Course Name	: Health Monitoring & Evaluation
Course Code	: APBPH 3101
Course Level	: Level 5
Credit Unit	: 4 CU
Contact Hours	: 60 Hrs

Course Description
The Course deals with differentiating between Monitoring and Evaluation, several illustrations to show project/program monitoring and evaluation, discussing different project frameworks relevant to project monitoring & evaluation, identifying project indicators, Linking evaluation to program planning and Implementation, data sources in project monitoring & evaluation

Course Objectives
- To help students engage into discussions to grasp clear differentiation between monitoring and evaluation.
- To involve students into getting well acquainted with various project tools/methods used in monitoring and evaluation.
- To improve on the research skills of the students in terms of application of M&E activities of data collection.
- To help students determine and estimate the challenges and outcomes of monitoring and evaluation.

Course content
Introduction
- Meaning of Monitoring
- Examples of program elements that can be monitored
- Graphic illustration of program monitoring
- What is Evaluation
- Graphic illustration of program evaluation
- Levels of evaluation
- What do we want to learn from evaluation
- Why is M & E important
- Examples of questions that M & E
- When should M & E take place
- M & E plan components
Project Frame works
- What are Frameworks
- Types of Frameworks ie Conceptual, Results and Logical Frameworks

- Their applicability to project monitoring and evaluation
- Limitations of the Frameworks

Indicator
- What is meant by Indicator
- Differences between Quantitative and Qualitative Indicators
- Why are indicators important
- What is a metric
- Clarifying Indicators
- Characteristics of a good indicator
- Linking Indicators to Frameworks
- Some common challenges to selecting indictors

Linking Evaluation to Program Planning and Implementation
- Planning the evaluation
- Conducting the evaluation
- Using the results
- Incorporate evaluation into program planning and Implementation

Data Sources in Project Monitoring & Evaluation
- Definition of Data
- Types of data sources
- Linking different sources to same indicators
- Data collection
- Data quality
- Data analysis
- Data use

Mode of delivery Face to face lectures
Assessment
Coursework 40%
Exams　　60%
Total Mark 100%

MONITORING & EVALUATION

Monitoring and Evaluation (M&E) is an essential component of any intervention, project, or program. This course will help you understand what M&E is, why it is important, and the basics of what it entails. Monitoring and evaluation program helps to monitor and reflect progress against plan, Provide field back, Identify needed changes and Improve work processes and objectives

Specific Objectives:
i. At the end of this course, you will be able to:
ii. Identify the basic purposes and scope of M&E
iii. Differentiate between monitoring functions and evaluation functions
iv. Describe the functions of an M&E plan
v. Identify the main components of an M&E plan
vi. Identify and differentiate between conceptual frameworks, results frameworks, and logic models
vii. Describe how frameworks are used for M&E planning
viii. Identify criteria for the selection of indicators
ix. Describe how indicators are linked to frameworks
x. Identify types of data sources
xi. Describe how information can be used for decision-making

What Is Monitoring and Evaluation?

When you read that the prevalence of low birth weight in a country is 20%, have you ever wondered how this calculation was derived? Or when you hear that the percentage of married women of reproductive age in a rural area using a modern contraceptive method rose from 52% to 73%, do you wonder how they know this? These types of statistics and other similar information result from "monitoring and evaluation" or "M&E" efforts. M&E is the process by which data are collected and analyzed in order to provide information to policy makers and others for use in program planning and project management. The terms monitoring and evaluation are often used interchangeably, but there are important differences between them.

Monitoring generally refers to the process of regularly checking on the status of the program by comparing the actual implementation of activities against a work plan, including whether the activities are being completed as planned, whether they are being conducted with in the time frame specified, whether the budget is being spent according to plan, whether any changes are needed in the management or implementation of the activities, and whether the work plan should be modified.

Evaluation on the other hand is directed at measuring progress toward the achievement of program objectives and the impact of the program (whether the intended long term changes have occurred).This includes measuring the extent to which the changes that have occurred are attributable to your programs activities. Although there are differences between monitoring and evaluation, the two processes work together to lead to the same end, which is to produce information that can be used to improve the management of a program and achieve the intended short term objectives and long-term results.

Check to see if you now know whether the following situations call for "monitoring" or "evaluation." The National Council of Population and Development wants to know if the programs being carried out in province A are reducing unintended pregnancy among adolescents in that province. USAID wants to know how many sex workers have been reached by your program this year. A country director is interested in finding out if the post abortion care provided in public clinics meets national standards of quality.

Solution:
The National Council of Population and Development wants to know if the programs being carried out in province A are reducing unintended pregnancy among adolescents in that province. This is evaluation because it is concerned with the impact of particular programs. USAID wants to know how many sex workers have been reached by your program this year. This is monitoring because it is concerned with counting the number of something (sex workers reached). A country director is interested in finding out if the post abortion care provided in public clinics meets national standards of quality. This is monitoring because it requires tracking something (quality of care).

What Is Monitoring?
Monitoring of a program or intervention involves the collection of routine data that measure progress toward achieving program objectives. It is used to track changes in program performance over time. Its purpose is to permit stakeholders to make informed decisions regarding the effectiveness of programs and the efficient use of resources. Monitoring is sometimes referred to as process evaluation because it focuses on the implementation process and asks key questions:
- How well has the program been implemented?
- How much does implementation vary from site to site?
- Did the program benefit the intended people? At what cost?

Examples of program elements that can be monitored:
- Supply inventories
- Number of vaccine doses administered monthly
- Quality of service
- Service coverage

☐ Patient outcomes (changes in behavior, morbidity, etc)
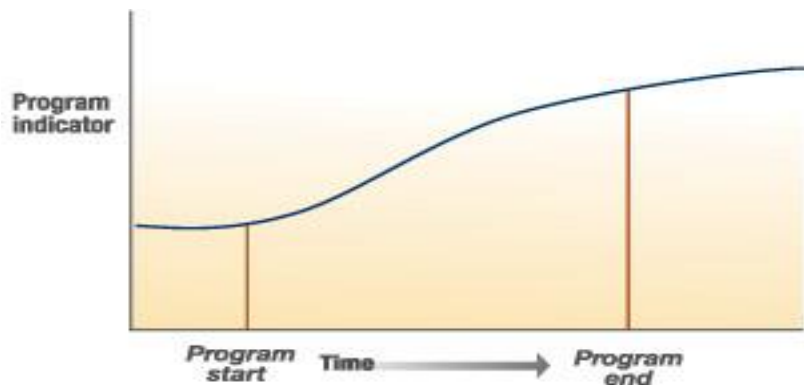
A graphic illustration of program monitoring over time could look like this. The program indicator being measured on the "Y" axis could be any element of the program that needs tracking, such as the cost of supplies, the number of times the staff provide certain information to clients, or the percentage of clients who are pleased with the services they received.

Monitoring is an ongoing, continuous process that; requires the collection of data at multiple points throughout the program cycle, including at the beginning to provide a baseline; can be used to determine if activities need adjustment during the intervention to improve desired outcomes.

Monitoring usually pertains to counting, tracking, and collecting, for example:
☐ Counting clients seen or health workers trained
☐ Tracking condoms distributed
☐ Collecting data on clinic clients

What Is Evaluation?

Evaluation is the systematic application of both quantitative and qualitative research techniques to determine the appropriateness and effectiveness of the design and implementation of social programs. Often in implementing programs we become so caught up in the day today challenges that we neglect asking a key question, is our program making a difference? More specifically is it achieving the stated objectives? Evaluation offers the answer to this question.

Evaluation measures how well the program activities have met expected objectives and/or the extent to which changes in outcomes can be attributed to the program or intervention. The difference in the outcome of interest between having or not having the program or intervention is known as its "impact" and is commonly referred to as "impact evaluation." Evaluation is fundamentally an exercise to help decision-makers understand how, and to what extent, a program is responsible for particular, measured results.
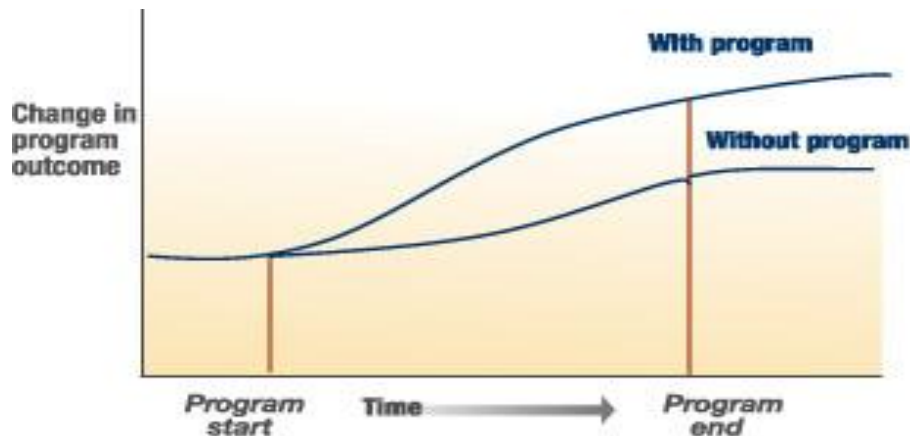
A graphic illustration of program impact would look like this.

Evaluations require: Data collection at the start of a program (to provide a baseline) and again at the end, rather than at repeated intervals during program implementation. A control or comparison group in order to measure whether the changes in outcomes can be attributed to the program with well-planned study design.

The purpose of evaluation is that Evaluation helps program managers identify what is and is not working as well as how to make the projects work better. It also provides a means of demonstrating project staff and donor agencies, the extent to which the project is achieving its objectives. it provides many benefits to social programs. It permits us to;
- identify successful strategies
- modify or discontinue interventions that do not yield desired results
- share findings with programs in other countries or regions
- provide donors/ funders with evidence of the result of their investment
- demonstrate the organization's interest in accountability

Levels of evaluation:
An important first step in the designing an evaluation is to decide if it will be performed at the population or program level. Key factors in decision making are the intended audience and the expected reach of the intervention.

Evaluation at the population level
This relates to the entire population of a given geographical area e.g. city district or country who fit the profile for the intended audience, whether or not they participated or were exposed to program activities. Thus it answers the question how effective was this intervention in reaching or changing behavior among the intended audience as a whole? This type of evaluation is appropriate

for large scale programs designed to be far reaching, such as behavior change programs that use the mass media in an attempt to reach the general public.

Evaluation at the program level

By contrast NGOs projects like on HIV/AIDS are often smaller in scope, focusing on subgroups in the population with specific characteristics; adolescents in schools, commercial sex workers, truck drivers, fisher mongers, factory workers, sero positive individuals and other definable groups in a determined geographical area. Program level evaluation therefore involves only those persons exposed to the program activities e.g participants in training courses, persons attending a VCT service, persons residing in target communities like slums. This type of evaluation answers the question, how effective was the intervention in changing behavior among those exposed to it? One could use a term project level evaluation with respect to projects although program level evaluation applies to both programs and projects.

What do we want to learn from evaluation?

Evaluation can answer three basic questions,
- How well has the project been implemented?
- Has the desired change been achieved?
- If the change has been achieved, to what extent can the change be attributed to the projects?

Depending upon which question we want to answer, we choose one of the three evaluation types.
1. Process evaluation
2. Monitoring of results (outputs and outcomes)
3. Impact assessment (Measuring cause and effect)

Another kind of evaluation is cost effectiveness analysis which relates project costs to results achieved. However this type of study requires specialized analytical or statistical skills that go beyond the scope of evaluation. Nevertheless, cost issues are important to consider, since they have implications both in terms of sustainability of project activities and outcomes and whether interventions can be successfully brought to scale.

Process evaluation:

This is the measurement of products and services provided by a program and the quality for those services and products. It allows us to gain an in depth understanding of a project implementation, including;
- number of activities carried out often in relation to the original plan
- quality of the activities implemented
- reaction of the target audience (e.g. user of client certification)
- problems or obstacles encountered

It answers the questions, "How much have we done?, How well have we done it? And how can we improve?"

Process evaluation entirely looks on the implementation of program activities. It does not measure how effective these activities were in producing the desired results. The greatest benefit of this type of evaluation is its ability to identify why the project is in full operation - the successful aspects to be continued and the deficiency to be addressed. If program managers evaluate in a timely fashion, they can use results to make mid course collections, thus increasing the chances that the program will ultimately achieve its objectives.

This type of evaluation – monitoring of program activities – is most important for the organization implementing the project and other stake holders' e.g. local government. It is also of interest to the donor agency in that, it demonstrates that the implementing agent is actively seeking to improve its services and to satisfy the needs of the intended audience.

Monitoring of Results (Outputs and outcomes):

Process evaluation is generally easier than measuring results, especially when process evaluation involves counting number of activities completed or number of clients/ participants. Process evaluation however, is only the first step. What we really want to know is whether the project is making a difference. In a sense we would like to know the project's effect by measuring knowledge, attitudes, skills, behaviors and practices of the population which we are trying to help.

Successful projects have clear, realistic and measurable objectives. Monitoring of results measures the extent to which the results or desired change is achieved. Or in other words the extent to which the objectives are made. Generally, the change in question relates to knowledge, attitudes or practices. Monitoring of results allows us to determine if the desired change has occurred among the intended audience and, if so how large the change is.

To measure change the evaluator must have data from before and after the intervention. Alternatively, the evaluator can establish the expected level to be achieved in terms of absolute numbers or percentages. And then determine whether the project achieves this level in a given period of time. For example by the end of year one, 20 percent of males 15-19 will report condom use at last sex. Often however, we do not know the pre intervention level, which is a limitation of this alternative. As a result the increasing number of NGO's are conducting baseline (pre intervention) assessments such as small scale, population based cluster surveys. They not only use findings fro this assessment to set targets for key project outcomes but also to build consensus among different stake holders in terms of local needs and priorities.

Impact Assessment (Cause and Effect):

This is the measurement of health, economic status and quality of life of the target population. It focuses on population based measures. Certain study designs – called experimental designs – allow us to evaluate cause and effects with relative precision. The most widely known of these designs is the pretest – post test control group designs with randomization. (Fisher and Foreit 2002). With this type of design, we are able to measure the amount of change attributable to the intervention, eliminating the possibility that confounding factors unrelated to the program influenced the results obtained. We can answer the question, what would have happened in the absence of our program?

In addition to experimental designs, other methodologies exist that can measure program effects. Other widely used methods include longitudinal multivariate analysis and multi-level multivariate analysis. Using appropriate statistical techniques, the evaluator can measure the extent of change that has occurred. Moreover, he/she can identify the relative importance of different factors-including exposure to the program intervention-to explain the observed change. However, due to the large samples and complex statistical analysis required, this type of approach may not be practical for NGOs working in HIV/AIDS.

Following, we present an illustrative project and explain how three types of evaluation will apply to it. The illustrative project involves commercial sex workers (CSWs).For the sake of this illustration, let us say that the objective of this project is to increase knowledge of the correct use of condoms among participating CSWs.

The intervention intended to achieve this objective is a series of workshops addressing the correct use of condoms, which will be carried out in places established especially for CSWs such as "safe haven" locations that exist for CSWs in a number of countries. Each participating CSW is expected to attend a workshop of one hour. The evaluator measures" correct use of condoms based on the ability to complete actions:
1. Open the packet without using teeth or scissors(using the finger tips)
2. Remove the air from the tip of the condom
3. Unroll the condom using the "dildo" (anatomical model) to the base of the erect penis.

Why Is M&E Important?

Monitoring and evaluation helps program implementers to make informed decisions regarding program operations and service delivery based on objective evidence Ensure the most effective and efficient use of resources objectively assess the extent to which the program is having or has had the desired impact, in what areas it is effective, and where corrections need to be

considered. Meet organizational reporting and other requirements, and convince donors that their investments have been worthwhile or that alternative approaches should be considered.

Examples of questions that M&E can answer:
☐ Was the program implemented as planned?
☐ Did the target population benefit from the program and at what cost?
☐ Can improved health outcomes be attributed to program efforts?
☐ Which program activities were more effective and which less effective?

When Should M&E Take Place?

M&E is a continuous process that occurs throughout the life of a program. To be most effective, M&E should be planned at the design stage of a program, with the time, money, and personnel that will be required calculated and allocated in advance. Monitoring should be conducted at every stage of the program, with data collected, analyzed, and used on a continuous basis. Evaluations are usually conducted at the end of programs. However, they should be planned for at the start because they rely on data collected throughout the program, with baseline data being especially important. One rule of thumb is that 5-10% of a project budget should be allocated for M&E.

The M&E Plan

Every project or intervention should have a [monitoring and evaluation (M&E) plan](). This is the fundamental document that details a program's objectives, the interventions developed to achieve these objectives, and describes the procedures that will be implemented to determine whether or not the objectives are met. It shows how the expected results of a program relate to its goals and objectives, describes the data needed and how these data will be collected and analyzed, how this information will be used, the resources that will be needed, and how the program will be accountable to stakeholders.

M&E plans should be created during the design phase of a program and can be organized in a variety of ways. Typically, they include:
• The underlying assumptions on which the achievement of program goals depend
• The anticipated relationships between activities, outputs, and outcomes
• Well-defined conceptual measures and definitions, along with baseline values
• The monitoring schedule
• A list of data sources to be used
• Cost estimates for the M&E activities
• A list of the partnerships and collaborations that will help achieve the desired results

- A plan for the dissemination and utilization of the information gained
- An M&E plan should be considered a living document and revised whenever a program is modified or new information is needed.

Why Are M&E Plans Important?

M&E plans are very important because they state how a program will measure its achievements and therefore provide accountability by documenting consensus and providing transparency to guide the implementation of M&E activities in a standardized and coordinated way of preserving the institutional memory.

M&E Plan Components:

Typically, the components of an M&E plan include:
- The introduction
- The program description and framework
- A detailed description of the plan indicators
- The data collection plan
- A plan for monitoring
- A plan for evaluation
- A plan for the utilization of the information gained
- A mechanism for updating the plan

M&E Plan Components: Introduction:

The introduction to the M&E plan should include the Information about the purpose of the program, the specific M&E activities that are needed, and why they are important and then A development history that provides information about the motivations of the internal and external stakeholders and the extent of their interest, commitment, and participation

Program Description and Frameworks:

The program description should include: A problem statement that identifies the specific problem to be addressed. This concise statement provides information about the situation that needs changing, who it affects, its causes, its magnitude, and its impact on society. The program goal and objectives: The goal is a broad statement about a desired long-term outcome of the program. For example, improvement in the reproductive health of adolescents or a reduction in unwanted pregnancies in X population would be goals. Objectives are statements of desired specific and measurable program results. Examples of objectives would be to reduce the total fertility rate to 4.0 births by year X or to increase contraceptive prevalence over the life of the program. Descriptions of the specific interventions to be implemented and their duration, geographic scope, and target population The list of resources needed, including financial, human, and those related to the infrastructure (office space, equipment, and supplies)

The conceptual framework, which is a graphical depiction of the factors thought to influence the problem of interest and how these factors relate to each other. The logical framework or results framework that links the goal and objectives to the interventions. Program Description: SMART Objectives The objectives listed in the program description should be "SMART," an acronym that stands for:

Specific: Is the desired outcome clearly specified?

Measurable: Can the achievement of the objective be quantified and measured?

Appropriate: Is the objective appropriately related to the program's goal?

Realistic: Can the objective realistically be achieved with the available resources?

Timely: In what time period will the objective be achieved?

Here is a sample objective. Do you think it is SMART (i.e., meets all of the criteria above)?

Increase contraceptive prevalence by 15% in women 30-49 years of age

An example of the SMART objective is:

Increase contraceptive prevalence by 15% in women 30-49 years of age

Specific: Yes, the intended outcome of the program is specified.

Measurable: Yes, contraceptive prevalence is measurable.

Appropriate: Unknown, because the program's goal would need to be provided in order to know whether the objective relates logically to it.

Realistic: Unknown, because the resources available to the program would need to be known.

Timely: No, the time within which the objective is to be achieved is not specified.

So this objective is not "SMART" because, although it meets some of the criteria, it does not meet them all.

Indicators:

Indicators are clues, signs or markers that measure one aspect of a program and show how close a program is to its desired path and outcomes. They are used to provide benchmarks for demonstrating the achievements of a program. One of the most critical steps in designing an M&E system is selecting appropriate indicators. The M&E plan should include descriptions of the indicators that will be used to monitor program implementation and achievement of the goals and objectives. We will discuss the selection and use of indicators later in this course. Examples of indicators include:

 Number of health workers trained in IUD insertion in the past 12 months

 Percentage of women of reproductive age who are using a contraceptive method at a particular point in time

 The number of maternal deaths per 100,000 live births in a specified period

Data Sources and Data Collection Plan:

[Data sources](#) are sources of information used to collect the data needed to calculate the indicators.

The data collection plan should include diagrams depicting the systems used for data collection, processing, analysis, and reporting. The strength of these systems determines the validity of the information obtained. Potential errors in data collection, or in the data themselves, must be carefully considered when determining the usefulness of data sources. We will discuss data sources, data collection and data quality later in this course. Examples of data sources include:

☐ Patient records
☐ Birth registers
☐ Sentinel/demographic surveillance
☐ Censuses
☐ Focus groups
☐ Household surveys

Monitoring Plan:

The monitoring plan describes: Specific program components that will be monitored, such as provider performance or the utilization of resources, How this monitoring will be conducted, The indicators that will be used to measure results, Because monitoring is concerned with the status of ongoing activities, output indicators, also known as process indicators, are used. For example, these indicators might be: How many children visit a child health clinic in one month? And How many of these children are vaccinated during these visits?

Evaluation Plan:

The evaluation plan provides the specific research design and methodological approaches to be used to identify whether changes in outcomes can be attributed to the program. For instance, if a program wants to test whether quality of patient care can be improved by training providers, the evaluation plan would identify a research design that could be used to measure the impact of such an intervention. One way this could be investigated would be through a quasi-experimental design in which providers in one facility are given a pretest, followed by the training and a posttest. For comparison purposes, a similar group of providers from another facility would be given the same pretest and posttest, without the intervening training. Then the test results would be compared to determine the impact of the training.

Information Dissemination and Use:

How the information gathered will be stored, disseminated, and used should be defined at the planning stage of the project and described in the M&E plan. This will help ensure that findings from M&E efforts are not wasted because they are not shared. The various users of this information should be clearly defined, and the reports should be written with specific audiences in mind.

Dissemination channels can include written reports, press releases and stories in the mass media, and speaking events.

Implementation and Mechanism for Update:

The capacities needed to implement the efforts described in the M&E plan should be included in the document. A mechanism for reviewing and updating the M&E plan should also be included. This is because changes in the program can and will affect the original plans for both monitoring and evaluation.

Standards for M&E Plans:

M&E plans should serve the information needs of the intended users in practical ways. These users can range from those assessing national program performance at the highest central levels to those allocating resources at the district or local level.   M&E plans should convey technically accurate information and should be realistic, prudent, diplomatic, and frugal.   The activities described in M&E plans should be conducted legally, ethically, and with regard to those involved in and affected by them.

What Are Frameworks?

Frameworks are key elements of M&E plans that depict the components of a project and the sequence of steps needed to achieve the desired outcomes. They help increase understanding of the program's goals and objectives, define the relationships between factors key to implementation, and delineate the internal and external elements that could affect its success. They are crucial for understanding and analyzing how a program is supposed to work.

There is no one perfect framework and no single framework is appropriate for all situations, but several common types will be discussed here:
- Conceptual framework
- Results framework
- Logic model

A fourth common type of framework, not discussed in this course, is a logical framework, a diagram or matrix that illustrates the linear relationships between key program inputs, activities, immediate results/outputs, and desired outcomes.

Conceptual Frameworks
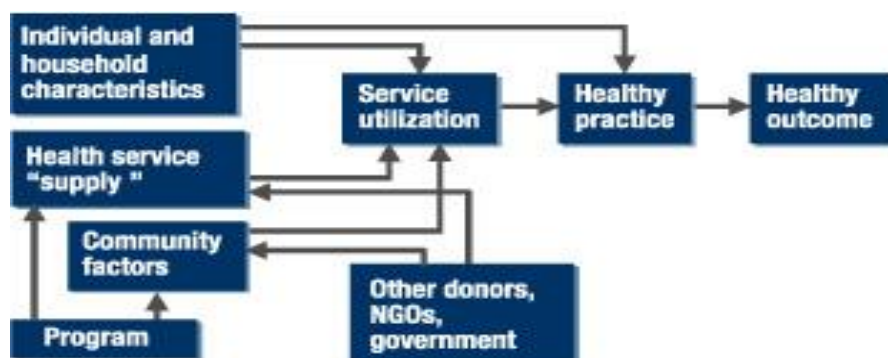
A conceptual framework, sometimes called a "research framework," is useful for identifying and illustrating the factors and relationships that influence the outcome of a program or intervention. Conceptual frameworks are typically shown as diagrams illustrating causal linkages between the key components of a program and the outcomes of interest. For instance, in this example, the program, in addition to other donors, is supplying health services, in order to increase service utilization, with the ultimate outcome of improved health. By identifying the variables that factor into program performance and depicting the ways that they interact, the results that can reasonably be expected from program activities are outlined. Clarifying this process permits program designers to develop valid measures for evaluating the success of the outcomes and also guides the identification of appropriate indicators. We will discuss the selection and use of indicators in the next section of this course.
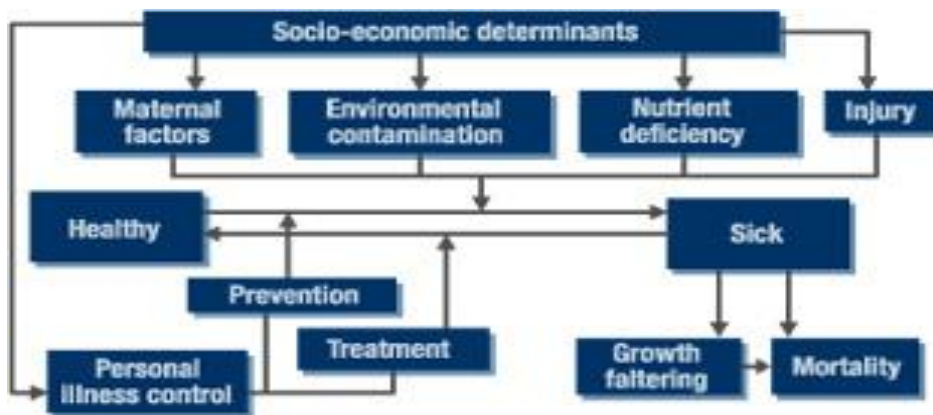
Another example of a conceptual framework, the Mosley-Chen Framework, is commonly used in the study of child survival. In this framework, socio-economic determinants act through five "proximate" or biological determinants to impact child health.

- Maternal factors (age, parity, birth interval)
- Environmental contamination (air, food, water, soil, insect vectors)
- Nutrient deficiency (calories, proteins, vitamins, minerals)
- Injury (accidental or intentional)
- Personal illness control (preventive measures and medical treatment)

The is no standard format for conceptual frameworks, but the two examples shown here are typical.

Results Frameworks

Results frameworks, sometimes called "strategic frameworks," diagram the direct causal relationships between the incremental results of the key activities all the way up to the overall objective and goal of the intervention. This clarifies the points in an intervention at which results can be monitored and evaluated. As can be seen in this example, results frameworks include an overall goal, a strategic objective (SO) and intermediate results (IRs). An SO is an outcome that is the most ambitious result that can be achieved and for which the organization is willing to be held responsible. An IR is a discrete result or outcome that is necessary to achieve an SO.

Notice that the goal and strategic objective appear at the top of the framework. Before achieving this broader strategic objective, a set of "lower level" intermediate results must first be reached. Under each IR are subordinate intermediate results or sub-IRs that relate directly to the intermediate results. For example, under IR1, you will see IR1.1 and IR 1.2. IR1.1 and IR 1.2 are sub-IRs. Results frameworks are the type of framework used by USAID in what is called Performance Monitoring Plans, or PMPs.

Goal: Improved health status and/or decreased fertility

Strategic Objective: Improved use of health/ FP services and/or appropriate practices

IR1: Access/Availability

IR1.1: Commodities/Facilities

IR1.2: Equity

IR2: Quality

IR2.1: Provider Performance

IR2.2: Training/Supervision

IR2.3: Information System

Source: David Marsh, 1999

Here is a portion of the same results framework with the information filled in. For example, as you can see under IR2, the information system, training and supervision of clinicians, and provider performance are factors that lead to improved quality of health services. Notice that IRs and sub-IRs need to

be measurable; in other words, indicators can be developed for them and data can be collected to calculate them. Please note that actual frameworks contain more information than appears here in these abbreviated examples.

Logic Models

INPUT
Develop clinical training curriculum

PROCESS
Conduct training events

OUTPUT
Practitioners trained in new clinical techniques

OUTCOME
Increase in clients served by (newly) trained providers

IMPACT
Declining morbidity levels in target population

A logic model, sometimes called an "M&E framework," provides a streamlined linear interpretation of a project's planned use of resources and its desired ends.

Logic models have five essential components:
Inputs – the resources invested in a program, for example, technical assistance, computers, condoms, or training
**Processes** – the activities carried out to achieve the program's objectives
Outputs – the immediate results achieved at the program level through the execution of activities
Outcomes – the set of short-term or intermediate results at the population level achieved by the program through the execution of activities
Impacts – the long-term effects, or end results, of the program, for example, changes in health status. In this context, the term "impact" refers to the health status or conditions that the program is intended ultimately to influence (mortality, morbidity, fertility, etc.), as measured by appropriate indicators. Measuring "impact" in this way, however, should be distinguished from impact evaluation which is a specific type of evaluation activity that focuses on examining how much of an observed change in outcomes or "impact" can be attributed to the program.In other words, inputs (or resources) are used in processes (or activities) which produce immediate intermediate results (or outputs), ultimately leading to longer term or broader results (or outcomes) and

impacts. This example presents a straightforward view of a project designed to reduce population morbidity by increasing the number of clients served by trained health care providers. As you can see, it does not try to account for all factors that may be influencing operations and results as a conceptual framework would, but instead focuses specifically on the project's activities and impacts. This narrow focus assists program managers and M&E planners as they clarify the direct relationships between elements of particular interest within a particular program effort.
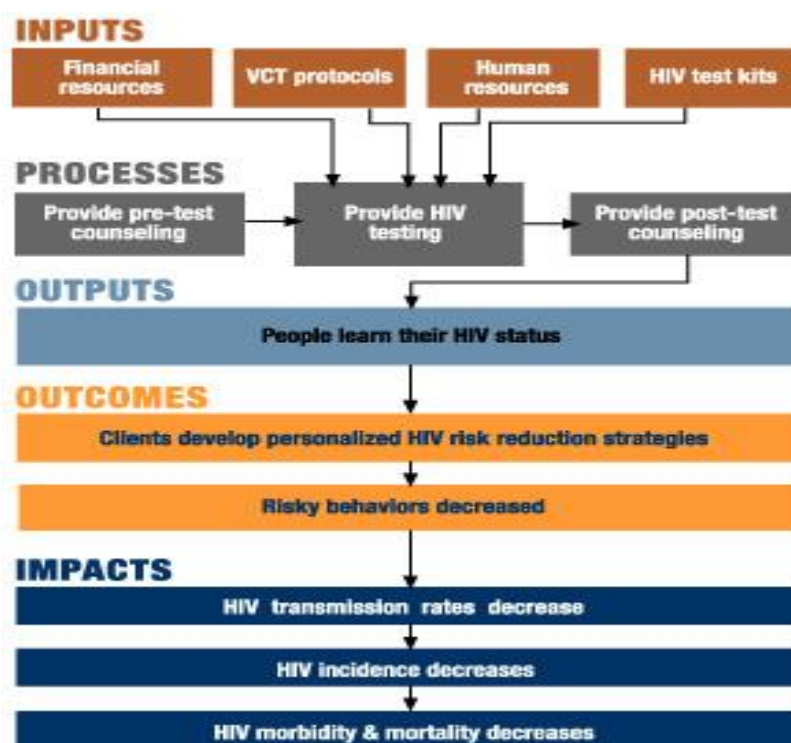
This is a small portion from a logic model for an HIV voluntary counseling and testing (VCT) program. It is important to remember that, within a program, several activities can have their own inputs and outputs. Collectively the outputs of the activities contribute to the program outcomes and impacts. In some cases the output of one program activity could be an input for another activity. For example, if an activity is to develop guidelines, the output of that activity is the guidelines, which are an input in this overall logic model for VCT service delivery.

Summary of Frameworks

Using frameworks is one way to develop a clearer understanding of the goals and objectives of a project, with an emphasis on identifying measurable objectives, both short-term and long-term. Frameworks, such as the three types discussed in this course, also help define the relationships between factors key to the implementation and success of a project, both internal and

external to the program context. This design process deepens the understanding of managers, implementers, and other partners in many practical ways, including serving as the foundation for selecting appropriate, useful M&E indicators.

Type of Framework and Brief Description	Program Management	Basis for Monitoring and Evaluation?
Conceptual– Interaction of various factors	Determines which factors the program will influence	No. Can help to explain results.
Results– Logically linked program objectives	Shows the causal relationship between program objectives	Yes – at the objective level
Logic model– Logically linked inputs, processes, outputs, and outcomes	Shows the causal relationship between inputs and the objectives	Yes – at all stages of the program from inputs to process to outputs to outcomes/ objectives

The conceptual framework places the health problem in a wider context, one that considers the various factors that can affect the program or intervention, clarifies the causal relationships between these factors, and identifies those that the intervention may affect. It is used for program design rather than for program M&E.

Results frameworks show the causal relationships between the various intermediate results that are critical to achieving the strategic objective. The effectiveness of these activities can be measured at each step along the way.

Logic models help to show the logical connections between the inputs, processes, and outputs of an activity and how they link to the program's objectives (outcomes) and goals (impacts). They also clarify the linear relationships between program decisions, activities, and products.

Programs should use the types of frameworks that best suit their needs. USAID-funded programs tend to use results frameworks, but many other donors, such as the UK Department for International Development (DFID) and the United Nations (UN), use other types of frameworks.

What Is an Indicator?

An indicator is a variable that measures one aspect of a program or project that is directly related to the program's objectives. Let's take a moment to go over each piece of this definition. Examples of indicators include:

☐　Percentage of clinic personnel who have completed a particular training workshop

☐　Number of radio programs about family planning aired in the past year

Percentage of clinics that experienced a stock out of condoms at any point during a given time period.

An indicator is a variable whose value changes from the baseline level at the time the program began to a new value after the program and its activities have made their impact felt. At that point, the variable, or indicator, is calculated again.

Secondly, an indicator is a measurement. It measures the value of the change in meaningful units that can be compared to past and future units. This is usually expressed as a percentage or a number.

A full, complete, and appropriate set of indicators for a given project or program should include at least one indicator for each significant aspect of the program's activities.

Finally, an indicator focuses on a single aspect of a program or project. This aspect may be an input, an output, or an overarching objective, but it should be narrowly defined in a way that captures this one aspect as precisely as possible.

A reasonable guideline recommends one or two indicators per result, at least one indicator for each activity, but no more than 10-15 indicators per area of significant program focus.

More examples of indicators:
 Percentage of women allowed to go alone to the clinic
 Percentage of facilities that maintain acceptable storage conditions for condoms
 Number of trained providers who perform to established standards

Quantitative and Qualitative Indicators:

Indicators can be either be quantitative or qualitative.

Quantitative indicators are numeric and are presented as numbers or percentages.

Qualitative indicators are descriptive observations and can be used to supplement the numbers and percentages provided by quantitative indicators. They complement quantitative indicators by adding a richness of information about the context in which the program has been operating. Examples include "availability of a clear, strategic organizational mission statement" and "existence of a multi-year procurement plan for each product offered."

Differences between qualitative and quantitative evaluation methods		
#	quantitative methods	qualitative methods
1	Describes "how many" or "how much"	Describe "how" and "why"
2	Uses predominantly closed-ended questions.	Uses predominantly open-ended questions.
3	Provides numerical data and statistics that facilitate similar interpretation by evaluators.	Provides data on perceptions, beliefs and values which can be interpreted differently by different evaluators

4	Requires large samples preferably selected at random	Permits more limited samples generally not selected at random.
5	Requires staff with experience in statistical methods.	Requires expertise in qualitative data analysis.
6	Results can be generalized to the target population.	Results can not be generalized and they are only indicative of a segment of the population.
7	Yields more superficial responses to sensitive topics e.g. sexual behavior.	Offers more in-depth responses in sensitive topics e.g. sexual behavior

Why Are Indicators Important?

Indicators provide M&E information crucial for decision-making at every level and stage of program implementation.

Indicators of program inputs measure the specific resources that go into carrying out a project or program (for example, amount of funds allocated to the health sector annually).

Indicators of outputs measure the immediate results obtained by the program (for example, number of multivitamins distributed or number of staff trained).

Indicators of outcomes measure whether the outcome changed in the desired direction and whether this change signifies program "success" (for example, contraceptive prevalence rate or percentage of children 12-23 months who received DTP3 immunization by 12 months of age).

What Is a Metric?

An important part of what comprises an indicator is the metric, the precise calculation or formula on which the indicator is based. Calculation of the metric establishes the indicator's objective value at a point in time. Even if the factor itself is subjective or qualitative, like the attitudes of a target population, the indicator metric calculates its value at a given time objectively.

Here is an example:

Indicator: Percentage of urban facilities scoring 85-100% on a Quality of Care Checklist

Note that because this indicator calls for a percentage, a fraction is required to calculate it.

Possible metrics:

Numerator, or top number of the fraction: number of urban facilities scoring 85-100% on a Quality of Care Checklist.

Denominator, or bottom number of the fraction: total number of urban facilities checked and scored.

Defining good metrics is crucial to the usefulness of any M&E plan because it clarifies the single dimension of the result that is being measured by the indicator.

Clarifying Indicators:

In many cases, indicators need to be accompanied by clarifications of the terms used. For instance, let's look at the indicator: number of antenatal care (ANC) providers trained. If such an indicator were used by a program, definitions would need to be included. For example, providers would need to be defined, perhaps as any clinician providing direct clinical services to clients seeking ANC at a public health facility. For the purposes of this indicator then, providers would not include clinicians working in private facilities. Trained would also need to be defined, perhaps as those staff who attended every day of a five-day training course and passed the final exam with a score of at least 85%. Another indicator for this program could be percentage of facilities with a provider trained in ANC. In this example, because the indicator is a proportion or fraction, a numerator and a denominator are needed to calculate it.

The numerator would be the number of public facilities with a provider who attended the full five days of the ANC training and scored at least 85% on the final exam. Note that the numerator must still specify that the facilities are public and that the providers must have attended all five days and passed the exam in order to be counted. This information need not be included in the indicator itself as long as it is in the definitions that accompany it.

The denominator would be the total number of public facilities offering ANC services. This requires that this number be obtainable. If it is not known and it is not possible to gather such information, this percentage cannot be calculated. In this example, it is also necessary to know at which facility each trained provider works. This information could be obtained at the time of the training. If it is not, all facilities would have to be asked if they have any providers who attended the training. To calculate the indicator in this example, let's say there were 100 public facilities with an ANC provider who completed the five-day training and scored at least 85% on the exam out of 500 facilities total. What would the indicator show?

ANSWER: The indicator would be 100 facilities with a trained provider/500 facilities total, which means 1/5 or 20% of public facilities have a provider trained in ANC.
Characteristics of Indicators

Characteristics of a good indicator:

Produce the same results each time it is used to measure the same condition or event
Measure only the condition or event it is intended to measure
Reflect changes in the state or condition over time
Represent reasonable measurement costs
Be defined in clear and unambiguous terms

Indicators should be consistent with international standards and other reporting requirements. Examples of internationally recognized standardized indicators include those developed by UNAIDS and those included in the UNDP Millennium Development Goals. Indicators should be independent, meaning that they are non-directional and can vary in any direction. For instance, an indicator should measure the number of clients receiving counseling rather than an increase in the number of clients receiving counseling. Similarly, the contraceptive prevalence rate should be measured, rather than the decrease in contraceptive prevalence. Indicator values should be easy to interpret and explain, timely, precise, valid, and reliable. They should also be comparable across relevant population groups, geography, and other program factors.
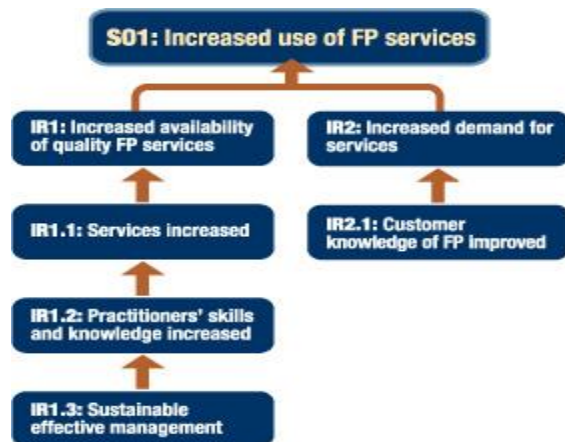
Linking Indicators to Frameworks:

Let's use this generic results framework for a family planning program to demonstrate how indicators are linked to frameworks. For this program, the strategic objective (SO) is to increase the use of family planning services. There are two intermediate results (IRs) feeding into this objective. Under the IR of increasing availability of quality services, there are three sub-intermediate results (sub-IRs): services increased, practitioners' skills and knowledge increased, and sustainable effective management. Under the other IR (increasing demand for services), the only sub-IR listed is to improve customer knowledge of family planning.

In order to develop indicators for this framework, the activities to be undertaken by the program must first be recognized. This portion of the results framework shows what activities are planned in order for the program to achieve IR1 and its sub-IRs. These activities are:

A. Provision of support and supplies to community-based distributors
B. Expanding family planning services to additional clinics
C. Clinical training for providers
D. The development of a checklist to monitor the quality of care
E. Management training for supervisors

Note that some of these activities can affect several of the sub-IRs.

Next, indicators that measure these activities would be identified. Here you can see the indicators that are linked to the IR and sub-IR1. Other indicators would be linked to the other sub-IRs. Although it is important to avoid assigning so many indicators that their measurement becomes unachievable, it is risky to rely on a single indicator to measure the significant effects of a project. If the data for that one indicator became unavailable for some reason, it would be difficult to document a significant impact on that result. Therefore, some diversification of indicators tends to strengthen M&E plans. Note that the indicators in these examples are not necessarily "perfect" indicators, just examples to suggest the connections between activities, results, and possible indicators.
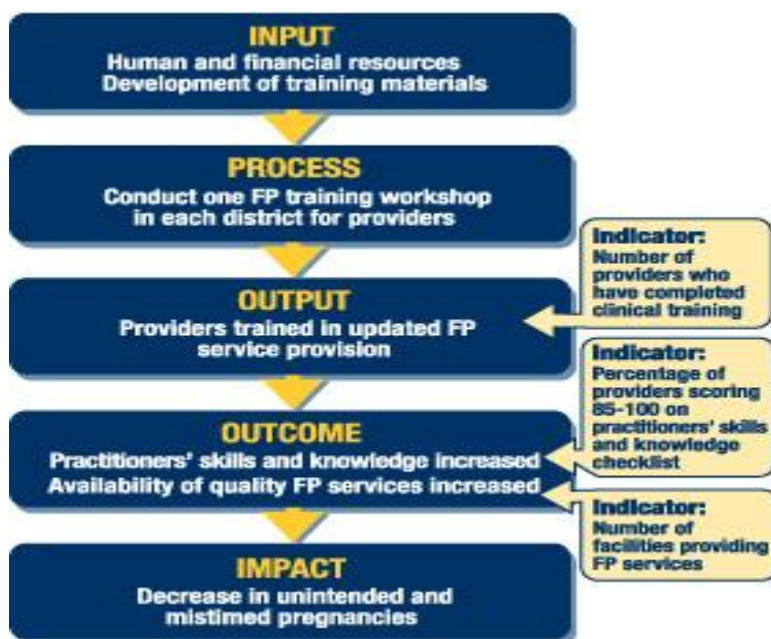
Linking Indicators to Logic Models:

This example depicts how indicators are related to logic models. Here is a logic model for the same activity that was just depicted in the results framework. Three indicators are linked with this activity: Number of providers who have completed clinical training is linked to the output of having trained providers. This indicator can provide information about whether the program is meeting its targets for training providers. Percentage of providers scoring 85-100 on the practitioners' skills and knowledge checklist relates to the intended outcome of improving the knowledge and skills of practitioners. Number of facilities providing family planning services links to the intended outcome of increasing the availability of services. The assumption is that increasing the skills and knowledge of more providers will result in more facilities being able to offer services.

Some common challenges to selecting indicators:

Choosing an indicator that the program activities cannot affect for instance, imagine a program that planned to train health care providers in AIDS prevention and treatment services in an effort to expand access to these services. The authors of the M&E plan selected the UNAIDS indicator the proportion of health care facilities with adequate conditions to provide care. However, many elements can affect this indicator, such as supervision, availability of supplies and equipment, and the drafting of appropriate treatment protocols. None of these factors would be addressed by the planned training program. In using this global indicator, the planners overlooked the fact that it did not accurately reflect their program activities. Better indicators would be the number of clinicians trained or the number of facilities with a trained provider.

Choosing an indicator that is too vague:

For example, imagine a radio campaign aimed at dispelling specific myths about HIV/AIDS transmission. Although the goal of the campaign is ultimately to increase knowledge about HIV/AIDS, the indicator percentage of the population with knowledge about HIV/AIDS does not specify the exact area of knowledge in question.

A better indicator would be one that measured precisely the objective of the campaign: percentage of the population not believing myths X and Y about HIV/AIDS transmission.

Selecting an indicator that relies on unavailable data

For instance, a program working on drug supply issues selected an indicator that stated percentage of days per quarter that service delivery points have stock-outs of drugs. However, information on stock-outs may not be collected often enough to provide this information.

A better indicator would be percentage of service delivery points that experienced a stock-out of drugs at some time during the last quarter. Population-level data may also be unavailable or difficult to collect. For example, baseline numbers for immunization coverage in a certain population may be unknown.

Selecting an indicator that does not accurately represent the desired outcome:

For instance, if an IR states expanded access to antiretroviral (ARV) treatment for pregnant women to prevent mother-to-child transmission (PMTCT) of HIV, what would an appropriate indicator be? Would the indicator percentage of women on ARVs who are pregnant be appropriate?

Answer:

No, this would not be an appropriate indicator because it tells us how many women are pregnant out of all women on ARVs, rather than how many HIV-positive pregnant women are on ARVs. In other words, the numerator for this indicator is the number of women on ARVs who are pregnant and the denominator is the number of women who are on ARVs. Let's say that there were 100 pregnant women on ARVs and a total of 400 women on ARVs. The percentage would be 100/400 or 1/4 or 25%. If the denominator increased, that is, if more non-pregnant women received treatment for HIV but the number of pregnant women receiving treatment stayed the same, the indicator would decrease. For instance, if 1000 women were on ARVs, the percentage would become 100/1000 or 1/10 or 10%. The indicator would reflect this change, but this change is irrelevant to the desired outcome of the program,which is increasing the number of pregnant women on ARVs. Similarly, if the indicator increased, for instance if the percentage of women on ARVs who were pregnant out of all women on ARVs went from 25% to 50%, this may be because more pregnant women received ARV treatment (the desired outcome) but it also could be because fewer non-pregnant women were on ARVs, which would not be related to the desired outcome of the program. Because it is not clear which change occurred, this would not be a good indicator to use. Let's try another example. Would the indicator percentage of people on ARVs who are pregnant women be appropriate?

Answer:
No, this also would not be an appropriate indicator. Here the numerator is the number of pregnant women on ARVs (let's say it is 100 again) and the denominator is the total number of people on ARVs, including all men and women and children receiving treatment (let's say it's 5000). In other words, this indicator would tell us, of all the people on ARVs, the percentage who are pregnant women is 100/5000 or 1/50 or 2%. If this indicator increased over time, say from 2% to 20%, it could be because more pregnant women were receiving ARV treatment (1000/5000, the desired effect of the program) but it could also be because fewer people overall were receiving this treatment (100/500) and the number of pregnant women receiving treatment did not actually change. Similarly, if the indicator decreased, it might be because more people overall were receiving treatment or because fewer women were HIV positive or because there were fewer pregnant women. So the information provided by this indicator would be difficult or impossible to interpret accurately. Let's try one more example: Would the indicator percentage of HIV-positive pregnant women who are on ARVs be appropriate?

Answer:
Yes, this indicator would provide the needed information.
Here the numerator is the number of HIV-positive pregnant women who are on ARVs and the denominator is the total number of HIV-positive pregnant women.
With this indicator, interpretation is not complicated by factors unrelated to the IR, such as a decrease in HIV prevalence among pregnant women or the number of non-pregnant women receiving ARVs.

Guidelines for Selecting Indicators:

Some general guidelines for the selection of indicators are:
Select indicators requiring data that can realistically be collected with the resources available. Select at least one or two indicators (ideally, from different data sources) per key activity or result. Select at least one indicator for each core activity (e.g., training event, social marketing message, etc.). Select no more than 8-10 indicators per area of significant program focus. Use a mix of data collection sources whenever possible. (We will discuss data sources in the next section of this course.)

## Linking Evaluation to the Program Planning and Implementation cycle:

The steps that an organization or program goes through in managing its activities can be presented as a continuous cycle of management actions from assessing needs, to planning and implementing activities, to measuring final programmatic outcomes, the results of which feed back into the planning stage to start the cycle again. Whether an evaluation is conducted internally by

program staff or by an external consultant, there are three main elements in any evaluation:

- planning the evaluation
- conducting the evaluation
- Using the results.

As shown in the diagram below, these elements of evaluation are directly linked to the steps in planning and implementing your program or project.

Evaluation as part of the program planning and Implementation Cycle
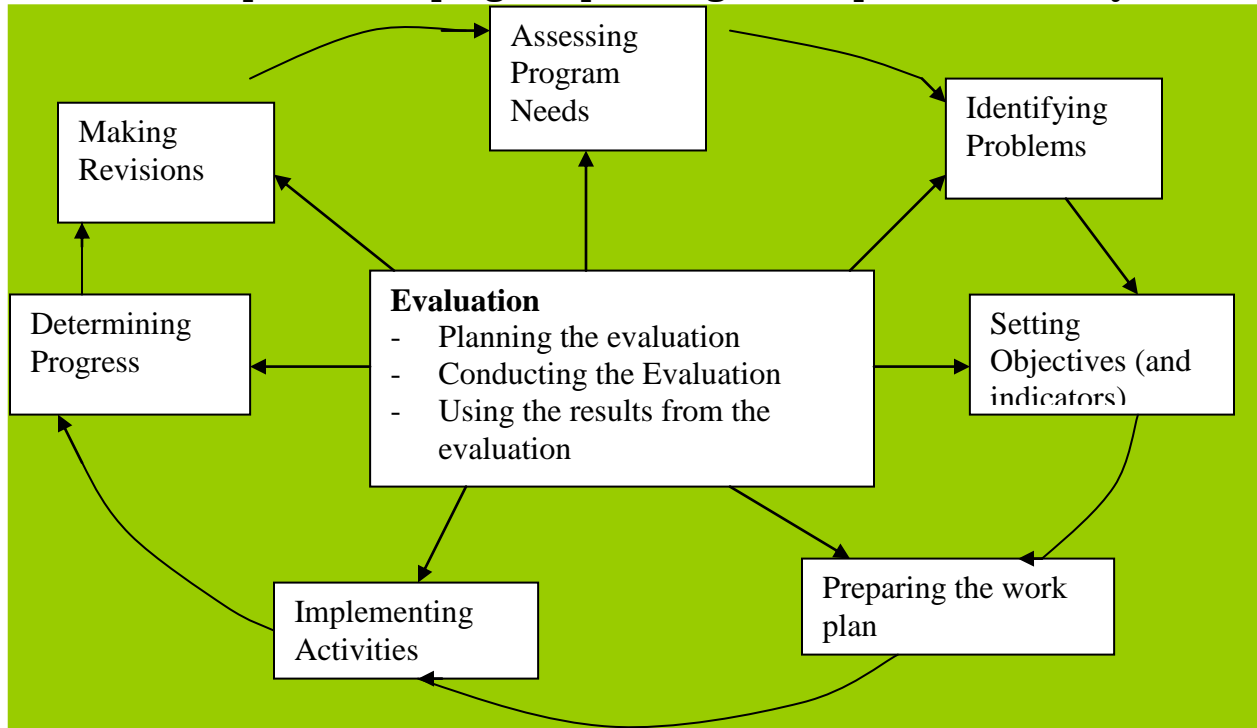
Evaluation is part of and relates to each stage of the cycle, and, as already noted, all of the program's participants-managers, staff, and target population (beneficiaries)-should be involved through out the process. In this way, participants involved in different aspects of the program will understand the need to implement any necessary changes indicated by the evaluation, and will be motivated to work together to achieve the desired results.

Incorporate Evaluation into Program Planning and Implementation:

Looking more closely at the elements and their subsets, you can see how important it is to think about how you will evaluate your program at the same time that you are developing your program objectives and work plan. The following chart breaks down the steps in the evaluation process and shows how they directly relate to the steps in the planning and implementation cycle.

Evaluation process	Link to Program Planning and Implementation process
Planning the Evaluation	**Assessing Program Needs, Identifying problems, Setting Objectives, Preparing the Work plan**
Identify the objective of the evaluation. What do you want to evaluate? Why do you want to evaluate it? Who needs what kind of information? How will they use the information and apply the results to improve the program **Decide on the scope of the evaluation.** Are you measuring the achievement of short term objectives or the long-term impact of the program? Will the evaluation be conducted by the staff person or by an external consultant? How will you involve others from the organization in the evaluation? How much time and money can you afford to spend on the evaluation? **Select indicators and standards for the evaluation.** Are they consistent with the objectives of the evaluation and those of your program? **Identify sources of data and plan for and decide how you will collect the data?** What methodologies will you use in evaluation? Are these methodologies appropriate to the data you want to collect (and appropriate use of your clients and / or staff if you are collecting data from them)?	In order to focus and plan the evaluation, you will need to know the main purpose of the program. What are the primary problems that the program or project intends to address? As you develop your strategic and operational work plans for the program, you will develop both long-term goals and short-term specific objectives. These goals and objectives should also be used as a criteria and indicators for evaluating your program, initially in internal evolutions to see if you are meeting your short-term objectives, and then in later evaluations (either internal or external) to see whether you are making progress towards achieving your long-term goals In addition as part of developing your work plan, you need to decide when evaluations will be undertaken and develop budgets and timelines for conducting them along with other program activities.
Conducting the evaluation	**Implementing activities and determining progress**
Carry out the data collection. Who will be directly involved in collecting data? How will you keep other stakeholders informed of your progress	In order to conduct an evaluation, your program needs to have been implementing program activities for at least several months. Program activities include providing the service

Organize and analyzed the data. How will the data be analyzed – in charts, graphs or narrative summaries?	planned, regularly monitoring and implementation of activities, supervising staff and following routine reporting procedures. Any evaluation that takes place will rely on using data from routine service statistics as well as talking to clients, staff and supervisors.
Using the Results	**Making revisions and assessing the program needs**
Formulate recommendations and present them with the findings. How will you present the results of the evaluation e.g. charts, graphs and who will be involved in making the presentations? What is the best way of making recommendations for change? **Encourage staff to implement the recommendations and make program improvements.** How will you work with staff at all levels to implement the recommendations?	It will be difficult to know how to make revisions in the program and identify new program needs or changes that should be made to the program without evaluation. Here the evaluation process is very closely linked to the program planning and implementation cycle. Whether you want to identify how you can better achieve your objectives and make a grater impact, what you could be doing differently or what new needs may have developed in your target population since the program started, the evaluation will help you determine what you and your staff need to do and will allow you to discuss and formulate actions that can be incorporated into the next work plan.

Types of Data Sources

Data sources are the resources used to obtain data for M&E activities. There are several levels from which data can come, including client, program, service environment, population, and geographic levels. Regardless of level, data are commonly divided into two general categories: routine and non-routine.

Routine data sources provide data that are collected on a continuous basis, such as information that clinics collect on the patients utilizing their services. Although these data are collected continuously, processing them and reporting on them usually occur only periodically, for instance, aggregated monthly and reported quarterly. Data collection from routine sources is useful because it can provide information on a timely basis. For instance, it can be used effectively to detect and correct problems in service delivery. However, it can be difficult to obtain accurate estimates of catchment areas or target populations

through this method, and the quality of the data may be poor because of inaccurate record keeping or incomplete reporting.

Non-routine data sources provide data that are collected on a periodic basis, usually annually or less frequently. Using non-routine data avoids the problem of incorrectly estimating the target population when calculating coverage indicators. Another advantage is that both those using and those not using health facilities are included in the data. Non-routine data have two main limitations: collecting them is often expensive, and this collection is done on an irregular basis. In order to make informed program decisions, program managers usually need to receive data at more frequent intervals than non-routine data can accommodate.

Examples of routine data sources:
☐ Vital registration records
☐ Clinic service statistics
☐ Demographic surveillance

Examples of non-routine data sources:
☐ Household surveys, such as DHS
☐ National censuses
☐ Facility surveys

Different Sources, Same Indicator

Data from different sources can be used to calculate the same indicator, although changes to the metric may be necessary. This illustration depicts one way that routine and non-routine data can be used together to provide for an effective M&E system. For example, basing on the types of evaluation questions depending on the focus of the evaluation

Types of evaluation questions depending on the focus of the evaluation	
Relevance	Are the programs, services and strategies appropriate to the needs they are supposed to address?
Adequacy	Is the program addressing all the needs it is designed to address?
Progress	Is the program doing what it planned to do within the planned

	amount of time and in accordance with the budget?
Effectiveness	Is the program achieving its intermediate objectives and serving the needs of its clients?
Impact	Has the program produced the expected long term results?
Efficiency	Are the results of the program (outputs) appropriate to the use of its resources (inputs)?
Sustainability	Is the program/ organization providing quality services to its clients, increasing or maintaining demand for services, and generating income locally while decreasing its dependency on funds from external donors?

If population-based survey data are used, the definition could be proportion of children age 12-23 months who were immunized with the first dose of DTP vaccine before age 12 months.
Numerator: Number of children age 12-23 months who were immunized with the first dose of DTP vaccine before age 12 months
Denominator: Total number of children age 12-23 months surveyed
If a routine data source is used, such as clinic records, the definition could be proportion of infants 0-11 months of age in a specified calendar year who were immunized with the first dose of DTP vaccine in that calendar year.
Numerator: Number immunized by age 12 months with the first dose of DTP vaccine in a given year
Denominator: Total number of surviving infants less than 12 months of age in the same year
Whenever several options for data sources exist, the advantages and disadvantages of each should be weighed when selecting which to use.

Data Collection

The M&E plan should include a data collection plan that summarizes information about the data sources needed to monitor and/or evaluate the program.
The plan should include information for each data source such as:
The timing and frequency of collection
The person/agency responsible for the collection
The information needed for the indicators
Any additional information that will be obtained from the source will depend on the differences between qualitative and quantitative evaluation methods

Data Quality

Throughout the data collection process it is essential that data quality be monitored and maintained. Data quality is important to consider when determining the usefulness of various data sources; the data collected are most useful when they are of the highest quality.

It is important to use the highest quality data that are obtainable, but this often requires a trade off with what it is feasible to obtain. The highest quality data are usually obtained through the triangulation of data from several sources. It is also important to remember that behavioral and motivational factors on the part of the people collecting and analyzing the data can also affect its quality.

Some types of errors or biases common in data collection include:

Sampling bias: occurs when the sample taken to represent population values is not a representative sample

Non-sampling error: all other kinds of mis-measurement, such as courtesy bias, incomplete records, or non-response rates

Subjective measurement: occurs when the data are influenced by the measurer

Here are some data quality issues to consider:

Coverage: Will the data cover all of the elements of interest?

Completeness: Is there a complete set of data for each element of interest?

Accuracy: Have the instruments been tested to ensure validity and reliability of the data?

Frequency: Are the data collected as frequently as needed?

Reporting Schedule: Do the available data reflect the time periods of interest?

Accessibility: Are the data needed collectable / retrievable?

Power: Is the sample size big enough to provide a stable estimate or detect change?

Data analysis

Analyzing the data you have collected is often one of the most difficult aspects of evaluation and requires careful planning. In analyzing the data, you need to develop skills in finding patterns in the data and to have the ability to isolate critical facts and information from other information that is not so important. How you analyze the data depends greatly on how the data were collected. In some evaluations the major interest may be to measure short-term progress by comparing numbers and information with different service sites with in the program or the organization. In other evaluations, you may want to measure your programs success by comparing the programs achievements against the baseline established by your programs.

Data Use

The term data refers to raw, unprocessed information while information, or strategic information, usually refers to processed data or data presented in some sort of context. Collecting data is only meaningful and worthwhile if it is subsequently used for evidence-based decision-making. To be useful, information must be based on quality data, and it also must be communicated effectively to policy makers and other interested stakeholders. M&E data need to be manageable and timely, reliable, specific to the activities in question, and

the results need to be well understood. The key to effective data use involves linking the data to the decisions that need to be made and to those making these decisions. The decision-maker needs to be aware of relevant information in order to make informed decisions. For example, if sales data from a program to provide insecticide-treated bednets show that the program is successfully increasing bednet distribution, the decision-maker may decide to maintain the program as is. Alternatively, the data may prompt the implementation of a new distribution system and could spur additional research to test the effectiveness of this new strategy compared to the existing one. When decision-makers understand the kinds of information that can be used to inform decisions and improve results, they are more likely to seek out and use this information.

Glossary of Terms

Conceptual Framework	A diagram of a set of relationships between factors that are believed to impact or lead to a target condition. It is the foundation of project design, management, and monitoring. Synonym: Conceptual model
Data Sources	The resources used to obtain the data needed for M&E activities. These sources may include, among many others, official government documents, clinic administrative records, staff or provider information, client visit registers, interview data, sentinel surveillance systems, and satellite imagery.
Evaluation	A process that attempts to determine as systematically and objectively as possible the relevance, effectiveness, and impact of activities in light of their objectives.
Framework	An open set of tools for project planning, design, management, and performance assessment. Frameworks help to identify project elements (goals, objectives, outputs, outcomes), their causal relationships, and the external factors that may influence success or failure of the project. A framework matrix provides an easy overview of key project information that allows assessment of project logic as well as performance monitoring and evaluation.
Goal	A broad statement of a desired, long-term outcome of a program. Goals express general program intentions and help guide a program's development. Each goal has a set of related, more specific objectives that, if met, will collectively permit program staff to reach the stated goal.
Impact	The anticipated end results or long-term effects of a program. For example, changes in health status such as reduced disease incidence or improved nutritional status.
Impact Evaluation	A set of procedures and methodological approaches that show how much of the observed change in intermediate or final outcomes, or "impact," can be attributed to the program. It requires the application of evaluation designs to estimate the

	difference in the outcome of interest between having or not having the program.
Indicators	Quantitative or qualitative measures of program performance that are used to demonstrate change and which detail the extent to which program results are being or have been achieved. Indicators can be measured at each level: input, process, output, outcome, and impact.
Inputs	The human and financial resources, physical equipment, clinical guidelines, and operational policies that are the core ingredients of programs and enable programs to be delivered.
Intermediate Result (IR)	An important result that is seen as an essential step to achieving a strategic objective (SO) in a results framework. IRs are measurable results that may capture a number of discrete and more specific results. IRs may also help to achieve other IRs.
Logic Model	A program design, management, and evaluation tool that describes the main elements of a program and how these elements work together to reach a particular goal. The basic elements in describing the implementation of a program and its effects are: inputs, activities or processes, outputs, outcomes, and impacts. A logic model graphically presents the logical progression and relationship of these elements.
Logical Framework	A dynamic planning and management tool that logically relates the main elements in program and project design and helps ensure that an intervention is likely to achieve measurable results. It helps to identify strategic elements (inputs, outputs, purposes, goal) of a program, their causal relationships, and the external factors that may influence success or failure. It can provide the basis for monitoring progress achieved and evaluating program results.
Metric	The precise calculation or formula that provides the value of an indicator.
Monitoring	Monitoring is the routine process of data collection and measurement of progress toward program objectives. It involves tracking what is being done and routinely looking at the types and levels of resources used; the activities conducted; the products and services generated by these activities, including the quality of services; and the outcomes of these services and products.
Monitoring and Evaluation (M&E) Plan	A comprehensive planning document for all monitoring and evaluation activities within a program. This plan documents the key M&E questions to be addressed: what indicators will be collected, how, how often, from where, and why; baseline values, targets, and assumptions; how data are going to be analyzed/interpreted; and how/how often reports will be

	developed and distributed.
Non-routine data sources	Resources that provide data collected on a periodic basis, usually annually or less frequently. In addition to large-scale household surveys, they may include small-scale, ad-hoc household surveys, special studies, and national censuses.
Objectives	Significant development results that contribute to the achievement of goals and provide a general framework for more detailed planning for specific programs. Several objectives can contribute to each goal. Examples: "to reduce the total fertility rate to 4.0 births by Year X," or "to increase contraceptive prevalence over the life of the program."
Outcomes	The changes measured at the population level in the program's target population, some or all of which may be the result of a given program or intervention. Outcomes refer to specific knowledge, behaviors, or practices on the part of the intended audience that are clearly related to the program, can reasonably be expected to change over the short-to-intermediate term, and that contribute to a program's desired long-term goals. Examples would be "the percentage of clients in a stop smoking program who are nonsmokers six months after the program ends," or "the percentage of married women, 15-44, using contraception one year after a family planning intervention."
Outputs	The results of activities achieved at the program level, in two forms: the number of activities performed (e.g., number of service providers trained) and measures of service utilisation (e.g., number of contraceptives distributed).
Problem Statement	A statement in an M&E plan that describes the nature and extent of the problem to be addressed by an intervention. It clearly states the specific problem and includes a quantitative element that describes the magnitude of the problem and its impact on society. The statement should also include a description of other efforts that are addressing the problem and definitions of relevant terms. An example of a problem statement is: A recent situation analysis of District A demonstrated limited access to young adult reproductive health services. Young adults (ages 15-24) account for 30% of the population in District A, yet reproductive health service statistics show that only 5% of the people using the services were in this age range. Anecdotal evidence from district health workers suggests a high incidence of unwanted pregnancies and a high prevalence of HIV/AIDS among young adults. As part of the national commitment to improve the reproductive health of young adults, the Ministry of Health will implement a five-year project aimed at increasing access to youth-

	friendly health services by improving the infrastructure necessary to deliver such services, and in partnership with the Ministry of Education and Youth, focusing on reproductive health education for youth ages 10-24.

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