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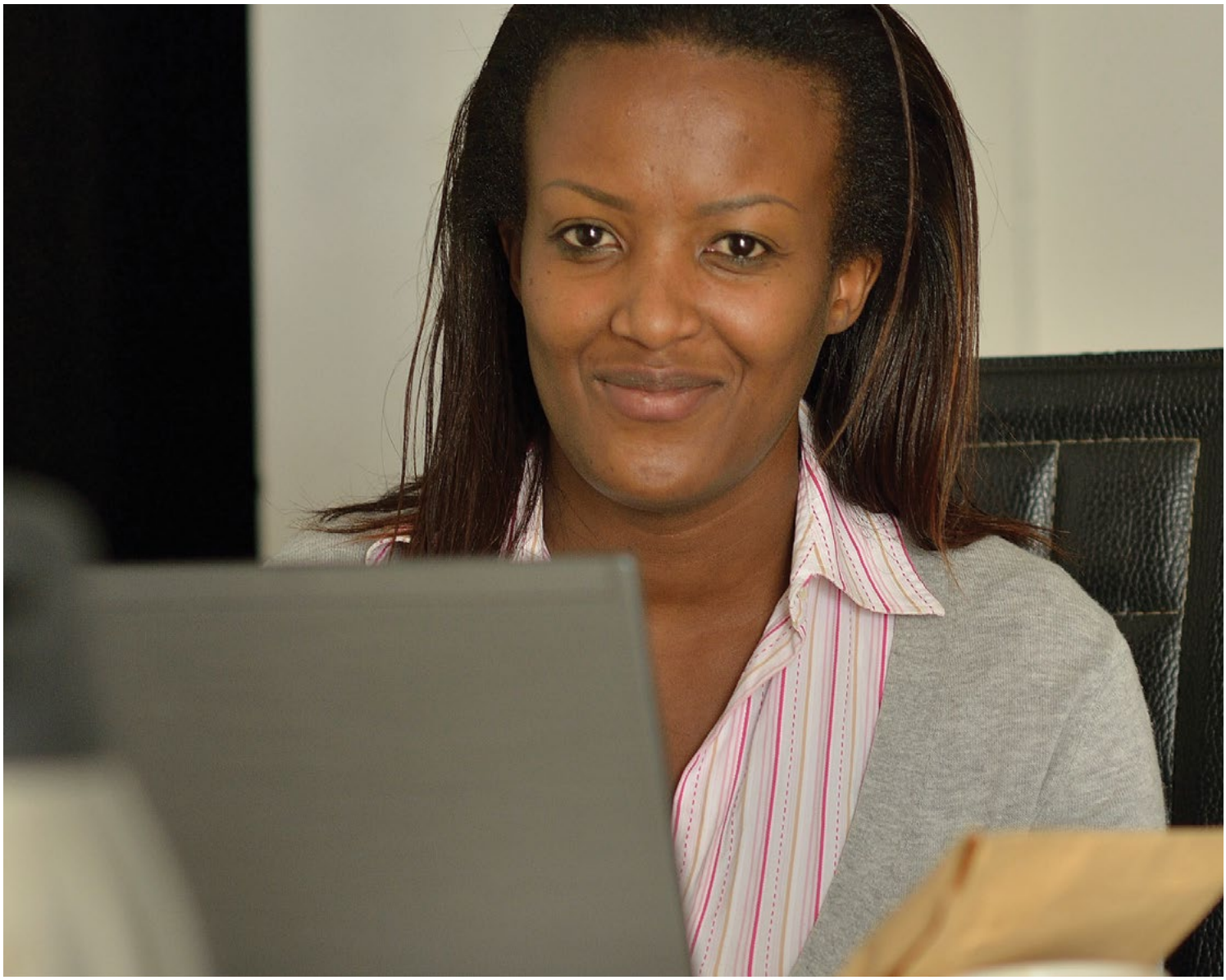
MANAGING INFORMATION
MONITORING AND EVALUATION

by Nancy LeMay



CHAPTER 9 OF *HEALTH SYSTEMS IN ACTION*

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Management Sciences for Health
200 Rivers Edge Drive
Medford, MA 02155-5741 USA

Fax: +1.617.250.9090
Email: bookstore@msh.org
Website: www.msh.org

Tel.: +1.617.250.9500

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CHAPTER 9

Managing Information: Monitoring and Evaluation

Nancy LeMay

This chapter is a practical guide that you, as the manager of a health program or health services, can use to understand and organize essential practices that will improve the monitoring and evaluation (M&E) of health services. It explains the role and function of an effective health information system (HIS). It describes monitoring and evaluation as key program management functions, explains the difference between the two, and offers considerations for making each function more useful to you for learning and action. It also shows how good leadership and management practices are relevant to M&E.

You can use the information in this chapter to:

- enhance the effectiveness of an HIS;
- use routine monitoring to improve the performance of organizational activities;
- produce actionable data for making informed decisions;
- avoid common M&E pitfalls;
- design an evaluation;
- use frameworks to develop a logical plan for program activities;
- prepare an M&E plan.

The chapter concludes with a story that emphasizes the human element in M&E. The story describes how using less-than-perfect data from an HIS can be beneficial and instill confidence in the system. The story also offers several proven practices in M&E that are relevant to your work as a health manager.

Introduction

Within the development community a strong and growing emphasis on producing quantifiable results has increased attention to, and interest in, M&E. There is much discussion about results-based planning, results frameworks, and results teams. But people are also frequently confused about what to monitor, what to evaluate, and how best to carry out both tasks.

There is a tendency to forget the importance of good, solid monitoring, which is essential for providing managers the information they need to take action and produce results. In the rush to evaluate, some organizations downplay monitoring in favor of evaluation, in order to show results. Monitoring is an often-underused management practice that can get lost between the evaluators and the planners.

In your role as a manager, you and your team need the information gained from both monitoring and evaluation to manage activities and produce results. You are likely to use your M&E skills to measure health inputs, activities, outputs, and outcomes (terms that are discussed later in this chapter). You will probably not be asked to measure impact. Except for large, well-established, and well-funded organizations, impact assessment is usually the responsibility of the Ministry of Health or the donor. Although impact assessment falls outside the scope of the chapter, you will find links to useful materials on the topic.

This chapter is not just for M&E or HIS staff. The audience is much broader and includes:

- directors and other senior managers in civil society organizations (CSOs), including nongovernmental organizations (NGOs), faith-based organizations (FBOs), and other nonprofit organizations;
- managers of donor-funded projects implemented by CSOs;
- district- and facility-level managers from the public sector;
- M&E and HIS staff from public-sector and donor-funded organizations.

Information for managing health services

It is widely accepted that health managers and service providers need better access to reliable information and better ways to use this information to monitor performance and manage services. The effective management of the entire health system depends on the appropriate use of timely and accurate information by personnel at all levels. This use of information depends, in turn, on the ability of the HIS to generate useful information.

SUBSYSTEMS AND CYCLES OF A HEALTH INFORMATION SYSTEM

In *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action*, the World Health Organization (WHO) shows that information is one of the six essential building blocks of any health system. WHO defines a well-functioning HIS as "one that ensures the production, analysis, dissemination and use of reliable and timely information on health determinants, health system performance, and health status" (WHO 2007). The term HIS usually encompasses the many subsystems that

provide the necessary information for managing health services. Figure 1 provides an overview of the common subsystems within an HIS.

An HIS that is well designed and functions well should support the key processes needed to manage health services. These processes are cyclical and ongoing, and the collection, analysis, and use of information to carry out health management functions also create a cyclical process.

Figure 2 shows M&E as one element of a typical management cycle, feeding data into an information cycle. There it is processed and turned into information, which is fed back into the various functions of the management cycle.

FIGURE 1. Common Health Information Subsystems

Epidemiological Surveillance

Detection and notification of diseases and risk factors, follow-up investigation, and outbreak control measures

Routine Service Reporting

Recording and reporting of facility-based, outreach, and community-level services in terms of case monitoring; and monitoring service task performance (quality), service output and coverage performance, and resource availability and use

Specific Program Reporting

Programs such as:

- malaria prevention and control
- reproductive health and family planning (FP)
- immunization
- tuberculosis control
- HIV & AIDS and STI prevention and management
- leprosy control
- integrated management of childhood illness
- water and sanitation
- food hygiene and safety

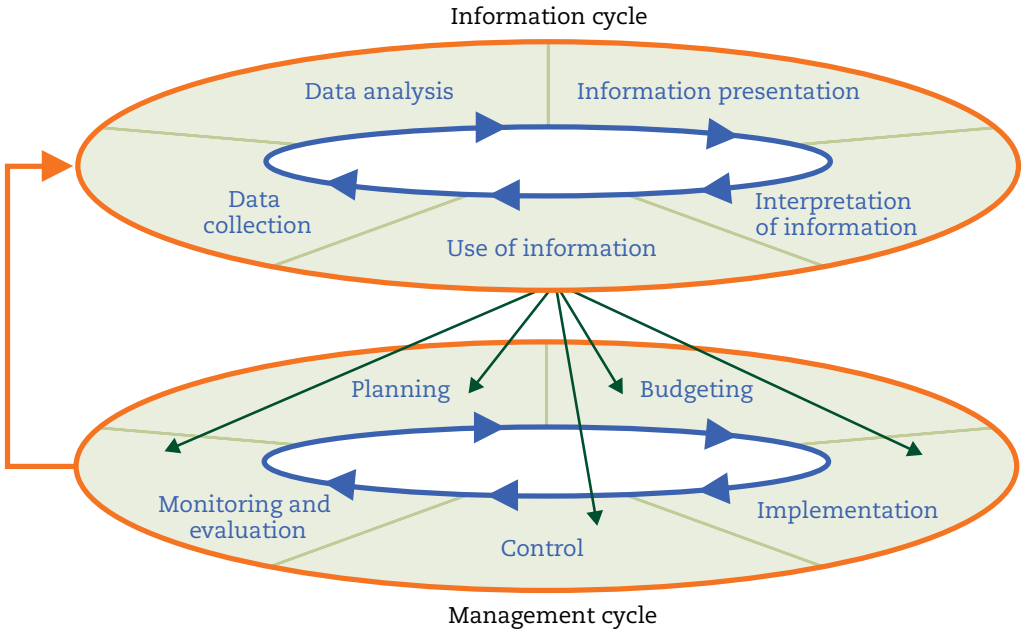
Administrative Information

- budget and financial management
- human resource management
- training administration
- essential drugs and supplies management
- facilities and equipment development and maintenance
- health research management
- data and document management
- external resources management

Vital Registration

Civil and health system registration of births, deaths, family formation, and migration

FIGURE 2. Relationship between Information and Management Cycles



DISTINCTIONS BETWEEN MONITORING AND EVALUATION

Monitoring and evaluation are key management functions of an organization. Together, they serve to support informed decisions, the best use of resources, and an objective assessment of the extent to which an organization's services and other activities have led to a desired result.

To make informed decisions, health care managers need an M&E system that yields reliable information about such factors as:

- the health needs of the people in their catchment area—the area from which clients are drawn to receive services;
- the priorities of the country, province, district, and communities they serve;
- the quality and coverage of the services they offer;
- the resources they have used and resources still available;
- progress in the implementation of their activities.

Both monitoring and evaluation activities are necessary to satisfy these information needs. But which should be used when? The differences between monitoring and evaluation lie in their purposes, time frames, and sources of information.

Monitoring is used to regularly track changes in indicators—measurable markers of change over time—in order to manage the implementation of a program. Monitoring measures progress toward results by collecting information on inputs, activities, outputs, and sometimes short-term outcomes. For you, the manager, this may involve monitoring progress against your operational plans and/or monitoring the services you provide.

Common procedures for program monitoring include tracking service statistics and reviewing records and training reports. Regular, systematic monitoring provides information for planning purposes and a reliable basis for an evaluation.

Evaluation, on the other hand, is used to assess the effectiveness (and sometimes the cost) of efforts to improve services and to prevent and manage priority health problems. Evaluation measures outcomes and impact. It assesses the extent to which your organization achieves its desired results and helps you understand why the results were or were not achieved. Evaluation also provides an opportunity for continuous learning from experience.

Thus, the first factor that separates monitoring from evaluation is a difference in *purpose*. Monitoring is driven by a management need, whereas evaluation is driven by the need to document outcomes of an intervention and report to a donor or other stakeholder. Monitoring thus focuses on operational implementation, while evaluation focuses on the effects of the activities on the health of the target population.

This leads to a second critical difference: the time frame when each is used. Monitoring is an ongoing, routine process used throughout an intervention. Evaluation requires the collection of baseline and post-intervention data that allow you to compare changes during the period of the intervention and, sometimes, after a suitable follow-up period.

Finally, a third difference is related to the sources each function uses for information. Monitoring data usually come from what is readily available: the health information system or routine service records. Service statistics provide such monitoring data as supply inventories, numbers of vaccine doses administered monthly, and patient outcomes. Monitoring data can also be obtained by compiling routine organizational records. For example, participant lists from a training workshop can supply information on the number of people trained on a given topic.

Outcome and impact indicators require measurements at the beneficiary or population level, which must be obtained through an evaluation. For example, to determine the outcome of a family planning counseling initiative, you would need to know the percentage of women among those counseled who actually adopted a family planning method. You could not derive that information from service statistics or routine organizational records; you would need to conduct a survey to collect the data.

Common measures in an evaluation include changes in the use of health services from one period to another, proportions of safe deliveries, coverage of immunization services, and changes in the knowledge, attitudes, or behavior of a target group.

Leading and managing practices for monitoring and evaluation. Despite the differences between monitoring and evaluation, both functions will be optimized if you use the other leading and managing practices when you are carrying out monitoring or evaluating tasks. For example, monitoring and evaluation—one of the managing practices discussed in Chapter 2 of this handbook—require you to **focus** on goals and priorities and use your **scanning** skills to collect and analyze appropriate data. In response to the results collected through monitoring and evaluation, you may need to **focus** and **align and mobilize** staff in order to modify intervention plans to better achieve results. Depending on whether

activities are meeting their objectives and achieving the expected results, you could also use M&E information to **inspire** staff to improve their performance or, alternatively, to keep up the good job.

In managing M&E activities, you will need to develop an M&E **plan** and then **organize** the structures, subsystems, and processes to **implement** the plan. And of course you will **monitor and evaluate** the M&E program itself to determine progress toward and achievement of results.

> The leading and managing practices discussed here and in Chapter 2 of this handbook are also fully described on MSH's Electronic Resource Center in the Leadership Development section titled "Developing Managers Who Lead."

Who owns M&E?

Who is the M&E client? Who needs health information? Managers at all levels of an organization have a stake in using information as the basis for taking action. This allows them to lead and manage effectively at any level. In fact, managers provide the foundation of the M&E system.

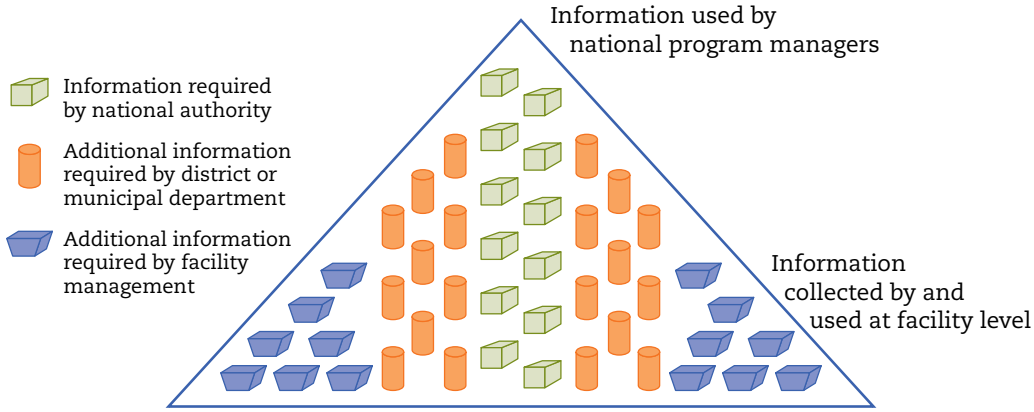
The trouble is that the M&E function is not always integrated into the organization. In many cases, organizations—and sometimes donors—operate as if M&E were the sole responsibility of the M&E staff. Without an adequate communication and feedback process, the information and knowledge could remain in the hands of the M&E staff. As a consequence, results (both good and bad) are not always fed back to the people who need them, and the information is not used for management decisions.

Too often, for example, an evaluation is conducted and information is produced to meet the needs of a donor or a government agency, rather than to improve an organization's services. One way to be sure that evaluation results are used is for managers at all levels of an organization, from the health center to the Ministry of Health, to own the M&E processes and results.

Information needs at different levels. Not all information is needed at all levels at all times. Managers, donors, and the central government may need different information at different times to meet their reporting requirements and make decisions. For example, managers of donor-funded projects typically work on a quarterly or biannual reporting cycle and the donor on an annual reporting cycle, while the Ministry of Health may require three to five years' worth of data to demonstrate impact and report it to politicians and the media.

Information needs in a health system can be viewed as a hierarchy. Figure 3 shows that decreasing amounts of information are needed as you move up the levels of an organization. There is a core set of information that managers at all levels need, but only the smallest subset of that information is needed at the national level. At the district and facility levels, managers need disaggregated information on an ongoing basis because this is where actions are taken in response to operational data (e.g., stock-outs and dropouts).

FIGURE 3. Hierarchy of Information Needs



Source: Recreated with permission from "Health Information System Reform in South Africa: Developing an Essential Data Set," by Vincent Shaw, 2005..

Monitoring operational indicators is less important at the national level. Rather, national-level decision-makers need indicators that measure the impact of health programs and services on health status over a longer term. Therefore, an HIS should be designed to serve all its clients by providing reliable information in the short, intermediate, and long terms.

At the facility level, for example, managers would collect and use information on the monthly distribution of contraceptives, stock-outs, and dropouts. At the district or provincial level, or at the headquarters of a large NGO, the most useful information would be annual contraceptive prevalence rates, while for the Ministry of Health it might be maternal morbidity and mortality rates at intervals of three to five years.

> For further discussion of the hierarchy of information needs, please see an article on the WHO website.

Principles for improving information management. Chapter 1 of this handbook points out that no management system can be strengthened if people are left out of the process. Strengthening an HIS is no different. It requires working with the people involved: the owners of the system who record, transfer, analyze, communicate, and use data and information to manage services.

How should we work with people in the HIS? Box 1 presents guiding principles for designing an effective HIS or improving information management. The purpose is to improve the availability and reliability of information so it can be more effectively used in managing health organizations and services. These principles emphasize the need to fully involve all HIS staff and managers and service providers who will be using the information.

BOX 1. Guiding Principles for Improving Information Management

Understand health service functions and responsibilities. Because an HIS is linked to the health management cycle, a prerequisite for improving an HIS is a clear understanding of the functions and responsibilities of each health service, program, level of operations, and sector (public, private, community, CSO, NGO) involved in delivering health services.

Focus on improving health and health services. Any change to health recording and reporting should be made for the purpose of improving the performance of health services. It is important to seek ways to meet information needs at higher levels of the health system without asking managers and providers to record and report data not used at the service delivery level.

Strengthen existing systems. Although it may be tempting to completely redesign systems and integrate parallel, program-specific reporting systems, the time, money, disruption, and other costs of doing so often outweigh the potential benefits. Few efforts to develop fully integrated HISs have proven successful. A better alternative is to set standards for data formats and coding that facilitate the exchange of data between separate systems.

Ensure national ownership. All activities to develop or improve an information system should be carried out by in-country working groups, managed by national staff. It is essential to involve not only information systems staff but also the managers and service providers who are the primary users of the information. If an external consultant is necessary, this person should assume a facilitating role that allows local personnel to develop their own system. Through active participation, they will understand and own the methods and instruments in the system and, in the process, become better able to maintain it.

Build the skills of health personnel. These skills include the recording, reporting, transmission, processing, presentation, analysis and interpretation of data, and the use of data for decision-making. How to use and maintain computer systems can also be taught. The recommended approach for building these skills is "learning by doing" through:

- in-service workshops in which health service staff and data managers work together to solve real problems using real data;
- involving national personnel in planning and implementing studies and designing system changes;
- clarifying roles and responsibilities through consensus building.

Use technology appropriately. You can use computers for database maintenance, report generation, data analysis, and communications if your computer systems and software can be maintained locally with existing staff. But make sure that computerization does not slow the flow and access to data, add an excessive burden to workloads, or encourage falsification, thereby reducing data reliability.

Go to MSH's Electronic Resource Center for links to additional guidance on managing information.

Monitoring as a path to action

THE IMPORTANCE OF ROUTINE MONITORING

Why is evaluation not sufficient on its own? In the development community, some organizations tend to rely more on evaluation studies than on solid program monitoring. Many intend to carry out both monitoring and evaluation but, in practice, they commonly focus more time and resources on evaluation.

Donors, governments, and organizations might favor evaluations because they give hard evidence of progress, such as contraceptive prevalence (a typical outcome measure for family planning/reproductive health) measured through an annual household survey.

Monitoring cannot produce the result or outcome indicator—the hard evidence that these contraceptives are actually being used. It can only provide a progress indicator or benchmark, such as the monthly distribution of contraceptives, that enable you to track progress toward operational goals. You can monitor the distribution of products but cannot conclude that the products were actually used.

But for you, the manager, distribution data represent exactly the type of information you need to show progress toward your goal and to do your job effectively.

Take, for example, a behavioral change intervention in Peru described and analyzed in the following box.

In the context of government health services, district and facility managers need to monitor both output and coverage indicators. Indicators of coverage tell the health manager whether essential services are being provided for specific target groups so that rapid action can be taken to address gaps in services for underserved communities or subgroups.

A good monitoring system gives you the critical information to manage the intervention and take prompt corrective action. An evaluation cannot give you this type of information. When you see a good monitoring system, therefore, a manager is usually driving it because he or she needs actionable monitoring information from the M&E system.

PRODUCING ACTIONABLE INFORMATION

Actionable information is data you can use to make a decision and take action. It helps you identify gaps in performance and find ways to fill these gaps. To be actionable, information gained from monitoring must be based on *useful indicators* produced in a *simple format* that is *on time* for the planning or reporting cycle.

"Actionable" means different things to different clients. The information the manager needs is not the same type of information the executive director of an organization or the minister of health would use for reporting to donors, politicians, or the media.

How can actionable information be produced for the manager?

Monitoring for Better Program Management in Action—An Example from Peru

A local family planning organization in Peru carried out a communication campaign to increase contraceptive prevalence in the organization's catchment area. They developed the materials and trained community health workers to educate the women in their villages. The organization planned to conduct only a baseline survey and follow up with knowledge, attitudes, and practices (KAP) surveys. These were necessary first steps and good methods to evaluate the effectiveness of the campaign, but would they provide actionable and sufficient data to meet the manager's needs? No, because the results would come in *after* the campaign was completed. The manager needed information to take corrective measures *while* the communication campaign was in progress.

Put yourself in the place of the manager in this scenario. What do you need to monitor? You could start with monthly contraceptive distribution during the communication campaign, using data that are easy to obtain from the commodity warehouse. Stock movements of contraceptive products in the supply chain would indicate that the campaign was creating demand, while no movement could indicate that the campaign or the supply system is not working properly. Are you seeing spikes in distribution during the campaign? Is there greater movement of contraceptives during the campaign than there was before it?

If you see no change after two to three months, you know that something needs to be fixed with the communication campaign or the supply chain, or both. You will need to make site visits to pinpoint the reasons. Are stock-outs the problem? Is there no change in distribution because there are no products? Or is there no change because the radio station did not air the communication spot? Or perhaps the community-based distribution (CBD) agents never received the flip charts and models they needed to educate women in their communities?

First, the indicators must be useful to the manager. They must be directly related to the organization's operational plan (or the intervention plan) and the expected results. Some organizations have a tendency to focus on **process monitoring** between KAP surveys. This means they monitor processes such as training: who was trained, on what topics, and when. This is important, but it is not enough. Process monitoring does not monitor progress toward results. It simply tracks the completion of activities.

In addition to process monitoring, managers also need to monitor **proxy indicators**, which are as close as you can get to the actual results during the implementation of a set of activities when results are not yet easily measurable. Proxy indicators are indirect measures that approximate or represent a target or result when direct information is not available.

In the case of delivery of family planning services, for example, because certain contraceptives are distributed through the health center, monitoring data should come from the health center. While you cannot conclude that the target result has been achieved—that the products are actually being used by the beneficiary population—the distribution information gives you clues about the potential success of the activities. Most of the data for monitoring proxy indicators can be obtained from the HIS.

Next, actionable information should be provided in a **usable format**. Often managers are given too much information in a format that is too complicated. You need a simple tool

that feeds back only the essential information. You can learn more about such tools in the section of this chapter entitled "Features of a Good Monitoring Tool."

Finally, managers need to receive the information on time so they can act on it. Projects implemented by organizations and funded by the government or a donor often run on two time frames.

For example, you may be managing a project that runs for five years, broken down into annual reporting cycles based on annual operational plans. To monitor the annual plan and file your required reports, however, you need information quarterly. If your health centers submit their data after the designated deadline, the information will come in too late for your reports.

Information in Action to Improve Services—Experiences from Bolivia and South Africa

Using Information to mobilize the supply chain. The iron folate supplementation program in Bolivia was a community mobilization activity implemented by several NGOs in rural areas of the country.

A problem showed up only after three months of implementation. If the manager had relied solely on process monitoring, she would have seen that all activities had been carried out on time and as planned. However, monthly data from the health centers in the catchment areas served by the program showed that in many communities, distribution of iron folate to pregnant women had remained at zero since the first month of program implementation.

The manager immediately investigated and found out there were stock-outs in 16 health centers. Even though there was a written protocol for the distribution of iron folate, and all health centers were supposed to stock it among their supplies, historically there had been no demand for this product. The health centers had long ago decided to stop carrying it.

The manager brought the problem to the attention of the vice minister of health, and within days the Ministry of Health mobilized its entire supply chain to ensure sufficient inventory throughout the chain. By the end of the year, iron folate supplementation had dramatically improved across the country. All this happened thanks to a simple monthly monitoring tool that allowed the manager to take corrective actions early during implementation.

Simplifying data collection and encouraging use of the data. It is generally acknowledged that if data collection and processing are too cumbersome, data quality and use will tend to decline. In South Africa, nurses in health centers are often required to carry out two functions: (1) to provide care to their clients and (2) to collect and use data. The problem is that the nurses are primarily dedicated to caregiving and view data collection as an unnecessary burden on top of their other daily responsibilities.

A group of South African nurses who recognized the importance of information in the provision of services wanted to make the collection and use of routine data part of their daily work. They realized that it was necessary to both reduce the amount of data needed and simplify the collection process.

As a result, they created a simple "tick register"—a checklist—that allowed them to see, at the end of each day, a snapshot of the care they had provided. At the end of the month, they could quickly tabulate and analyze the data on their services. This type of daily and monthly summary of their activities was immensely satisfying. It motivated their ongoing use of the register to track, analyze, and improve services.

Practical M&E tools and approaches

FRAMEWORKS FOR THE DESIGN AND M&E OF HEALTH SERVICES

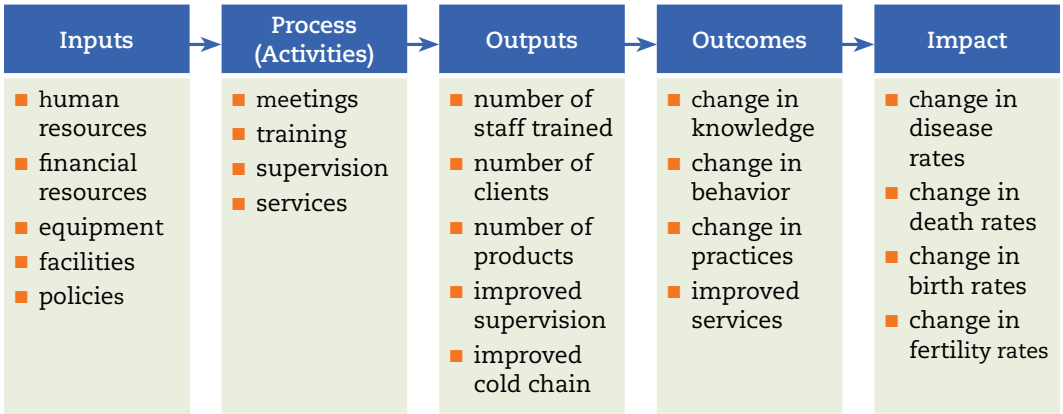
The results of health services and programmatic interventions can be measured at different levels. Many M&E guidelines are based on a chain of five levels of results: inputs, activities, outputs, outcomes, and impact. Figure 4 summarizes the results levels that can be monitored and evaluated.

To better understand the results chain, consider the following definitions:

- **Input:** The materials and resources needed to carry out your team or unit's implementation plan and achieve the desired result. Examples include financial, technical, human, supply, and commodity resources.
- **Process:** The activities carried out through your implementation plan. Examples include training service providers, improving the supply management system, and distributing family planning methods.
- **Output:** The immediate product of an activity. Examples include the number of people trained, number of new users of contraceptives, and the quantity of products distributed.
- **Outcome:** A short-term change in a population group as a result of a set of activities. Examples include changes in coverage of prenatal care, proportion of safe deliveries, knowledge and attitudes of FP/RH methods, unmet need for family planning, and contraceptive prevalence rates.
- **Impact:** Long-term changes within a beneficiary of population group. Examples include changes in the total fertility rate and maternal morbidity and mortality rates.

Two types of frameworks are commonly used to plan and organize the design of an intervention or service and its M&E plan: logical frameworks and conceptual frameworks.

FIGURE 4. Levels in the Results Chain



LOGICAL FRAMEWORKS

Since the development of the logical framework approach for the US Agency for International Development (USAID) in 1969, Logical frameworks (also called LogFrames or Logic Models) have been adopted with various adaptations by numerous bilateral and international development organizations.

Figure 5 shows the elements of a LogFrame.

The LogFrame helps managers and teams answer the four key questions:

1. What are we trying to accomplish and why?
2. How will we measure success?
3. What conditions must exist at each stage of our intervention?
4. What resources and processes will we need to get there?

LogFrames help identify the causal links in the results chain: inputs → processes (activities) → outputs → outcomes → impact. These causal links shape the logic of the intervention and guide the selection of indicators for each stage in the results chain.

FIGURE 5. Typical Elements of a Logical Framework

Objectives	Indicators	Means of Verification	Assumptions
Goal The ultimate aim or intended impact of the intervention	Measures used to assess the degree to which the goal has been achieved	Methods and sources of information for measuring or assessing goal indicators	Factors or conditions necessary for long-term sustainability
Purpose/Outcome The expected benefits or changes to be achieved among clients, communities, organizations, or systems	Measures used to assess the degree to which the purpose/outcome has been achieved	Methods and sources of information for measuring or assessing purpose/outcome indicators	Factors or conditions necessary for program success at this level and progression to the next
Outputs The tangible, direct results of program activities expected to attain the purpose	Measures used to assess the degree to which the outputs have been produced	Methods and sources of information for measuring or assessing output indicators	Factors or conditions necessary for program success at this level and progression to the next
Processes/Activities The actions a program takes to achieve the stated objectives	**Inputs/Resources** People, time, materials, funds needed to carry out activities	Methods and sources of information used to show that activities have been completed	Factors or conditions necessary for program success at this level and progression to the next

TABLE 1. Overview of the Logical Framework

Advantages	Disadvantages
■ Improves the quality of intervention plans by requiring the definition of clear objectives and indicators and the analysis of assumptions and risks. ■ When used regularly during an intervention, an effective management tool to guide implementation and M&E. ■ Summarizes the design of complex plans. ■ Supports the preparation of detailed implementation plans.	■ Assumes a linear relationship between inputs-outputs-outcomes that does not take into account other influencing factors. ■ If used rigidly during the design process, may stifle creativity and innovation. ■ If not updated during implementation, can be a static tool that does not reflect changing conditions. ■ Training and follow-up often necessary to use this approach correctly.

To understand how a LogFrame makes explicit the logic of an intervention, take another look at Figure 5. A series of "if-then" relationships connects each component of the LogFrame.

1. *If* the necessary resources are available, and assuming that specific favorable conditions exist, *then* program activities can be implemented, and…
2. …*if* program activities are implemented successfully, and assuming that specific favorable conditions exist, *then* the desired outputs and outcomes can be attained, and…
3. …*if* the desired outputs and outcomes are attained, and assuming that specific favorable conditions exist, *then* the strategic goal can be met.

The LogFrame can be useful in conceptualizing a project during the planning period and in reviewing progress and taking corrective action during implementation. Like any framework, it has advantages and disadvantages, as seen in Table 1.

Appendix A in this chapter provides an illustrative LogFrame for a home visiting program developed by the Inter-American Development Bank.

CONCEPTUAL FRAMEWORKS

These frameworks are similar to LogFrames in that they describe a chain of results, but they take into account the underlying reasons *why* changes occur along the results chain. Where LogFrames merely state that activities will lead to ever-larger results, conceptual frameworks allow you to map out the factors you believe to be critical and to explain why these factors are important to success.

This type of mapping helps you decide which factors should be monitored during the implementation of activities. When the data show that these critical elements have or have not been achieved, you can better understand why an intervention was or was not successful and what could be changed in the future.

You can see the advantages and disadvantages of conceptual frameworks in Table 2.

TABLE 2. Overview of the Conceptual Framework

Advantages	Disadvantages
■ Provides a flexible, visual mapping of complex intervention plans ■ When used regularly during implementation, allows early feedback about what is or is not working and why ■ Assists in the identification of unintended side effects ■ Helps in prioritizing which issues to investigate in greater depth, perhaps using more focused data collection methods or more sophisticated M&E techniques	■ Can become overly complex if the scale of activities is large or if an exhaustive list of factors and assumptions is assembled ■ Stakeholders might disagree about which determining factors they feel are the most important

The Pathway to Change is a particularly useful example of a conceptual framework. This model uses an "if-then" format to show, step-by-step, how the outcomes were conceptualized and will be achieved. Figure 6 is an example of a Pathway to Change for a six-month municipal health project in Nicaragua.

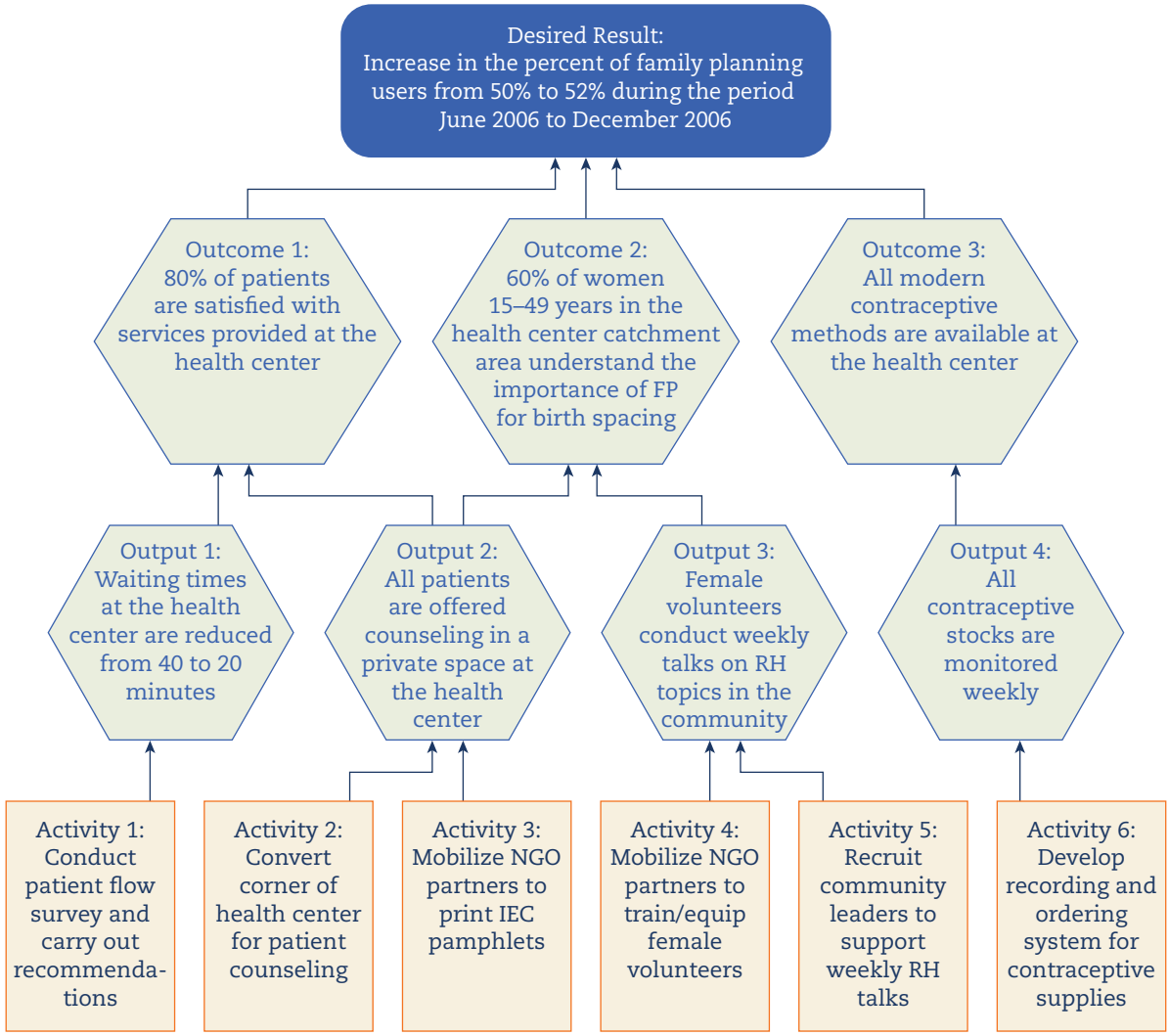
The Pathway to Change. The Pathway to Change is featured in this chapter because of its usefulness to managers and its benefits as a team-building activity. Developing a Pathway to Change is usually a participatory process that allows your team or unit and other stakeholders to design an intervention and determine how it will work. The final product is a map that shows how one action relates to another and another and how they all add up to the desired result. Constructing a pathway often exposes the underlying beliefs that people in an organization hold about how their actions achieve change.

Creating a Pathway to Change has several benefits. First, it requires your team to examine each proposed action and answer these questions:

- Does every activity lead to our desired result? If not, should some activities be changed, added, or eliminated?
- Are the activities sequential? Are they connected in a logical way? Do they build upon one another as a rational and coherent set of actions?
- Have we thought of all the outputs and outcomes needed to reach our desired result?
- Do we have the resources we need to implement our proposed activities?
- How long will it take to reach our desired result?
- What other factors might enhance or impede each of the activities in the pathway?

Second, your team must make explicit, and agree on, the underlying logic of an intervention plan. That is, they must show, on paper, how each action will lead to the desired change at each level of the map. Finally, the pathway outlines what outputs and outcomes the team should monitor and which indicators you should use.

FIGURE 6. Example of a Pathway to Change



How do you read a Pathway to Change map? A pathway can be read like a flow chart, with boxes and arrows showing the relationship between actions and effects, as shown in Figure 6. The desired result appears at the top of the pathway, and the outcomes that must be reached in order to get there are arranged on the next layer. The outputs that must be produced in order to achieve the outcomes are arranged on the next layer down. And, finally, the activities are at the bottom.

When read from bottom to top, the map shows which activities are needed to get to the outputs, and which outcomes are needed to reach the top. You must always be able to trace a pathway from the beginning of your actions to the expected result.

It can be helpful to think of the pathway in terms of an organizational chart: you could start at the bottom of the chart as an administrative assistant, move up to office coordinator, then to management, and then up to the director's office.

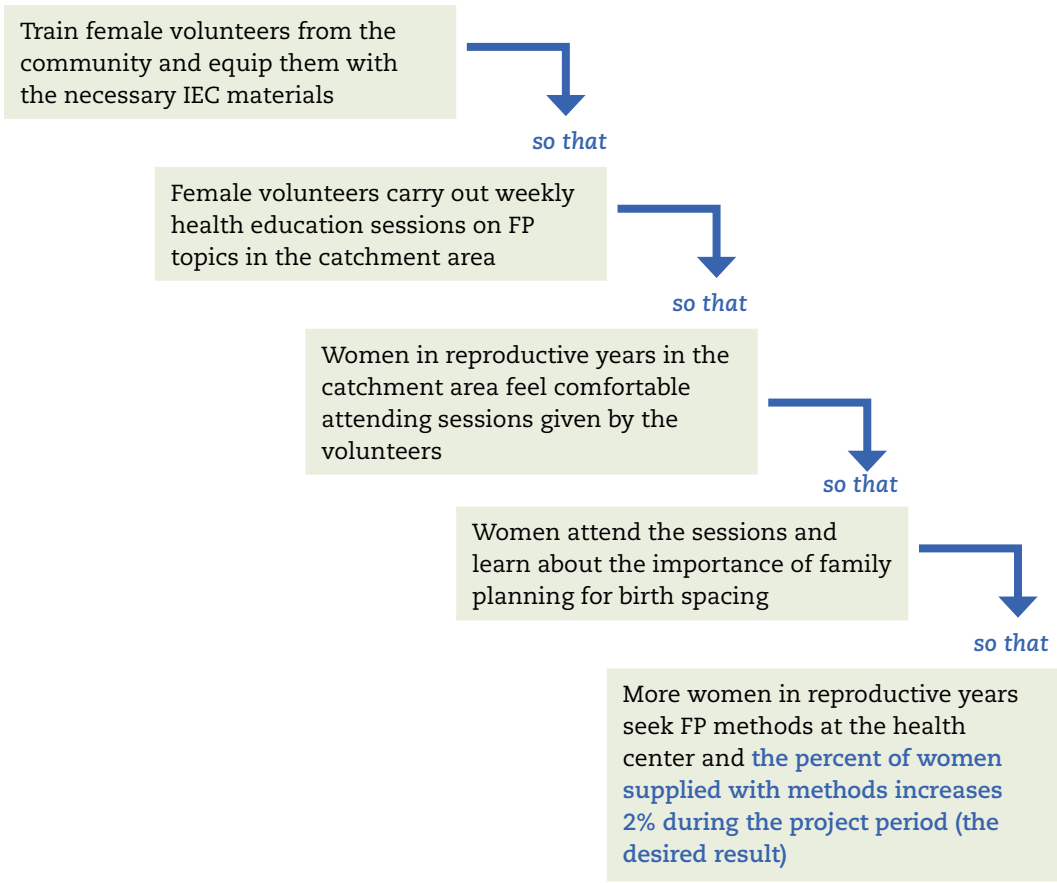
Creating a Pathway to Change. To develop a Pathway to Change, your team maps the change backwards. You start at the end of the pathway (the top of the chain) and define the long-term goal of the organization or the desired result of an intervention. Then you fill in the map by working from top to bottom, where you finally identify the main activities: the first elements in your implementation plan.

As you move down the pathway, ask three questions: What outcomes need to happen to contribute to the long-term goal? What outputs need to happen before that to achieve the outcomes? and What activities need to happen before that to produce the outputs?

Designing an intervention in this way can help reveal the necessary conditions for reaching the outcomes and long-term goal. It may take several tries to develop a Pathway to Change that everyone can agree on. Outcomes, outputs, and actions may be added, changed, and removed until eventually a map emerges that tells a story your team can agree on. The debate is often the most valuable part of the experience, because the team jointly defines the expectations, assumptions, and features of the change process.

Using a "so that" chain to check the pathways in a Pathway to Change. A good way to check the logic of your pathway map is to reverse the process and create a "so that" chain for each activity. The example in Figure 7 shows how to do this for Activity 5 in Figure 6.

FIGURE 7. "So That" Chain for One Activity in a Pathway to Change



The movement in the "so that" chain is the exact opposite of the Pathway to Change. You place each activity at the top of its own chain and move *down* through the chain to the goal or desired result. This sequence helps to confirm that each individual pathway in the larger Pathway to Change makes logical sense.

To use this technique, you need to create a separate "so that" chain for each activity in your Pathway to Change. You begin by describing each activity and adding the phrase "so that," followed by a description of what will happen next if that activity is completed. Continue doing this until you reach your long-term goal or desired result.

Steps in developing an M&E plan

One of your essential M&E tasks as a manager who leads is to develop a plan that will help you and your team determine whether you have achieved your desired results and to track progress toward those results during implementation. This requires you to not only choose reliable indicators but also to measure these indicators in an organized way. Your M&E plan should specify which indicators you will measure, how they will be measured, when, and by whom.

A well-designed M&E plan answers five questions:

1. Is your expected result measurable?
2. What indicators will you use to monitor your outputs and evaluate your outcomes?
3. What are your data sources and how will you gather data from these sources?
4. What are the time frames for each indicator?
5. Who will collect the data?

These questions are important because, without a valid M&E plan, you may misinterpret the effects of your intervention. You may decide that it has had no effect when it actually has produced some positive results, or you may conclude that it had a positive effect when in fact it achieved no results at all—a more common and destructive error.

Developing and using an M&E plan ensures that comparable data will be collected on a regular and timely basis, even when staff changes over time. Table 3 summarizes the steps in developing and implementing an M&E plan. The rest of this section describe each step in detail.

STEP 1: DEFINE THE EXPECTED RESULTS

The first step in developing the M&E plan is to determine an appropriate level for results. Together, the type and scope of the intervention, available resources, and time frame for implementation determine a feasible result.

As you saw earlier in this chapter, interventions led by donor-funded organizations and government services typically lead to outputs or outcomes. Although impact takes a long time to achieve and is usually not within the scope of a single set of activities, it is important to include it in your M&E plan so it is clear what your intervention will contribute to in the long term.

TABLE 3. Steps for Developing and Using an M&E Plan

Steps	Pointers
1. Define expected results	■ Results should be identified according to the scope and time frame of your intervention. ■ Results should meet the SMART criteria (Specific, Measurable, Appropriate, Realistic, Time bound).
2. Select indicators	■ Indicators should conform to the qualities of a good indicator. ■ Indicators should be affordable, easy to collect, and comparable over time and in different locations. ■ For priority health problems and essential services, use standard or national core indicators. ■ Select a minimum number of key indicators, making sure that selected indicators are really necessary to measure your desired results.
3. Identify data sources	■ Identify where the data for each indicator will come from. Common data sources include service statistics, organizational records, clients, or the community.
4. Determine data collection methods	■ Select the most appropriate and reliable data collection method for each indicator. These could include a review of logbooks or registers for service statistics, the use of observation checklists, client exit interviews, or a sample survey for community-based data. ■ Decide on the frequency of data collection. You could collect only baseline and post-intervention data or you may need to collect daily, monthly, or quarterly data, depending on the type of indicator. ■ For each indicator, assign responsibility for data collection to a particular office, team, or individual.
5. Collect baseline and post-intervention data	■ Recognize that baseline results will be used to determine your targets. ■ Clearly define the duration covered by the baseline, since you need a similar time period for comparison at the end of the implementation period. ■ Use the same methodology and tools for data collection as for the baseline and post-intervention measures.
6. Share and use your results	■ Schedule meetings, workshops, and reports to present results to project staff, management, and other key stakeholders. ■ Present options for learning and action based on M&E results.

To determine at which level you should monitor and evaluate your results, it is useful to revisit and expand on the results chain, beginning on the right with the ultimate result (impact) and moving back to the necessary materials and resources (inputs).

Inputs → Processes → Outputs → Outcomes → Impact

- **Impact:** These results are measured at the population level, take a relatively long time to achieve (usually three to five years), and require the combined effort of several interventions and even several organizations. As a manager, you may not be responsible for measuring impact, but you will want to include it in the logic of your M&E plan so you know what your organization and its partners aim to achieve in the long run.
- **Outcome:** In most cases, managers are responsible for measuring results at the output and/or outcome levels. Outcomes are a result of activities designed to produce a behavioral change in providers or clients. Outcomes are often measured in terms of changes in service coverage and changes in the knowledge, attitudes, and practices of a beneficiary population.

  An outcome could be the initiation of a proven practice for service delivery, the adoption of new management approaches, or the successful advocacy for health policy design. It could also be an increase in women delivering at a health facility or children fully immunized. In most cases, a clear relationship between outputs and outcomes can be established.
- **Outputs:** Outputs are the direct products of activities. They should be monitored throughout implementation as an essential element of good management. M&E plans should define the expected output of each activity as a product. For service delivery units, this usually means service outputs (for example, number of clients served or length of client waiting times).

  For organizations that do not provide direct health services, this might mean the distribution of health products or the provision of training (for example, number of family planning commodities distributed or number of participants trained).
- **Processes:** Monitoring of processes or activities is largely an accountability measure, ensuring that activities are conducted on time and with sufficient resources. Monitoring at this level plots progress in implementation against proposed time frames and the use of resources against budgets. It is usually carried out through traditional quarterly, semiannual, and annual reporting.
- **Inputs:** When developing an intervention, you must identify the number and types of resources needed to implement the activities. Performance can be monitored in terms of the quantity and types of inputs provided and the number and timing of activities carried out.

The next step in defining the expected results is to make sure that they meet the SMART criteria (see Table 4). You can monitor and evaluate progress toward a result only if that result has been defined in measurable terms.

Here is an example of a measurable result for an intervention whose purpose is to promote immunization coverage in children between the ages of 12 and 24 months: *The proportion of fully vaccinated children aged 12–24 months in the catchment area will increase to 70 percent within the next year.*

TABLE 4. Criteria of a SMART Result

Criterion	Description
Specific (S)	Clearly written and understood. The desired result is specific enough to be measured by a frequency, percentage, or number.
Measurable (M)	It is possible to monitor progress and evaluate results. The desired result is framed in terms that are measurable.
Appropriate (A)	The desired result is appropriate to the scope of your work and the mission of your organization.
Realistic (R)	The desired result is achievable and within the control of your organization. It can be realistically achieved using the resources available and within the time frame of your implementation plan.
Time bound (T)	There is a specific time period for achieving the desired result.

STEP 2: IDENTIFY THE INDICATORS AND THEIR DEFINITIONS

Indicators are normally percentages or proportions representing the extent of a specific condition in the population of interest. They also can be an absolute value, such as the number of occurrences of a health event (e.g., a maternal death or a case of malaria).

Every indicator needs a detailed definition. Is it a qualitative or quantitative indicator? If it is a percentage, what are the numerator and denominator? The definition should be detailed enough to ensure that different people at different times can collect identical types of data for the indicator.

You will see what characterizes a good indicator in Box 2.

Indicators can be classified as indicators of health status or of the performance of services.

Indicators of health status might include the:

- number of cases and deaths due to specific diseases in a given time period;
- proportion of the population that has a disease or condition at a particular point in time or over a period of time;
- proportion of the population with a factor or condition that puts them at risk of disease such as low knowledge or unsafe behavior.

Indicators of performance might include the:

- proportion of a beneficiary population having received a specific service;
- proportion of a beneficiary population demonstrating specific health knowledge and behaviors;
- proportion of facilities and staff demonstrating adherence to particular service standards or achieving stated objectives;
- proportion of facilities adhering to defined standards of functional management (e.g., staffing, availability of medicines, recording, and reporting).

BOX 2. Qualities of a Good Indicator

Valid: The indicator measures what it is intended to measure.

Reliable: Measurement of the indicator would be the same no matter how many times measurement is carried out.

Precise: The indicator is defined in clear, specific terms so that it can be measured. The indicator may be qualitative (descriptive), discrete (Yes/No), or based on quantitative levels or proportions, as long as it is clearly measurable.

Easily understood: Both experts and nonexperts can grasp the meaning of the indicator.

Discrete: The indicator captures a single component or aspect of a more complex result. It measures only one thing, not a set of things.

Timely: The indicator can be measured at appropriate time intervals according to the availability of data.

Comparable: When possible, the indicator avoids narrow or unique definitions whose values would be difficult to compare with other results.

Feasible to use: Data for the indicator are easy to obtain from a credible source and relatively inexpensive—affordable within your organization's resources. If such data are not available, methods exist for obtaining them in the future.

Additional guidance on indicators can be found in: "Compendium of Indicators for Evaluating Reproductive Health Programs" and "Menu of Indicators on Management and Leadership Capacity Development."

STEP 3: IDENTIFY THE DATA SOURCES

You now need to identify a data source for each indicator in the M&E plan, selecting data that are readily available from a credible source and that your organization can afford. Ideally you would choose data that are already available through the organization rather than launch a new data collection strategy, which could be costly and time-consuming.

A good way to start is by asking: What data do we already collect routinely and systematically? You should always consider the advantages and disadvantages of each data source. Please refer to the section "Selecting Your Data Sources" for more information on the pros and cons of some common data sources.

You should be as specific as possible about the data source, so the same source can be used consistently throughout your intervention. Changing data sources for the same indicator can lead to inconsistencies and misinterpretations. For example, if you are measuring infant mortality rates, switching from estimates based on a large-scale survey to estimates based on hospital statistics can lead to a false impression of change.

STEP 4: DETERMINE DATA COLLECTION METHODS

The next step is to define the methods or tools that you will use to collect data for each indicator. For indicators based on **primary data** (data that you collect yourself), you should describe the type of instrument needed to gather the data. Examples might be structured questionnaires, direct observation checklists, or scales to weigh infants.

For **secondary data** (data collected by others that is available for your use), you should explain the method of calculating the indicator and the source of data, providing enough detail on the calculation method so that others can replicate it. Remember, while it is easier and less expensive to use secondary data, its quality is often less reliable than that of primary data.

It is also important to note the frequency of data collection for each indicator. Depending on the type of indicator, you may need to collect data monthly, quarterly, annually, or even less frequently. When developing the data collection schedule for each indicator, consider the need to provide timely information to decision-makers in your organization. Assigning responsibility for data collection to individuals or groups in your staff will help ensure that the data are collected on time.

The information from Steps 1–4 will provide the content of your monitoring and evaluation plan. Table 5 shows the elements of an M&E plan for a clinical mentoring program for voluntary counseling and testing (VCT) facilities.

STEP 5: COLLECT BASELINE AND FOLLOW-UP DATA

Collecting accurate baseline data is one of your most important M&E tasks. Baseline data provides the starting point for setting the goals that you and your team hope to reach and for tracking changes in indicators over the life of your intervention. In this way, baseline data help fine-tune an expected end result.

You will need to collect baseline data on each indicator *before* your activities begin. These data identify the starting point from which you can assess progress. Then, at different points during implementation, you will collect follow-up data on each indicator for comparison with baseline levels and anticipated results. This allows you and other decision-makers in your organization to assess the progress of each intervention or service and make needed changes along the way.

Consider the example in Box 3.

Why track changes in indicators during implementation? The indicators in an M&E plan are linked to the immediate (output) and long-term results (outcomes) that managers need to monitor. Changes in indicator values over time show whether these results are moving up or down, or staying the same. This tells the manager whether the interventions and strategies are working as planned to reach the desired results.

At the end of the implementation period, you will need to collect data on your indicators in order to compare final levels to your baseline and to your anticipated results. Depending

TABLE 5. Example of a Monitoring and Evaluation Plan

Objective: Health care workers (HCWs) who have received classroom training improve their ability to provide antiretroviral therapy (ART) according to national guidelines

Activity/ Output	Indicator	Data Source	Frequency of Data Collection	Responsible Person	Timeline/ Deadline
Experienced HIV clinicians recruited to serve as clinical mentors at five regional hospitals	Number of mentors recruited and placed at regional hospitals	Employment records	As completed	Deputy director for clinical programs	September 2008
Physicians at five regional hospitals receive one-on-one mentoring in ART	Number of sites receiving clinical mentoring Number of physicians receiving one-on-one mentoring Number of days of clinical mentoring provided	Mentor monthly reports	Monthly	Mentors	March 2009
Outcome	**Indicator**	**Data Source**	**Frequency of Data Collection**	**Responsible Person**	
HCWs increase knowledge of ART	80% of participants achieve score 85% or more correct on posttest				
HCWs improve skills in delivering ART	Percent of skills demonstrated on competency checklist	Special study	Dates TBD	Deputy director for clinical programs	

Source: International Training and Education Center on HIV, p. 2.

BOX 3. Using Baseline Data to Adjust Results

A child survival team is proposing an intervention with a specific and measurable result, as follows: In the next 12 months, 40 percent of children aged 12–24 months in the catchment area will be fully immunized.

To determine whether their program can actually achieve this result, staff need to measure current vaccination levels. Their review of the data shows that only 10 percent of children in the catchment area are fully immunized by the age of 24 months. That is their baseline.

The manager realizes it will not be possible to reach the target level of 40 percent immunization coverage in just 12 months. So the manager and her team revise their expected result to something that is more realistic reasonable but still significant: In the next 12 months, 20 percent of children aged 12–24 months in the catchment area will be fully immunized.

on your indicators, you may also need to collect follow-up data at an agreed-on time to determine whether the changes are maintained after the completion of your intervention.

A note on using indicators for an evaluation. Most M&E efforts emphasize the selection of well-defined indicators to set goals and measure changes in health conditions or services.

But it is important to remember that indicators simply serve as markers. Indicator data provide clues as to *whether* an intervention or set of activities is on schedule and expected results are being achieved. They do not answer questions about *why* results are—or are not—achieved. They do not explain unintended results, linkages between interventions and results, or causes of perceived results that arise outside the intervention. Thus, they cannot prescribe actions that should be taken to improve results.

Indicator data must, therefore, be interpreted carefully. They simply point to results that need further exploration, rather than providing a definitive assessment of success or failure. An evaluation study is normally carried out to determine whether an intervention can be considered a success and why.

In general, as you move up the hierarchy from activities to long-term outcomes, M&E becomes more complicated. At the process and output levels, you can easily track which activities have been completed and their immediate results. This is operational information—information you can use for day-to-day management decisions. However, to identify and measure the outcomes that result from the synergy of outputs, you will probably need to integrate qualitative and quantitative information and rely less on single quantitative indicators.

Remember that when a desired improvement—in service performance, providers' or beneficiaries' knowledge and behavior, or the trend of a health problem—is confirmed through M&E, it does not prove that the intervention itself brought about that change. Other things may have been going on within the service or in the larger environment that caused the change. Of course the same is true for negative results or results indicating no change in outcomes.

Using Results to Improve Routine Data in Action—An Example from Pakistan

In Pakistan, through the support of the PRIDE Project, 10 subdistrict teams applied the Performance Assessment and Improvement Process—Public Health (PIP-PH) set of procedures and formats to address health problems that they identified as most serious for their populations. They used the PIP-PH to prioritize problems and services most needing short-term attention for improvement.

As part of the PIP-PH process the teams also designed a format for a Health Watch Framework for their subdistricts as a whole and the facilities within them. Each team selected indicators to measure the status of two priority public health problems, the related essential services, and the constraints affecting those services.

The teams used the Health Watch forms to establish baseline values for the indicators and then to monitor these values as the interventions proceeded over time. Facilities reviewed and updated the form each month; the subdistrict teams, including facility managers, reviewed and discussed the revised forms each quarter.

The subdistrict teams used the information to analyze the reasons for progress or lack of progress so that they could provide support to facility managers. The process spurred facility managers to improve the completeness and accuracy of routine data so that they could use the information to more effectively monitor health events and essential services and make needed improvements.

> Examples and detailed information about the PIP-PH and the Health Watch Framework appear in the PRIDE Project 2007 Annual Report.
>
> For additional approaches to using data to improve the performance of an organization, team, health service, or intervention, please see Performance Assessment and Improvement (PAI) process on the Leadership, Management and Sustainability (LMS) Program website..

STEP 6: SHARE AND USE YOUR DATA

In the rush to start collecting data, some managers forget to plan a process for reflecting on the information and making changes to improve the performance of activities. To make sure that data will be used—not just collected—think about how you and your team will disseminate the M&E information and obtain feedback from different stakeholders. A few basic questions will guide you:

- Who needs what kind of information and when do they need it?
- What type of setting should you use to communicate results to staff, senior management, and other key stakeholders? Is it sufficient to circulate a report, or should you organize a meeting or workshop?
- Should you also organize community meetings to solicit feedback from your beneficiaries on the initial M&E findings?
- How should you present information so it will be useful to different decision-makers? Should the information be presented visually, in charts, graphs, or maps? For guidance on the presentation of data and results, please see the M&E Guide for Facilitators of Leadership Development Programs.

M&E should be undertaken with the purpose of immediately *using* the results to identify gaps in performance and take action to reduce or fill those gaps. You should always plan ways to use M&E results for learning and action. For example, if project activities are not leading to the desired products, what should you do about it? If essential services are not achieving anticipated coverage levels or reaching specific groups of people, what needs to change? And how can you bring these facts to the attention of the right people in order to obtain a rapid response?

Designing an M&E tool

MONITORING AND EVALUATION TRAPS

There are a number of common pitfalls that can prevent you, as a manager, from improving the M&E function in your organization.

- **Over- or under-planning.** Some of you may spend too much time developing the M&E plan, which can lead to elaborate plans that are too complicated to use. Or managers who are overeager to implement M&E interventions may get started before they have completed an M&E plan. This means that, by the time the plan is worked out, it is often too late to get a viable baseline and M&E must be deferred. In these cases, the manager may have to settle for some sort of evaluation later, without baseline data to use for comparison.
- **Neglecting continuous monitoring.** Another trap that is easy to fall into is the failure to build continuous monitoring into the implementation of activities. This is often due to lack of experience. Many managers have not had access to useful monitoring tools (which are rare). They may not have received timely results or feedback from the M&E system in the past, so they may not see the value of routine monitoring. In addition, managers can easily get caught up in the details of implementation and neglect routine monitoring.
- **Overdoing it.** Still another monitoring trap is trying to track data on every possible indicator. Attempting to capture data on too many factors makes the monitoring process so complicated that it becomes imprecise. It also slows the process, so that by the time the data are collected and analyzed, they are no longer useful. Monitoring tools that are too long and complicated do not get used. What happens then? The manager skips monitoring altogether and has to resort to evaluation.

If you have encountered these problems, it is time to change your approach. You can develop a simple M&E plan and use simple monitoring tools. Figure out what you should measure in order to obtain data within three to six months; the time frame will depend on your organization's planning and reporting cycles. Also figure out what, at a minimum, should be measured in a longer-term evaluation. Aim for simplicity even in the context of a complex set of activities.

Try to include only what you need to know. You can screen all proposed indicators before including them in the M&E plan, asking: Who needs to use this information, when, and for what purpose? If one output indicator is enough, perfect! Do not overburden monitoring with unnecessary indicators. In many cases, fewer data actually provide more information.

FEATURES OF A GOOD MONITORING TOOL

As a manager, you do not need to know everything to manage a service or intervention. You need information now. You need a monitoring tool that can deliver sufficient information in time to identify and correct problems as soon as they emerge.

A monitoring tool should be easy to construct and use. Tables, checklists, and simple graphs are particularly useful methods of collecting, organizing, and presenting monitoring information.

At a minimum, your monitoring tool should enable you and your team to track:

- the status of activity implementation;
- the delivery of outputs;
- the status of key outcome indicators vis-à-vis anticipated results, if appropriate;
- budget expenditures;
- the availability of human and financial resources;
- obstacles to implementation and what is being done to overcome them.

You need to be able to answer the following questions on a periodic basis:

- Have activities been implemented as planned, on time, and within the budget?
- What additional, unplanned activities have been carried out?
- What direct, tangible products or services have been delivered as a result of activities we have implemented?
- Are we on track for reaching our outcomes?
- Do we have the necessary resources (staff, money, medicines and supplies, etc.) to stay on track?

Box 4 illustrates the basic components of a simple monitoring tool.

BOX 4. A Simple Monitoring Tool

Review Date:		Outcome Targets:			
Activities (per Implementation Plan)	Status to Date	Expected Outputs	Dates for Completion	Status to Date	Comments
Challenges and Opportunities:					

When used correctly, new technologies (e.g., Personal Digital Assistants or PDAs, "smart phones," handheld computers) can make monitoring easier and increase the benefits of monitoring activities. Automated monitoring—data that can be pulled and processed automatically—can produce an easy-to-read, one-page summary of key indicators in a color-coded format that alerts the manager to areas that need attention. Timely information on a few key indicators allows the manager to monitor progress and take corrective actions.

This visual display of the most important information needed to manage a project is generally known as a **performance dashboard**. Performance dashboards can be used in any organization, department, or division. In public health organizations, dashboards are often used to monitor programmatic and financial indicators as well as the coverage, production, effectiveness, and quality of specific health services. A human resources dashboard, for example, would include relevant indicators for managing:

- employee retention
- employee turnover
- employee training
- skill gaps
- employee satisfaction
- employee costs, benefits, and overhead

Table 6 shows a performance dashboard created to monitor key indicators for voluntary surgical contraception (VSC) services.

TABLE 6. Illustrative Performance Dashboard for VSC Services

Service: Voluntary surgical contraception
Reporting Period: January 2009

No.	Service Provision/Cost/ Quality Indicator	Programmatic or Financial Goal/ Threshold		Number Achieved	Percent Completed									
		Min.	Max		10	20	30	40	50	60	70	80	90	100
1	Number of VSCs performed during the month	8	10	7										
2	Average cost of VSCs in US$	100	120	110										
3	Monthly budget of income from VSCs performed, in US$	800	1200	770										
4	Percent of VSCs performed by qualified personnel	—	100%	60										
5	Percent of VSCs with no complications	95	100	100										
6	Percent of users satisfied with treatment received from personnel performing VSC	90	100	90										

Adapted from Colindres, 2008, p. 6.

You will find a description of the use of a performance dashboard for routine monitoring in a case study from a Bolivian NGO, the Center for Research, Education and Services (CIES).

For information on designing a dashboard, please see "Using Performance Dashboards to Monitor Organizational Achievements." This paper helps to clarify concepts and defines key steps for developing performance dashboards.

Design an evaluation for learning

Despite the importance of routine monitoring, monitoring is not sufficient for you to be able to answer the "So what?" question. In other words, how have your activities and products contributed to improving coverage of services, increasing knowledge, or encouraging health-enhancing behaviors?

Maybe a family planning communication campaign designed to increase contraceptive prevalence has led the government to stock district warehouses with contraceptive supplies. So they can learn from this experience and design more effective campaigns in the future, the project managers still want to know whether the products were actually dispensed to health facilities and distributed to clients. This section discusses how to design an evaluation for learning purposes.

There are two reasons for carrying out an evaluation.

1. Evaluation provides information about the success of your team, unit, or organization in meeting its objectives. This information helps determine which activities to expand, modify, or eliminate. It can also reveal ways to improve the design and management of future activities.
2. Evaluation can demonstrate accountability to your donor and other stakeholders, including your government and the beneficiaries of your services.

FORMATIVE AND SUMMATIVE EVALUATIONS

Managers can carry out two broad types of evaluations: formative and summative.

Formative evaluation. This type of evaluation is conducted during the development and implementation of a program. Its purpose is to guide the design and implementation of activities that include the best or most promising practices that will increase the chances of success. Formative evaluation is more commonly used by large or long-term projects rather than small, short-term ones. However, small projects should at least conduct a brief review of best practices during the planning phase to support the logic and proposed content of the activities.

Formative evaluation includes a needs assessment to discern the desires and requirements of a population group and determine how best to meet them. It also includes **process evaluation** to investigate the process used for delivering an intervention. You can use process evaluation to assess whether activities have been conducted according to plan—in terms of the original design, estimated costs, and number of people to be served—and whether the quality of the processes used is in accord with the best known practices.

A process evaluation typically includes several approaches. It may involve a review of output data (e.g., number of bednets provided, number of training workshops conducted, number of workshop participants) as well as individual interviews or focus groups among beneficiaries. It is good practice for small interventions to carry out process evaluation, even if it is limited to participant feedback.

Summative evaluation. This type of evaluation is conducted after the completion of a set of activities or intervention to assess the quality of the intervention and its key results. Summative evaluation includes outcome evaluation, impact evaluation, cost-effectiveness and cost-benefit analysis, and operations research.

Summative evaluation includes **outcome evaluation**, which assesses the extent to which a team, unit, or entire organization has achieved its intended results. Outcome evaluation is used to demonstrate accountability, improve the design of organizational activities, better allocate resources, and promote successful future interventions. The main questions addressed are: What has changed in the lives of individuals, families, or the community as a result of our work? What difference did we make?

As pointed out earlier in this chapter, outcomes are typically measurable and/or observable changes in two dimensions. The first dimension encompasses awareness, knowledge, attitudes, values, and skills of participants in a program or beneficiaries of services during or after their involvement in the intervention. The second dimension involves changes in behavior in these same groups.

Ideally, both dimensions should be measured at three points: at the beginning and end of the implementation period, and, if possible, after a suitable follow-up period. If the follow-up measurement is not feasible, at least baseline and post-intervention measures should be compared. In many cases, the changes may be modest, but there must be some improvement in at least one or two outcomes for the intervention to be considered a success.

Outcome evaluation attempts to distinguish between the influence of the intervention on these changes and the influence of other, external factors. However, evaluators often have to settle for partial attribution of an outcome to a specific intervention or service because of the difficulty in determining a direct, causal relationship between the service provided and a given change.

Outcome evaluations typically use a nonexperimental design (often called "pre-post evaluation") that simply measures changes before and after an intervention, as opposed to an experimental design (comparing participants to a control group with random assignment to both groups) or quasi-experimental design (comparing participants to a control group, but with no random assignment).

The nonexperimental design is acceptable for standard outcome measurement and reporting purposes. NGOs rarely use experimental designs. Although a large, well-funded organization might occasionally obtain expert assistance for an experimental design, most NGOs find that ethical and logistical considerations prevent the random assignment of participants to intervention and control groups. In addition, the costs of collecting data from a control group are likely to be too high.

Impact evaluation is another component of summative evaluation. It is broader than outcome evaluation and assesses the overall or net effects—both intended and unintended—of an entire program, group of programs, or group of organizations. Impact evaluations usually take place over three to five years.

OTHER TYPES OF EVALUATION

Cost-effectiveness and cost-benefit analysis. These types of analysis address an intervention's efficiency by analyzing outcomes in terms of their financial costs and value.

Operations research (OR). OR is the assessment or evaluation of a specific intervention within the context of a broader program that is delivering a number of interventions. OR is used to test and evaluate new approaches in delivering health services. It is also used to identify problems in service delivery and to develop solutions.

OR is a powerful tool that program managers and decision-makers can use to improve and expand services. OR studies compare interventions that are within the manager's sphere of influence. Examples include evaluating the effectiveness of a new HIV & AIDS prevention strategy, a new training course, a new set of procedures for managing medicines, a new contraceptive method, or a new reproductive health service.

> The Population Council's Horizons Operations Research on HIV/AIDS Toolkit provides step-by-step information for designing an OR study.

CONSIDERATIONS FOR DESIGNING AN EVALUATION

What should you evaluate to answer the "So what?" question? If you, as a manager, want to know when your activities are really successful, you need to design all interventions with evaluation in mind and incorporate evaluation into your overall organizational planning. When defining objectives, you should ask, how will we know whether we are meeting these objectives? This is the starting place for the evaluation.

Regardless of the size of your intervention or service and the scope of the evaluation, you need to answer three questions during the design and planning phase:

1. What will your intervention or service achieve in the short and long terms? If you successfully implement a set of activities over time, what will be different?
2. How do you conceptualize your activities—what is the underlying logic? Two approaches for identifying the program logic are discussed in this chapter under Practical M&E Tools and Approaches.
3. Which indicators can you use to identify progress toward the outcomes?

To answer the So what? question, you need to assess factors over which you have reasonable control. For example, a new service designed to provide housing for people living with AIDS (PLWA) cannot control or affect the life expectancy of the people it serves. By providing a stable living environment, however, the service can reduce the stress and improve the quality of life of PLWA who were previously forced to move frequently.

Once you have addressed the So what? question, you should also make sure that the evaluation is designed so that when the process is complete you can address five key evaluation topics:

1. **Relevance:** Was the intervention a good idea, given the situation and the need for improvement? Did it deal with the priorities of the target or beneficiary group? Why or why not?
2. **Effectiveness:** Have the intended outcomes, outputs, and activities been achieved? Why or why not? Is the intervention logic correct?
3. **Efficiency:** Were inputs (resources and time) used in the best possible way to achieve outcomes? Why or why not? What could you and your team do differently in the future to maximize outcome results at an acceptable cost?
4. **Impact:** To what extent has your intervention contributed to longer-term or national goals? What unintended consequences (positive or negative) did your activities have? Why did these consequences arise?
5. **Sustainability:** Will there likely be continued positive results once your intervention has ended? Why or why not?

A final word of caution here: like monitoring, evaluation can be made too complicated. When developing an evaluation plan, you will be wise to select a small set of key indicators and resist the urge to evaluate every aspect of your intervention.

Like monitoring, evaluation is useful only if the information is fed back on time to the manager and other decision-makers and stakeholders. A common problem with midterm evaluations is that results often come back six to eight (or more) months later, leaving only one to two years to make lasting changes before donor or government funding runs out.

SELECTING YOUR DATA SOURCES

This section describes three types of data sources that are commonly used for an evaluation: routinely collected data, large-scale surveys, and rapid assessment techniques, including participatory appraisal.

Routine data. Data collected and analyzed on a routine basis by an HIS are referred to as "service statistics." You can draw on several routine service information systems to monitor services. These include the basic HIS recording and reporting system; special program reporting systems (e.g., TB, malaria, immunization, HIV, family planning, etc.); special community agent reporting systems (e.g., community health workers' records); the disease surveillance and outbreak control notification and response information system; and reports for special support systems (e.g., medicines, referrals, and human resources and financial management).

These systems provide data that are readily available and are intended to tell you what is happening in the health sector. Examples of routine data include, for example, the number of prenatal visits at a clinic, the number and type of vaccinations provided on site, or the number and types of contraceptives supplied each month.

Data on services are generally collected by health centers or health posts and sent up to the next level in the system (usually the district) to be aggregated. These data may then be

sent upward to the next level (regional or provincial) for further aggregation before they finally arrive at the central level of the Ministry of Health.

Ideally, managers in health facilities and at the district level would use these data to guide daily operations, track performance and accountability, and make decisions that will continuously improve performance. But there are many impediments to this use.

All too often, routine data are inaccurate or incomplete. While those who use the HIS attempt to produce timely information of high quality, there are many opportunities for errors. There may be little support for managers and their staffs to focus on procedures for collecting, recording, and aggregating data correctly.

Health systems in many countries emphasize the importance of submitting reports to higher levels; they have not developed procedures and incentives to encourage those who provide information to use it, even when the data are of good quality.

Another drawback is that service statistics provide information only about the clients who use health services. They cannot provide the information about the many people who do not use the services.

For these reasons, you cannot rely on service statistics alone for an evaluation. Service statistics are more appropriately used for routine monitoring of public health problems and related essential services.

Large-scale surveys. Large-scale surveys constitute another readily available source of information. These include population-based surveys such as the Demographic and Health Surveys (DHS), comprehensive facility assessments such as the Population Council's Situation Analysis, and the national census. In many cases, managers can use data from an existing large-scale survey to provide context for interpreting the data captured through their own evaluations.

For example, the DHS is carried out periodically to characterize the health situation in a country or large geographic region for numerous subpopulations: men, women, children, infants, and so on. But the DHS data cannot usually be disaggregated for managers to use at the district or community level.

Further, because they are carried out only every three to five years, the information they provide may not be sufficiently up-to-date for managers' evaluation needs. Despite these drawbacks, DHS data are useful for understanding national or regional trends that may help explain data gathered in a focused evaluation.

Rapid assessments. These are quick, inexpensive ways to obtain information for decision-making, especially at the activity level. Examples include client exit interviews, small-scale facility assessments, rapid sample surveys, record reviews, focus group interviews, and other participatory methods.

You may use rapid assessment techniques to supplement information from routine data or large-scale surveys. Rapid assessments can provide you with valuable information about

your catchment area and your wider responsibility area—the communities and populations that are supposed to have access to essential services provided by a given facility. They can also provide context and qualitative understanding of quantitative data collected by more formal methods.

Within the category of rapid assessments, participatory methods and rapid sample surveys deserve your attention.

Participatory methods (also called participatory learning and action). These techniques and methods aim to incorporate the knowledge and opinions of community members in planning and managing development projects, influencing policy, and implementing programs. They enable voices from the community to be included in policy, planning, and research and generate a sense of ownership in the M&E results and the recommendations made by both the organization and its beneficiaries.

Unlike other techniques for rapid assessment, participatory methods are not based on samples. They use individual or key informant interviews (including client exit interviews), group interviews, case studies, and other qualitative approaches to identify local conditions and understand local perspectives and priorities.

In many locations community members cannot read and write, so participatory methods often rely on oral communication supported by pictures, symbols, physical objects, and group memory.

Participatory methods can be used before, during, and after implementation of an intervention or set of activities. They provide information for both design and evaluation and allow active involvement of stakeholders in decision-making. During implementation, participatory methods are a useful approach for identifying and trouble-shooting problems.

> You might want to take advantage of a listing of online resources on qualitative research and guidelines on focus group discussions in the Community Tool Box at Kansas University.

Rapid sample surveys. These surveys can be used to collect standardized information from a carefully selected, small sample of people or households in a beneficiary area. These surveys can describe conditions in a particular community or target group and allow comparison of different groups at a given point in time or changes in the same group over time. They also permit the comparison of actual conditions with planned results.

- One of the most common small-sample surveys is the **knowledge, attitudes, and practices (KAP) survey** based on a 30-cluster sample.
- **Lot Quality Assurance Sampling (LQAS).** This is another rapid assessment technique that is becoming widely used in public health. LQAS employs very small samples to obtain reliable information on a small geographic area or administrative unit. LQAS can be used to accurately detect the extremes of performance—to determine whether an intervention has exceeded an upper threshold of performance or has failed to meet a lower threshold of performance in terms of quality or coverage. The lot samples can also be combined to provide coverage estimates in a wider geographic area.

TABLE 7. Overview of Three Common Data Sources for an Evaluation

Data Source	Strengths	Limitations
Service Statistics: Data on the client population and clinic services that are routinely collected in client registers and clinical records	■ Readily available ■ Cover all types of health services and all areas of a country ■ Can be disaggregated to district and local levels ■ Inexpensive to use	■ Only tell you about current clients, with no information about the people who do not use the health services and might be potential users ■ Do not provide information about community values, perceptions, or behaviors ■ Do not reflect people who turn to private sources for services ■ Can be inaccurate if service sites fail to record data accurately, legibly, and on time
Large-Scale Surveys: Population-based surveys and large-scale facility assessments	■ Relevant, precise, reliable data ■ Can measure national health trends, identify problem areas, and help focus country resources on areas of greatest need ■ Generate averages for rural and urban areas, regions, and provinces ■ Provide a context for interpreting data collected locally ■ Can generate additional information from their computerized data sets	■ Usually cannot disaggregate data to provide averages for subregional areas (districts or municipalities) ■ Usually not conducted annually; data become quickly outdated if populations or health conditions are changing rapidly
Rapid Assessments: Focused methods for assessing local needs and making local decisions	■ Quick and inexpensive ■ Lead to local action ■ Guidelines exist to assist managers in many of these techniques ■ Empower managers to collect the data they need ■ Household surveys (e.g., LQAS or KAP) can achieve sufficient precision for evaluation purposes	■ Balance the need for representative, objective results with the need to use slightly less rigorous designs that are most feasible in local areas ■ Use reduced scope and scale to produce timely and low-cost results

A search of the web will uncover useful resources; here are one on KAP surveys and another on LQAS. The M&E area of the CORE Group website includes links to valuable rapid assessment tools and resources created by CORE Group's M&E Working Group.

As a manager, you should review all existing data sources before planning your evaluation. Table 7 displays the advantages and disadvantages of the three main data sources that were discussed above: routine service statistics, large-scale surveys, and rapid assessment techniques.

How *good* do HIS data have to be in order to be useful—how complete, accurate, and timely? For your management needs, data that are less than perfect may be good enough to have a powerful effect, as shown in an example from Madagascar.

Using and Improving Imperfect HIS Data— An Example from Madagascar

A more timely, accurate community-based HIS. A project in Madagascar implemented a community-based approach to increasing the use of family planning methods called "Champion Communes" in 50 of the country's 110 districts. This approach relied exclusively on HIS data for monitoring and evaluating achievements among participating communes.

First, a baseline was established for each commune, using data from its health center. Then, health center staff and community representatives identified goals for 10 indicators that would determine whether a commune had reached champion status after 12 months of implementation. Each commune monitored its own progress at a quarterly check-in meeting.

After the 12 months, the project staff returned to each commune to evaluate results. They reviewed data from each health center's routine monitoring report for each indicator. They also prepared a report on the data for each commune and sent it to the district-level supervisor for validation based on the district's computerized records. The data sources for the health center reports and district records were the same (health center registers), so there was rarely a discrepancy. But the point was to involve the district supervisor in reviewing health center data and to show the utility of using even simple data at this level.

The project also worked with the Ministry of Health at the district level to improve the accuracy, completeness, and timeliness of the HIS. The emphasis was on obtaining more complete data from the health centers and reducing the district health office's turnaround time—the time it took to receive the health center report, review it, return it to the health center for correction, retrieve it, enter the data into the system, and send the data to the central level. The districts were responsible for working with health centers to improve data recording and upgrading their own data-processing techniques.

After two years of technical assistance, the HIS had indeed improved, according to indicators for accuracy, completion, and timeliness. The greatest improvements were seen in timeliness; the turnaround time decreased from 12 months to 3 months.

Imperfect, but still valuable. It should be pointed out that the Champion Communes project did very well with imperfect data. Their numerator (the number of regular family planning users) was detailed and accurate. But their estimates of the contraceptive prevalence rates (CPR) were not accurate because the denominator (the number of women of reproductive age) was only an estimate, based on an out-of-date census and the government's annual estimated updates on growth percentages.

(continued)

However, the project determined that the CPR was good enough to track the performance of the communities participating in the Champion Communes approach. The project staff also supplemented comparisons of CPRs with comparisons of the numerator values: simple numbers that made sense to health center staff and communities alike.

The central level began organizing quarterly regional workshops to disseminate results to the district level. Together, managers from the central, regional, and district levels analyzed progress and rated the districts on the basis of their performance. They used root cause analysis—a process for identifying the underlying causes of a problem—to understand obstacles facing the low performers. (See Appendix A in Chapter 2 of this handbook for more about root cause analysis.) Then the Ministry of Health mobilized support from donors and partner organizations to help them improve.

The ministry began to use health information to truly manage the health system. Before this intervention, few organizations had trusted or used HIS data. But once it became clear that the system was functional, the donors believed in it, partner organizations used it, and the ministry was proud. For the first time, they had a clear picture of what was happening throughout the country, and they could use this information to advocate for donor support where needed.

Similarly, health centers had rarely used their own data. They had simply filled out registers and sent them up to the district office, without ever receiving feedback in return. After project completion, they saw how more precise data could be used to benefit them and their communities.

The districts also had been operating in an uninformed way. Each district had relied only on its own data, operating in a vacuum. The changes in the HIS and the encouragement of the central government provided districts with opportunities to compare their work—and learn from—one another.

Learning from more accurate, complete, and timely data. Data are often used to make comparisons, but they are less often used as a learning tool. In this instance, once the reports were coming in on time, the Ministry of Health used data—including less than perfect data—to detect which districts were underperforming and which were outperforming the rest. They learned from the best performers by asking: Why were their results so high? What were they doing differently? What could be replicated? They then applied what they learned, using these districts as models and providing support to the underperformers.

The entire health system became excited about the information it could produce and use. Starting at the top, this excitement trickled down to the lower levels, motivating them to improve their data collection and processing.

HIS data: Strengths and limitations

Underestimating the value and utility of the HIS is an unfortunate trend. It is true that the HIS system is often broken, but it often has potential. As seen in Madagascar, the Champion Communes project greatly improved the system over two years. In this case, the system was already fairly functional because earlier projects had invested in a major effort to put the system in place and make it basically sound. By improving the way the system was managed and the data were used, the most recent project was able to make a big difference with small changes.

HIS data are not 100 percent accurate and never will be. That is the reality all managers have to work with. But data do not need to be perfect to be useful. You can still monitor and manage with imperfect data. Timely information that is 75 percent accurate is better than information that is 95 percent accurate but arrives several months too late.

Despite its great value, HIS data alone will not meet all the information needs of many organizations. Some organizations and donors need data that require special systems or assessments. In addition, many interventions are designed to change the knowledge, attitudes, and practices of beneficiaries, which are not captured in service data. It is important to use HIS data when possible and to supplement it with local assessments when needed.

As the manager of a health program or health services, one part of your job should be to improve the HIS in the country where you work. The HIS is the only sustainable information system in most countries. Information systems that are created and maintained by donors or external organizations have limited life spans, but the HIS is a permanent part of your legacy.

If all partners and donors work with the Ministry of Health to provide technical and financial assistance for the HIS, it can yield information that greatly improves health services and more than justifies the investment.

Proven practices

- An M&E system should give managers what they need to know to take action. It must be based on relevant indicators, easy to use, and on time for planning or reporting cycles.
- M&E results are not just for your organization's M&E staff or your donor. M&E information is a vital resource for action and learning. If your M&E process has feedback mechanisms that allow decision-makers to reflect on the findings and absorb what they need for their own purposes, they will own the process and will use what it yields.
- If you design your M&E at the beginning of an intervention or project, in conjunction with the action plan for the project, you will better able to guide and track the implementation of activities.
- M&E plans that are too elaborate and complicated do not get used. Develop a simple M&E plan, choose easy-to-use monitoring tools, and select the fewest possible indicators to track progress and make necessary changes along the way.
- Strengthening an HIS requires working with the people involved: the owners of the system who record, transfer, analyze, communicate, and use data and information to manage services.

- In providing HIS data to decision-makers, you should recognize differences in the frequency of reporting and the amounts of aggregated and disaggregated data needed at different levels of government or by nongovernmental organizations.

- Routine monitoring gives you, the manager, the information you need to track progress toward your goal and to run your unit effectively. It allows you to spot a problem and make changes quickly. An evaluation cannot give you this type of information.

- In many cases, timely but imperfect data are sufficient to meet basic management needs.

- Support health facility staff in using available data promptly to monitor and manage services, even if the data are of poor quality. If they routinely use the data that they collect, they will see why data quality is important. They will then be more likely to take the necessary steps to improve their data collection and processing and generate more complete and valid data.

- You can use service statistics to collect data specific to a catchment area and supplement these data with other approaches—such as rapid assessment tools—to to gather additional information about your wider areas of responsibility.

Glossary of M&E terms

baseline: Data collected during the initial stages of a project, before beginning activities. Baseline data identifies the starting point from which you can assess progress towards intended results.

catchment area: The area from which clients are drawn to service facilities.

conceptual framework: A diagram of a set of theoretical links between activities and a variety of other factors believed to lead to desired outputs and outcomes. Unlike the LogFrame, the conceptual framework does not assume a simple, linear cause-and-effect relationship among inputs, outputs, and outcomes.

data source: Where information regarding an indicator comes from. Every indicator has its own data source. Common data sources include service statistics, organizational records, clients, and the community.

evaluation: Assessment of the extent to which results are achieved. Evaluation's purpose is also to understand why the results were or were not achieved. It is usually based on information from routine monitoring combined with the measurement of outcomes and impact.

formative evaluation: Used to guide the design and implementation of a program or intervention. It is used to ensure that activities include the "best" or "promising" practices to increase the chances of success. It includes needs assessment and process evaluation.

goals: Organizational or national-level long-term results that an intervention is intended to achieve.

health information system (HIS): Usually refers to the many different subsystems that provide the necessary routine information for managing health services. *Sometimes called* **health management information system (HMIS)** or **management information system (MIS).**

impact: Long-term change in the health status of a population, usually the combined result of several programs over time (for example, total fertility rate, maternal morbidity and mortality rates).

indicator: A quantitative or qualitative factor associated with assessing change or the performance of a specific activity. A marker of change over time.

input: The resources needed to achieve a desired result (e.g., financial, human, supplies, commodities, facilities).

logical framework: A management tool that uses a matrix to outline project objectives, the causal links in the results chain (inputs → processes (activity) → outputs → outcomes → impact), key assumptions, and how outputs and outcomes will be monitored and evaluated. *Also called* **LogFrame** or **logic model**.

monitoring: Regularly tracking changes in indicators over time in order to measure progress toward results by collecting information on inputs, processes, and outputs.

monitoring and evaluation (M&E) plan: Outlines which indicators will be measured, how they will be measured, when, and by whom. An M&E plan helps managers choose reliable indicators and measure these indicators in an organized way.

outcome: Short-term changes in a beneficiary population as a result of a set of activities.

output: The immediate or direct product of activities (e.g., number of people trained, number of new users of family planning, number of products distributed).

participatory assessment: Techniques and methods that aim to incorporate the knowledge and opinions of community members in planning and implementing health programs. *Also called* **participatory learning and action**.

performance dashboard: A one-page visual display of the most important information needed to manage a project.

primary data: Information that you collect yourself, for example, through a rapid assessment technique or key informant interviews using a structured guide.

process: The activities carried out through your implementation plan (e.g., providing new methods of contraception, developing a curriculum, training service providers).

process monitoring: Selecting and tracking the inputs and outputs of activities, for example, who was trained, in what topics, and how often. Process monitoring does not monitor progress toward goals. It simply tracks activity completion.

proxy indicator: An indirect measure that approximates or represents a target or result when direct information is not available. For example, couple-years of protection (CYP) is a common proxy indicator for family planning use when data on the contraceptive prevalence rate are not available.

rapid assessment: Quick, inexpensive ways to rapidly provide information for decision-

making, especially at the activity level. Examples include client exit interviews, small-scale facility assessments, rapid sample surveys, record reviews, focus group interviews, other participatory methods.

result: The logical expected accomplishment that can be measured after implementing a program or service.

results chain: The sequential, causal relationships among results levels outlined in the logical framework (inputs, activities, outputs, outcomes, and impact).

results levels: The various stages of results outlined in the results chain.

routine data: Information about health service delivery collected on a regular basis through the health information system. *Also called* **service statistics**.

secondary data: Information from existing sources (such as routine data, a census, or Demographic and Health Survey) in contrast to primary data, which one collects oneself.

SMART criteria: Set of five standards used to check that a result or objective is developed in measurable terms. The criteria are: Specific, Measurable, Appropriate, Realistic, and Time bound.

summative evaluation: An assessment conducted to measure quality of performance and achievement of key results after the completion of an interventionor set of activities. Summative evaluations include outcome evaluation, impact evaluation, cost-effectiveness evaluation, and operations research.

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APPENDIX A. Example of a Logical Framework from the Inter-American Development Bank

The logic for this framework:

1. *If* the activities (promotion, training, and so on) are carried out well, and assuming favorable political and economic conditions and the availability of resources (monetary, human, and technological), *then* parents will be enrolled, home visitors and other staff will be trained, materials will be available, home visits will have been made, and an administrative system and MIS will be functioning.
2. *If* the outputs are obtained, and assuming low turnover of home visitors and other staff, *then* changes will occur in parental practices and in the home environment with which the child interacts.
3. *If* parental behavior and the home environment improve, and assuming that the trained caregivers continue to provide care and that the family structure is maintained or improves, *then* the health, nutritional, and psychosocial status of children will improve.

Logical framework for a home-visiting program with parental education			
Goal (general objective) Improve the development of young children, from birth to age 3, in urban marginal areas	**Indicator** Raise the developmental status of *x* children by *x*% over 5 years, as indicated by measures of health status, nutritional status, and psychosocial development	**Verification** Health: Health care net for each child Nutrition: Growth monitoring records in center Psychosocial: Performance on standardized tests	
Purpose (specific objective) Provide children with quality care and education through improved child rearing practices and changes in the home environment	**Indicators** Changes in practices of *x*% of participating parents Changes in the home environment	**Verification** Periodic observations of a sample of parents and homes: interaction with children, questionnaires, supervisory reports	**Assumptions** Trained parents or other caregivers continue to provide care Continuity in economic and family conditions
Outputs Participants enrolled Trained home visitors, supervisors, and directors Materials developed Home visits Parental training carried out Administrative system in place MIS in place	**Indicators** *x* low-income participants enrolled *x* caregivers trained Parental guides developed and distributed to *x* families Home visits made Functioning MIS and administrative system	**Verification** Data from MIS on trainees, parents, and materials Evaluations of trainee knowledge and skills after initial training and during course of continuous training; observation of interaction between home visitor and parents Questionnaires tapping parental knowledge and attitudes	**Assumptions** Low turnover of home visitors and other staff Ability to reach the desired population
Activities Enroll parents Select and train home visitors and other staff Develop materials Develop administrative system Provide continuous training and supervision Carry out home visits Develop monitoring and evaluation system	**Resources** Budget Technology Human resources	**Verification** Plan of action, budgets, and accounting records Studies showing that the chosen model and curriculum work Evaluations to see that the activities were not only carried out but also done well Curriculum vitae	**Assumptions** Political will Reasonable economic and political stability

Source: Inter-American Development Bank.