



Ministry of Health  
Immunization In  
Practice Facilitators  
Guide

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### **Lists of Immunization in Practice 2023 version Participant Manual and Facilitator Guide Development Working Team Members:**

Name	Organization	Role
Dr. Meseret Zelalem	MOH	MCAYH-LEO
Mr. Melkamu Ayalew	MOH-ISD	Immunization Service Desk Head
Mr. Sileshi Solomon	MOH-ISD	Technical Coordinator
Mr. Temesgen Lemma	MOH-ISD	Technical Coordinator
Mr. Yosef Tariku	MOH-ISD	Technical Coordinator
Dr. Efrem Teferi	CHAI	Consultant
Mr. Yohannes Lakew	MOH-ISD	TWG Lead
Mr. Jiregna Wirtu	MOH-ISD	TWG Lead
Mrs. Tseganesh Gedlu	MOH-ISD	TWG Lead
Mr. Mengistu Bogale	MOH-ISD	TWG Lead
Mr. Mengesha Belay	MOH-ISD	TWG Lead
Mr. Mulat Nigusse	MOH-ISD	TWG Lead
Mr. Habtamu Alemay	MOH-ISD	TWG Lead
Mr. Kibrom Abriham	MOH-ISD	TWG Lead
Mrs. Mastewal Kerebih	MOH-ISD	TWG Lead
Mrs. Mulu Begna	MOH-ISD	Member
Mrs. Yeshiwork Eshetu	MOH-ISD	Member
Mr. Berhanu Bekele	MOH-ISD	Member
Mrs. Tewabech Alemu	MOH-ISD	Member
Dr. Mehret Elias	MOH-ISD	Member
Dr. Alemayehu Ayele	MOH-ISD	Member
Mss. Hana Alemayehu	MOH-ISD	Member
Mr. Tekalign Admasu	MOH-ISD	Member

Mr. Tekalign Morka	MOH-ISD	Member
Mr. Tesfaye Bekis	MOH-ISD	Member
Mr. Belete Alebachew	MOH-ISD	Member
Dr. Zufan Abera	MOH-ISD	Member
Mr. Selahadin Seid	MOH-CPD	Member
Mr. Assefa Ejamo	EFDA	Member
Dr. Zelalem	EFDA	Member
Mr. Haileyesus Wossen	EPSS	Member
Dr. Adamu Gelan	EPHI/WHO	Member
Dr. Habtamu Belete	CHAI	Member
Dr. Dejene Duguma	CHAI	Member
Mr. Anduamlak Asfaw	CHAI	Member
Mr. Nigussie	CHAI	Member
Dr. Dereje Belew	WHO	Member
Dr. Abayneh Girma	WHO	Member
Mr. Wondimu	WHO	Member
Mr. Haimanot Fisseha	UNICEF	Member
Mr. Fitsum	UNICEF	Member
Dr. Kumie Alene	CDC	Member
Mr. Zinabu Malsebo	JSI	Member
Mr. Deriba Badada	PATH	Member
Dr. Amare Bayeh	PATH	Member
Mr. Girma Hailemariam	PATH	Member
Mr. Solomon Zeleke	Project Hope/EPHI	Member
Mr. Haile Kassahun	Project Hope	Member
Mr. Guluma Berhanu	Acasus	Member
Mr. Aristotle Gebremedhin	Acasus	Member
Mr. Melaku Tsehay	CORE Group	Member
Sr. Alemnesh Teka	CORE Group	Member





## Preface

Immunization program is one of the most cost-effective health interventions, with proven strategies to reach the most hard-to-reach and vulnerable populations. Measurable achievements in terms of reducing morbidity and mortality associated with vaccine preventable diseases (VPDs) have been documented since the national immunization program was commenced in Ethiopia since 1980 G.C. With progressive introduction of new and under used vaccines, there has been remarkable achievements in reducing morbidity and mortality from vaccine preventable diseases and the total antigens in the routine immunization program has currently reached above twelve.

The Ministry of Health recognizes the crucial role immunization contributes to reducing child morbidity and mortality and affirms its responsibility to ensure that every target is protected from VPD. With the emergence of COVID 19, and other new vaccines after two years of age immunization has taken the picture of life course approach. Expanded Program of Immunization (EPI) builds on direction and planning of the government's Health sector Transformation Plan (HSTP) and other relevant documents.

Apart from other programmatic priorities, addressing the training gap of EPI frontline workforce in practical aspects of the program requires follow up by ensuring adherence to standards and up to dating the training manuals, including IIP manual.

The performance improvement model conducted training provides critical support to health care workers who deliver services, with commitment. The aim of this course is to build participant's knowledge, skills, and attitude, enable to improve performance of EPI coverage and quality of immunization services. The revision has been following the introduction of new vaccines as well as the skill gap identified in the field and after feedback taken on the previous manual.

The ministry health appreciates the role of partner organizations in the in the development this 2015 edition of IIP training manual, appreciates the unreserved efforts of EPI case team, other directorates for their inputs and constructive comments.

## Acronyms

AD	Auto-Disable syringe
AEFI	Adverse Event Following Immunizations
AFP	Acute Flaccid Paralysis.
AIDS	Acquired Immune-Deficiency Syndrome
BCG	Bacillus Calmette Gu'erin
CRS	Congenital Rubella Syndrome
DOTS	Directly Observed Treatment Short course
DT	Diphtheria-Tetanus toxoids
DTP	Diphtheria Tetanus Pertussis
DTP-HepB-Hib	Diphtheria Tetanus Pertussis -Hepatitis B Haemophiles influenza type b
EPI	Expanded Program on Immunization
GAVI	Global Alliance for Vaccine and Immunization
HEW	Health Extension Worker
HEP	Health Extension Program
HAD	Health Development Army
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
ILR	Ice-Lined Refrigerator
IPV	Inactivated Polio Virus vaccine
ITN	Insecticide Treated bed Net
MCV	Measles Containing Vaccine
MR/MMR	Measles, Rubella/ Measles Mumps Rubella vaccines
MNTE	Maternal and Neonatal Tetanus Elimination
NIDs	National Immunization Days
OPV	Oral Polio Vaccine
PAB	Protected At Birth
PATH	Project for Appropriate Technology for Health
PHCU	Primary Health Care Unit
SIA	Supplemental immunization activities
TB	Tuberculosis

Td	Tetanus-diphtheria toxoid vaccine
TT	Tetanus toxoid vaccine
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
VAD	Vitamin A deficiency
VAPP	Vaccine associated paralytic polio
VVM	Vaccine vial monitor
WHO	World Health Organization
YF	Yellow fever
RTS, S/S/A so1	
COVID 19	Corona virus disease of 2019

## COURSE INTRODUCTION

Rationale: Immunization is the cheapest public health intervention available today in the world. During 2021, about 81% of infants worldwide (105 million infants) received 3 doses of diphtheria-tetanus-pertussis (DTP3) vaccine, protecting them against infectious diseases that can cause serious illness and disability or be fatal. The COVID-19 pandemic and associated disruptions have strained health systems, with 25 million children missing out on vaccination, 5.9 million more than in 2019 and the highest number since 2009, 60% of these children live in 10 countries: Angola, Brazil, the Democratic Republic of the Congo, Ethiopia, India, Indonesia, Myanmar, Nigeria, Pakistan and the Philippines. There is a disparity in the access of the lifesaving EPI vaccines to children in the world today. Reaching most children in developing countries still remains as a challenge. As a result of the traditional vaccines being underutilized and new vaccines introduced in these developing countries there are three million vaccine preventable child deaths each year in world today.

In Ethiopia, vaccine preventable diseases are contributing substantially to under-five mortality. Measles is one of the leading causes of under-five mortality. However, recently there is substantial reduction in the number of measles caused under-five deaths in the country due to the catch up and follow up measles campaigns. Consequently, through EPI together with other primary health care interventions, the country has attained substantial reduction in morbidity and mortality due to vaccine preventable diseases and has been able to achieve the targets set for MDG4 three years before it was due.

In recent years, the EPI coverage is showing encouraging progress after many years of stagnation. The HEP is, therefore, a golden opportunity to increase the immunization coverage for the traditional, underutilized and new routine EPI vaccines.

However, there is a felt need for the IIP training to the health care workers as it is evident during supportive supervision, review meetings and different occasions for training need assessment. The frequent staff turnover and rotation calls for the periodic training using this updated training manual.

Capacity enhancement for health workers is one of important and indispensable strategy for successful EPI service delivery. Health workers and Health Extension Workers are expected to handle immunization program in their areas and should be able to reach every child to get an opportunity for immunization services. This IIP manual is adapted from the immunization in practice WHO, and current updates to the Ethiopian situation. It will be of great use for health service providers as training manual and will be kept to be used as reference during day to day EPI operations as well.

Course Description: This is a six days course consisting of eight modules. Chapter 1 deals with target diseases and the vaccines used to prevent them. Chapter 2 deals with supply chain and cold chain system used for storing & distributing vaccines in good condition. Chapter 3 incorporates communication skills for health workers and the general overview of building political commitment and community support for EPI. Module 4 describes planning and coordination, including



micro-planning, to ensure immunization services reach every community. Chapter 5 Immunization safety discusses practices that health workers should follow to ensure that they deliver immunization injections in the safest manner. Chapter 6 Immunization service delivery describes the tasks a health worker needs to perform to ensure the quality of an immunization session, and preparation required at the health facility and outreach before the infants arrive. Chapter 7 Vaccine preventable disease surveillance shows continuous and systematic collection, analysis, and interpretation of Vaccine-preventable disease data needed for planning, implementation, and evaluation, including adverse events following immunization (AEFI). Chapter 8 Monitoring, evaluation and accountability, explains how to collect and report data for monitoring of immunization services.

**Course Goal:** To transfer the required knowledge, attitude and skills to participants, and train others onsite to enable them provide quality immunization services.

**Course Objectives:** By the end of the training participants will be able to:

- Describe the 20-target vaccine-preventable diseases
- Identify the vaccines used to prevent 20 target vaccine-preventable diseases
- Describe the elements of supply chain, cold chain and vaccine management
- Effectively communicate for quality EPI service provision
- Prepare micro-plans for community outreach services
- Explain the steps following safe procedures in administering immunization services
- Perform quality immunization session
- Monitor EPI activities.

**Methods and materials:** Presentation, group work and discussion, demonstration, video, exercise, home take assignment, practical session through health facility visit will be used throughout the training. Materials to be used for the training include, but not limited to, Pictorial aid (photo, video, posters or flip chart) of the specific chapters, sample of vaccines (at different VVM stages) and syringes. Cold chain monitoring tools (thermometer and Fridge tags) , cold boxes, vaccine carriers, foam pads, ice packs, refrigerators, burners, and wick, social map model, registration book, Vaccine stock balance sheet and other reporting formats.

**Target Audience:** The training takes six days, number of participants are 25 per session, health workers (nurses, health officers, medical doctors) providing EPI service in their health facilities and Facilitator to participant ratio should not exceed 1:5.

**Instructor Qualifications:** Facilitators are health workers, who have taken the training course and have experience on immunization service provision.

**Core Competencies:** The participants are expected to conduct EPI sessions in their respective areas, provide onsite training for HWs and HEWs, support HEWs in outreach session, follow situation of the cold chain, assist the health

center or health post in requesting vaccines, and prepare report, analyze it, use for local decisions and report to next higher level.

**Course Evaluation:** Participants will reflect on the course during their daily recap and using prepared evaluation format and over all course evaluation.

There is daily facilitator meeting during which they evaluate how participants follow the training and identify weak participants to provide additional support. Pre/post-test is given to see their knowledge and Facilitators observe to evaluate skill gained by participants.

Post training supportive supervision after six to eight weeks, and review meeting after 3 months integrated with other programs should also be conducted, where results of supervision will be discussed. As they are opportunities to learn from each other, they will help to reinforce the knowledge and skill gained during trainings.

#### Materials and facilities needed for IIP training

1	Participant of IIP manual	12	EPI Monitoring chart
2	IIP Facilitator guide	13	Ice pack
3	Exercise book, pen, pencil, sharper, marker	14	EPI reporting formats
4	Small bag	15	Infant doll
5	Tally sheet	16	Daily facilitator meeting agenda
6	EPI registration book	17	Health Center with immunization service
7	Flip chart and marker	18	Pre/Posttest copies
8	Vaccine vials: Pentavalent, PCV, Rotavirus, BCG, Measles, Td, OPV, MenA, IPV , HPV, COVID 19, Hepatitis , Cholera, Typhoid, Rabies, Ebola	19	Training evaluation sheet
9	Diluents for BCG, Measles	20	Training quality assessment
10	Vaccine carrier	21	Job aid
11	Foam pad	22	Supportive supervision and review Meeting checklist
12	AD Syringes	23	RED categorization data base tool
		24	EPI job aid (comprehensive)
		25	Computer and overhead projector

## PRE/POST Test Questions

1. The efficacy of measles vaccine when given at the age of 9 months is  
A) 100%    B) 75%    C) 85%    D) 50%
2. Which of the following vaccines is administered intradermally?  
A) Measles    B) Td    C) pentavalent    D) BCG
3. Bole Health Center has 100,000 Catchment population and the Live birth and surviving infants are 3.6% and 3.2% respectively. Calculate the Annual and Monthly need of Penta Vaccine for Bole Health Centers (Use Penta Wastage factors=1.05 and 100% Coverage)  
A. 10,080, 840  
B. 1080,90  
C. 1800, 150  
D. 10,080,84
4. All of the following are the criteria of Multi-dose Vial Policy (MDVP) except  
A. The vaccine is currently prequalified by WHO.  
B. The vaccine is approved for use for up to 28 days after opening the vial, as determined by WHO.  
C. The expiry date of the vaccine has not passed.  
D. The Vaccines is under Emergency Use list (EUL)
5. There are 4 key action steps that you should systematically take when a temperature alarm is noticed except  
A. Safeguard the vaccines:  
B. Separate the damaged vaccines from the usable ones.  
C. Fix the underlying problem  
D. Document and inform relevant people:  
E. Procure the SDD refrigerator
6. One of the Following is not planned preventive Maintenance of Solar refrigerators  
A. Wipe and clean refrigerator door seals.  
B. Check the amount of ice forming around the freezer compartment, conduct defrosting.  
C. Clean the solar array (early morning or evening)  
D. Replace the Solar panel
7. Which procedure should vaccinators follow during vaccinating the client?  
A. Ask the caregiver/targeted individual to repeat the date to be sure it is understood.  
B. Remind the caregiver/targeted individual when to return for the next appointment.  
C. Explain to the caretakers/targeted individuals the proper position for vaccination and reassure, if there is any complaint.  
D. Greet the caregiver/targeted individual.

8. Which one is the good skill in leading community dialogue?

- A. Giving community members the opportunity to voice their thoughts and concerns about immunization.
- B. Distribute key messages through community social committee.
- C. Making an appointment for the follow up visit.
- D. Involving only those active community members to raise their concerns

9. Which one is the first step in crisis management as a vaccinator?

- A. Do crisis analysis to estimate the impact.
- B. Create a crisis communication plan
- C. Monitor the management of the crisis
- D. Coordinate with Technical and communication expert

10. Intra-sectoral and multi-sectoral coordination mechanism is crucial for Immunization Program at all levels of the health system.

- A. True
- B. False

11. Which one of the following is not the key consideration to conducting a Kebele-level micro plan?

- A. Target population
- B. Cold chain inventory
- C. Identifying service delivery strategies
- D. Knowing the target population of the neighboring Kebele

12. Which of the following service delivery strategies is not more applicable for hard-to-reach/hard-to-serve areas/communities?

- A. Static/Fixed
- B. Temporary fixed
- C. Outreach
- D. Mobile

13. During preparation for the vaccination session, which one of the following would not be the most important?

- A. Knowing the team composition & target for the session
- B. Applying Infection prevention technique
- C. Mapping of session organization
- D. None of the above

14. Which of the following are the recommended practices during vaccine administration?

- A. Checking the expiry date of the vaccine
- B. Ensure the right match for a vaccine with diluent as per the manufacturer's recommendation
- C. Discard the used needle and syringe without recapping them in the safety box
- D. All of the above

15. Which one is the correct steps to conduct vaccine preventable disease surveillance?
- A. Case detection, case investigation, sample collection, case classification, data analysis and reporting
  - B. Case detection, case investigation, sample collection, data analysis and reporting
  - C. Case investigation, sample collection, case classification, data analysis and reporting
  - D. Sample collection, case classification, data analysis and reporting
16. ----- is the reduction of disease incidence, prevalence, morbidity, or mortality to a level that is locally acceptable as a result of deliberate efforts.
- A. Control
  - B. Eradication
  - C. Elimination
17. Regular reporting of disease data by all institutions that see patients (or test specimens) and are part of a reporting network is called.
- A. Passive surveillance
  - B. Active surveillance
  - C. sentinel surveillance
18. Which one is not the purpose of AEFI monitoring
- A. Prevent immunization program-related errors
  - B. Prevent false blame arising from coincidental adverse events following immunization
  - C. Maintain confidence in immunization by the community
  - D. Increase vaccine efficacy
19. Which one of the following is not an important element of monitoring to improve quality of immunization program
- A. Ensuring all targets of the immunization are vaccinated
  - B. Vaccines and safe injection equipment are delivered in correct quantities and on time.
  - C. Staff are well trained and adequately supervised.
  - D. None of the above
20. One of the following is used as an immunization monitoring, recording and reporting tool
- A. Immunization register
  - B. Tally sheet
  - C. Temperature monitoring chart
  - D. All
21. **One of the following is not among the Common data quality problems**
- A. Different people supply different answers to the same question.
  - B. Data is not collected in a standardized way or objectively measured.
  - C. Staff suspects that the information is unreliable, but they have no way of proving it.
  - D. Complete and timely data collection and reporting

# Chapter 1: Introduction to vaccines preventable diseases and their vaccines

Chapter objective: At the end of this chapter participants will be able to describe vaccine preventable diseases and their vaccines.

## Enabling Objectives:

- Describe basic facts of vaccine preventable diseases.
- Explain vaccine types and their characteristics.

**Total time: 260 Minutes**

**Material:** Flip chart, LCD, Marker, participant manual

## Session One: vaccine preventable diseases and its characteristics

**Time: 80 Minutes**

**Training methods:** Group work, presentation, and discussion

<p>Activity 1: Brainstorm</p> <p>Time 10 Min</p> <p>Instruction: Display pictures on ppt and ask participants to brainstorm which disease cause the following sign and symptom for 7 min and the summarize them in 3 minutes</p> <p>Ans: 1- Measles 2- Diphtheria 3- Mumps 4-Pertusis</p>
<p>Activity 2: Group discussion and presentation. (Time 80 minute)</p> <p>Instruction: divide the participants into groups (each group has 5 individuals at least) and let them read and discuss session 1 and discuss the below question (Time 30 minutes) and allow 1 group to present question 1 and allow 1 group to present question 2 to larger participants (10 min for each group). Summarizing the discussion allows the participants to ask questions and answers (30 min).</p> <p>1. List common VPD that are included in routine vaccination programs and Sign and symptom and major complications? List common VPD that are included in routine vaccination programs and their prevention methods?</p>

Facilitator's note		
Target disease	Sign and Symptom	Prevention
Diphtheria	Sore throat, tonsillitis, fever	Vaccination, (Diphtheria containing vaccine like Penta, Td)
Pertussis	Fever, Cough, Vomiting, Apnea	Vaccination (Penta vaccine)
Tetanus	Fever, Neck stiffness & Muscle spasm	Vaccination (Tetanus containing vaccines Td, Penta vaccine)

Haemophilus Influenzae type b	Fever, cough, Neck stiffness	Vaccination (Penta)
Hepatitis B	Fatigue, Nausea, Jaundice, vomiting, abdominal pain	Vaccination (Hep B virus containing vaccine like Penta, and Hep B birth dose)
Tuberculosis	Cough, fever, night sweating,	Vaccination (BCG), ventilation and nutrition
Pneumococcal disease/Pneumonia	Cough, fever, shortness of breath	Vaccination (PCV13)
Rotavirus gastroenteritis	Diarrhea, Vomiting	Vaccination (Rota vaccine), Hygiene and sanitation
Poliomyelitis	Fever, headache, sore throat	Vaccination, (OPV, IPV, nOPV)
Measles	Fever, Coryza, skin rash, Conjunctivitis	Vaccination (Measles Containing Vaccine)
HPV and cervical cancer	No symptom before cancer lesion	No symptom before cancer lesion Vaccination (HPV), Condom, early screening, and treatment
COVID 19	Cough, fever, body weakness, loss of taste and smell	Cough, fever, body weakness, loss of taste and smell vaccination (COVID 19 vaccine), Face mask, social distancing, handwashing,

## Session two: Vaccine types and their characteristics

**Time: 180 Minutes**

**Training methods:** Group work, presentation, and discussion

### 2.1. Routinely provided vaccines in Ethiopia

**Time allowed: 120 minutes.**

Activity 3: Group discussion and presentation. (Time 120 minute)

Instruction: divide the participants into groups (each group has 5 individuals at least) and let them read and discuss session 1 and discuss the below question and prepare response (Time 70 minutes) and allow 2 groups to present their presentation for 10 min each to larger participants. Allow the participants to ask any questions and discuss and summarize the sessions (30 min).

1. List routine vaccines for under one and adolescent in Ethiopia, schedule, site of administration.

Facilitator's note		
Routine vaccines	schedule	site of administration
BCG	At or as soon as after birth	Intradermal, right outer deltoid
Penta	6, 10, 14 weeks of age and per catch up guide	Intramuscular, Left outer mid-thigh in infants.
PCV	6, 10, 14 weeks of age	Intramuscular, right mid anterolateral (outer) thigh in infants and children
Rotta	At 6 and 10 weeks of age	Oral only
Measles	MCV 1: at 9 months of age. MCV 2: at 15 months of age	Subcutaneous, Left upper arm.
OPV	Birth, 6, 10, 14 weeks of age	Oral only
IPV	IPV 1 at 14 weeks and IPV 2 at 9 months	Intramuscular: Right anterolateral (outer) mid-thigh in infants. There should be minimum of 2.5cm apart from PCV injections
HPV	9 -14 years of age adolescent girls	Intramuscular, Deltoid muscle of upper arm

## 2.2. Vaccines provided for emergency or outbreak response in Ethiopia and potential to be routinized.

**Time allocated: 40 Minute.**

Activity 4: Group discussion and presentation. (Time 50 minute)

Instruction: divide the participants into groups (each group has 5 individuals at least) and let them read and discuss session 1 and discuss the below question (Time 30 minutes) and allow 2 groups to present and share their reflections to larger participants (10 min). Summarize the discussion (10 min).

1. List vaccines currently provided for emergency and outbreak response vaccination in Ethiopia, and list schedule

Facilitator's note	
Vaccine type	Target age
Yellow fever vaccine	Age greater than 9 months
Oral Cholera vaccine	Age greater than 1 year, the 2nd dose is given after 2 weeks of interval
Meningococcal conjugated vaccines (Men A)	Single dose for all between 1 and 29 years of age
Rabies vaccine	Not age specific vaccine

## 2.3. Vaccine not introduced and in pipeline.

**Time allocated: 10 Minute.**



### Activity 5: Brainstorm

Instruction: Ask participants to brainstorm WHO prequalified vaccine not provided as routine and humanitarian situation currently for 10 Minute. Summarize the brainstorming session by presenting potential vaccines to be introduced in Ethiopia (10 min). List vaccine types in pipeline in Ethiopia?

#### Facilitator's note

#### Vaccine type

Hepatitis B birth dose

Malaria Vaccine

Rubella vaccine

Typhoid vaccine

Rubella vaccine

Mumps vaccine

Note: For any new vaccine specific training will be provided for provider and program managers and schedule and target age will be clearly decided by ministry of health.

### Session 3: Chapter Summary

#### Time allocated: 10 minutes.

A vaccine-preventable disease is an infectious disease for which an effective preventive vaccine exists. Vaccination is among the most cost-effective health interventions and has been responsible for substantial reductions in mortality and morbidity for under five as well as adults. Vaccine-preventable deaths are usually caused by a failure to obtain the vaccine in a timely manner. In addition to direct protection afforded to vaccinated individuals, high levels of vaccination coverage offer indirect protection (herd immunity) to the remaining unvaccinated individuals in a population.

## Chapter 2: Vaccine and Cold chain management

### Chapter Description:

This chapter provides technical guidance on the vaccine management policies, procedures, and standard practices for health workers at health facility level. It covers the proper use of cold-chain equipment , temperature-monitoring practices, the basic preventive maintenance of cold-chain equipment, vaccine stock management, forecasting of adequate quantity of vaccines and other supplies, vaccine distribution and vaccines wastage management practices that health workers should follow during all processes of managing vaccines and the cold chain system.

**Primary Objective:** At the end of this chapter participants will be able to manage vaccine and cold chain equipment at the health facility level.

**Enabling objectives:** Estimate the vaccine and supply needs.

- Manage vaccine and supply stock levels
- Determine vaccine wastage.
- Manage cold chain equipment.
- Apply proper vaccine temperature monitoring practice.
- carryout basic preventive maintenance

### Chapter outline:

- 2.1 Forecasting required Vaccine & supplies
- 2.2 Managing vaccine stock
- 2.3 Determine vaccine wastage
- 2.4 Cold Chain Equipment and management
- 2.5 Cold Chain Temperature Monitoring Devices
- 2.6 Basic Cold Chain Equipment Maintenance

**Duration:** Classroom session - 8:00 hrs. and 2 hrs. health facility visit

### Summary of Activities

Time in (min)	Activity	Facilitator task and Instruction	Method of delivery	Learning material and Resource
10	Chapter course description and Introduction	Display slide # 1 and introduce the session by explaining the chapter objective and relating it to the outline of the chapter in Slides # xxx	Interactive Presentation	Slide # XXX Participant Manual (PM) page XXX
5	<b>Session 2.2:</b> Forecasting vaccines and related supplies	Start the session by displaying slide # XXX	Interactive Presentation	Slide # XXX PM page _
30	Presenting	Using Slide # XX - xx <ul style="list-style-type: none"> <li>• Define what is vaccine and supply forecasting.</li> <li>• Methods of vaccine and related supply forecasting</li> </ul>	Interactive Presentation	Slide # XXX PM page _
40	Learning Activities	Divide the participant into small groups to calculate the required vaccines and related supply based on the information in the PM page XX (exercise 2.1)	Group work	PM page ____
5	Session Summary	Summarize the session by displaying slide # 1	Interactive Presentation	Slide # XXX
10	<b>Session 2.3:</b> <b>Vaccine stock management</b>	Start session by displaying slide # x -xx	Interactive Presentation	Slide # xx and xx PM page _
35	Presentation on vaccine stock management	Using slide # xx discuss	interactive presentation	slide #
80	Learning Activities	Divide the participant into small groups to discuss on vaccine ledger book (Exercise 2.2)	Group work	PM page
		Divide the participant into small groups to discuss on how to prepare vaccine request form (Exercise 2.3)	Group work	PM page

Time in (min)	Activity	Facilitator task and Instruction	Method of delivery	Learning material and Resource
		Provide used VRF of the HC to identify and discuss factors affecting stock level (Ex 2.4)	Individual Activity	PM ____
		Instruct them to review on the accuracy and completeness of the submitted VRF (distributed for Exercise 2.5)	Individual reflection	PM page
10	Session Summary	Use slide #__ to summarize the session	Interactive Presentation	slide # ____
5	<b>Session 2.4</b> Vaccine Wastage	Introduce the session using slide #__ and PM page	interactive presentation	slide # PM page
5	Presentation on vaccine wastage	Using Slides XXX-XXX to <ul style="list-style-type: none"> <li>• Types vaccine wastage</li> <li>• How to calculate vaccine wastage</li> <li>• How to reduce vaccine wastage</li> </ul>	Interactive Presentation	slide # ____ PM Page ____
5	Session summary	Summarize the session using slide # xx	Interactive presentation	slide # PM page
5	<b>Session 2.5</b> Cold chain equipment and management	Introduce the session using slide #__ and PM page	interactive presentation	Slide # PM page
30	Presentation on CCE and management	Using slide #xxx-ZZ and PM page xxx discuss on <ul style="list-style-type: none"> <li>• Cold chain equipment</li> <li>• Vaccine Cold chain management</li> </ul>	interactive presentation	Slide # xxx-zz PM page
20	Learning Activities	show videos on <ul style="list-style-type: none"> <li>• What Is Cold-Chain Equipment?</li> <li>• Types of Refrigerators at in Health Facilities</li> <li>• Using Front-Opening Refrigerators</li> <li>• Using Top-Opening Refrigerators with or without basket.</li> </ul>	Video show	<a href="https://watch.immunizationacademy.com/en/videos/category/coldchain">https://watch.immunizationacademy.com/en/videos/category/coldchain</a>

Time in (min)	Activity	Facilitator task and Instruction	Method of delivery	Learning material and Resource
5	Session summary	summarize the session using PM page xx and Slide # xx	interactive presentation	PM page ____ Slide # ____
5	session 2.6 Temperature monitoring	Introduce the session using slide #__and PM page	Interactive presentation	PM page slide #
35	presentation on temperature monitoring	Using slide #xxx-ZZ and PM page xxx discuss on Vaccine sensitivity Temperature monitoring device	Interactive presentation	Slide # PM page
5	learning activity	Instruct the participants to discuss exercise in pair and present their response to bigger group	Think pair and share	PM page
20	Presentation on monitoring refrigerator temperature	Using slide # and PM page discuss on <ul style="list-style-type: none"> <li>Monitoring vaccine refrigerator temperature</li> <li>Taking Actions against Temperature Violations</li> </ul>	Interactive presentation	slide # PM page
50	Learning activities	Show videos on Fridge tag and shake test	Video show	videos
		Divide the participant into small groups to discuss and identify temperature alarm with their possible correctives action (Exercise 2.6 on PM)	Group work	PM page xx-xy
		Instruct them to read both case scenarios and do exercises accordingly individually (Exercise 2.7 on PM)	Individual work: Case scenario	PM page xxx
5	Session 2.7 Basics of CCE Maintenance	Start session using Slide #__	Interactive presentation	Slide #____ PM page ____
5	Learning Activity	Instruct the participants to reflect on their experience of cold chain failure and possible actions to be taken.	Individual reflection	PM page

Time in (min)	Activity	Facilitator task and Instruction	Method of delivery	Learning material and Resource
20	Presentation on basic maintenance of cold chain equipment	Using PM page xx and slide #xx discuss on <ul style="list-style-type: none"> <li>• CCE preventive maintenance at the HF level</li> <li>• CCE contingency plan</li> <li>• CCE inventory</li> </ul>	Interactive presentation	Slide #____ PM page ____
20	Learning Activity	Show videos on <ul style="list-style-type: none"> <li>• CCE preventive maintenance,</li> <li>• what to do during refrigerator breakdown and</li> <li>• maintenance record keeping</li> </ul>	Video show	<a href="https://watch.immunizationacademy.com/en/videos/category/coldchain">https://watch.immunizationacademy.com/en/videos/category/coldchain</a>
5	session summary	Using slide #xx and PM page summarize the session	Interactive presentation	slide #xx PM page
120	Session 2.7	Health Facility Visit	Demonstration	Guiding question

**Resources Required:** In addition to resources mentioned at the beginning of the manual, the following materials are needed to facilitate this chapter.

- Vaccine and injection materials stock recording book
- Copy of Vaccine requisition formats
- Temperature monitoring device (Fridge tag)
- Fridge-tag temperature recording sheet (pad)
- Different videos and sound system
- Print out of fridge tag temperature recording sheet (downloaded PDF)
- Copy of exercises for participants (Figure XX and YY on Facilitator guide for exercise 2.3 and 2.5)

**Advance preparation by facilitator:**

- Read Chapter 2 of the participant manual, facilitator guide, Power point, and other related references.
- In advance of the session, collect and prepare all necessary training materials and job aids (based on lists above).
- Freeze adequate vials of freeze sensitive vaccines (Td) to demonstrate the shake test (optional).
- Sticker for exercise
- Identify and discuss with health facilities for prior preparation for health facility visit.

## Session 2.1: Introduction to Chapter Two

**Course Description:** (10 minutes)

- Session 2.1 Present PowerPoint on Course description and introduction to the vaccine and cold management (using slide #1 to 4)

## Session 2.2: Forecasting vaccines and related supplies

- **Allocated Time – 1:20 hrs.**

The purpose of this session is to describe the importance of accurate vaccines and related supplies at health facility level using reliable parameters, and methods that are appropriate for the health facility.

Interactive presentation (using slides # 8 to 11)

- Define what is vaccine and supply forecasting.
- Methods of vaccine and related supply forecasting
- Do Example 2.1 for OPV, Penta, HPV, and AD Syringe 0.5ml on participant manual page\_\_\_\_\_ and make sure the participants understand it well by asking questions.

### **Learning activities: Group work (Exercise 2.1, 2.2 & 2.3)**

The main purpose of this group exercise is to help the participants learn how to forecast the quantity of vaccines and other related supplies required for their supply period using the parameters given.

- Divide the participants into small groups of 5 members.
- Help them select a leader and rapporteur for the group work.
- Instruct them to do exercise 2.1,2.2, and 2.3, the page \_\_\_\_\_,\_\_\_\_\_, and \_\_\_\_\_
- Inform different group to do forecasting for different antigens by using the different methods.
  - Group 1: BCG, AD Syringe, Mixing Syringe and Safety box
  - Group 2: PCV, AD Syringe & Safety box
  - Group 3: Td, AD Syringe & Safety
  - Group 4: IPV, AD Syringe & Safety box
  - Group 5: Measles, AD Syringe, Mixing Syringe and Safety box

- Inform the participants to use wastage factor and Immunization Coverage in Example 2.1 on participant manual page \_\_\_\_\_
- Instruct 2 groups (Preferably group 2 & Group 5) to present their response using a template on participant manual page #\_\_. (Table 2.3)

### Answer to Exercise 2.1:

	Vaccines needed	BCG	BOPV	IPV	Penta	Hep BD	HPV	Measles	PCV-13	Rota	Td
Vaccine	Annual	2,960	6571	2842	4,032	1,554	588	3,942	4262	2688	4928
	Monthly	247	548	237	336	130	49	329	355	224	411
AD syringe	Annual	1554		2688	4032	1554	588	2688	4032		4662
	Monthly	130		224	336	130	49	224	336		389
Mixing Syring	Annual	155						414			
	Monthly	13						34			
Safety box	Annual	18		28	42	16	6	33	42		49
	Monthly	2		3	4	2	1	3	4		4

### Note:

- **The quantity of calculated Safety box was rounded to the nearest whole number.**
- **The actual calculation of safety box is by adding total required AD syringes and Mixing Syringes and multiplying by Wastage factor and dividing by 100.**

### Answer for Exercise 2.2

#### Vaccines

Vaccines	Beginning Balance	Quantity received	Ending Balance	Doses discarded	Monthly need
BCG Vaccines with Diluent	0	600	400	0	200
BOPV + Dropper	200	160	260	0	100
IPV	1000	200	560	60	580
Pentavalent	600	360	430	100	430
Measle Vaccine +Diluent	300	600	600	0	300
PCV 13	160	460	480	0	140
Rota	250	200	280	30	140



Vaccines	Beginning Balance	Quantity received	Ending Balance	Doses discarded	Monthly need
Td	400	400	400	0	400
HPV	360	0	360	0	0

### Supply

AD Syringe & Safety box	Beginning Balance	Quantity received	Ending Balance	Doses discarded	Monthly need
Syringe AD 0.5ml	2400	2000	3800	50	550
Syringe AD 0.05ml	0	500	400	0	100
Mixing Syringe (BCG)	0	30	20	0	10
Mixing Syringe (Measle)	400	60	60	0	400
Safety box	160	260	190	0	230

### Answer for Exercise 2.3

Vaccines	# Vaccination post	#Weeks in Operation	# of sessions per week	Number of Vial per session	Number of doses per vial	Annual need
BCG Vaccines with Diluent	20	48	3	6	20	345,600
BOPV + Dropper	20	48	3	8	10	230,400
IPV	20	48	3	12	5	172,800
Pentavalent	20	48	3	80	1	230,400
Measle Vaccine +Diluent	20	48	3	23	10	662,400
PCV 13	20	48	3	40	2	230,400
Rota	20	48	3	40	1	115,200
Td	20	48	3	25	10	720,000
HPV	20	48	3	20	1	57,600

N.B

**AD Syringe, mixing syringe and safety box can be calculated based on the number of doses of antigens per session.**

**Session summary:** Summarize the session using slide #13

## Session 2.3: Vaccine stock Management

- **Allocated Time:** 2:10 hrs.

The purpose of this session is to support participants to learn how to monitor vaccine and other supplies stock, define different stock levels for stock management and ordering, conduct regular physical inventory, and place accurate and timely order of vaccine and all other supplies using standard vaccine resting form.

**Presentation:** Using slides 15 to 18, present the Vaccines stock management

- Do Example 2.2 on Flip chart with Participants
- Distribute a copy of vaccine ledger to each participant before starting session.
- Discuss importance and how to fill accurately and completely each column of vaccine and other EPI supply recording sheet column by column.
  - Emphasize that all columns are equally important and must be completed during each transaction and physical count.

### **Learning Activities:**

#### **Group Exercise 2.4:** Stock Management exercise

The main purpose of this group exercise is to help the participants learn how to properly fill and update the ledger book and be able to manage vaccine stock.

### **Instructions:**

- Inform the participants to divide into a small group of 4 participants and discuss to complete the vaccine ledger book using the given information in participant manual exercise 2.4
- Assign two groups to complete a recording book for the measles vaccine and the other teams for Td vaccine.
- Distribute 2 Copies of Measles Ledger book for group 1 and 2, and 2 Copies of Td Ledger book to Group 3 & 4
- Help them to select leader and rapporteur.
- Inform them to present your group work to a larger group using Flip charts. Follow the completeness of all Column.

Answer for Exercise 2.4

Minimum stock/Safety stock, Requirement for the supply period, and Maximum stock answer is from page \_\_\_Example 2.2

Scenario 1.

- a) Minimum stock/Safety stock=69, Requirement for the supply period=276, Maximum stock 345
- b) Updated ledger book for Measles Vaccines

Date	Received from/Distributed to	Purpose of Collection	Movement				Presentation (dose/Vial)	Manufacturer	Status of VVM	Batch number	Expiry date	Balance
			Received	Returned	Issued	Withdrawn /Discarded						
Carried over from Previous period											0	
1/3/2015	Adama Hub	RI	1800				10	Serum Industrial	1st	004N0141	Aug-21	1800
1/3/2015	Adama Hub	RI	800				10	Serum Industrial	1st	054N0133	Jun-21	2600
3/3/2015	K Health Post	RI			600		10	Serum Industrial	1st	054N0133	Jun-21	2000
4/3/2015	EPI Room	RI			200		10	Serum Industrial	1st	054N0133	Jun-21	1800
5/3/2015	L Health Post	RI			680		10	Serum Industrial	1st	004N0141	Aug-21	1120
5/3/2015	L Health Post	RI		180			10	Serum Industrial	2nd	004N0141	Aug-21	1300
8/3/2015	EPI Room	RI			160		10	Serum Industrial	2nd	004N0141	Aug-21	1140
10/3/2015	PC					20	10	Serum Industrial	3rd	004N0141	Aug-21	1120
10/3/2015	PC						10	Serum Industrial	1st	004N0141	Aug-21	1100

Scenario 2.

- a) Minimum stock/Safety stock=80, Requirement for the supply period=319, Maximum stock 399
- b) Updated Ledger book for Td Vaccines

Date	Received from/Distributed to	Purpose of Collection	Movement				Presentation (dose/Vial)	Manufacturer	Status of VVM	Batch number	Expiry date	Balance
			Received	Returned	Issued	Withdrawn /Discarded						
Carried over from Previous period											200	
1/3/2015	Adama Hub	RI	2000				10	Serum Institute Of	1st	004M5150	Sep-21	2200
1/3/2015	Adama Hub	RI	200				10	Serum Institute Of	2nd	004M5150	Aug-21	2400
3/3/2015	K Health Post	RI			200		10	Serum Institute Of	2nd	004M5150	Aug-21	2200
3/3/2015	K Health Post	RI			200		10	Serum Institute Of	1st	004M5150	Sep-21	2000
4/3/2015	EPI Room	RI			460		10	Serum Institute Of	1st	004M5150	Sep-21	1740
5/3/2015	L Health Post	RI			720		10	Serum Institute Of	1st	004M5150	Sep-21	1020
5/3/2015	L Health Post	RI		200			10	Serum Institute Of	2nd	004M5150	Sep-21	1220
8/3/2015	EPI Room	RI			150		10	Serum Institute Of	2nd	004M5150	Sep-21	1070
10/3/2015	PC					50	10	Serum Institute Of	3rd	004M5150	Sep-21	1020
10/3/2015	PC						10	Serum Institute Of	1st	004M5150	Sep-21	1020

**Time allowed:** 20 minutes for group work and 10 minutes for presentation.

**Summary:** Summarize the activity emphasizing

- Present the completed ledger book and summarize focusing on VVM stage and Expiry during issuing
- the importance of accurately and completely filling the stock recording ledger book including stock levels against which available stock levels are compared.
- All vaccines including diluents, droppers, AD syringes, mixing syringes and safety boxes must be recorded.
- All transactions must be filled into recording book on the same day of transaction.

## Group Exercise 2.5

Time allotted: 50 minutes

### Instruction for Facilitator:

- Use the same group as in Exercise 2.4 above.
- Distribute the copy of vaccine requisition format for the exercise.
- Instruct them to prepare vaccine request format
  - To do this exercise the groups are expected to use the annual and monthly quantity of vaccines and supplies forecasted for health facility in exercise 2.1 (HC with 40000 total population, 3.7% live birth and 3.2% surviving infant), given stock on hand, issued data and discarded data in table 9.
- Instruct them to prepare VRF for the specified HC for specific antigen and their respective syringes as follows.
- Print Answer sheet of Exercise 2.1 and distributes one copy to all group
  - Group 1: AD Syringe, Mixing Syringe and Safety box
  - Group 2: IPV & Measles
  - Group 3: Penta & Rota
  - Group 4: HepBD & Td
  - Group 5: BCG & BOPV

Instruct 2 groups (Preferably group 1 & Group 4) to present their response using a template on participant manual page #\_\_. Figure XXX

Inform the groups to fill their response in the distributed vaccine request form and present to the larger group for the plenary discussion.

Wrap up of the Response:

- Display or print and distribute the Completed VRF and discuss on all items
- The responsible EPI focal person is expected to request all vaccines and supplies except IPV, pentavalent, BCG mixing Syringe because it is beyond maximum stock level of the health center. Requesting additional stock of these items might result in overstocking of the items which can lead to stock management problems and expiry of the items.
- Following plenary discussion, summarize the answer for question emphasizing the importance of proper vaccine request with standard VRF based on annual (monthly) forecasted quantity of vaccines and supplies and physically verified stock at hand.

Vaccine Request Form



Ministry of Health



Region/Zone/Woreda: **Oromia/East Shoa/Adama Town**  
 Name of cold store: **Geda Health Center**  
 Responsible Person: **Biftu Temasgen**  
 Contact Address: \_\_\_\_\_  
 Telephone Number(s): **091-768-76-45**

Level of cold chain  
 RHB/HUB Cold room  
 Zonal store  
 Woreda  
 Health facility (H/HC/HP)

Date of request: **August 5, 2015**  
 No. of months to supply (S): **1**  
 For population catchment served: **25000**  
 Births (BI): **925**  
 Surviving infants (SI): **800**  
 Girls of age 9 year: \_\_\_\_\_

Antigen	Doses/pieces	Waste factor	Target coverage	Balance at beginning of last supply period	Received during the last supply period	Used or dispatched to lower level during last supply period	Doses discarded (Provide reason in remarks)	Current balance (E + F - G - H)	Requirement for the next supply period*	Requested Amount (J - I)	Quantity released	Vaccinations given since last supply (all doses)	Remarks
A	B	C	D	E	F	G	H	I	J	K	L	M	N
BCG (Bacillus Calmette Guerin) Vaccine	1	2	100%	200	300	640	20	160	193	353			
BOPV (Bivalent Oral Polio) Vaccine	4	1.11	100%	460	760	1,200	-	20	370	350			
IPV (Inactivated Polio Vaccine)	1	1.11	100%	870	600	1,300	-	170	93	78			
DTP-Hib-Hep (Pentavalent) Vaccine	3	1.05	100%	900	1,000	1,460	30	410	263	148			
Measles Virus Vaccine	2	1.54	100%	700	600	1,400	-	100	257	357			
Pneumococcal Conjugate Vaccine (13 Valent)	3	1.11	100%	760	600	1,400	-	40	278	318			
Rota Virus Vaccine	2	1.05	100%	340	600	940	-	-	175	175			
Td (Tetanus and Diphtheria) Vaccine	3	1.11	100%	480	400	670	-	210	321	111			
Syringe, A-D, 0.5ml	12	1.05	100%	2,000	300	4,800	-	2,500	1,050	3550			
Syringe, A-D, 0.05ml	1	1.05	100%	100	150	260	-	10	101	111			
Mixing syringe (BCG)		1.05	100%	10	100	10	-	100	10	-90			
Mixing syringe (Measles)		1.05	100%	340	600	960	-	20	26	46			
Safety box		1.05	100%	400	300	700	-	-	1,246	1246			

\* Birth Infants (Births for BCG and Td) × B × C × D × (months to supply) ÷ 12 × 1.25 (buffer)  
 \* Surviving Infants (for other vaccines) × B × C × D × (months to supply) ÷ 12 × 1.25 (buffer)  
 \* (Girls of 9 years for HPV) × B × C × D × (months to supply) ÷ 12 × 1.25 (buffer)

N.B all figures are indicated as doses, pieces; requested amount includes requirement for number of months indicated at target coverage PLUS 25% buffer (min. stock), LESS current stock

Equipment monitoring	No. of units			No. Temperature excursions		Remarks
	F	NF	FT*	< 0°C	> 8°C	
Cold rooms						
Refrigerators	2				2	
Freezers						

\*Functional (F); Non-functional (NF); Fridges tag (FT) in use

Requested by: Bontu Temasgen

Approved by: Solomon Lemma

**Session Summary:** Conclude the session using slides #25

## Session 2.4 Monitoring Vaccine Wastage

### **Learning Activity: Think-pair-share on Participant manual page XX**

#### **Time allotted: 5 minutes**

The main purpose of this think-pair-share exercise is to share participants' real experiences on the major factors contributing to vaccine wastage at their health facility and to take a lesson from that.

#### **Instruction for the facilitator:**

- Instruct the participants to be in pair and to assign a rapporteur
- Help them to discuss Example on Participant manual page XX in pair
- Inform them to present their response for a bigger group.

#### **Power Point presentation:(15 minutes)** on vaccine wastage by emphasizing the following points

- Factors associated with vaccine wastage.
- how to calculate vaccine wastage at health facility level
- how to reduce vaccine wastage
- Do Example 2.3 step by step on flip chart with the participants (5 minutes)
- Multi dose Vial Policy

#### **Session Summary: Conclude the session using slides #34 (5 minutes)**

## Session 2.5 Cold chain equipment and management

#### **Time allotted: 30 minutes**

**Present power point on** introduction on cold chain system, cold chain equipment and cold chain management by emphasizing the following points

- What is a cold chain?
- Major elements of cold chain system
- Cold chain equipment needed for health facilities
- Installation or placement of refrigerators in cold store
- Arranging vaccine inside the cold chain equipment
- Preparing conditioned ice-pack and cool water pack

#### **Learning activity: video show**

#### **Time allotted: 20 minutes**

**Instruction for the facilitator:** Show videos on

- What Is Cold-Chain Equipment?
- Types of Refrigerators Found in Health Facilities
- Using Top-Opening Refrigerators with and without basket

**Session Summary: Conclude the session using slide #44 (5 minutes).**

## Session 2.6 Temperature monitoring

- **Allocated Time:** 110 minutes

**Present PowerPoint on** introduction temperature monitoring

Time

- Vaccine sensitivity (Freezing, heat, and light)
- Temperature monitoring device emphasizing the following points the type of temperature monitoring equipment that are commonly used at health facility level
- Show available temperature device (Fridge tag) for participants
- Show different stages of VVM and discuss the importance of understanding them supported video on “how to read VVM?”
- Monitoring vaccine refrigerator temperature (importance of regular recording, interpreting and responding to any temperature violation)

**Learning Activity:** Think-pair-share on Participant manual page XXX (reflection of temperature monitoring and recording practice at health facility)

- **Time allotted:** 3 minutes for pair discussion, and 2 minutes for each group presentation

The main purpose of this think-pair-share exercise is to share participants’ real experiences on the temperature monitoring and recording practice at their health facility and to take a lesson from that.

**Instruction for the facilitator:**

- Instruct the participants to be in pair and to assign a rapporteur.
- Help them to discuss exercise on Participant manual page XX in pair
- Inform them to present their response for a bigger group.



**Present PowerPoint on Monitoring vaccine refrigerator temperature by emphasizing the following points:**

- Importance of regular and correct temperature recording to ensure safety and potency of vaccine at health facility level during transportation, storage and during sessions.
- Discuss on how to record reading correctly on the temperature recording sheet demonstrating a copy of FT@2 temperature recording sheet.
- Taking action against temperature violations and FT alarms
- Shake test as response to freezing temperature (This has its own video and don't waste your time explaining the details.)

**Learning activity:** Video show (Fridge tag and Shake test video)

**Allocated Time:** 25 minutes

- **Instruction for instructor**
- Make sure that the sound system works properly to show the videos.
- Display Videos: Fridge tag and Shake test video
- In between, shows ask the participants the lesson they got from the videos.

**Learning Activity:**

**Group Exercise 2.7:** Reading Fridge tag temperature recording sheet (participant manual page #\_\_, Figure 23)

**Allocated time :25 minutes**

**Instruction for Facilitator:**

- Divide into small group of 5 participant
- Assign group lead and rapporteur
- Using the used temperature sheet figure 2.23 on participant manual page xx, do the activities in group.
- Present your discussion result to larger Group.

**Answer for Exercise 2.7:**

Based on the completed refrigerator temperature chart

**1. Temperature reading 3<sup>rd</sup>, 6<sup>th</sup> and 9<sup>th</sup> days**

	3 <sup>rd</sup> day	6 <sup>th</sup> day	9 <sup>th</sup> day
Morning	4.2	5	14.6
Evening	4.5	9	18.5
Maximum	8.5	9	19
Minimum	-1.1	3.4	14.5

## 2. High and Low Temperature Alarms:

- High temperature alarms occurred on 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> days
- Low temperature alarms occurred on 1<sup>st</sup> and 2<sup>nd</sup> days.

3. **Actions to be taken:** For any temperature alarm, implement the four key action steps that should be followed systematically while responding to both high and low temperature alarms are mentioned as follows.

### Safeguard the vaccines.

- Relocate the vaccines from the unsafe storage location to prevent further exposure to potentially damaging temperature.
- Transfer the vaccines to another vaccine fridge at the facility or to cold boxes or vaccine carriers or to a near-by vaccine storage facility (for both alarms)

### Separate the damaged vaccines from the usable ones.

- All vaccines can be eventually damaged by exposure to temperature alarms. The procedure to identify damaged vaccines from usable ones vary based on types of alarm and exposed vaccines.

#### High alarm

- Check the VVM of all vaccine vials.
- Discard all vials with VVM at or beyond discarding points (when the inner square is the same or darker than the surrounding circle).

**Low alarms:** Only liquid vaccines are affected by freezing, especially the ones containing aluminum adjuvant. If frozen, they should be tested and sorted.

- Identify frozen solid vaccines that have to discard immediately.
- Conduct shake test for vaccines (Pentavalent, PCV, TT, suspected to be frozen to identify damaged vaccines.
- If the vaccines fail the shake test, discard them.

### Fix the underlying problem.

- It is crucial to fix the underlying problem such that the fridge can store vaccines safely again. Even if the fridge temperature returns to normal on its own, it is imperative to investigate and address the root cause of the temperature alarm to prevent future occurrence.

For detailed response for both types of alarms: please refer to section 2.6.2 of participant manual.

## Document and inform relevant people.

- Document characteristics of the alarm, diagnostic and actions taken on the temperature monitoring chart
- Contact the cold chain technician supporting the facility if the fridge needs repair or in-depth diagnostic (e.g., if cause of temperature excursion is not understood)
- Conduct the shake test to all exposed liquid vaccines containing aluminum adjuvant

### **4) Vaccines that are most affected by Temperature Alarms and procedures to be conducted to identify damaged vaccines**

- Vaccines in national EPI program that are mostly affected by High alarm: OPV.
  - Check VVM
- Vaccines in national EPI program that are mostly affected by Low (Freezing) alarm: DPT-HepB-Hib, TT, PCV
  - Conduct shake test

### **Exercise 2.8: Case Scenarios 1& 2**

#### **Learning activity: Case Scenarios**

Individual exercise on Regular Temperature recording Exercise 2.8

**Time allocated:** 10 minutes for each activity.

#### **Instruction to facilitator:**

- Instruct the participants to read and do exercise 2.8 on participant manual page XX individually.
- Ask one participant to read the question.
- Ask 3-5 individuals to share their individual response to larger group for discussion

#### **Answers for Exercise 2.8:**

**Case Scenario 1:** Actions to be taken by head of health center:

- Check temperature recording device (fridge tag) to identify the extent of temperature alarms. Note: Since there was no recording of temperature during the weekend, besides the reported high alarm, freezing might also occur during the weekend.

Q.1: What would you do with the vaccines?

- **First step** - Separate the damaged vaccines from the usable by checking VVM stage (for heat sensitive vaccines),

- If the temperature is still high, to minimize further exposure to high temperature, transfer vaccines to another refrigerator or cold boxes if conditioned/chilled ice packs are available. Otherwise transfer to a nearby health facility.
  - **Second step** - Identify problem of the refrigerator and fix.
    - Brainstorm the problems and possible solutions
    - Report to the next level to get support for refrigerator maintenance if required.

Q.2: What would you do to prevent the occurrence of such problems in future?

- Ensure regular recording of refrigerator temperature.
  - Discuss with health center staffs on how to ensure regular recording of the refrigerator temperature twice a day including week-ends
- Prepare participatory contingency plans for emergency situations in advance (for the detail refer section 2.7)
- Document the events and action taken

### **Case Scenario 2: Wrong handling and use of Measles Diluents**

The defrosting procedure followed by Ahmed was correct and must be appreciated.

However, Ahmed shouldn't have used warm diluent to reconstitute measles vaccine. As general guidelines, the diluents should be at the same temperature (+2-+8°C) as the vaccine to be reconstituted. Hence, the diluents should be always kept in the refrigerator at health facility level or should be refrigerated 24 hours before actual session time.

Ahmed could have returned the diluents to the refrigerator with vaccines on Saturday while installing the refrigerator.

**Session 2.6 Summary:** Using slides 58 summarize the session.

### **Session 2.7 Basic maintenance of cold chain equipment**

- **Allocated Time:** 60 minutes

**Learning activity:** Individual reflection /Brainstorming (participants manual page #\_xx\_

- **Time allotted:** 5 minutes

The main purpose of this individual exercise is to share participants' real experiences on basic maintenance of cold chain equipment at their health facility and to take a lesson from that.

**Instruction for Facilitator:**

- Instruct the participants to read and brainstorm the individual reflection questions written on participant manual page XX
- Inform them to reflect their response to the larger group (3-5 participants)
- Summarize the discussion points

**Present power point on Basic maintenance of cold chain equipment by emphasizing the following points:**

**Time allocated: 25**

- The main objectives of maintenance
- Basic cold chain maintenance activities supposed to be done at health facilities focusing on
- Preventive maintenance

**Learning activity:**

**Activity 1:** Video show

- Time allotted: 15minutes

**Instruction for Facilitator**

- Make sure that the sound system works properly to show the videos
- Show the following four videos
  - Defrosting and Cleaning a Vaccine Refrigerator
  - What to Do When a Vaccine Refrigerator Breaks Down
  - Solve Cold-Chain Equipment Problems using temperature data,

After each video show, ask the participants to summarize main points from the videos.

**Session Summary:** using slide # 67 summarize the session.

## Chapter 3: Demand Promotion & RISK/Crisis Communication

Total time allocated: **4:30 hours**

### **Primary Objective**

By the end of this session, participants will be able to describe the effective communication methods, demand promotion strategies and approaches, and risk/crisis communication for the successful implementation of immunization programs.

### **Enabling Objective**

Explain the basics of communication.

Identify communication gaps and barriers in immunization.

Identify demand Promotion and communication strategies and approaches.

Demonstrate effective Interpersonal Communication skills.

Describe the risk/crisis in immunization and its management.

### **Session outline**

Basics of communication

Communication gaps and crisis in immunization

Demand promotion and communication strategies and approaches

Interpersonal Communication (IPC) skills

Risk/Crisis Communication in immunization

### **Materials**

Flip Chart and Markers

LCD Projector and Laptop

Participant manual

Trainer's guide

Audio-Video materials

### **Training methods**

Brainstorming

Session introduction using PPT

Discussion and plenary session

Group activities: Role plays and case studies

Field practice

### **Facilitator preparation**

Carefully read the detailed lesson plan and understand the activities very well.

Read chapter 3 of the participant manual and other references.

Read the PowerPoint presentation.

Collect and prepare all necessary training materials, job aids and audio-visuals in advance of the session.

Prepare necessary information on a flip chart (if LCD is not applicable)

<b>S.no</b>	<b>Activity</b>	<b>Method of Delivery</b>	<b>Time</b>
1	Basics of communication	Brainstorming & interactive presentation	30 minutes
2	Communication gaps and barriers in immunization	Brainstorming & interactive presentation	30 minutes
3	Demand promotion and communication strategies and approaches	Brainstorming, interactive presentation and group work and case study	45 minutes
4	Interpersonal communication (IPC) skills	Brainstorming, interactive presentation group work, role play, video & field practice	110 minutes
5	Community engagement	Brainstorm, group work	25 Minutes
5	Risk/Crisis communication in immunization	Brainstorming, group work & role play	30 minutes
6	Field practice	Health facility attachment	60 Minutes
<b>Total Hr.</b>			<b>4:30 Hour</b>

## **3.1. Basic in Communication (30 minutes)**

### **3:1.1 Communication: (5 minutes)**

Start the session by asking about communication and raise the following brainstorming questions: what is communication? why communication (aim)?

Make an interactive presentation, allow the participants to discuss in pairs and reflect.

Facilitator to summarize with PowerPoint presentation.

**Facilitator Note: # 1**

Communication is a process that involves sending and receiving messages through verbal and non-verbal methods. The aim of communication is to transmit information from one person to another so that the sender and receiver understand the message in the same way. Clear communication usually falls on the sender, but the receiver also has a responsibility to confirm a clear understanding of the message.

**i. Effective communication (5 minutes)**

Ask the participant to brainstorm what effective communication means and to reflect

**Facilitator Note # 2**

- Effective Communication is Communication between two or more persons where the intended message is successfully delivered, received, and understood.
- Effective communication involves exchanging ideas, thoughts, opinions, knowledge, and data to ensure clarity and understanding. When communication is successful, both parties feel satisfied.

**ii. Why is effective communication important?**

- To manage good relationship with care givers
- To prevent damage of reputation and loose of the intended objectives

**iii. Principles of effective communication (10 Minutes)**

Tell the participants to read session 3.2 in the participant manual on page 73 about the principle of communication.

Give a chance for the participants to reflect their ideas.

Facilitator to summarize with PowerPoint presentation.

**Facilitator Note: # 3**

Principles of communication contains information to be complete, concise, consider, concrete and correct.

Effective communication contributes to increasing knowledge and awareness, building confidence, and improving interpersonal communication skills. Also, supports the community to identify and report any Adverse Effects of vaccination.



**iv. Terminologies in communication (10 minutes)**

Start by grouping the participants in to five and discuss on given terminology and reflect the meaning: What do mean by misinformation, misconceptions, disinformation, rumor & hesitancy:

**Facilitator Note: # 4**

**Misinformation:** False claims (for e.g. about adverse vaccine side effects)

**Misconceptions:** An opinion or belief that is wrong

**Disinformation:** Deliberately pass false information

**Rumor:** Story or report of uncertain or doubtful truth

**Hesitancy:** delay in acceptance or refusal of vaccination

### 3.2. Communication gaps & barriers in immunization (30 minutes)

Start the session by asking about the communication gaps and raise the following brainstorming questions and allow the participants to discuss them.

What are the major communication gaps and barriers that hinder acceptance of vaccination in your locality?

Summarize the reflections of the participants and provide a general overview of communication gaps and barriers in immunization.

### **Gaps**

Poor interpersonal communication, rumors, misinformation, disinformation, hesitancy

Sub-optimal utilization of clan, religious, and community leaders

Shortage of targeted, inclusive, and culture/gender-sensitive communication materials

Health care providers' overwhelmingness and busy schedules with other competing issues

### **Barriers**

- ❖ Language barrier
- ❖ Channel of communication (absence of sign language utilization)
- ❖ Culture Barriers (sensitive)
- ❖ Physical Barriers
- ❖ Perceptions and Beliefs
- ❖ Emotional Barriers
- ❖ Cultural Barriers
- ❖ Gender Barriers

## **3.3. Demand Promotion and Communication Strategies and Approaches (45 minutes)**

### **3.3.1. Demand Promotion and Communication Strategies (20 minutes)**

Start the session by asking about demand promotion strategies, raise the following brainstorming questions, and allow the participants to discuss them. (10 minutes)

What are the major demand promotion and communication strategies for immunization?

Summarize the reflections of the participants and provide a general overview of the three major demand promotion strategies. (10 minutes)

#### **Facilitators note: #6**

The three major communication strategies: advocacy, social Mobilization, and Program Communication.

Advocacy: for leaders/decision makers to bargain into the pogram objective.

Social mobilization: bringing all together to mobilize resources and utilize the available services.

Program communication: Establish and manage ongoing communications throughout a program or project by the program person to build trust and utilize the service.

### **3.3.2. Demand Promotion and Communication Approaches (25 minutes)**

Start the session by asking about demand promotion approaches, raise the following brainstorming questions, and allow the participants to discuss them. (10 minutes)

What are the major demand promotion approaches for immunization?

Discuss and present their reflection (3 participants)

Summarize the reflections of the participants and provide a general overview of the three major demand promotion approaches. (15 minutes)

**Facilitators note # 7**

Major demand promotion approaches are: Interpersonal Communication, community engagement and communication materials utilization:

Community engagement: Involving the community in decision-making, with the goal of creating informed actions.

Communication material utilization: Using different demand promotion and communication materials such as print materials including posters, brochures/flyers; Audio visuals like videos; Job Aids; and interpersonal communication guides).

**3.3.2.1 Interpersonal communication skills (110 minutes)**

**3.3.2.1.1 Overview on Interpersonal communication (IPC) (25 minutes).**

Start the session by asking and raise the following brainstorming questions and allow the participants to discuss them in group in their sit. (10 minutes).

What is Interpersonal communication & its importance?

What skills require for effective IPC?

Based on the reflections of the participants summarize the IPC skills PPT and ask questions at the end (15 minutes)

**Facilitators note #8**

Interpersonal communication is a face-to-face verbal or non-verbal exchange of information and feelings between two or more people.

IPC to be effective: skills like active listening, negotiation, storytelling, speaking, presentation, and conflict regulation skills are mandatory.

IPC is important in order to persuade and convince individuals, address rumors, respond to questions and doubts, and build consensus, effective skills on IPC are important,

Required IPC skills are: skills for caring, problem-solving, and counseling skills.

**Skills for caring**

Welcoming the client

Emphasizing to the client

Praising and encouraging the client

**Skills for problem solving.**

Asking

Listening

**Skills for counselling****3.3.2.1.2. Key message during interpersonal communication (15 minutes).**

Start the session by asking and brainstorming with the participants on the topic followed by an interactive presentation using the cards to post it on the wall or write on a flip chart by asking the following questions.

Group the participants in to 5, discuss and allow them to post what are the essential message HCW expected to deliver as the key IPC messages. (5 minutes)

Based on the reflections of the participants summarize the IPC (10 minutes)

**Facilitators note #9**

Disease does the vaccines prevent (on the vaccine given today).

AEFI occurrence and how can be managed.

Visits that still need to be fully immunized or protected.

Not to miss the next schedule, even if the child gets sick.

Date, time, and place of next vaccination.

Remind a caregiver or client to keep the card and bring it with.

### **3.3.2.1.3 The GALIDRAA approach for effective interpersonal communication: (30 minutes).**

Tell the participants to read the GALIDRAA approach in participant's manual on page 84-85 (10 minutes).

Show the video on “**what to say to caregivers during a vaccination session**” and ask the participants for any reflection. (10 minute)

Finally, the facilitator will summarize the session by interactive PPT presentation. (10 minutes)

#### **Facilitator Note # 10**

GALIDRAA approach stands for greet, ask, listen, identify, discuss, recommend, agree, and appoint. Which is an essential IPC skill at the start, throughout the vaccination session, and after vaccination.

N.B: 1. To make the vaccination service more user friendly every vaccinator should have IPC skills.

2. The HCWs should talk to the child at vaccination session to improve his/her early childhood development.

#### **Group exercise: Role play #1: (20 minutes)**

Read the role play in a group and call two volunteers from participants to come in front and play the role play on page 85.

Instruct all participants to follow and give reflection/ feedback.

“W/ro Marta is a resident of village 1; her home is three km far from the health facility. She is 21 years old, married, and illiterate. Marta went to the health facility seeking vaccination for her six weeks old baby girl. She met the healthcare worker (Hana) at the health facility of immunization service unit for the first time. Sr. Hanna provided all immunization services to the child.

#### **Based on the roll play one, ask those questions to the general participants**

- How do you think the mother felt in the role play?”
- What did you think about how the health worker communicated to the mother?
- What did you think about what information the health worker gave the mother? Was it helpful?
- How would you do things differently?

Summarize the session by addressing effective interpersonal communication (IPC)

**Facilitator Note # 11/ Possible answers for roll play #1:**

- Explain shortly what the mother feel on the role play.
- Insure whether the HCWs do all IPC components or not.
- Do differently by passing (applying) all the key IPC messages mentioned on facilitator note

**Group Exercise: Role play #2 (20 -minute)**

Read the role play on participants manual, on page 86

A mother with 4 weeks old child who was not yet started vaccination came to the health center to get immunization service. Sr. Sadya who was working at the EPI room respected and appreciated the care giver for bringing the child and provide all vaccines based on the schedule.

Call two volunteers from participates to come in front and play the role play.

Instruct all participants to follow and give reflection/feedback.

**Based on the roll play 2, ask those questions to the general participates**

- What do you think about the way the health worker dealt with the mother?
- What should the health worker have done under both circumstances?
- How well did the health worker understand the mother's situation and communicate?

Summarize the session by addressing effective interpersonal communication skills (IPC).

At the end, ask questions and summarize the reflections of the participants and provide a general overview of the scenario, allowing participants to ask questions and close the session.

**Filed practices: time (60 minutes)**

Identify one health center /health post where immunization service is provided.

Demonstrate with staff nurse for the first time.

Apply interpersonal communication with real clients.

Feedback by trainer and staff nurse working at the EPI unit.

### 3.3.2.2 Community engagement (25 minutes)

Allow the participants to read case study one from the participant manual from page 86-87 (5 minutes)

#### Case study:

In your kebele, there are many pregnant mothers who were registered during their pregnancy period and didn't bring their children to vaccination after their delivery. And also, there are many under two year's children who missed their vaccination schedule.

#### Based on the case study, ask those questions to the participants:

As an HW/HEW, what will be your role and responsibility to bring these caregivers and children to the vaccination site? (5 minutes)

As an integrated demand promotion, what needs to be done at/or during ANC and at EPI unit? (5 minutes)

After the end ask participants for their reflection: and summarize points with power points or flip charts (10 minutes)

#### Possible answers /case study #1:

Work in collaboration with other departments (integration) with ANC, FP unite to improve the awareness about benefit of vaccination.

Take time and counsel caretakers during vaccination sessions in the facility or community.

Work with kebele /village & WDA leaders,

Work with clan and religious leaders and other community platforms and decision-makers

Engagement with civil society organizations and faith-based organizations,

Conduct community dialogue at kebele level

## 3.4. Risk and Crisis communication in immunization (35 minutes)

### 3.4.1. Risk communication (10 Minutes)

Start the discussion by asking the participant to brainstorm about risk communication and to reflect (5 minutes)

Based on the reflections of the participants summarize what risk communication means (5 Minutes)

### **Facilitator Note #11**

**Risk:** Chance or likelihood that something will harm or otherwise affect your health unless necessary measure and precautions taken this works for disease and services.

**Risk communication:** It refers to the exchange of real-time information,

**Purpose** is to enable people at risk to take informed decisions to protect themselves and their loved ones

### **3.4.2. Crisis and crisis Communication (10 minutes)**

Start the session by asking the following brainstorming questions and discussing them. **(5 minutes)**

What is crisis and crisis communication?

What are the reasons for the immunization crisis?

Collect the reflection of the participants

Based on the reflections of the participants, present and discuss the crisis, crisis communication, and reasons for the crisis in the immunization program **(5 minutes)**

#### **Facilitators note # 11 Reasons for immunization crisis.**

**A crisis is** any situation that affects the trust or reputation of an institution or its products.

**Crisis communication:** is an adjusted response to an incident.

**Reasons for crisis:** Adverse events following immunization (AEFI), actions including rumors, misinformation, or fake news, hesitancy, and inadequate communication in immunization.

### **3.4.3. Crisis management in immunization (15 minutes)**

Start the session by asking what measures will be taken to manage the incident that caused the crisis. Explain to the participants to discuss with their side mates on the group work (three participants in each team)- **(5 minutes)**

#### **Group work questions**

What kind of crisis occurred that is related to routine immunization, covid-19 vaccination rollout/ campaigns in your area? May be related to AEFI or other conditions)

What measures were taken to manage the incident?

Who engaged in the response?



Participants will present the group work (**5 minutes**)

The facilitator will summarize and present the PPT by mentioning the main responses (**5 minutes**).

**Facilitator Note #12 Managing Crisis in Immunization**

- Get prepared
- Implement
- Monitor the impact of the crisis management

## Chapter 4: Planning and Coordination

**Session duration:** 6 hrs.

### Primary objective

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

Plan Immunization service to reach every target community

**Enabling objective:** At the end of this chapter participants will be able to:

- Identify immunization coordination mechanism
- Describe basic micro plan development processes
- Determine vaccine delivery strategies.
- able to do comprehensive micro plan.

### Summary of activities:

Activity	Method of delivery	Time	PPP slide No.
Immunization coordination mechanism	Interactive presentation	<b>15 min.</b>	---
Micro plan development processes	Brainstorming and Reading	60 min	-
	Interactive presentation	60 min	
	Video session	30 min	
	Group Exercise	30 min	
Planning vaccine delivery strategies	Brainstorming and Group Reading	<b>20 min</b>	--
	Interactive presentation	<b>15 min</b>	
	Group activity and discussion	<b>10 min</b>	
	Video session	<b>10 Min</b>	
Micro plan development and session planning exercise	Case Scenario	<b>75 min</b>	-
Facility practical session	Health facility micro plan development review	<b>60 min.</b>	
Total Hour		<b>6 hrs</b>	

### Materials:

Flip Chart and Markers

LCD Projector and Laptop

Participant manual

Facilitator's guide

Print out MP template

Video

Facility practical session guide

#### **4.1: Immunization coordination mechanism (10 Minute/5" brain storming,5" reading )**

**Facilitator Note:** Introduce the chapter to participants by using ppt slide number 1-3 and guide the participants to brainstorming about immunization coordination mechanism by using ppt slide number 4. Guide the participants to read participants manual on page number \_\_\_\_ about immunization coordination mechanism. Summarize immunization coordination platform by using ppt slide number slide number 5-6.

#### **4.2: Micro-plan development process (30 Minute/10" chapter introduction/10" Reading/10" Interactive Presentation)**

**Facilitator Note:** Introduce the micro plan development session to participants by displaying ppt slide number 7 and ask the brainstorming question to the participants & allow them to respond on Micro-plan development process (Give chance to 4 person)

Encourage participants to respond

Guide the participants to read session 4.2 in the participant manual on page xxx about the Micro-plan development process.

Facilitator Summarize Micro-Planning Definition, five areas to be considered during Micro Planning, Rational for Micro plan development and RED/REC components to the participants by using power points slide number 8-12.

#### **4.2.1a: Catchment Area mapping (15 Minute/5" Reading and 5" Interactive presentation/5" Video display on mapping)**

**Note: tools used in video session is taken from immunization academy for example purpose, please use tools annexed for practical and actual purpose based on country context.**

**Facilitator Note:** Guide the participants to read session 4.2.1a in the participant manual on page xxx about the Catchment Area mapping. Summarize the session to the participants by using power points slide number 13-14 and show Video on catchment area mapping

#### **4.2.1b: Target setting (15 Minute/10" Reading and 5" Interactive presentation by using Kebele Inventory Form K1 and K2)**

**Facilitator Note:** Guide the participants to read session **4.2.1b** in the participant manual on page xxx about the target setting and kebele inventory **form K1 and K2** annex XX and YY on participant manual page xxx. Summarize the session to the participants by using power points slide number 15-16.

#### **4.2.2: Problem Analysis and Prioritization (10 Minute/5" reading and 5" Interactive presentation)**

**Facilitator Note:** Guide the participants to read session **4.2.2** in the participant manual on page xxx about Problem Analysis and Prioritization. Summarize the session to the participants by using power points slide number 17

**4.2.3: Analysis of PHCU catchment area immunization data (30 Minute/10” reading and 10” Interactive presentation/10” Video display on: How to Be Identified and prioritize Coverage problems)**

**Facilitator Note:** Guide the participants to read session 4.2.3 in the participant manual on page xxx about Analysis of PHCU catchment area immunization data. Summarize the session to the participants by using power points slide number 18-23 and show Video on rout cause analysis and prioritization Video.

**4.2.4: Identifying barriers to access and utilization (30 Minute/5” reading and 5” Interactive presentation/10” Video on identifying solutions to overcome Barriers to Access/10” Video on Digging Deeper into root causes of coverage problem).**

**Facilitator Note:** Guide the participants to read session 4.2.4 in the participant manual on page xxx about Identifying barriers to access and utilization. Summarize the session to the participants by using power points slide number 24 and show Video on identifying barriers to access and utilization.

**4.2.5: Identifying solutions and preparing a work plan (10 Minute/5” group reading and 5” Interactive presentation)**

**Facilitator Note:** Guide the participants to read session 4.2.5 in the participant manual on page xxx about Identifying solutions and preparing a work plan. Summarize the session to the participants by using power points slide number 25.

**4.3 Immunization Session Plan Preparation (35 minute/10” Group Reading/10” exercise work/5” interactive presentation/10” Video Session: Creating Fixed and outreach Session Plan).**

**Facilitator Note:** Guide the participants to read session 4.3 in the participant manual on page xxx about Immunization Session Plan Preparation. Summarize the session to the participants by using power points slide number 26-33 and show Video on Creating Fixed and outreach Session Plan.

**Answers for Exercise #1:**

**Exercise 1:** Calculate the number of eligible children for MCV, Penta and Td for pregnant women based on data given on example1.

**MCV Target= 960 children**

**Penta Target= 960 children**

**Td Target= 1,110 Pregnant Women**

**Answer for classwork activity #1**

Calculate The Number of outreach sessions needed per month for a community with total no. of surviving infants 120.

**Total # of expected annual injection (SI\*14) =120\*14=1,680**

**Number of injection per month= 1,680/12=140 injection**

**Outreach sessions needed per month=140/30=5 (Two session per week for first week and one session per week for remaining three weeks)**

**Answers for Exercise #2:**

**Exercise 2:** Calculating Number Of outreach, static and mobile sessions for remaining sub kebeles based on example done for sub kebele A by using table 8 below

**Table 8:** Calculating Number Of outreach, static and mobile sessions based on injection load

Sub kebele	Total pop.	SIs (3.2%)	Session type	Total # of expected injection (SI*14)	# of injections/month	Number Of Session/month (40,30,20 injection per session per OR, Static, Mobile respectively)	Actual Sessions Planned Per Month
A	3,400	109	OR	1,526	127	4.2	HC outreach (one session /week)
B	4,000	128	OR	1,792	149	5	5 (Two session per week for first week and one session per week for remaining three weeks)
C	5,000	160	OR	2,240	187	6	6 (Two session per week for first two week and one session per week for remaining two weeks)
E	1500	48	Static	672	56		Daily Base
F	3500	112	Mobile	1,568	131	7	6 (Two session per week for first three week and one session per week for remaining one weeks)
G	25,000	800	static	11,200	933		Daily Base

**Micro plan development and session planning exercise Total Time: 75 minutes**

**Facilitator Note:** Guide the participants to read the scenario in detail and avail all the printed micro plan template for exercise: The case scenario in participant manual on page xxx. The facilitator gave the group to present their work, and finally the facilitator summarized the case scenario. ( **75 Minute/45” group work and 20” group work presentation and 10” group work summary by facilitators** )

**Answers for Case scenario 1 – How to prepare detailed Micro Plan for health Post and PHU by using MP template annexed.**

1. Draw the map of the X-health post catchments area and put the corresponding population size to each Gott in the map and mark the immunization sites (use the alphabets M, F and O for mobile, fixed and outreach sites respectively)

Map sketching for the Gott with given information

- Fill out kebele inventory **form K1** annexed in participant manual (given to you for these exercise) and present to large group.

Kebele Inventory Form																						Form K1												
Region:		Target Population										Zone:		Woreda:				Kebele:				Date of Compilation:				Name of hard to reach area								
Sub-Kebele Name	Total Population	Live birth	Surviving infant	12-23 months	12-59 months	Girls (9 Yrs)	Preg. Women	Target (12 years and above)	Sub-Kebele contact person	Distance from Kebele	Type		# Health Facility				# Functional EPI Sites		Transportation Access? (yes=1, No=0)		# Functional Cold chain Equipment		# staff trained											
											Rural	Urban	Hos	HC	HP	Total	Fixed	OR	Mobile	Total	Car	Motor Bike	Animal	Refrig	Cold box		V. Carrier	MLM	IIP	IRT	Cold Chain	Vaccine Management	Injection Safety	
Gott A	2000	68	71	66	180	69	72	1030		8	X				1	1	1	2	1	1		1	1	1	3									
Gott B	1400	51	48	46	136	49	54	795		9	X				1	1	1	1	1	1		1	1	2										
Gott C	1600	54	52	51	141	53	57	799		13	X				1	1	1	1	1	1		1	1	2										
Gott D	1000	44	42	41	131	43	47	789		11	X				1	1	1	1	1	1		1	1	0										
X-Health Post	6000	217	213	204	588	214	230	3413			X				1	1	4	5	1	1		1	1	4	7									
Total																																		

Name of coordinator: \_\_\_\_\_ Signature: \_\_\_\_\_

- Prepare a session plan by using sub kebele session plan **form K2** for the X-Health Post (assume 40 injections per session for static session and 30 injection per session for outreach session).

Sub-Kebele Session planning																	
Date filled in:		Region:			Woreda:			Health Facility:			Form K2						
Name of the site (fixed, outreach mobile) for service delivery	Target Population per year							Distance or time to vaccination post (km or minutes)	# injections per year	Other key MNCH activities for integration (e.g. Vit, de-worming, screening)	Session type		Sessions			Responsible Person	
	Live birth	SI	12-23 months	12-59 months	HPV target	PW	Target (12 years and above)				F, OR & M	#per year	#per month	Day of Session	Means of Transport	HEW/HW	sub-Kebele contact name
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
One static at HP	24	25	23	63	24	25	361	5	350		F	12	1		Car/Mot.Bik		
Gott A	44	46	43	117	45	47	669	8	644		OR	16	2		Mot.Bik		
Gott B	51	48	46	136	49	54	795	9	672		OR	17	2		Mot.Bik		
Gott C	54	52	51	141	53	57	799	13	728		OR	18	2		Mot.Bik		
Gott D	44	42	41	131	43	47	789	11	588		OR	15	2		Mot.Bik		

- Prepare sub kebele data analysis and prioritize Gotts based on identified problems by using kebele data analysis **form K3** for the X-Health Post annexed in participant manual (given to you for these exercise) and present to large group.

		Sub Kebele Data Analysis Summary form																				Date of _____		Form K3											
Region:		Zone:					Woreda:					Kebele																							
Sub Kebele Name	Total Pop	Live birth	Analyse problem																	Drop-out rates	Identify & categorize Problems		Are there significant # VPDs?	Are there significant # of high risk pop?	Are there significant # of unimmunized ?	Priority/rank (1,,2,,3,4)									
			Doses of vaccine administered							Immunization Coverage (%)							Unimmunized (No.)				Access	Utilization					Category: 1,2,3,4								
			Surviving Infant	12-23 Months	HPV target	Penta1	Penta3	MCV1	MCV2	HPV	Td2+	Penta1	Penta3	MCV1	MCV2	HPV	Td2+	Penta3	MCV1									MCV2	HPV	Td2+	P1-P3	MCV1-MCV2			
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	aa	ab	ac	ad	ae	af	ag	ah	ai	
Gott A	2000	68	71	66	69	52	48	46	38	32	51	73	68	65	54	46	75	23	25	8	37	20	8	17	P	P	4								1
Gott B	1400	51	48	46	49	48	44	41	36	29	41	100	92	85	75	59	80	4	7	5	20	7	8	12	G	P	2								3
Gott C	1600	54	52	51	53	52	50	48	42	46	49	100	96	92	81	87	91	2	4	6	7	3	4	13	G	G	1								4
Gott D	1000	44	42	41	43	32	31	30	26	22	31	76	74	71	62	51	70	11	12	4	21	11	3	13	P	G	3								2
X-Health Post	6000	217	213	204	214	184	173	165	142	129	172	86	81	77	67	60	79	40	48	23	85	41	6	14	P	P	4								1

5. Prepare health facility session monitoring **form K4** annexed in participant manual (given to you for these exercise) assume the first session on July 22 of new EPY for all Gotts.

Annual RI workplan		Region/Zone: _____ Woreda: _____ Health Facility: _____												Form K4	
Name of service delivery site	Session plan (F, OR, M)	July	August	September	October	November	December	January	February	March	April	May	June		
Outreach 1	Date scheduled	22	20	18	16	14	12	10	8	6	4	2	30		
	Date held														
Outreach 2	Date scheduled	22	20	18	16	14	12	10	8	6	4	2	30		
	Date held														
Outreach 3	Date scheduled	22	20	18	16	14	12	10	8	6	4	2	30		
	Date held														

**Case scenario 2 – How to prepare detail Micro Plan for PHCU by using MP template**

**Answers:** Assume previous case scenario 1 **X-Health Post** as Y-PHCU and Take Gott A-D as a health post under Y-PHCU/Health Center:

**Answer** for case scenario 2 question 2 & 3 is the same with case scenario 1 the only difference is Gott name can be changed to health post and total aggregate for PHCU will be summarized in one row on **Form Cluster 1 & Form cluster 3**.

**Answer** for case scenario 2 question 4 is filling the given target from **form cluster 1 to Form Cluster 4** and planning for 100% in all target or according to the capacity of PHCU during actual planning time.

**Answer** for case scenario 2 question 5 can be prepared based on target we have and vaccine forecasting exercise on chapter 2 for vaccine needed dose and AD syringe for each health post and operational cost depends on the resource capacity of the PHCU based on **Form Cluster 5**.

## Chapter 5: Injection safety and waste management

Time allocated: 3 hours.

### Course description

This chapter introduces participants with safe injection practice and waste management. It focuses on prevention of needle stick injury and disposal of used syringes and needles.

**Primary Objective:** - At the end of this chapter participants will be able to:

Demonstrate injection safety and waste disposal practices.

**Enabling objective:** At the end of this chapter participants will be able to:

- Demonstrate safe injection practices.
- Apply proper waste management practices.

### Outline

Safe injections practice

Measures to ensure injection safety practices.

Preventing needle-stick injuries.

Waste management practices.

### Training methods and materials

#### Methods

Video session

Group work and presentation

Demonstration on vaccine administration, infection prevention,

#### Materials

PPT, Video, LCD, Flip chart, Marker, Vaccines, Diluent, AD & Mixing Syringes, safety box, and Toy

### Session summary

Session	PPT page --- to ----	Allocated time
Session 1: Injection safety		60 minutes
Session 2: Waste management		50 minutes
Chapter summery		10 minutes
Total		120 minutes



## **Session 1: Injection safety**

Step 1: Facilitator introduce the chapter by using injection safety and waste management chapter slide number 1-4. After introducing the chapter, invite the participant to brainstorm about injection safety and general steps, and receive reflection from 2 to 3 participant, then show them video on How to Give an Injection with an AD Syringe.mp4 and Video on: Using a Safety Box.mp4 (10 minutes),

Step 2: Facilitate to conduct activity 1 (injection safety) in group (10 minutes), after group work presentation, display and summarize the session with PPT Slide number 6 to 17 (20 minute)

Step3. Group participant in pair, 1 act as caretaker and the other is also service provider using Toy to demonstrate safe injection practices at least 2 to pair should be showed the demonstration. (20 minute). Facilitator expected to prepare dole or orange, syringe with needle, vaccine and safety box for demonstration.

## **Session 2: Waste management**

Step 1. Divide the participants into 4/5 small groups and request them to read participant manual session 2 of module 5 on waste management (page ----). Then Do activity 2 in group, and 2 group will present the activities (30 minute). Facilitator summarize the session by using display and summarize the session with PPT Slide number 19 to 27 (30 minute).

**Note:** Facilitator expected to prepare participant for field visit by providing orientation and availing observation guide checklist.

## Chapter Six: Immunization service delivery

Chapter description: This chapter touches on topics that are not covered in more detail in other chapters and references are specified in the text. Mainly focuses on immunization service delivery to deliver high quality immunization services and systems.

Chapter Objective: - At the end of this chapter participants will be able to acquire knowledge and skill needed to conduct quality immunization service delivery

Learning objective: At the end of this chapter participants will be able to:

- Identify and apply strategies to improve quality of immunization service delivery
- Prepare for immunization session
- Communicate accurate information/key messages
- Assess infants/targets for vaccination
- Give vaccines
- Apply proper immunization data recording
- Apply proper closing of the vaccination session

Chapter Duration: 8 hours: (5 hours class room session and 3 hours practical session)

## Summary of instructions/guide for service delivery Activities for a facilitator:

Time	Activity	Instruction and Guide	Method of Delivery	Resources
20 minutes	Immunization service delivery strategies	<p><b>Total Time allocated: 20 Minutes</b></p> <ul style="list-style-type: none"> <li>• <b>Activity 1:</b> Read in group, discuss and present immunization service delivery strategies and the services those recommended to integrate during vaccination sessions.</li> </ul> <p><b>Instruction:</b> Divide in three group and work out</p> <ul style="list-style-type: none"> <li>• Group 1: Read in group and discuss immunization service delivery strategies are commonly used</li> <li>• Group 2: Read and discuss page XXX</li> <li>• Group 3: Read page XXX</li> <li>• Reflection/presentation by participants</li> </ul> <p><b>Summary presentation by facilitator: 10 minutes</b></p>	<p><b>Group work:</b></p> <p>Individual and group reading, Group discussion and Presentation Summary presentation by facilitator</p>	<p>Slide #XX</p> <p>PM #XX</p>
40 minutes	Preparing for immunization session	<p><b>Total Time allocated: 60 Minutes</b></p> <p>Group Reading and Reflection</p> <ul style="list-style-type: none"> <li>• Page XXX</li> <li>• Group 1: Planning for immunization session</li> <li>• Group 2 preparing for immunization session</li> <li>• Group 3 and 4: Preparing for session site arrangements (Static and outreach)</li> </ul> <p>Summery Presentation by facilitator (20 minutes)</p>	<ul style="list-style-type: none"> <li>• Group Reading and discussion</li> <li>• Participants' reflection</li> <li>• Summary presentation by facilitator</li> </ul>	<p>Slide #XX</p> <p>PM # XX</p> <hr/> <p>Slide #XX</p> <p>PM # XX</p> <hr/> <p>Slide #XX</p> <p>PM # XX</p>
20 minute	Prepare vaccines and injection supplies basic list including prepare supplementary materials and equipment.	<p><b>Total Time allocated: 20 minutes</b></p> <p><b>Case:</b></p> <ul style="list-style-type: none"> <li>• Imagine if you are assigned as EPI focal for the X health center and you are supposed to prepare immunization session,</li> </ul>	<ul style="list-style-type: none"> <li>• Group work and presentation by participant</li> <li>• Summary presentation by a facilitator</li> </ul>	<p>Slide #XX</p> <p>PM # XX</p>

		<p><b>Instruction:</b></p> <ul style="list-style-type: none"> <li>Discuss in four groups, list and present on flip chart</li> <li>list out the basic lists for the vaccines and injection supplies including supplementary materials and equipment</li> </ul> <p>Summary presentation by facilitator (10 minutes)</p>		
<p><b>Total Minute 90</b></p> <p>30 Reading and group work minutes</p> <p>40 minutes Group presentation and discussion</p> <p>20 Minute summery presentations</p>	Communicating accurate information	<p><b>Total Time allocated:</b> 90 minutes.</p>	<ul style="list-style-type: none"> <li>Group work and presentation by participant</li> <li>Summary presentation by a facilitator</li> </ul>	Slide #XX
	Assessing eligible for vaccination including contraindication	<p><b>Activity;</b></p> <ul style="list-style-type: none"> <li>Be in group read Communication, assessing eligibility and contradiction</li> </ul>		PM # XX
	Preparing to vaccinate	<ul style="list-style-type: none"> <li>Discuss and present in groups for essential elements of communicating accurate information, contraindications for the vaccinations.</li> </ul> <p><b>Instruction:</b></p> <ul style="list-style-type: none"> <li>Please be in four groups, then discus and present on the flip chart</li> </ul> <p>Summery presentation by a facilitator (30 minutes)</p>		Slide #XX
50 minutes	Administer the vaccine & data recording	<p><b>Total Time Allowed: 50 Minutes</b></p> <p><b>Activity:</b></p> <ul style="list-style-type: none"> <li>Participants will read and discus the root of vaccine Administration</li> <li>Presentation by facilitator (20 minutes)</li> <li>Participants will watch video sessions on immunization site and route of administration</li> </ul> <p><b>Instruction:</b></p> <ul style="list-style-type: none"> <li>Divide in three subs groups and attend the video session, then each sub group will reflect on it.</li> </ul>	<ul style="list-style-type: none"> <li>Presentation by a facilitator</li> <li>video session</li> <li>participants reflection on video sessions</li> </ul>	Slide #XX
				PM # XX

		<p><b>Video 1:</b></p> <ul style="list-style-type: none"> <li>Giving an Intramuscular Injection: 3:50 Minutes</li> </ul> <p><b>Video 2:</b></p> <ul style="list-style-type: none"> <li>Giving a Subcutaneous Injection: 3:14 Minutes</li> </ul> <p><b>Video 3:</b></p> <ul style="list-style-type: none"> <li>Giving an Intradermal Injection: 4:59 Minutes</li> </ul>		
60 minutes	Exercises	<p><b>Total time allocated: 80 minutes</b></p> <p><b>Activity:</b></p> <ul style="list-style-type: none"> <li>All group will work on the all the exercises</li> <li>Group presentation on exercises: <ul style="list-style-type: none"> <li>Group One : Exercise 1, 2 &amp; 3</li> <li>Group two: Exercise 4 &amp; 5</li> <li>Group three: Exercise 6 &amp; 7</li> </ul> </li> </ul> <p>Facilitator will display the answers from the facilitator guide (15 Minutes)</p>		<p>Slide #XX</p> <p>PM # XX</p>
20 Minutes	Chapter summary	Chapter summary presentation by a facilitator	Presentation	<p>Slide #XX</p> <p>PM # XX</p>
2:30 hours	Field Practice and Observation	Checklist based field practice and observation (Health Facility Visit)	Field Visit	PM # XX

**Materials Needed**

- LCD projector and laptop
- Flip chart, Marker, syringes, safety box, doll, immunization monitoring chart, recording tools (Tally sheet, registration book, immunization card, cotton swab, vaccine stock ledger, temperature monitoring chart), and vaccines with carrier, syringes, AEFI recording & reporting formats, etc.

General Exercises:

Exercise 1: Baby Sara is 3 months old. She has diarrhea with no dehydration Immunization history: BCG, HepB-BD, OPV 0, OPV 1, OPV 2, DPT1-HepB1-Hib1 and DPT2 –HepB2-Hib2, PCV1, PCV2, Rota 1, and Rota 2 given two weeks ago.

- What immunizations, if any, does Sara need today?
- What immunization will she receive at her next visit?
- After the next visit when should Sara return for next immunization?

## Answer for E1

- A. She does not need any vaccine, because her age is still 12 weeks to take the next doses.
- B. OPV3, IPV, PCV3, and Penta3 during her next visit (14 weeks of her age)
- C. At the age of nine months to take the first dose of Measles Containing Vaccine (MCV1)

### Exercise 2:

W/ro Fatuma and M/rt Chaltu, the two health extension workers run outreach sessions once a week in a crowded market neighborhood to the village health post. W/ro Fatuma registered clients, weighing the children and decides which vaccine or vaccines a client should take. She then writes the date in the corresponding space or spaces on each client's immunization card. W/rt Chaltu examines the card and gives the vaccine or vaccines indicated by the date recoded in the immunization card.

One day, two children with fever, and. generalized maculopapular (i.e. non-vesicular) rash, and. cough, coryza (i.e. runny nose) or conjunctivitis (i.e. red eyes) to the health post for treatment. W/ro Fatuma examines their immunization cards and finds that they all have record for measles immunization. She asked the parents whether their children have taken measles vaccine on the date indicated in the immunization card. One of the mothers says she left the outreach site without her child getting the injection, because, she was late for cooking lunch for her family. The second child received Penta 3 in the same day and his mother says that she did not know whether the child needed another vaccine.

Find out why these three children missed the vaccination.

## Answer for E2a

- Recording data was done before vaccinating the children. This was not correct.
- Accurate information was not communicated to the care takers/mothers

a) Identify possible ways to prevent such events

## Answer for E2b

- *Record the data on the immunization card after providing the vaccine*
- *Provide key immunization message*

### Exercise 3:

Shalom was brought by her grandmother to the neighboring health facility when she was six weeks old and she received OPV1, Penta1 vaccines. Three days later, shalom became very sick and lost her consciousness. After a brief hospitalization, she recovered fully. Subsequently, when shalom was 11-month-old, her mother brought her to health center to be treated for a cold. What would you do if you were a health worker in this health center?

## Answer for E3

- Link with EPI team and provide BCG, Opv2, PC1, Rota 1, penta2, IPV and MCV1
- Advise to Return back after month including date and place where shalom can get the vaccine

### Exercise 4:

Mohammed is 6 months old. He has a common cold, anemia and is underweight. Immunization history: BCG, OPV 0, OPV 1, OPV 2, Penta 1, PCV 1, Penta 2, PCV2, Rota 1, Rota 2 given 6 weeks ago.

- a) What immunizations, if any, does Mohammed need today?
- b) When should he return for his next immunization?

c) What other health services do you recommend to integrate and provided for him?

Answer for E4

A) OPV3, Penta 3, PCV3, IPV1

B) 9 months for the MCV1

C) Vit A and Nutrition

Exercise 5:

Selam is 20 years old and 20 weeks pregnant she visit health for ANC care, her immunization history is she vaccinated Td1 two years ago.

a) Does selam restart Td 1 on this visit? Discuss the reason for your response

b) When should she return for her next immunization?

c) What immunization will she receive at her next visit?

**Answer for Exercise 5**

A) No because there is no maximum interval for immunization and restart is not recommended. Give her Td 2 and appoint for the next dose.

B) After 6 months.

C) Td3

**Exercise 6:**

What immunization can you give on the same day to an 11 months old child who has never been immunized?

**Answer for E6**

➤ BCG, OPV1, Rota 1, PCV1, Penta1, IPV, MCV1

Exercise 7:

Ujulu 16 month old boy who was brought by care taker to the health facility, during the assessment, it was found out that Ujulu Received all vaccines except MCV.

A) What Vaccine will you provide him?

B) When do you give the next appointment and what antigen will be provided by the next appointments?

Answer for E7

A) MCv1

B) After four weeks give MCV2

## Chapter 7: Vaccine Preventable Diseases and AEFI Surveillance

**Chapter description:** This chapter will describe the basic VPD and adverse events following immunization (AEFI) surveillance, case definition and use of appropriate reporting tools. It enables participants to describe VPD and AEFI surveillance at their respective level.

**Primary Objective:** - At the end of this chapter participants will be able to:  
Explain VPDs and AEFI surveillance activities.

**Enabling objective:** At the end of this chapter participants will be able to:

- Describe concepts of surveillance
- Describe case definitions of Vaccine-Preventable diseases.
- Detect and notify VPD.
- Define AEFI, describe types and classification.
- Explain AEFI surveillance and its importance.
- Detect and notify AEFI.

**Session one:** Vaccine preventable Diseases Surveillance

- Concepts of surveillance
- case definitions of Vaccine-Preventable diseases
- Function/Steps of VPD Surveillance

**Session two:** Adverse Events Following Immunization (AEFI) Surveillance

- AEFI Definition, describe types and classification
- AEFI surveillance and its importance.
- AEFI detection and notification

### Training Methods and Materials

#### Methods

Interactive session (PowerPoint Presentation)

Brainstorming

Group Work

Demonstration

Case study



**Materials:** Participant’s Manual, LCD Projector, Flip chart and marker, Recording and reporting formats, Notebook, and pen.

### Session summary

Session	PPT page --- to - ---	Allocated time
Concept of VPD Surveillance		30 minutes
Case definition		20 minutes
Case detection, notification, Investigation, and reporting		60 minutes
Concepts of AEFI Surveillance		65 Minute
AEFI Reporting		55 Minute
AEFI Case management		50 Minute
Chapter summery		15 Minute
<b>Total</b>		<b>295 Minute</b>

### 7.1. Concept of VPD Surveillance

Step 1: Introduce the chapter with the slide number (---)

Invite the participant to brainstorm about VPD surveillance its type and importance and receive reflection from participant, (20 minutes)

Explain the session using power point presentation. (30 minute)

#### 7.1.2 Case definition

Step 2: Define case definition using the power point presentation. (20 minutes)

“Is an agreed set of criteria that can be used to describe if a person has a particular disease or was exposed to a particular pathogen. It is used to label a case as **suspected, probable, or confirmed.**”

And continue presentation the list of selected case definition Polio, Measles and Neonatal Tetanus

#### 7.1.3. Case detection, notification, and reporting

##### Step 3. Activity

Ask the participants to be in groups select reporter and the chairperson, then do activity 2 (Case Study on page---) and present the group work for plenary discussion. -(30 Minute)

Summarize the session using PPT. (15 minutes)

## **7.2: Adverse event following immunization**

### **Concepts of AEFI(35 Minutes)**

Step1 Group Discussion.

- Instruct the participants to be in small groups (5 participants in each group) and discuss the definition and classifications of AEFIs (15 Minutes)
- Invite the participants to present their work to the larger groups (the groups can be assigned to present AEFI definition and cause specific classification of AEFI separately) -(10 Minutes)
- Summarize the session by using the slide no.4-9 using the PPT-(10 Minutes)

### **AEFI Surveillance (25 Minutes)**

Step 1: Brain storming Session

- Instruct the participants to be in pair and brainstorm about AEFIs surveillance and its importance? - (10 Minutes)
- Take a time to discuss on the Participant reflections including the components of AEFI surveillance (Slide no. 11-13 (15 Minute)

### **AEFI Reporting (50 Minutes)**

Step1 –Brain storming Session

- Instruct the participants to be in pair and list types of AEFI reporting tools including the availability in their facility and which tool is used to report AEFI -(5 Minute)
- Select at least five participants to reflect their discussion points to the larger group(5 minutes)

### **Step 2-Group Discussion**

#### **Case study 1**

- Instruct the participants to be in group and read the Case study 1 on pagxxx to answer the question 1 to 3.(15 Minutes)
- Summarize the AEFI reporting session using PPT-( 30 Minute)

### **AEFI Case Management (40) Minutes**

Step 1- Case study 2

Instruct the participants, to be in small groups, and do the Case study given on page----under AEFI reporting session – (15 Minutes)

Invite the group members to reflect their answers to the larger group

Step 2: Summarize the AEFI Case investigation and Management sessions using PPT (25 Minutes)

### **Key**

## Answer for AEFI case studies

### Case study #1

A caretaker from Kebele 01 brought a 9-month-old boy who had got the measles vaccine three days before at Gedera health center then the child had developed a generalized body rash, a fever, and pain at the injection site.

### Answer for Case 1

1) Fill in the AEFI reporting formats (paper-based, med-safety, and electronic reporting formats)

Manual reporting

Location 01 kebele, Age (date of birth or age on set)=9 month, , Measles dose= 0.5 ml , -, Adverse event = rash ,fever and injection site pain, place of vaccination =Gedera Hc, date onset =after 3 day

Report the case using med safety mobile app and web base reporting option.

2) List any missed information from given case scenario

Patient name ----, vaccine brand--- , Manufacturer name --- vaccine and diluent batch no. --- date of vaccination ----, date of notification ----, date of reporting ----, etc

3) When will you report the case to the next AEFI reporting level? Monthly

**Case study-2:** A 23 years old male with no past medical history. He received his first dose of Pfizer and he complained fever, headache and injection site pain which were minor. But on his second dose of Pfizer vaccination after 5 minutes of vaccination he developed diffuse erythematous rash, loss of consciousness, lips and tongue swelling. Blood pressure is 90/60, pulse is rapid and feeble and he has diffuse wheeze on his chest bilaterally.

A. What is your diagnosis?

B. How do you manage him?

### Answer for Case 2:

A. The diagnosis is anaphylaxis

B. It should be managed following the algorithm for management of anaphylaxis

## Chapter 8: Monitoring, evaluation, learning and accountability

**Total time allowed: 3:45 hours**

**Chapter description:** This chapter equips the participants with basic knowledge, attitude and practice on the concepts of immunization program monitoring and evaluation, recording and reporting tools, data quality self-assessment techniques, analysis and use of basic immunization program indicators, documentation of best practice and lessons and concepts of evidence-based accountability.

**Primary Objective:** - At the end of this chapter participants will be able to:

- Understand the immunization program monitoring and evaluation system

**Enabling objective:** At the end of this chapter participants will be able to:

- Describe basic concepts of immunization program monitoring and evaluation
- Apply immunization data recording and reporting tools
- Implement immunization data quality self-assessment techniques
- Analyze and use basic immunization program monitoring indicators/KPIs for improvement
- Understand ways to document lessons and share best practices
- Understand basic concepts of evidence-based accountability

### Training Methods

- Brainstorming exercise
- Interactive presentation
- Group discussion and reflection
- Group exercise
- Video display
- Case study
- Reading assignment
- Summary by facilitators

### Materials required for the sessions

- Participant manual
- Facilitator guide
- PPT
- LCD
- Flip chart
- Immunization monitoring chart
- Marker
- video
- Laptop computer
- Print out materials for exercise

## Facilitator task

- Advance preparation for the session (Read chapter 8 of participant manual and other related references)
- In advance of the session, collect and prepare all necessary materials required for the session
- Manage time according to the lesson plan
- Summarize key points after the session

### Summary of session plan

S.No	Activity	Method of deliver	Time	PPT slide number
1.	Basic concepts of immunization program monitoring and evaluation	<ul style="list-style-type: none"> <li>• Brainstorming exercise</li> <li>• Interactive presentation</li> </ul>	<ul style="list-style-type: none"> <li>• 5 minutes</li> <li>• 10 minutes</li> </ul>	Slide 4 Slides 5-8
2.	Immunization monitoring, recording and reporting tools	<ul style="list-style-type: none"> <li>• Interactive presentation</li> <li>• Group exercise</li> </ul>	<ul style="list-style-type: none"> <li>• 30 minutes</li> <li>• 30 minutes</li> </ul>	Slides 9-25 Slide 10
3.	immunization data quality Assurance	<ul style="list-style-type: none"> <li>• Brain storing exercise</li> <li>• Interactive presentation</li> <li>• Group exercise</li> </ul>	<ul style="list-style-type: none"> <li>• 5 minutes</li> <li>• 30 minutes</li> <li>• 25 minutes</li> </ul>	Slide 27 Slides 27-40 Slide 28
4.	Immunization program data analysis and use	<ul style="list-style-type: none"> <li>• Interactive presentation</li> <li>• Group exercise</li> </ul>	<ul style="list-style-type: none"> <li>• 30 minutes</li> <li>• 20 minutes</li> </ul>	Slides 41-44 & 46-48 Slide 45
5.	Lesson learned and best practice documentation	<ul style="list-style-type: none"> <li>• case study</li> <li>• Interactive presentation</li> </ul>	<ul style="list-style-type: none"> <li>• 5 minutes</li> <li>• 10 minutes</li> </ul>	Slide 51 Slides 50-51
6.	Evidence based accountability	<ul style="list-style-type: none"> <li>• Case study</li> <li>• Interactive presentation</li> </ul>	<ul style="list-style-type: none"> <li>• 5 minutes</li> <li>• 10 minutes</li> </ul>	Slide 54 Slides 53-57
7.	Chapter summary	<ul style="list-style-type: none"> <li>• Any Question</li> <li>• Present summary points</li> </ul>	<ul style="list-style-type: none"> <li>• 10 minutes</li> </ul>	Slide 58 Slide 60
			225 minutes	

Start the session by introducing the chapter outline and the primary and enabling objectives to the participants

### Basic concepts of monitoring and evaluation

- Let the participants brainstorm on what is monitoring and evaluation and state the difference between them. Give a chance to at most 3 participants to reflect their idea
- Provide presentation stating the concepts of monitoring and evaluation, indicators and key performance indicators

## **Immunization monitoring, recording and reporting tools**

- Instruct the participants to follow from participant manual on the immunization monitoring, recording and reporting tools
- Provide presentation on the types of immunization monitoring, recording and reporting tools
- Group the participants and allow them to read group exercise in the participant manual page----- and order them to fill the immunization register based on the information provided
- Provide print out immunization register to the participants
- Give chance for one group to present and allow the other groups to reflect and add their opinion
- Continue the presentation on the vaccination card, immunization tally sheet, and immunization register
- Group the participants and allow them to read the group exercise in the participant manual on page---- on EPI monitoring chart
- Provide print out monitoring chart to each group to record the information provided and plot the line
- Allow one or two groups to present and conclude the exercise by showing the appropriately filled monitoring chart
- Continue the presentation on defaulter tracing, family folder, temperature monitoring chart, vaccine control book, AEFI tools and supportive supervision
- Tell the participants to read on chapter 2 (Supply chain management) and chapter 7 (VPD and AEFI surveillance) for better understand

## **Immunization data quality assurance**

- Allow the participants to brainstorm the meaning and dimensions of data quality, data quality assurance and the importance of data quality assurance at the PHCU level
- Deliver an interactive presentation on the Techniques for immunization data quality assurance by emphasizing the LQAS, visual scanning
- Provide detailed information on data verification at health facility and community level . Work on the examples of data verification
- Mention the steps to conduct the data triangulations
- List some other examples of Common data quality problems

### **Summarize by providing the following correct answer for LQAS**

- Answer: Seven (7)
- Answer: 65% -70%
- Answer: No

### Answer for data verification

Indicators	Description	HF1	HF 2	HF3	HF4	HF5	HF6	HF7	$\Sigma A / \Sigma B$	VF= A/B
Penta 3	Recounted=A	25	45	30	12	20	10	0	142	0.83
	Reported=B	38	59	30	16	15	13	0	171	
Measles	Recounted=A	20	55	34	54	45	25	92	325	1.17
	Reported=B	12	42	23	22	95	36	47	277	

- Answer: Improve reporting and registration system for the next month

### Immunization program data analysis and use

- Deliver presentation on compiling coverage data, immunization coverage calculation, immunization data use and RED categorization and prioritization
- Group the participants and tell them to read the group exercise on page---- of the participant manual on RED categorization and prioritization
- Allow at most 2 groups to present and let the other groups reflect if they have different opinion
- summarize the group exercise by providing the following correct answer

Health Facility name	Penta 1 coverage	Penta 1- 3 dropout	Interpretation	Category & problem
X	63%	5%	Poor access and good utilization	Category 3- Access problem
Y	83%	20%	Good access and poor utilization	Category2- Utilization problem
Z	95%	2%	Good access and good utilization	Category1-No problem
W	21%	30%	Poor access and poor utilization	Category4-access & utilization problem

## Lesson learned and best practice documentation

- Group the participants and allow them to read the case study on the lesson learned and best practice documentation page ---- of the participant manual
- Give chance to 2 groups to reflect on the case study
- Summarize the case study by providing the following possible answer

### Answer for Case study

**What is the issue being faced:** The facility has low performance - particularly with regards to having high Penta dropout

**What was the underlying issue:** They had poor reach, thereby making it hard to reach the hard-to-reach kids

**What was the solution:** They maximized their reach by working more closely with local non-health actors

**Lesson learned:** To maximize reach, local non health actors should be leveraged more.

- Continue the session by delivering presentation

## Evidence based accountability

- Use the previous group and allow them to read the case study on the evidence-based accountability page ---- of the participant manual
- Give chance to 2 groups to reflect on the case study
- Summarize the case study by providing the following possible answer
  - The possible answer for the case study will be “vaccinator C” where the completeness of the report is 95%, accuracy of data is 95%, intime reporting and having reliable data.
- Continue providing the presentation
- Ask participants if they have any questions
- Conclude the session by providing the following summary points

### Summary

- Monitoring and evaluation is key in improving the quality
- There are various M&E recording and reporting tools
- Data quality assurance is an important component of monitoring and evaluation
- There are various data quality assurance tools which include Data Quality self-assessment, LQAS, Triangulation
- Data that is collected needs to be analyzed and interpreted regular to improve quality of immunization service
- There are some techniques for analysis, for example, RED categorization and prioritization and root cause analysis.
- It is important to write a lesson learned report to record the desired outcomes and solutions to use as a reference for all future
- Accountability entails the procedures and processes by which a health care provider justifies and takes responsibility for service provision



## List of Annex

### Annex 1: Health Facility Practical Session

#### 1. Day Four Thursday (Afternoon)

#### Vaccine, Supply and Cold chain management Practical Session

- **Time allotted:** 2 hours (90 minutes, for demonstration and 30 minutes for presentation and discussion)

The main purpose of this demonstration is to equip trainees with necessary skills that help them to manage vaccines and cold chains properly.

#### **Learning Activity 2:** Demonstration at health facility

##### **Instruction for the facilitator before field visit**

- Make sure the Health Facilities for field Visit were communicated, and transportation are ready. The appropriate time for Health Facility visit is Afternoon.
- Provide adequate guidance for participants on how to make health facility visit more efficient within short time
- Orient on guiding questions
- Divide Participants in to two teams
- Print guiding questions and give 2 copies per team

##### **Instruction for the facilitator at the Health Facility**

- Meet with PHCU Director or responsible person and explain the objectives of field practice
- Demonstrate the Cold Chain Equipment and Temperature Monitoring Devices to Participants
- Allow participants to Observe Cold Chain Equipment, Ledger book, VRF and Temperature Monitoring pad, and Temperature Monitoring devices using the guiding questions.
- 1<sup>st</sup> group Observe Cold Chain Equipment while the 2<sup>nd</sup> group observe the Recording and Monitoring tool.
- After Completing the Cold Chain, they will interchange and observe the remaining part.
- After completing the Observation Instruct participants to discuss on Major strengths, gaps identified, lessons learned, and recommendations by their group for 10 minutes.
- After they finish and summarize the findings, merge the two teams together and allow the team leader to present the finding to the larger team.
- Ask for additional comments from the group
- Summarize the field visits by discussing on Observation finding per the training and actual practice

- Acknowledge the Health Facility staff for their Cooperation.

#### For front Opening Refrigerator

S/N	Major components for observation	Points to be observed	Note
	Cold Chain Equipment	Cleanness of vaccine refrigerators, including defrost	
		Documentation of preventive Maintenance activities	
		Availability and connection of Voltage regulator for electric refrigerators	
		Cleanness and appropriate storage of Cold box and vaccine carriers	
		Vaccines arranged in the Refrigerator both Heat sensitive & Free Sensitive.	
		Availability and completeness Contingency Plan	
		Availability and use of foam pad for vaccine carriers	
2	Temperature Monitoring	Is the fridge tag availability and use of fridge tag for refrigerators in use	
		Temperature excursions (high and low alarms)	
		Availability and completeness of Daily Manual Temperature Monitoring pad	
		Is a daily Manual Temperature monitoring pad updated daily including the weekend?	
		Appropriate action and documentation for any temperature excursion	
3	Stock Management tools	Availability of vaccine forecast for the physical year	
		Availability of updated Ledger book	
		Availability of completed VRF form	
		Appropriate storage of Dry supplies	
4	Vaccine wastage rate monitoring	Availability vaccine wastage monitoring system	
		Segregations of Expired/Damaged Vaccines from useable vaccine.	

- Never put freeze sensitive Vaccines in contact with, or close to Evaporator plate
- Put Measles, BCG, OPV, IPV, on the top shelf
- Put Td, HepBD, Penta, HPV, Rota, PCV & Covid 19 Vaccines Middle or Lowe shelf

#### For Top Opening Refrigerator

- Always store Vaccines and diluent in the basket provided
- Put Measles, BCG, OPV, IPV in bottom basket
- Put Td, HepBD, Penta, HPV, Rota, PCV & Covid 19 Vaccines in top basket

## 2. Day Five-Friday in the Morning

Immunization service Delivery, Injection Safety and Waste Management, Inter personal communication, Micro Planning and M & E practical session- Tima allocated 4 hr :

- 2 :30 hr for Immunization session, IPC and Safety
- 1:30 hr for Microplanning and M & E

### Instructions

Before the field Visit the facilitator should communicate the nearby Health facility about the Filed observation. This is guide will be used at field mainly focus the Communication, service delivery thematic area and Injection safety. The session facilitator will be together with trainees during the field visit.

### What is expected from Trainees:

- Observe the interaction of the client and the care giver. Observe if there is effective communication or not.
- The trainees avoid over curding the immunization room, not allowed to enter to immunization room more than **8 participants**,
- Don't act as supervisor,
- Ask the training facilitator any unclear issue during your filed visit,
- Summarize the major strength and weakness for team reflection,
- Don't give feedback if any feedback is expected the training facilitator will give for the health workers later.

Field visit and observation guide				
S. No	Pillars	Specific Q	Y/N/NA	Comment
1	Communication and Demand Promotion	Key messages available and visible? ( <b>observation</b> )		
2		Job aids available and utilized? ( <b>Observation</b> )		
3		IPC Fully implemented? ( <b>Caring, problem solving, counseling</b> )		
4		Principles of effective communication applied (complete, concise, concrete, consider, correct)		
5		GATHER applied? (at the start, During assessment, During vaccination, after vaccination)		
6		Communication gaps/barriers observed?		

7		Does key immunization messages available and visibly posted in the HF? ( <b>observation</b> )		
8		Does job aids related to immunization service are available and in use? ( <b>Observation</b> )		
9		Is interpersonal communication fully implemented during the vaccination session? ( <b>Caring, problem solving, counseling</b> )		
10		Does the major principles of effective communication are applied during the vaccination session? (Complete, concise, concrete, consider, correct)		
11		Does GALIDRA approach applied during the vaccination session? (At the start, during assessment, during vaccination and after vaccination)		

### Immunization Service Delivery

1	Immunization Service delivery strategies	Do all immunization service delivery strategies have been known and applied in the HF?		
2	Preparing for immunization session	Do preparations for immunization sessions part of micro planning in the HF?		
3	Plan the immunization session	Does the HF have an immunization session plan?		
4	Prepare the session site	Are all basic requirements for preparation of session site known and applied in the HF by the vaccinator?		
5	Prepare vaccines and injection supplies basic list, <b>Observe</b>	Are all the basic lists of vaccines and injection supplies available and prepared in the HF?		
6	Communicating accurate information	Is all the key immunization messages delivered in every encounter by the vaccinator in the HF?		
7	Assessing eligible for vaccination & assess possible contraindications	Does the vaccinator assess eligibility for vaccination & possible contraindications?		
8	Preparing to vaccinate	Does the vaccinator organized supplies and the sitting arrangements?		
9	Administering the vaccine	<b>Observe:</b> Does the vaccinator administer each vaccine though the right site, route, dose and schedule?		

10	Recording data	<b>Observe:</b> Is all immunization recording tools (immunization register, tally sheet and card) available and properly recorded in a right time (order of recording) in the HF?		
11	Closing the vaccination session	<b>Observe and document</b> does the vaccinator correctly close the vaccination session by applying all the required activities?		
1	<b>Injection Safety and waste Management</b>	Is there proper handling of injection materials in the facility		
2		Safe injection practices in place		
3		Session setup organized in ways that minimize needle stick injury		
4		Proper waste management practice in place		
5		Is there Safety box collection and dispose practice during outreach and campaign at facility level		
6		Is there functional incinerator (proper incineration: ash pit functionality, use PPE.)		

### Observation Checklist for Planning and Monitoring and Evaluation

S. No	Pillars	Specific Q	Y/N/NA	Comment
1	<b>Planning and Coordination</b>	Does the PHCU have a catchment area map showing kebele boundaries, total population by kebele, main roads/rivers, Mosques/Churches, schools and current static, outreach, and mobile sites in the cluster?		
2		Is there a current Session and (Static, outreach and mobile) vaccination sessions available for the PHCU catchment area (by kebele/sub-kebele, name of location of service, and schedule)?		
3		Is there current year Comprehensive Work plan?		
4		Is there current year MP available at the PHCU?		

### Monitoring and Evaluation

		1. Are there immunization recording and reporting tools and been used		
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		a. Tally sheet		
		b. Register		
		c. Reporting format		
		d. Vaccination card		
		e. Monitoring chart		
		f. Defaulter tracking list		
		g. tickler box/reminder card		
		h. Surveillance tools		
		i. Vaccination Session plan Monitoring tool		
		j. Supportive Supervision check list		
		2. Is there a practice of immunization data quality check in HF		
		• LQAS		
		• Data verification		
		• Completeness, trimlines, consistency, accuracy etc.		
		3. Any practice of immunization data analysis and use		
		• Coverage Chart		
		• RED categorization		
		• Available PRT/PMT		
		• Any action taken based on the finding		
		4. Any available immunization lesson learnt, best practice documentation		
		5. Data accountability measures taken in the HF?		

## Annex 2: Pre/Post test Answers

**1. C**

**2. D**

3. A

4. D

5. E

6. D

**7. C**

**8. A**

**9. B**

10. A

11. D

12. A

13. D

14. D

15. A

16. C

17. B

18. D

19. D

20. D

21. D

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