

# Health Management Information System (HMIS)

## Facilitator's Guide for Training of Hospital Staff

June 2010



**USAID**  
FROM THE AMERICAN PEOPLE



**HMIS Scaling-up Project  
Implemented by John Snow Inc.**



**SNNP Regional Health Bureau**

## Table of Contents

Message from Head, SNNP Regional Health Bureau.....	1
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### Introduction 2

<b>Session 1: Welcome and introduction to the training.....</b>	<b>4</b>
---	----------

1.1 Opening.....	4
1.2 Conduct introduction exercise .....	4
1.3 Review Training Objectives.....	5
1.4 Review expectations .....	5
1.5 Briefly explain the training agenda .....	5
1.6 Pre and post test.....	6
1.7 Training methodology.....	9
1.8 Logistic arrangements .....	9

<b>Session 2: Health Management Information – for Improving Your Performance.</b> .....	<b>10</b>
--	-----------

2.1 Hospital and Health System.....	10
2.2 Health System Management and its information needs .....	11
2.3 Making HMIS data meaningful .....	13
2.4 HMIS Reform in Ethiopia .....	15
2.5 Health System Management using Problem solving approach.....	17
2.6 HMIS Data source .....	19
2.7 HMIS – Factors influencing HMIS Performance .....	19

<b>Session 3: OPD Data.....</b>	<b>21</b>
---------------------------------	-----------

3.1 Patient/Client Flow in a Facility.....	21
3.2 Scenario: Patient/Client coming for Outpatient services - Record keeping at the Card Room.....	23
3.3 HMIS Instruments at OPD.....	26
3.4 Case Scenario: Zami and her child .....	28
3.5 Patient Card and HMIS Disease Classification.....	29
3.6 OPD Data and HMIS Reporting .....	31
3.7 Brainstorming - OPD data and its uses.....	32
3.8 Session Summary .....	32

<b>Session 4: Reproductive Health Service Data – Family Planning Services .....</b>	<b>33</b>
---	-----------

4.1 HMIS instruments used for Family Planning services .....	33
4.2 Family Planning Service Delivery Reporting .....	35
4.3 Family Planning Method Dispensed Count.....	36

<b>Session 5: Reproductive Health Service Data – Antenatal, Labor, Delivery, Postnatal and post abortion services .....</b>	<b>37</b>
---	-----------

5.1	HMIS instruments used for antenatal, labor, delivery, newborn and postnatal services.....	37
5.2	Antenatal Care - Case Scenario: Alemitu Adera .....	38
5.3	Delivery and Postnatal Care.....	40
5.4	Safe / Post Abortion Care .....	42
<b>Session 6:</b>	<b>IPD Data.....</b>	<b>45</b>
6.1	Patient Flow in IPD.....	45
6.2	HMIS Instruments used at IPD.....	46
6.3	Scenario: Patient coming for In-Patient services - Record keeping at the IPD. .....	47
6.4	IPD Data and HMIS Reporting .....	48
6.5	Brainstorming- IPD data and its use .....	49
6.6	Session Summary .....	50
<b>Session 7:</b>	<b>HIV/AIDS service Data: VCT, Pre-ART and ART .....</b>	<b>51</b>
7.1	Patient flow at ART clinic .....	51
7.2	HMIS instruments used at HIV/AIDS clinic .....	52
7.3	Patient coming For VCT, Pre-ART and ART service.....	52
7.4	HIV/AIDS service data and HMIS Reporting.....	53
7.5	Brain storming, HIV/AIDS data and its use.....	54
7.6	Session Summary .....	54
<b>Session 8:</b>	<b>TB/Leprosy clinic .....</b>	<b>55</b>
8.1	Patient flow at TB/Leprosy clinic.....	55
8.2	HMIS instruments used at TB/Leprosy clinic.....	56
8.3	Patient coming to TB/Leprosy clinic .....	57
8.4	TB/Leprosy service and HMIS reporting.....	57
8.5	Brain storming, TB/Leprosy data and its use.....	59
8.6	Session Summary .....	59
<b>Session 9:</b>	<b>Child health services: Infant immunization and growth monitoring</b>	<b>60</b>
9.1	Patient/Client flow at child health service clinic .....	60
9.2	HMIS instruments used for child health service .....	61
9.3	Scenario: infant coming to child health clinic .....	61
9.4	Child health service and HMIS reporting .....	62
9.5	Brain storming, Child health data and its use .....	63
9.6	Session Summary .....	64
<b>Session 10:</b>	<b>Data Accuracy Check.....</b>	<b>65</b>
10.1	Data Quality Assurance – Introduction.....	65
10.2	Data Quality Assurance – Self-Assessment Check Sheet.....	66
10.3	Data Quality Assessment – Supervisor’s role.....	71
<b>Session 11:</b>	<b>HMIS Data Management.....</b>	<b>73</b>

11.1	HMIS Reporting formats.....	73
11.2	HMIS Managment with in health institution.....	74
11.3	HMIS Reporting Schedule .....	77

## Message from Head, SNNP Regional Health Bureau

### MESSAGE FROM THE REGIONAL HEALTH BUREAU HEAD

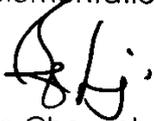
Health Management Information System (HMIS) is an essential tool for assisting health managers and health service delivery staff to monitor health care activities and reach logical decisions for improving health care delivery.

To realize this objective, the reformed HMIS has been prioritized and emphasized in all of Health Sector Development Program (HSDP) strategic plans. The first step in HMIS reform was selection of the indicators based on the priorities of the HSDP Accelerated and Sustained Development to End Poverty (PASDEP, HSDP III) and the requirements of international agreements such as the Millennium Development Goals (MDGs).

Reform of HMIS and M&E are mutually linked. Monitoring and evaluation is an action oriented management tool that uses indicators to improve performance and resolves bottlenecks. Thus, HMIS and M&E are complementary processes; reforming one means reforming the other.

As part of the health sector transformation the reformed HMIS documents have been developed by Federal Ministry of Health (FMOH) in collaboration with developmental partners. Through an agreement between Regional health bureau and USAID, John Snow Inc. (JSI) has been awarded the responsibility to facilitate the implementation of the reformed HMIS in SNNPR. To this effect, the facilitators guide has been developed in joint collaboration between the Regional Health Bureau, SNNPR and JSI/HMIS project. This facilitator's guide is instrumental to train trainers by equipping them with required skills and knowledge in HMIS and training techniques so that in turn they will train all higher, mid and lower level managers and health workers at health facilities. I commend the work carried out by JSI/HMIS Scale-up Project in collaboration with RHB.

At this juncture, the most fundamental factor that needs to be remembered is that improvement in HMIS utilization requires the input and participation of every one at health management and health facility levels. HMIS is not simply the responsibility of data clerks or statisticians who collect and aggregate raw data and send them to higher level. This situation must change. Thus I am calling on all health managers and health workers in this region to ensure proper implementation and use of the reformed HMIS in SNNPR.



Kare Chawicha,  
Head, Regional Health Bureau  
January 01, 2010  
Hawassa,



## Introduction

Health Management information System (HMIS) is one of the six building blocks essential for health system strengthening (WHO); and Ministry of Health (MOH) Government of Ethiopia gives due recognition to HMIS as a management support system for improving the health system in Ethiopia by providing continuous information support to decision making process at each decision-making level – Federal Ministry of Health (FMOH), Regional Health Bureau (RHB), Zonal Health Department (ZHD), Woreda Health Office (WorHO) and health facility.

At the request of FMOH and funding of USAID, John Snow Inc. (JSI) is assigned to scale-up HMIS in Southern Nations, Nationalities and Population (SNNP) Region.

Training health staff and health managers in SNNPR is one of the essential elements of scaling up HMIS in SNNPR. Health staff are targeted because they are the one who collect, aggregate and report data, and who must also understand the utility and benefits of the data that they collect. Health managers are targeted so that, on one hand, they can have a thorough knowledge of the HMIS and, thereby, can provide technical support/mentoring to health staff to properly collect, compile and report HMIS data and ensure data quality. On the other hand, these managers are the users of the reported data and need to have the necessary capacity to understand, interpret and utilize HMIS data for management decisions.

The HMIS Procedures and Management Training for the hospitals is organized in two tiers. The first tier is the training of the trainers (TOT) from among the hospital management and case teams. The second tier is the training of hospital staff.

This manual is intended as a Training of Trainers Manual. It has been designed such so that the trainers, who belong primarily to the government's health system, develop appropriate skills to become good trainers/facilitators during the training period, but also acquire mentoring skills for providing technical support to their health staff.

Thus, in addition to focus on HMIS instruments, emphasis has been put on overall concept of HMIS, HMIS indicators and their use in performance improvement, and data quality improvement.

This manual has been designed by John Snow Inc. (JSI) HMIS Scale-up team in collaboration with Regional Health Bureau, SNNPR and was pre-tested in Yergalem/SNNP. The need for developing this manual for felt to assure standardize training approach using adult learning methodology which can be later used by

SNNP or other regions for providing HMIS training utilizing their own human resources.

February 18, 2010

## Session 1: Welcome and introduction to the training

**Time: 60 minutes**

### **Materials required:**

- LCD and computer loaded with PowerPoint slides
- Flip charts and colored markers
- Facilitator's & participant's manuals
- Folders, pen, pencil and note book paper
- 1 blank piece of paper per participant and trainer
- Pretest
- Name tags

### **Preparation**

- Test LCD and computer
- Flip chart stand in place
- Tables and chairs set in "U" shape
- Set of stationery for each participant

### **Session objectives**

By the end of this session, participants will have:

- Introduced themselves to one another
- Received an orientation to the training, including objectives and agenda of the training
- List the general principles of adult learning

### **Plan of activities**

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#### **1.1 Opening**

Greet the participants setting a less formal tone for the training. State that one of the important aspects of this training is the network and friendship people form during the period of the training that helps them later in supporting each other in their work.

#### **1.2 Conduct introduction exercise**

Ask each participant, trainer, and observer in the room to think of a symbol that represents them in some way, and draw it on a sheet of paper.

Go round the room and ask each person to introduce him/herself using his/her symbol. Everyone should share the following:

- Name
- Symbol and why they chose it
- The zone, woreda and health institute where they work in
- Their organization and position
- Their work experience
- Expectations for the course

Write down the expectations on a flipchart as they are stated.

When everyone is finished, summarize the range of experience represented in the room, and the most commonly mentioned expectations. Explain that in the subsequent part of the session we will talk about which expectations will be met.

### *1.3 Review Training Objectives*

#### **HMIS Training Objectives:**

By the end of the training, the participants will be able to:

- explain the role of HMIS in health services management
- describe benefit of HMIS tools in performing daily tasks
- properly fill HMIS instruments, forms and tools
- describe the HMIS management procedures
- explain HMIS data quality assurance techniques
- calculate, analyze, and interpret HMIS indicators
- use HMIS information for improving health services performance

### *1.4 Review expectations*

Refer to the participants' expectations listed on the flipchart earlier in the session. Explain how their expectations will be met during the course and which expectations that might not be met; try to be accommodative as far as possible.

### *1.5 Briefly explain the training agenda*

Refer to the training agenda provided in the participant's folder and explain how the sessions have been organized.

The training sessions follow a pattern divided into five parts:

1. Sessions on HMIS record-keeping instruments that are used according to the patient flow
2. Sessions on HMIS reporting formats according to the priority health services / management areas, and understanding what data comes from which record
3. Sessions on use of HMIS data / information: calculating, analyzing and interpreting HMIS indicators and developing skills on how to use the HMIS information for decision making; local level forums for HMIS information use – The Performance Review Teams and Performance Review Meetings
4. HMIS management, including data quality assurance
5. introduction to eHMIS, especially the Decision Support System

## 1.6 Pre and post test

Explain that the “test” is not given to assess individuals’ capacities. It is given so that the trainers can see what needs to be emphasized during the training. At the end of the training the same test will be given to see if participants’ knowledge and skills have improved.

### 1. HMIS:

- a. Collects data for performance monitoring from service delivery and administrative records.
- b. Provides signals that can be reviewed frequently to monitor program implementation
- c. Used for decision making
- d. a and c
- e. All

### 2. Factors that affect value of information include:

- a. Appropriateness
- b. Quality
- c. Timeliness
- d. Quantity
- e. All

### 3. Information management include:

- a. Data collection
- b. Data processing
- c. Data analyzing
- d. b and c
- e. All of the above

4. Quality HMIS information means that the information is:
  - a. Complete
  - b. Relevant
  - c. Valid
  - d. Reliable
  - e. All
5. HMIS reform is required for one of the following reasons:
  - a. To improve quality
  - b. Reduce data burden
  - c. Integrate data channel
  - d. All
  - e. None
6. A variable that permits to measure a change of a given condition over time is called:
  - a. Base line
  - b. Target
  - c. Indicator
  - d. Data
  - e. All
7. One of the following does not belong to principles of HMIS
  - a. Standardization
  - b. Integration
  - c. Simplification
  - d. All of the above
  - e. None
8. Sources of data for HMIS include
  - a. Registers
  - b. Tallies
  - c. Surveys
  - d. All
  - e. a and b

**Read the following scenario and answer the questions 9-11 below:**

Sike is a kebele with a total population of 10,000 at the year 2001 E.C  
A Health post in this kebele provides the following immunization service

Penta1	=	330 children
Penta3	=	300 children
Measles	=	280 children
Fully immunized	=	250 children

Assuming proportion of surviving infants is 3.5%,

9. Penta1 coverage of the kebele is
- 94.2%
  - 84%
  - 99%
  - 80%
  - 79%
10. Penta1 to Penta3 dropout rate of Sike kebele
- 8.5%
  - 13%
  - 23%
  - 5.5%
  - 25%
  - none
11. Fully immunized coverage
- 71.4%
  - 88.2%
  - 66%
  - 97%
  - 99
12. Information used in HMIS is merely to collect and to report to higher level
- True
  - False
13. Both health managers and health staff should have skills in interpreting HMIS information and problem solving
- True
  - False
14. Health information system is a system that provides specific information support to decision making process at all levels of health facilities.
- True
  - False

## 1.7 Training methodology

Explain that children and adults learn in different ways and should therefore be taught in different ways. Children have few life experiences and may not be able to judge what they should learn and whether they have learned. Adults have rich experiences and usually know what they want to learn and whether they have learned it.

Explain that the training is based on adult learning principles and techniques, building on participants' professional life experiences, emphasizing dialogue, relevance of information, immediate results, respect, recognition and appreciation, and using feeling, thinking and actions for learning. It includes discussion, questions and answers, individual and group activities, role plays etc.

Ask the participants questions to remind them how they learn best and how they can set up the training sessions to provide this environment. For example,

- When you're in a learning situation, what helps you learn best?
- What kind of situation is best for you when you're trying to learn new skills?

Note their inputs on flip chart. Show relationship between what participants said and your list.

### Adult learning principles:

- Respect and learn from participants' experiences
- Praise/appreciate the participant
- Listen to others and understand their perspective
- Make participants feel safe by valuing their contributions
- 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 of material to daily work
- Immediate results
- Having fun – entertain and educate
- Repeat, paraphrase key messages to enhance long term memory

End the session by appreciating the participants.

## 1.8 Logistic arrangements

Explain which staff person is responsible for logistical and administrative duties.

Make announcements as needed regarding meal plans, lodging, and transportation that apply to all attendees.

## Session 2: Health Management Information – for Improving Your Performance

**Time: 2 hrs**

### **Materials required:**

- Flip charts and colored markers
- LCD and computer loaded with PowerPoint slides
- Facilitator's & participant manual

### **Session objectives**

By the end of this session, participants will be able to:

- Explain the role of HMIS in health service management and its importance as a management tool for performance improvement and evidence-based decision making
- Explain the concept of Routine Health Information System (RHIS) performance and factors determining RHIS performance
- Describe the background of HMIS reform in Ethiopia
- List the core HMIS indicators relevant for their hospital
- Explain the relationship between HMIS indicators, HMIS reports and data collection instruments used at the hospital
- Tell how to use the HMIS information to assess service delivery performance and identify gaps, analyze the root causes and formulate appropriate solutions

### **Plan of activities**

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#### **2.1 Hospital and Health System**

Initiate discussion on where the hospitals fit within the overall health system of the zone/region by asking: "What is the primary purpose of a health system"

Note the responses on a flip chart. Appreciate their answers and help them to understand that:

In general, the primary purpose of the health system is to promote, restore or maintain health (*from WHO definition*).

Under its HSDP, Ethiopia strives to reduce morbidity, mortality and disability, and improve the health status of the Ethiopian people

Ask the participants: “what is the main strategy used by the health system to serve that purpose. Appreciate their responses and explain that:

HSDP in Ethiopia strives to reduce morbidity, mortality and disability, and improve the health status of the Ethiopian people through providing comprehensive package of preventive, promotive, rehabilitative and basic curative health services via a decentralized and democratized health system in collaboration with all stakeholders.

Ask the participants what is the primary objective of their hospital. Facilitate discussion and help them to understand the primary objective of their hospital fits within the broader objective of the Ethiopian Health System

Ask that after the above discussion, whether the participants think that their hospital is a stand-alone entity in the city, or part of the zonal/regional/national overall health system?

Encourage them to elaborate why they think so and help them to recognize that their hospital is an important component of the overall health system.

## 2.2 Health System Management and its information needs

Ask the participants what the typical management functions of a health system are needed in order for it to serve its purpose. Facilitate the discussion and encourage the participants to look into the various levels of the health system and management functions involved<sup>1</sup>. (See the box below).

In the public sector, health system management includes the functions of:

1. Client management / individual care (delivery of promotional, preventive, and curative health services to the population; working with communities)
2. Health unit/facility management (managing service coverage/ utilization, resources)
3. Health system management (policy, planning, coordinating and managing support to health units)

<sup>1</sup> Design and Implementation of Health Information Systems. Edited by Lippeveld, Sauerborn & Bodart; WHO: Geneva, 2000. Page 18.

## **Managing individual patient/client:**

Ask the participants what information they need for managing an individual patient/client.

Information needs for managing a patient/client (example):

- Previous medical, surgical, obstetric, gynecological history
- Clinical signs and symptoms
- Treatment, vaccination history
- Family history
- Investigation findings

Inform the participants that there are a number of HMIS instruments that are used to record individual's detailed information so that a clinician or health service provider can easily retrieve and receive the patient/client information and use them for the management of individual patient/client.

Ask the participants to name some of these individual patient/client records used in their hospital/case teams. List them down on a flip chart and compare with the following list of HMIS instruments that are to be used for recording patient/client's detailed information. Clarify that many of the record keeping instruments that they have listed might not be in the HMIS list simply because there was no need to reform them, for example the patient prescription, investigation report forms, EPI card, FP card etc.

HMIS instruments for individual patient/client detailed records:

- Individual folder
- Summary sheet within individual folder
- Patient Card
- Integrated ANC, Labor, Delivery, Newborn & PNC Card
- Woman's Card

## **Managing the Hospital or the Health Unit within it**

Ask the participants what are the broad management functions they perform in order to manage their hospital or case team/unit. List the responses on a flip chart and facilitate grouping them into broad categories.

Broad management functions carried out in a hospital or case team

- Management of services
- Management of resources
  - Human resource
  - Finance
  - Logistics – medicines, equipment
  - Capital assets
- Preparedness for future needs, emergencies

Ask, in order to manage the hospital or their case team (unit), what types of information they will need.

Health Unit/Hospital management information needs

- Information on health service performance and coverage for promotive, preventive and curative services
- Information on disease and health conditions
- Information of health resources

Ask for managing the health system, what information are needed by the policy makers, planners and top level managers.

Health system management information needs

- Morbidity, mortality
- Coverage of essential services
- Births and deaths
- Health behavior
- Health resources
- Health needs of the population
- Health emergencies, emerging and re-emerging disease

### *2.3 Making HMIS data meaningful*

Ask the participants, within the context of the overall health system of which hospital is an integral part, as a hospital/case team manager and service provider how will you know that you are doing a good job.

Ask a member from each case team and hospital management to give an example of what information they will use to assess if they are performing well or not.

## Examples

### Performance / Coverage information

- Average daily OPD attendance
- Bed Occupancy Rate
- Percent of mothers immunized
- Number of <5 children treated for malnutrition
- Percent of pregnant women delivered at health facility

### Disease surveillance

- Number of diarrhea cases attending OPD
- Number of severe pneumonia cases admitted in hospital

### Resource information

- Stock outs
- Hospital staffed as per standards

Explain that all these information indicate performance or resource status or disease situation. We can call them **indicators**. Elaborate that **indicators serve to indicate or describe a given situation and permits measurement of change over time**.

Ask, how can they analyze these information to assess their performance.

## Methods to answer the question: "Is the hospital doing a good job?"

- Time trend
- Comparison with the baseline
- Comparison with other similar health facilities
- Comparison with expected / target service coverage
- Comparison with standard

Pick one indicator from each case team example and ask what that indicator can tell them. Elaborate on each.

### Example 1:

#### **Outpatient (OPD) visits per practitioner per day, by facility type.**

OPD visits per practitioner per day is calculated as the total number of outpatient visits (including first and repeat visits) during a given time period divided by the number of practitioners on duty times the number of days the OPD was open during the time period.

This indicator measures the productivity of the health facility based on its current staffing pattern. It provides guidance for priorities in staff deployment.

Example 2:

**Admission rate - the number inpatient admissions per 1000 population**

Admission rate is calculated as the total number of admissions during a given time period (usually one year) divided by the population (expressed in thousands) in the catchment area.

Admission rate reflects the interaction between demand and supply of inpatient care. Like outpatient service utilization, admission rate is inversely related to certain barriers that may be physical (distance), economic (cost to patient), cultural (low awareness and health care seeking behavior) or technical (poor quality of health care).

This indicator is used in conjunction with two other indicators of hospital indoor performance:

- Bed-Occupancy rate - the average proportion (percentage) of occupied beds during the period under review
- Average Length of Stay - the average number of days patients spent in the facility during a period under review

Similarly, discuss the following indicators:

- Inpatient mortality rate
- Top ten inpatient case-specific fatality rates
- Morbidity attributed to malaria
- Cesarean section rate
- Any other indicator that was mentioned by the participants

## 2.4 HMIS Reform in Ethiopia

Explain that under the reformed HMIS, a set of 108 indicators have been selected for use at national, regional and woreda levels. Explain that three overarching principles have guided the HMIS reform in Ethiopia.

### Guiding principles for HMIS reform in Ethiopia

- Standardization
  - Definitions throughout health sector
  - Recording and reporting instruments & procedures
- Integration
  - Single source for each data item
  - One report and one reporting channel
- Simplification
  - Reduce number of data items, limited to those required by indicators selected
  - User friendly forms and procedures

The emphasis in this reformed HMIS is on:

#### HMIS TO-BE

- Information Use
  - Self-assessment & Performance Monitoring using set of core indicators at all levels
  - Informed decision at lower level (Decentralization)
- Data Quality
  - Emphasis on Data Quality Assurance
  - Using LQAS Technique
- Decreasing data burden
  - Guided by list of relevant and actionable indicators
  - Standardized work flow
  - Integration of reporting formats
  - Simplified reporting schedule
- ICT Support
  - For data entry and Decision Support

Inform the participants that the selection of Health Management Information System (HMIS) indicators has been guided by national monitoring requirements of the Plan for Accelerated and Sustained Development to End Poverty (PASDEP)<sup>2</sup> and HSDPIII, by regional and woreda requirements, and by international agreements such as the Millenium Development Goals (MDGs) and the United Nations General Assembly Special Session (UNGASS). These 108 indicators are directly linked to the objectives of various health programs implemented in Ethiopia. Data for these 108 indicators are to be collected and reported routinely. However, whenever a health manager identifies some gap or problem area, there might be need for in-depth assessment of the situation which may require further investigation and data collection on need-basis.

Show a slide on broad grouping of HMIS indicators:

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<sup>2</sup> *Ethiopia: Building on Progress, A Plan for Accelerated and Sustained Development to End Poverty (PASDEP)*. Ministry of Finance and Economic Development (MoFED). Addis Ababa, September, 2006.

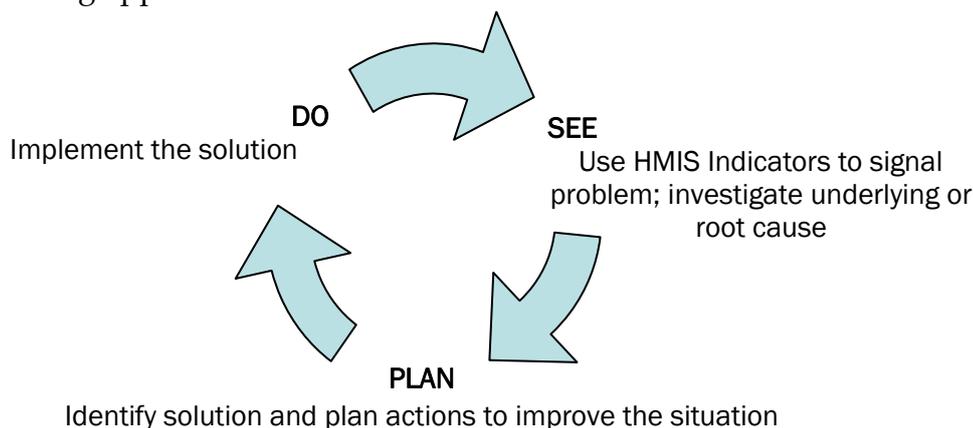
### HMIS Indicators: Broad grouping

- Family Health (21 indicators)
  - Reproductive Health (12 indicators)
  - Child Health (3 indicators)
  - Expanded Programme on Immunization (EPI) (6 indicators)
- Disease Prevention and Control (47 indicators)
  - All Diseases (5 indicators)
  - Communicable Diseases (39 indicators)
    - + Malaria (4 indicators)
    - + TB and Leprosy (10 indicators)
    - + TB/HIV co-infection (2 indicators)
    - + HIV/AIDS (17 indicators)
    - + Other Communicable Diseases (6 indicators)
  - Non-communicable Diseases (1 indicators)
  - Hygiene and Environmental Sanitation (2 indicators)
- Resources (28 indicators)
  - Assets (7 indicators)
  - Finance (9 indicators)
  - Human Resources (4 indicators)
  - Logistics (2 indicators)
  - Laboratory and Blood Bank (6 indicators)
- Health Systems (12 indicators)
  - Health Service Coverage and Utilization (8 indicators)
  - Management (2 indicators)
  - HMIS and M&E (2 indicators)

Inform that all the HMIS indicators and their definitions are given in HMIS/M&E Indicator Definition Manual. Refer to the list of indicators on page 70-74 of that manual.

## 2.5 Health System Management using Problem solving approach

Facilitate discussion and ask how the HMIS indicators can be helpful in the management of the respective case team or the hospital. Elaborate that HMIS helps in the “See” component of the “See-Plan-Do” cycle of health management using a problem solving approach.



Tell the participants that we will have an exercise to identify performance gap, analyze root cause and decide on appropriate solutions. Ask the participants to work in groups of two (without changing their seats).

### Exercise

Awassa town has a population of 225,650. In 1999 EC, 270 Pulmonary TB cases were registered. Of them 146 got cured, 16 died and 48 were defaulters.

On the other hand, in the whole of SNNP Region with a population of 15.745 million, 9,565 Pulmonary TB cases were registered in 1999 EC whereas the expected number of cases was 23,984; the TB cure rate during that year was 70.7%, among the pulmonary TB patients 3% died and 4.3 % were defaulters.

Given these figures:

- How is Awassa performing in terms of TB control program?
- In which aspects of the TB control program is Awassa doing better or not doing so good?
- What can be reasons for lower performance of Awassa in some aspects of the control program?
- How can we improve the situation? What aspects of the program implementation you would consider when deciding on what interventions you need to improve the situation in Awassa?

Review the answers and appreciate them. Facilitate discussion on possible reasons of lower performance and how to get to the root cause. Tell the participants that they can brainstorm on various aspects of TB control program implementation including resources/logistics, health seeking behavior, accessibility, quality of care, program management etc. where the problem or its root cause(s) may lie. Ask them to suggest possible solutions and prioritize them based on certain criteria (e.g. implementation feasibility, effectiveness, resource availability).

Once they have prioritized the solutions, ask them that in order to implement the solution(s) what things they need to decide on.

Appreciate the answers and compare with the following:

- *Actions required for implementing the solution(s)*
- *Timeline for implementation*
- *Resources, especially budget, required for the implementation*
- *Person(s)/organization responsible for implementation or leading the implementation*
- *Outputs of each action (the deliverables) or indicators to access accomplishment of each action*

- Possible external factors that might influence the implementation or output.

Ask the participation to pick one solution and help the participants to develop an action plan that addresses the above points.

Summarize the session and reiterate the significance of use of HMIS information in improving the health services.

## 2.6 HMIS Data source

Initiate discussion by saying: “ now that we know how important HMIS information is for the management fo the health system, we need to know from where we can get the relevant data.”

Refer the participants to the OPD Abstract Registerformat given in the Participants Handout, and ask what data can we get from this register; ask them to specify data from which column can be used to calculate what indicator.

### Indicators that can be derived from OPD Data

- Top 10 causes of morbidity among children under 5 years
- Top 10 causes of morbidity among persons 5 years and above
- Morbidity attributed to Malaria
- Morbidity Attributed to Measles
- Neonatal tetanus
- Morbidity attributed to Guinea Worm ( Dracunculiasis)
- OPD attendance per capita
- OPD visit rate per practitioner per day
- PIHCT service offered, testing and positivity rate

Inform the participants that as we move along each session on HMIS instruments, we will be discussing about what data comes out from which HMIS instrument and to calculate which indicators.

## 2.7 HMIS – Factors influencing HMIS Performance

Based on the above discussions, invite the participants to brainstorm on what is the principal purpose of HMIS. *Compare the responses with the following:*

The purpose of HMIS is to routinely generate quality health information and use that information for management decisions to improve the performance of health services delivery.

Emphasize that HMIS is not only meant as a system for data collection and generating quality information, but use of that information for decision making is an essential output of HMIS.

Ask: what do the participants mean by quality HMIS information.

- Quality HMIS information means that the information generated by HMIS is:
- relevant
  - timely
  - complete (both in geographical coverage and in terms of range/amount of data it is supposed to provide)
  - valid (provides the information that it is supposed to provide)
  - reliable (the information is consistent)

Ask: what factors determine that HMIS is producing quality information in a sustainable manner and that there is continued used of HMIS information for decision making. Help the discussion to focus on organizational and behavioral factors that apart from the technical design of the HMIS also determine how HMIS performs. Elicit examples from the participants.

Technical determinants	Organizational determinants	Behavioral determinants
<ul style="list-style-type: none"> <li>• HMIS design</li> <li>• Forms</li> <li>• Technology</li> </ul>	<ul style="list-style-type: none"> <li>• Organizational Structure</li> <li>• Functions</li> <li>• Management</li> <li>• Roles &amp; responsibilities</li> <li>• Information culture</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Skills</li> <li>• Values</li> <li>• motivation</li> </ul>

End the session by summarizing the session and appreciating the participants.

## Session 3: OPD Data

**Time: 4hrs**

### **Materials required:**

- Flip charts & Markers
- Slides
- Facilitator's & participant manual

### **Session objectives**

By the end of this session, participants will be able to:

- Describe the HMIS instruments used at various point of patient/client provider interactions in the out-patient departments (OPD)
- Fill the following instruments correctly
  - **Integrated Medical Record (IMR) tools used at the card room**
    - + Integrated individual folder
    - + Patient form/or card
    - + Service ID card
    - + Appointment card
    - + Master Patient Index (MPI)
    - + Tracer card
  - **HMIS Instruments used for OPD services**
    - + OPD Abstract Register,
    - + Patient Diagnosis and Attendance Tally
    - + PIGHT tally
    - + Report forms – OPD related sections
- Describe the benefits of data collection in these HMIS instruments  
Interms of standardization, simplification & integration at all levels
- Describe what and how to transfer data from these data collection instruments used in OPD to HMIS reports

### **Plan of activities**

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#### **3.1 Patient/Client Flow in a Facility**

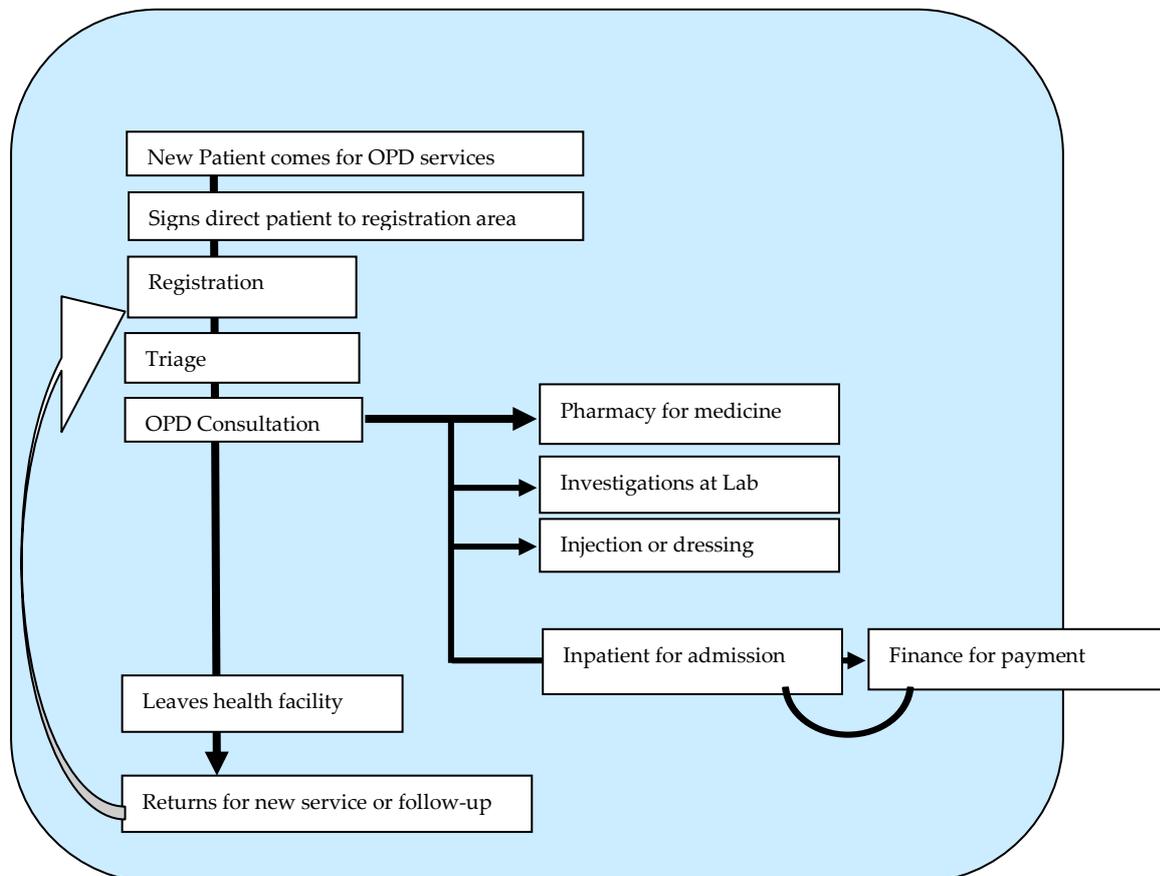
Ask the participants to describe what happens when a new patient/client comes for a service at their respective health institution. (Ask them about how clients find their way from the entrance to registration area, and then flow from triage, registration,

OPD consultation, pharmacy, injection/dressing room, investigation unit, in-door for admission).

Divide participants in to four groups and ask them to draw the patient flow at their health facilities.

Then highlight commonalities among the flow charts, especially those that coincide with the already prepared slide (next)

**Fig.: 4.1: Patient / Client Flow at Outpatient Registration**



Point out the changes that are needed to implement the reformed HMIS, and why these are important:

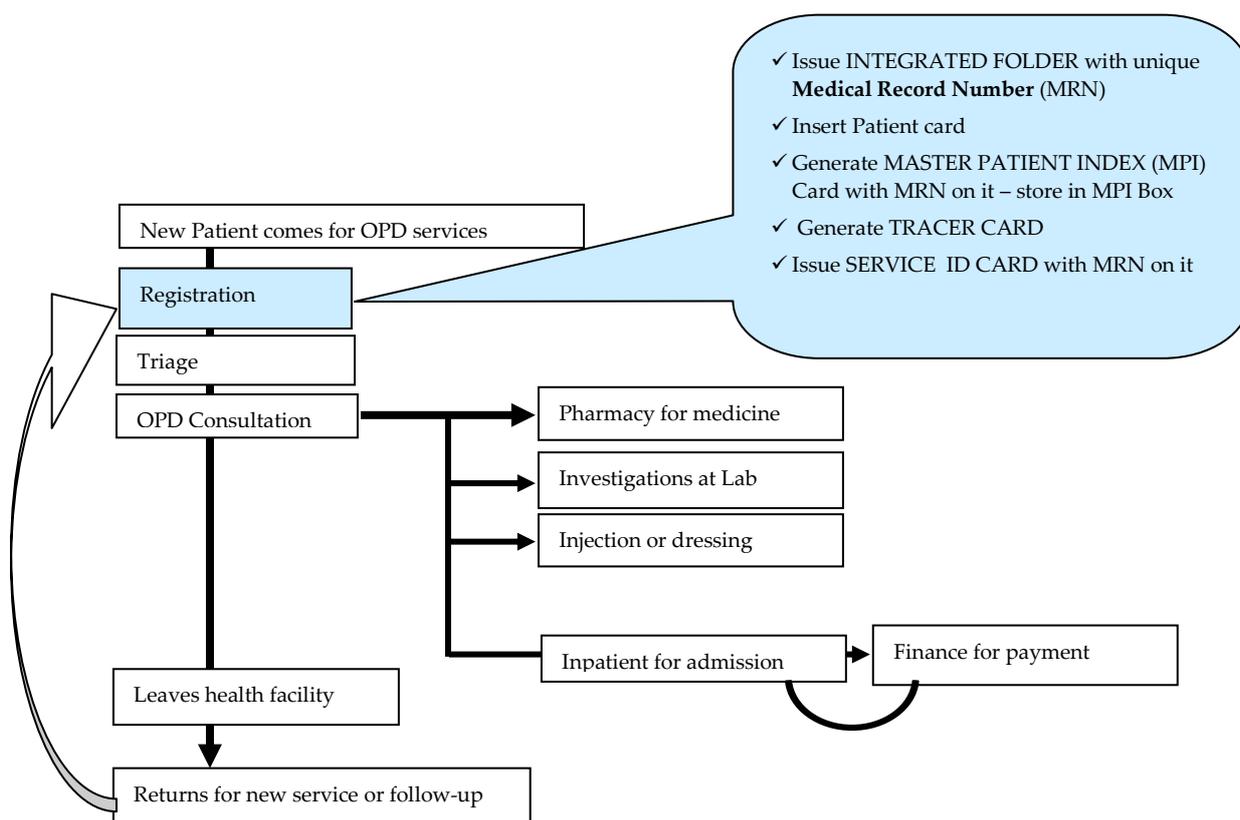
- Signage directing client to card room (*Why?* Reminder to patients who went directly to service room in the past to come to registration area.)
- Card room with two windows – fast track and regular. (*Why?* to assure prompt attention to preventive and chronic patients.)
- Shelves, MPI index box, work table and chair, and other furnishings in card room. (*Why?* to provide tools and space for managing new integrated folder.)

Show participants samples of I NTEGRATED FOLDER, SERVICE CARDS, MASTER PATIENT INDEX CARD, TRACER CARD, SERVICE ID CARD and APPOINTMENT CARD.

Allow a few minutes for the participants to review the instruments.

After about 5 minutes, ask which instruments will be used at each step of the client/patient flow. Facilitate discussion using the flip chart with client flow diagram putting the names of the appropriate record-keeping instruments that are/will be used at each step of client/patient flow. Clarify that instead of multiple patient folders, only one integrated individual folder will be used for an individual client/patient.

**Fig.: 4.2: HMIS Instruments at the Card Room**



### 3.2 Scenario: Patient/Client coming for Outpatient services - Record keeping at the Card Room

Divide the participants in 4 groups, assign facilitators to each group, and ask the participants to read and discuss the story given below.

## Zami Regesa

Zami Regesa is a 21 year old married woman living in a village of Alaba in SNNP. Four months ago she gave birth to her first baby at the Health Center in Alaba. The family was very happy and named him “Berhanu” – the Guiding Light.

At the time of her discharge from the Health Center, the nurse advised her to bring her child for vaccination. Zami forgot, but a few days ago she was reminded by Keisha, the Health Extension Worker in her village. Zami thought it's a good time she goes to the health center so that she can also consult the doctor for her pain in the abdomen she is feeling since a few days.

Today, when she was on her way to the health center with her son, she also met Girish. Girish was from the same village and was going to the clinic as well. Zami didn't ask him why he was heading to the Health Center. Girish has been suffering for many months; people say many things about him, but Zami thought Girish needs help. Zami offered Girish to go together to the health center. Zami saw a small card popping out of Girish's pocket and knew that Girish has been to the health center before. She recalled that she was also given a similar looking card when she went to the health center for giving birth to Berhanu, but she lost it. She was afraid that she will have difficulty in the health center.

At the health center, they waited for their turn at the registration booth. When it was Zami's turn, she told about her son and herself. The woman at the registration asked if she has brought the little card she was given last time she was at the health center. Zami apologized. The woman didn't look very happy, but asked her name, husband's name of her Goth and Kebele. Then she looked through a smartly kept small stack of cards and brought out a card which had her name etc. on it. The woman wrote another card and gave it to Zami, but warned her that she must keep this card safely and bring it every time she visits the health center. She also gave Zami a similar card for Berhanu. An assistant went and brought out Zami's folder from the shelves. In the meanwhile, the woman at the registration prepared another folder with Berhanu's name and other information.

Zami was then taken to a room where a female doctor greeted her and asked about her complaints. She examined her and wrote on the card and summary sheet that were inside her folder. The doctor reassured Zami and told her probably her menstruation is coming back and gave her a prescription. She gave Zami another small card and advised her to come back on the date written on the small card she has given her.

Then she went to another room where Berhanu was vaccinated. Here also the nurse wrote something on a summary sheet inside Berhanu's folder and gave Zami a small card advising her to bring Behanu after a month.

Ask each group:

- To list the HMIS tool needed based on the case scenario:
- What card did Zami lose which was given to her at the time of discharge after delivery?
- How does this card help?
- What card did the woman at the registration use that helped her to find Zami's folder without Zami bringing her card?
- What did the woman do with the two folders after getting Zami and Behanu registered?

*Compare the responses to the following*

- The HMIS tools are: MPI, service ID card, individual folder, patient card, appointment card and summary sheet.
- Zami lost Service Id card
- It helps to locate integrated individual folder using MRN
- The woman used MPI
- The woman replaces the lost ID card to Zami & provides new ID card to behanu.

Ask the participants to complete the story on what happened when Zami came back the next week.

Zami came back next week and show her service ID & appointment card to the card room. The Integrated individual folder is tracked easily and sent to the care provider.

***Note for Facilitators of group discussion:** During these group discussions, review how the participants have filled the respective cards. Using the guidelines given in the HMIS Procedure Manual, help them fill the cards correctly and clarify any queries they might have.*

Ask the participants to reassemble and **ask what the benefits are of:**

- Keeping all service records in one folder (Integrated Folder)
- Having a unique MRN (Medical Record Number) - and how do you assign it (serial number of new patients/clients as they get registered). A person is assigned the number only once, at first registration. The same number is kept over the years. E.g. 000001/yy
- Tracer Card? How does it help in properly maintaining the medical records of an individual?

Write their responses on flip charts on each question one by one. Compare the responses with the following Boxes,so that you can use it as a summary.

**Integrated Folder:**

- a. Contains individual's medical records of all preventive, OPD, and IPD services
- b. Provides individual's demographic information
- c. Contains summary sheet for all services provided in the facility

**Medical Record Number:**

- MRN is assigned as a serial number of new patients/clients as they get registered at the health institution. The serial numbers start again each year
- Helps in easy filing and extracting the individual folder containing all medical records from the file shelf

**Tracer Card:**

- Track location of individual folder when it is removed from file shelf

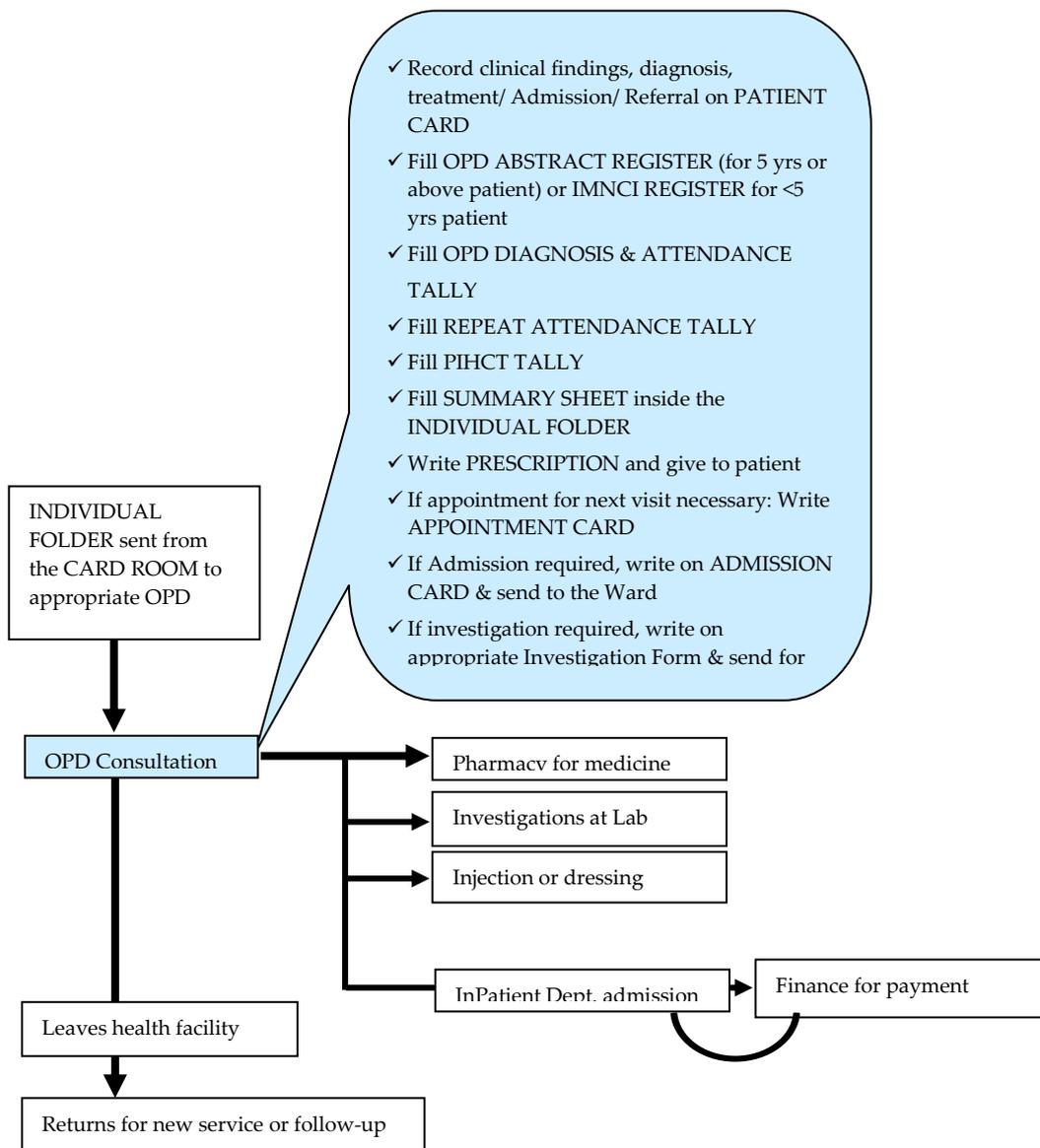
### 3.3 HMIS Instruments at OPD

Ask the participants to review:

- OPD ABSTRACT REGISTER
- OPD DIAGNOSIS & ATTENDANCE TALLY
- REPEAT ATTENDANCE TALLY
- IMNCI REGISTER
- PIHCT TALLY

Allow them some time (about 10 minutes) to review the instruments in groups of two (without changing their sitting positions).

**Fig.: 4.3: HMIS Instruments Filled at OPD (Curative Services)**



Explain to the participants that now we will work on a case study that will help us to know how to fill these various OPD instruments.

### 3.4 Case Scenario: Zami and her child

#### Zami returns:

Berhanu is now 7 months old. By now Zami is giving him other solid food besides breast milk. Since the last 2 days Behanu has developed fever and cough. She gave him some warm soup, but his cough seems to get worse. Zami doesn't like his appearance. She asks her husband, Yared, what to do. They decide that they should take him to the health center. This time Zami doesn't forget to take the cards that were given to her for herself and her son. Yared asks his wife what are these cards for. Zami proudly explains to him what they are. Yared appreciates his wife's sense of responsibility.

This time at the health center, it was easy to find Berhanu's folder and they were quickly guided to the doctor's room. The doctor looked through Berhanu's record in his Folder. He appreciated that Berhanu has all the three doses of pentavalent vaccines by now. He could also see that this is Berhanu's first visit to the health center for any illness.

Dr Elias examined Berhanu very carefully and told them that he needs antibiotics. He would like to start with injection and then switch to oral syrups which they can give him at home. He writes a prescription and asks the parents to go to the Injection room for injection and then take a bottle of antibiotic syrup from the pharmacy. He also gives them some advice on giving Berhanu food and fluids and to watch for his symptoms.

Ask the participants to distribute themselves in 4 groups as was done previously.  
Ask each group of participants to review the case study in detail

Ask each group to fill

- All the relevant HMIS instruments that Dr Elias filled at the time of or after the consultation.
- Berhanu's information in the HMIS instrument used at the Injection Room.

Ask them to discuss:

- Which cards was Zami carrying to the Health Center? (*Service ID*)
- What cards were already there in Berhanu's Folder?( *Summary sheet*)
- What card did the woman at registration put in Berhanu's Folder this time? (*patient card*)
- How did Dr Elias know that Berhanu has received three vaccinations and has never been ill before? ( *based on the record in the summary sheet*)
- What was his diagnosis? Where did Dr Elias write it? (*pneumonia, on pt.card& summary sheet*)
- Berhanu has been to the health center before for vaccination, but this is his first visit for any illness. How would Dr Elias classify his visit type – New or Repeat? (*New*)
- After completing the consultation, what did Dr Elias do with Berhanu's Folder?( *sent back to the card room for future use*)

- Zami brought Behanu for a follow-up check-up after 5 days even though he is now perfectly alright. Is this his new visit or repeat visit? **(Repeat)**
- Which HMIS instrument was used at the Injection Room? Who filled it? **(Repeat attendance tally & filled by the care provider in the room)**

**Note for Facilitators of group discussion:** During these group discussions, review how the participants have filled the respective HMIS Instrument. Using the guidelines given in the HMIS Procedure Manual, help them fill the forms correctly and clarify any queries they might have. Refer to the HMIS Procedures Manual for details on how to fill the various cards/registers.

Ask the participants to reassemble.

### 3.5 Patient Card and HMIS Disease Classification

Show a slide of the Patient Card. Inform the participants that based on the clinical finding and investigations, the clinical diagnosis and other diagnosis are noted down on the Patient Card. In addition, the care provider must also note down the HMIS Disease Classification on the Patient Card.

Ask why it is important to write down both the main diagnosis and HMIS disease classification.

#### Main Diagnosis

The Main Diagnosis helps the care provider to determine what treatment should be given to the patient.

#### HMIS Disease Classification

HMIS Disease Classification has statistical purposes. It makes broad categorization of disease and health problems within the ICD-10 framework and specifies ICD-10 codes that fit within each category.

HMIS Disease Classification allows health facilities with varying diagnostic capabilities to report on diagnoses according to broad classifications that permit systemic recording, analysis, collation and interpretation of morbidity and mortality data collected in different health institutions and, thereby, facilitate statistical study of disease phenomena.

**Writing both the main diagnosis and HMIS Disease Classification on Patient Card:**

By doing so, the care provider is not constrained by HMIS Disease Classification from making detailed diagnosis of the case necessary for appropriate management of the patient.

Example: Acute appendicitis and acute ruptured appendicitis with peritonitis are classified as “Acute Appendicitis”

Falciparum malaria with or without its complications, e.g. Cerebral malaria is classified as “Malaria (p. falciparum)”

For further details on HMIS Classifications, refer the participants to the document “Disease Classification for Disease Reporting and Case Definitions” published by MOH. Provide a copy of the document and ask the participants to review the document as part of their home work.

Show the slide/transparency on HMIS Disease Classification Case Study. Encourage the participants to provide their diagnosis and what would be HMIS Disease Classification for each case. Clarify misconceptions.

**Exercise: Main Diagnosis and HMIS Disease Classification**

1. Nine-month-old Mamush is rushed to the health centre because he is very ill. He was well until yesterday, when he developed fever and a stiff neck. He has had no diarrhea. On examination, you find that he shows signs of "some" dehydration. He has no rash, and his fontanel is slightly bulging.
2. Eight-year-old Henok is brought to the clinic by his father. He fell from the roof of the house earlier that day and has been complaining of arm pain since the fall. His forearm appears broken.
3. Four-year-old Kedir has had diarrhea (about 4 loose stools a day) for two days. There is no blood in the stool and his physical examination is normal. His Road to Health Card indicates that he his weight has been fluctuating across the lower line.
4. Tesfu, 28 years old, is complaining about a discharge from the penis for four days. Urination is painful. On inspection you can see a whitish/watery discharge from the penis.

Summarize the benefits of each HMIS instrument used at OPD

### 3.6 OPD Data and HMIS Reporting

Introduce the HMIS OPD Reporting forms to the participants. Show them:

- QUARTERLY OPD DISEASE REPORT FORM (for Hospitals/Health Centers/Clinics)
- QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)
- WEEKLY IDS REPORT FORM

Tell them that we will gradually look into each corresponding section of the HMIS Reports during the relevant session on HMIS data collection instruments. For this session, we will focus on sections that relate to OPD data reporting.

Ask the participants to review the report forms and tell which section of each report relates to OPD (Curative care) data. Compare the answers with the following table. Clarify misconceptions, if any.

QUARTERLY OPD DISEASE REPORT FORM (for Hospitals/Health Centers/Clinics)	All
QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)	Section B2d.3 (PIHCT) Section D (Health Systems) Rows 1.2.1 to 1.2.12) Row 1.3

Ask the participants to review the OPD ABSTRACT REGISTER, OPD DIAGNOSIS & ATTENDANCE TALLY and PIHCT TALLY. Ask them which data reported in the above reports comes from which column of the OPD Abstract Register, OPD Diagnosis and Attendance Tally or PIHCT Tally.

Compare their responses with the table below and clarify misconceptions, if any.

Quarterly Report Data item	Data Source
OPD Diseases	OPD Abstract Register Col. 7
New Visits	OPD Abstract Register Col. 8
Repeat Visits	OPD Abstract Register Col. 9
PIHCT test offered	OPD Abstract Register Col. 11
PIHCT test performed (accepted)	OPD Abstract Register Col. 12
PIHCT test result	OPD Abstract Register Col. 13
OPD visits (by age and gender)	OPD Diagnosis & Attendance Tally

### 3.7 Brainstorming - OPD data and its uses

Encourage discussion among the participants on:

- What information they can derive from these data, and
- How, as managers of their health unit/institution, they can use the information collected from OPD

Encourage them to respond in simple language (e.g. will know about which are the top disease attending the OPD; is there any increase in malaria cases from previous months; or is OPD attendance increasing or decreasing)

Write their responses on flip chart. Compare their responses with the list of HMIS indicators given in the Box below and appreciate their responses. Tell that we will have a more detailed session on use of information later.

#### Indicators that can be derived from OPD Data

- Top 10 causes of morbidity among children under 5 years
- Top 10 causes of morbidity among persons 5 years and above
- Morbidity attributed to Malaria
- Morbidity Attributed to Measles
- Neonatal tetanus
- Morbidity attributed to Guinea Worm Dracunculiasis
- OPD attendance per capita
- OPD visit rate per practitioner per day
- PIHCT service offered, testing and positivity rate

### 3.8 Session Summary

End the session by summarizing what have been discussed in this session. Compare with the session objectives and see whether those objectives have been achieved. If not, go back to the relevant section of the session and complete that. Invite questions, if any, from the participants for further clarification on any issue within the subject matter of the session. Appreciate their active participation.

## Session 4: Reproductive Health Service Data – Family Planning Services

**Time: 1hr**

### **Materials required:**

- Flip charts & Markers
- Slides
- Facilitator’s & participant manual
- Cards, Registers, Tally Sheets and Report forms

### **Session objectives**

By the end of this session, participants will be able to:

- Describe the HMIS instruments used for Reproductive Health Services
- Fill the following instruments correctly
  - **HMIS Instruments used for Family Planning services**
    - Family Planning Register
    - Family Planning Methods Dispensed Count
    - Women’s card
- Describe the benefits of data collection in these HMIS instruments
- Describe what and how to transfer data from these data collection instruments to HMIS reports

### **Plan of activities**

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#### **4.1 HMIS instruments used for Family Planning services**

Show the Family Planning Register and Family Planning Method Dispensed Tally sheet. Ask the participants to reviews these instruments for a few minutes.

Invite participants’ views on “New Acceptor at registration” and “Repeat Acceptor at registration”.

Ask,

- If a woman who has never before used any contraceptive methods comes for Family Planning, how her FP acceptor status would be defined? (*New*)
- If another woman has used contraception, but discontinued it for several months and is now coming for Family Planning method, how would you define her FP acceptor status? (*Repeat*)

- Another woman who is using contraceptive method and previously was receiving FP service from another health center. She moved to another Kebele and came to the health center of that Kebele for the first time to get FP method. How would you define her FP status? (*Repeat*)

Show the slide on the following scenario:

**Zami and Yared want to plan their family**

Zami's 7 month old son Berhanu is taking solid food in addition to breast milk. Zami and Yared want to take good care of him and want to wait for at least 2 or 3 years before they think of having another child. Zami has her menstruation started again since 2 months and decided to go to the health center.

Zami took her Service ID card with her. At the health center Zami didn't have to wait long. She was taken to the FP service room. There the nurse greeted her courteously and talked with Zami politely, asked a few questions took her weight and examined her. Zami weighed 50 kg and her Blood Pressure was 110/70 mm Hg. The nurse counseled her for family planning methods. Zami decided that she will have oral pills. Since she had her menstruation 18 days ago, the nurse gave her condoms and strips of contraceptive pills and advised her to start taking pills from the first day her next menstruation cycle starts; in the meanwhile she should use condoms.

Zami took the contraceptive pill for two months, but thought she needs something which she does not have to remember to take everyday. She went back to the health center. This time she chose injectable. She had just completed the cycle of taking the pills yesterday. The nurse provided her the injectable and advised her to come back every three months.

The nurse also offered her HIV test and asked about her TT immunization. Zami told that when she was pregnant she got 2 TT doses, and she will think about the HIV test and let her know later.

Ask the participants to fill in the Family Planning Register and Women's Card for both days when Zami came to the health center for family planning services.

Review the filled registers and see if both the visits are entered in the same row (line) of the register. Also clarify the abbreviations to be used for recording "Short term contraceptive method selected" and "Reason for method change or discontinuation".

Inform the participants that for a single client, up to 5 visits in one year can be recorded in a single row. If the client comes more than 5 times in the same year then a new row has to be used. Similarly, if the client comes the next year, then the client's record should be entered using a new row.

Ask, what other HMIS instruments were filled by the nurse to record data on the encounter with Zami at the Family Planning Service room.

**HMIS Instruments filled by the nurse for encounter with Zami**

- Family Planning Register
- Summary Sheet in the Individual Folder
- Appointment card (for next injection date)

Refer the participants to the Family Planning register and ask what the benefits of this register are.

**Benefits of Family Planning Register**

- Reminds the service provider to do counseling on FP, STI, HIV test, TT immunization
- Provides longitudinal record of family planning services provided in a year – this facilitates continuity of care
- Promotes quality of care by prompting to assure that no contraindication of selected FP method is there
- Helps to calculate number of new and repeat acceptors registering at the health facility; provides data for calculating Contraceptive Acceptance Rate (CAR)

Ask how CAR is calculated.

**Contraceptive Acceptance Rate**

Proportion of women of reproductive age (15-49 years) who are not pregnant who are accepting a modern contraceptive method (new and repeat acceptors). Each acceptor is counted only once, the first time s/he receives contraceptive services in the calendar year.

$$\text{CAR} = \frac{\text{Number of new \& repeat acceptors in a calendar year}}{\text{Total number of women of reproductive age who are not pregnant}} \times 100$$

Facilitate a discussion on how the information on number of new acceptors, repeat acceptors and CAR can help in managing Family Planning services.

## 4.2 Family Planning Service Delivery Reporting

Ask the participants to review the quarterly service delivery report form and tell which section of the report relates to Family Planning data. Compare the answers with the following table. Clarify misconceptions, if any.

**HMIS Quarterly Report Sections that Relate to Family Planning data**

QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)	Section A1.2 Section B2d.3 (PIHCT)
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Ask the participants to review the Family Planning Register.

Ask them which data reported in the above reports comes from which column of the Family Planning Register? Compare their responses with the table below and clarify misconceptions, if any.

**HMIS Quarterly Report Sections –Family Planning data: Source of Data**

Data item	Data Source
Total new and repeat acceptors	Family Planning Register Col. 5 & Col. 6
New acceptors	Family Planning Register Col. 5
Repeat acceptors	Family Planning Register Col. 6

**PIHCT Data from Family Planning Register**

PIHCT test offered	Family Planning Register Col. 16
PIHCT test performed (accepted)	Family Planning Register Col. 17
PIHCT test result	Family Planning Register Col. 18

**4.3 Family Planning Method Dispensed Count**

Ask the participants to review the Family Planning Method Dispensed Count record sheet. Inform them that the monthly data to fill this form is taken from the Logistics and Request Form (LMIS-LR (2005)) maintained by the person responsible for managing family planning logistics in the health facility.

## Session 5: Reproductive Health Service Data – Antenatal, Labor, Delivery, Postnatal and post abortion services

**Time: 1:15hrs**

### **Materials required:**

- Flip charts & Markers
- Slides
- Facilitator's & participant manual
- Cards, Registers, Tally Sheets and Report forms

### **Session objectives**

By the end of this session, participants will be able to:

- Describe the HMIS instruments used for Reproductive Health Services
- Fill the following instruments correctly
  - **HMIS Instruments used for antenatal, labor, delivery, newborn and postnatal services**
    - + Integrated Antenatal, Labor, Delivery, Newborn & Postnatal Card
    - + Antenatal Care Register
    - + Delivery Register
    - + Postnatal care Register
- Describe the benefits of data collection in these HMIS instruments
- Describe what and how to transfer data from these data collection instruments to HMIS reports

### **Plan of activities**

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#### **5.1 HMIS instruments used for antenatal, labor, delivery, newborn and postnatal services**

Ask the participants to review the following Card and Registers:

INTEGRATED ANTENATAL, LABOR, DELIVERY, NEWBORN &  
POSTNATAL CARD  
ANTENATAL CARE REGISTER  
DELIVERY REGISTER  
POSTNATAL CARE REGISTER

Allow 10 minutes to review the HMIS instruments.

## 5.2 Antenatal Care - Case Scenario: Alemitu Adera

Invite the participants to read the following case scenario.

### **Alemitu Adera**

Zami and Alemitu are friends since their school days. They share lots of their secrets. Both are of the same age, 21 years, but Alemitu got married when she was 18 years. Within the first year of her marriage Alemitu was pregnant. At that time she didn't know what to do; she had so much of nausea all the time and couldn't eat well; but she never went to see a health care provider either. When her pregnancy was much advanced, she developed convulsions and was taken to the health center. There she was treated and gave birth to a child. The baby was looked too frail and didn't suck her breast well. Alemitu remembers she was very sad when the baby just stopped breathing on the third day of her life. She cried a lot but also decided that next time she would be very careful. The doctor in the health center advised her to wait for sometime before she becomes pregnant again so that she can be healthy again and give birth to a healthy baby. Alemitu agreed.

Today Alemitu came to Zami's house with happy news. She had her last menstruation about 3 months ago and thinks that she is pregnant again! This time she wants to take real good care of herself and the baby – boy or girl, inside her. She has come to Zami because she knows a lot about good health care and knows the people in the health center. Zami was glad to offer help to Alemitu. She also wanted to see her friend happy.

Zami took Alemitu to the Health Center. At the registration, Alemitu was quickly registered. and sent her to the Reproductive health service room. Zami introduced Alemitu to the nurse there and requested her to take good care as Alemitu had already lost one child. Zami left the room.

The nurse greeted Alemitu, insert an integrated antenatal, labour, delivery, newborn and Postnatal care card and started asking her questions and examined her. Alemitu weighed 54 kg and her blood pressure was 110/65 mm Hg. Her blood type was O+ and VDRL tested negative. The nurse noted down all these information on the card. The nurse assured Alemitu that she was doing good but needs to be careful; she also told her a few things which she should be careful about and asked her to come for a follow-up visit after a month.

Alemitu came out happy and confident. Zami smiled at her and took her to enjoy together. Zami phoned her husband Yared who join them at the restaurant. While eating, Yared asked whether Alemitu got her TT vaccines. Alemitu looked lost. Zami knew that she has to bring Alemitu again for the vaccine.

Ask the participants to make groups of two with the participant on their left (without changing their seats).

Ask them to fill the "Integrated Antenatal, Labor, Delivery, Newborn and Postnatal Care Card" based on the case scenario.

Ask them:

- What services the nurse missed to offer to Alemitu?
- What HMIS instruments the nurse did not fill during her encounter with Alemitu?
- Encourage the participants to review the Antenatal Care Register again and ask,
  - How filling this register by the nurse could have benefited Alemitu?
  - On her next antenatal visit, where in the Antenatal Care Register would the nurse record her data? How will she find her previous record on the register?
  - What data are reported from the Antenatal Care Register and from which columns?
  - Which sections and rows of the Quarterly Service Delivery Report are filled using the data from the Antenatal Care Register?

*Compare the answers with the following:*

The nurse did not offer Alemitu TT immunization, Iron/Folate tablets or HIV test. If she had filled the Antenatal Care Register, she would have been reminded of providing these services.

The nurse also did not give Alemitu the appointment card for her next visit, nor did she fill the Summary Sheet on the inner side of the Individual Folder.

There is provision to record up to 5 antenatal visits for an individual in one row. Thus, on Alemitu's next visits the nurse will record in the Antenatal Care Register in the same row where she recorded her first visit. She will use the MRN and Date of first visit to trace down where Alemitu's first visit's record is.

Count of entries in Column 6 of the Antenatal Care Register is used to fill Section A1.3 (row 1.3) of the Quarterly Service Delivery Report.

Counts of entries in Col. 11 and the positive entries in Col 12 are used to fill Section B2d.5 (PMTCT) rows 2d.5.2 and 2d.5.3 respectively

Ask which indicators can be calculated using data from the Antenatal Care Register.  
Ask how these indicators are calculated.

### Antenatal Care Indicators

$$\text{ANC Coverage} = \frac{\text{Number of first antenatal visits}}{\text{estimated number of pregnancies}} \times 100$$

$$\% \text{ pregnant women attended ANC/PMTCT} = \frac{\text{Number of ANC clients at PMTCT}}{\text{Estimated number of pregnancies}} \times 100$$

$$\% \text{ ANC clients tested} = \frac{\text{Number of ANC clients tested}}{\text{Total number of ANC clients in the same period}} \times 100$$

$$\% \text{ ANC clients tested positive} = \frac{\text{Number of ANC clients tested positive for HIV}}{\text{Total number of ANC clients tested in the same period}} \times 100$$

**Exercise:** Show the slide of the exercise

Population of a Kebele is 6,000. Last six months reports from the health center show that the number of pregnant women coming to the health center for their first antenatal care visits were 30, 26, 35, 25, 29, and 19.

Ask

- What percentage of ANC coverage has the health center achieved in the Kebele in the past six months? **(69%)**
- Is the performance of the health center in providing ANC services satisfactory? How do you judge whether the performance is satisfactory or not? *(yes, because they achieved more than half of the annual target)*
- What other indicators can help you to know whether the health center is providing good maternal health services or not? *(institutional delivery, PNC coverage)*

### 5.3 Delivery and Postnatal Care

Ask the participants to review Pages 3 and 4 of the “Integrated Antenatal, Labor, Delivery, Newborn and Postnatal Care Card” again.

Tell them that the Partograph on page 3 of the card is used to monitor the progress of labor. Page 4 has two sections: Delivery Summary to record procedures and outcome of delivery; and Postpartum visit section to record up to three postpartum visits.

Invite the participant to read the following case scenario:

**Alemitu has labor pain**

It was late afternoon and Zami was playing with her son in front of their house when Alemitu’s sister came running. She was gasping and told that Alemitu is having pain. Zami smiled. They knew this day was approaching and they have had made the arrangements from long before. Yared went to call Anteneh for his car and Zami went to Alemitu’s house. They took her to the health center.

At the health center, it took some time before Alemitu delivered a baby girl; she required episiotomy. At first the baby didn’t cry but when the nurse wrapped the baby in a towel it started crying. Everyone in the delivery room sighed with relief. The nurse weighed the baby – she was 2.6 kg.

Alemitu and the baby were taken to the postpartum room. The baby was put on breast feeding. The nurse offered Alemitu HIV testing. Both of them were negative.

Ask the participants to work in groups of two and fill the Delivery Register. Clarify any queries. Inform them that since Alemitu and her daughter were provided their first postnatal care at the delivery/post-delivery room, their information need not to be entered in a separate PNC Register. However, when Alemitu comes for next PNC visit, the PNC Register has to be used for recording that visit.

Ask counts of which columns of the Delivery Register will be used for reporting. Ask them to review the Quarterly Report and identify which sections can be filled using data from the Delivery Register.

**Reporting from Delivery Register**

<b>Data element</b>	<b>Data Source</b> (column in Delivery Register)	<b>Data reported</b> (Section/Row of Quarterly Service Delivery Report)
Attended delivery	4	A1.5.1
Live birth	22	A.1.5.1
Still birth	21	A.1.5.2
Caesarean section	6	A1.6
Institutional maternal death	12	A1.7
Total weighed newborn	19	A2.1.1
Wt less than 2500 gms	20	A2.1.2
Early neonatal death	22+23	A1.9
HIV positive delivery	30	B2d.5.4
ARV prophylaxis for mother & newborn	31 / 32	B2d.5.5

Ask the participants what indicators can be calculated using the above data.

Elaborate on:

- Delivery by skilled attendants
- Caesarean section rate
- Proportion of maternal deaths
- Stillbirth rate
- Early neonatal death rate

Ask the participants to review the **PNC Register**. After a few minutes ask:

- Up to how many postnatal visits of a mother can be recorded in a single row? (*Three visits*)
- If a mother comes with postnatal complication and is managed at the health center, in which column is that recorded? (*col. 10*)
- When will you put a tick in column 16? ( *if infant is referred*)
- Counts of which columns of the PNC Register are used for reporting in the Quarterly Service Delivery Report? ( *col. 7&17*)
- Which sections & rows of the Quarterly Service Delivery Report are filled using data from the PNC Register? (*A10, raw 1:10*)

## 5.4 Safe / Post Abortion Care

Ask the participants if they can define abortion. Compare with the following definition.

**Definition:** Abortion is termination of pregnancy before fetal viability, which is conventionally taken to be less than 28 weeks from the last menstrual period (LMP).

Invite participants to explain conditions for which termination of pregnancy is allowed in Ethiopia.

### Compare the responses to the following:

In Ethiopia, termination of pregnancy is allowed under the following conditions:

1. When the pregnancy is a result of rape or incest
2. Maternal condition
  - When the continuation of the pregnancy endangers the life of the mother or the child or the health of the mother or where the birth of the child is a risk to the life or health of the mother
  - The woman is physically as well as mentally unfit to bring up the child (underage, mental deficiency)
3. Fetal Condition
  - Where the fetus has an incurable and serious deformity

Ask the participants to review the Safe /post Abortion Care Register. And answer the following questions.

- What will you fill in the column 7?
- Explain the abbreviations in column 8, 9,10,11,12?
- What counseling is to be given in post abortion care? ( column 13&14)
- What could be the serious complications of abortion

**Compare the responses to the following**

- Reasons for the current abortion
  - 1 = Rape or incest
  - 2 = Maternal condition
  - 3 = Fetal deformity
- Abbreviations
  - Column 8 MVA = Manual Vacuum aspiration
  - Column 9 MA = Manual aspiration
  - Column 10 E&C = Evacuation and curettage
  - Column 11 D&C = Dilatation and curettage
  - Column 12 MP = Mixed procedure
- For column 13 &14
  - Yes or No = If counseling is done on family planning, limitation of pregnancy.
- For serious Complications of abortion Tick in one of the column (15-18 )
  - Minor = if complication is easily manageable
  - Serious = when it requires major intervention
  - Death = if women died of abortion process
  - None = if no complication resulting from the abortion

Ask the participants to review the quarterly service delivery report form and tell which section of the report relates to Safe/post abortion care. Compare the answers with the following table. Clarify misconceptions, if any.

<b>HMIS Quarterly Report Sections that Relate to safe /post abortion care data</b>	
QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)	Section A1.4 , row 1.4

Ask them which data reported in the above report (quarterly service delivery report form) comes from which column of the Safe /Post abortion register? Compare their responses with the table below and clarify misconceptions, if any.

### HMIS Quarterly Report Sections –Safe abortion data: Source of Data

Data item	Data Source
Number of performed abortion	Safe/post abortion care register Col. 2

Encourage discussion among the participants on:

- What information they can derive from these data, and Compare their responses with the HMIS indicator given in the box below and appreciate their responses.

#### Indicator that can be derived from Safe/post abortion data

- abortion care rate

Ask how to calculate the indicator

$$\text{Abortion care} = \frac{\text{Number of abortions performed}}{\text{Total number of expected pregnancies}} \times 100$$

## Session 6: IPD Data

**Time: 1:30hrs**

### **Materials required:**

- Flip charts & Markers
- Slides
- Facilitator's & participant manual

### **Session objectives**

By the end of this session, participants will be able to:

- Describe the HMIS instruments used at InPatient department (IPD)
- Fill the following HMIS IPD instruments correctly
  - Admission and Discharge Card,
  - Admission and Discharging Register
  - IPD Morbidity and Mortality Tally
  - PICT tally
  - Report forms ( Disease and IPD related section of service report form)
- Describe the benefits of data collection in these HMIS instruments
- Describe what and how to transfer data from these data collection instruments used in IPD to HMIS reports

### **Plan of activities**

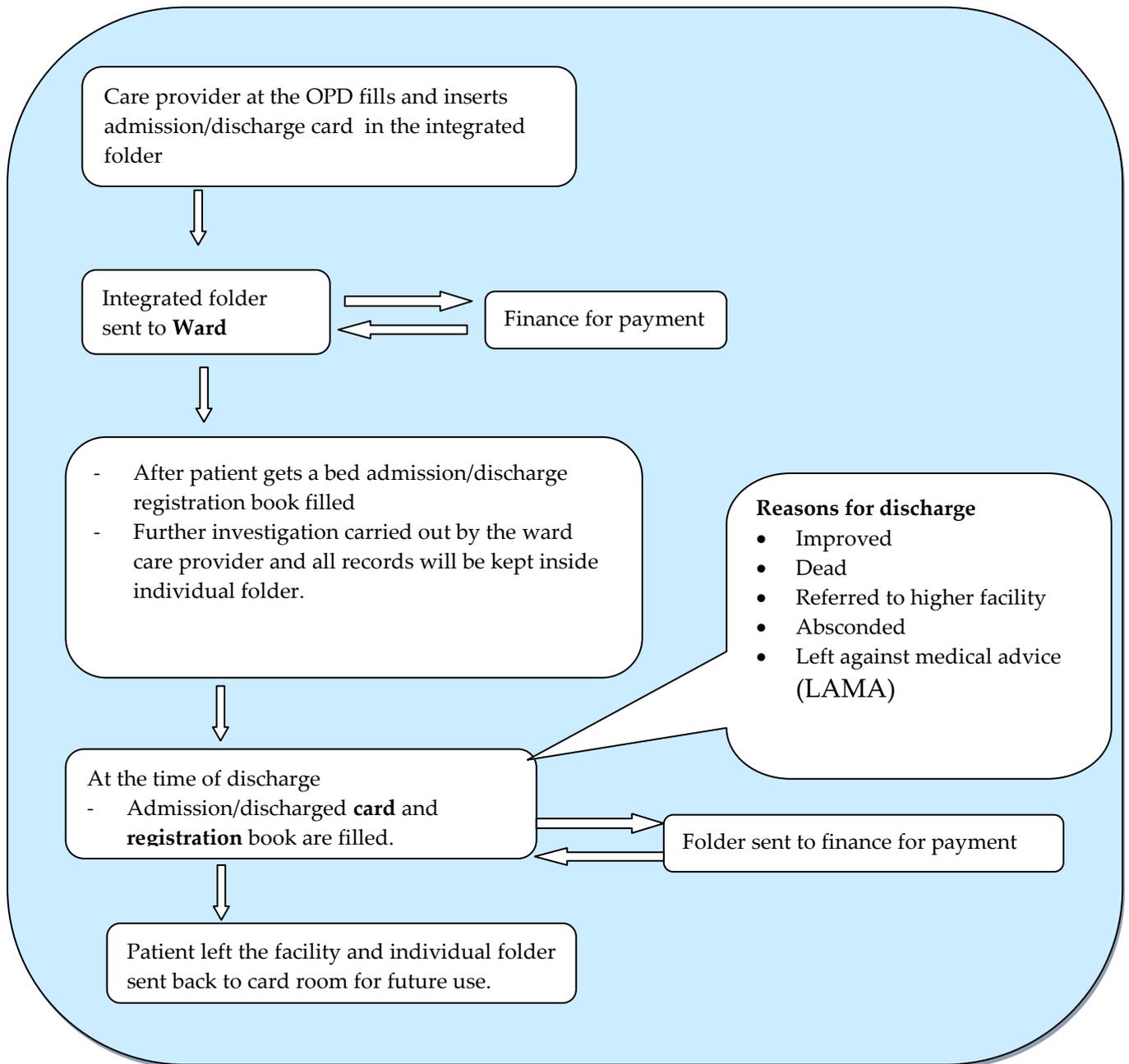
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#### **6.1 Patient Flow in IPD**

Ask the participants to describe what happens when a patient comes for admission at their respective health institution.

Use flip chart to draw the patient flow diagram as described by the participants. Facilitate discussion to clarify each step, if not clear to all participants. **Compare with the next Box**

## Patient flow at In Patient Department (IPD)



### 6.2 HMIS Instruments used at IPD

Ask the participants to review:

- ADMISSION /DISCHARGE CARD
- ADMISSION/ DISCHARGE REGISTRATION BOOK
- PIHCT TALLY
- IPD MORBIDITY AND MORTALITY TALLY
- IPD & SERVICE REPORTING FORMAT

Show participants each of the above HMIS instruments and allow them about five minutes to review them.

**Ask** which instrument will be used at each step of the patient flow. Facilitate discussion using the flip chart and patient flow box.

### 6.3 Scenario: Patient coming for In-Patient services - Record keeping at the IPD

Divide the participants in 4 groups, assign facilitators to each group, and ask the participants to read the story given below.

#### Yeshi Alemu

Yeshi Alemu is a 25 year old married women living in Hosanna town. Suddenly she had nausea, vomiting & severe abdominal pain. Her husband brought Yeshi to Hosanna hospital, and she was admitted urgently to surgical ward on 1/3/2002 .Same day, the surgeon evaluated and documented acute abdomen with a possibility of a ruptured appendix, ectopic pregnancy or pelvic inflammatory disease. She was also offered HIV testing, accepted the offer, and the HIV test was negative. Yeshi was taken to Operation Theater (OR) immediately and a ruptured appendix was removed. She developed acute peritonitis and was kept on antibiotics for 10 days. Finally Yeshi improved and was discharged on 11/3/2002. The doctor told Yeshi to come back after one month for checkup, and she received an appointment card.

Ask each group to fill:

- Admission/discharge register accordingly.
- Appropriate tall(ies) for the above patient.

Ask them to discuss:

- What are Yeshi's admission and discharge diagnoses? (*Acute abdomen, appendicitis respectively*)
- What is Yeshi's length of stay in the hospital? (*10 days*)
- What is the source of information to fill the register under column 15 – 17? , Finance category. (*Admission card*)
- Assume that Yeshi left the hospital on her own, what will be filled & in which column? (*e, at column 13*)
- What are the reportable data elements? At which column do you fill? (*Total Admission, Total discharged and sum length of stay at col. 6, 11 & 12 respectively*)

## 6.4 IPD Data and HMIS Reporting

Introduce the HMIS IPD Reporting forms to the participants. Show them:

- QUARTERLY IPD DISEASE REPORT FORM (for Hospitals/Health Centers/Clinics)
- QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)
- WEEKLY IDS REPORT FORM

Tell the participants that for this session, we will focus on sections in the HMIS reports that relate to IPD data reporting.

Ask the participants to review the report forms and tell which section of each report relates to IPD data. Compare the answers with the following table. Clarify misconceptions, if any.

### HMIS Quarterly Report Sections that Relate to IPD data

QUARTERLY IPD DISEASE REPORT FORM (for Hospitals/Health Centers/Clinics)	All
QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)	Section B2d.3 (PIHCT) Section D (Health Systems) D1.4, D1.5.1, D1.5.2, D1.6

Ask the participants to review the ADMISSION & DICHARGE REGISTER, IPD MORBIDITY & MORTALITY TALLY and PIHCT TALLY. Ask them which data reported in the above reports comes from which column of the Admission & Discharge register , IPD Morbidity & Mortality Tally or PIHCT Tally. Compare their responses with the table below and clarify misconceptions, if any.

**HMIS Quarterly Report Sections - IPD data: Source of Data**

Data item	Data Source
Number of Admissions	Admission/Discharge Register Col. 6
PIHCT test offered	Admission/Discharge Register Col. 8
PIHCT test performed (accepted)	Admission/Discharge Register Col. 9
PHICT test result	Admission/Discharge Register Col. 10
Number of discharge	Admission/Discharge Register Col. 11
Sum days length of stay	Admission/Discharge Register Col. 12
IPD visits (by age and gender)	IPD Morbidity and Mortality Tally

Please show participants how they *transfer* data elements from the registration book to reporting format.

### 6.5 Brainstorming- IPD data and its use

Encourage discussion among the participants on:

- What information they can derive from these data, and
- As managers of their health unit/institution, how can they use the information collected from IPD

Encourage them to respond in simple language (e.g. will know about which are the top cause of admission? Is there any increase in malaria admission from previous months?)

Write their responses on flip chart. Compare their responses with the list of HMIS indicators given in the Box below and appreciate their responses. Tell that we will have a more detailed session on use of information later.

### Indicators that can be derived from IPD Data

- Top 10 causes of morbidity and mortality amongst children under 5 years.
- Top 10 causes of morbidity & mortality amongst persons 5 years & older
- Inpatient mortality rate.
- Malaria case fatality rate amongst children under 5 years of age
- Malaria case fatality rate amongst persons 5 years of age and older
- Case fatality rate for meningitis
- Cataract surgical rate
- Admission rate
- Bed occupancy rate (BOR)
- Average length of stay (ALOS)
- Bed turnover rate (BTO)
- PHICT services: offered, tested and positive rate

## 6.6 Session Summary

End the session by summarizing what have been discussed in this session. Compare with the session objectives and see whether those objectives have been achieved. If not, go back to the relevant section of the session and complete that. Invite questions, if any, from the participants for further clarification on any issue within the subject matter of the session. Appreciate their active participation.

## Session 7: HIV/AIDS service Data: VCT, Pre-ART and ART

**Time allowed (50 minutes)**

### **Materials required**

- LCD and computer loaded with powerpoint slides
- Flip charts and colored markers
- Facilitator's & participant's manuals

### **Session objectives:**

By the end of this session, participants will be able to:

- Identify the following HMIS instruments used at HIV/AIDS clinic.
  - Fill the following HMIS instruments found at HIV/AIDS clinic correctly
  - PIHCT tally
  - VCT register
  - VCT tally
  - ART regimen tally
  - ART enrollment tally
  - ART register
  - Pre ART enrollment tally
  - Pre ART register
  - HIV exposed infant register
  - Reporting form
- Describe the benefits of data collection in these HMIS instruments (Interpreting the HIV indicators and use for decision making )
- Describe what and how to transfer data from HIV/AIDS data collection instruments to HMIS reports.

### **Plan of activities**

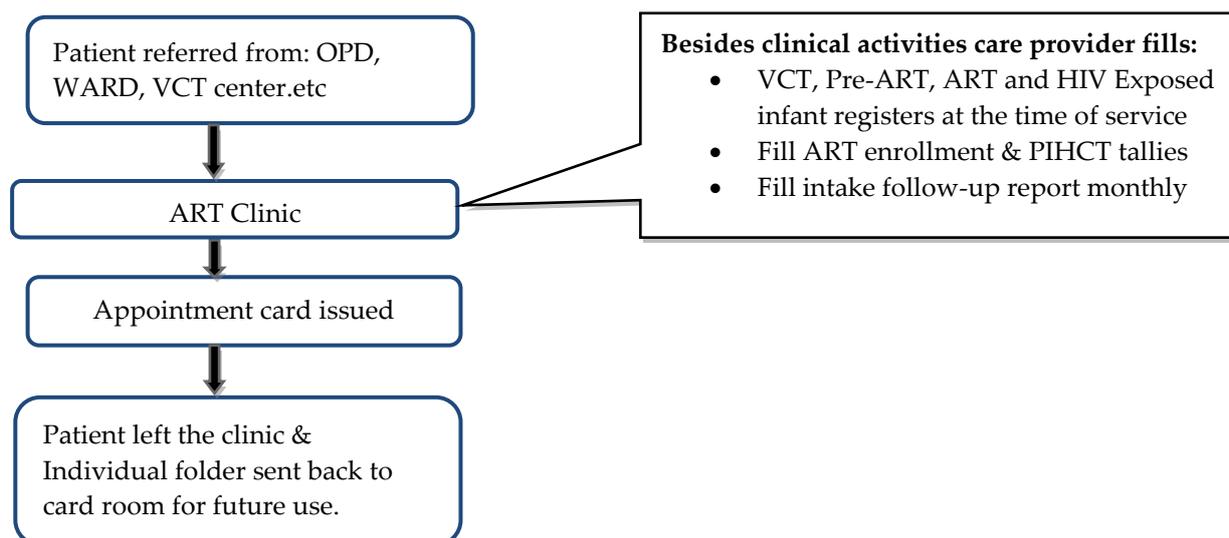
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#### **7.1 Patient flow at ART clinic**

Ask the participants to describe what happens when a patient comes to HIV/AIDS clinic at their respective health facilities.

Use flip chart to draw the patient flow diagram as described by the participants. Facilitate discussion to clarify each step, if not clear to all participants. **Compare with the next diagram.**

## Diagram of patient flow at ART clinic



### 7.2 HMIS instruments used at HIV/AIDS clinic

Ask the participants to review:

- VCT register
- VCT Tally
- Pre ART register
- Pre ART Tally
- ART register
- ART enrollment Tally
- ART regimen Tally
- HIV Exposed infant register

Show each instrument from the participant manual and allow them to review for about 20 minutes.

**Ask** which instrument will be used at each step of the flow. Facilitate discussion using the flip chart and patient flow diagram shown above.

### 7.3 Patient coming For VCT, Pre-ART and ART service

Please tell the participants to read the note below and follow it strictly.

- I. Care provider at facility level is expected to fill all the above registers, tally sheets
- II. HMIS focal person at facility level, Woreda health office, Zonal /sub-city health department, Regional Health Bureau and National HMIS prepares and fills HIV quarterly report on the HMIS, Health center/clinic/Hospital quarterly reporting form.

Data reporting strictly follows HMIS reporting channel and procedures

*Source; implementation guidelines for TB/HIV collaborative activities in Ethiopia: FMOH 2008*

Ask them to discuss on:

- Benefits of:
  - Registers (VCT, Pre-ART, ART)
  - Tallies (PIHCT, Pre- ART Enrollment , ART Enrollment ART Regimen)

## 7.4 HIV/AIDS service data and HMIS Reporting

Show participants HMIS reporting forms:

- QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)

Tell participants that the focus will be on the sections that are related to HIV/AIDS.

Ask participants to review the report forms and tell which section of the report relates to HIV/AIDS service data. Compare their answers with the following table. Clarify if there is any misconception.

### HMIS quarterly report sections that relate to HIV/AIDS data

QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)	Section B2d.2 (VCT)	Rows 2d.2.1 to 2d.2.3.4
	Section B2d.3 (PIHCT)	Rows 2d.3.1 to 2d.3.3.4
	Section B2d.5 (PMTCT)	Rows 2d.5.1 to 2d.5.5
	Section B2d.7 (ART)	Rows 2d.7.1 to 2d.7.4.5.2

Ask participants which section of data comes from which column of the VCT, Pre-ART and ART Registers.

### HMIS quarterly report sections VCT, Pre-ART & ART data: Source of data

Data Item	Data source
Clients receiving pretest counseling	VCT register column 7
HIV test accepted	VCT register column 8
HIV final test result (R and NR)	VCT register column 11
Cumulative enrollment in chronic care	Pre-ART register column 1
ART, started, by regimen and survival	ART register

Please show participants how they **transfer** data elements from the registration books to the reporting format.

## 7.5 Brain storming, HIV/AIDS data and its use

Encourage discussion among the participants on:

- What information they can derive from these data, and
- As managers of their health unit/institution, how they can use the information collected from HIV/AIDS service data.

Write their responses on flip chart. Compare their responses with the list of (HIV/AIDS)-HMIS indicators given in the Box below and appreciate for their responses. Tell that we will have a more detailed session on use of information later.

### Indicators that can be derived from HIV/AIDS service data

- VCT pretest counseling
- VCT testing rate
- VCT positivity rate
- The cumulative number of PLWHA ever in rolled in HIV care. Number of HIV patients ever enrolled in chronic care.(pre)
- Cumulative ART care enrolment: cumulative number PLWHA ever started on ART
- ART by regimen: Number of PLWHA currently receiving ART by *regimen*
- Survival rates at 6, 12, 24, 36,48 months

## 7.6 Session Summary

End the session by summarizing what has been discussed in this session. Compare with the session objectives and see whether those objectives have been achieved. If not, go back to the relevant section of the session and complete that. Invite questions, if any, from the participants for further clarification on any issue within the subject matter of the session. Appreciate their active participation.

## Session 8: TB/Leprosy clinic

**Time: 40 minutes**

### **Materials required**

- Slides
- Markers & Flip chart
- Facilitators and participants manual

### **Session objectives:**

By the end of this session, participant will be:

- Introduced,
  - Unit TB/Leprosy register
  - Quarterly reporting format
- Describe the benefits of data collection from this register.
- Describe what and how to transfer data from this data collection instruments to HMIS reports

### **Plan of activities**

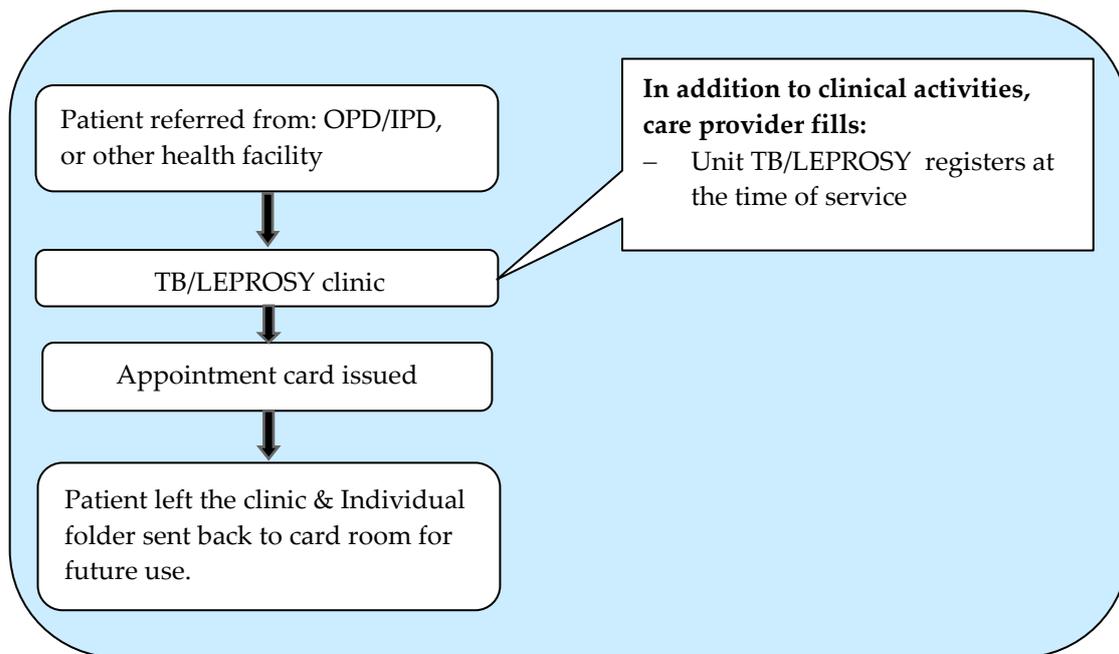
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#### **8.1 Patient flow at TB/Leprosy clinic**

Ask the participants to describe what happens when a patient comes to TB/LEPROSY clinic at their respective health facilities.

Use flip chart to draw the patient flow diagram as described by the participants. Facilitate discussion to clarify each step. Compare with the next diagram.

## Diagram of patient flow at TB/Leprosy clinic



### 8.2 HMIS instruments used at TB/Leprosy clinic

Ask the participants to review:

- Unit TB/LEPROSY Register

Show the register from the participant manual and allow them to review for about 5 minutes.

### 8.3 Patient coming to TB/Leprosy clinic

Please tell the participants to read the note below and follow it strictly.

#### **TB screening questions**

1. Has the individual had cough for > 2weeks?
2. Has the individual had fever for 2 > weeks?
3. Has the individual had weight loss > 3kg in the last 4 weeks?
4. Has the individual had night sweats for > 2 weeks ?
5. History of TB contact in the past one year ?

If YES to question 1 or if NO to question 2 or more of other questions= positive TB screen (P), **Evaluate for TB**

1. Care provider at facility level is expected to fill all the above registers, tally sheets
2. HMIS focal person at facility level, Worda health office, Zonal /sub-city health department, Regional health Bureau and National HMIS prepares and fills HIV quarterly report on the HMIS, Health center/clinic/Hospital quarterly reporting form.

Data reporting strictly follows HMIS reporting channel and procedures

*Source; implementation guidelines for TB/HIV collaborative activities in Ethiopia: FMOH 2008*

Ask them to describe the:

- Benefits of the register

### 8.4 TB/Leprosy service and HMIS reporting

Show participants HMIS reporting forms:

- QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)

Tell participants, the focus will be on the sections that are related to TB/leprosy service.

Ask participants to review the report forms and tell which section of the report relates to TB/Leprosy service data. Compare their answers with the following table. Clarify if there is any misconception.

**HMIS quarterly report sections that relate to TB/Leprosy data**

QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)	Section B2b.1	(TB)	Rows 2b.1.1 to 2b.1.4.6
	Section B2b.2	(TB)	Rows 2b.2.1 to 2b.2.5
	Section B2b.3-6	(Leprosy)	Rows 2b.3 to 2b.6.2.2
	Section B2c	(Leprosy)	Rows 2c.1 to 2c.2

Ask participants which section of data comes from which column of the unit TB/Leprosy Register.

**HMIS quarterly report sections TB data: Source of data**

Data Item	Data source
Number of smear positive by age and sex	Unit TB Register column 6
TB cases by category	Unit TB Register column 7
TB cases enrolled in DOTS	Unit TB Register column 10
Tb cases Tested for HIV	Unit TB Register column 43
HIV positive TB cases	Unit TB Register column 44
Cured TB cases	Unit TB Register column 66
Treatment completed TB cases	Unit TB Register column 67
Died	Unit TB Register column 68
Defaulted	Unit TB Register column 70

**HMIS quarterly report sections Leprosy data: Source of data**

Data Item	Data source
Age to determine cases under15	Unit Leprosy Register column 4
New leprosy cases identified	Unit Leprosy Register column 7
Category of leprosy (MB/PB)	Unit Leprosy Register column 7
Disability grades	Unit Leprosy Register column 8, 9, 10
Treatment complete	Unit Leprosy Register column 25

Please show participants how they *transfer* data elements from the registration books to the reporting format.

## 8.5 Brain storming, TB/Leprosy data and its use

Encourage discussion among the participants on:

- What information they can derive from these data, and
- As managers of their health unit/institution, how they can use the information collected from TB/Leprosy service data.

Write their responses on flip chart. Compare their responses with the list of (TB/Leprosy) - HMIS indicators given in the Box below and appreciate for their responses. Tell that we will have a more detailed session on use of information later.

### Indicators that can be derived from Unit TB/leprosy Register

#### TB

- TB case detection rate
- Treatment success rate
- TB treatment cure rate
- TB treatment defaulter rate
- TB death rate
- Proportion (%) of registered TB cases who are tested for HIV
- Proportion (%) of registered TB cases who are HIV positive

#### Leprosy

- New cases of leprosy
- Grade II disability rate among new cases of leprosy
- Leprosy case among less than 15 years children
- Leprosy treatment completion rate
  - PB treatment completion rate
  - MB treatment completion rate

## 8.6 Session Summary

End the session by summarizing what have been discussed in this session. Compare with the session objectives and see whether those objectives have been achieved. If not, go back to the relevant section of the session and complete that. Invite questions, if any, from the participants for further clarification on any issue within the subject matter of the session. Appreciate for their active participation.

## Session 9: Child health services: Infant immunization and growth monitoring

**Time: 40 minutes**

### Materials required

- Slides
- Markers & Flip chart
- Facilitators and participants manual

### Session objectives:

By the end of this session, participant will be able to:

- Identify HMIS instruments used for Infant immunization and growth monitoring services
- Fill the following instruments used for the services
  - Unit Infant immunization and growth monitoring Register
  - EPI/Immunization tally
  - Growth monitoring tally
- Describe the benefits of data collection from these HMIS instruments
- Describe what and how to transfer data from these data collection instruments to HMIS reports

### Plan of activities

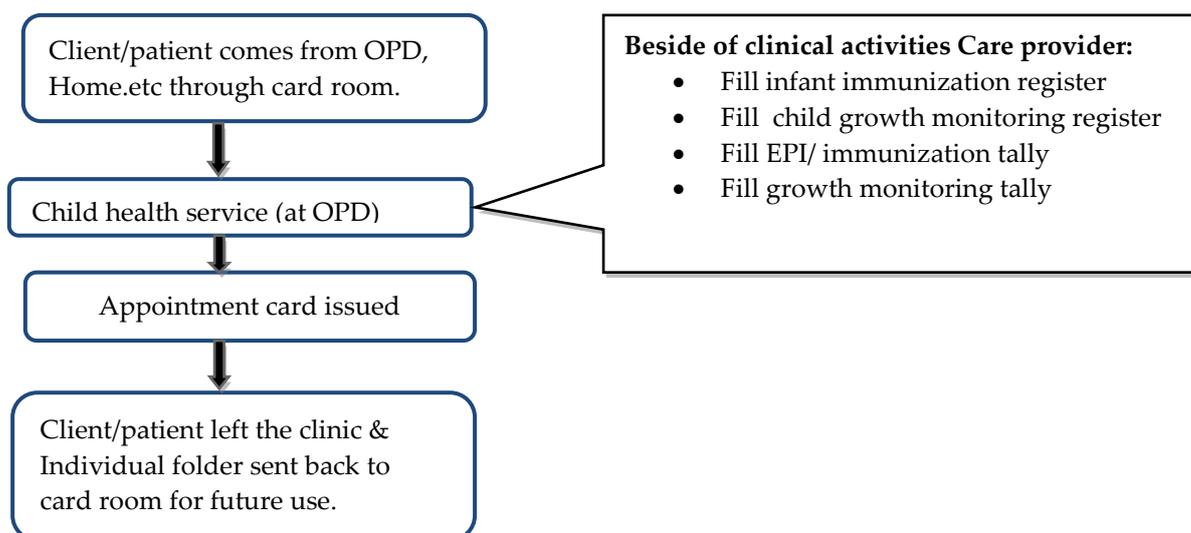
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#### 9.1 *Patient/Client flow at child health service clinic*

Ask the participants to describe what happens when a child comes for child health service at their respective health facilities.

Use flip chart to draw the client/patient flow diagram as described by the participants. Facilitate discussion to clarify each step. Compare with the next diagram.

## Diagram of Client/patient flow at child health service



### 9.2 HMIS instruments used for child health service

Ask the participants to review:

- Infant immunization and growth monitoring register
- Child growth monitoring register
- EPI/Immunization Tally
- Growth monitoring tally

Show each instrument from their participant manual and allow them to review for about 10 minutes.

**Ask** which instrument will be used at each step of the flow. Facilitate discussion using the flip chart and client/patient flow diagram shown above.

### 9.3 Scenario: infant coming to child health clinic

Divide the participants into four groups, assign facilitators to each group and ask them to read the story below carefully.

### Abebe Kebede

An infant named Abebe Kebede resident in Hossana Town woreda , 02 kebele, came to Hossana Health Center in his 7th week after birth at Negist Eleni Hospital on 25/10/, 2001. He was among the four clients to the health center that day and given upper hand to show up first in the card room which just started HMIS implementation. He took antigens at birth and his body weight was 2.6 kg as could be tracked, the health center followed him along the courses of antigens and other services appropriate to the schedule and weighed 3.2, 5 and 8 kg in subsequent visits. His mother who was recorded next had adequate doses of immunization during the pregnancy got advice on family planning and left to come after couple decision on options.

Ask each group to fill:

- Fill growth monitoring register based on the case scenario

Ask them to describe:

- Benefits of:
  - Infant immunization and growth monitoring register
  - Child growth monitoring register
  - EPI/Immunization Tally
  - Growth monitoring tally
- What makes this register different from other registers?

## 9.4 Child health service and HMIS reporting

Show participants HMIS reporting forms:

- QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)

Tell participants, the focus will be on the sections that are related to Child health service.

Ask participants to review the report forms and tell which section of the report relates to child health service data. Compare their answers with the following table. Clarify if there is any misconception.

### HMIS quarterly report sections that relate to child health data

QUARTERLY SERVICE DELIVERY REPORT FORM (for Hospitals/Health Centers/Clinics)	Section A2 Rows 2.1.1 to 2.2.3 Section A3 Rows 3.1 to 3.6.5
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Ask participants which section of data comes from which column of the infant immunization & Child growth monitoring register.

**HMIS quarterly report sections Child health data: Source of data**

Data Item	Data source
BCG	Infant immunization and growth monitoring register column 13
OPV 1-3	Infant immunization and growth monitoring register column 15-17
Penta 3	Infant immunization and growth monitoring register column 20
Measles vaccine	Infant immunization and growth monitoring register column 21
Fully immunized	Infant immunization and growth monitoring register column 22
Protected at birth (PAB)	Infant immunization and growth monitoring register column 25
Measured wt	Infant immunization and growth monitoring register column 27
% WFA (wt for age)	Infant immunization and growth monitoring register column 28

Please show participants how they **transfer** data elements from the registration books to the reporting format.

**9.5 Brain storming, Child health data and its use**

Encourage discussion among the participants on:

- What information they can derive from these data, and
- As managers of their health unit/institution, how they can use the information collected from Child health service data.

Write their responses on flip chart. Compare their responses with the list of Child health HMIS indicators given in the Box below and appreciate for their responses. Tell that we will have a more detailed session on use of information later.

**Indicators that can be derived from infant immunization and growth monitoring register**

- DPT1+HEPB1+HIB1 coverage
- DPT3+HEPB3+HIB3 coverage
- Measles coverage
- Fully Immunization coverage
- Protection at birth (PAB) against neonatal tetanus
- Vaccine wastage rate
- Prevalence rate of moderate/severe malnutrition among <3 year children

## 9.6 *Session Summary*

End the session by summarizing what have been discussed in this session. Compare with the session objectives and see whether those objectives have been achieved. If not, go back to the relevant section of the session and complete that. Invite questions, if any, from the participants for further clarification on any issue within the subject matter of the session. Appreciate their active participation.

## Session 10: Data Accuracy Check

**Time: 90 minutes**

### **Materials required:**

- Flip charts and colored markers
- Facilitator's & participant's manuals
- Handouts

### **Session objectives**

By the end of this session, participants will be able to:

- Describe how to conduct monthly data accuracy check using LQAS technique
- Describe the Data Accuracy Check Sheet

### **Plan of activities**

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## 10.1 Data Quality Assurance – Introduction

Initiate the discussion by asking what will happen if data quality is not good. Appreciate their answers and reiterate that if data in the facility report are not accurate, then decisions made based on those data may not produce effects that are intended.

Ask participants, in order to ensure quality data who are the most important persons.

Appreciate their answers and reiterate that data quality assurance starts at the level of data recording by the health care providers. If the care provider forgets to record patient's data or records wrong data in the register, later checks comparing the register with the report may show a perfect match, but the data is incorrect.

Ask how we can ensure that the health care providers are recording appropriate data.

Note the answers on flip chart. Appreciate their answers and emphasize that for assuring data quality,

- the health care providers need to be motivated and encouraged by their supervisors to carryout proper data recording

- they need to understand the value of proper data recording and reporting: how quality data that they record and compile is useful to them in improving their performance and, at the same time, helps the health managers to take important management decisions like resource allocation

Ask how can we motivate the care providers to ensure data quality.

Note the answers on flip chart and appreciate their answers. Emphasize on:

- supportive supervision of the care providers by health managers, which includes data quality checks:
  - ▶ Are the care providers able to record data appropriately on the registers and tally sheets? Do they know what to record on each column or row of the registers and tally sheets?
  - ▶ Are they recording data of every patient/client that come to them for service?
  - ▶ Do the recorded data match with the reported data?
- training, developing skills of the care providers to appropriately fill patients records and reports
- developing their skills in simple calculations for assessing their performance using the data that they record
- providing regular feed-back to them on data quality as well as their performance based on the data that they report
- appreciating the care providers verbally and/or through written communication or during meetings for their good work and for maintaining quality data

## 10.2 Data Quality Assurance – Self-Assessment Check Sheet

Ask the participants, how will you know that the data in a particular monthly or quarterly report is accurate?

*Two possible answers are:*

- *The reported data matches with the data recorded in the respective registers or tallies*
- *The reported data represents the actual number of cases served*

Encourage discussion on the above answers. Tell the participants that the number of actual cases served is the data we want to match, but this is difficult to ascertain after the client/patient has left the facility. As a proxy for actual cases, we may use the services recorded in a patient medical record or in a service register. It is impractical to look at every patient medical record every month, so a service register is the document of choice for checking reported data with services provided.

The HMIS DQA methodology compares registers, the tallies made from the registers, and the report. The tallies are included in the comparison so that we can see if the tally process creates errors.

Most services are recorded on medical records, registers, and tallies. If tallies are the only tool used to compile data on services, mistakes (unintentional or intentional) may occur. Therefore, registers and tallies should be used together to assess data quality.

Some events – stockouts, for example – are recorded only on tallies, so for these data elements, tallies are the only reference document. Some services, such as first antenatal attendance, are summed directly from the registers, so there is no tally for comparison.

Thus, infer that the first step to ensuring accuracy of the reported data is to ensure that the reported data matches with the data in the records.

Ask the participants, how will you know that the data in the reports and that in the register books match together?

Appreciate their answer that, for any particular month/quarter, if we recount any data element from the register books and compare the figure with what has been reported in the monthly/quarterly report we can check the accuracy of the reported data.

Inform that instead of recounting all the data elements in a monthly/quarterly report, we can take a sample of the data elements and cross-check them with the corresponding register and tally.

Inform the participants that Lot Quality Assurance Sampling (LQAS) is a technique that originated in manufacturing sector as a low-cost way to assess and assure quality. With this technique, one can use a small sample size to assess whether the desired level of quality has been achieved or not. In recent years this methodology has been applied to assess the quality or various aspects of the health services, including data quality.

Inform that the optimal sample size for LQAS is 19; however, we can use smaller sample size of up to 12 and get a fairly good assessment (within the range of +/- 15%) of data quality of the monthly/quarterly reports.

Show the slide on LQAS Table for sample size of 12. Tell the participants that this table is used to know the “Decision Rule” for deciding whether we have achieved the desired level of data quality or not.

Decision Rules for sample Sizes of 12 and Coverage Targets /Average of 20-95%																
Sample size	Average Coverage (baselines)/Annual Coverage Targets (monitoring and Evaluations)															
	Less than 20%	20%	25%	30%	35%	40%	45%	55%	60%	65%	70%	75%	80%	85%	90%	95%
12	N/A	1	1	2	2	3	4	5	6	7	7	8	8	9	10	11

Ask the participants that if our desired level of data quality is 70%, at least how many data elements from a random sample of 12 should match. Appreciate the answer that at least 7 data elements should match. In other words, if more than 5 randomly selected data elements from a report do not match, we can say that we have not achieved the desired 70% level of data quality.

Inform the participants that we will do a simple exercise to further clarify how to assess data quality using LQAS technique. In order to facilitate data quality assessment we will use “Data Accuracy Check Sheet”.

To begin the process of data accuracy check of the Health Center/Hospital Quarterly Service Delivery Report Form, ask the participants to put serial number to all the data elements in the report form.

If a monthly data assessment is being done, it is better to exclude Section B2b – TB and Leprosy, Section B2c – TB/HIV Co-infection and Section C2, because they are reported on quarterly basis and no monthly data is entered in these sections. Also, exclude Section D2 and D3. Similarly, since there is a preponderance of data elements related to ART, we tend to exclude section B2d.7 to assure a wide distribution of random selection from various other sections. Section B2d.7 can be dealt separately.

Excluding the above few sections, we have 97 data elements whose data come from one or more registers or tallies.

Now, ask the participants to generate a random numbers that lies within 1 to 97 We can use Excel program to generate such random number by using the formula **=RAND()\*97.1**

Demonstrate how Excel program can be used to generate the random numbers and also show that every time we generate the random numbers, they are different from the previous list of random numbers.

Mention here that a random number table will be supplied for those without access to a computer (probably the vast majority of the participants).

For the sake of the exercise, we have already generated the random numbers (Column 1) that correspond to the following data elements given in Column 2 and 3:

Random # (1)	Reference No. in the Report (2)	Reporting elements (3)
2	A1.2,1.2.1	New acceptors
16	A2,2.2.1	Number of weights measured for children <3 years
21	A3,3.3	Measles immunizations for infant <1 year of age
11	A1.9, 1. 9	Early neonatal deaths (institutional)
14	A2,2.1.2	Low birth Weight
28	A3,3.6.5	TT does used (all ages)/dose opened
4	A1.2,1.3	First antenatal attendances
60	C4.1,4.1.3	Arthemisin/Lumphantrine
87	D1,1.2.7	OPD Visits 5-14: Repeat-Male
92	D1,1.2.12	OPD Visits >=15-14: Repeat-Female
32	B2d,2,2d.5.4	HIV positive women delivered in facility
10	A1.5,1.7	Institutional maternal death

Provide the participants with a copy of the sample LQAS Data Accuracy Check Sheet. Inform the participants that in this check sheet Column 4 represents the figures from the Registers, Column 5 represents the figures from the corresponding tally sheet if there is any, and Column 6 represents figures from the Quarterly Service Delivery Report.

Tell the participants that in the sample LQAS Data Accuracy Check Sheet, we have already filled in the figures for most of the randomly selected data elements except for random data elements no. 2 and no. 60.

Provide the participants with copy of the Service Report and relevant registers/tally. Ask them to fill-in Column 4 or Column 5 and Column 6 of the sample LQAS Data Accuracy Check Sheet for randomly selected data elements 2 and 64 for the month of Megabit (March).

Now ask the participants to note in Column 7 or Column 8 whether the figures from corresponding register/tally and the Quarterly Service Delivery Report for a given month matched with each other or not. Put a tick in Column 7 if they matched; put a tick in Column 8 if they did not match.

Ask them to calculate how many data elements matched or did not match. Ask them to refer to the LQAS Table for sample size of 12 and determine what the level of data quality is and whether it satisfies the expected data quality level.

## Data Accuracy Check Sheet

Month/Year: \_\_\_\_\_

Random # (1)	Reference No. in the Report (2)	Reporting elements (3)	Source & Figures			Figures in Col. 4/5 & Col. 6 Match?	
			Register (4)	Tally (5)	Report (6)	Yes (7)	No (8)
2	A1.2,1.2.1	New acceptors		-			✓
16	A2,2.2.1	Number of weights measured for children <3 years	10	10	10	✓	
21	A3,3.3	Measles immunizations for infant <1 year of age	8	8	8	✓	
11	A1.9, 1. 9	Early neonatal deaths (institutional)	3	-	1		✓
14	A2,2.1.2	Low birth Weight	10	-	10	✓	
28	A3,3.6.5	TT does used (all ages)/dose opened	7	7	7	✓	
4	A1,2,1.3	First antenatal attendances	20	-	20	✓	
60	C4.1,4.1.3	Arthemisin/Lumphantrine	-				✓
87	D1,1.2.7	OPD Visits 5-14: Repeat-Male	15	-	15	✓	
92	D1,1.2.12	OPD Visits >=15-14: Repeat-Female	-	*2	2	✓	
32	B2d.2,2d.5.4	HIV positive women delivered in facility	1	1	1	✓	
10	A1.5,1.7	Institutional maternal death	1	-	0		✓
<b>Total (YES or NO)</b>						<b>8</b>	<b>4</b>

\*from administrative report

(NB: Total Yes + No = Sample size)

*Data accuracy in the above exercise reached 75-80% levels; i.e. it exceeds the expected level of 70% data accuracy.*

Inform the participants that data accuracy check of the Disease Report can be done in similar manner.

Ask the participants to recapitulate the steps for data accuracy check. Appreciate correct answers and clarify any confusion.

### Steps for Data Accuracy Check

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
3. Put serial number 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 number of the data elements included for data accuracy check. Note them in Column 1 of Data Accuracy Check Sheet
5. List down the selected data elements from the report on to the Data Accuracy Check Sheet in Column 2 and 3
6. Count and fill the corresponding figures from corresponding registers/tallies and the report in Column 4/5 and Column 6 respectively
7. If the data match/mismatch put 'yes' or 'no' in Column 7 or Column 8 respectively
8. Count the total numbers of 'yes' and 'no' at the end of the table
9. Match the total number of 'yes' with the LQAS Table and determine the level of data quality achieving the expected target or not

Inform the participants that if they do not have access to Excel program, they can use the following table for random numbers. In this case they should randomly select any one column for any one month and then follow the steps of data accuracy check.

**Randomly selected Sample data elements for Hospital & Health Center**

Col No.	1	2	3	4	5	6	7	8	9	10	11	12
Random Numbers	2	48	42	33	20	21	94	95	46	65	93	26
	16	14	10	2	83	37	3	93	9	16	10	70
	21	60	52	1	21	68	43	70	30	38	3	13
	11	28	44	42	90	11	74	60	41	43	61	38
	14	4	94	45	77	6	60	12	30	15	73	11
	28	3	29	93	10	91	73	46	24	65	76	28
	4	56	81	21	58	29	59	45	94	7	13	52
	64	62	60	30	27	58	95	33	62	59	4	32
	87	93	76	90	32	56	46	12	63	89	62	40
	92	87	86	9	65	20	19	91	82	82	30	38
	32	42	39	13	74	95	18	44	45	69	92	72
	10	51	77	51	8	81	44	93	19	1	23	37

### 10.3 Data Quality Assessment – Supervisor’s role

Inform the participants that the above self-assessment check sheet was for the facility in-charge or HMIS focal person to self-assess the data accuracy. Ask them, how a woreda or zonal supervisor can conduct the data accuracy assessment.

Note their answers on a flip chart. Appreciate their answers and reiterate that supervisors can:

1. During their routine supervisory visits of the health facilities Use the same check sheet for data accuracy check
2. Examine various registers to see if those registers are filled properly
3. Examine eHMIS generated reports to see if there is any unusual reporting of any data element, e.g. data reported too high or too low in comparison to previous reports
4. Examine blanks in the reports
5. Review the score of Data Quality LQAS score (Section D3) in the Quarterly report and provide necessary feedback to the health facilities.

Ask the participants what is the supervisory visit schedule for woreda and zonal supervisors and motivate them to use the Data Accuracy Check Sheet during the visit. Tell them that in this way, one supervisor can assess all the health facilities in two or three months.

Summarize the session and conclude by stressing that one of the major determinants of HMIS data use is the use of information by the health care providers and health managers. If the staff know that the data they generate is used at higher level and they get regular feedback based on those data, the care providers will be motivated to capture and report quality data.

## Session 11: HMIS Data Management

**Time: 45 minutes**

### Materials required:

- LCD and computer loaded with PowerPoint slides
- Flip charts and colored markers
- Facilitator's & participant's manuals
- Handouts

### Session objectives

By the end of this session, participants will be able to:

- Describe the standard reporting formats in the New HMIS
- Understand HMIS data (Reporting) flow
- Know role of HMIS focal persons at health institutions
- Know Reporting schedule

### Plan of activities

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#### 11.1 HMIS Reporting formats

Ask participants: What are the reporting formats currently used at your facility?  
*Show the standard reporting formats in the Reformed HMIS.*

##### HMIS Reports

- **Diseases reporting format**
  - OPD (out patient department) disease report form
  - IPD (in patient department) diseases report form
- **Epidemic (IDSR) reporting format**
  - Weekly epidemic summary form
  - IDSR (integrated disease surveillance & response) report form
- **Service delivery reporting format**
  - Quarterly service delivery report form
  - Annual service delivery report form

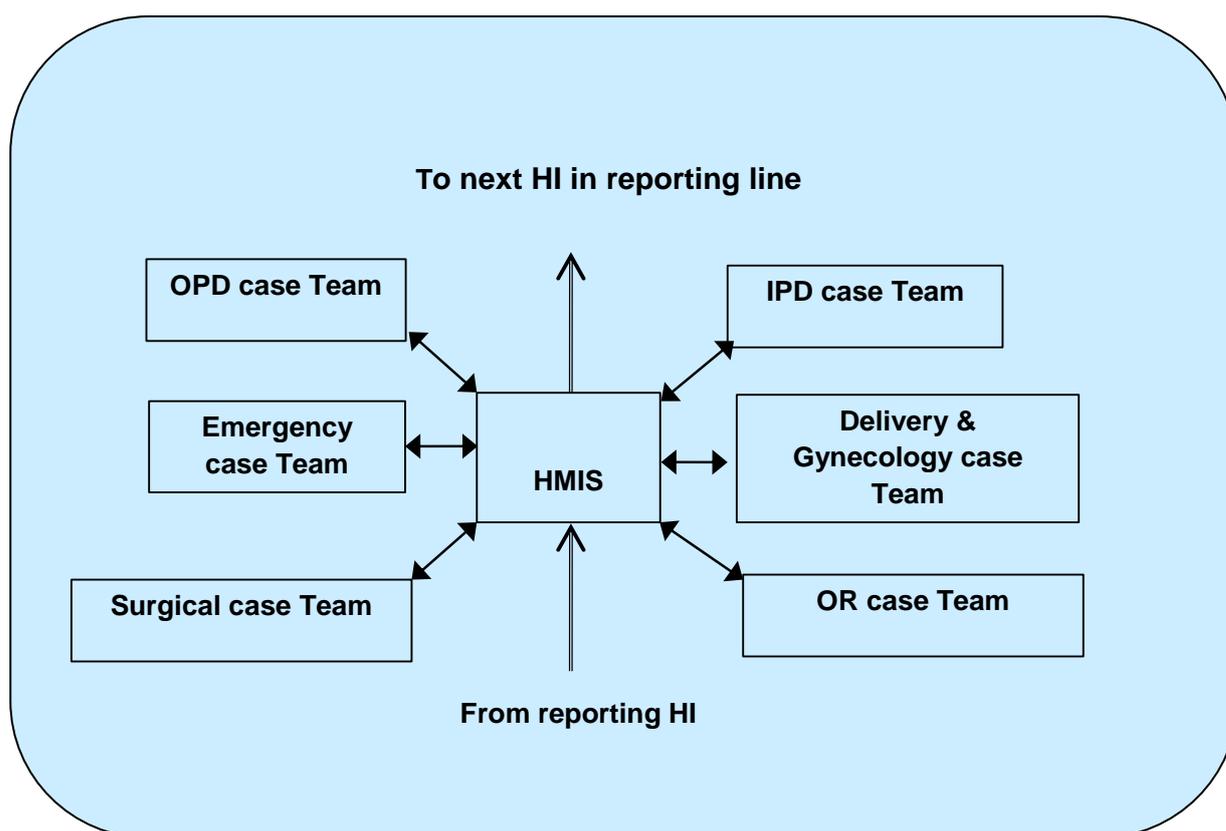
Ask the participants to review the format given in the participants' handout and clarify if any query.

Ask them at what frequency each report should be filled and then reported. Emphasize that at facility level reports are compiled on monthly basis i.e the monthly column is filled at the end of each month but report sent to the next level quarterly.

## 11.2 HMIS Management with in health institution

### 1. Data compilation with in health facility

Ask participants, how their facility is reporting currently and make them understand the flow of data from various case teams will be as following.



At the facility, HMIS reports cover three months, for each month there is a separate column along with a column for quarterly totals.

The case team coordinator will facilitate compilation of the respective data from its different sections and will send to HMIS focal person.

### 2. Role of HMIS focal person

Ask participants the possible role of HMIS focal person in a health facility/ institution.

### **Role of HMIS focal persons at health institutions**

#### **The HMIS focal person will:**

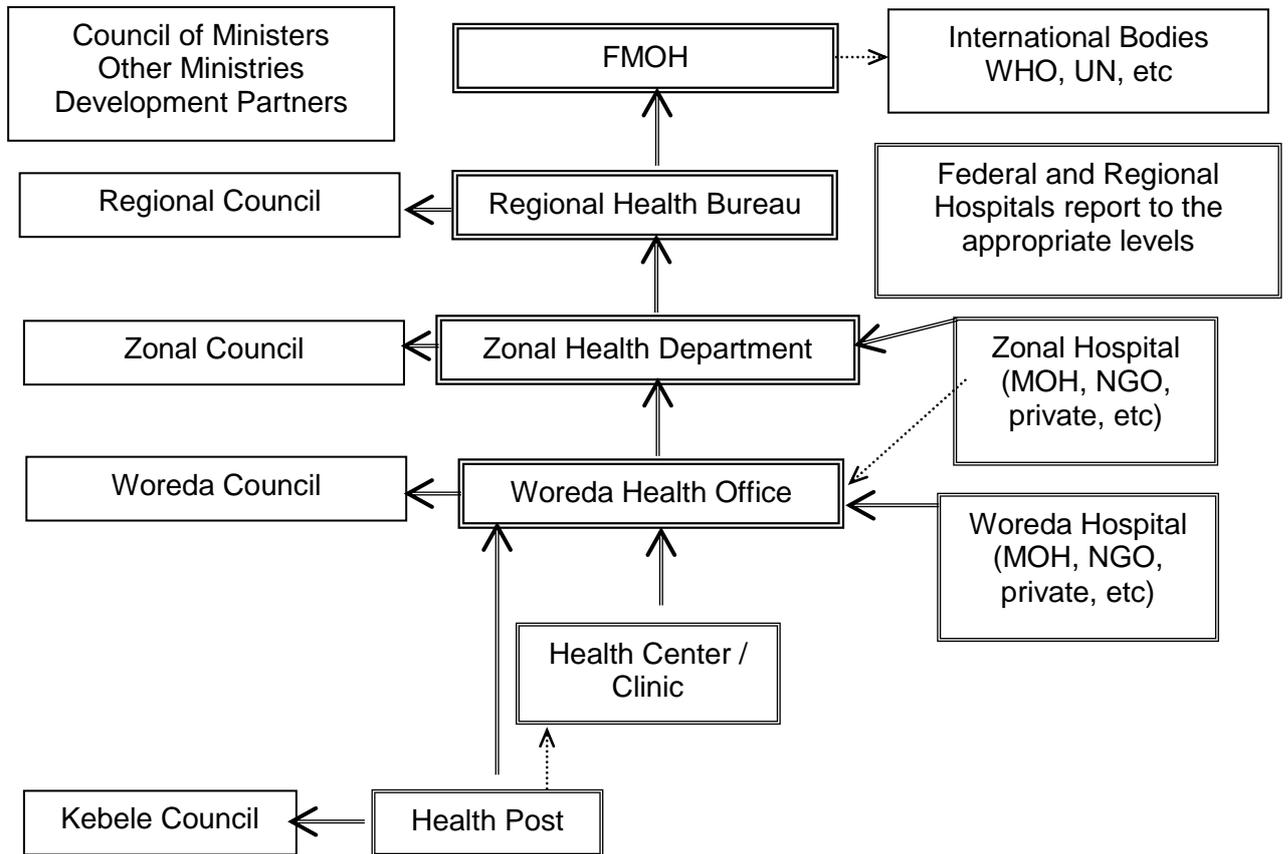
- Collect all records from different case teams and compile in to one complete format.
- Make sure all the records are readable, written in pen and facility stamp on the report is out of the data recording area.
- Do random accuracy check
- Facilitate review of the compiled data by the performance review team of the facility
- Send approved report data to the next level.
- Facilitate use of HMIS information locally with in respective health institution.

**NB. Service data are recorded by the service provider.**

### 3. Integrated reporting channel

Ask, what is the possible reporting flow from health facilities onwards. Show, the chart below and explain that reporting to respective area council ( kebele, woreda, zonal council..etc) is on regular basis at a frequency determined by the respective council.

# Integrated data channel



### 11.3 HMIS Reporting Schedule

Show the following table and facilitate participants to understand how to maintain this schedule.

#### Reporting schedule

From	To	Report arrival date at reporting destination	Frequency of		Comment
			reporting	aggregation / assessment	
Health post	WorHO with copy to HC	8th of month	Quarterly and annual	Monthly	HC won't include HP info in its report to WorHO
Health center	WorHO	8th of month	Quarterly and annual	Monthly	
District hospital	WorHO / ZHD	8th of month	Quarterly and annual	Monthly	
Regional / referral hospital	RHB / FMOH	8th of month	Quarterly and annual	Quarterly	
WorHO	ZHD / RHB	15th of month	Quarterly and annual	Quarterly	
ZHD	RHB	21st of month	Quarterly and annual	Quarterly	
RHB	FMOH	28th of month	Quarterly and annual	Quarterly	Selected few activities may require quarterly reporting

Note:

Arrival date in all cases refers to the following month after each quarter or fiscal year. This schedule is intended to provide enough time for review of results to improve data quality, particularly at the facility.

This schedule presumes a manual system. Introduction of electronic transmission from the woreda onwards should reduce the transmission type for reports.

Show the reporting period as following:

# Reporting period

- **Quarters:**
  - Quarter 1 = Hamle 1 – Meskerem 30
  - Quarter 2 = Tikimt 1 – Tahsas 30
  - Quarter 3 = Tir 1 – Megabit 30
  - Quarter 4 = Miazia 1 – Sene 30
- **Report submission for both diseases and service quarter reports**
  - Quarter 1 → **Tikimt 8**, Quarter 2 → **Tir 8**
  - Quarter 3 → **Miazia 8**, Quarter 4 → **Hamle 8**
- **Late report to be received at federal ministry of health:**
  - **Quarter report** should never be later than 45<sup>th</sup> days of next quarter
  - **Annual report** should never be later than 45<sup>th</sup> days (Nehassie 15<sup>th</sup>)



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