produce unreliable measurements. Challenges to indicator reliability can occur when data collectors are not well trained, resulting in one interviewer applying a tool or interpreting a response differently from another, thus registering different responses from a similar person or situation.

An easy visualization of these concepts can be seen in Figure 4, using a “bulls-eye” metaphor.

**Figure 4: Visualizing the Validity and Reliability of an Indicator**



Source: *Research Methods Knowledge Base 2006*

Other considerations when selecting indicators are of a more practical nature, such as the feasibility of collecting a given indicator (e.g., is it too costly or does it require highly sophisticated equipment or training?), and the ease of interpreting results (e.g., are there variations in how health workers report job satisfaction?). By carefully addressing these dimensions of indicator quality, evaluators can ensure that indicators are relevant, specific, clearly defined, and realistically able to be measured within a specified time period. SMART indicators can be developed in a similar way to the development of SMART objectives (Table 3).

For each indicator, the national M&E plan for HRH should outline operational definitions and methods, data sources, baseline values, targets, and the frequency of and responsible parties for data collection and reporting. Also essential are to have or produce baseline values, which enable performance monitoring by providing a starting point against which future data can be compared, and targets that represent a desired, measurable level of performance or change. Baseline values and targets provide meaning to the data collected for a set of indicators, as they help to determine progress toward program goals, as illustrated in Table 4.

**Table 4: Key Indicator Information for the Illustrative Indicator,  
% of Health Workers Who Perform Family Planning Counseling According to Guidelines**

<b>Definition</b>	<p>“Performing to standard” is completing all items on the checklist for new family planning clients in the following areas:</p> <ol style="list-style-type: none"> <li>1. Greets the client respectfully</li> <li>2. Offers audiovisual privacy</li> <li>3. Asks about family history of diseases/ailments</li> <li>4. Asks about history of pregnancies and their outcomes</li> <li>5. Assesses current status (including pregnancy)</li> <li>6. Conducts physical examination as per protocol</li> <li>7. Provides method, treatment, or counseling as appropriate (defined)</li> <li>8. Details potential side effects and what to do in the event</li> <li>9. Asks and paraphrases to ensure understanding of next steps</li> <li>10. Ensures follow-up appointment is made and thanks client.</li> </ol>
<b>Method</b>	Observation of client-provider interaction with trained observer and standard checklist as per latest guidelines and protocols; informed consent of client and provider obtained previously
<b>Data source</b>	Facility assessment (or survey)
<b>Baseline value</b>	57% (average)
<b>Target value</b>	90% after two years
<b>Frequency</b>	Annual
<b>Reporting responsibility</b>	District medical officer (or equivalent)

## QUESTIONS TO ASK

- What HRH-related indicators are currently being monitored and reported? Do they need to be revised to ensure that they meet the criteria of quality indicators (e.g., validity, reliability, feasibility)?
- Do these indicators reflect the national HRH plan's priorities and expected results?
- Can realistic target values be set for indicators to be used for programmatic decision-making?
- Are the financial, human, and material resources available to routinely collect the data that the indicators require? Is it possible to collect the data with existing information systems, or are surveys or other special studies required?
- Do baseline values exist for the selected indicators in order to gauge the level of effort required to achieve targets?

### Human resources for health considerations

Good HRH indicators are hard to come by, and the few that are in use often suffer from data quality problems. For example, use of the WHO-promoted indicator assessing density of skilled health professionals per 10,000 population (WHO 2014) may be problematic, as numbers needed for the numerator (number of physicians, nurses, and midwives) or the denominator (total population) are often outdated, yet the accuracy of these numbers is of critical importance if governments want to assess progress toward achieving a minimum threshold of health professionals (e.g., 22.8 per 10,000) in all regions and provinces. Additionally, HRH experts argue that the density indicator does not recognize the efforts of nonprofessional and outreach workers or the benefits these categories of workers bring about in the area of disease prevention and health promotion (e.g., health education, immunization).

## LEARN MORE

- CapacityPlus has compiled the [Human Resources for Health Indicator Compendium](#) containing HRH indicators that meet the dimensions of indicator data quality (Pacqué-Margolis et al. 2011). This tool does not list all possible HRH indicators, nor should a country automatically use all of the indicators listed in the tool. However, the compendium is a starting place from which to select or adapt appropriate indicators. The [Human Resources for Health Effort Index](#) is another resource under development, which when applied incrementally in countries should add valuable HRH indicators to the current arsenal (Fort et al. 2015).
- The compendium draws some of its indicators from such resources as the WHO's [Handbook on Monitoring and Evaluation of Human Resources for Health](#) (WHO 2009) and the Pan American Health Organization's [Handbook on Indicators for HRH](#) (PAHO 2011).
- CapacityPlus's free, self-paced course, [An Introduction to Monitoring and Evaluation of Human Resources for Health](#), includes a session on indicator quality and HRH indicators.

## Step 5: Review Existing Monitoring and Evaluation Systems and Identify Sources of Data

Once HRH indicators have been selected or developed, a review of any existing M&E system(s) and available data sources should be conducted. Such a review can identify gaps that need to be addressed and provide direction for how M&E processes and tools can be adapted or, if necessary, established anew to support the national HRH plan.

Identifying an M&E system or subsystem specifically for HRH may not be a simple task. Although it may not be necessary—or even advisable—to create an entirely new system, ensuring that high-quality HRH data can be captured on a regular basis and be made readily available for programmatic use is critical. Therefore, in addition to strengthening existing HRH information systems and databases, it may be worth exploring the feasibility of establishing new systems.

### Identifying data sources

HRH data may often be limited, incomplete, outdated, or even nonexistent. For example, many countries do not have up-to-date numbers and information about the distribution of certain cadres by sex or geographic location. It is, therefore, important that data quality and availability be reviewed when assessing the existing M&E system, as this informs both the selection of indicators that are feasible to monitor and the inclusion of data quality strengthening activities in the plan.

Identifying data sources is vital not only to articulating where and how the data for selected indicators will be collected, but also for confirming the availability of such data. While data sources and collection methods vary, the frequency or periodicity of data collection is typically distinguished as either routine or non-routine.

- **Routine** data collection is continuous and, in the context of HRH, can include health facility-based information and service statistics; vital registration systems; workforce administrative records such as payrolls, employment registries, and health insurance records; health professional association registration and tracking; HRIS systems; and information from medical universities, including yearly graduation and job placement rates.
- **Non-routine** data collection is done periodically and, in the context of HRH, can include labor force surveys; facility surveys and assessments; population censuses and surveys; migration data; and special studies or research projects.

All HRH M&E systems and electronic sources of data should be assessed for **interoperability**, defined by the Healthcare Information and Management Systems Society as “the ability of different information technology systems and software applications to communicate, exchange data, and use the information that has been exchanged.” Interoperability is essential for HRIS systems, enabling program managers to effectively use multiple sources of data for decision-making.

### **Mapping system resources**

As previously mentioned, the M&E plan for HRH should complement any systems that may already exist. In addition, it should take into account the level of resources—financial, human, material, and otherwise—that will be needed to conduct M&E activities as well as the capacity available to undertake such activities, especially when new reporting structures or indicators are recommended.

For example, an indicator measuring the percentage of certain cadres of health workers who are satisfied with their jobs may be conceptually appropriate but may in reality prove difficult to measure. A system to measure staff satisfaction would have to be set up—and used—or comprehensive surveys or interviews would need to be regularly conducted. Many countries may not be able to train enough staff or may not have sufficient funds to support this type of data collection method. Resource-mapping is, therefore, vital to setting the boundaries and defining the scope within which the M&E plan for HRH will operate.



## QUESTIONS TO ASK

- Which agencies currently collect and report HRH data? Are there other agencies that should? Are there any HRIS that contain HRH data? If so, how comprehensive, well-maintained, and used are they?
  - Which positions are responsible for reporting HRH data at the national, regional, and district levels? Are they related to the larger health management information systems?
  - Which nongovernmental partners, including professional associations, collect HRH-related data in their own programs? How do they report these data to the government, if at all?
- What are the current flows of HRH data? Is it a “two-way” street (i.e., with feedback included)?
- What types of HRH data are currently being collected?
  - How frequently are data collected?
  - What is the completeness and quality of the HRH data currently being collected and reported?
- What types of HRH data should be but are not collected (e.g., supervisory records), and why are they not collected?
- What M&E tools exist and are most appropriate for HRH?
  - Assessment tools (e.g., training needs assessment, density by regions)?
  - Data collection tools?
  - Data reporting tools?
- What population-based health and facility surveys or special studies have been conducted in the last ten years, and how frequently have they been conducted? Is the information from such surveys incorporated into health sector workplans?
- What types of facility surveys or special studies are planned in the future? Are there opportunities to collect HRH-related data through these surveys or studies?

## LEARN MORE

- The WHO's (2009) [Handbook on Monitoring and Evaluation of Human Resources for Health](#) describes potential HRH data sources and their strengths and limitations. The handbook also contains a section on how to develop HRH information systems and provides country case studies.
- The [Health Metrics Network](#) (HMN) is a global partnership dedicated to strengthening national health information systems. HMN offers tools and resources to countries and partners interested in developing and strengthening health information systems.
- Supported by CapacityPlus, [iHRIS](#) is a suite of free and open source HRH information systems software that countries can download and adapt to their own contexts and needs. iHRIS includes modules for health workforce training, licensure, planning, management, and retention.
- [OrangeHRM](#) is an open source information system that focuses on human resources management. Another well-known human resources management system is the proprietary, web-based [Oracle HR](#) system.
- The MEASURE Evaluation project has compiled [profiles](#) of selected health facility assessment methods (Hozumi et al. 2006).
- The [Demographic and Health Surveys \(DHS\) Program](#) conducts the comprehensive population-based DHS in over 90 countries. DHS data can be accessed in the summary reports or on [STATcompiler](#), an online tool that allows users to create customized tables and charts with DHS data. For facility-based information, the [Service Provision Assessment Survey](#) provides nationwide data on infrastructure and supplies, services offered, monthly client statistics, observations of provider consultations, and client perspectives.
- The Global Fund to Fight AIDS, Tuberculosis, and Malaria has developed several [M&E system assessment tools](#) that may be helpful during a systems review.
- [Service Availability and Readiness Assessment \(SARA\)](#) is a health facility assessment tool designed to assess and monitor health sector service availability and readiness and to generate evidence to support health system planning and management.

### Step 6: Monitor the HRH Program: Putting It All Together

The monitoring of HRH interventions seeks to ensure that activities identified in an M&E plan or a performance monitoring plan (PMP) are being implemented on schedule, according to design, and that they are having the intended effect on the outcome of interest. After creating the goals, objectives, M&E framework, and indicators discussed in earlier steps of these guidelines, and identifying corresponding sources of data, it is time to put the plan into action.

The five tasks involved in the routine monitoring of HRH program areas are as follows:

1. Create a schedule for the collection of data
2. Train data collectors assigned to this duty
3. Collect appropriate data
4. Analyze the information obtained, comparing the data collected to targets, and look for patterns or trends
5. Interpret the findings, providing feedback to program managers with recommendations on how to strengthen HRH interventions
6. Share the findings with stakeholders and collectively determine how the monitoring results can help strengthen HRH efforts.

Program monitoring involves the continuous comparison of pre-intervention targets or benchmarks with information gained thorough regular assessments at different intervals. As mentioned before, the indicators chosen for these assessments are usually of inputs (e.g., number of personnel hired, financial or physical resources brought to assist the intervention), activities or processes (e.g., training, improvements in the workplace, adoption and dissemination of policies and procedures), and possibly short-term outputs (e.g., improved knowledge and skills, correct and on-time expenditures as budgeted).

For monitoring to be successful, systems have to be set up in advance to collect the necessary information. Personnel or financial records must be meticulously kept so that information needed for indicators such as number of people who attend trainings, pre- and post-test results, number of stakeholder meetings, and stakeholder meeting decisions can be referred to and compared against program plans and targets.

Monitoring allows program and M&E officers to determine whether such inputs or activities are carried out as intended and on schedule. Their achievement can provide reassuring evidence of progress, while any departures from targets can prompt correctional measures to avoid wasting valuable resources or allowing so much time to elapse that it becomes impossible to reach the original targets.

The principles that apply to monitoring also apply to evaluation and include such things as consistency of measurement (i.e., valid and reliable instruments), unbiased interpretation, and relevant comparisons over time, between regions or districts, and even between two or more different intervention strategies. Quantitative measures should be complemented with qualitative enquiries in order to understand better why—or why not—targets are being fulfilled as planned.

## QUESTIONS TO ASK

- What indicators should be used to track progress? If too few they may miss all the components needed to show whether interventions are implemented when and how intended; if too many they may generate confusion or prove difficult to collect accurately and timely
- Has a budget been considered for the collection of data to show progress? Is it sufficient and does it include all the components of the intervention?
- Do we have the program managers involved from the start in the monitoring plan? If the intent is to have them take corrective actions depending on what the monitoring data shows, are they interested enough to support the continuous collection of data and reporting for appropriate decision making?
- Is the data collection schedule based on reliable estimates of data availability?
- Have sufficient data collectors been trained? Has their ability to collect data been verified or evaluated post-training?
- Is the design of data collection forms appropriate to the data being collected? Have data collection forms been piloted to preemptively identify problems in design or functionality?
- Are systems and permissions in place for the collection of electronic data through HRIS?
- Once collected, where are data being stored? For how long? Are electronic records being “backed up” on a regular basis?
- Are meetings scheduled at appropriate intervals for sharing program monitoring data with stakeholders? Are the meetings well attended? Are action items for the improvement of HRH interventions developed as a result of these meetings?

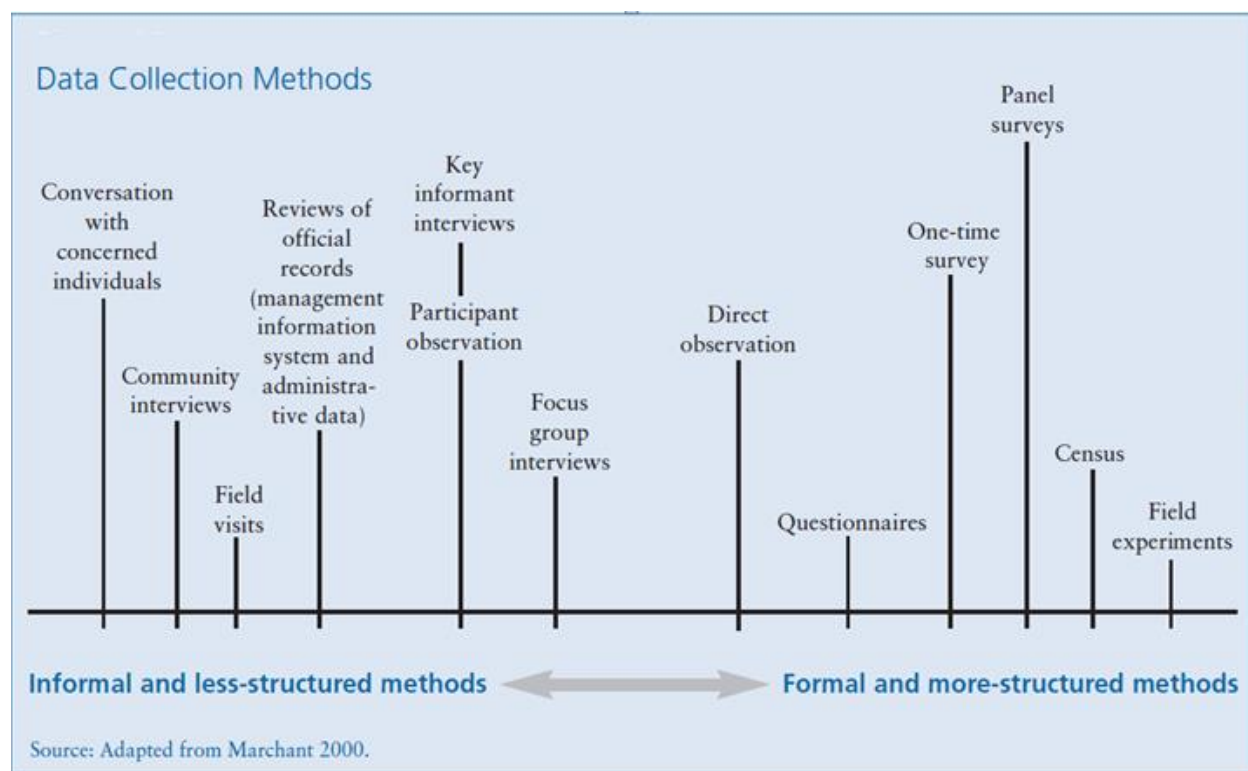
## LEARN MORE

Monitoring is an integral aspect of monitoring and evaluation. It can be found as a component of several M&E [guides](#) and handbooks (e.g., WHO’s [Handbook on Monitoring and Evaluation of Human Resources for Health](#), PAHO’s [Handbook for measurement and monitoring indicators of the regional goals for human resources for health](#))

## Step 7: Evaluate HRH Program: Study Design and Methods

M&E for HRH interventions seeks to ensure not only that the interventions are implemented according to plan (**monitoring**), but also that there is evidence that the interventions improved the quality, efficiency, or effectiveness of health services and/or outcomes (**evaluation**). As indicators are being considered, the design and methodology for data collection also need to be addressed. Figure 5 below depicts data collection methods on a continuum from informal to more structured, formal methods.

**Figure 5: Continuum of Data Collection Methods**



### Introduction to evaluation designs

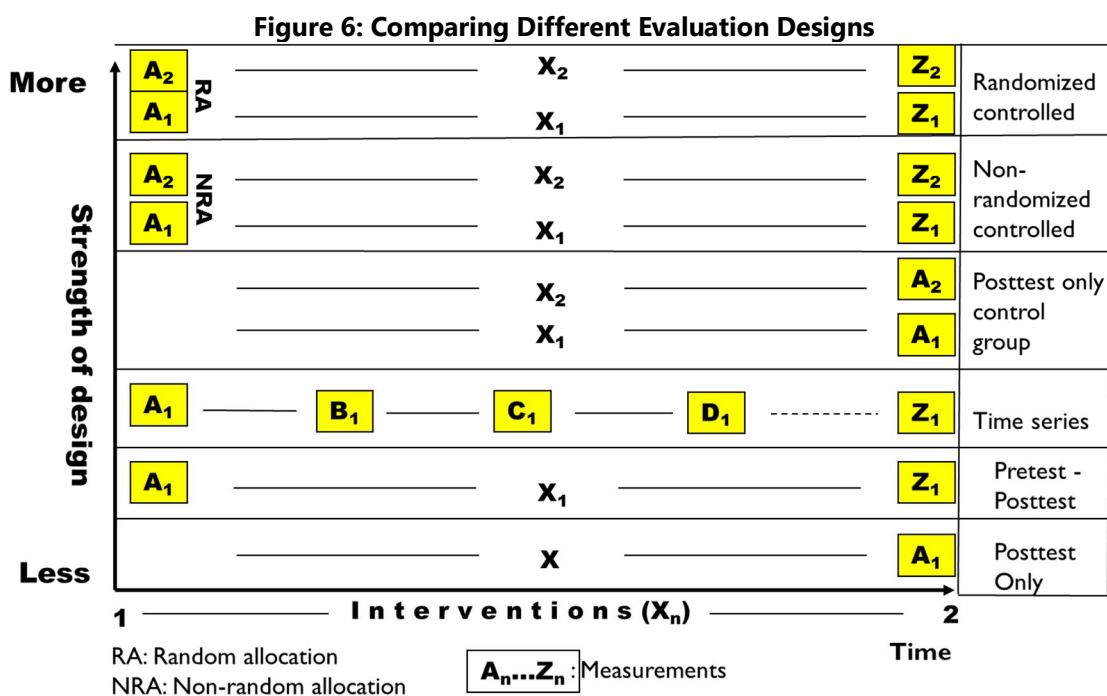
In evaluation, *attributing* improvement to an intervention requires both measuring the change that occurred as well as ruling out that the change was not due to other factors that may have been operating during the same period as the intervention. This counterfactual argument asks whether "C would have occurred [anyway] had A not occurred" (Stanford Encyclopedia of Philosophy 2014). For example, it would be important to compare whether health workers' adherence to HIV management protocols is higher after receiving *both* a refresher training on adherence *and* supportive supervision than it would have been if they had only received refresher training without the supervision component. The results could indicate whether supportive supervision adds value to the outcomes and should, therefore, be implemented on a wider scale.

While HRH program evaluations may emphasize one principle over another, depending on the purpose of the evaluation and available resources, two data collection principles are essential:

1. **Repeat** measurements to assess changes
2. **Compare** measurements between groups to obtain the net effects.

### Types of evaluation designs

Figure 6 provides a quick overview of different types of evaluation designs and their relative strength to measure changes and the net effect of such changes. The example borrows from the field of operations research in family planning (Fisher et al. 1991). In this figure, the strength of the evaluation design increases as one moves from the bottom to the top of the graph, and the measurements are taken over time as one moves from left to right. If a measurement is taken before an intervention is implemented (*baseline* measurement), it can be compared with additional measurements taken during or after the intervention ends. In HRH, this could mean comparing measures of health worker stock, performance, satisfaction, or other characteristics over time. Although it is not the purpose of these guidelines to fully discuss all possible evaluation designs, we highlight a few characteristics of the designs that make them stronger.



Source: Adapted from Fisher et al. 1991

### Comparison or control groups for net effects

Comparing changes in the intervention area to changes in an area where the intervention was not implemented (a *control* or *comparison* area or group) can strengthen the evaluation design. However, potential differences between the intervention and comparison groups need to be taken into account. Using the hypothetical example of health worker adherence to HIV

management protocols to compare areas A and B, evaluators may already know that regular refresher trainings were conducted in both areas prior to introducing a supportive supervision intervention in area A. For intervention area A, a pre- and post-evaluation determined that the adherence of workers to a predefined HIV checklist improved baseline scores from 0.58 before the supportive supervision intervention to 0.85 after the intervention. However, the comparison group in area B, which did *not* receive supportive supervision, also showed a small improvement in workers' adherence to the HIV checklist for the same time period, from 0.63 to 0.67.

The crude effect of the intervention for area A is determined as follows:

$$0.85 - 0.58 = 0.27 \text{ points' difference}$$

$$\text{(or } 0.85/0.58 = 1.47 \text{ or 47\% improvement)}$$

Additionally, we have to take into account the fact that area B was different from area A; even before the supportive supervision intervention was implemented in area A, area B had a higher pre-evaluation (or baseline) adherence score. Area B also saw a slight improvement in HIV protocol adherence, possibly due to the refresher trainings implemented in both areas.

The crude effect of the intervention for area B is:

$$0.67 - 0.63 = 0.04 \text{ points' difference}$$

$$\text{(or } 0.67/0.63 = 1.06 \text{ or 6\% improvement)}$$

The net effect of the supportive supervision intervention would have to be adjusted for the two facts: 1) areas A and B had different starting points; and 2) a background intervention (i.e., refresher trainings) affected both areas A and B and would produce effects in both even without the supportive supervision intervention.

Thus, the net effect of supportive supervision in area A is the "***difference-in-differences***" between the two areas, or:

$$0.27 - 0.04 = 0.23 \text{ points}$$

$$\text{(or 41\% improvement)}$$

### **The benefits of randomization and repeat measurements**

With comparative evaluation designs, adding an element of randomization when determining the beneficiaries of an intervention can significantly improve an evaluation's ability to determine the net effect of the intervention. When feasible, random allocation ensures that the characteristics of beneficiaries of an intervention area are not significantly different from those

of the control area or, at least, that any differences are not due to investigator biases (e.g., prior knowledge that one area is better than another).

In real-world HRH programs, it may be difficult to use the strongest evaluation design, whether due to lack of financial resources, practical considerations (e.g., not possible to have a control group), or even political will. Yet the underlying principles guiding the evaluation should be the same: an evaluation of an intervention will be much stronger if it can show that performance improved from baseline measures (as opposed to limiting the evaluation to obtaining “good” measurements only at the end of the intervention).

Similarly, taking several measurements during an intervention—for example, an intervention aiming to improve health workforce planning—can be helpful in explaining patterns and variations, such as how changes to job descriptions affect the performance of providers. Finally, comparison with an outside group (e.g., a group that will receive the intervention at a later date) may produce results that decision-makers can attribute to the intervention and use to support replication or scale-up.

### **Qualitative evaluation methods**

Qualitative methods of evaluation in health and the social sciences are often as important as quantitative methods (e.g., comparing scores as seen above). HRH M&E should use a combination of quantitative and qualitative methods to provide the most useful and comprehensive data possible for decision-makers. Qualitative methods provide deeper knowledge than can be obtained through quantitative methods by explaining, contextualizing, and providing the details and reasoning behind the processes that are occurring. Typical qualitative methods include participatory action research (community-based); focus group discussions; in-depth interviews; and participant or non-participant observation.

Qualitative methods gather data on context, settings, and perceptions. In HRH, these methods can be used to gain an in-depth understanding of preferences for or concerns about workloads, workplace environments, policies, or management practices.

### **Data collection principles for evaluation designs**

- The quality of data collection is directly correlated to the training of the data collectors. Data collectors should be trained on the tool(s) for data collection and follow well-established protocols that deal with potentially troubling situations such as missing data or respondent refusals.
- Periodicity of data collection depends on the nature of the phenomena being investigated and the time and resources available. For example, a typical program evaluation might start with a baseline assessment and then conduct a midterm evaluation (e.g., in 2 years) and an end-of-intervention evaluation (e.g., in 4-5 years).



- The evaluation protocol specifies data management procedures, including how they will be entered, quality control procedures, whether or when data sources will be destroyed, and so on.

## QUESTIONS TO ASK

- What is the key information (i.e., inputs, processes, and outcomes) that should be obtained from the HRH program? At which points should this information be obtained (beginning, during, end)? Who are the audiences for the evaluation and what level of inference/conclusions is desired?
- What resources (human, financial, time) are available for the evaluation?
- What is the desired level of rigor for the evaluation?
- How difficult is it to obtain comparison groups (e.g., health workers, facilities, clients)?
- What other factors, interventions, or programs exist that might affect—directly or indirectly—the health outcome or health service outcome that the evaluation is investigating?

### Human resources for health considerations

HRH interventions vary in their target groups, timing, and intended effects. As such, M&E of these interventions may need to be adjusted to these variations. For example, assessing knowledge gained from in-service trainings is quite feasible, given the captive audience of trainees, but knowledge assessments would take far longer if looking at something like preservice education.

Other challenges to evaluating HRH programs include the fact that more rigorous evaluations assessing the work environment may require sampling and visiting facilities in remote areas. Isolating the net effect of HRH interventions on changes in service delivery may also be difficult in the presence of other factors such as the availability of supplies or other interventions, and may also require more rigorous designs. Additionally, following up with health workers over time might be challenging if turnover and attrition are high. Designs need to carefully consider such circumstances.

## LEARN MORE

There are many resources on impact evaluation, operations research, and implementation research that provide more detail on types of evaluation designs, their pros and cons, and the trade-offs between gathering evidence and spending resources.

- For a relatively simple and visual review of operations research methods in family planning, see the Population Council's [Handbook for Family Planning Operations Research Design](#) (Fisher et al. 1991).
- For a comprehensive discussion of principles and methods for impact evaluation of programs and projects, see the World Bank's [Impact Evaluation in Practice](#). (Gertler et al. 2011).
- An example of a [qualitative research field guide](#) is available from FHI 360 (Mack et al. 2005).
- Extensive quantitative and qualitative methods of evaluation and research can also be found at [Sage Publications](#).

For more resources on study designs and methods, see Fisher et al. (1991) or Gertler et al. (2011).

## Step 8: Draft the Monitoring and Evaluation Plan and Obtain Consensus

With the pieces from Steps 1–7 in place, the working group will be ready to draft an M&E plan for HRH. Before beginning work on the draft plan, the working group should decide how to divide responsibilities and should set a timeline by which draft sections are due. The secretariat (or other designated party) can help to manage the timeline and compile the drafts. Ideally, parties designated as having responsibility for particular elements of the plan should be represented either in the working group or at a specially held work planning meeting. This will increase their buy-in of the workplan and ownership of the tasks for which they are responsible.

### M&E plan components

A detailed M&E plan outlines what actions will be taken at what time and by whom. Items in an M&E plan could include, but are not limited to, the following (see Appendix A):

- Introduction
- Program description and conceptual framework
- Indicators, their definitions, data sources, and periodicity of measurement
- Data collection plan and forms
- Data management and quality assurance
- Plan for monitoring
- Plan for evaluation

- Plans for M&E staffing
- Plans for staff and data collectors' training
- Workplan and budget
- Data use mechanisms
- Information dissemination
- Mechanism for periodically updating the plan.

As noted in Step 5, determining what activities to include in an M&E plan will entail revisiting the capacity of the existing M&E system to identify challenges and needs specific to M&E of HRH. In addition, it is important to include the budget for each action as a means of ensuring that funding is allocated and that the proposed activities do not exceed available funding levels.

## QUESTIONS TO ASK

- Does the timeline align with that outlined in the national HRH plan? For example, do data use processes take place with enough time to be incorporated into annual HRH planning processes?
- What challenges *currently* exist to ensuring routine, comprehensive data collection and reporting for HRH data? What challenges *might* exist? What actions are necessary to overcome these existing and potential challenges?
- Is there any ambiguity about who is responsible for each activity?
  - What are the current skill levels of M&E staff and other staff with HRH data collection and reporting responsibilities?
  - Are there enough staff with the right qualifications to carry out the activities in the M&E workplan?
  - What staff training and other capacity-building activities should be conducted?
  - Is funding available to recruit or train/retrain the necessary staff?
- What level of financial resources is available or will be needed for establishing and sustaining HRH M&E systems, including M&E staff?
- Are there agencies from different sectors that should be involved?

### Obtaining consensus

Once a draft plan has been developed, it should be circulated to the entire working group and any other stakeholders deemed appropriate, such as additional members of the national HRH working group. Although consensus may be obtained virtually, an in-person consensus meeting is recommended to focus stakeholders' attention, make the approval process more efficient, and secure funding and political commitment for HRH M&E.

## Step 9: Disseminate the Monitoring and Evaluation Plan and Conduct Periodic Reviews

The purpose of conducting M&E is to use data and results for informed decision-making and future programming. Although stakeholders may be involved in the development and/or approval process, they may not have the same level of involvement during implementation. Whether or not the M&E plan for HRH is integrated into the national HRH plan, the M&E plan must be disseminated widely, especially to senior-level staff in the sectors and departments that have implementation responsibilities.

Hence, M&E for HRH plans should include activities to ensure results are described and disseminated in ways that policy-makers can understand and use. M&E technical reports are often full of jargon, with complicated graphs and unclear recommendations. Policy-makers will have difficulty adopting any meaningful decisions based on such reports.

Consider the following hypothetical statement:

**The evaluation found a 9% increase in retention of nurses in the rural areas of the country, which was found to be significant at the 90% level but not at the 95% level; however, given the stochastic trend from previous years, and fluctuating time-bound correlations with the incentive package, which render the attribution consideration uncertain, results have to be taken with great caution.**

Contrast the above with the following:

**The evaluation found that the very modest (9%) increase in the retention of nurses in the rural areas could not be definitively attributed to the incentive package. We therefore recommend increasing the benefits in the package and improving its dissemination in an intensive way over the next year to ensure all nurses are fully aware of such benefits. After doing so we could reassess the level of retention to see if it has increased further.**

The first statement is jargon-clad, does not lead to a conclusion, and does not offer recommendations for action. The second statement is easier to read, arrives at a conclusion based on the data, and offers actionable and time-bound recommendations (including alternative modes of action).

### Conducting periodic reviews

Just as HRH data can be used to make programmatic improvements, so, too, can the M&E plan be improved following periodic review. This does not mean that the entire process needs to be repeated, but that mechanisms, tools, and aspects of implementation can be refined and strengthened. For example, data quality assurance is a systematic approach to verifying data entry, management, and reporting, implementing changes, and monitoring performance. Data quality assurance methods such as initial and follow-up site visits and data quality checks can highlight aspects of M&E plans and systems that could be improved. Consulting data collectors, users (e.g., Ministry of Health officials), and other stakeholders on a regular basis can help the M&E system maintain its usefulness.

**Keep in mind, however, that any revisions made to indicator definitions or methods of measurement must be carefully considered when analyzing the data for trends or changes in values.** Indicators and methods need to be well planned to avoid midstream changes, which make it difficult to compare results measured before the changes to results measured after the changes. For example, an M&E plan for HRH might include an indicator that measures the proportion of facilities that meet recommended nurse-to-patient ratios. If the Ministry of Health changes the value of the recommended ratio after the original plan is developed and, following this change, more facilities meet the ratio, then any interpretation of the increase must account for the change in ratio definition, as well as “real” change due to program interventions. Otherwise, reported results can be misleading and lead to erroneous conclusions and decision-making.

## QUESTIONS TO ASK

- Are key stakeholders aware of the M&E plan and processes?
- Are data and results being shared with stakeholders? How are the data being used?
- How are M&E activities progressing as compared to the plan? What factors are supporting or hindering the implementation of the plan?
- What additional resources are needed to achieve the plan’s objectives?
- Are the outlined roles and responsibilities still appropriate? What other stakeholders should be involved?
- Which indicators and data sources are not feasible to measure?
- Which indicators and data sources are no longer relevant? How can they be revised?

## LEARN MORE

MEASURE Evaluation offers a [toolkit](#) for conducting data quality audits and routine data quality assurance. It includes implementation guidelines, tools, and templates.

## Step 10: Conduct Systematic Training on Implementation of the Monitoring and Evaluation Plan

Both initial and regular follow-up training on the M&E plan are important for ensuring that stakeholders are actively and correctly engaged in its successful implementation and that application of methods maintains the necessary rigor. At all levels of the M&E system—from data collection, entry, and analysis to supervision and use—it is essential that staff understand the M&E plan’s purpose and objectives, how the planned activities contribute to achieving those objectives, and their role in the plan’s implementation.

It may be helpful to develop a training plan that outlines the types of trainings to be held, core content, frequency, target participants, and budget allocation. Trainings on the M&E plan for HRH may be conducted in conjunction with or as a component of trainings on M&E plans for the overall health sector. In both cases, training participants should include staff that are responsible for implementing the M&E plan, as well as end users of the data.

The content of the trainings will vary by country and by the type and level of training being held. For example, training for national-level decision-makers may focus more on basic M&E concepts, the conceptual framework, and how to interpret the results of data analyses, while training for district-level staff may focus more on data flow, management processes, and understanding indicator definitions, methods of measurement, and types of additional analyses (e.g., disaggregation by sex, geographic location, type of facility).

## LEARN MORE

UNICEF’s (2009) [guidelines](#) for developing M&E systems for support to orphans and vulnerable children include a section on strengthening capacity that lists core content for trainings at different levels of the M&E system.

## REFERENCES

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## APPENDIX A: WHAT TO INCLUDE IN A MONITORING AND EVALUATION PLAN

The list below contains sections that frequently appear in M&E plans. It is not necessary to include all of these sections; working groups should determine what sections are relevant for their M&E plans.

- Introduction
- Purpose, goals, and objectives
- Background or situational analysis
- Gap analysis
- How the M&E plan aligns with other plans, policies, and/or strategies
- Process taken to develop the plan
- Guiding principles
- Conceptual framework
- Roles and responsibilities—coordination, reporting, etc.
- Existing databases and information systems
- Process for data management: flow, collection, analysis, reporting, and quality assurance
- Table/matrix of objectives, indicators, definitions, baselines (if applicable), targets, frequency, and data sources
- Evaluation designs: surveys, surveillance, and other studies (including baseline, midterm, and endline assessments)
- Data use and dissemination
- Training and capacity building
- Periodic review of the M&E plan
- Workplan or implementation plan, with associated costs/budget
- Appendices
  - Glossary/definitions
  - Indicator reference sheets
  - Data collection protocols/tools
  - Field work instructions for data collectors and supervisors
  - Reporting forms/templates
  - Detailed timelines

## APPENDIX B: RESOURCES, GUIDELINES, AND EXAMPLES OF HEALTH SECTOR MONITORING AND EVALUATION PLANS

### General M&E-Related Resources and Guidelines

- CapacityPlus's eLearning course, [An Introduction to Monitoring and Evaluation of Human Resources for Health](#)
- CapacityPlus's [Guidelines for Forming and Sustaining Human Resources for Health Stakeholder Leadership Groups](#)
- CapacityPlus's [Human Resources for Health \(HRH\) Indicator Compendium](#)
- CapacityPlus's [Human Resources Management Assessment Approach](#)
- Demographic and Health Survey (DHS) Program's population-based [DHS](#) and online data tool, [STATcompiler](#)
- DHS Program's [Service Provision Assessments](#)
- FHI 360's [Qualitative Research Methods: A Data Collector's Field Guide](#)
- Global Fund's [M&E systems strengthening and assessment tools](#)
- [Health Metrics Network \(HMN\)](#)
- Health System 20/20's [Health System Assessment Approach: A How-To Manual](#)
- [HRH Action Framework](#)
- [iHRIS](#), a suite of free and open source HRH information system software; other software includes [OrangeHRM](#) and [Oracle HR](#)
- Indicator quality dimensions: [Validity and reliability](#)
- Johns Hopkins Bloomberg School of Public Health open online course, [Fundamentals of Program Evaluation](#)
- MEASURE Evaluation's [Profiles of Health Facility Assessment Methods](#)
- MEASURE Evaluation's data quality audit and routine data quality assessment [toolkit](#)
- PAHO's [Handbook for Measurement and Monitoring Indicators of the Regional Goals for HRH](#)
- Quantitative and qualitative methods of evaluation and research at [Sage Publications](#)
- The Measurement, Learning & Evaluation Project's [Measuring Success Toolkit](#), including a [sample M&E plan outline](#)
- The Population Council's [Handbook for Family Planning Operations Research Design](#)
- The World Bank's [Impact Evaluation in Practice](#)

- UNICEF's working paper, [Developing and Operationalizing a National Monitoring and Evaluation System for the Protection, Care and Support of Orphans and Vulnerable Children Living in a World with HIV and AIDS](#)
- WHO's [A Guide to Rapid Assessment of Human Resources for Health](#)
- WHO's [Assessing Financing, Education, Management and Policy Context for Strategic Planning of Human Resources for Health](#)
- WHO's [Handbook on Monitoring and Evaluation of Human Resources for Health](#)
- WHO's [Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and Their Measurement Strategies](#)
- WHO's [World Health Report: Working Together for Health](#)

## Health Sector Monitoring and Evaluation Plans

The examples are for *illustrative* purposes and are not necessarily recommended as models.

- Federal Ministry of Women Affairs and Social Development, Nigeria, [Monitoring and Evaluation Plan for the Orphans and Vulnerable Children \(OVC\) Response in Nigeria](#)
- Government of Uganda Ministry of Health, [Monitoring & Evaluation Plan for Health Sector Strategic Investment Plan 2010/11–2014/15](#)
- Republic of Kenya, [Kenya Malaria Monitoring and Evaluation Plan 2009–2017](#)
- Republic of Namibia, [Plan for National Multisectoral Monitoring and Evaluation of HIV/AIDS, 2006/7–2008/9](#)
- Republic of Zambia and National AIDS Council, [National Monitoring, Research and Evaluation Plan \(2011-2015\)](#)
- Swaziland Government Ministry of Health and Social Welfare, [M&E Framework for the Health Sector Response to HIV/AIDS 2006–2008](#)

## Additional Guidelines and Tools

- MEASURE Evaluation's [Guide for Monitoring and Evaluating Population-Health-Environment Programs](#)
- UNICEF's [Developing and Operationalizing a National Monitoring and Evaluation System for the Protection, Care and Support of Orphans and Vulnerable Children Living in a World with HIV and AIDS](#)
- UNAIDS's [National AIDS Programmes: A Guide to Monitoring and Evaluation](#)
- WHO's [Data Mapping Template on HRH](#)
- WHO's [Draft Checklist for Developing a Monitoring and Evaluation Plan for Malaria Control](#)

- WHO's [spotlight on statistics](#), which highlights several facility-based data collection tools that include HRH as a component



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