

*Training Workshop for*

**MONITORING &  
EVALUATION (M&E)**

**OF**

**POPULATION, HEALTH, AND  
NUTRITION PROGRAMS**

# *OVERVIEW*

## **TRAINING GOALS:**

This training will provide participants an understanding of

- basic concepts and practices to use as they develop and implement performance monitoring and evaluation plans
- challenges and pitfalls to anticipate as they develop and implement performance monitoring and evaluation plans, along with helpful strategies for overcoming them

# TRAINING GOAL 1:

For participants to understand basic concepts and practices that should be used in the development of sound and practical plans for quality performance monitoring and evaluation

## TRAINING GOAL 2:

For participants to understand the complexities inherent in the process of developing and implementing plans for performance monitoring and evaluation, introducing a variety of strategies and techniques that they may use in anticipation of or response to these common challenges

# *LEARNING OBJECTIVES*

## Module 1: Introduction to M&E

- The purpose of Monitoring & Evaluation and M&E plan components

## Module 2: Developing Plans for Performance Monitoring and Evaluation -- Frameworks

- M&E Frameworks' components and uses

## Module 3: Developing Plans for Performance Monitoring and Evaluation -- Indicators and Data Systems

- Indicator selection and standards; Data considerations

# 1: INTRODUCTION TO M&E

The first module covers:

- the purposes of performance monitoring and evaluation
- components of plans for performance monitoring and evaluation

## 2: DEVELOPING PLANS FOR MONITORING AND EVALUATION: FRAMEWORKS

The second module covers:

- the components of conceptual, logical, and strategic frameworks
- how to design frameworks to be useful tools for M&E planning

### 3: DEVELOPING PLANS FOR MONITORING AND EVALUATION: INDICATORS & DATA SYSTEMS

The third module covers:

- characteristics of ideal indicators
- criteria for the practical selection of sound indicators
- indicator definitions and metrics
- data needs and collection strategies for quality M&E

# *Participant Introductions*

*An important element of learning in this training course will be learning from each other. Participant contributions are actively encouraged!*

*Add ideas and information from your own experiences, ask questions, and discuss issues that arise in further detail. Discussions may continue during meals, in your small groups, possibly late into the evenings!*

*Before further exploring our M&E topics, then, let's get to know each other a little better.*

# *Participant Introductions*

*Introduce yourselves to each other* through your answers to the following questions:

What is your name?

Where are you from?

For whom do you work, and what is your position?

Why are you interested in M&E training? What are your goals for the training? For instance, what would you like to understand better or to be able to do better after completing this M&E workshop or manual?

*<... take a break ...>*

# *Module 1*

## *Introduction to M&E*

# INTRODUCTION TO M&E: LEARNING OBJECTIVES

This module covers:

- the purpose of performance monitoring and evaluation
- components of plans for performance monitoring and evaluation

# THE PURPOSE OF MONITORING AND EVALUATION

*The purpose of monitoring and evaluation  
is to measure  
program effectiveness*

# USES OF MONITORING AND EVALUATION

Monitoring and evaluation helps program implementers:

- make informed decisions regarding operations management and service delivery
- ensure the most effective and efficient use of resources
- determine the extent to which the program/project is on track and to make any needed corrections accordingly
- evaluate the extent to which the program/project is having or has had the desired impact

# DISTINGUISHING PERFORMANCE MONITORING AND PERFORMANCE EVALUATION

## Performance Monitoring

Performance monitoring is tracking the key elements of program/project performance over time (inputs, activities, results)

## Performance Evaluation

Evaluation is distinguishing the measured change in targeted results that can be attributed to the program/project intervention, or analyzing inputs and activities to determine their contribution to results

# PERFORMANCE MONITORING VS. EVALUATION

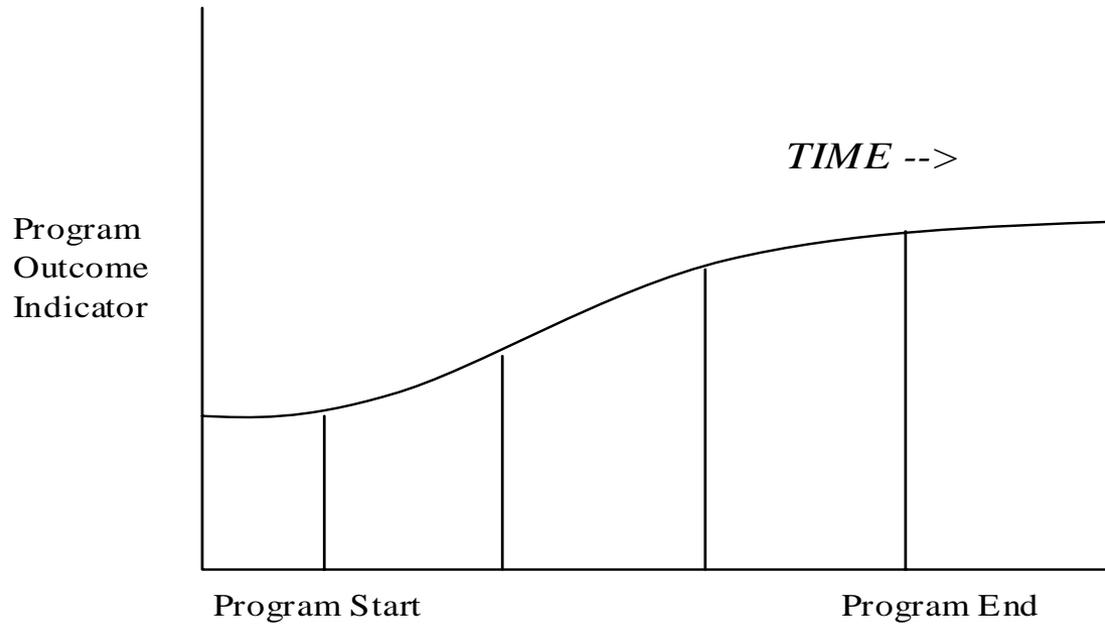
Performance Monitoring can:

- indicate whether the program/project is being implemented as planned
- identify changes over time in inputs, outputs, use of services, and some outcomes
- suggest problem areas and possible solutions

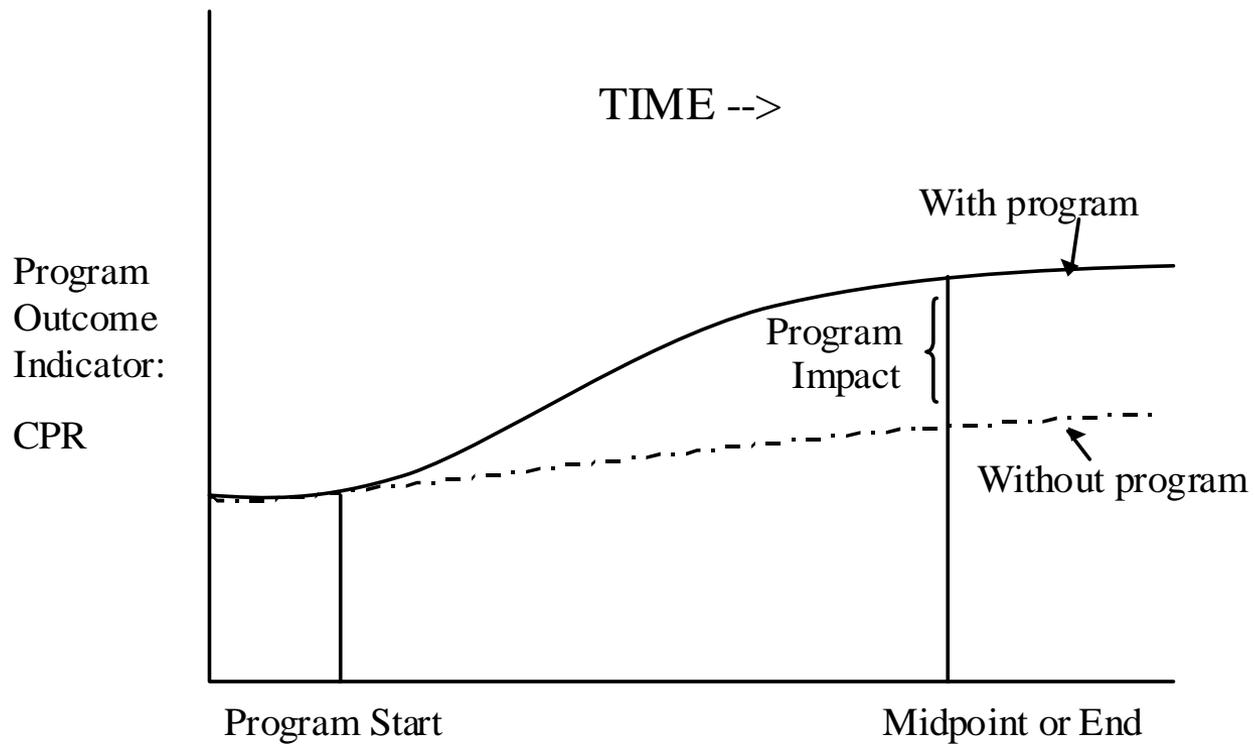
Evaluation can:

- identify changes over time in overall outcomes
- indicate the extent to which observed changes are the result of the program/project intervention

# *ILLUSTRATION OF PERFORMANCE MONITORING*



# *ILLUSTRATION OF EVALUATION (IMPACT ASSESSMENT)*



# M&E PLANNING

## Planning for Monitoring and Evaluation is Crucial

- M&E requires the allocation of project resources
  - time
  - money
  - personnel
- Demonstrating program effects requires empirical proof
  - valid indicators and reliable data
  - baseline values and periodic re-measurement over the project's life
  - further analysis of unexpected or anomalous results
- Management utilization of M&E data requires commitment
  - the planning process is a learning process for administrators and other staff
  - planned resource expenditures yield more efficient resource usage

# PERFORMANCE M&E PLANS: FUNDAMENTALS

M&E Planning requires consideration of the following issues:

- ideas and assumptions underlying program goals -- *ideally, program goals should be determined through a process of context-based needs assessment*
- anticipated relationships between program activities, other key factors, and outcomes

# PERFORMANCE M&E PLANS: COMPONENTS

M&E Plans should typically include the following components:

- underlying assumptions regarding context, activities, and goals
- anticipated relationships between activities, targets, and outcomes
- well-specified conceptual measures and operational definitions (indicators and metrics), along with baseline values, monitoring schedule, data sources, and M&E resource estimates
- partnerships and collaborations required to achieve results
- specific attention to periodic evaluation and use of program performance indicators, with resources allocated at least mid-term and at the project's end.

# M&E PLAN COMPONENTS

*Each component contributes uniquely to the plan's usefulness:*

- Explanation of the program's fundamental assumptions provides a crucial “reality check” for assessing and improving performance where root expectations may need adjustment
- Complete outline designating the relationships connecting program elements provides a “map” to help in finding exact points where performance may be encountering problems
- Superior indicators, metrics, and accompanying data details provide certainty in performance assessment, so that M&E information accurately and fully reflects a program's actual performance for ongoing management and decision-making

# M&E PLAN COMPONENTS

*Each component contributes uniquely to the plan's usefulness:*

- Full information regarding partnerships and collaborations serves as a guide for responsibilities both in creating an effective program and monitoring and evaluating the degree of success in each of its interventions
- Careful consideration and planning attention to the need for periodic evaluation and use of M&E information, including the dissemination of results so that others can share in “lessons learned”, allows the rational allocation of resources throughout the project's life and fruitful endeavors in the future

# ADVANTAGES OF MONITORING AND EVALUATION

Performance Monitoring can:

- assess achievements and shortfalls in program/project implementation while it is ongoing
- reliably record changes over time in inputs, outputs, effects and outcomes
- indicate problems that may be resolved while the project is ongoing

Performance Evaluation can:

- isolate marginal changes in outcomes or impact due to activities and interventions
- carefully analyze qualitative and quantitative data from one project area in order to improve future implementations in similar or different contexts

## *CONCLUDING 1: INTRODUCTION TO M&E*

The purposes of understanding performance monitoring and evaluation include being better able to:

- allocate resources appropriately according to program objectives and measurable outcomes
- fine-tune future programs and their impacts according to real data on practical results

The components of plans for performance monitoring and evaluation include:

- program assumptions, objectives, and projections
- activity descriptions with resources identified in local context
- desired outcomes in terms of objective (measurable) results, with full details on indicators and metrics to determine progress periodically, and specific strategies for data collection, analysis, and use

***Planning for  
Performance Monitoring  
and Evaluation***

***(Modules 2 and 3)***

# PLANNING FOR PERFORMANCE MONITORING AND EVALUATION

Planning for performance monitoring and evaluation is a process that includes all of the following :

- Clearly understanding program/project goals and measurable long-term, short-term, and intermediate objectives
- Clearly defining relationships between program/project goals and objectives, inputs, processes, outputs, and outcomes, and external or environmental factors
- Clearly understanding assumptions about these relationships
- Clearly defining the purposes of the planning effort (monitoring/evaluation objectives)
- Clearly defining indicators and data systems, and goals of data use

# *Module 2*

## *M&E Frameworks*

# M&E FRAMEWORKS: LEARNING OBJECTIVES

This module covers:

- the components of conceptual, logical, and strategic (results) frameworks
- how to design frameworks to be most useful for M&E planning

## MODULE 2 -- M&E FRAMEWORKS

Designing M&E Frameworks assists in the development of

- Clearly understood program/project goals and measurable, long-term, short-term, and intermediate objectives
- Clearly defined relationships between program/project inputs, processes, outputs, and outcomes, and between program/project activities and the external context (environmental factors)

# M&E FRAMEWORKS

## **Conceptual Frameworks:**

Conceptual, or “research”, frameworks are diagrams that identify and illustrate the relationships among systemic, organizational, individual, or other salient factors that may influence program/project operation and the successful achievement of program or project goals.

## **Logical Frameworks:**

Logical frameworks are diagrams that identify and illustrate the linear relationships flowing from program inputs, processes, outputs, and outcomes.

## **Strategic Frameworks:**

Results or strategic frameworks are diagrams that identify and illustrate the causal relationships linking all levels of a program’s strategy -- objectives and impacts.

# M&E CONCEPTUAL FRAMEWORKS

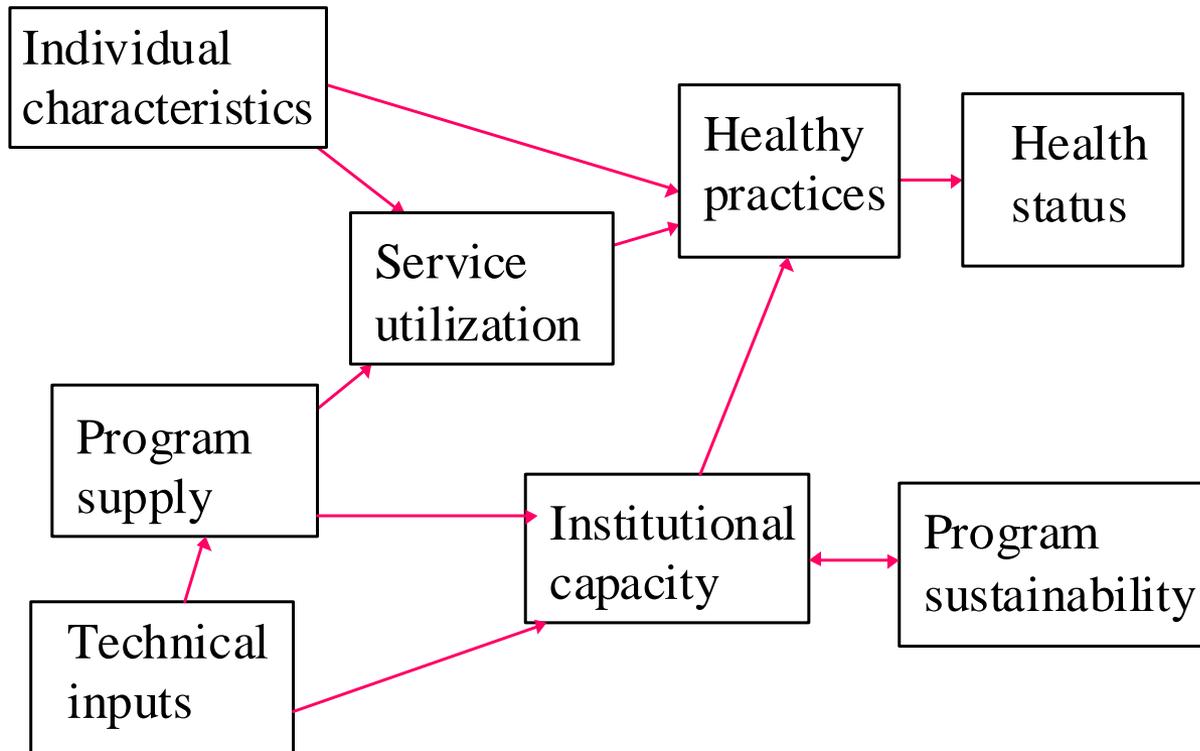
## Conceptual Framework:

*Conceptual, or “research”, frameworks are diagrams that identify and illustrate the relationships among all relevant systemic, organizational, individual, or other salient factors that may influence program/project operation and the successful achievement of program or project goals.*

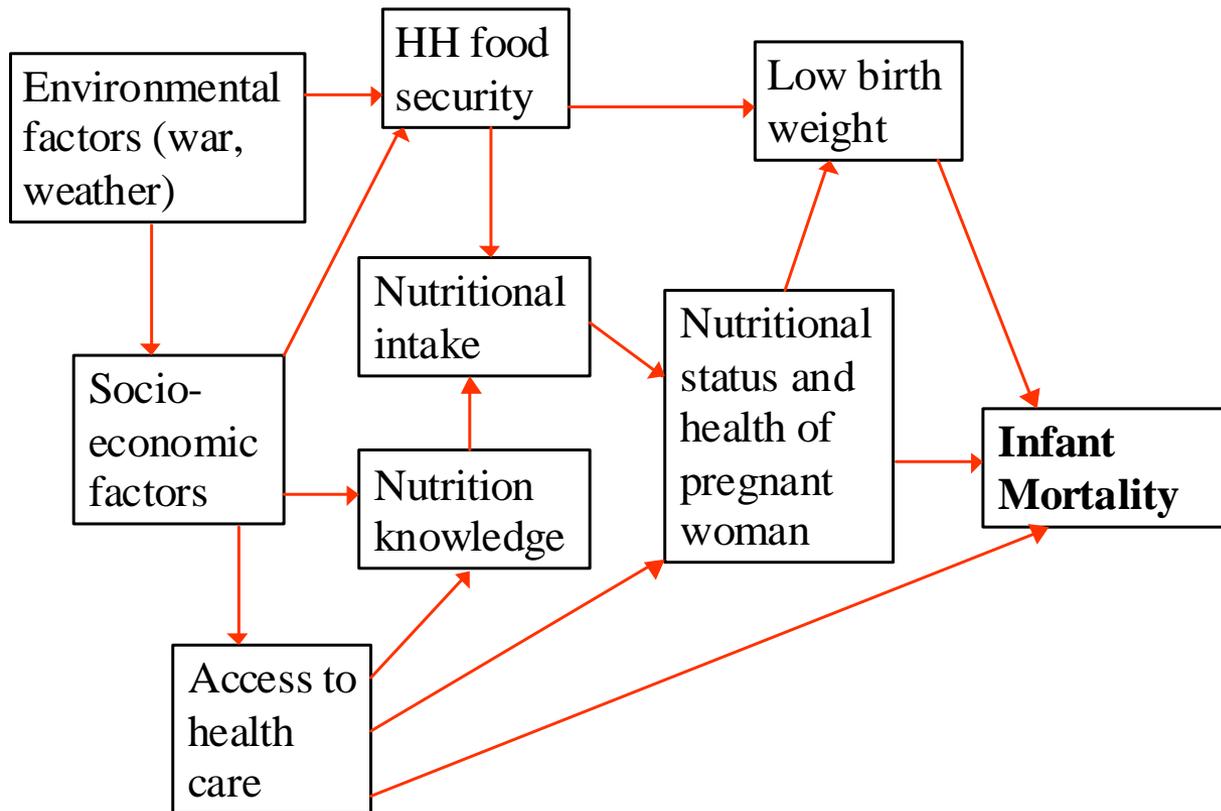
## Purpose:

- Provides a perspective for understanding program objectives within a complete context of relevant factors in a program’s operating environment
- Clarifies analytical assumptions and their implications for program possibilities or limitations on success, as well as measuring and analyzing that degree of success

## *EXAMPLE 1: CONCEPTUAL FRAMEWORK*



## *EXAMPLE 2: CONCEPTUAL FRAMEWORK*



# M&E LOGICAL FRAMEWORKS

## Logical Framework:

*Logical frameworks are diagrams that identify and illustrate the linear relationships flowing from program inputs, processes, outputs, and outcomes. Inputs or resources affect Processes or activities which produce immediate results or Outputs, ultimately leading to longer term or broader results, or Outcomes.*

## Purposes:

- Provides a streamlined interpretation of planned use of resources and desired ends
- Clarifies project/program assumptions about linear relationships between key factors relevant to desired ends

# *EXAMPLE: LOGICAL FRAMEWORK*

**INPUT** → **PROCESS** → **OUTPUT** → **EFFECT** → **OUTCOME**

Develop  
clinical  
training  
curriculum

Conduct  
training  
events

Practitioners  
trained in  
new clinical  
techniques

Increase in  
clients served  
by (newly)  
trained  
providers

Declining  
morbidity  
levels in  
target  
population

# M&E STRATEGIC (RESULTS) FRAMEWORKS

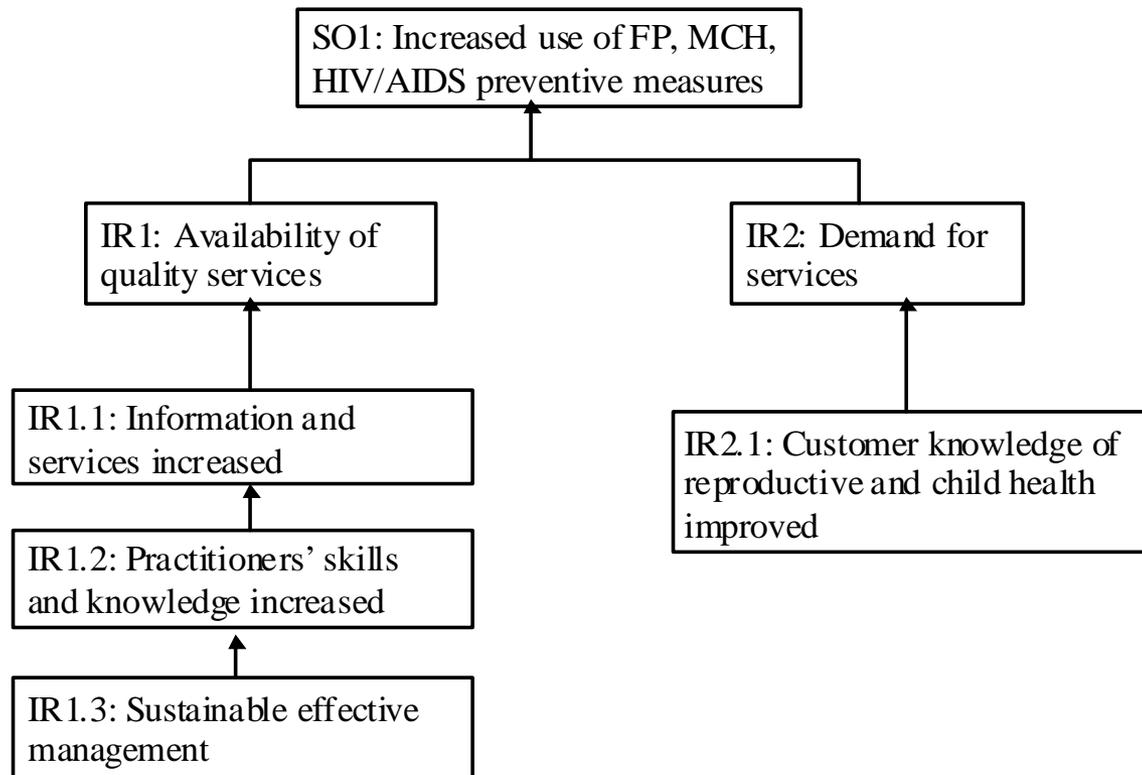
## Strategic or Results Framework:

*Strategic/Results frameworks are diagrams that identify steps, or levels, of results, and illustrate the causal relationships linking all levels of a program's objectives.*

## Purposes:

- Provides a clarified focus on the causal relationships that connect incremental achievement of results to the comprehensive program impact
- Clarifies project/program mechanics and factors' relationships that suggest ways and means of objectively measuring the achievement of desired ends

# *EXAMPLE: STRATEGIC OR RESULTS FRAMEWORK*



## *CONCLUDING 2: M&E FRAMEWORKS*

The purposes of designing performance monitoring and evaluation frameworks include:

- clarifying assumptions, goals, and interrelationships among all kinds of factors relevant to the project or program
- defining levels of performance and desired results in terms of planned activities and realistic, objective impacts

Monitoring and evaluation frameworks incorporate:

- program managers' assumptions and objectives, in a given context to build a
- a schematic design displaying the directional linkages between key program elements and/or planned results, and other relevant factors

# M&E FRAMEWORKS

*Designing an M&E framework assists in determining:*

*Appropriate program elements to measure*

*Appropriate indicators and data*

*Appropriate methodology*

*<... take a break ...>*

# *Module 3*

## *M&E Indicators and Data Systems*

# M&E INDICATORS AND DATA SYSTEMS: LEARNING OBJECTIVES

This module covers:

- indicator definitions and metrics for their calculation
- characteristics of ideal indicators
- criteria for the practical selection of sound indicators
- data needs and collection strategies for quality M&E

# *Module 3 (part 1)*

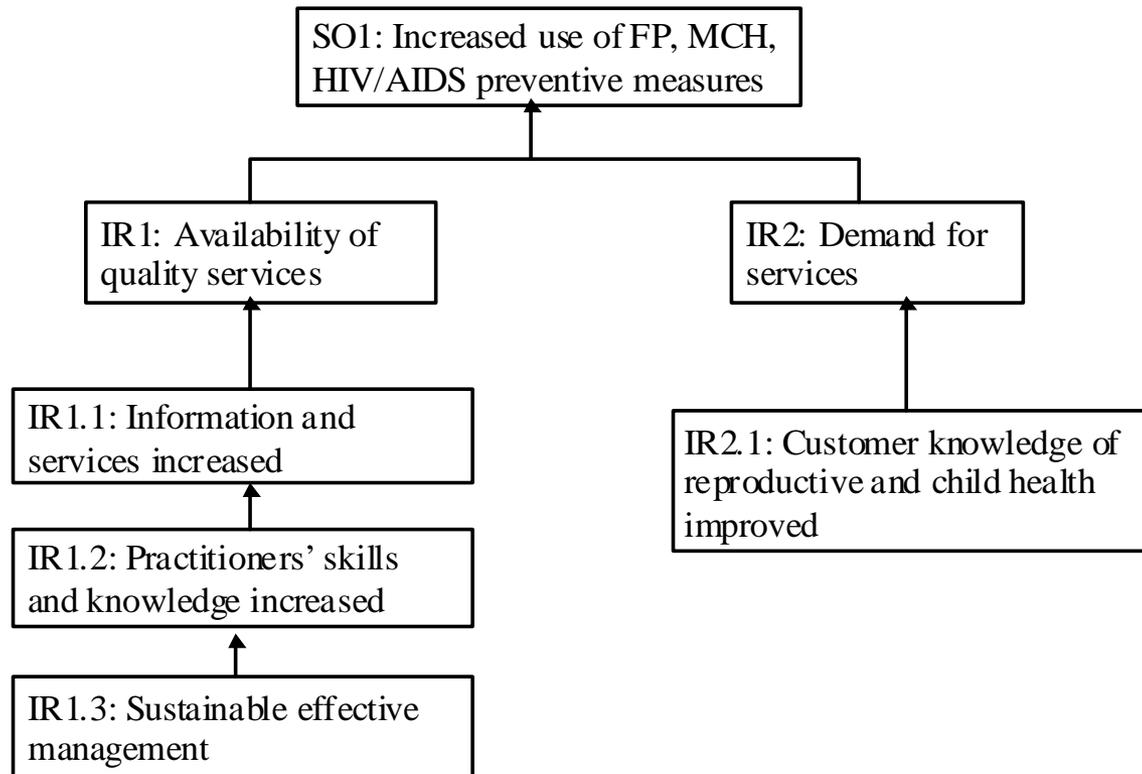
## *M&E Indicators*

# WHAT IS AN INDICATOR?

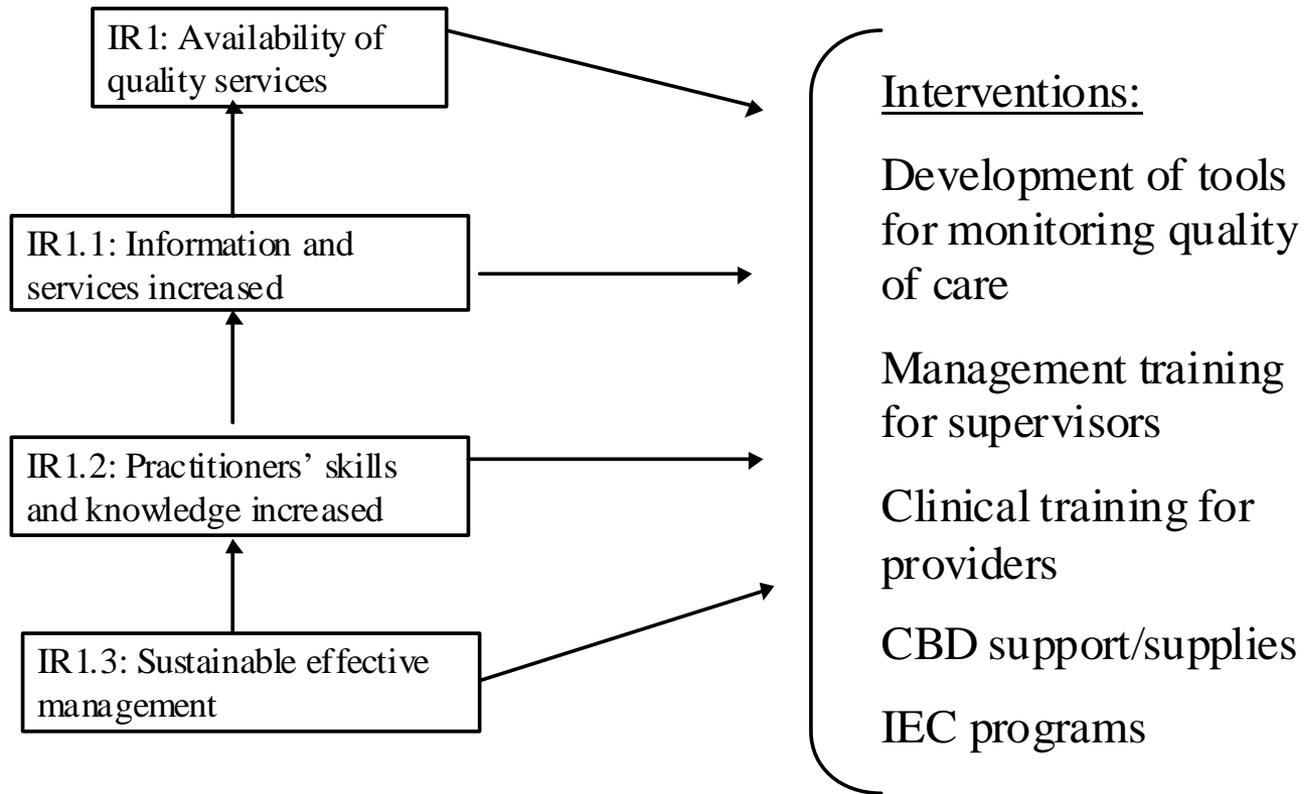
- a variable
- that measures
- one aspect of a program/project

*An appropriate set of indicators will include at least one for each significant element of the program or project (i.e. at least one per box in an M&E framework)*

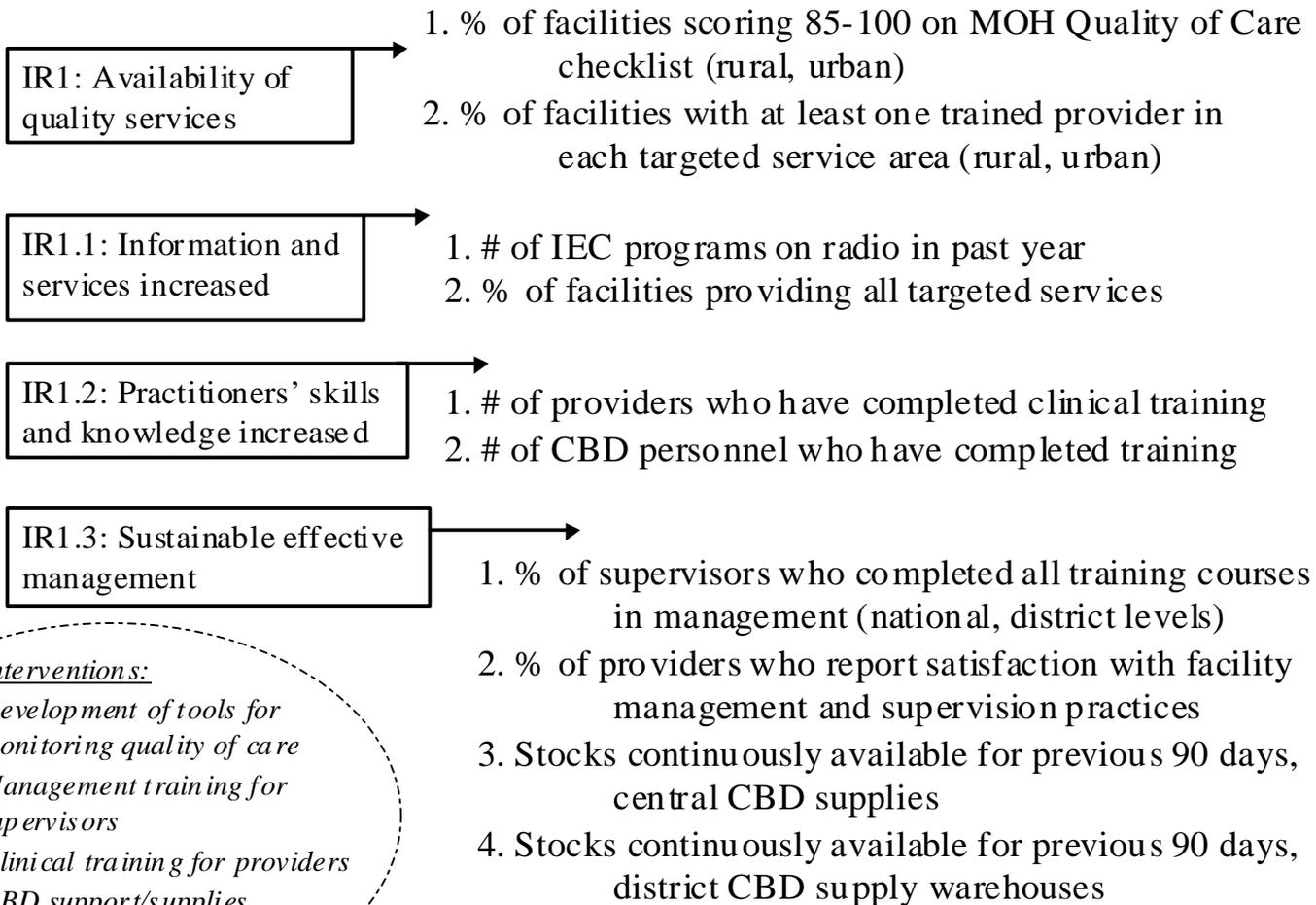
# *SAMPLE RESULTS FRAMEWORK*



# *SAMPLE (PARTIAL) FRAMEWORK WITH ACTIVITIES*



# *SAMPLE (PARTIAL) FRAMEWORK WITH INDICATORS*



*Interventions:*

*Development of tools for monitoring quality of care*

*Management training for supervisors*

*Clinical training for providers*

*CBD support/supplies*

*IEC programs*

# *INDICATORS WITH METRICS (example 1)*

IR 1: Availability of quality services

## **Indicators:**

1. % of facilities scoring 85-100 on Quality of Care checklist (rural, urban)

2. % of facilities with at least one trained provider in targeted service areas (rural, urban)

## **Metrics:**

1a. Numerator: # of rural facilities scoring 85 or better on checklist for quality of care.

Denominator: Total # of rural facilities that were checked and scored

1b. Numerator: # of urban facilities scoring 85 or better on QoC checklist

Denominator: Total # of urban facilities checked and scored

1c. (Could also calculate an aggregate percentage)

2a-f. Numerator: # of (rural, urban) facilities with at least one trained provider in (MCH, STDs, FP)

Denominator: Total # of (rural, urban) facilities

Alternative 2a-f. Could limit denominators to count only those facilities that offer the service for which trained providers are counted in the numerator

## *INDICATORS WITH METRICS (example 2)*

IR 1.2: Practitioners' skills and knowledge increased

### **Indicators:**

1. # of providers who have completed clinical training

2. # of CBD personnel who have completed training

### **Metrics:**

1. Number of providers who have completed a clinical training course in an area in which they provide client care (e.g., MCH, STDs, FP)

Note: The M&E Plan should determine and specify how to calculate this count. For instance, a provider may have completed a basic course and an advanced course. The M&E Plan should specify that this is a count of 1 provider. Data for this indicator therefore must come from provider interviews, not a count of trainees in courses, in order to avoid double counting.

2. Number of CBDs who have completed a course training them in relevant duties and responsibilities

Note: The M&E Plan should determine and specify the appropriate period within which training should have taken place, e.g. “ever trained” or “trained in the past year”, or another time period. Where attrition rates are a concern, some determination of “active” trained personnel may need to be included in the metric.

# CHARACTERISTICS OF A GOOD INDICATOR

- Validity: Measures in fact what it intends to measure conceptually
- Reliability: Minimizes measurement error
- Precision: Is operationally defined in clear terms
- Independence: Non-directional and unidimensional, depicting a specific, definite value at one point in time
- Timeliness: Provides a measurement at time intervals relevant and appropriate in terms of program goals and activities
- Comparability: Generates corresponding or parallel values across different population groups and program/project approaches

# CHARACTERISTICS OF A GOOD INDICATOR

Validity -- The indicator measures what it is intended to measure

# CHARACTERISTICS OF A GOOD INDICATOR

Reliability: The indicator minimizes measurement error

Types of measurement error --

Sampling Error

Non-Sampling Error

Subjective Measurement

# GOOD CHARACTERISTICS FOR INDICATORS

Precise Definition: Is operationally defined in clear terms

# GOOD CHARACTERISTICS FOR INDICATORS

Independence: Non-directional and unidimensional,  
to describe a discrete result at a single point in time

# GOOD CHARACTERISTICS FOR INDICATORS

**Timeliness:** Provides a measurement over periods of time of interest with data available for all appropriate intervals

# GOOD CHARACTERISTICS FOR INDICATORS

Comparability: Assists in understanding results across different population groups and program/project approaches

# ADDITIONAL FACTORS INFLUENCING INDICATOR SELECTION

- Data availability
- Resources
- Programmatic needs
- Donor requirements

# OPERATIONALIZING INDICATORS

Definition: To operationalize an indicator is to identify exactly how a given concept or behavior will be measured.

Challenges:

- Subjective judgment
- Local Conditions
- Unclear yardsticks

*<... take a break ...>*

*Module 3 (part 11)*

*M&E Data Systems*

# MODULE 3 -- DATA SYSTEMS

Components of a Clearly Defined Data System:

- Multiple, Operationally Defined Indicators
- A Variety of Appropriate Data Sources
- Baseline and Target Values
- Feasible Data Collection Plan and Budget
  - Specified Frequency
  - Identified Responsibility

# LEVELS OF DATA

- Policy or Program Level
- Population Level
- Service Environment Level
- Client Level
- Spatial/Geographic Level

# DATA SOURCES AND TOOLS AT THE POLICY/PROGRAM LEVEL

## Sources:

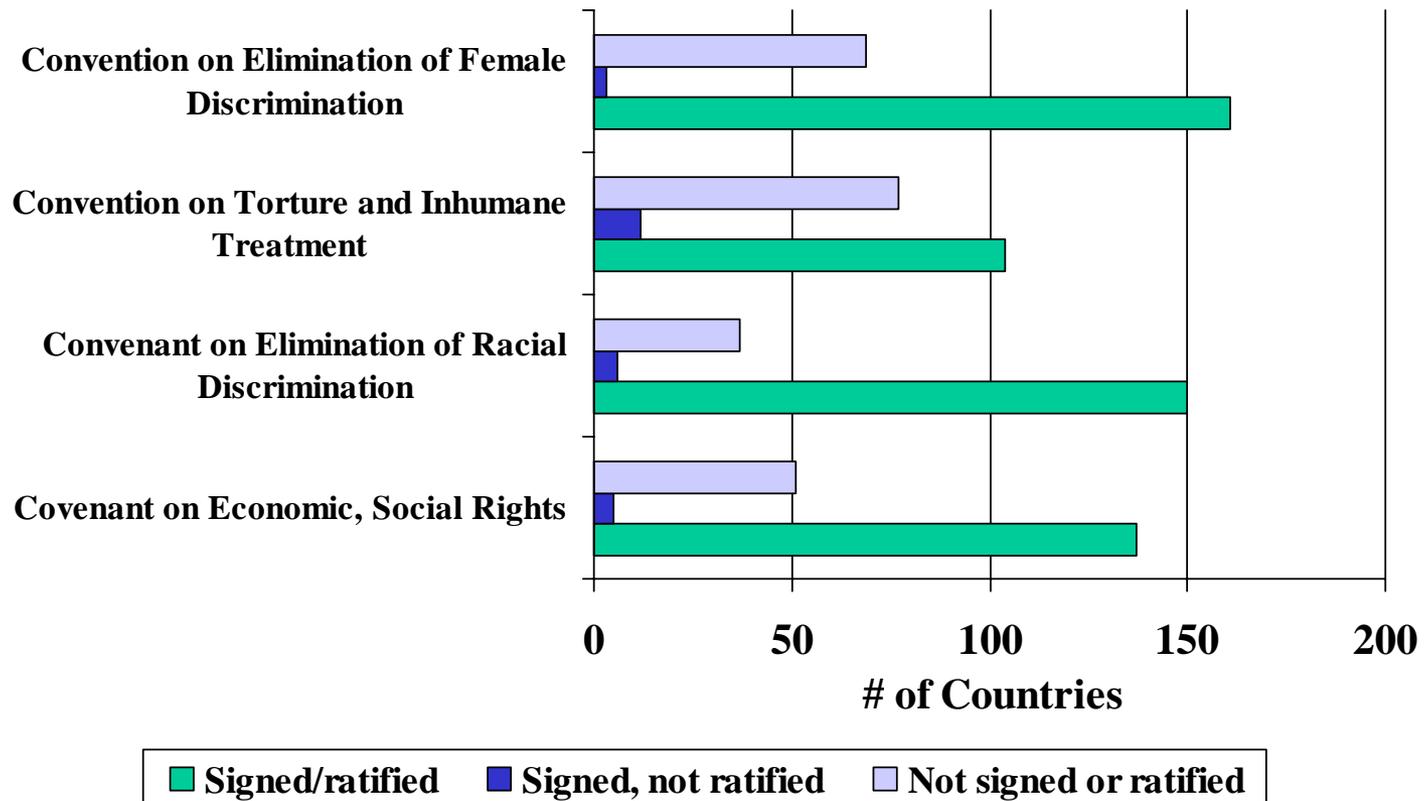
- Official documents (e.g., legislative and administrative documents)
- National budgets or other accounts data
- Policy inquiries
- Reputational rankings (e.g., program efforts scores)

## Tools:

- Indexing questionnaires (for country specialists and rankings)
- Special/contract studies

# EXAMPLE: POLICY/PROGRAM LEVEL DATA

## Global Record on International Human Rights Instruments



# DATA SOURCES AND TOOLS AT THE SERVICE ENVIRONMENT LEVEL

## Sources:

- Administrative records (e.g., service statistics, HMIS data, financial data)
- Service delivery point information (e.g., audit information, inventories, facility survey data)
- Staff or provider information (performance or competency assessments, training records, staff/provider data, quality of care data)
- Client visit registers/compilations

## Tools:

- Health Service Information Systems
- Facility sample surveys
- Performance monitoring reports
- Facility (Service Delivery Point) records

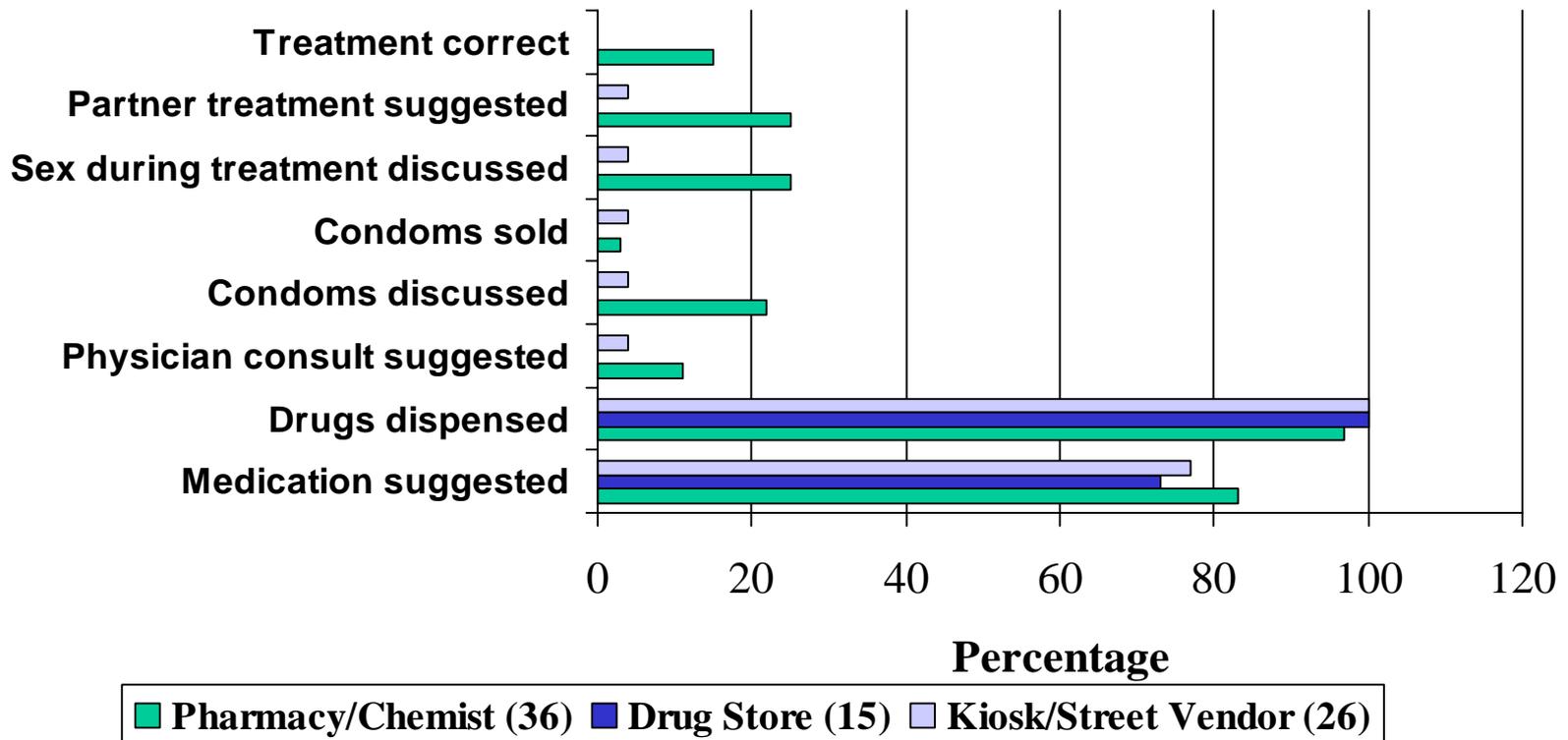
# HEALTH MANAGEMENT INFORMATION SYSTEMS (HMIS)

Note: An important way of monitoring routine data over time is through a Health Management Information System. An HMIS is a system for ongoing (routine) collection and reporting of data about client service delivery. In many countries, this system operates at the national level. Ideally, these routine data are collected from a comprehensive set of service delivery points, and should cover topics such as:

- Costs
- Stockouts
- Births
- Mortality
- Morbidity
- Numbers of clients seen, referred (inpatient; outpatient)
- Numbers of clients by types of service

# EXAMPLE: SERVICE ENVIRONMENT LEVEL DATA

## Informal health system practices, Zambia



# DATA SOURCES AND TOOLS AT THE INDIVIDUAL LEVEL

## Sources:

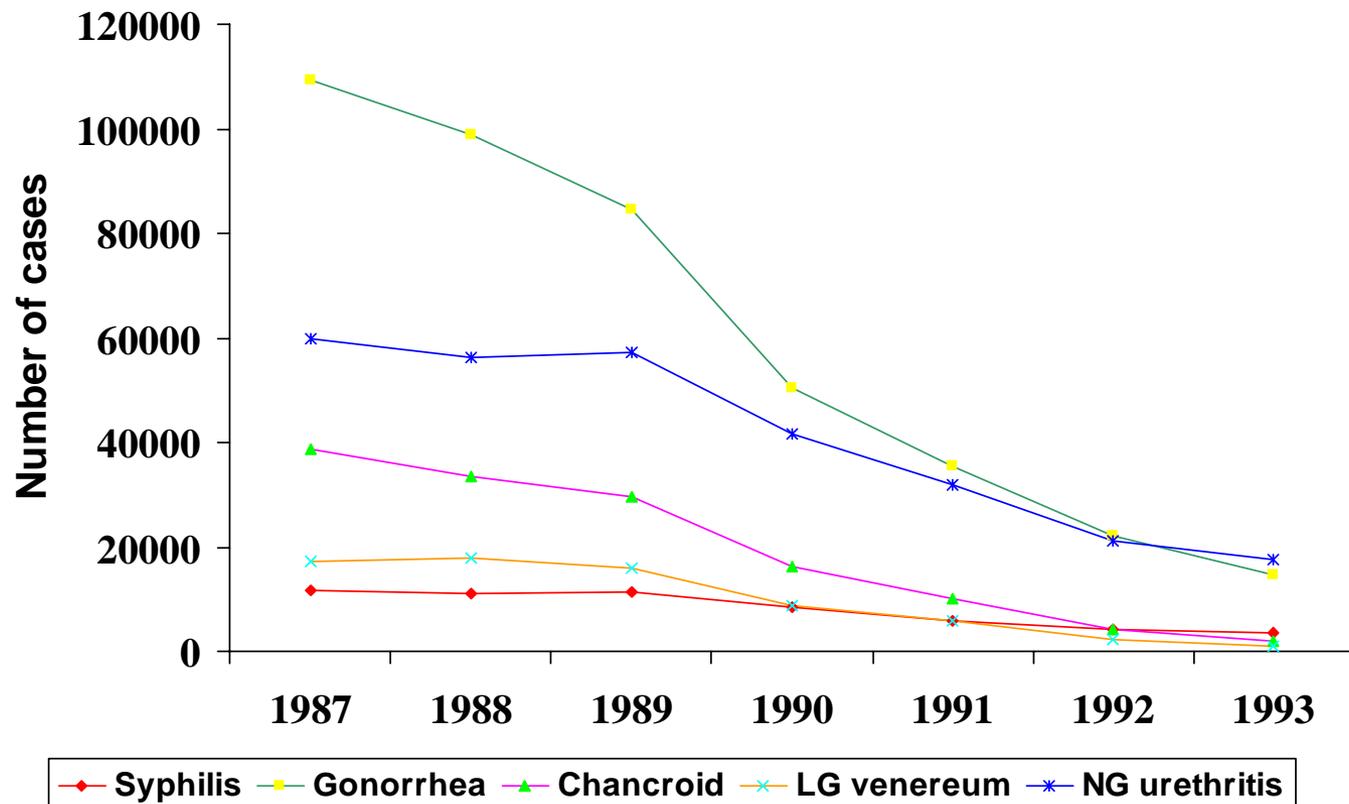
- Case surveillance (e.g., epidemiology of disease)
- Medical records
- Interview data
- Provider-Client interactions (clinical/technical or interpersonal skills)

## Tools:

- Case reports
- Client register analysis
- Patient flow analysis
- Direct observation

# EXAMPLE: INDIVIDUAL LEVEL DATA

Male STD Cases at Thai Government Clinics: 1987-1993



# DATA SOURCES AND TOOLS AT THE POPULATION LEVEL

## Sources:

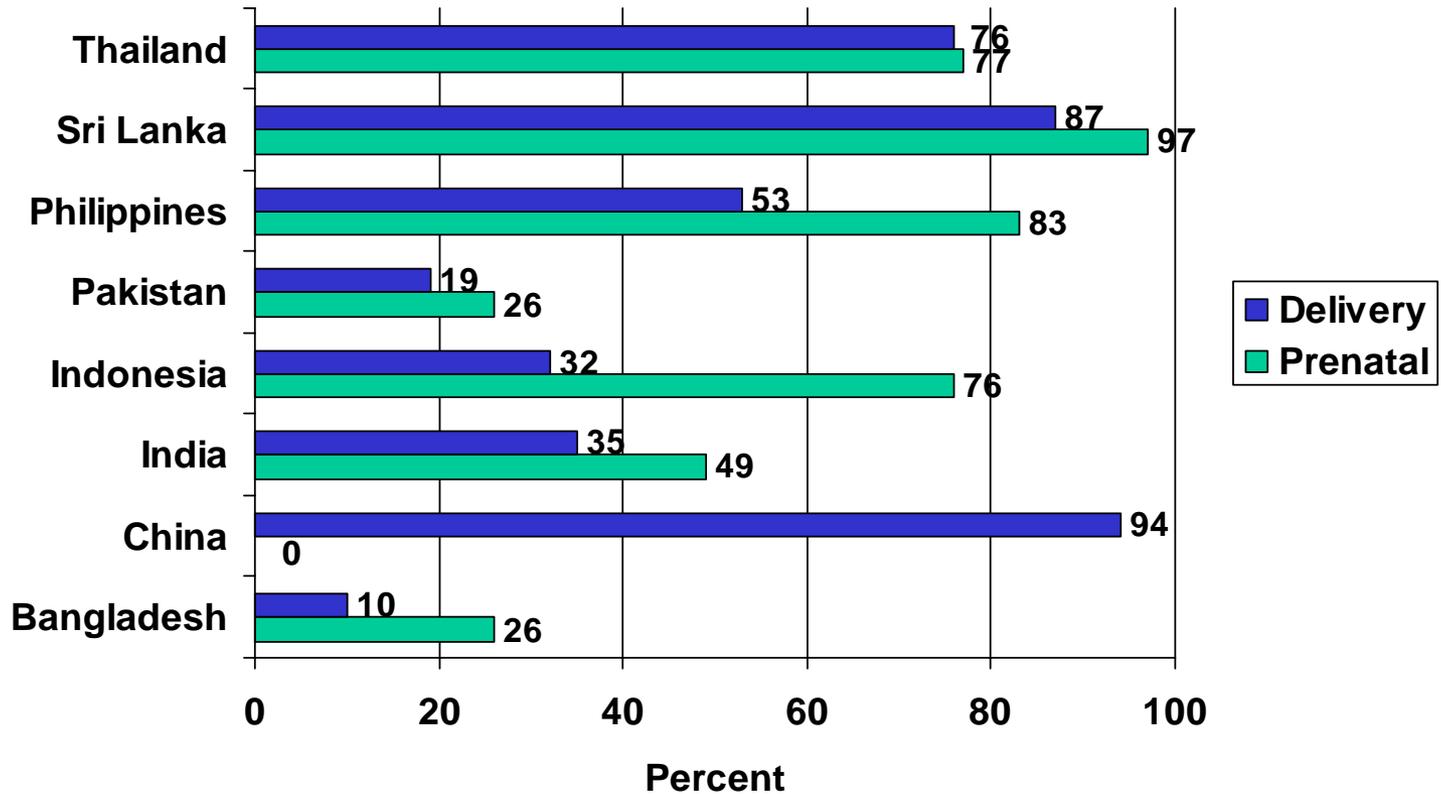
- Government Census Office
- Vital registration systems (e.g., birth and death certificates)
- Sentinel surveillance systems
- Sample households or individuals
- Special population samples (demographic or occupational group, or geographic sector)

## Tools:

- Birth certificates
- Household/Individual/Special surveys
- Census forms

# EXAMPLE: POPULATION LEVEL DATA

Percent of Women Receiving Prenatal Care and Professional Assistance at Delivery



# DATA SOURCES AND TOOLS AT THE SPATIAL/GEOGRAPHIC LEVEL

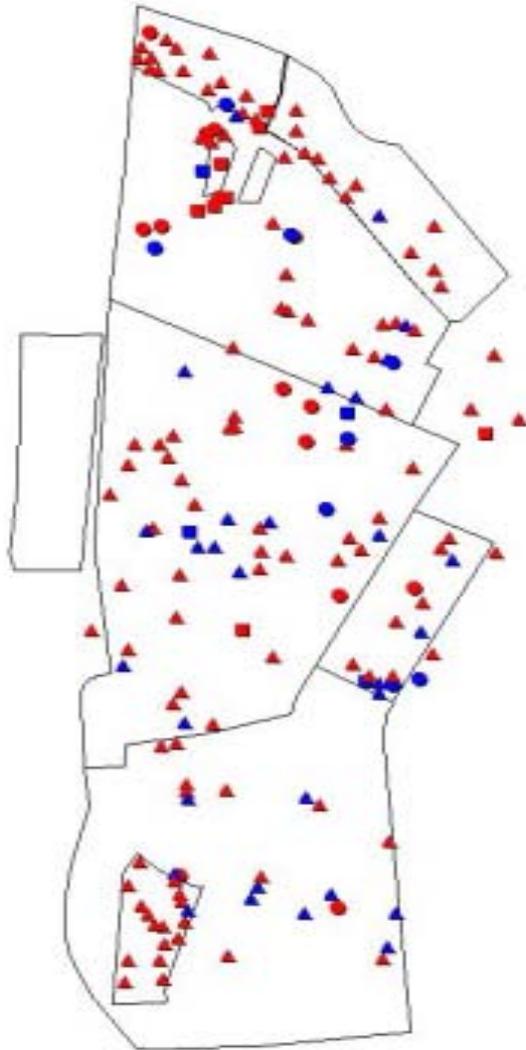
## Sources:

- Satellite imagery and areal photography
- Digital line graphs and elevation models
- Cadastral maps (land ownership)

## Tools:

- Global Positioning System
- Computer software programs

# EXAMPLE: GEOGRAPHIC LEVEL DATA



**Patrons Meet New Partners and  
No Condoms Available by Site Type**

AIDS HTA Study  
A Township in Cape Town, South Africa



University of North Carolina  
at Chapel Hill



University of Cape Town

**Legend**

Meet New Partners  
and Condoms Available

Type of Site	No	Yes
	Bar	●
Shebeen	▲	▲
Other	■	■

# DIFFERENT DATA SOURCES - SAME INDICATOR

Different data sources can be used to measure the same indicator. In some cases, changes to the defined metric are required depending on data sources selected.

## % of live births attended by a trained professional in last 12 months

- Option 1:
  - Numerator: # of live births in the district attended by trained professional (doctor or trained nurse or midwife) in last 12 months
  - Denominator: # of live births in the district in last 12 months
- Option 2:
  - Numerator: # of women having a live birth in last 12 months reporting being attended by a trained professional
  - Denominator: # of women having a live birth in last 12 months

# DIFFERENT DATA SOURCES - SAME INDICATOR

Pros and cons of different data sources should be weighed when there is more than one option.

## % of children 12-23 months receiving all three polio vaccines

- Numerator: # of children 12-23 mos receiving all three polio vaccines
- Denominator: # of children 12-23 mos

### Data sources:

- Option 1: numerator from individual client records at facilities, denominator from census
- Option 2: numerator from HMIS, denominator from census
- Option 3: numerator and denominator from sample household survey (interview with mother)
- Option 4: numerator and denominator from sample household survey (review of child's immunization card)

# MODULE 3 -- DATA SYSTEMS

Components of a Clearly Defined Data System:

- Multiple, Operationally Defined Indicators
- A Variety of Appropriate Data Sources
- Baseline and Target Values
- Feasible Data Collection Plan and Budget
  - Specified Frequency
  - Identified Responsibility

# *Additional Issues*

# How much is enough?

- at least one or two indicators per result (ideally with different data sources)
- at least one indicator for every activity
- no more than ten or fifteen indicators per area of significant program focus
- try to include a variety of data collection activities or sources

# LINKING DATA

- Data can be linked from different sources, across different levels, or over time
- Linking data appropriately requires planning, preferably prior to data collection
- Understanding linked data can provide depth and continuity to enrich otherwise discrete points of information

# LINKING DATA

## Why link?

- Survey data sets (e.g., household and facility information) can be linked to compare services available and health outcomes across geographical units
- Geographical and survey data can be linked to examine the effects of physical attributes on service utilization
- Time series and panel data can help build causal explanations of program or project effects

## Why not link?

- May not be necessary for a given program in a given context
- Improper methodology can confuse issues more than explain them
- Analyzing linked data more appropriate for evaluation than monitoring

# LINKING DATA

## Examples

- Population and facility data can be linked to ascertain health outcomes correlated with service availability, training, or quality of care (e.g. % of live births in catchment area attended by a trained personnel or % of women exclusively breastfeeding until 6 months among women going to facilities where provider training took place.)
- Facility and client data can be linked to learn about program expenditures per new family planning acceptor
- Facility and staff data can be combined to provide information about the proportion of clients per provider or the proportion of doctors per facility

# DATA QUALITY

Without sound and reliable data, the best-designed indicators will be useless.

Types of measurement error --

- Sampling Error

- Non-Sampling Error

- Subjective Measurement

# DATA QUALITY

Data Quality Issues:

- Will the data cover all of the elements of interest? (Coverage)
- Is there a complete set of data needed for each element of interest? (Completeness)
- Have the instruments been tested to ensure validity and reliability of data? (Accuracy)

# DATA QUALITY

## Data Quality Issues:

- Are the data collected as frequently as needed? (Frequency)
- Does the available data reflect the time periods of interest (Reporting Schedule)
- Can the data needed from each source be collected/retrieved? (Accessibility)

# QUALITATIVE AND QUANTITATIVE DATA

Uses of Quantitative and Qualitative Data:

- Quantitative data are necessary for tracking trends accurately
- Qualitative data are useful for understanding the context in which the trends occurred and to interpret the quantitative data accurately

## *CONCLUDING 3: M&E INDICATORS AND DATA*

The purposes of understanding indicators and data systems include:

- better design of indicators using better data for most effectively improving program results

Indicators and Data Systems for performance M&E incorporate:

- an understanding of the program's assumptions, underlying and operational frameworks, activities, and context
- an understanding of the strengths and limitations of available information, in order to maximize its utilization in management for results

***PHN M&E***  
***Core Training Modules:***  
***Wrap-Up***

# PERFORMANCE MONITORING AND EVALUATION

- Modules 1-3 have introduced basic concepts and practices useful for both Performance Monitoring and Evaluation.
- Understanding of additional concepts and practices is indispensable for planning and implementing both Performance Monitoring and Evaluation.
- Ideally, both performance monitoring and evaluation should be built into program/project planning and design.
- In the real world, choices must be made based on greatest need, data availability/accessibility, and financial and political realities.

## *CONCLUDING: INTRODUCTION TO M&E*

The purposes of understanding performance monitoring and evaluation include:

- appropriate allocation of resources according to program objectives and measurable outcomes
- fine-tuning of future program impact according to current real results

The components of plans for performance monitoring and evaluation include:

- program activities and resources in local context
- program managers' assumptions and objectives
- desired impacts / objective results, indicators to determine progress periodically, and detailed strategies for data collection