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Federal Ministry of Health,  
Ethiopia

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# HMIS Information Use Workshop

## Training of Master Trainers

### 8-12 July, 2013

### Hotel Siyonat, A.A

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**HMIS Scale-up Project, Ethiopia**

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SNNP Regional Health Bureau

# 1.1 Training Objectives

At the end of the workshops the participants will be able to:

- Define concepts, roles and functions of HIS and explain data source of HIS
- Discuss determinants of HMIS performance using PRISM framework
- Apply M&E framework, M&E plan and explain relationship of M&E to HMIS
- Explain how HMIS is used for monitoring and improving health programs

# 1.1 Training Objectives...(2)

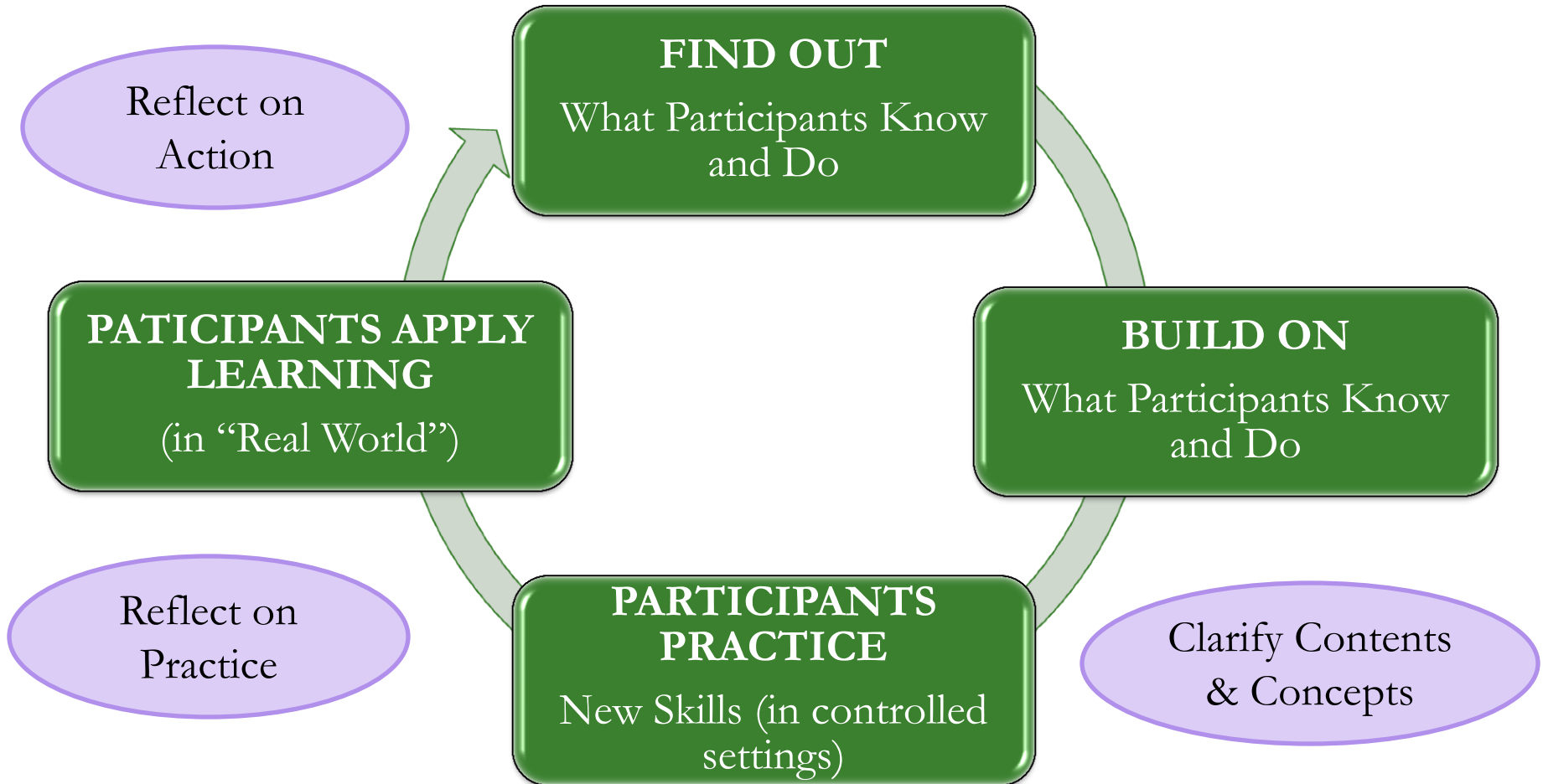
- Define data quality and apply data quality assurance tools to improve data quality
- Practice data analysis, interpretation and presentation for evidence based decision making
- Apply Stakeholder analysis matrix to identify and engage HMIS stakeholders
- Describe HMIS forums for evidence based decision making
- Describe actions for sustaining the culture of HMIS information use

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# 1.2 Training Sessions

1. Welcome and Introduction to the Training
  2. Health Information System (HIS)
  3. HMIS for performance management
  4. M&E and HMIS
  5. Relationship of HMIS indicators with Health Programs
  6. HMIS Data Quality
  7. Decision Making in the context of Performance Improvement
  8. Forum for HMIS Information use
  9. Sustaining a Culture of Information Use
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# 1.3 Experiential learning cycle



Beth Gragg: Tools From The Field. John Snow Inc. and World Education

# 1.4 Adult Learning Principles

- Respect and learn from participants' experience
- Praise/appreciate the participants
- Listen to others and understand their perspectives
- Make participants feel comfortable by valuing their contribution
- Apply 20/40/80 rule – learn 20% by listening, learn 40 by listening and seeing and learn 80% by listening, seeing and doing.
- Involve a combination of thinking, feeling and acting
- Relevance to daily work
- Immediate results
- Having fun – entertain and educate

# Session 2: Health Information System (HIS)

## Session Objectives

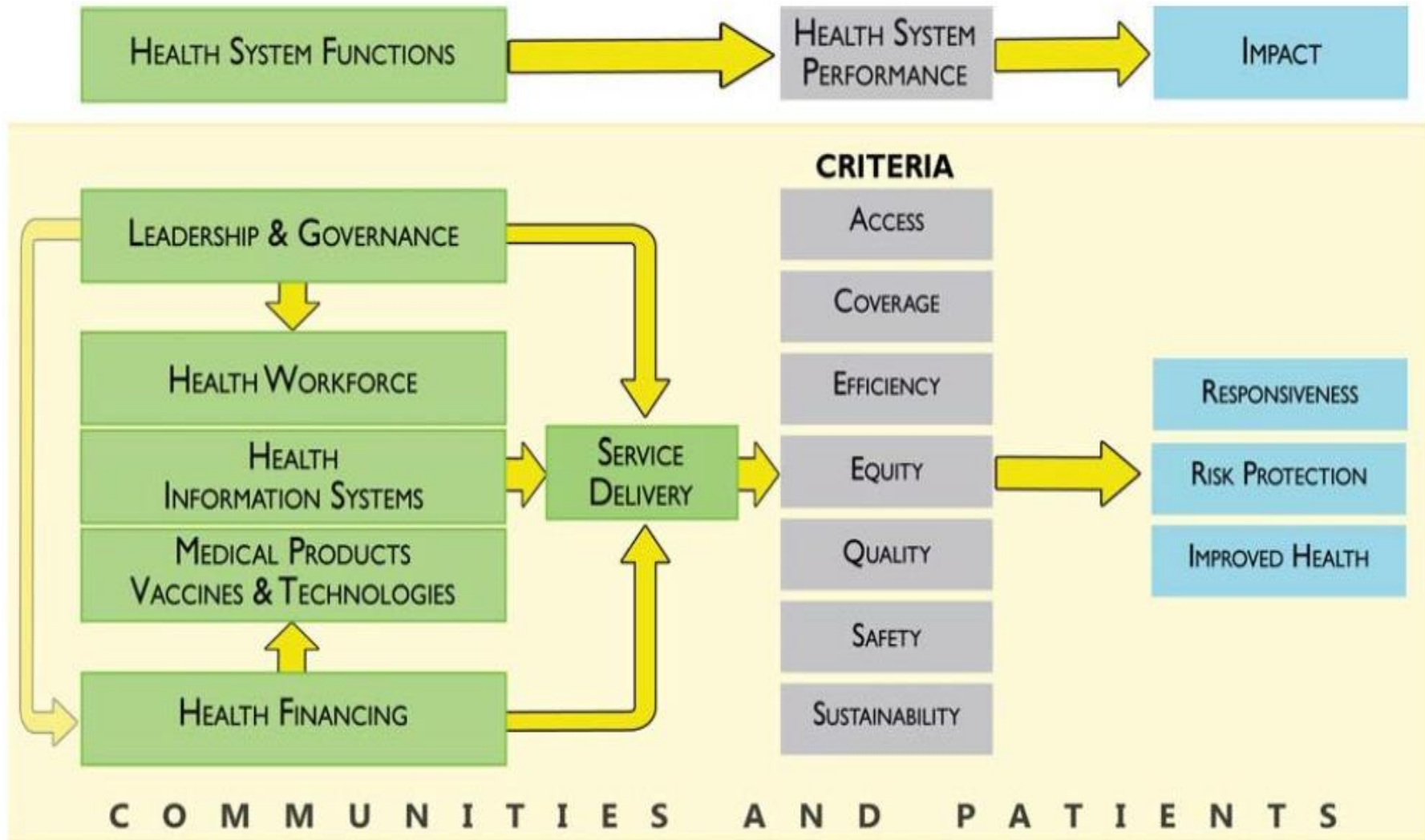
- By the end of the session the participants will be able to:
  - Define concepts, roles and functions of HIS in the context of the health systems building blocks
  - Explain different data sources for HIS

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## 2.1 WHO's definition of Health System

- A health system consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health. This includes efforts to influence determinants of health as well as more direct health-improving activities.

## 2.2 Health Systems Building Blocks



## 2.3 Products of Health Information System

- A well-functioning health information system is one that ensures the production, analysis, dissemination and use of reliable and timely information on health determinants, health systems performance and health status.

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## 2.4 Exercise

**“Reliable and timely health information  
can make a difference”**

# 2.5 Components of Health Information System

## ■ HIS Resources

- ❑ HIS coordination and leadership
- ❑ HIS information policies
- ❑ HIS financial and human resources
- ❑ HIS infrastructure

## ■ Indicators

## ■ Data Source

- ❑ Censuses
- ❑ Civil registration
- ❑ Population surveys
- ❑ Individual records
- ❑ Service records
- ❑ Resource records

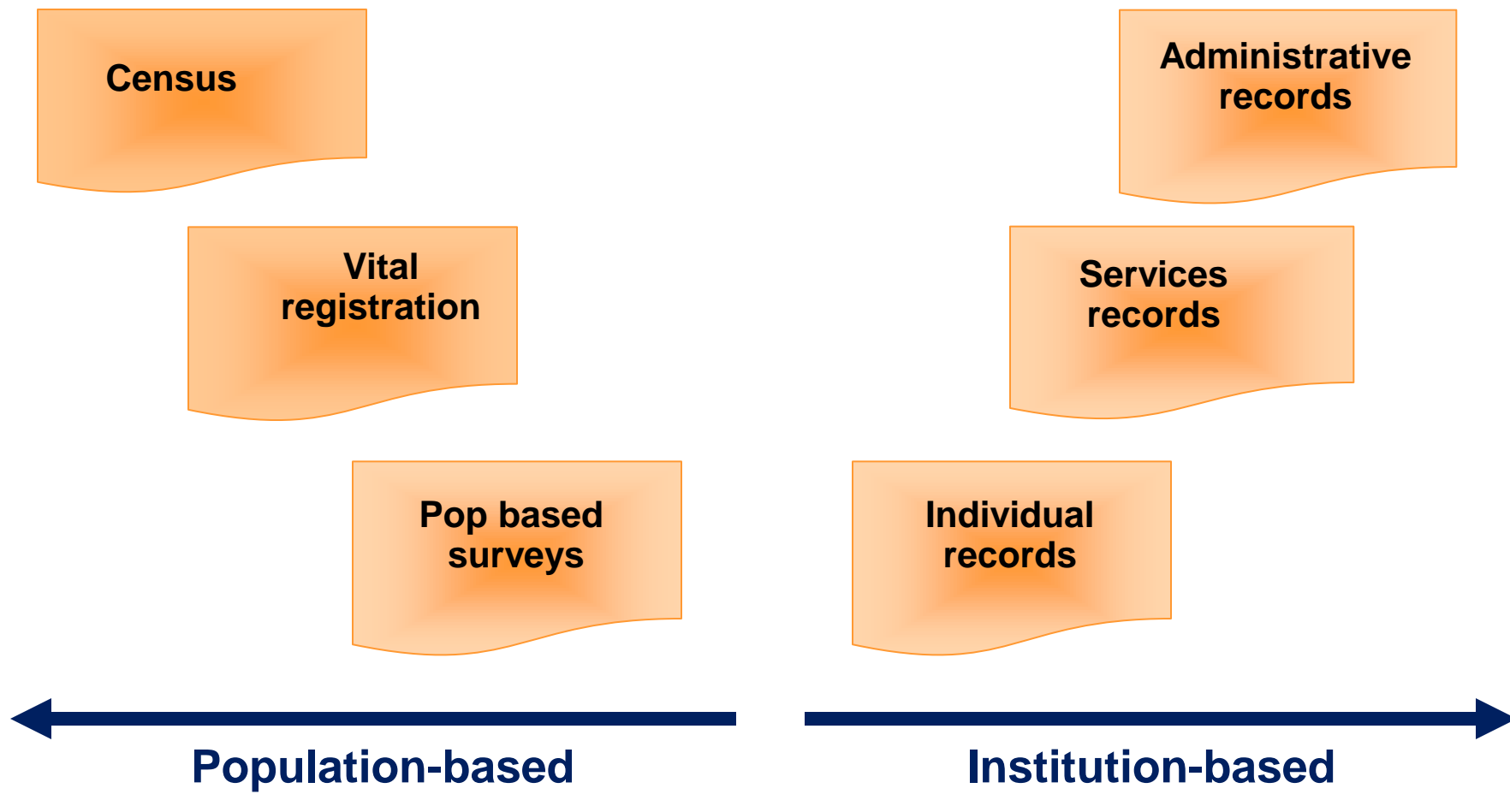
## ■ Data management

- ❑ Data storage
- ❑ Ensuring data quality
- ❑ Data processing and compilation

## ■ Information Products

## ■ Dissemination and use

## 2.6 Health Information Data Sources



# Session 3: Health Management Information System (HMIS) for performance management

## Session Objectives

- By the end of this session participants will be able to:
  - Define concepts, roles and functions of HMIS
  - Explain determinants of HMIS performance using PRISM framework

# 3.1 HMIS Reform in Ethiopia

- “One plan, one budget and one report” policy
- HMIS / M&E as the backbone of health system in Ethiopia.
- HMIS as the core information system for health system monitoring.
- The redesigned HMIS emphasizes on:
  - improved HMIS information use
  - improve data quality
  - decrease data burden
  - improved ICT support

## 3.2 The Purpose of HMIS

- To routinely generate quality health information that provides specific information support for the decision making to monitor and improve performance of the health sector.
- HMIS is more than a system for data collection and generating quality information, and encompasses the continued use of the information for decision making as well.

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## 3.3 Indicator

- Is a variable – whose value changes
- Is a measurement that measures the value of the change in meaningful units that can be compared to past and future units
- Focuses on a single aspect of a program or project – i.e., an input, output or the overarching objective.

## 3.4 Key Performance Indicators

- 21 HMIS indicators selected by FMOH for routine monitoring of key aspects of the health system performance
- Among 5 broad categories
  - Reproductive health,
  - Immunization,
  - Disease prevention and control,
  - Resources utilization
  - Data Quality.
- Every administrative unit/health facility routinely reviews these indicators during performance review meetings

## 3.5 Key Performance Indicators List (1)

### ■ Reproductive Health

1. Family planning Acceptance Rate
2. Antenatal Care coverage
3. Proportion of deliveries attended by skilled health personnel
4. Proportion of deliveries attended by HEWs

### ■ Immunization

5. DPT-3 (Pentavalent-3) coverage (>1 children)
6. Measles Immunization coverage(>1 children)

### ■ Resource Utilization

7. Trace drug availability (in stock)
8. OPD attendance per capita
9. In patient admission rate
10. Average length of stay (in – patient)
11. Bed Occupancy Rate

### ■ Data Quality

12. Reporting completeness rate
13. Reporting timeliness rate

## 3.5 Key Performance Indicators List (2)

### ■ Disease prevention and control

14. Malaria case fatality rate amongst patients under 5 years of age
15. New malaria cases per 1000 population
16. New pneumonia cases amongst under 5 children per 1000 population of < 5 yrs
17. TB case detection rate
18. TB cure rate
19. Clients receiving VCT services
20. PMTCT treatment completion rate
21. PLWHA currently on ART

## 3.6 Hospital KPIs

### ■ Outpatient Service

- KPI2: Outpatient attendances
- KPI3: Outpatient attendances seen by private wing service

### ■ Emergency Services

- KPI6: Emergency room attendances

### ■ Inpatient Services

- KPI10: Inpatient admissions
- KPI12: Inpatient mortality
- KPI14: Bed Occupancy
- KPI15: Average Length of Stay
- KPI18: Completeness of inpatient medical records

### ■ Maternity Services

- KPI19: Deliveries (live births and still births) attended
- KPI20: Births by surgical procedure (C-section)
- KPI21: Institutional maternal mortality
- KPI22: Institutional neonatal deaths within 24 hours of birth

### ■ Referral Services

- KPI23: Referrals made
- KPI24: Rate of referrals

### ■ Pharmacy Services

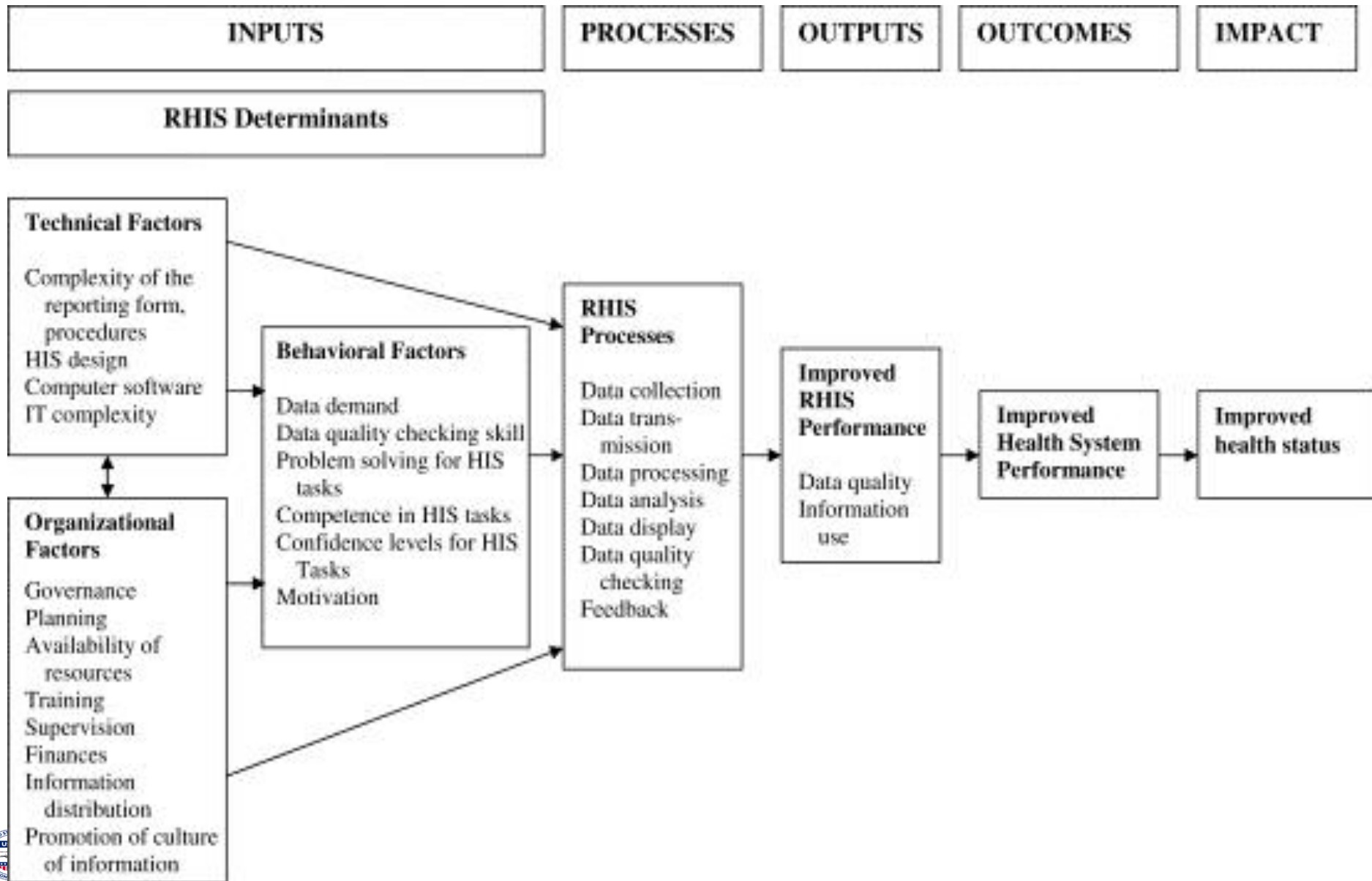
- KPI26: Average stock out duration of hospital specific tracer drugs

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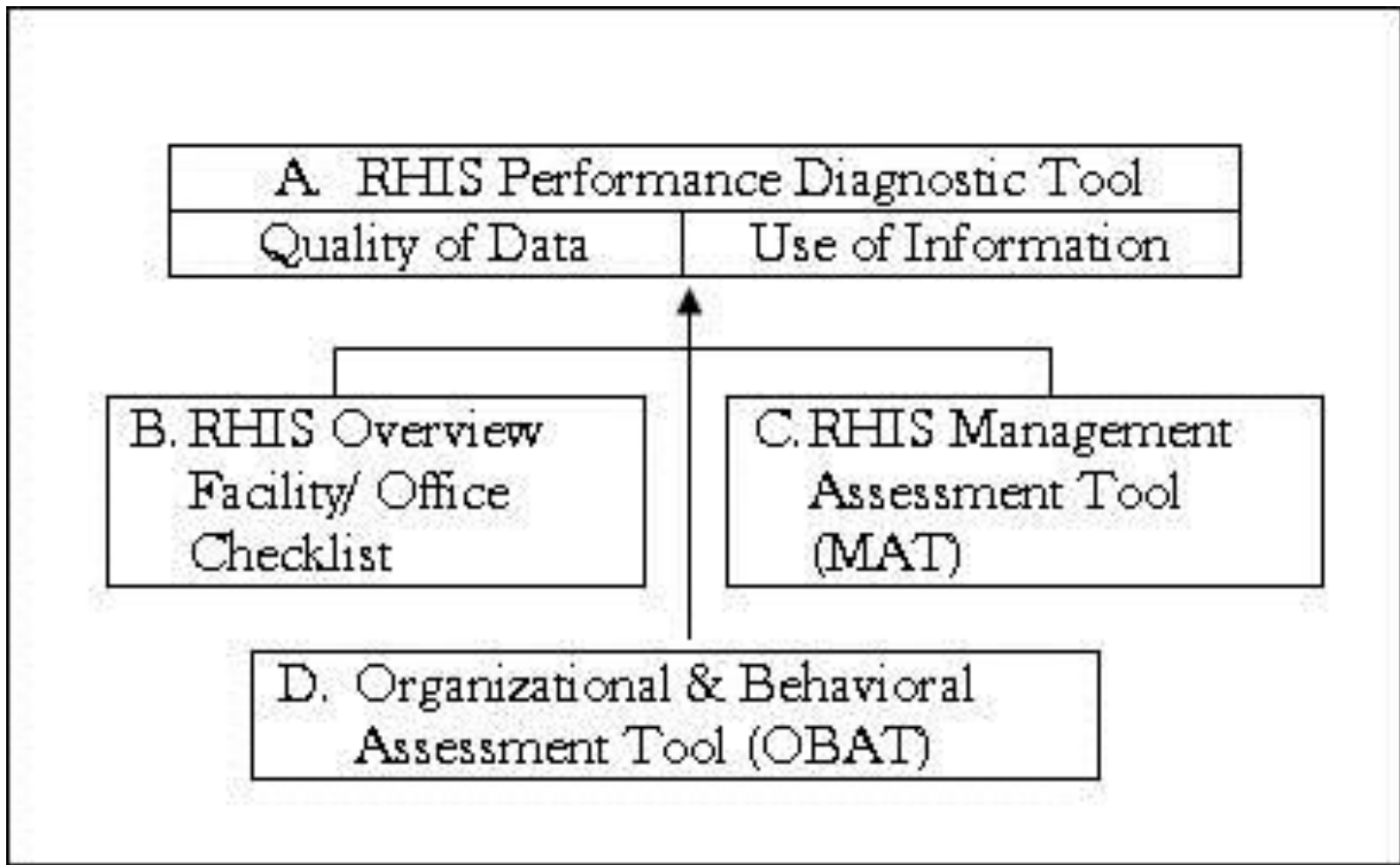
## 3.7 PRISM

- **P**erformance of
- **R**outine
- **I**nformation
- **S**ystem
- **M**anagement

# 3.8 PRISM Framework



## 3.9 PRISM Tools



## 3.10 PRISM Tools Assessment Domains

RHIS overview / Diagnostic Tool	Facility /office Checklist	RHIS Management Assessment Tool (MAT)	Organizational & Behavioral Assessment tool (OBAT) examine
Existing information (sub systems)	Available resources, organizational context of RHIS at health facilities and management offices	Status of RHIS management functions	Behavioral factors such as knowledge, skills, problem-solving, confidence level, motivation
Information flow	Role and responsibilities of staff in RHIS processes	Level of development of RHIS	Organizational factors such as promoting culture of information
Level of Data quality & Information use practices		Areas for improvement	

# Session 4: HMIS Data Quality

## Session Objectives

- By the end of this session, participants will
  - Define data quality
  - Describe data quality assurance tools
  - Understand the application of data quality assurance tools

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# 4.1 Elements of Data Quality

- Relevant
- Accurate
- Timely
- Complete

## 4.2 Elements of Data Quality explained (1)

### ■ Relevance

- Data collected and reported by HMIS is relevant to the information needs of the health system for routine monitoring of program performance

### ■ Timeliness

- Data is collected, transmitted and processed according to the prescribed time and available for making timely decisions

## 4.2 Elements of Data Quality explained (2)

### ■ Accuracy

- Data that is compiled in databases and reporting forms is accurate and reflect no inconsistency between what is in the registers and what is in the databases/reporting forms at facility level.
- Similarly, in case of data entered in the computers, there is no inconsistency between the data in the reporting forms and the computer files.

## 4.2 Elements of Data Quality explained (3)

### ■ Data Completeness:

- At service delivery point, it refers to all the relevant data elements in a patient/client register are filled
- At Health Administrative unit
  - All the data elements in a database or report are filled
  - The health administrative unit has reports from all the health facilities and/ or lower level health administrative units within its administrative boundary

## 4.3 Common sources of errors in HMIS reports

Error	Example
Missing data	Data items for whole months missing (ex - HIV positive women delivered in facility)
Duplicate data	Multiple counting of a fully immunized child
Thumb suck	When data collection tools are not used routinely, staff just fills in a likely-looking number (often using preferential end digits! /0 & 5/ )
Unlikely values for a variable	A man being pregnant; low birth weight babies exceeding number of deliveries
Contradictions between variables	100 births in a month when there are only 2,000 women in childbearing age
Calculation errors	Mistakes in adding
Typing error	Data is wrongly entered into the computer
Capture in wrong box	TB Cured in the place of Treatment Completed

## 4.4 What if....

### ■ Data is not relevant

- it won't have any added value in monitoring the program performance. It only adds burden on data collectors.

### ■ Data is not timely

- it will not help us to make timely decisions to fix problems.

### ■ Data is not accurate

- It can prevent us from seeing the actual performance of the program.

### ■ Data is not complete

- we will not be able to see the complete picture of the performance at different levels.

### ■ Overall, data quality is not good

- the decision making based on evidence will be hampered.

## 4.5 Tracking Report Timeliness

- HMIS focal person at each administrative should
  - maintain a registry of receipt and transmission of monthly report from and to the respective level/health unit.
  - After the due date for receiving the report is over, the focal person will check the registry (or the electronic Report Tracker in eHMIS) to identify the health facilities that have not submitted the report, and
  - communicate with them to ensure timely submission of the report.

# 4. HMIS Data Accuracy Check

- Data accuracy check using Lot Quality Assurance Sampling (LQAS) technique
- Routine Data Quality Assessment (RDQA) methodology

## 4.7 Lot Quality Assurance Sampling (LQAS)

- A technique useful for assessing whether the desired level of data accuracy has been achieved by comparing data in relevant record forms (i.e. registers or tallies) and the HMIS reports.
- Recommended for use at Health Facility level

## 4.8 Basic Principles of LQAS

- A method for testing hypothesis
  - e.g. desired level of HMIS data quality is achieved (or not)
- Small random sample for a lot/supervisory area is used
  - The optimal sample size is 19
  - A sample size of 12 also serves well
  - Testing only two possibilities i.e. Yes or No; Present or Absent
- If the number of sampled items not meeting the standard exceeds a pre-determined criterion (decision rule), then the lot is rejected or considered not achieving the desired level of pre-set standard
- “Decision rule” table is used for determining whether the pre-set criterion is met or not
- Aggregating LQAS data from multiple supervisory areas can give us mathematical percentage of the level of achievement.
- Comparing LQAS results over time can also indicate if there is any change or not

## 4.9 Steps in Data Quality Check using LQAS method (Steps 1-5)

1. Select the month for which you are doing the data accuracy check.
2. Pre-fix the level of data accuracy that you are expecting, e.g. 70% or 85% etc.
3. Put serial numbers against the data elements in the Service Delivery or Disease Report that you want to include in the data accuracy check
4. Generate twelve random numbers using Excel program. These random numbers represent the serial numbers of the data elements included in the data accuracy check. Note them in Column of the Data Accuracy Check Sheet. This is to ensure representation of all data elements by giving equal chance to all data elements.
5. List down the selected data elements from the report on to the Data Accuracy Check Sheet in Column 2 and Column 3

## 4.9 Steps in Data Quality Check using LQAS method (Steps 6-10)

6. Write down the reported figures from the Monthly HMIS Report for the selected data elements in the Column 4 of the Data Accuracy Check Sheet.

***Note: In case of Health Post, figures for the selected data elements from the Tally Sheet will be compared with recounted figures from the Family Folders. Therefore, record the figures for the selected data elements from the Tally Sheet in Column 5.***

7. Recount the figure from the corresponding registers and note the figures on Column 6 of the LQAS check-sheet
8. If the figures for a particular data element match or do not match put “yes” or “no” accordingly in Column 7 or Column 8 respectively.
9. Count the total number of “yes” and “no” at the end of the table
10. Match the total number of “yes” with the LQAS Decision Rule table and determine the level of data accuracy achieving the expected target or not.

## 4.10 Routine Data Quality Assessment (RDQA) tool

- Helps to
  - Perform data accuracy at administrative level by enabling quantitative comparison of recounted data to reported data
  - Assess if intermediate aggregation sites are collecting and reporting data accurately by providing a “Verification Factor” i.e. level of under or over reporting, if any, for the HMIS data items studied.

## 4.11 RDQA Steps

- To understand the HMIS data accuracy level in the given administrative area, a sample of 12 health facilities is selected
- Each of these selected health facilities is visited to complete the RDQA tool.
- Steps for completing the RDQA are:
  1. Select key data element from HMIS reports for data accuracy check
  2. List the data items in the RDQA table
  3. For each of the selected data elements recount the number of cases or events recorded during the reporting period by reviewing the relevant source documents available at the selected sites [A]

## 4.11 RDQA Steps (2)

4. Copy the number of cases or events for the selected data elements reported by the site during the reporting period from the HMIS reports submitted by the selected sites [B]
5. Add up all the recounted figures for the corresponding data elements from the 12 sites [ $\sum A$ ]
6. Add up all the figures for the same data elements copied from the HMIS reports of all the 12 sites [ $\sum B$ ]
7. Calculate the ratio of recounted to reported numbers. [ $\sum A / \sum B$ ]

This ratio is called the Verification Factor (VF)

## 4.12 RDQA Exercise - explanation

- Institutional maternal deaths
  - $\sum A = 204$ ;  $\sum B = 193$ ; therefore  $\sum A / \sum B = 1.06$ .
  - Represents under-reported
- Early Neonatal death
  - $\sum A = 317$ ;  $\sum B = 308$ ; therefore  $\sum A / \sum B = 1.03$ .
  - Indicates under-reporting
- 1<sup>st</sup> ANC
  - $\sum A = 226$ ;  $\sum B = 232$ ; therefore  $\sum A / \sum B = 0.97$
  - Indicates over-reporting

# Session 5: Monitoring & Evaluation (M&E) and HMIS

## Session Objectives

- By the end of this session, participants will be able to:
  - Define M&E and its purpose
  - Explain M&E plan and its components
  - Discuss M&E frameworks and Logic Model
  - Explain the Relationship between M&E and HMIS indicators

# 5.1 Monitoring & Evaluation

- The process of data collection and analysis for informing policy, program planning and project management.
- Helps to answer program related questions
  - Is the program being implemented as planned
  - Did target population benefited from the program
  - Can improved health outcomes attributed to program efforts
  - Which program activities are more effective and which are less effective

## 5.2 Is it Monitoring OR Evaluation?

- MOH wants to know if the ICCM program implemented in “Region B” is reducing infant death in that region
- RHB wants to know how many children have been vaccinated this year in their region
- The Delivery Business Process Owner wants to know if the delivery care provided in the health centers in “ZONE Y” meets national standards of quality

## 5.3 Monitoring

- An ongoing, continuous process of collection of routine data that
  - Measures program progress towards achieving program objectives
  - Is used to track changes in program performance over time
  - Is used to determine if activities need adjustments during the intervention to improve desired outcomes
  - Permits decisions regarding effectiveness of the program and efficient use of resource
- Also referred to as “ PROCESS EVALUATION”

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## 5.4 Evaluation

- Measures how well the program activities have met expected objectives and/or
- It measures the extent to which changes in outcomes can be attributed to the program or intervention

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## 5.5 Program elements that can be monitored

- Service coverage
- Number of vaccine doses administered monthly
- Quality of services
- Supply inventories
- Patient outcomes

# 5.6 M&E Terminology Quiz

- **Processes**
  - Rigorous, scientifically based analysis of information about program activities, characteristics, and outcomes to determine the merit or worth of a specific program/project; A comparison of objectives with accomplishments and how the objectives were achieved
- **Indicator**
  - The routine collection and analysis of measurements or indicators to determine ongoing progress toward objectives
- **Evaluation**
  - Specific statement describing the desired accomplishments or results of an intervention or program. These should be measurable and should address existing problems, program weaknesses, and/or client needs (or build on strengths)
- **M&E Plan**
  - A variable that measures a particular aspect of a program (input, process, output, outcome, impact), usually related to achievement of objectives
- **Monitoring**
  - Set of resources (e.g., funds, policies, personnel, facilities, supplies, etc.) that are needed to implement a program/activity
- **Outputs**
  - Set of activities (training, supervision, reporting) in which inputs are utilized to achieve desired results
- **Objective**
  - Results obtained at the program level following activities (e.g., number of people trained, product availability, improved skills, etc.)
- **Outcomes**
  - Results obtained at the population level following activities (e.g., access, contraceptive prevalence, percent of pregnant women receiving antenatal care, etc.)
- **Analysis**
  - Relates objectives and activities to problems, and shows how indicators and tools measure achievement of objectives
- **Inputs**
  - Convert data into information

# 5.6 M&E Terminology Quiz (Answers)

<ul style="list-style-type: none"> <li>• <b>Processes</b></li> </ul>	<ul style="list-style-type: none"> <li>• Rigorous, scientifically based analysis of information about program activities, characteristics, and outcomes to determine the merit or worth of a specific program/project; A comparison of objectives with accomplishments and how the objectives were achieved</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Indicator</b></li> </ul>	<ul style="list-style-type: none"> <li>• The routine collection and analysis of measurements or indicators to determine ongoing progress toward objectives</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Evaluation</b></li> </ul>	<ul style="list-style-type: none"> <li>• Specific statement describing the desired accomplishments or results of an intervention or program. These should be measurable and should address existing problems, program weaknesses, and/or client needs (or build on strengths)</li> </ul>
<ul style="list-style-type: none"> <li>• <b>M&amp;E Plan</b></li> </ul>	<ul style="list-style-type: none"> <li>• A variable that measures a particular aspect of a program (input, process, output, outcome, impact), usually related to achievement of objectives</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Monitoring</b></li> </ul>	<ul style="list-style-type: none"> <li>• Set of resources (e.g., funds, policies, personnel, facilities, supplies, etc.) that are needed to implement a program/activity</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Outputs</b></li> </ul>	<ul style="list-style-type: none"> <li>• Set of activities (training, supervision, reporting) in which inputs are utilized to achieve desired results</li> </ul>
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<ul style="list-style-type: none"> <li>• <b>Analysis</b></li> </ul>	<ul style="list-style-type: none"> <li>• Relates objectives and activities to problems, and shows how indicators and tools measure achievement of objectives</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Inputs</b></li> </ul>	<ul style="list-style-type: none"> <li>• Convert data into information</li> </ul>

## 5.7 Comparing Monitoring & Evaluation

Dimension	Monitoring	Evaluation
Frequency	Periodic, occurs regularly	Episodic
Function	Tracking / oversight	Assessment
Purpose	Improve efficiency, provide information for reprogramming to improve outcomes	Improve effectiveness, impact, value for money, future programming, strategy and policymaking
Focus	Inputs, outputs, processes, work plans (operational implementation)	Effectiveness, relevance, impact, cost-effectiveness (population effects)
Methods	Routine review of reports, registers, administrative databases, field observations	Scientific, rigorous research design, complex and intensive
Information source	Routine or surveillance system, field observation reports, progress reports, rapid assessment, program review meetings	Same sources used for monitoring, plus population-based surveys, vital registration, special studies
Cost	Consistent, recurrent costs spread across implementation period	Episodic, often focused at the midpoint and end of implementation period

## 5.8 M&E Recap

1. Monitoring is sometimes referred to as:
  - a) Evaluation
  - b) Impact Evaluation
  - c) Process Evaluation
  - d) Performance Evaluation
2. Evaluations measure:
  - a) The timeliness of a program's activities
  - b) The outcomes and impact of a program's activities
  - c) How closely a program kept to its budget
  - d) How well the program was implemented
3. At what stage of a program should monitoring take place?
  - a) At the beginning of the program
  - b) At the mid-point of the program
  - c) At the end of the program
  - d) Throughout the life of the program
4. Which of the following is NOT considered “monitoring”?
  - a) Counting the number of people trained
  - b) Tracking the number of brochures disseminated
  - c) Attributing changes in health outcomes to an intervention
  - d) Collecting monthly data on clients served in a clinic.

Answer: 1c; 2b, 3d, 4c

# 5.9 Monitoring & Evaluation Plan

- A fundamental document of any program
- Relates the objectives and activities to the problems the program is trying to address
- Shows how indicators and tools measure achievement of objectives
- States how a program will measure its achievements and therefore provide accountability
  
- The Functions of M&E Plan are to:
  - State how the program is going to measure what it has achieved (ensure accountability)
  - Document consensus (encourage transparency and responsibility)
  - Guide M&E implementation (standardization and coordination)

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## 5.10 Case Scenario

Your organization (RHB, ZHD or WorHO as applicable) is implementing a malaria program (or any other program that you are familiar with and feel comfortable to work on its M&E Plan).

Based on your knowledge of the program develop an M&E Plan for that program.

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## 5.11 Component of M & E Plan

1. Introduction: Purpose of the program, stakeholders motivation, commitment & participation
2. Program description and framework
3. Detailed description of the plan indicators
4. Data collection sources and data collection plan
5. Plan for monitoring
6. Plan for evaluation
7. Plan for the utilization of the information gained
8. Mechanism for updating the plan

## 5.12 Program Framework

- Describes the underlying assumptions on which the achievement of the program goal depends
- Describes the anticipated relationship between activities, outputs and outcomes
- Helps to determine
  - the indicators to be selected for program M&E
  - their data sources
  - how that data will be used to monitor and evaluate various aspects of the program

## 5.13 Commonly used frameworks

- Conceptual framework
- Results framework
- Logic Model

## 5.14 Conceptual framework

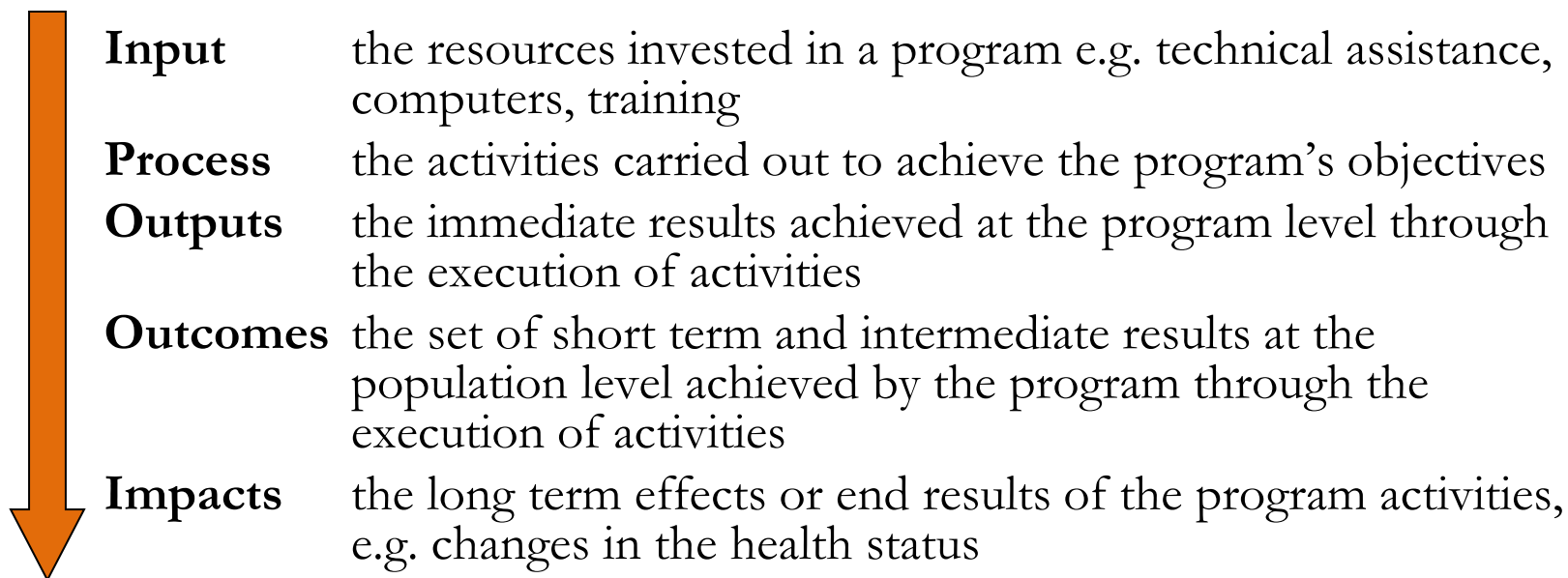
- Sometimes called a “research framework,”
- Useful for identifying and illustrating the factors and relationships that influence the outcome of a program or intervention.
- Helps to understand the relationships between all relevant systemic, organizational, individual, or other salient factors that may influence program/project operation and the successful achievement of program or project goals

## 5.15 Results framework

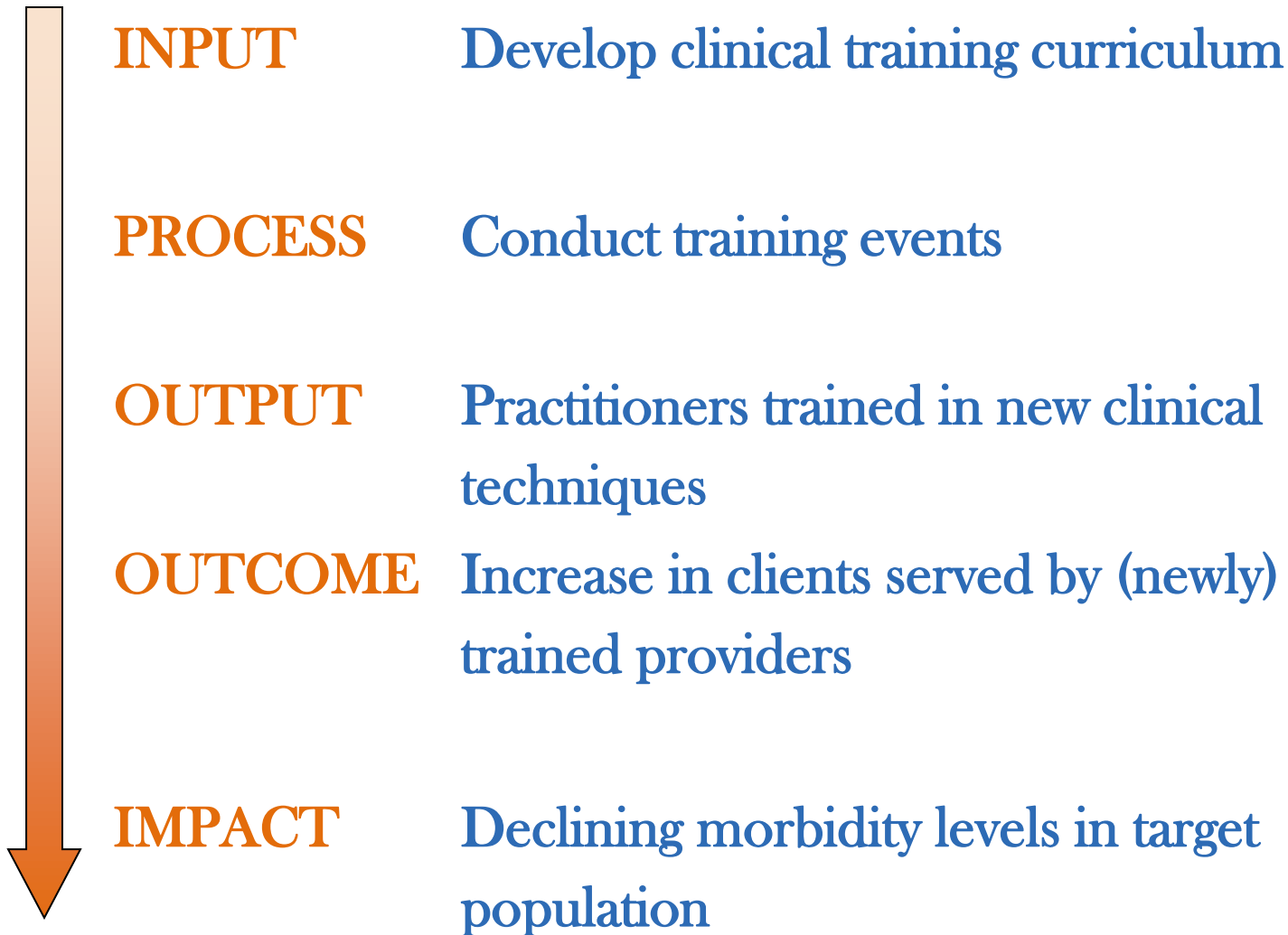
- Sometimes called “strategic framework,”
- Diagrammatically shows the direct causal relationships between the incremental results of the key activities all the way up to the overall objective and goal of the intervention.
- Clarifies the points in an intervention at which results can be monitored and evaluated.
- Results frameworks include an overall goal, a strategic objective (SO) and intermediate results (IRs).

## 5.16 Logic model

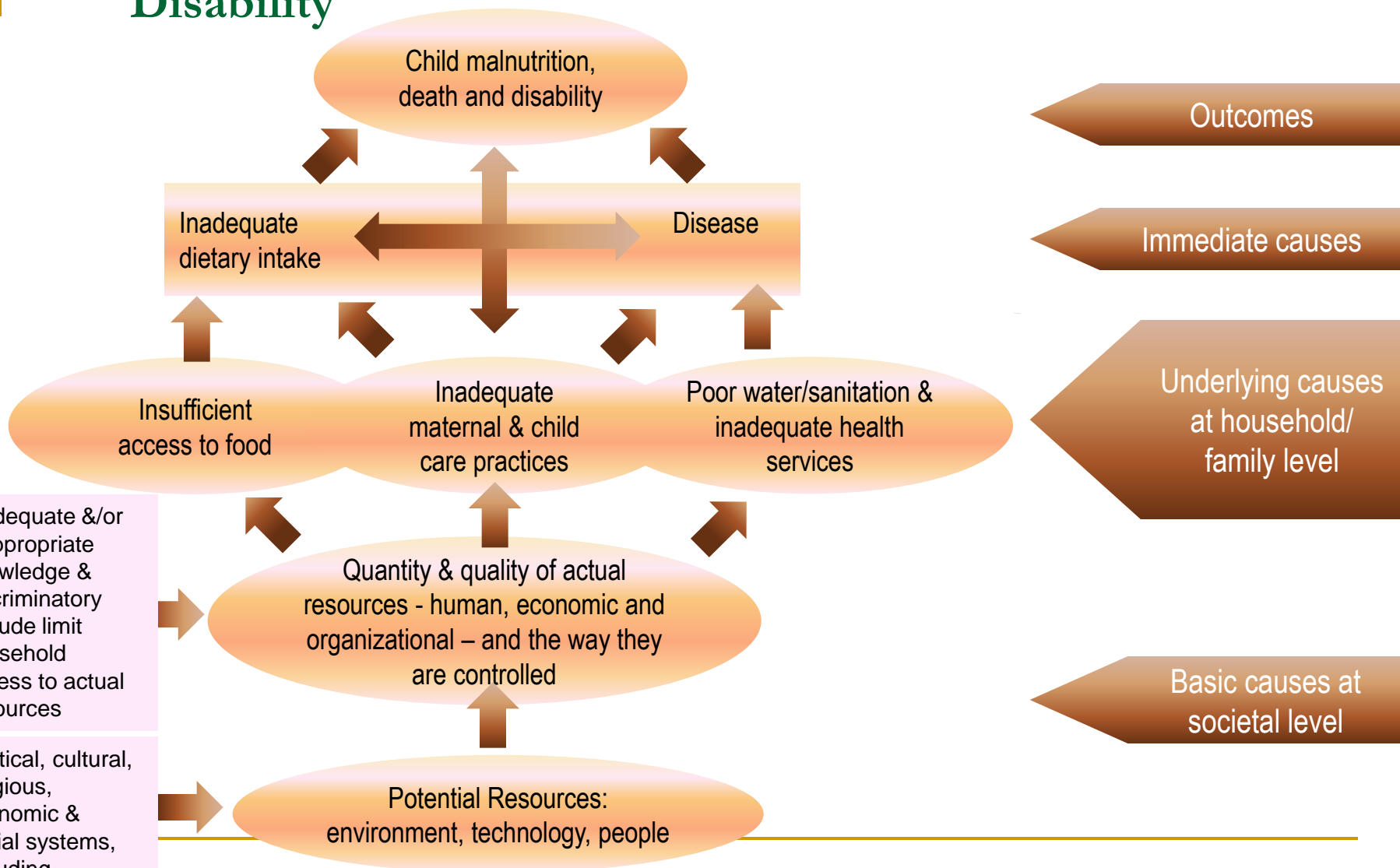
- Sometimes called an “M&E framework,”
- Illustrates the linear relationships flowing from program inputs, processes, outputs, and outcomes



# 5.17 Example of Logic Model

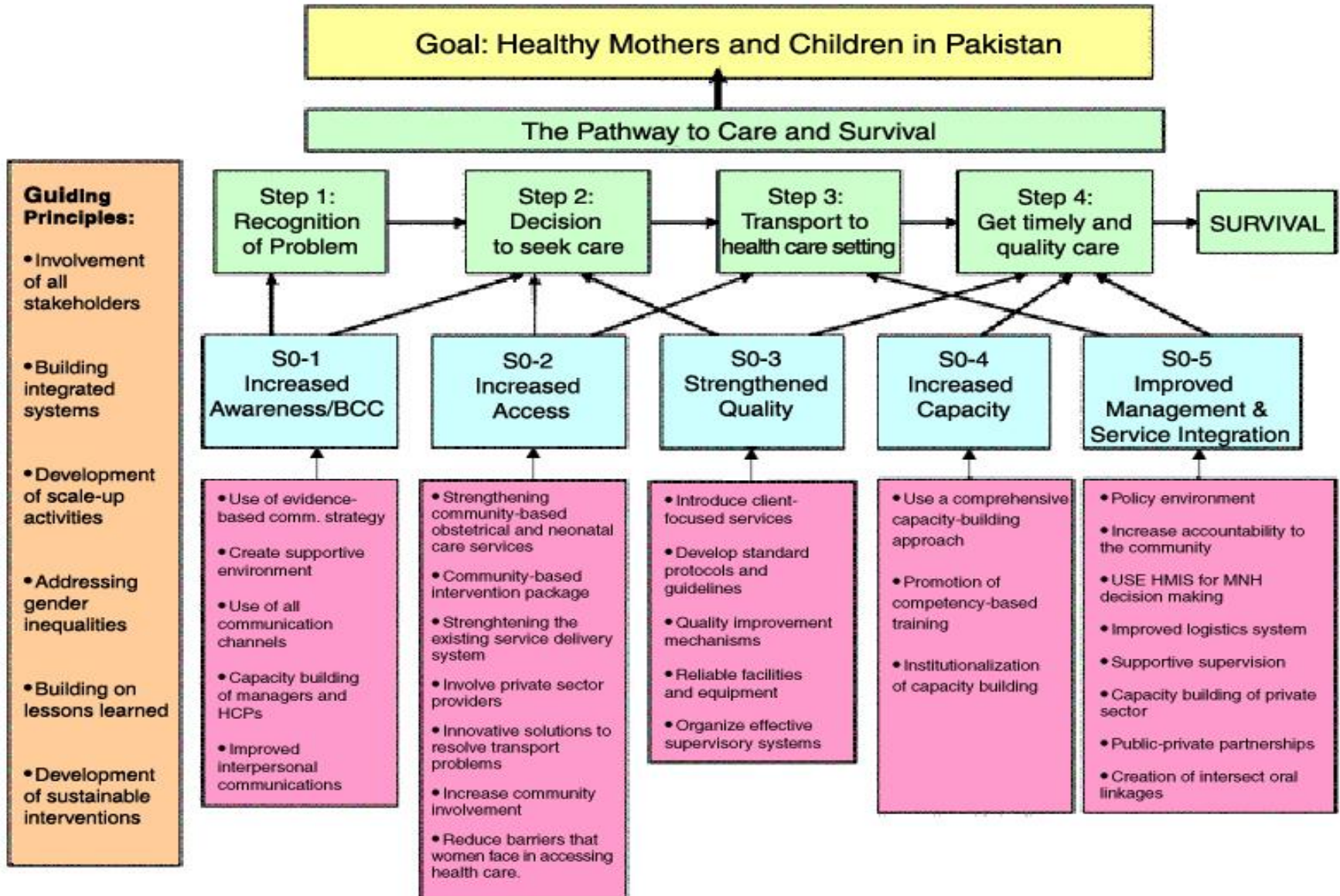


## 5.18 Conceptual Framework: Child Malnutrition, Death & Disability



Source: UNICEF, *State of the World's Children*, 1998

# 5.19 Results Framework: Pathway to Care and Survival (USAID MNH Project)



## 5.20 Summary of the Frameworks

Type of Framework	Brief Description	Program Management	Basis for Monitoring and Evaluation
Conceptual	Interaction of various factors	Determine 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 links 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

# Session 6: Relationship of HMIS indicators with Health Programs

## Session Objective

- By the end of this session, participants will be able to:
  - Explain how HMIS is used for monitoring program performance and strategy implementation by emphasizing on the following three programs:
    - Maternal Survival Intervention
    - Child Mortality and Child Survival Intervention
    - STOP TB Program

# 6.1 Case study - Improving family and community practices

- For the last few years there were substantial efforts to improve infant and child health and nutrition in town “A”. However, one out of five babies born in the town in a given year dies before they reach their 5th birthday, many of them during the first year of life. The Zonal Health Department recognized that improving the quality of care for sick children at the health facility alone would have a limited impact on reducing child mortality. Town A was, therefore, chosen as a pilot site for the development and implementation of a household and community-based approach to promote key household practices for child survival, growth and development.
  - Develop goal and objectives for a program aimed at improving family and community practice in town “A”.
  - Develop a logic model for the program to improve infant and child health and nutrition in town “A”.
  - List some of HMIS indicator that will help track the progress of this program.

## 6.2 Maternal Survival Strategy

- Is a framework for achieving the Millennium Development Goal (MDG) of reducing maternal mortality by implementing a package health facility oriented interventions

# Maternal Survival Strategies

Strategies aimed at all women

Strategies targeted to subset of women

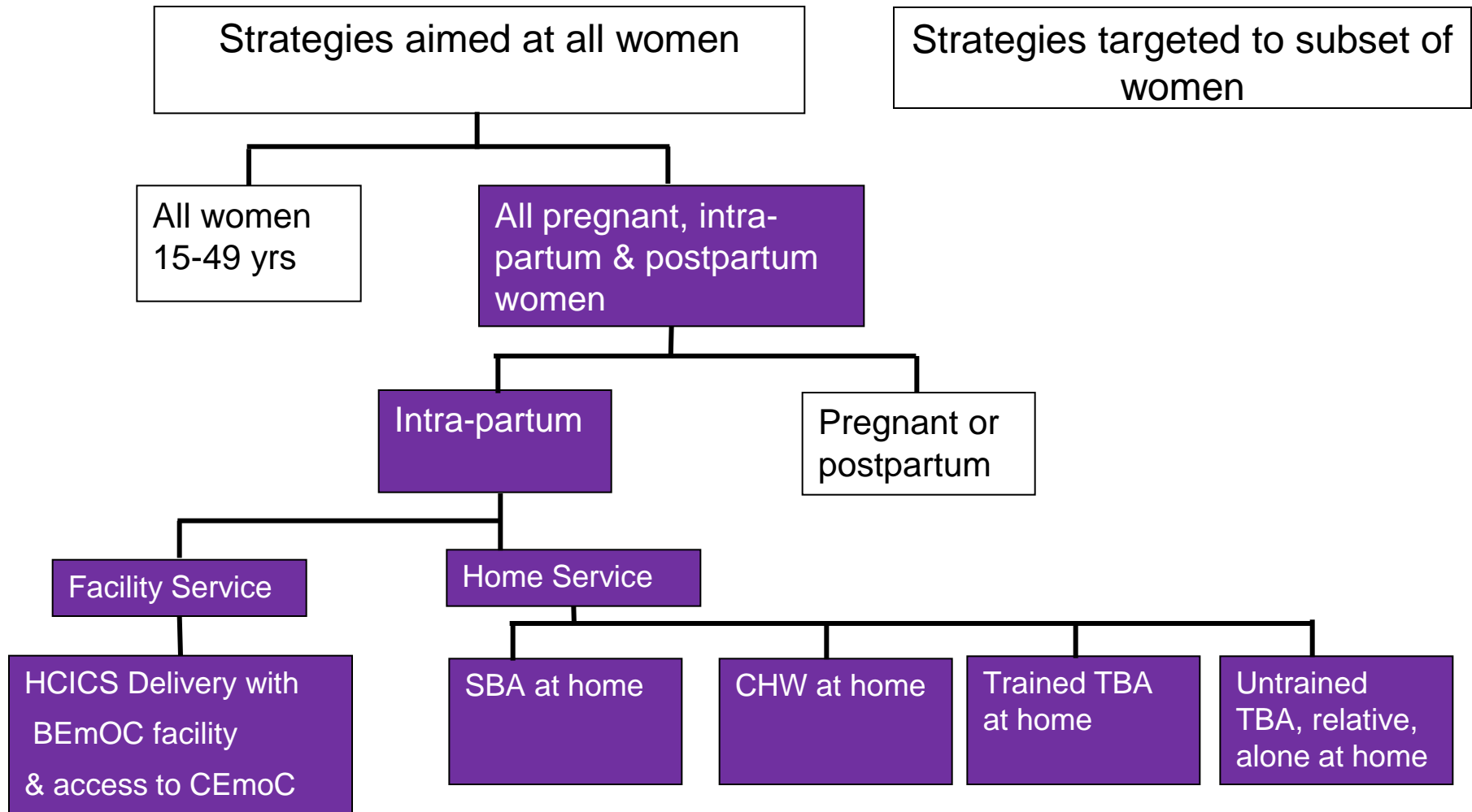
All women  
15-49 yrs

All pregnant, intra-  
partum & postpartum  
women

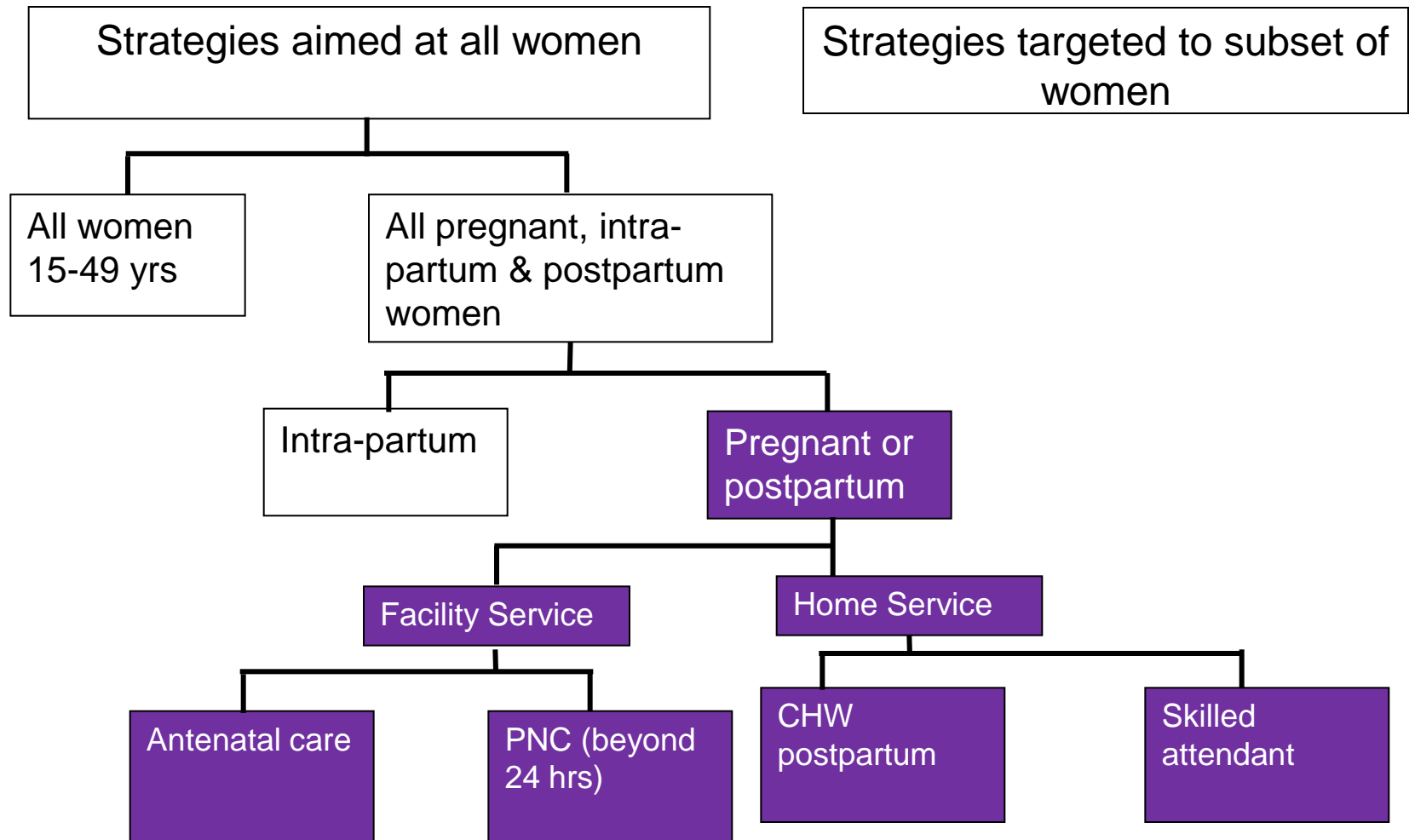
Various non-  
maternal specific  
services

Nutrition  
Micronutrients  
Violence  
Education  
Empowerment  
Prevention & treatment of prevalent  
diseases e.g. HIV, CVD

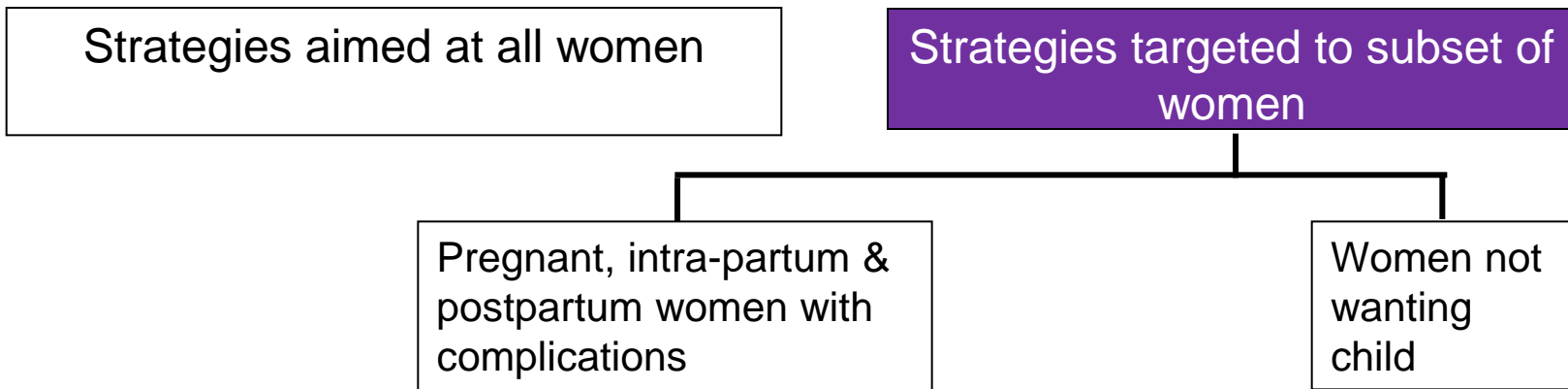
# Maternal Survival Strategies



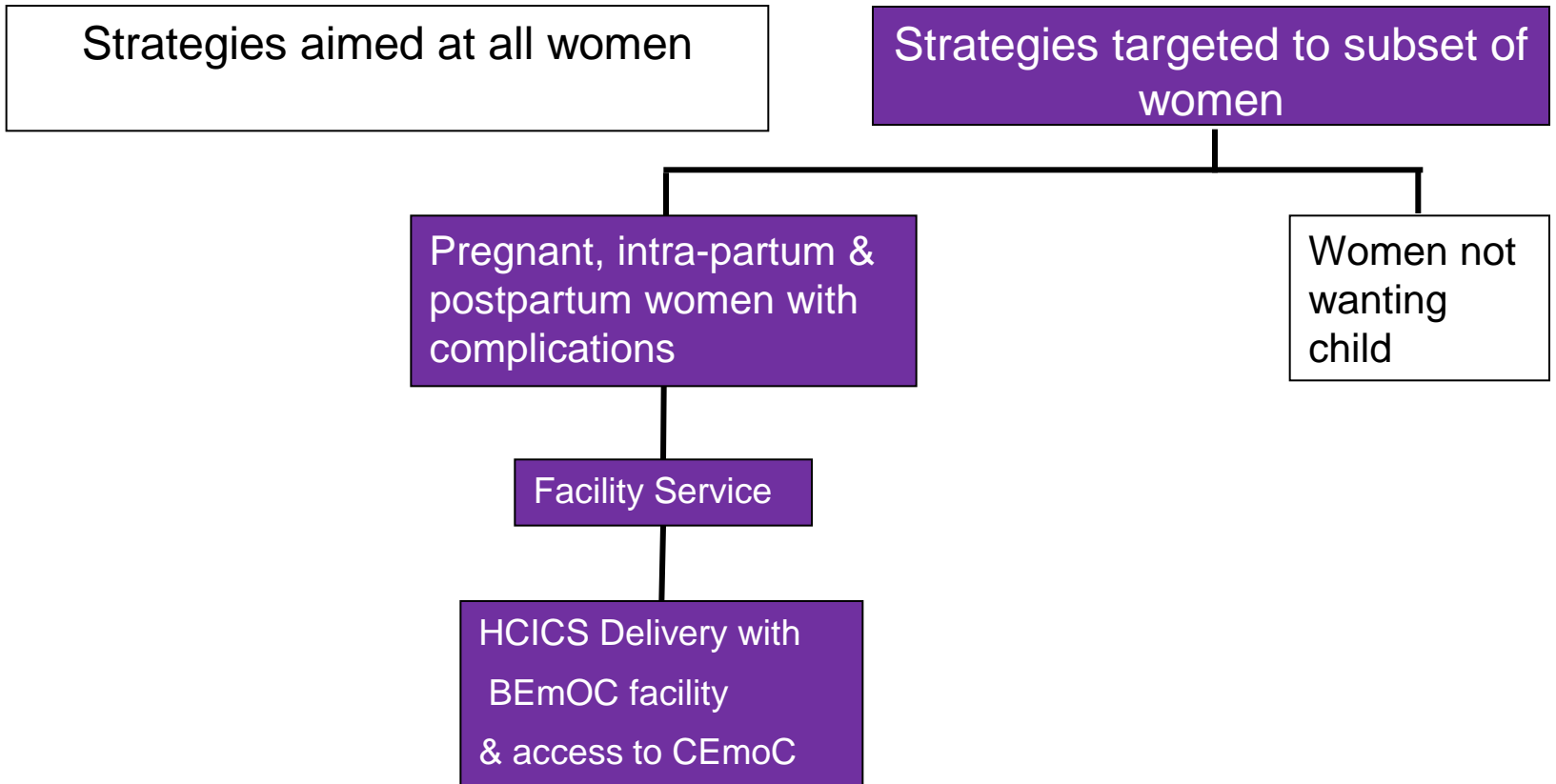
# Maternal Survival Strategies



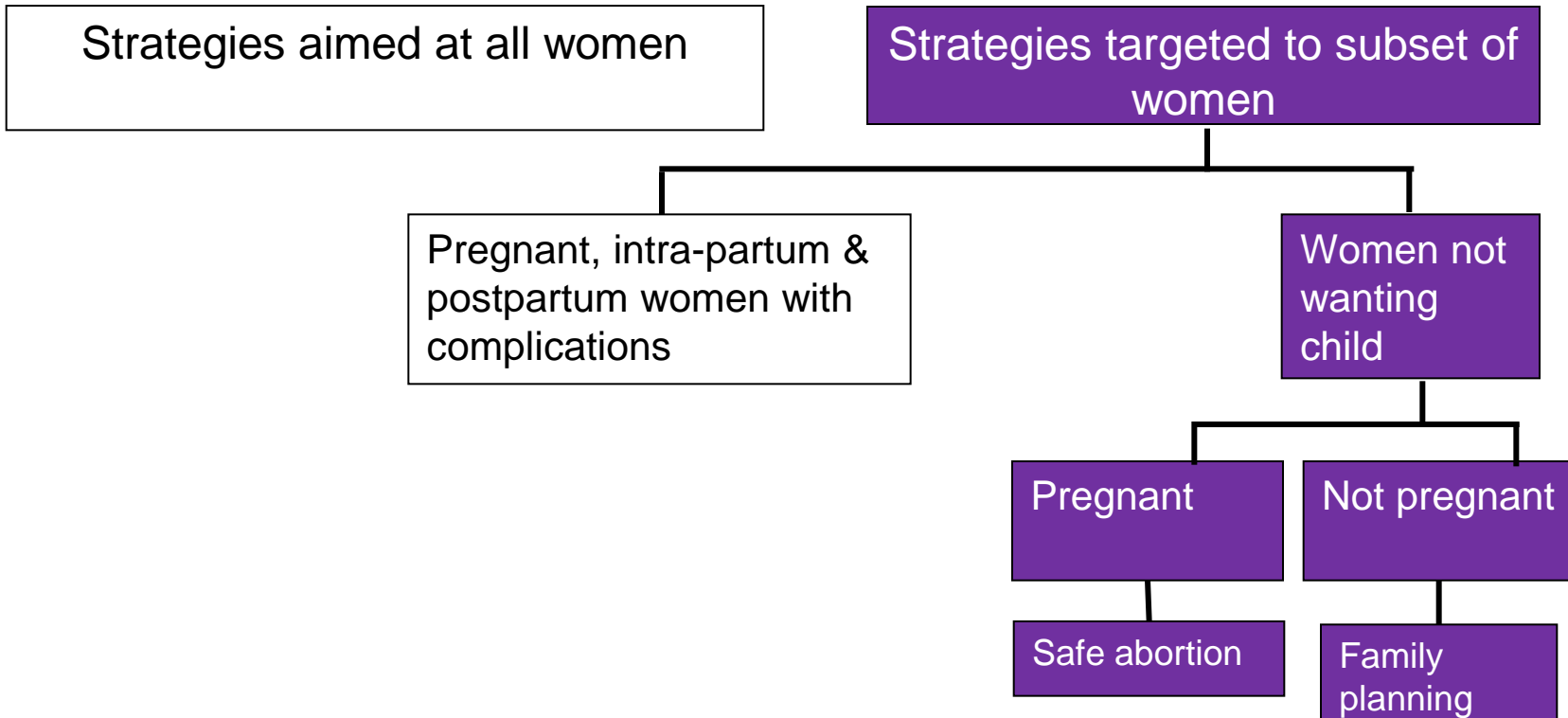
# Maternal Survival Strategies



# Maternal Survival Strategies



# Maternal Survival Strategies



- 
- *Which HMIS Indicators relate to Maternal Survival Strategies*

# Maternal Survival Strategies

Strategies aimed at all women

Strategies targeted to subset of women

All women  
15-49 yrs

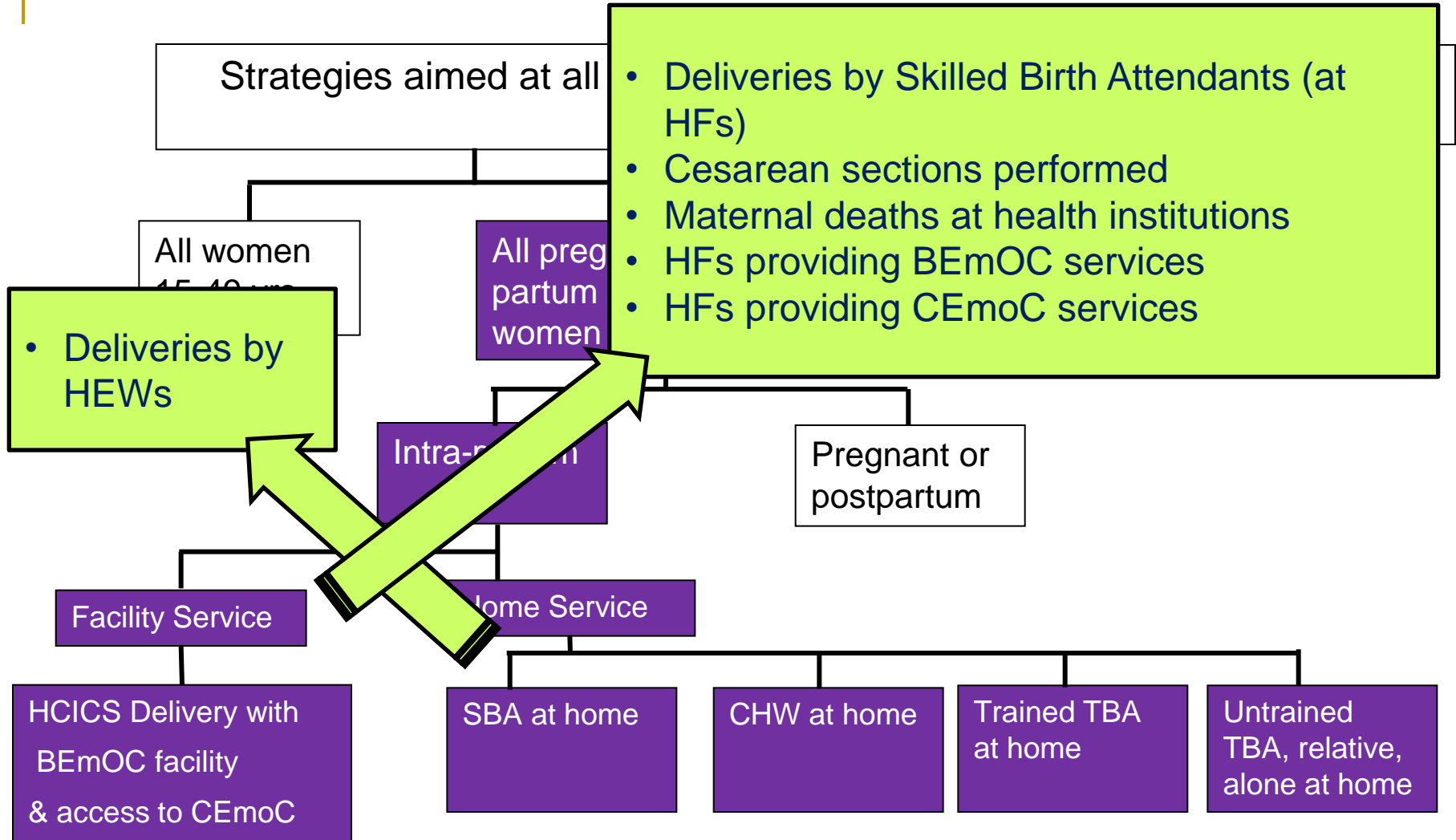
All pregnant, intra-  
partum & postpartum  
women

Various non-  
maternal specific  
services

Nutrition  
Micronutrients  
Violence  
Education  
Empowerment  
Prevention & treatment of prevalent  
diseases e.g. HIV, CVD

- New TB cases detected: female 15+
- Clients receiving HCT: females

# Maternal Survival Strategies



# Maternal Survival Strategies

Strategies aimed at all women

Strategies targeted to subset of women

All women  
15-49 yrs

All pregnant, intra-  
partum & postpartum  
women

- 1<sup>st</sup> ANC attendances
- 4<sup>th</sup> ANC attendance

- 1<sup>st</sup> PNC attendances

intra-partum

pregnant or  
postpartum

Facility Service

Home Service

Antenatal care

PNC (beyond  
24 hrs)

CHW  
postpartum

Skilled  
attendant

# Maternal Survival Strategies

Strategies aimed at all women

Strategies targeted to subset of women

Pregnant, intra-partum & postpartum women with complications

Women not wanting child

Facility Service

HCICS Delivery with BEmOC facility & access to CEmoC

- Cases of abnormal pregnancy, childbirth and puerparium attended at HF (OPD)
- Morbidity & mortality cases in IPD
  - Obstructed labor
  - APH
  - PPH
  - Pregnancy induced Hypertension & edema
  - Puerperal sepsis

# Maternal Survival Strategies

Strategies aimed at all women

Strategies targeted to subset of women

Pregnant, intra-partum & postpartum women with complications

Women not wanting child

Pregnant

Not pregnant

Safe abortion

Family planning

- Cases of abortion cases attended at HF
- Cases of medical (safe) abortions conducted at HF

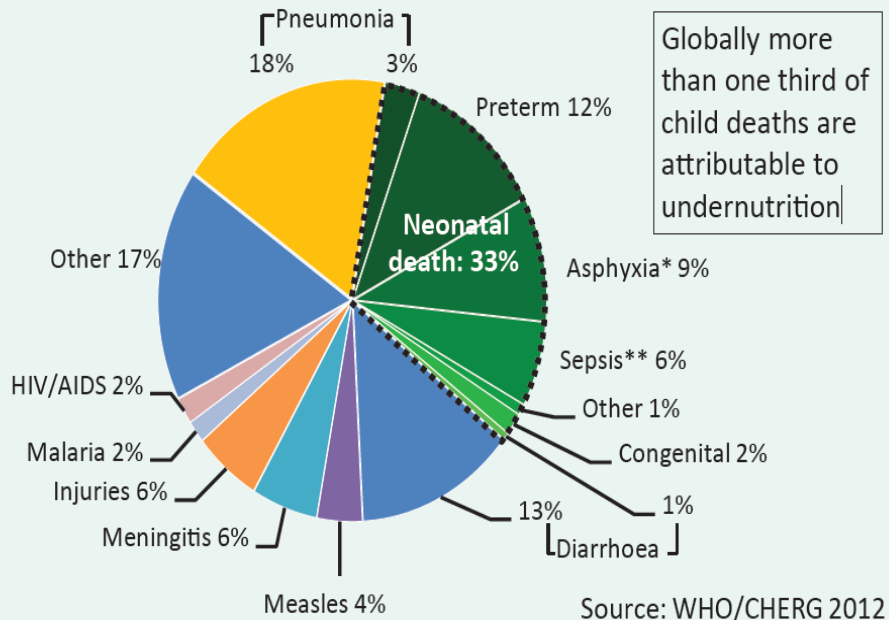
- New and Repeat FP acceptors
- FP methods issued (by type of method)

## 6.3 HMIS Indicators\_for monitoring of Maternal Survival Strategies

- New and Repeat FP acceptors
- FP methods issued by type of method
- Cases of abortion cases attended at HF
- Cases of medical abortions conducted at HF
- 1<sup>st</sup> PNC attendances
- 1<sup>st</sup> ANC attendances
- 4<sup>th</sup> ANC attendances
- Deliveries by HEW
- New TB cases detected: female 15+
- Clients receiving HCT: females
- Deliveries by skilled birth attendants at HFs
- C- section performed
- Maternal deaths at health institutions
- HFs providing BEmOC services
- HFs providing CEmoC services
- Cases of abnormal pregnancy, childbirth and puerparium attended at HF
- Morbidity & mortality cases in IPD
- Obstructed labor, APH, PPH, Pregnancy induced hypertension & edema , Puerperal sepsis

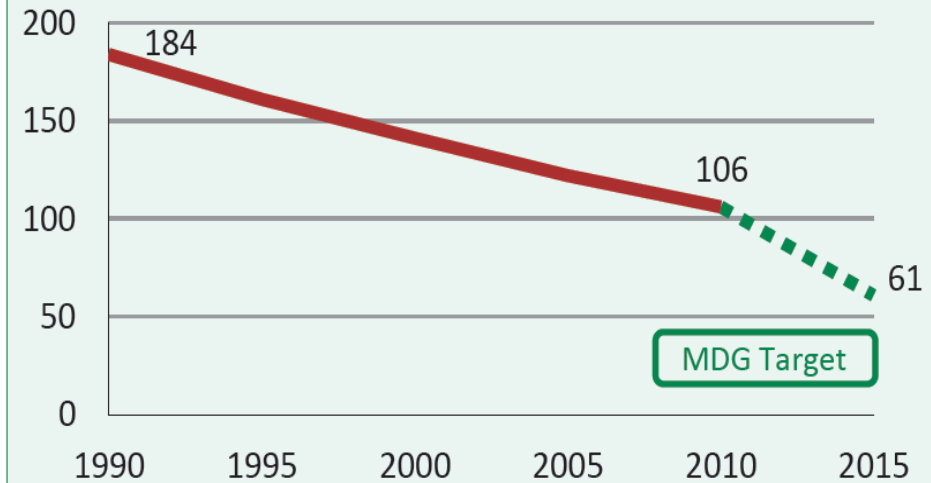
# 6.4 Major causes of child-mortality & under-5 mortality reduction target for Ethiopia

**Causes of under-five deaths, 2010**



**Under-five mortality rate**

Deaths per 1,000 live births



# 6.5 Child Survival Interventions in Ethiopia

- Universal Immunization Coverage,
- nutrition program,
- Integrated Management of Childhood Illnesses and the Community Case Management of Childhood Illnesses
- Through Health Development Army to
  - improve water, sanitation and hygiene
  - Malaria prevention through Integrated Household Spraying and distribution of Insecticide Treated Nets (ITN)

## 6.6 HMIS Indicators to monitor Child Survival Interventions

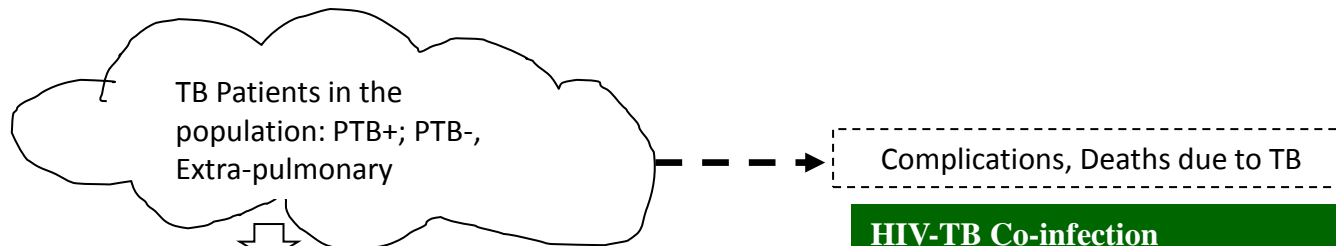
- Number of treatment of children under five – diarrhea, dysentery, pneumonia, measles, malaria, neonatal tetanus
- Number of infants immunized of measles
- Latrine coverage
- Safe water coverage
- Households with ITN

## 6.7 HMIS and STOP TB program

- STOP TB program is
  - aimed in achieving the MDG goal of dramatically reducing burden of TB by 2015
  - through universal access to high quality care (diagnosis and patient treatment) for all people with TB including those co-infected with HIV and those with drug resistance TB

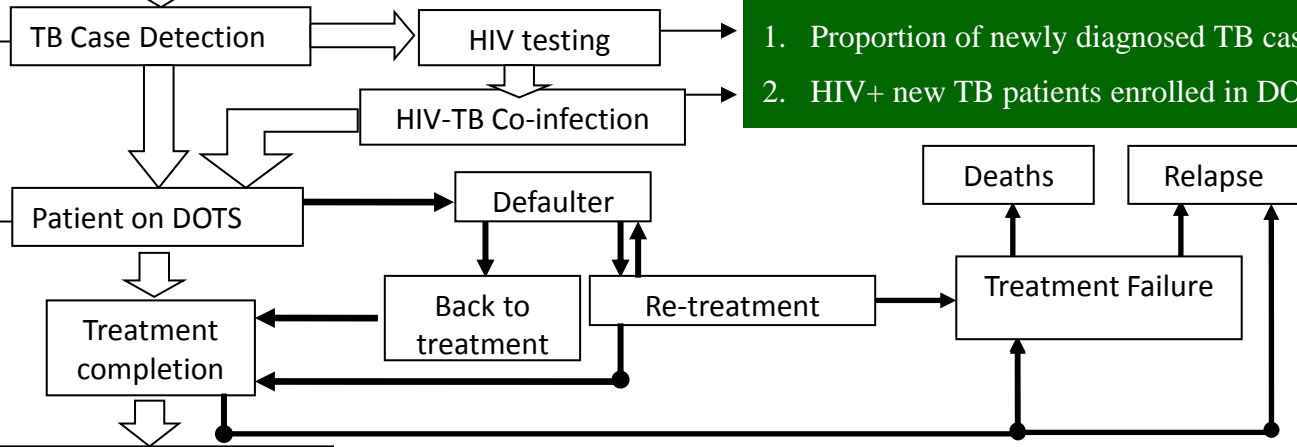
## 6.8 HMIS Indicators to Monitor STOP TB Program

- TB patients on DOTS
- Number of new smear pulmonary TB cases enrolled in the cohort
- TB Case Detection
- Number of New smear positive pulmonary TB cases detected
- Number of new smear negative pulmonary TB cases detected
- Number of new extra pulmonary TB cases detected
- HIV – TB – Co-infection
- Proportion of newly diagnosed TB cases tested to HIV
- HIV+ new TB patients enrolled in DOTS
- TB Treatment outcome
- Treatment completed PTB+
- Cured PTB+, Defaulted PTB+, Deaths PTB+



**HIV-TB Co-infection**

1. Proportion of newly diagnosed TB cases tested for HIV
2. HIV+ new TB patients enrolled in DOTS



**TB Patients on DOTS**

1. Number of new smear-positive pulmonary TB cases enrolled in the

**TB Treatment outcome**

1. Treatment completed PTB+
2. Cured PTB+
3. Defaulted PTB+
4. Deaths PTB+

**TB Case Detection**

1. Number of new smear-positive pulmonary TB cases detected
2. Number of new smear-negative pulmonary TB cases detected
3. Number of new extra-pulmonary TB cases detected

# Session 7: Decision-making in the context of Performance Improvement

## Session Objectives

- By the end of this session, participants will be able to:
  - Describe purpose of Ethiopian health system, its mission and vision
  - Analyze, interpret and present health data in the context of using HMIS data for decision-making
  - Apply various techniques of root cause analysis, generating interventions and prioritization

# 7.1 Overall Mission of the Ethiopian Health System

- To reduce morbidity, mortality and disability
- and improve the health status of the Ethiopian people
- through providing and regulating a comprehensive package of promotive, preventive, curative and rehabilitative health services
- via a decentralized and democratized health system.

## 7.2 Vision of Ethiopian Health Sector

- To see healthy, productive and prosperous Ethiopians

## 7.3 Handout questions

- Q1. What is one of the initiatives at health center level to reduce incidence & prevalence of malaria?
- Q2. What are the four priority areas under Health Sector Development Program (HSDP)?
- Q3. What are the targets for maternal health initiatives that would lead to reduction in maternal mortality?
- Q4. What are the strategic themes of the Ethiopian Health Sector?
- Q5. For which of the HSDP indicators data come from HMIS?

# 7.4 Exercise

You want to assess the performance of maternal health program in your assigned region.

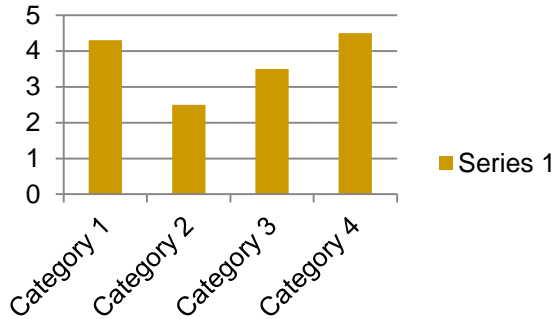
- What are the key maternal health program related questions in your mind that you want to be answered?
- Analyze the data given above and organize them as graphs, tables or narrative
- Answer the following:
  - What are your key findings?
    - What is the situation in your assigned region?
    - What important key question(s) remained unanswered?
    - What additional data do you need to answer those unanswered questions?
    - From where or how can you get those additional data?
  - How do you interpret or explain your findings?
    - What do you think are the reasons for such a situation in the region?

## 7.5 Data analysis & presentation technique

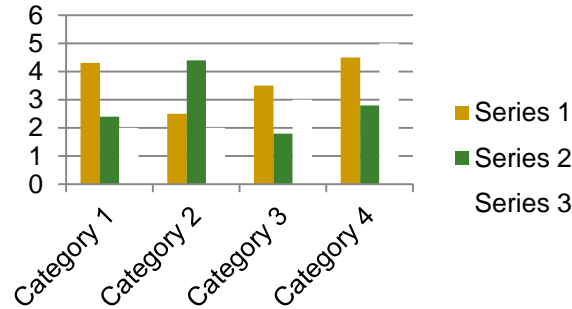
Type of data analysis	Type of Chart/Diagram Used	Data Needed
<b>Frequency of occurrence:</b> Simple percentages or comparisons of magnitude	Bar chart Pie chart Pareto chart	Tallies of category (data can be attribute data or variable data divided into categories)
<b>Trends over time</b>	Line graph Run chart	Measurements taken in chronological order (attributes or variable data can be used)
<b>Distribution:</b> Variation not related to time	Histograms	Large number (40 or more) of measurements (not necessarily in chronological order, variable data)
<b>Association:</b> Looking for a correlation between two things	Scatter diagram	Large number (40 or more) of paired measurements (measures of both things of interest, variable data)

# 7.6 Types of Charts

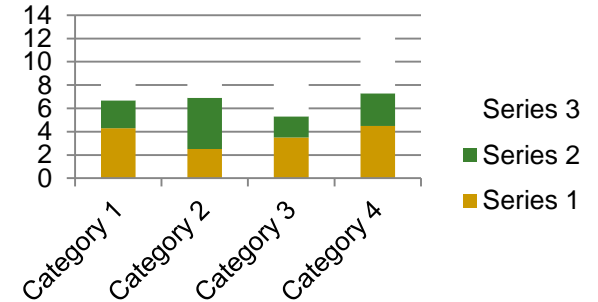
**Bar Chart**



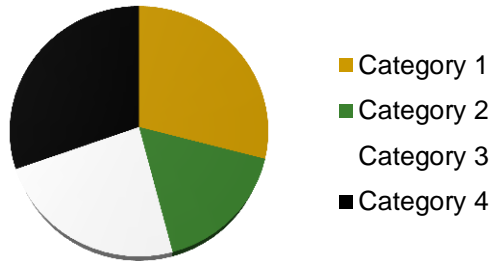
**Grouped Bar Chart**



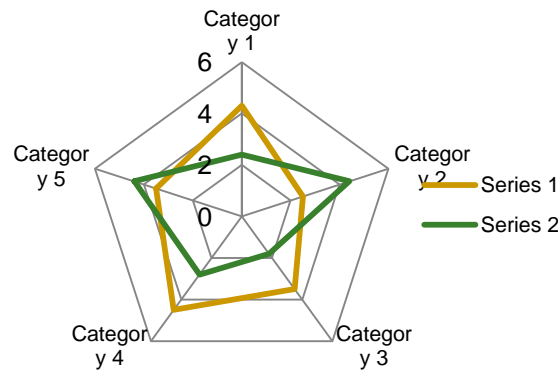
**Stacked Bar Chart**



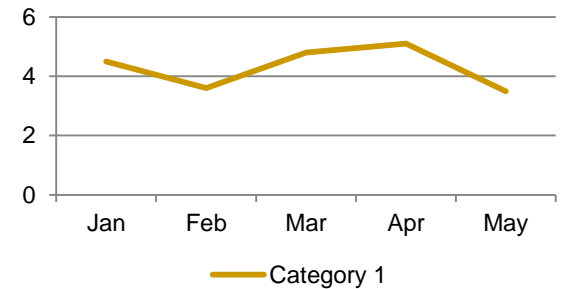
**Pie Chart**



**Radar Chart**



**Line Chart**

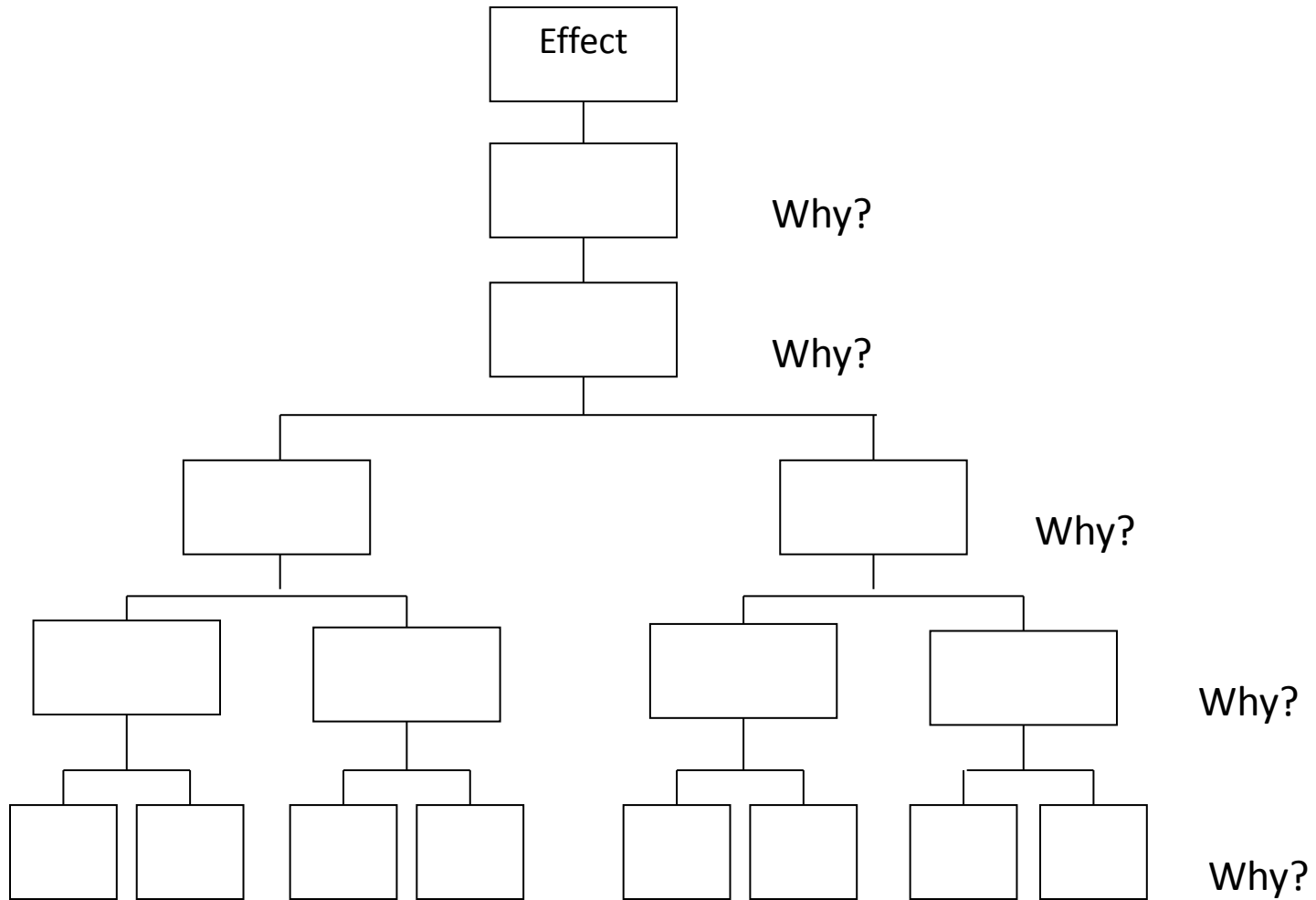


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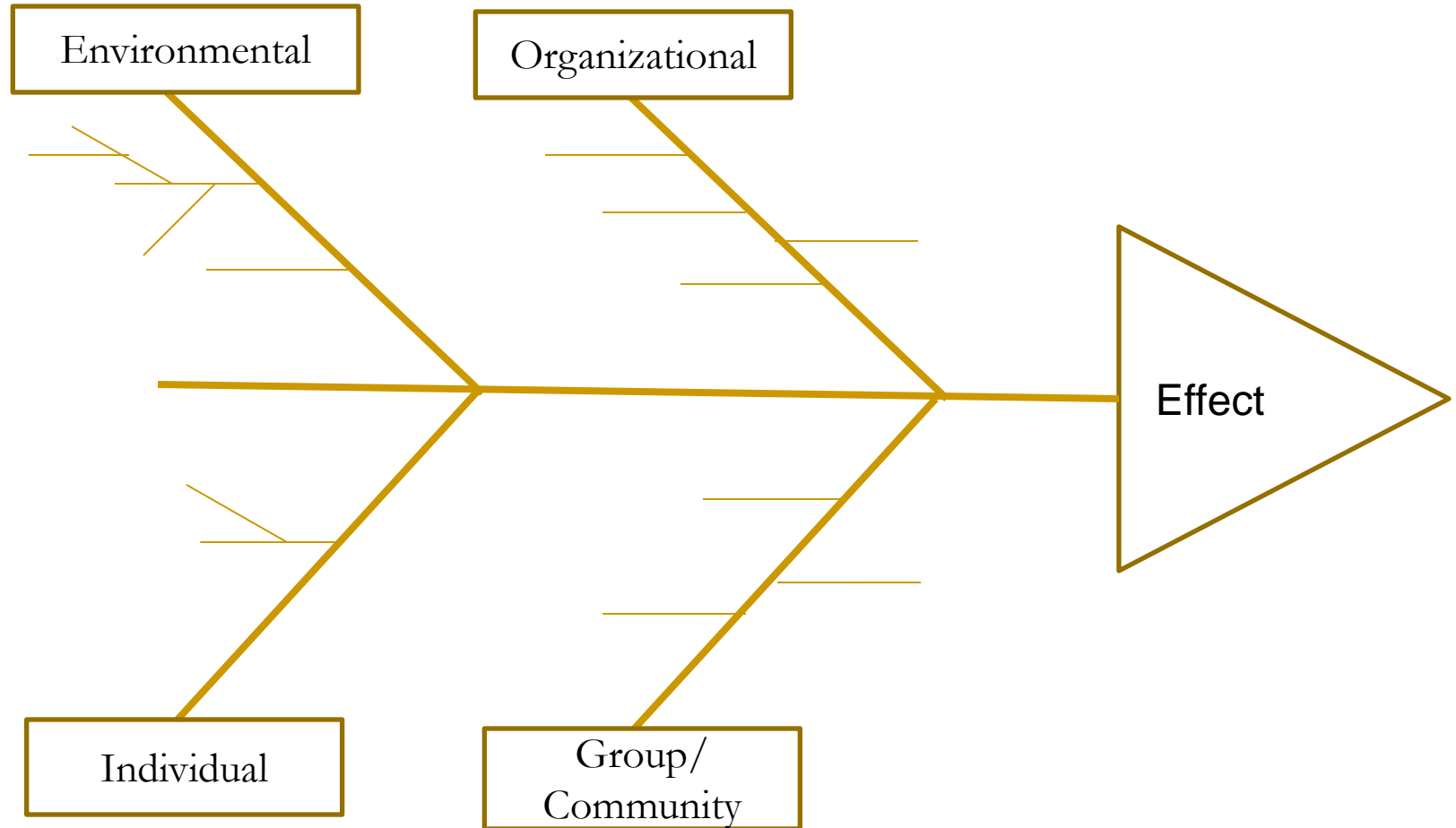
# 7.7 Root Cause Analysis Tools

- Tree Diagram – 5 WHYs
- Fish-bone Diagram

# 7.8 The Tree Diagram



# 7.9 Fishbone Diagram



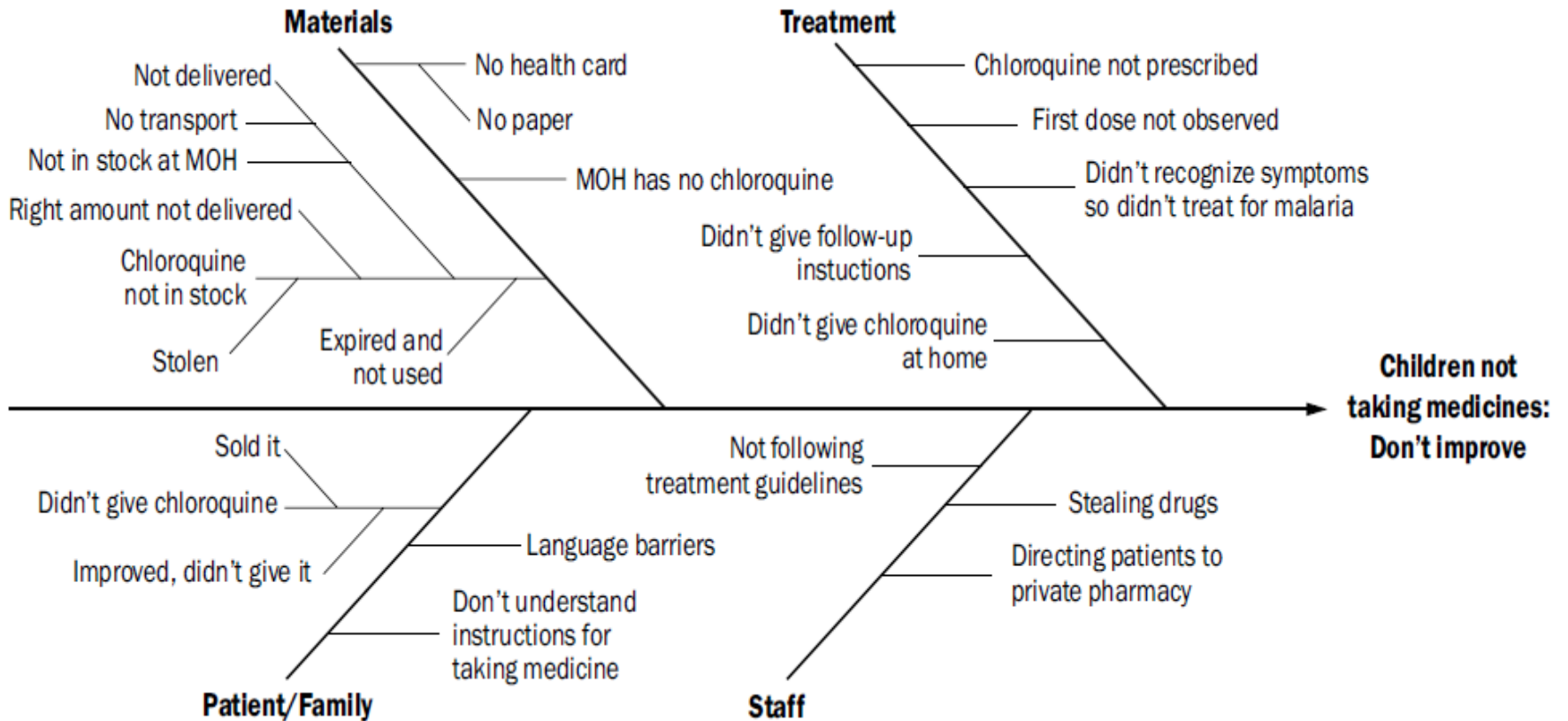
# 7.11 Prioritization Matrix

<b>Potential Solutions</b>	<b>Magnitude</b> <i>Large scale = 4</i> <i>Medium scale = 3</i> <i>Low Scale = 2</i> <i>Very Low Scale = 1</i>	<b>Feasibility</b> <i>Highly feasible = 4</i> <i>Good feasibility = 3</i> <i>Low feasibility = 2</i> <i>Not at all feasible = 1</i>	<b>Cost</b> <i>Low Cost = 4</i> <i>Medium Cost = 3</i> <i>High Cost = 2</i> <i>Very High = 1</i>	<b>Other Resources Needed</b> <i>Minimal = 4</i> <i>Few = 3</i> <i>Several = 2</i> <i>Significant = 1</i>	<b>Capacity</b> <i>Excellent Capacity Exists = 4</i> <i>Good Capacity Exists = 3</i> <i>Fair Capacity Exists = 2</i> <i>Little Capacity Exists = 1</i>	<b>Total</b>

## 7.12 Electronic HMIS (eHMIS) for performance review and decision making

- eHMIS: is a computerized system that helps to accurately and timely enter, aggregate, store, analyse and evaluate health related data from health facility to federal level.
- Based on the principle that COMPARISON is one the most powerful analytical methods
- eHMIS allows the following comparisons:
  - Spatial: by health facility, woreda, zone, region
  - Time: trends by month, quarter, year, etc.
  - Indicators: among various indicators related to same program, e.g. ANC coverage and skilled birth attendance
  - Benchmark: expected versus achieved

# 7.10 Example of Fishbone Diagram



(Taken from: *QA Monograph – A Modern Paradigm for Improving Healthcare Quality: USAID Quality Assurance Project*).

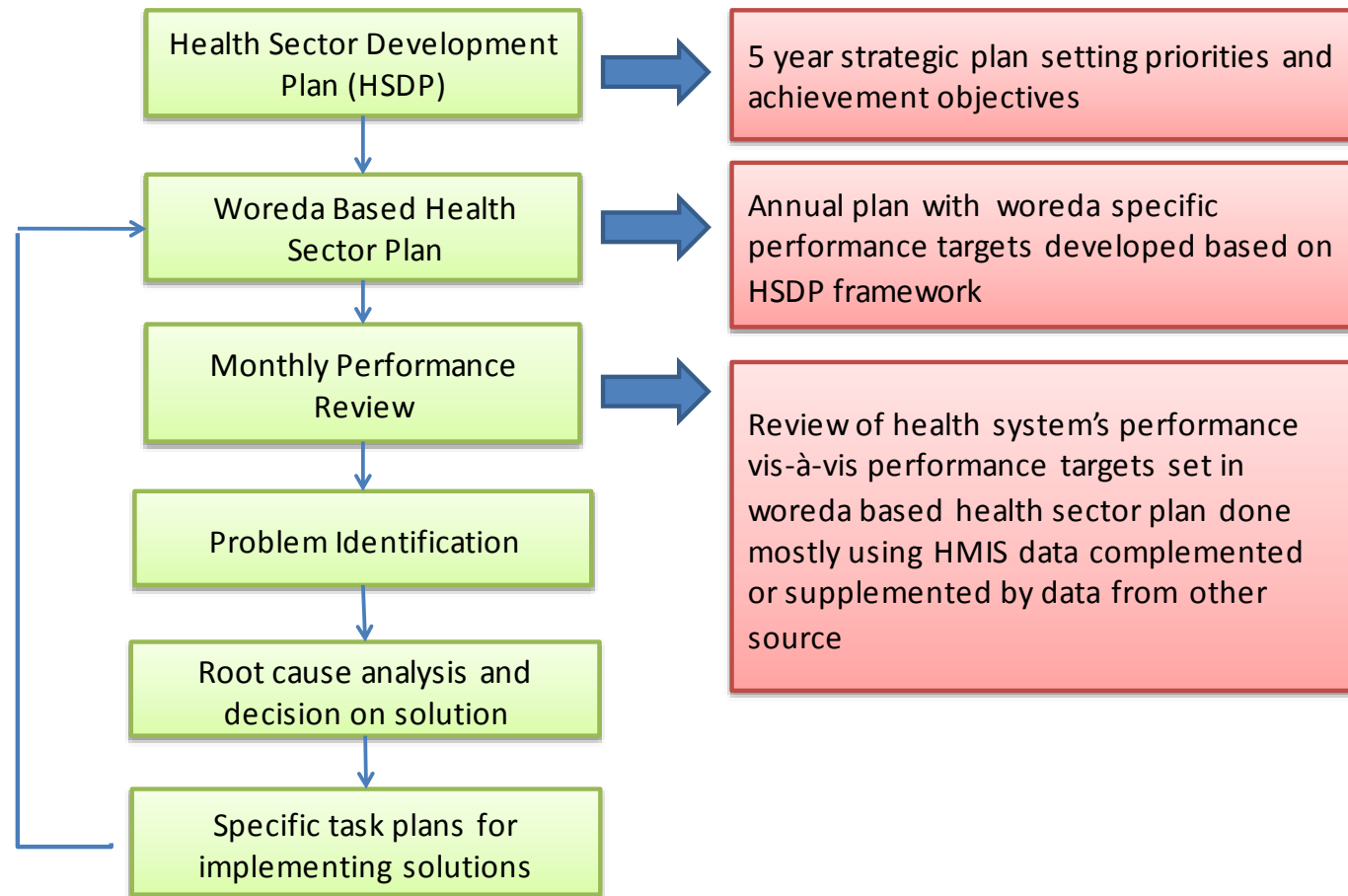
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# Session 8: Forum for HMIS Information use

## Session Objectives

- By the end of this session, participants will be able to:
  - Explain how woreda based planning serves as a one planning forum
  - Describe the purpose and functions of Performance Review Team
  - Elaborate how and why to engage stakeholders in Performance Review Team

# 8.1 The One Planning & Performance Monitoring Flow



# 8.2 Stakeholder Analysis Matrix

**Program Issue:** Health Services/Program Monitoring and Performance Improvement

**Proposed Activity:** Convene stakeholders to review health services/program performance on the basis of available data and to develop an action plan for performance improvement

**Date:**

<b>Name of Stakeholder</b>  <i>Organization, Group, or Individual</i>  <i>National, regional, or local</i>	<b>Stakeholder Description</b>  <i>Primary purpose, affiliation, funding</i>	<b>Potential Role in the Issue or Activity</b>  <i>Vested interest in the activity</i>	<b>Level of Knowledge of the Issue</b>  <i>Specific areas of expertise</i>	<b>Level of Commitment</b>  <i>Support or oppose the activity, to what extent, and why</i>	<b>Available Resources</b>  <i>Staff, volunteers, money, technology, information, influence</i>	<b>Constraints</b>  <i>Need funds to participate, lack of personnel, political or other barriers</i>

# 8.3 Stakeholder Engagement Plan matrix

**Program Issue:** Health Services/Program Monitoring and Performance Improvement

**Proposed Activity:** Convene stakeholders to review health services/program performance on the basis of available data and to develop an action plan for performance improvement

**Date:**

<b>Stakeholder Organization, Group, or Individual</b>	<b>Potential Role in the Activity</b>	<b>Engagement Strategy</b>  <i>How will you engage this stakeholder in the activity?</i>	<b>Follow-Up Strategy</b>  <i>Plans for feedback or continued involvement</i>

## 8.4 Performance Review Team Membership

Who Participates in Performance Review Team (PRT) Meetings	
RHBs, ZHO, WorHOs – administrative level	Health Facility level
Heads of Administrative units	Hospital Managing Director, HC/PHCU
All management members	All case team coordinators
M & E process owners	HMIS focal person
	Health Extension Workers (HEW) – need base

# 8.5 Performance Review Meeting

## Best Practices

- Setting an agenda – selecting priority program/management area
- Timely communicating the agenda, time & place of meeting to the stakeholders
- Ensuring that the meeting is chaired by the designated chairperson
- Proceeding the meeting according to the set agenda
- Reviewing/following-up the decisions of the previous meeting(s)
- Reviewing performance using Performance Improvement framework which includes
  - Identifying performance gaps based on HMIS
  - Identifying root causes
  - Deciding solutions and developing action plans with specified actions, timelines and responsibilities
  - Allocating/mobilizing resources
- Recording the meeting proceedings and timely communicating to all stakeholders

# Session 9: Sustaining a Culture of Information Use

## Session Objectives

- By the end of this session, participants will be able to
  - Define culture of information use.
  - Describe the factors affecting culture of information use
  - Develop action for sustaining the culture of information use.

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# 9.1 Debate: Sustaining a culture of information use

Topic:

**“Sustaining the culture of information use is the responsibility of the Regional Health Bureau – if the RHB managers use HMIS for monitoring and decision making, others at zonal, woreda and health facility levels will follow their practice.”**

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# Thank You!

MEASURE Evaluation is funded by the U.S. Agency for International Development and is implemented by the Carolina Population Center at the University of North Carolina at Chapel Hill in partnership with Futures Group International, ICF Macro, John Snow, Inc., Management Sciences for Health, and Tulane University. The views expressed in this presentation do not necessarily reflect the views of USAID or the United States Government.

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