

PARTICIPANT MANUAL

EMERGENCY & DISASTER PREPAREDNESS AT PRIMARY HEALTHCARE LEVEL



KHYBER PAKHTYNKHW A HUMAN CAPITAL INVESTMENT PROJECT

Activity: Emergency & Disaster Preparedness at PHC level

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(KP-HCIP)

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Map of Khyber Pakhtunkhwa

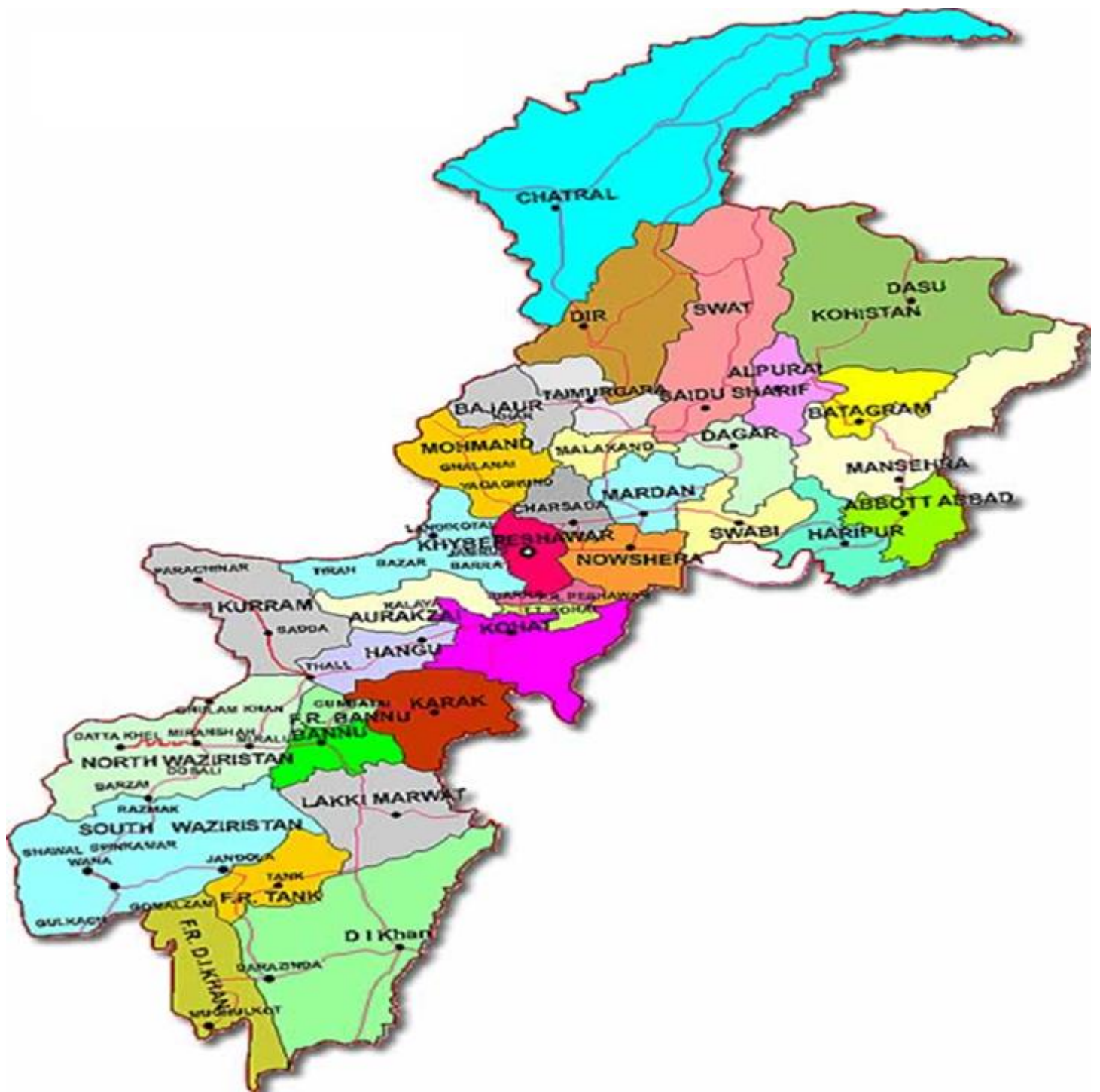


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Message from Health Minister, Khyber Pakhtunkhwa

It is my privilege to announce the launch of the *Emergency and Disaster Preparedness in Primary Healthcare Settings* training manual, developed for primary healthcare workers across Khyber Pakhtunkhwa under the World Bank–supported Khyber Pakhtunkhwa Human Capital Investment Project (KP-HCIP).



This manual is a significant milestone in strengthening the readiness, resilience and response capacity of our primary healthcare system. It provides essential guidance, practical tools and standardized procedures designed to help healthcare workers effectively prepare for, manage and respond to emergencies and disasters at the facility and community levels.

By enhancing emergency preparedness and improving frontline response practices, this initiative directly supports our broader objectives of building a resilient health system, advancing Universal Health Coverage (UHC) and contributing to national progress toward the Sustainable Development Goals (SDGs)—especially those centered on health security and community well-being.

We extend our sincere appreciation to the World Bank Pakistan for their continued collaboration and to the experts, practitioners and stakeholders who contributed their knowledge and experience to the development of this manual. Your collective efforts ensure that primary healthcare facilities in Khyber Pakhtunkhwa are better equipped to safeguard lives and deliver timely, coordinated and reliable care during emergencies.

Mr. Khaliq ur Rehman

Health Minister, Khyber Pakhtunkhwa, Pakistan

Message from the Secretary of Health, Khyber Pakhtunkhwa

It is with great pride that I present the *Emergency and Disaster Preparedness in Primary Healthcare Settings* training manual, developed as a vital resource for primary healthcare workers across Khyber Pakhtunkhwa under the World Bank–supported Khyber Pakhtunkhwa Human Capital Investment Project (KP-HCIP). This manual represents an important advancement in strengthening the preparedness, responsiveness and resilience of our primary healthcare system.



The manual offers clear, practical and evidence-based guidance to help healthcare workers enhance emergency readiness, reduce risks during crises and ensure coordinated, timely and life-saving actions at the community and facility levels. It underscores our collective commitment to protecting lives, improving emergency response capacity and building a resilient health system capable of withstanding future shocks.

By strengthening preparedness and response practices, this initiative contributes directly to our broader goals of advancing Universal Health Coverage (UHC) and supporting the Sustainable Development Goals (SDGs), particularly those related to health security, community resilience and system strengthening.

I encourage all healthcare professionals—from medical officers and nurses to paramedics and community health workers including Rescue 1122 field workers—to actively engage with this manual and apply its principles in routine practice as well as during emergencies. I extend my sincere appreciation to all experts and contributors whose efforts made this manual possible and I look forward to the meaningful impact it will create for the communities we serve.

Mr. Shahid Ullah

Secretary of Health, Khyber Pakhtunkhwa, Pakistan

Message from the Director General Health Services, Khyber Pakhtunkhwa

In our continued effort to build a safer and more resilient primary healthcare system in Khyber Pakhtunkhwa, I am pleased to present the Emergency and Disaster Preparedness in Primary Healthcare Settings Training Manual. Developed under the World Bank–supported Khyber Pakhtunkhwa Human Capital Investment Project (KP-HCIP), this manual reflects our commitment to strengthening emergency readiness and ensuring that primary healthcare workers are equipped to effectively manage crises at the community level.



Pakistan—particularly Khyber Pakhtunkhwa—is highly prone to both natural and human-made disasters, including floods, earthquakes, landslides, epidemics, conflict-related emergencies and mass-casualty events. In such situations, primary healthcare (PHC) workers serve as the first point of contact and the frontline responders for affected communities. Their ability to act quickly, confidently and effectively can make a critical difference in saving lives and reducing suffering.

This manual provides clear, practical and evidence-based guidance to help PHC workers prepare for, respond to and manage emergencies at both facility and community levels. It aims to strengthen local readiness, improve coordination and equip frontline providers with essential skills for triage, first aid, emergency communication and disaster response. By enhancing these capacities, this initiative supports our broader goals of Universal Health Coverage (UHC) and contributes to the Sustainable Development Goals (SDGs), particularly those related to health security and system resilience.

I encourage all healthcare professionals—medical officers, nurses, LHVs, paramedics, technicians and community health workers—to engage deeply with this manual and apply its principles in daily practice. I extend my sincere appreciation to the experts, partners and stakeholders who contributed to its development.

Dr. Shahid Yunis

Director General Health Services, Khyber Pakhtunkhwa, Pakistan

Message from Project Director, (KP-HCIP)

As the Project Director of the Khyber Pakhtunkhwa Human Capital Investment Project (KP-HCIP), I am pleased to introduce the *Emergency and Disaster Preparedness in Primary Healthcare Settings* training manual—developed under the World Bank-supported initiative to strengthen resilience, readiness and response capacities across our primary healthcare system.

Khyber Pakhtunkhwa is one of Pakistan’s most disaster-prone provinces, facing recurrent floods, earthquakes, landslides, disease outbreaks and other natural and human-made emergencies. In these situations, Primary Healthcare (PHC) workers serve as the first point of contact and the frontline responders for affected communities. Their skills, preparedness and ability to act under pressure are essential to minimizing loss of life, reducing complications and ensuring continuity of essential health services.

This manual is a key contribution to KP-HCIP’s broader mandate of enhancing the performance and resilience of the primary healthcare system. It provides practical, evidence-based guidance designed to strengthen the capacity of PHC staff in emergency response, triage, first aid, risk communication and facility-based preparedness. Through these efforts, the manual directly supports the achievement of KP-HCIP Disbursement-Linked Indicators (DLIs) related to service quality, workforce capacity-building and improved delivery of essential health services at the community level.

I extend my sincere appreciation to the World Bank for its continued partnership and to all technical experts—including Dr. Muhammad Imran Marwat—and stakeholders who contributed to the development of this manual. I encourage all primary healthcare providers—clinicians, nurses, LHVs, paramedics, technicians, community health workers and Rescue 1122 staff—to engage fully with the content of this manual and apply its principles in their daily practice.

Dr. Muhammad Bilal

Project Director, KP-HCIP, Pakistan

Message from the Deputy Project Director

As part of our ongoing commitment to strengthening primary healthcare services in Khyber Pakhtunkhwa and ensuring equitable access to safe and reliable care, I am pleased to introduce the *Emergency and Disaster Preparedness at Primary Healthcare Level Training Manual*. Developed under the World Bank–supported Khyber Pakhtunkhwa Human Capital Investment Project (KP-HCIP), this manual represents a critical advancement in our efforts to equip frontline healthcare workers with the knowledge and practical skills required to protect communities during emergencies and disasters.

Pakistan is among the countries most severely affected by climate change, facing increasing frequencies of floods, heatwaves, droughts, landslides and disease outbreaks. These evolving environmental threats, combined with man-made hazards such as road accidents, fires and conflict-related incidents, demand a prepared, skilled and resilient primary healthcare workforce. This manual directly responds to these challenges by providing clear, actionable and evidence-based guidance for PHC staff and community responders.

Designed specifically for Primary Healthcare (PHC) workers and CERT members, the manual enables users to apply lifesaving techniques, conduct rapid assessments and manage emergencies ranging from shock, bleeding, burns and fractures to drowning, snakebites and heat-related illnesses. By standardizing emergency care practices, strengthening communication and promoting coordinated response mechanisms, it contributes to reducing preventable morbidity and mortality across the province.

I extend my sincere appreciation to the World Bank, the Health Department and the technical experts who contributed to the development of this manual. Their collective effort will help ensure that frontline healthcare workers are better prepared, better trained and better equipped to safeguard the health and safety of communities across Khyber Pakhtunkhwa—today and in the years to come.

Dr. Sumaira Saeed

Deputy Project Director, KP-HCIP, Pakistan

Glossary of Terms

All-Hazards Approach:

A comprehensive method for disaster preparedness that considers a wide range of potential threats, including natural, biological, chemical and man-made hazards.

Basic Life Support (BLS):

Emergency medical care provided to sustain life in cases of cardiac arrest, respiratory failure, or airway obstruction until advanced care is available.

Capacity Building:

Activities and processes that strengthen the ability of individuals, organizations and systems to respond effectively to emergencies and disasters.

Casualty:

Any person injured, killed, or missing as a result of an emergency or disaster event.

Command and Control:

A structured framework that defines leadership, roles and communication channels during an emergency response.

Community-Based Disaster Preparedness (CBDP):

A participatory approach where local communities assess hazards, plan and implement preparedness and response actions.

Contingency Planning:

Preparation of detailed, scenario-based plans outlining the actions to be taken during specific types of emergencies.

Disaster:

A serious disruption of the functioning of a community causing widespread losses which exceed the ability of the affected community to cope using its own resources.

Disaster Risk Reduction (DRR):

Strategies and practices aimed at minimizing vulnerabilities and disaster risks throughout society.

Early Warning System (EWS):

A set of procedures and mechanisms designed to detect, forecast and communicate potential hazards to enable timely response.

Emergency:

A sudden, unexpected situation requiring immediate action to prevent loss of life, injury, or damage to property or the environment.

Emergency Medical Response (EMR):

The organized provision of medical care and coordination during an emergency or disaster situation.

Emergency Operations Center (EOC):

A centralized facility for coordination, communication and management of emergency response activities.

Evacuation:

The organized and safe removal of people from dangerous or potentially dangerous areas to safer locations.

First Aid:

Immediate care given to an injured or ill person before professional medical help is available.

Hazard:

A potentially damaging physical event, phenomenon, or human activity that may cause loss of life or injury, property damage, or environmental degradation.

Mitigation:

Actions taken to reduce or eliminate the long-term risk and impact of hazards.

Preparedness:

Planning and training activities carried out before an emergency to ensure effective response and recovery.

Primary Healthcare (PHC):

Essential health care that is accessible, affordable and community-based, forming the foundation of a country's health system.

Recovery:

The process of restoring a community or health system to normal or improved functioning after a disaster.

Rehabilitation:

Short- to medium-term restoration of basic services and facilities after a disaster.

Resilience:

The capacity of individuals, communities and health systems to anticipate, prepare for, respond to and recover from disasters.

Response:

The immediate actions taken during or immediately after a disaster to save lives, reduce health impacts and meet basic needs.

Risk Assessment:

The process of identifying and analyzing potential hazards and vulnerabilities to determine their likely impact.

Surge Capacity:

The ability of a healthcare system to rapidly expand beyond normal services to meet the increased demand during emergencies.

Triage:

The process of sorting patients based on the severity of their condition to prioritize treatment and resource allocation.

Vulnerability:

The degree to which a community or system is likely to be adversely affected by a hazard, due to exposure, susceptibility, or lack of coping capacity.

List of Abbreviations

ACRONYM	FULL FORM
BHU	Basic Health Unit
CDC	Communicable Disease Control
CNS	Command and Control System
DDMA	District Disaster Management Authority
DGHS	Directorate General Health Services
DHIS	District Health Information System
DHQ	District Headquarters Hospital
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EIA	Emergency Impact Assessment
EOC	Emergency Operations Centre
EMS	Emergency Medical Services
EML	Essential Medicines List
FLCF	First-Level Care Facility
HCW	Health Care Waste
HFA	Health Facility Assessment
HIMS	Health Information Management System
HRH	Human Resources for Health
IDPS	Internally Displaced Persons
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
ILR	Ice-Lined Refrigerator
IPC	Infection Prevention and Control
IOM	International Organization for Migration
KP-HCC	Khyber Pakhtunkhwa Health Care Commission
LHW	Lady Health Worker
MNCH	Maternal, Newborn & Child Health
MOH	Ministry of Health

NDMA	National Disaster Management Authority
NDRMF	National Disaster Risk Management Fund
NHSRC	National Health Services, Regulations and Coordination
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PDMA	Provincial Disaster Management Authority
PHC	Primary Health Care
PHEOC	Public Health Emergency Operations Centre
PME	Post-Monitoring Evaluation
PPE	Personal Protective Equipment
QA	Quality Assurance
QI	Quality Improvement
RCCE	Risk Communication and Community Engagement
RRT	Rapid Response Team
SDMA	State Disaster Management Authority
SOP	Standard Operating Procedure
UHC	Universal Health Coverage
UNDP	United Nations Development Program
UNDSS	United Nations Department of Safety and Security
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNODC	United Nations Office on Drugs and Crime
WFP	World Food Program
WHO	World Health Organization

Executive Summary

Background

The Primary Health Care (PHC) approach forms the backbone of disaster and emergency preparedness in Khyber Pakhtunkhwa (KP). It strengthens the ability of communities and the health system to prepare for, respond to and recover from emergencies. KP has experienced repeated disasters—such as floods, earthquakes, outbreaks and ongoing conflict-like situations in certain areas—highlighting the need for a strong and resilient PHC system.

PHC is built on three connected pillars:

1. Empowered people and communities,
2. Multisectoral policies and actions for health and
3. Strong, integrated health services, including good-quality primary care supported by essential public health functions.

These pillars provide the structure needed for effective disaster management at the local level. Through this approach, PHC ensures that emergency response is quick and coordinated, while the health system continues to deliver essential services even during crises. It also supports long-term resilience by helping communities prevent, manage and recover from emergencies more effectively.

KP faces many types of emergencies—such as disease outbreaks, natural disasters like floods and earthquakes and humanitarian challenges due to displacement. Although the causes of these emergencies differ, they often lead to similar challenges, including population movement, disruption of health services and increased health risks. A strong PHC system can help minimize these impacts and protect the health and well-being of communities across KP.

Introduction to Emergency and Disaster Preparedness at the Primary Healthcare Level

1.1 Background

Primary Health Care (PHC) forms the foundation of Pakistan's health system, particularly in provinces like Khyber Pakhtunkhwa (KP) where communities are geographically dispersed, disaster-prone and often underserved. Over the past decade, PHC has expanded beyond maternal and child health to include non-communicable diseases, chronic communicable diseases, mental health, geriatric care and public health emergencies.

KP's health system continues to face a dual burden:

- Rising non-communicable diseases (NCDs) such as cardiovascular diseases, diabetes, chronic respiratory diseases, cancer and stroke.
- Persisting communicable and vector-borne illnesses, as well as recurrent emergencies due to conflict, displacement, floods, earthquakes, road traffic accidents and climate-related events.

In this context, Emergency and Disaster Preparedness has become an essential pillar for resilient primary healthcare delivery.

1.2 Rationale for Strengthening Emergency Care at PHC Level

Timely, competent and well-coordinated emergency care at the primary level significantly reduces morbidity, mortality and the financial burden on families and higher-level facilities.

However, challenges persist:

- Emergency care services remain largely concentrated at secondary and tertiary hospitals.
- Referral systems are fragmented.
- Primary facilities are often not well-equipped or trained for acute conditions such as trauma, burns, cardiac events, poisoning, obstetric emergencies and pediatric crises.
- KP's exposure to natural disasters—floods, earthquakes, landslides—further complicates emergency response.

Strengthening PHC, especially PHC-HWCs, ensures that lifesaving interventions begin early, within the “Golden Hour,” improving chances of survival.

1.3 Linkages with National and Provincial Health Priorities

Pakistan’s progress toward Universal Health Coverage (UHC), Sehat Sahulat Programme and the Essential Package of Health Services depends on strong PHC with integrated emergency care.

KP’s Human Capital Investment and primary healthcare reforms aim to ensure:

- Comprehensive Primary Health Care (CPHC) at PHC-HWCs
- Expanded service packages, including emergency and trauma care
- Stronger referral pathways, linking communities to BHUs, RHCs, DHQs and tertiary hospitals
- Preparedness for disasters, mass casualties and outbreaks

Emergency and disaster-ready PHC facilities help maintain continuity of essential services even during crises.

1.4 Purpose of This Training Module

This training module is designed to build the capacity of Medical Officers, PHC-HWC teams and frontline health workers to provide timely and effective emergency and trauma care and respond confidently during disasters.

By the end of this module, participants will understand:

- Principles of emergency care at the PHC level
- Essential clinical competencies (airway, breathing, circulation, trauma care, stabilization, referral)
- Management of common emergencies (trauma, burns, cardiac, obstetric, neonatal, pediatric, poisoning, respiratory failure, sepsis)
- Effective triage, communication and safe transport

- Preparedness for disasters such as floods, earthquakes, mass casualty incidents and disease outbreaks
- Coordination with community structures, district health teams, Rescue 1122 and other emergency response agencies
- Record-keeping, medico-legal documentation and public health responsibilities

1.5 Role of Medical Officers in Emergency and Disaster Preparedness

At the PHC-HWC level, the Medical Officer is the anchor of emergency preparedness, responsible for:

Clinical Care Roles

- Airway and ventilation management
- Trauma and burns stabilization
- Management of acute cardiac, neurological, obstetric, neonatal and pediatric emergencies
- Poisoning and bites management
- Stabilization and referral of critically ill patients
- Communication with receiving facilities and transport teams

Public Health Roles

- Community awareness on preventable emergencies
- Health promotion across schools, communities and village committees
- Early detection and reporting of potential outbreaks
- Leading triage and frontline response during disasters and mass casualty events

Managerial Roles

- Coordinating the emergency team at PHC-HWC
- Ensuring availability of supplies, emergency drugs and equipment
- Maintaining referral records, emergency registers and follow-up mechanisms
- Conducting regular drills and training for the health team



MODULE ONE

INTRODUCTION TO DISASTERS AND THEIR IMPACT ON HEALTH



SESSION 1.1

UNDERSTANDING DISASTERS

Introduction

Over the past two decades, disasters and humanitarian crises have increased significantly across the world. These events—whether natural or caused by human actions—disrupt the lives, health and livelihoods of millions of people. When communities are unable to cope with the impact of such events using their own resources, the situation becomes a humanitarian crisis and requires external support.

In many regions, especially low- and middle-income countries, disasters affect health systems, social services, education and the economy. The effects are even more severe when conflict and natural disasters occur together, leading to what is known as Complex Humanitarian Emergencies (CHEs). These emergencies cause mass displacement, food insecurity, disease outbreaks and increased health needs for both displaced and host communities.

Disaster preparedness at the PHC level is not only about knowing the hazards—it is about ensuring resilient health facilities, trained staff, coordinated communication and strong community engagement. When PHC workers understand how disasters unfold and how emergencies affect health services, they are better equipped to save lives, reduce suffering and support recovery.

This session introduces the basic concepts of disasters, types of emergencies and the global and national frameworks guiding disaster response—including the roles of key UN agencies such as WHO, UNICEF, UNFPA, UNHCR, IOM, WFP, OCHA and others who work alongside governments during major crises.

Understanding the Purpose of This Session

This session has been designed for PHC workers across KP, including Medical Officers, LHVs, Technicians, Community Health Supervisors and Facility Managers, who are often the first responders when disasters strike.

The session aims to help participants:

- Understand what disasters and humanitarian crises are.
- Differentiate between natural, man-made and complex emergencies.
- Recognize how disasters affect PHC services, supplies and community well-being.
- Learn key disaster-related terminology used by health and humanitarian agencies.
- Understand how UN agencies support the Government of Pakistan during emergencies.

Disaster understanding is the foundation for all preparedness and response planning. Without shared understanding, no effective coordination, risk assessment or emergency response can take place.

Why Understanding Disasters Matters

Primary Health Care facilities often remain the closest, most accessible point of care during disasters. Strong understanding of disaster dynamics helps PHC workers to:

- Maintain essential services during crises.
- Anticipate surges in patient load (injuries, infections, malnutrition).
- Protect vulnerable groups such as children, pregnant women, displaced families and the elderly.
- Coordinate with district authorities and humanitarian partners.
- Activate early warning and reporting systems.
- Support community awareness, prevention and psychological first aid.

Example:

During the 2022 floods, many Basic Health Units became evacuation points, first aid centers and referral hubs. Staff who understood disaster risks were able to quickly mobilize vaccination teams, prevent outbreaks and support displaced families.

Understanding disasters allows PHC workers to act with confidence, clarity and coordination during times when communities depend on them the most.

Definition

A *disaster* is a severe disruption in the functioning of a society, causing widespread human suffering, material loss, or environmental damage. According to the United Nations Disaster Relief Organization (UNDRO), a disaster occurs when the impact of an event exceeds the ability of the affected community to cope using its own resources.

Similarly, a *humanitarian crisis* refers to an event—or a series of events—that threatens the safety, well-being and health of a large number of people and requires urgent assistance.

The severity of a disaster depends on:

- the type and intensity of the hazard,
- the vulnerability and coping capacity of the community and
- the level of preparedness in place.

Types of Disasters

Disasters can be grouped into three main categories:

Table: Types and Examples of Natural and Man-Made Disasters

Disaster Type	Disaster Sub-type	Examples
Natural Disasters	Geophysical	Earthquake, Tsunami & Volcanic eruptions
	Climatologically	Droughts
	Hydrological	Floods, Avalanches
	Meteorological	Cyclones, Storms
	Biological	Epidemics & Plagues
Man-made Disasters	-	Armed Conflicts, Plane crash, Fires and industrial accidents etc.
Complex Humanitarian Emergencies	Combination of natural and man-made disasters leading to humanitarian crisis	Armed conflicts, Mass Displacement and Food insecurity etc.

Key Terminology

To understand disasters effectively, it is important to understand the core concepts used in emergency management. These terms are used by health authorities, NDMA/PDMA and international partners during preparedness, response and coordination activities.

1. Hazard

A hazard is any potentially dangerous event, phenomenon, or activity that can cause harm to people, property, services, or the environment. Hazards may be natural, human-made, or biological.

Examples relevant to Khyber Pakhtunkhwa (KP):

- Natural hazards:
 - Earthquakes (KP lies near major seismic fault lines)
 - Flash floods and river floods (especially in Chitral, Swat, DI Khan, Tank)
 - Landslides in mountainous regions (Shangla, Upper Dir, Kohistan)
 - Snowstorms and avalanches (Kalam, Chitral)
- Biological hazards:
 - Disease outbreaks (measles, dengue, polio, COVID-19)
- Human-made hazards:
 - Road and transport accidents
 - Industrial/chemical accidents
 - Conflict-related displacement

A hazard does not automatically become a disaster—it becomes one when it interacts with vulnerable communities.

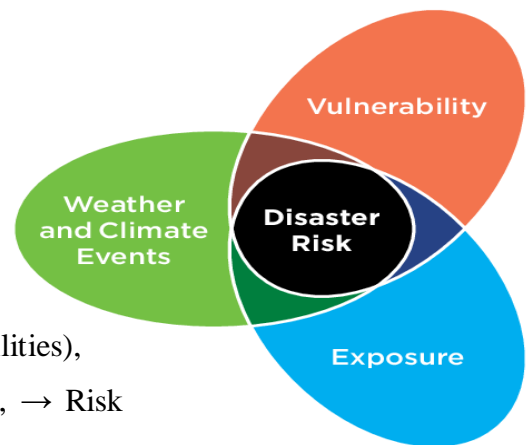
2. Risk

Risk refers to the probability or likelihood that a hazard will cause harmful consequences to people, property, livelihoods, or systems.

It is usually expressed through the formula:

$$\text{Risk} = \text{Hazard} \times \text{Vulnerability} \times \text{Exposure}$$

- If hazard is high (e.g., heavy floods),
- and vulnerability is high (poor housing, unprepared health facilities),
- and exposure is high (large population in the affected area), → Risk becomes extremely high.



FROM IPCC 2012.⁴⁵²

Practical Example (PHC Setting):

A PHC located near a river without an evacuation plan has higher risk during floods than a PHC with elevated structure, emergency supplies, trained staff and safe access routes.

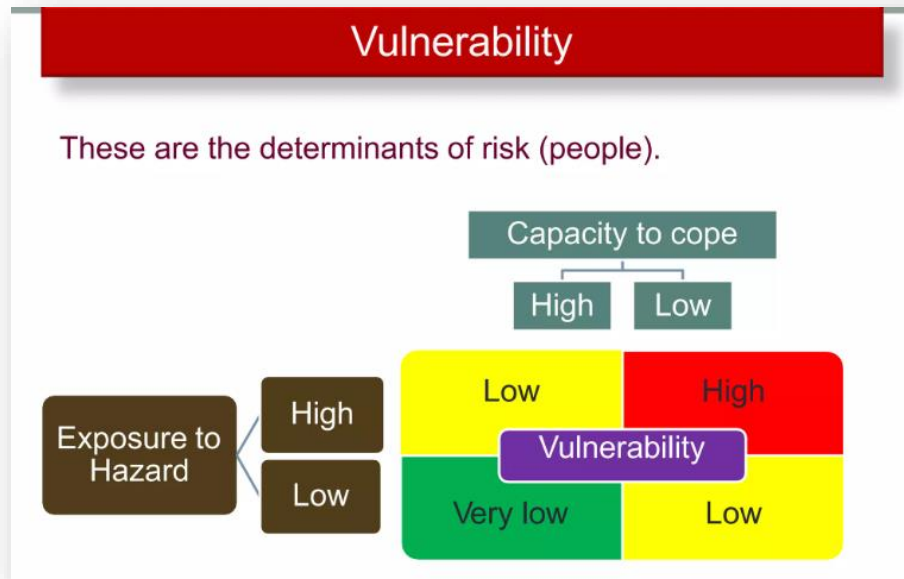
Understanding risk helps PHC teams prioritize preparedness actions and resource allocation.

3. Vulnerability

Vulnerability is the degree to which individuals, communities, or systems are likely to be negatively affected by a hazard. It reflects underlying weaknesses that reduce the ability to cope with or recover from disasters.

Factors that increase vulnerability include:

- Poor housing or unsafe living conditions
- Poverty and limited livelihood options
- Inadequate access to health services
- Poor sanitation and lack of safe drinking water
- Limited knowledge about disasters
- Chronic diseases, disability, pregnancy, or age (children and elderly)
- Geographical barriers (mountains, rivers, remote areas)



Vulnerability in KP Context:

- Mountainous regions face road blockages during rains/snow → delayed medical services
- Displaced populations living in temporary shelters → high disease risk
- Remote villages with limited communication → late warnings during emergencies

4. Exposure

Exposure refers to the number of people, facilities, infrastructure or services that are located in areas where hazards may occur.

Examples of exposure:

- A PHC located in a flood zone → high exposure
- A village situated on a steep slope → exposed to landslides
- A school used as an emergency shelter → high exposure during outbreaks

Reducing exposure can significantly reduce overall risk—for example, relocating fuel storage away from kitchens or shifting medicine stocks to elevated shelves in flood-prone facilities.

5. Resilience

Resilience is the ability of individuals, communities and health systems to withstand, absorb, adapt to and recover from disasters while maintaining essential functions.

A resilient health system continues to serve the community during crises without collapsing.

Characteristics of a resilient PHC facility include:

- Functional emergency plans (evacuation, mass casualty, referral plans)
- Trained staff in emergency response
- Backup systems (power, water, communication, supply stocks)
- Safe building structure
- Strong community linkages
- Ability to resume services quickly after disruption

Example in KP:

A PHC with emergency supplies, trained staff and good communication with the District Health Office is more resilient to floods compared to a PHC that has no preparedness plan.

6. Capacity

Capacity refers to the strengths, skills, resources and abilities that people, communities and systems have which help them reduce disaster impact.

Examples include:

- Skilled PHC staff
- Emergency equipment
- Community volunteers
- Local leadership
- Strong referral systems

Capacity building is a core purpose of this training.

Impact different communities in different ways:

$$\frac{(\text{Vulnerability} + \text{Hazard})}{\text{Capacity}} = \text{Disaster}$$

7. Preparedness

Preparedness refers to actions taken before a disaster to ensure effective response. It Includes:

- Emergency planning
- Training and drills
- Stockpiling supplies
- Communication plans
- Early warning systems

Preparedness transforms vulnerability into resilience.

Summary Table: Key Terminology in Disaster Management

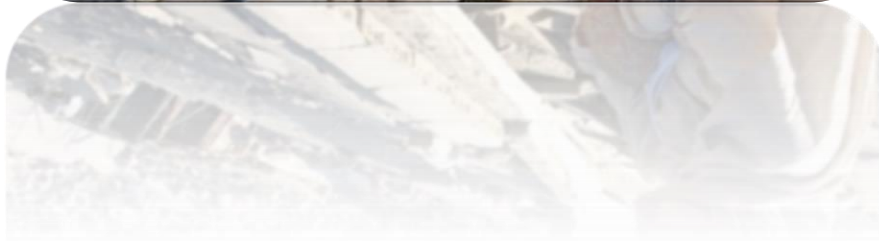
Term	Definition	Examples / Relevance to KP & PHC
Hazard	A dangerous event or phenomenon that may cause injury, loss of life or damage.	Earthquakes, floods (Chitral, Swat), epidemics (dengue), landslides, conflict-related displacement.
Risk	The likelihood that a hazard will cause harm to people or systems.	A PHC near a river has high flood risk if unprepared. $\text{Risk} = \text{Hazard} \times \text{Vulnerability} \times \text{Exposure}$
Vulnerability	Conditions that increase the chance of being affected by hazards.	Poor housing, poverty, remote areas, elderly, children, disabled persons, displaced families.
Exposure	People, infrastructure or services located in hazard-prone areas.	PHCs built in flood zones; villages on landslide-prone slopes.
Resilience	Ability to withstand, absorb, adapt and recover from disasters.	PHCs with backup supplies, trained staff, safe buildings, community linkages.
Capacity	Strengths and resources that reduce disaster impact.	Skilled staff, equipment, volunteers, communication systems, emergency committees.
Preparedness	Actions taken before disasters to ensure effective response.	Emergency plans, drills, stockpiling medicine, early warning systems, evacuation routes.

Reflection Questions

1. Why is it important for PHC workers to understand different types of disasters?
2. Think of a disaster in your district: what role did PHC facilities play?
3. Which UN agencies are most relevant to your work during emergencies?
4. How can better disaster understanding improve your daily services at the PHC level?

SESSION 1.2

IMPACT OF DISASTERS ON HEALTH SYSTEMS



SESSION 1.2

IMPACT OF DISASTERS ON HEALTH SYSTEMS

1. Introduction

Primary Health Care (PHC) facilities are frequently the first point of contact for communities affected by natural disasters, conflicts, displacement or complex emergencies. In regions like Khyber Pakhtunkhwa (KP), Pakistan—characterized by mountainous terrain, recurrent floods, earthquakes, conflict-affected populations and large refugee/IDP presence—PHC resilience is essential for reducing morbidity, mortality and long-term socio-economic losses.

Complex Humanitarian Emergencies (CHEs) refer to situations where large-scale disaster, conflict or insecurity lead to mass displacement, breakdown of health and social systems, increased mortality and prolonged humanitarian needs. These crises place enormous strain on PHC systems, weaken institutional capacity and overwhelm resources.

This session introduces the overall consequences of CHEs on individuals, host communities and health systems and provides PHC staff with foundational knowledge to enhance preparedness and effective response during crises.

2. Learning Objectives

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

1. Define complex humanitarian emergencies and differentiate between natural disasters, conflicts, displacement and combined events.
2. Describe the general consequences of CHEs on individuals and host communities.
3. Explain the public health consequences of displacement and prolonged crises.
4. Identify the impact of CHEs on key components of the health system, including human resources, financing, supplies and service delivery.
5. Recognize how CHEs affect Sustainable Development Goals (SDGs) and national development.
6. Discuss PHC-level preparedness actions required to mitigate health impacts.

3. Session Content (Detailed)

3.1 Understanding Complex Humanitarian Emergencies

What Are Complex Humanitarian Emergencies?

CHEs are situations characterized by:

- Mass population displacement (refugees and IDPs)
- High levels of violence, insecurity and mortality
- Breakdown of social services, governance and economies
- Political and military constraints to humanitarian assistance
- Prolonged crisis duration (often 10+ years)
- Difficulty in coordinating relief due to security risks

CHEs result from interaction of conflict, natural disasters, political instability, poverty, weak systems and climate-related shocks.

Displacement Categories

- Refugees: People fleeing persecution who cross international borders.
- Internally Displaced Persons (IDPs): People displaced within their own country due to violence, disasters or insecurity.

IDPs are especially vulnerable because they remain under national authority and lack international legal protection.

3.2 General Consequences of Complex Humanitarian Emergencies

CHEs affect individuals and host communities in multiple ways:

Effects on Individuals

- Acute food shortage → malnutrition
- Increased morbidity and mortality
- Infectious disease outbreaks
- Lack of access to clean water
- Interrupted education
- Mental health problems (anxiety, PTSD, depression)
- Loss of livelihoods and shelter
- Increased protection risks (GBV, exploitation)

Effects on Host Communities

- Increased competition over food, water and employment
- Overburdened health and education services
- Higher risk of communicable diseases
- Environmental pollution and poor waste management
- Increased insecurity

Table : Effects of Displacement on Individuals and Host Communities

Effects on Displaced Individuals	Effects on Host Communities
Food shortage → malnutrition	Increased competition for food and jobs
Higher mortality/morbidity	Overburdened public services
Community disruption	Security risks increase
Infectious disease outbreaks	Black market economies emerge
Lack of water, sanitation	Environmental pollution increases
Loss of education opportunities	Pressure on health & WASH systems
Mental health disorders	Social tensions & inequalities
Loss of livelihood & assets	Wage reductions for local workers

3.3 Public Health Consequences of Complex Emergencies

1. Direct Effects

- Deaths, injuries and disabilities
- Increased GBV, trauma, burns, fractures, weapon-related injuries
- Attacks on health workers and facilities

2. Indirect Effects

- Malnutrition due to food shortage
- Outbreaks of diseases (diarrhea, measles, malaria, dengue, ARI)
- Decline in maternal and child health indicators
- Mental health deterioration
- Poor water and sanitation → diarrheal disease, skin infections

3. Maternal, Newborn and Child Health (MNCH) Impact

- Reduced access to ANC/PNC
- Higher maternal mortality
- Unsafe deliveries outside health facilities
- Child malnutrition and vaccine-preventable diseases



4. Mental Health Impact

- Stressful displacement conditions lead to:
 - PTSD
 - Depression
 - Anxiety
 - Sleeping disorders
- Limited mental health services in PHC increases long-term risks.

5. Water, Sanitation and Hygiene (WASH) Impact

- Contaminated water leading to cholera, typhoid, diarrhea
- Overcrowded camps → poor hygiene
- Limited latrines → environmental health hazards

3.4 Consequences of Complex Emergencies on the Health System

CHEs significantly weaken health systems by affecting all major building blocks:

1. Impact on Organization and Institutions

- Breakdown of governance
- Inability of local authorities to coordinate care
- Health policies disrupted
- Long-term dysfunction if crisis persists for years

2. Impact on Health Resources

a. Health Care Financing

- Reduced budgets
- Increased demand for services
- Reliance on donors

b. Health Workforce

- Overburdened PHC staff
- Loss of trained workers due to conflict
- Poor motivation due to insecurity
- Interruption of routine programs (EPI, MCH, community outreach)

c. Drugs and Medical Supplies

- Interrupted supply chains
- Stockouts of essential drugs
- Failure of cold-chain systems

Table: Impact of CHEs on Health System Components

Health System Component	Impact During CHEs
Governance	Breakdown of local institutions, poor coordination
Financing	Reduced government spending, donor dependency
Health Workforce	Staff shortages, insecurity, burnout
Medical Supplies	Stockouts, interrupted supply chain
Infrastructure	Damaged facilities, unsafe buildings
Service Delivery	Disruption of routine services, poor access

3.5 Impacts on SDGs

Disasters and emergencies significantly influence progress toward the Sustainable Development Goals (SDGs). Their effects can be both direct, through immediate loss and damage and indirect, through long-term disruptions to systems, services and development outcomes. Understanding these impacts is essential for strengthening preparedness, resilience and recovery efforts—especially within primary healthcare settings. Below is a summary of how disasters and emergencies affect the SDGs:

Impact of Disasters and Emergencies on SDGs

SDG	Goal Title	Direct Impact of Disasters & Emergencies	Indirect Impact of Disasters & Emergencies
SDG 1	No Poverty	Loss of homes, livelihoods, assets	Long-term economic instability and increased poverty levels
SDG 2	Zero Hunger	Destruction of crops, livestock, food supply chains	Food insecurity, malnutrition, increased market prices
SDG 3	Good Health & Well-being	Injury, death, disease outbreaks, disruption of health services	Worsening health indicators, reduced access to care, mental health issues
SDG 4	Quality Education	School buildings damaged, learning disrupted	Increased dropout rates, long-term learning gaps
SDG 5	Gender Equality	Increased risk of violence against women during crises	Reduced access to reproductive health services, loss of social protection
SDG 6	Clean Water & Sanitation	Damage to water systems, contamination of water sources	Long-term shortages, increased waterborne diseases
SDG 7	Affordable & Clean Energy	Damage to energy infrastructure	Reduced energy access, slower economic recovery
SDG 8	Decent Work & Economic Growth	Loss of jobs, business closures	Slower economic growth, increased unemployment
SDG 9	Industry, Innovation & Infrastructure	Damage to roads, buildings, communication networks	Slowed industrial growth, reduced innovation capacity
SDG 10	Reduced Inequalities	Vulnerable populations hit hardest	Widening social and economic inequalities
SDG 11	Sustainable Cities & Communities	Urban flooding, building collapses, unsafe settlements	Unplanned migration, overcrowded shelters, reduced resilience
SDG 12	Responsible Consumption & Production	Waste accumulation, resource shortages	Disrupted supply chains, unsustainable coping practices
SDG 13	Climate Action	Increased frequency & severity of climate-related disasters	Slower progress on adaptation and mitigation efforts
SDG 14	Life Below Water	Marine pollution, coastal flooding	Reduced fish stocks, long-term damage to marine ecosystems
SDG 15	Life on Land	Deforestation, land degradation, wildlife loss	Reduced biodiversity and weakened ecosystems
SDG 16	Peace, Justice & Strong Institutions	Rise in conflicts, weakened governance during crises	Delayed justice processes, lower trust in institutions
SDG 17	Partnerships for the Goals	Disrupted coordination and resource flows	Reduced investment, slower progress on development partnerships

3.6 Implications for PHC Preparedness

PHC preparedness must focus on:

1. Strengthening health facility readiness

- Emergency stockpiles
- Updated emergency plans
- Staff training and drills
- Ensuring safe water supply
- Facility-based early warning systems

2. Community Preparedness

- Risk communication
- Community volunteers
- Mapping vulnerable groups
- Community engagement in preparedness

3. Coordination & Referral Systems

- Clear referral pathways
- Linkages with district and provincial EOCs
- Coordination with NGOs, UN agencies

4. Continuity of Essential Health Services

- MNCH
- Routine immunization
- Communicable disease surveillance
- Mental health support

4. Scenario-Based Group Activity

Case Study: Flood Emergency in Nowshera, Khyber Pakhtunkhwa

Main Theme:

“Enhancing Primary Health Care Response and Coordination during Flood Disasters”

Scenario Background:

Over the past 48 hours, Nowshera district has experienced unprecedented monsoon rains, causing the Kabul River to overflow and resulting in severe flooding in multiple tehsils, including Akora Khattak, Jehangira and Pabbi. Roads have been washed away, villages submerged and bridges collapsed.

The flood has affected approximately **150,000 people**, with **45,000 displaced** and sheltering in makeshift camps set up in schools, mosques and community halls. PHC facilities in flood-prone areas are overwhelmed, with some facilities partially damaged, lacking electricity, clean water and proper sanitation. Many staff members are unable to reach health centers due to water-logged roads.

PHC facilities serve as the **first point of contact** for affected populations. The flood has increased the risk of waterborne diseases (diarrhoea, cholera), vector-borne diseases (dengue, malaria), injuries and maternal and child health complications. Vulnerable populations, including pregnant women, children under 5, elderly and persons with disabilities, are at higher risk.

Group Activity Instructions

Participants will be divided into **4 groups**, each assigned a specific focus area related to flood response at PHC facilities. Each group will analyze the scenario, discuss challenges and propose solutions. Groups are expected to **develop an action plan** for the next 24–48 hours of emergency response.

Group Themes and Tasks

Group 1: PHC Facility Preparedness & Safety

Focus: Ensuring the facility is operational, staff safety and continuity of services.

Tasks:

- Conduct a scene assessment for the PHC facility.
- Identify immediate risks to staff, patients and infrastructure.
- Plan basic safety measures (PPE, infection control, water and sanitation).
- List essential services to continue and prioritize.

Key Questions:

1. What are the immediate hazards at your PHC facility?
2. How will you ensure staff safety while treating patients?
3. Which health services are essential to maintain during the flood?
4. What modifications can be made to continue patient care in a damaged facility?

Group 2: Triage & First Aid Management

Focus: Patient assessment, triage and lifesaving interventions.

Tasks:

- Apply START triage to hypothetical flood victims arriving at PHC.
- Identify the first 10 critical actions upon patient arrival.
- Discuss management of common flood-related emergencies (injuries, drowning, shock, hypothermia, waterborne diseases).
- Prepare referral pathways for critical cases.

Key Questions:

1. How will you prioritize patients arriving at the facility?
2. Which first aid interventions are most critical for flood victims?
3. How do you manage overcrowding and resource limitations?
4. What referral mechanisms can be activated for severe cases?

Group 3: Disease Surveillance & Outbreak Prevention

Focus: Early detection, reporting and preventive measures for flood-related diseases.

Tasks:

- Identify diseases likely to surge post-flood (e.g., diarrhoea, malaria, dengue).
- Develop a basic disease surveillance plan using PHC resources.
- Propose preventive measures for waterborne and vector-borne diseases.
- Plan community awareness and hygiene promotion activities.

Key Questions:

1. Which diseases pose the highest risk in this scenario?
2. How can PHC staff monitor and report early signs of outbreaks?
3. What public health interventions can be implemented immediately?
4. How will you educate displaced populations about hygiene and safe water use?

Group 4: Coordination, Logistics & Vulnerable Populations

Focus: Supply management, inter-agency coordination and protection of vulnerable groups.

Tasks:

- Assess current drug and medical supply stock at PHC facility.
- Identify gaps and propose strategies to ensure continuity of supplies.
- Discuss coordination with district health offices, NGOs and local authorities.
- Plan specific interventions for pregnant women, children, elderly and persons with disabilities.

Key Questions:

1. How will you manage shortages of drugs and essential supplies?
2. Which agencies and partners can support your PHC response?
3. How will you ensure equitable access to services for vulnerable populations?
4. How do you document activities and communicate updates effectively?

SESSION 1.3

DISASTERS AND SUSTAINABLE DEVELOPMENT GOALS (SDGs)



SESSION 1.3

DISASTERS AND SUSTAINABLE DEVELOPMENT GOALS (SDGs)

Introduction

Disasters pose a direct threat to global development, public health and community well-being. The Sustainable Development Goals (SDGs) recognize that achieving progress in health, poverty reduction, safe cities and climate action requires strong preparedness systems—especially at the Primary Health Care (PHC) level.

In disaster-prone regions like Khyber Pakhtunkhwa (KP), where communities face frequent floods, landslides, earthquakes, displacement and disease outbreaks, PHC facilities are often the first point of contact for affected populations. Strengthening PHC is therefore central to meeting several SDGs, including SDG 3 (Health), SDG 11 (Safe Cities) and SDG 13 (Climate Action).

This session explores how disasters impact progress on SDGs and how PHC systems contribute to improved preparedness, resilience and equitable health services during emergencies.

Learning Objectives

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

1. Understand the link between disasters, development and SDGs.
2. Explain the SDGs most relevant to disaster preparedness and PHC.
3. Describe how PHC strengthens community resilience and contributes to SDG targets.
4. Identify practical ways PHC workers can support disaster-related SDG implementation in KP.

1. Disasters and Their Impact on Sustainable Development

Disasters—whether natural, biological, or human-made—can reverse development gains by damaging health facilities, disrupting essential services, increasing poverty and weakening community resilience.

Typical impacts include:

- Increased disease burden and outbreaks
- Disruption of routine immunization and maternal/child health services
- Loss of livelihoods, food insecurity
- Population displacement
- Increased health inequities
- Infrastructure damage (roads, water systems, health facilities)

In KP, disasters such as the 2022 floods, earthquakes in Swat and Dir and recurring landslides have affected thousands of households and directly impacted PHC operations. Achieving SDGs in such contexts requires proactive preparedness and resilient systems.

2. SDGs Directly Linked to Disasters

SDG 3: Ensure Healthy Lives and Promote Well-Being for All

Disasters directly threaten SDG 3 targets by increasing mortality, injuries, disease outbreaks and mental health problems.

Key linkages:

- Emergency response and essential services (3.8)
- Protecting vulnerable populations during crises
- Maintaining immunization and MCH services
- Preventing outbreaks (cholera, dengue, measles)
- Mental health care during and after emergencies

SDG 3.d – Strengthening Health System Resilience

This sub-goal specifically focuses on:

“Strengthening the capacity of all countries for early warning, risk reduction and management of national and global health risks.”

For PHC, SDG 3.d means:

- Preparedness plans at the facility level
- Emergency drills and training
- Stockpiling essential medicines
- Surveillance and early reporting of outbreaks
- Functional referral pathways
- Safe and resilient infrastructure

SDG 11: Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable

Disasters often damage unplanned settlements and densely populated areas.

Relevant targets:

- 11.5: Reduce deaths and economic losses caused by disasters
- 11.b: Implement disaster risk reduction strategies
- 11.1: Improve housing and basic services

Role of PHC:

- Community education on risk reduction
- First aid and emergency services
- Disease surveillance in urban slums
- Supporting displaced or migrant populations
- Health promotion in schools and communities

SDG 13: Take Urgent Action to Combat Climate Change and Its Impacts

Climate-related disasters (floods, heatwaves, droughts) are increasing worldwide and in KP.

Relevant targets:

- 13.1: Strengthening resilience and adaptive capacity
- 13.3: Climate change education and awareness

Role of PHC:

- Heatwave and winter emergency preparedness
- Early disease surveillance (vector-borne diseases like dengue)
- Health education for climate adaptation
- Supporting climate-resilient communities

3. Universal Health Coverage (UHC) and Disasters

Universal Health Coverage is at the core of SDG 3. Disasters make UHC harder to achieve because:

- Services become disrupted
- Vulnerable people lose access
- Financial hardship increases
- Essential medicines become scarce

How PHC Helps Achieve UHC During Disasters

- Accessible primary care prevents complications
- Continuity of care during crises maintains population health
- Strengthening community-based services ensures equity
- Surveillance helps detect and control outbreaks early

A resilient PHC system ensures that no one is left behind during emergencies, especially marginalized groups, people with disabilities, women, children and displaced populations.

4. PHC as the Frontline for Preparedness and Response

Primary Health Care facilities are the first point of contact during emergencies. Their role in achieving SDGs is crucial.

PHC Contributions to SDGs During Disasters

- Early detection and reporting of outbreaks
- Triage, first aid and stabilization of injured persons
- Continuity of essential health services (ANC, deliveries, EPI, NCD care)
- Community mobilization and risk communication
- Coordination with District Health Office, PDMA, Rescue 1122
- Supporting vulnerable or hard-to-reach populations
- Maintaining equity in access to services
- Documentation, health data and monitoring

Practical Example (KP Context)

During the 2022 floods, PHC facilities in Chitral, DI Khan and Swat provided immediate first aid, ensured safe drinking water alerts and helped prevent outbreaks of acute watery diarrhea (AWD). These actions directly supported SDG 3 and SDG 11.

5. Strengthening PHC to Achieve SDGs

Strengthening PHC in emergency-prone areas requires:

- Trained staff in disaster management
- Safe, climate-resilient infrastructure
- Community engagement for preparedness
- Reliable supply chains and emergency stocks
- Data and early warning systems
- Risk communication and public awareness
- Collaboration with PDMA, local government, Rescue 1122, NGOs and UN agencies

When PHC systems are strong, progress toward UHC and SDGs accelerates—even in disaster situations.

6. Equity and Accessibility During Emergencies

Disasters disproportionately affect:

- Indigenous and remote communities
- People living in poverty
- Women and children
- Elderly and persons with disabilities
- Displaced populations (IDPs, refugees, Afghan migrants)

PHC facilities must ensure:

- Fair and equal access to services
- No discrimination in relief or treatment
- Culturally sensitive communication
- Special outreach plans (mobile teams, CHWs)
- Protection of vulnerable groups

Equity is a core principle of UHC and SDGs.

Reflection Questions

1. Which SDG is most affected by disasters in your area and why?
2. How can your PHC facility contribute to SDG 3.d (health system resilience)?
3. What challenges does your catchment population face during emergencies?
4. What actions can your PHC team take to improve climate and disaster preparedness?
5. How can you ensure equity and accessibility for vulnerable groups during a disaster?

Table 2.5: Impact of Complex Emergencies on SDGs

SDG Goal	Impact
No poverty	Poorest countries are more affected. Many IDPs leave all their belongings and puts pressure on host communities and aid agencies/organizations economy.
Zero hunger	Displacement affects the food security as crops are not cultivated in conflict zone while on other hand increased food consumption lead to food shortage in hosting areas.
Good Health and Well being	All aspects of health including mother & child health, physical and mental health are affected. Health facilities are strained in hosting area resulting compromising service qualities.
Quality Education	Displaced children instead of going to school put their share in bread earning. Quality of education in areas where IDPs reside is compromised due to overcrowding.
Gender Equality	In temporary camp settings, women are affected most. Gender based violence is increased in these settings as well.
Clean Water and Sanitation	In camps, IDPs have limited access to water, sanitation and energy resources. Shortage occurs due to over usage of these facilities.
Affordable and Clean Energy	
Decent Work and Economic Growth	During displacement, the income sources are left behind in their areas of origin. These IDPs start searching new income generating venues in hosting areas and affects the local market. Both positive and negative effects occur. Overall economy suffers due to low production, excess utilization, more imports and fewer exports.

Industry Innovation and Infrastructure	Disaster induced displacement can be minimized through sustainable industries and resilient infrastructure.
Reduced Inequalities	IDPs badly suffer due to inequalities, discrimination and deprivation from opportunities.
Sustainable Cities and Communities	The sudden influx of a large population in the form of IDPs causes overstretching of urban systems due to informal settlements. Risk of urban poverty and further displacement increases. Many countries including Pakistan is facing this problem
Responsible Consumption and Production	Natural disasters due to environmental degradation, climate change and unsustainable natural resources have tremendously caused global displacement of millions of people and will even continue to do so in the coming years.
Climate Action	
Life below Water	
Life and Land	
Peace, Justice and Strong Institutions	There's always a chance of recruiting these IDPs by local armed groups.
Partnership for the Goals	Good and effective policies, greater participation and accountability at the national level and proper monitoring of progress can reduce the impacts of internal displacement.

DISASTERS AND THEIR IMPACT ON THE HEALTH SYSTEM OF PAKISTAN



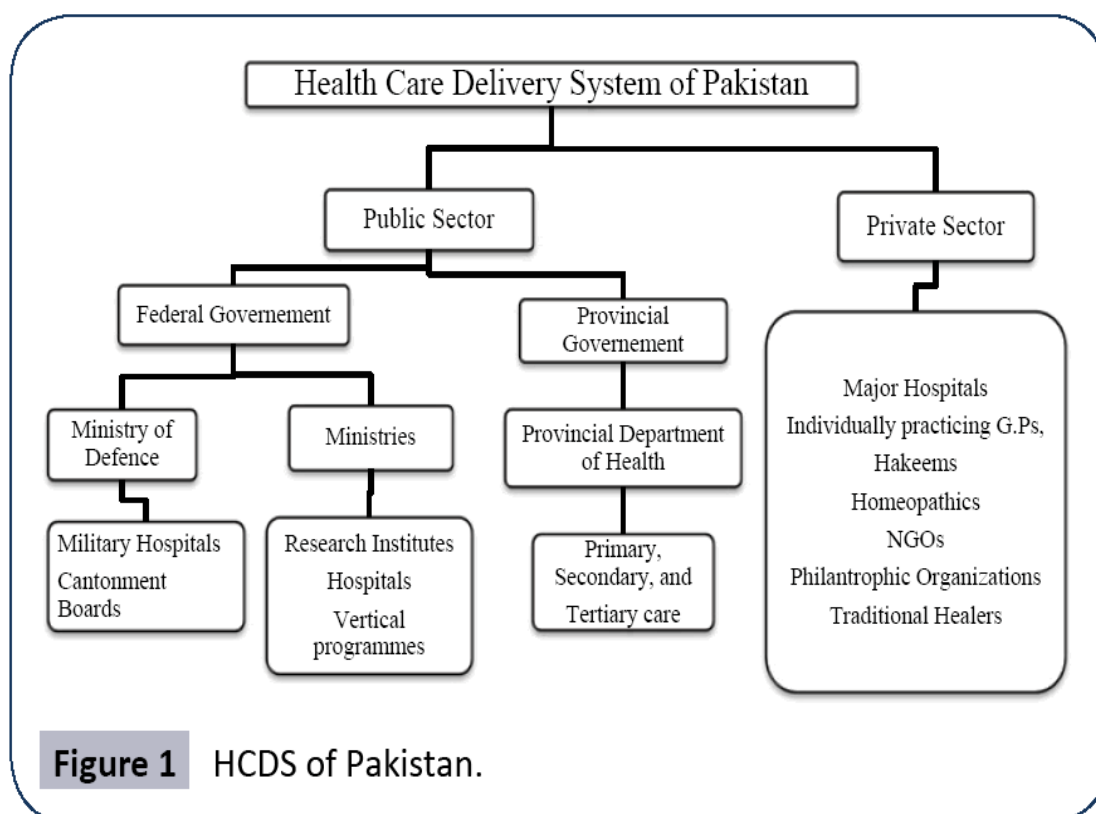
SESSION 1.4

DISASTERS AND THEIR IMPACT ON THE HEALTH SYSTEM OF PAKISTAN

Introduction

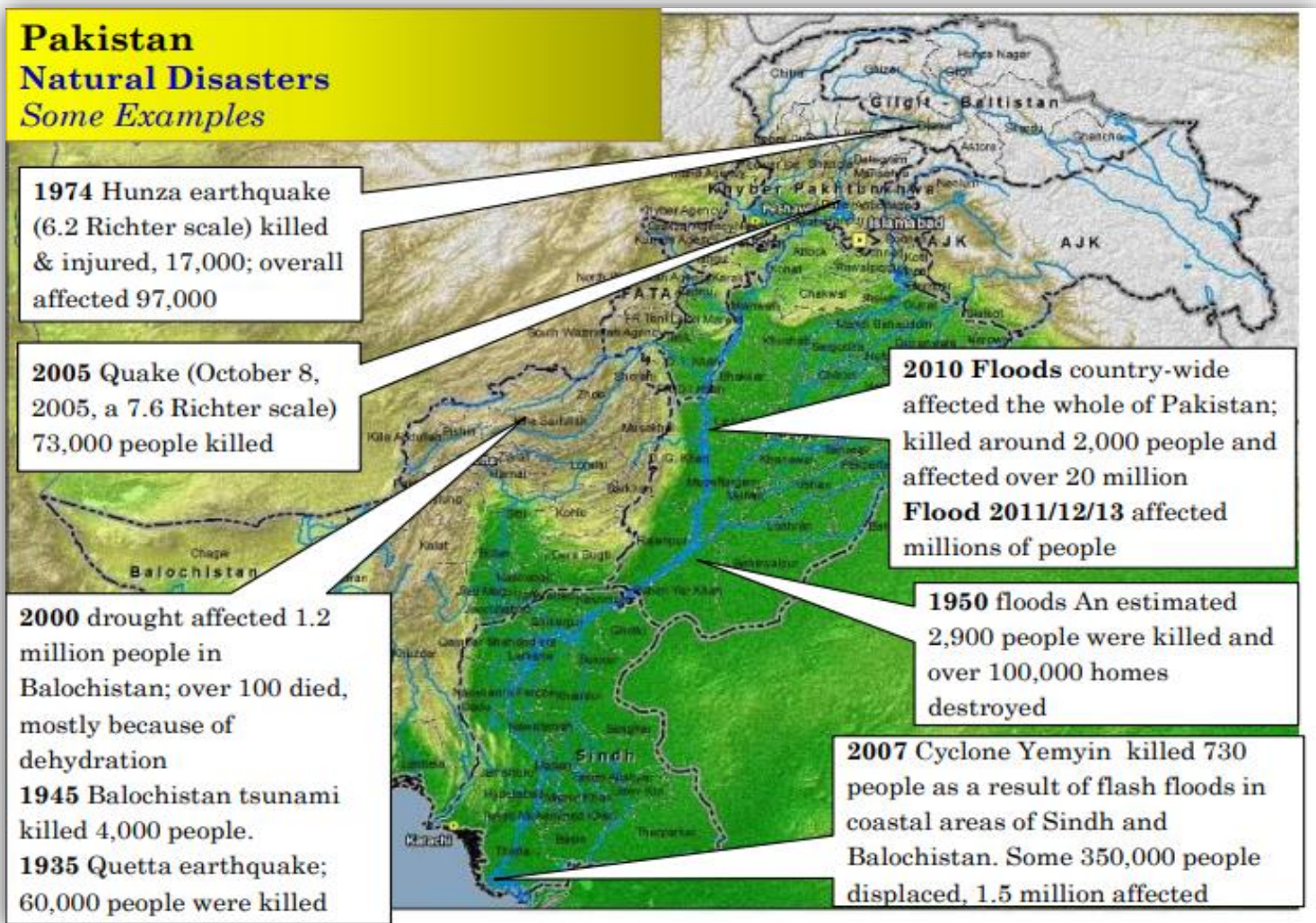
Pakistan is highly vulnerable to a wide range of disasters, including floods, earthquakes, landslides, droughts, epidemics, heatwaves and conflict-related emergencies. These events repeatedly strain the country's health system, leading to interruptions in essential services, overburdened facilities and worsened health outcomes—particularly for the most vulnerable populations.

In Khyber Pakhtunkhwa (KP), the geographical landscape, climate patterns and ongoing population movement (including refugees and IDPs) increase exposure to recurrent emergencies. Strengthening the health system—especially at the Primary Health Care (PHC) level—is therefore critical for reducing the impact of disasters on communities.



Pakistan's Disaster Context

Over the past two decades, Pakistan has experienced major national emergencies such as the 2005 Earthquake, 2010 Super Floods, 2022 Floods, repeated dengue outbreaks and the COVID-19 pandemic. These disasters highlight systemic weaknesses such as inadequate preparedness, fragile infrastructure, shortages of trained staff and weak surveillance systems.



Earthquake 2005:

- Over 3.5 Million people were homeless.
- More than 80,000 were died
- 910,000 were women of reproductive age (WRA) group.
- The cost of losses to the health sector in the Kashmir earthquake in 2005 was equivalent to about 60% of the national health budget for the entire country of Pakistan (UNISDR et al, 2008.)



Floods 2010 :

- Number of people affected: **over 20 million (70% women and children),**
- Number of women in reproductive age): **4,400,000,**
- Number who delivered in the subsequent 12 months: **575,000,**
- Number of Pregnancy related complications in subsequent 12 months: **7500**



Floods 2011

- Total number of people affected: **more than 7 million,**
- Women of reproductive age: **1.5 million,**

Drought in 2019:

- 750,000 were WRA of the total affected population



Table 1: Major Disasters in Pakistan and Their Health System Impact

Disaster Event	Key Effects on Health System
2005 Earthquake	Widespread destruction of hospitals; mass trauma; overwhelmed emergency response; loss of health workforce.
2010 Super Floods	Over 2,000 health facilities damaged; outbreaks of diarrheal disease and malaria; long-term displacement.
COVID-19 Pandemic	Overburdened hospitals; oxygen and PPE shortages; disruptions in routine PHC services and immunization.
Dengue Outbreaks (annual)	Increased burden on PHC and tertiary care; shortage of diagnostic kits; delayed surveillance reporting.
2022 Floods	Record-level facility destruction; increased malnutrition; limited access to maternal and child services; contamination of water sources.

These events show that disasters do not create new weaknesses—they amplify existing gaps in governance, infrastructure and emergency readiness.

Impact of Disasters on the Health System of Pakistan

Damage to Health Infrastructure

Disasters often damage or destroy Basic Health Units (BHUs), Rural Health Centers (RHCs) and district hospitals. Facilities may lose water, electricity and communication systems, making it difficult to operate even if the building remains intact. Remote areas of KP are particularly vulnerable due to fragile roads, landslides and harsh weather.

Disruption of Essential Health Services

Maternal and child health, immunization, outpatient care and chronic disease management are among the first services to be interrupted. Disasters divert attention to emergency care while routine services are postponed, increasing long-term health risks—especially for women, children, the elderly and persons with chronic diseases.

Table 2: Essential Health Services Commonly Disrupted During Disasters

Service Area	Nature of Disruption	Health Consequences
Maternal & Child Health	Limited access to ANC/PNC; unsafe deliveries	Higher maternal and neonatal mortality
Immunization	Outreach suspended; cold chain failure	Outbreaks of measles, polio, diphtheria
Communicable Diseases	Weak surveillance; delayed reporting	Rapid spread of infections
Chronic Diseases	Interrupted medications & follow-up	Complications, preventable deaths
Nutrition	Shortages of therapeutic foods	Increased acute malnutrition
Mental Health	Anxiety, trauma, lack of psychosocial support	Long-term emotional distress

Human Resource and Supply Chain Challenges

Health workers may be unable to reach facilities due to damaged roads or may themselves be displaced. Others face excessive workloads, psychological stress and limited protective supplies. Supply chains are often disrupted, leading to shortages of essential medicines, vaccines, PPE and emergency supplies.

Impact on Vulnerable Populations

Disasters disproportionately affect pregnant women, newborns, young children, elderly persons, people with disabilities, refugees and low-income households. Overcrowded shelters, poor sanitation and limited access to routine care increase disease transmission and mortality.

Implications for Primary Health Care (PHC)

PHC facilities serve as the first point of contact for communities and therefore experience the earliest surge in demand. Their preparedness level determines how quickly a health system can respond. Challenges at PHC level include:

- Lack of disaster preparedness plans
- Inadequate emergency supplies and triage capability
- Limited communication and transport
- Weak community linkages and referral mechanisms

Strengthening PHC resilience is thus a foundational requirement for reducing disaster impact and safeguarding community health.

Summary

Disasters in Pakistan repeatedly test the limits of the health system, exposing weaknesses in infrastructure, service delivery, supply chains, workforce capacity and surveillance. Their impact is most visible at the community level, where PHC facilities struggle to maintain continuity of care. Building resilient PHC systems—supported by preparedness planning, risk reduction strategies and community engagement—is essential for protecting lives, achieving Universal Health Coverage (UHC) and advancing progress toward the Sustainable Development Goals (SDGs).

MODULE TWO

FIRST AID MANAGEMENT IN EMERGENCIES AT PRIMARY HEALTHCARE LEVEL



SESSION 2.1

INTRODUCTION TO FIRST AID MANAGEMENT IN EMERGENCIES AT PHC LEVEL

Introduction

Primary Health Care (PHC) facilities in Khyber Pakhtunkhwa often serve as the *first point of contact* during emergencies and disasters. When disasters strike, health workers—including Medical Officers, LHVs, Technicians and CHWs—must be able to provide timely and lifesaving first aid before a patient is referred or reaches higher-level care.

This section builds the capacity of PHC staff to manage common emergency situations, provide immediate medical assistance, use triage effectively and protect both patients and themselves. The content complements national emergency guidelines and aligns with global standards such as WHO’s Basic Emergency Care (BEC), START triage and national disaster response systems.

Section Learning Objectives

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

- Understand the principles and priorities of First Aid in emergencies.
- Conduct a scene size-up and apply START triage in a PHC setting.
- Perform basic lifesaving interventions using available PHC resources.
- Manage common emergency conditions seen during disasters (e.g., bleeding, fractures, burns, shock, respiratory distress).
- Apply safe practices, including the use of Personal Protective Equipment (PPE) to avoid risk to themselves.
- Coordinate with referral systems, ambulance services and community responders such as CERT teams.

Understanding First Aid in PHC Settings

First Aid at the PHC level refers to the initial and immediate care provided to a person suffering from illness or injury *before advanced medical care becomes available*. It aims to stabilize the patient, prevent deterioration and prepare for safe referral.

While in community settings, First Aid is commonly performed by CERT or volunteers, within PHC facilities it is led by trained staff who play a crucial role in bridging the gap between community first responders and the formal healthcare system.

Aims of First Aid at PHC

Principles and Aims of First Aid

First Aid at the PHC level follows three core aims:

1. **To save life** – preventing avoidable deaths through early, life-saving interventions.
2. **To prevent further harm** – ensuring that actions do not worsen the patient's condition.
3. **To promote recovery** – supporting comfort, reassurance and basic care until referral.

The underlying principle is compassionate, timely and safe care: *“Take care of the person, not just the wound.”*

Role of PHC Workers in First Aid and Emergency Care

During disaster-related mass casualties or sudden emergencies, PHC teams are responsible for:

Responsibilities of PHC Staff During Emergency First Aid Response

Responsibility	Description
rapid assessments	Quickly evaluating patient condition to determine urgency, stability and immediate care needs upon arrival.
Initiating START triage	Applying the Simple Triage and Rapid Treatment method to sort patients into priority categories for efficient resource allocation.
Quick Management	Performing critical interventions such as airway management, bleeding control, immobilization and shock prevention at the PHC level.
Timely Referral	Stabilizing patients, completing referral forms and arranging safe transfer to secondary or tertiary hospitals.
Coordinating	Ensuring effective communication and teamwork with ambulance services, CERT members and other field responders.
proper documentation	Recording patient details, interventions provided, triage category and communicating status to receiving facilities.
personal safety and IPC compliance	Using PPE, adhering to infection prevention and control protocols and ensuring a safe working environment during emergencies.

PHC staff must balance immediate lifesaving actions with rational use of limited resources, especially during mass-casualty situations.

Activity: "What Happens First?"

Objective:

To strengthen participants' understanding of scene size-up, triage and First Aid prioritization at PHC level.

Method:

1. Divide participants into **three groups**.
2. Present a short scenario (e.g., road traffic accident with multiple casualties, or a flood-affected community).
3. Ask each group to discuss and list their **First 10 Actions** as PHC responders.
4. Each group presents, followed by a facilitated discussion comparing:
 - Safety considerations
 - Triage decisions
 - Roles of PHC vs CERT
 - Required equipment

Outcome:

Participants reflect on real-world decisions and recognize the importance of early actions, coordination and communication.

Scene Size-Up at PHC Facility

Although PHC staff typically receive patients brought in from the field, emergencies may occur within or near the facility, such as:

- sudden collapse of a patient in the waiting area
- mass arrival of victims after a traffic accident
- fire or structural hazard near the facility

PHC workers must quickly:

1. Ensure personal safety and PPE use
2. Identify hazards (electrical, fire, violence, chemical exposure)
3. Estimate number of victims

4. Request additional support if needed
5. Activate emergency protocols
6. Establish triage and treatment areas

A proper scene size-up reduces risk to staff and patients.

Role of PHC Staff and CERT Members in Emergency First Aid

PHC staff and CERT members complement each other. While PHC teams provide clinical assessment and interventions, CERT groups act as the community's first responders during the first critical hours of a disaster.

Their shared responsibilities include:

- Conducting rapid scene assessment (size-up).
- Initiating Simple Triage and Rapid Treatment (START).
- Providing immediate First Aid and basic life support.
- Calling for additional help or organizing transport.
- Assisting professional responders in mass casualty incidents.

CERT teams support early stabilization and safe transport, whereas PHC staff provide continued assessment, clinical management and referral.

Table 1: Roles of CERT vs PHC Staff in Emergencies

Function	CERT Members	PHC Staff
Scene size-up	First to arrive, assess hazards	Coordinate facility-based response
Initial triage	Apply START triage	Reassess using clinical triage
First Aid	Basic interventions	Advanced First Aid, clinical care
Transport	Assist, mobilize community	Organize ambulance/referral pathways
Communication	Inform PHC/VDMC/professionals	Lead communication with EMS & hospitals

START TRIAGE in PHC Emergencies

START (Simple Triage and Rapid Treatment) is widely used in disasters to prioritize care based on the severity of injuries. In a mass casualty incident, personnel, supplies and time are limited. The goal is to save the maximum number of lives by focusing on those who need immediate attention.

The START steps:

1. Respiration – Is the patient breathing?
2. Perfusion – Capillary refill or pulse assessment
3. Mental status – Can the patient follow commands?

START triage categorizes victims into four groups using simple assessments of breathing, circulation and mental status.

Table 1: Disaster Triage Categories

Category	Color Tag	Condition	Description / Remarks
Minor	Green	Minor injuries; stable	<ul style="list-style-type: none">• Patient is unlikely to deteriorate over the next several days.• Often referred to as “walking wounded.”• Can be treated on-site with basic first aid.
Delayed	Yellow	Serious but not immediately life-threatening	<ul style="list-style-type: none">• Patient’s condition is stable enough to wait several hours for treatment.• No expected rapid deterioration.• Transport and advanced care can be safely delayed.
Immediate	Red	Critical; requires urgent medical attention	<ul style="list-style-type: none">• Includes patients with compromised airway, breathing, or circulation.• Needs life-saving intervention within minutes (golden hour).• Likely to deteriorate quickly without immediate treatment.
Expectant	Black	Deceased or unlikely to survive	<ul style="list-style-type: none">• Injuries are so severe that survival is unlikely given available resources.• Focus is on comfort measures and pain relief.

PHC staff must know how to rapidly assign these categories and direct patients to appropriate areas.

2.1.8 First Aid Priorities at PHC Level

During emergency patient arrival, PHC teams should follow this sequence:

1. Ensure safety (self, staff and patients)
2. Apply PPE
3. Activate emergency plan
4. Triage patients using START
5. Provide lifesaving interventions
6. Prepare for referral/transport
7. Document and communicate clearly

Reflection Questions

1. If a mass casualty incident occurs outside your PHC, what steps would you take *before touching a patient*?
2. How confident do you feel using START triage in a real emergency?
3. Which immediate interventions can you safely perform with the resources available in your PHC?
4. What are the common mistakes you must avoid while providing first aid?
5. How is communication managed between your PHC and ambulance/hospital teams?
6. Are PPE and IPC supplies readily available in your PHC?
7. What would you do if you had to respond to a patient without appropriate protective equipment?
8. Does your PHC have a designated triage area, emergency plan and mass casualty protocol?
9. Recall a real emergency you have managed. What would you do differently now base on this session?

SESSION 2.2

INITIAL ASSESSMENT BY THE FIRST RESPONDER (DRABC)

Session Time: 60 Minutes

Brief Introduction:

During emergencies, the first few minutes are critical for saving lives. Primary Healthcare (PHC) staff and Community Emergency Response Team (CERT) members often arrive at the scene before professional medical responders. Knowing how to quickly assess and respond to life-threatening conditions can prevent deterioration and save lives.

The **DRABC** acronym guides first responders in prioritizing their actions to address immediate threats to life. This session equips participants with the knowledge and practical skills to perform an initial assessment safely and effectively.

Session Objectives:

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

1. Understand the DRABC approach for initial assessment at emergency scenes.
2. Identify and manage immediate life-threatening conditions (Airway, Breathing, Circulation).
3. Demonstrate the proper sequence of actions during first aid for victims.
4. Recognize the importance of personal safety and gaining victim consent before assistance.
5. Apply learned techniques in a simulated hands-on exercise.

Content:

1. Importance of Initial Assessment

- Emergencies can occur at any time and victims may face immediate threats to life.
- The first responder's goal is to stabilize the victim until professional help arrives.
- The **ABC** principle addresses the three most critical conditions:
 - **A: Airway** – Ensure the airway is clear and open.
 - **B: Breathing** – Check for normal breathing patterns.
 - **C: Circulation** – Identify and control bleeding.







2. DRABC Approach

The DRABC acronym expands ABC to include **Danger** and **Response**, guiding safe and systematic assessment:

DRABC Summary Table

Letter	Meaning	Key Actions
D Danger	Assess the scene for hazards	Check for dangers to yourself and the victim (fire, electricity, traffic). Remove victim if safe.
R Response	Check for responsiveness	Gently shake the victim's shoulder and call their name. Assess alertness and level of consciousness.
A Airway	Open and check airway	Use head tilt-chin lift technique to open airway. Look for obstructions.
B Breathing	Check breathing	Look, listen and feel for chest movement, sounds of breath, or exhaled air (no more than 10 seconds).
C Circulation/Compressions	Check circulation & initiate CPR if needed	Observe for bleeding or abnormal color. Apply direct pressure to control bleeding. If absent breathing or pulse, start CPR: 30 chest compressions + 2 rescue breaths or 100 compressions/minute continuous.

Note: Always introduce yourself to the victim and seek permission if conscious. Use gloves and PPE where available.

DRABC Approach	
<p>Danger: Assess the situation: are there any dangers to yourself or the injured person? If it is there, either remove the danger or take the casualty out of danger.</p>	
<p>Response: Assess the person for responsiveness: do they respond to your voice and being gently shaken? If there is no response go to next step</p>	
<p>Airway: Check and open the airway; place one hand on the forehead, tilt the head back and lift the chin.</p>	<p>Chin Lift - Head Tilt</p> 
<p>Breathing: Check breathing, Look, Listen and feel for breathing. Look for chest movement, listen for sounds of breathing and feel for breath on your cheek. Do this for no more than ten seconds. If the victim is breathing normally, assess for life threatening injuries and then place in the recovery position and maintain an open airway.</p>	<p>LOOK, LISTEN, FEEL</p> 
<p>Compressions: If they are NOT breathing normally, call professional help and start Cardio- Pulmonary Resuscitation (CPR), cycles of 30 chest compression followed by 2 rescue breaths or only continue chest compression at the rate of 100 compressions per minute.</p>	
<p>C: Circulation: Look for blood pumping or pouring out of a wound, control it with direct pressure, look for normal tissue color.</p>	

3. Step-by-Step Action by First Responder

1. **Scene Safety:** Ensure your own safety first; avoid becoming a casualty.
2. **Assess Response:** Gently shake and speak to the victim.
3. **Airway:** Open using chin-lift head-tilt.
4. **Breathing:** Check for normal breathing using “Look, Listen, Feel” technique.
5. **Circulation:** Control severe bleeding, monitor skin color and pulse.
6. **CPR:** Begin if the victim is not breathing normally.
7. **Recovery Position:** If breathing is normal but unconscious, place the victim in recovery position to maintain airway.
8. **Call for Help:** Alert professional responders and prepare for transfer.

4. Safety and Infection Prevention

- Wear gloves and another PPE.
- Minimize direct contact with bodily fluids.
- Avoid moving the victim unnecessarily if spinal injury is suspected.

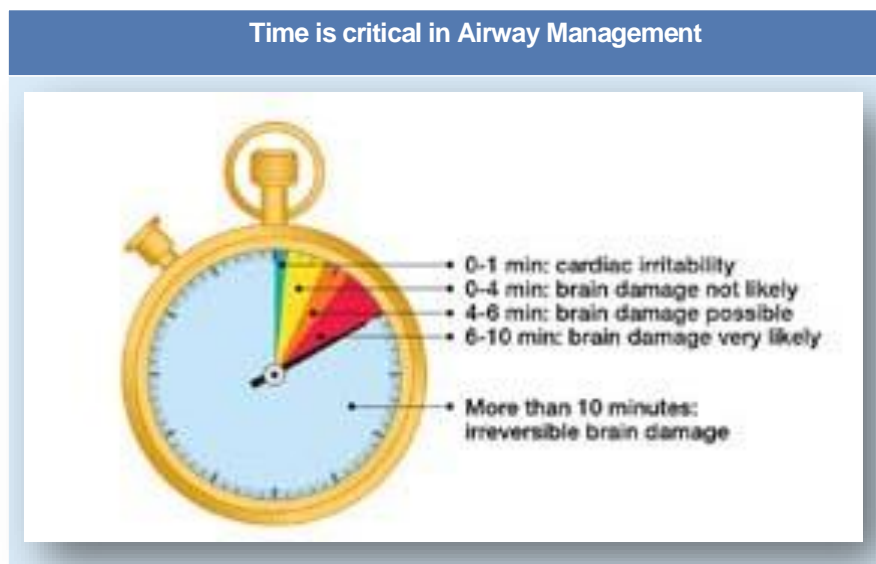


Table 8: Initial Airway Assessment

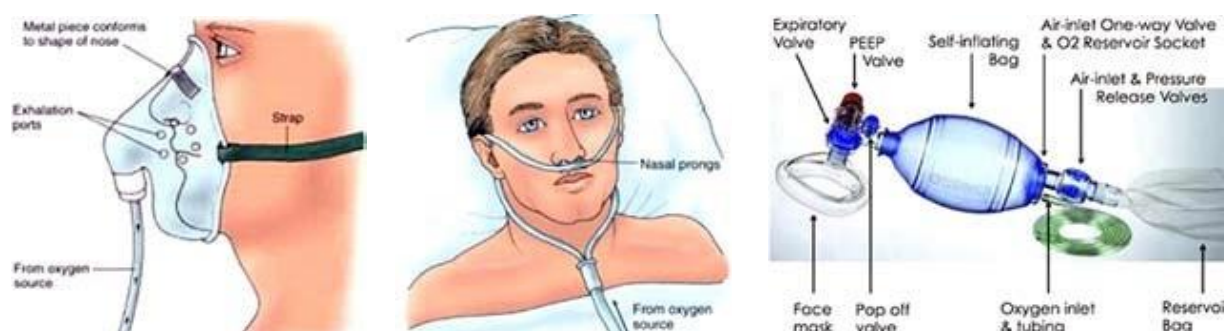
Question	What to Check	Key Points / Simple Explanation
1. Is the patient conscious?	Use AVPU Scale (Alert, Voice, Pain, Unresponsive)	Helps quickly assess level of consciousness. (See Annexure IV)
2. Is the airway obstructed?	Look for tongue obstruction, vomit, secretions, or facial trauma	Unconscious patients often have blocked airways. Facial injuries may also deform the airway.
3. Is the cervical spine stable?	Check if injury or disease may have affected the neck	Always protect the cervical spine while assessing the airway to avoid further damage.

In critical illness and injury, oxygen delivery to the vital organs is compromised resulting in tissue hypoxia. Tissue hypoxia lasting more than four minutes leads to irreversible brain damage and will likely kill the patient. The immediate priority here is to correct the hypoxia irrespective of the underlying cause.

Basic oxygen delivery methods

- Nasal canula (nasal prongs)
- Face mask (simple face mask and non-rebreather)
- Bag-valve-mask (BVM / AMBU bag)

Figure: Basic oxygen delivery methods



5. Activity: Hands-On DRABC Simulation (30 Minutes)

Objective: Practice DRABC assessment in a simulated scenario.

Instructions:

1. Divide participants into small groups (3–4 per group).
2. Set up a mock scene with a volunteer “victim” (lying on floor with props to simulate bleeding or unconsciousness).
3. Each participant will perform:
 - Danger Assessment
 - Response check
 - Airway opening
 - Breathing and circulation check
 - Basic CPR/Recovery position (as required)
4. Facilitator observes and provides feedback on correct sequence and technique.

Discussion: Groups share challenges faced and lessons learned.

Key Takeaways

1. **Safety First:** Always assess the scene for danger before approaching the victim.
2. **Structured Assessment:** Follow the DRABC sequence (Danger → Response → Airway → Breathing → Circulation) to prioritize life-saving actions.
3. **Rapid Response Saves Lives:** Immediate assessment and intervention can significantly improve survival, especially within the “golden hour.”
4. **CPR and Recovery Position:** Knowing how to perform CPR and place a victim in recovery position is critical when professional help is delayed.
5. **Communication Matters:** Always call for help, coordinate with team members and document actions.
6. **PPE and Infection Control:** Protect yourself while assisting victims to prevent injury or infection.
7. **Preparedness is Key:** Regular practice and drills enhance confidence and effectiveness in real emergencies.

Reflection Questions

1. During the hands-on activity, what was the most challenging step of DRABC for you and why?
2. How did you ensure your own safety while assisting the victim?
3. What steps can you take to improve your speed and accuracy in initial assessment?
4. How would you prioritize multiple victims in a real emergency using START triage?
5. After this session, what first aid skills do you feel confident in and what requires further practice?

SESSION 2.3

CARDIO PULMONARY RESUSCITATION (CPR) AT PHC LEVEL

Introduction

Cardio Pulmonary Resuscitation (CPR) is a critical life-saving technique performed when a person's heart or breathing stops. In primary healthcare settings and community emergencies, timely and proper CPR can significantly increase survival chances. This session focuses on equipping PHC staff and trained community volunteers (CERT members) with practical knowledge and hands-on skills to perform CPR effectively following the CAB sequence (Compressions → Airway → Breathing).

Session Objectives

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

1. Understand the importance of CPR in emergency and disaster situations.
2. Recognize the CAB sequence for CPR.
3. Perform chest compressions with correct technique and rhythm.
4. Open and maintain the airway using head tilt-chin lift.
5. Deliver rescue breaths effectively.
6. Adapt CPR techniques for adults, children and infants where applicable.
7. Apply infection prevention and personal safety measures during CPR.

Assessing the Victim

Check carotid artery pulse (or femoral or radial) on either side for about 06 seconds, multiply to it by 10 to get pulse rate per minute. E.g.: If there were 08 pulsations felt in 06 seconds, then the approximate pulse rate would be 80/minute. Simultaneously also look for breathing, respiratory movements over chest. If there is no breathing, no pulse and the patient is unresponsive, the patient is in cardiorespiratory arrest.

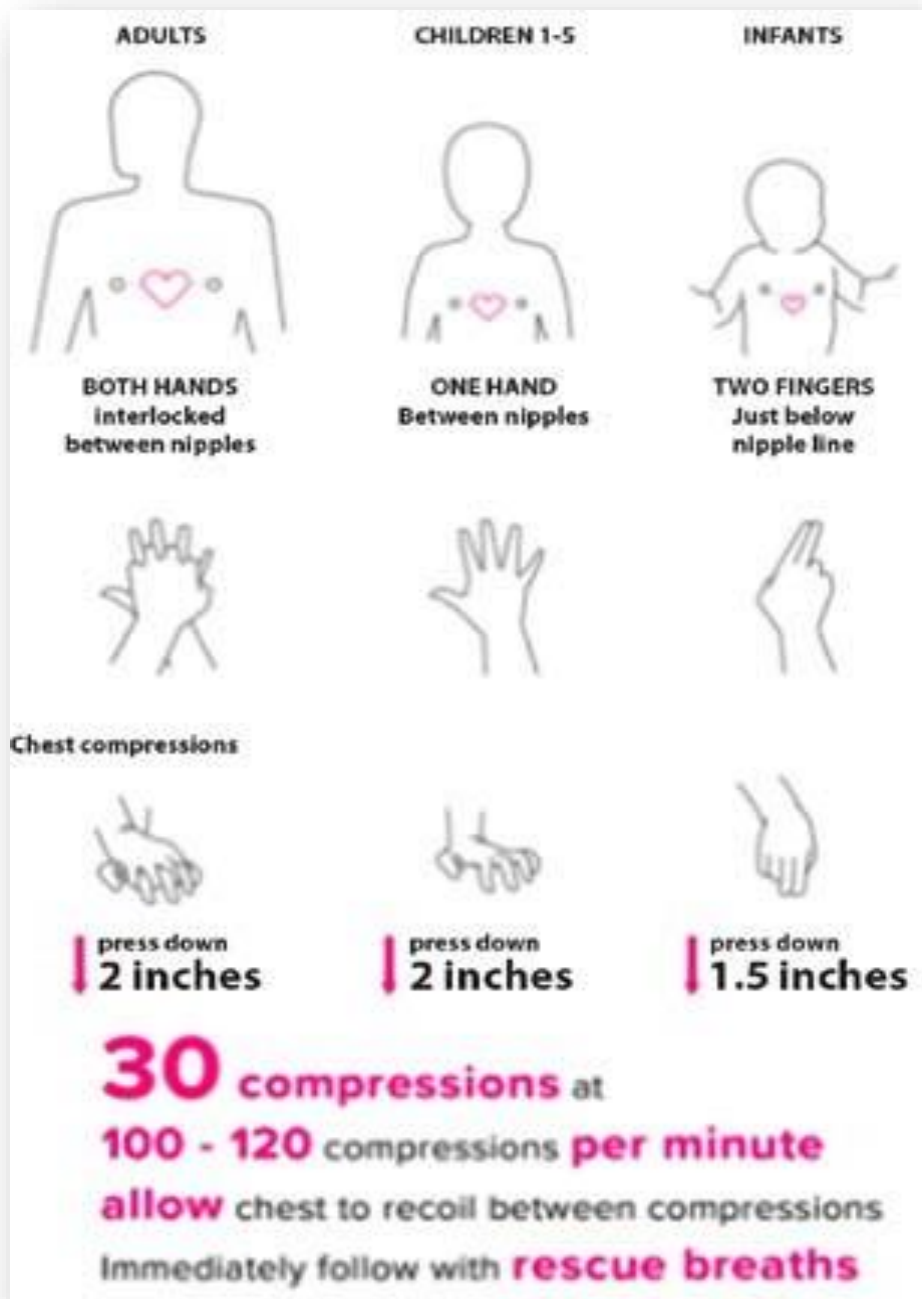
- Check responsiveness by gently shaking and shouting, “Are you OK?”
- If the person responds, CPR is not required.
- If unresponsive, call for help (Rescue 1122/ambulance) immediately.

2. CPR Sequence: CAB

The updated CPR sequence follows **CAB** instead of the older ABC:

Step	Action	Key Considerations
C Compressions	Perform chest compressions	<ul style="list-style-type: none">- Place heel of one hand on the center of the chest, interlace fingers.- Depth: 5–6 cm (2 inches).- Rate: 100–120 compressions/min.- Allow full chest recoil after each compression.- Continue cycles of 30 compressions.
A Airway	Open the airway	<ul style="list-style-type: none">- Position the victim on their back on a firm surface.- Perform head tilt-chin lift.- Check for normal breathing (LOOK, LISTEN, FEEL) within 10 seconds.- Avoid assuming gasping is normal breathing.
B Breathing	Deliver rescue breaths	<ul style="list-style-type: none">- Perform mouth-to-mouth (or mouth-to-nose if mouth is injured).- Pinch nostrils, seal mouth and give 2 breaths.- Observe chest rise; if it fails, repeat head tilt-chin lift.- Resume 30 compressions after 2 breaths.- Ratio remains 30:2 for single or two-person CPR.

Note: For children 3–7 years, use one-hand compressions;
for infants, use 2 fingers



3. Practical Demonstration and Hands-on Practice

- Demonstrate proper hand placement, compression depth and rate.
- Demonstrate head tilt-chin lift for airway opening.
- Practice giving rescue breaths with mannequins.
- Conduct small group exercises with rotations: one performing compressions, one managing airway, one observing timing and safety.

Correct Hand Position



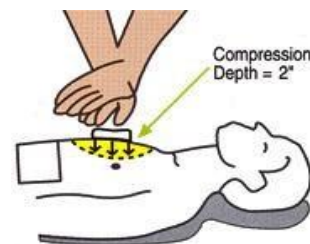
Interlace the fingers




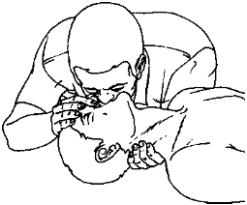


4. Safety and Infection Prevention

- Always wear gloves and follow standard precautions.
- Use a CPR mask if available to reduce infection risk.
- Ensure surrounding environment is safe before performing CPR.

- The depth of compressions should be at least 5-6 cm (2 inches) - ***Remember: 2 hands, 2 inches.***
- Count aloud as you compress 30 times at the rate of about 3 compressions for every 2 seconds or approximately 100 compressions per minute.
- Continue with 2 breaths and 30 pumps until help arrives



<p>C-Compressions -Start chest compression</p> <ol style="list-style-type: none"> 1) Push hard: At least 2 inches depth (6 cm) 2) Count aloud as you compress 30 times 3) Push fast: 100 to 120 per minutes 4) Wait for chest to fully recoil with each push 5) Don't stop: if there is someone with you switch position every 2 minutes till ambulance arrives. 	<p>Lock Elbows- Compress</p> 
<p>A -Airway - Clear the airway</p> <ol style="list-style-type: none"> 1) Put the person on his or her back on a firm surface. 2) Kneel next to the person's neck and shoulders. 3) Open the person's airway using the head tilt-chin lift. 4) Put your palm on the person's forehead and gently push down. 5) Then with the other hand, gently lift the chin forward to open the airway. Check for normal breathing, 6) Taking no more than 10 seconds: 7) Look for chest motion, listen for breath sounds and feel for the person's breath on your cheek and ear. 	<p>LOOK, LISTEN, FEEL</p>  <p><i>Do not consider gasping to be normal breathing. If the person isn't breathing normally or you aren't sure, begin mouth-to-mouth breathing.</i></p>
<p>B - Breathing – Rescue Breathing</p> <ol style="list-style-type: none"> 1) Rescue breathing can be mouth-to- mouth breathing or mouth-to-nose, <i>if the mouth is seriously injured or mouth can't be opened.</i> 2) Pinch the nostrils, shut for mouth-to- mouth breathing and cover the person's mouth with yours, making a seal. 3) Prepare to give two rescue breaths. 4) Give the first rescue breath — lasting one second and watch to see if the chest rises. 5) If it does rise, give the second breath. 6) If the chest doesn't rise, repeat the head tilt-chin lift and then give the second breath. 	<p>Pinch the nostrils</p>  <p>Two Breaths</p>  <p>2 breaths and 30 pumps*</p>

Point to Remember in case of emergency

DO NOT...

- ✘ ...leave the victim unattended.
- ✘ ...make the victim eat or drink.
- ✘ ...throw water on the victim's face.
- ✘ ...put the victim into a sitting position.
- ✘ ...slap victims his/her face.

Activity: CPR Relay Drill (30 minutes)

Objective: Enhance coordination, speed and accuracy during CPR.

Instructions:

1. Divide participants into small groups of 4–5.
2. Set up CPR mannequins at stations.
3. Each participant performs a full 2-minute CPR cycle (30 compressions + 2 breaths).
4. Rotate roles within the group for hands-on experience.
5. Debrief on technique, rhythm, hand placement and communication.

Key Takeaways

1. **CAB Sequence Saves Lives:** Follow Compressions → Airway → Breathing.
2. **Proper Technique:** Hand placement, compression depth and rescue breaths are critical.
3. **Rapid Response Matters:** Call for help immediately; early CPR significantly improves survival.
4. **Adapt to Age Groups:** Use one-hand for children, two-finger technique for infants.
5. **Personal Safety:** PPE and infection control cannot be neglected.
6. **Practice Builds Confidence:** Regular drills ensure readiness during real emergencies.

Reflection Questions

1. What challenges did you face while performing chest compressions?
2. How confident do you feel about identifying when CPR is required?
3. What steps can you take to maintain your own safety while performing CPR?
4. How would you manage CPR in a scenario with multiple victims?
5. How can you educate your community or colleagues about performing CPR effectively?

SESSION 2.4

MANAGING SHOCK AND UNCONSCIOUS PATIENTS AT PHC LEVEL

Introduction

Shock and unconsciousness are critical conditions that can occur in emergencies, accidents, or disasters. Prompt recognition and proper first aid can prevent further complications and save lives. This session focuses on identifying the signs of shock, understanding its causes and performing appropriate first aid including positioning, circulation support and recovery position.

Session Objectives

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

1. Identify the common signs and symptoms of shock and unconsciousness.
2. Perform initial first aid for shock, including proper positioning.
3. Apply the recovery position safely for an unconscious but breathing patient.
4. Ensure patient comfort and maintain airway patency.
5. Reassure and monitor the patient until professional help arrives.

Content

1. Understanding Shock

Shock is a life-threatening condition where vital organs do not receive enough oxygen due to reduced blood circulation. It may result from:

- Severe blood or fluid loss
- Electric shock or injury
- Allergic reactions
- Poisoning
- Heart failure

Common Symptoms of Shock:

Symptom	Description
Pulse	Rapid and weak
Breathing	Shallow and fast
Skin	Pale grey, cold, sweaty and clammy
Lips	Grey or bluish inner side
Behavior	Restless, anxious, may feel thirsty or nauseous

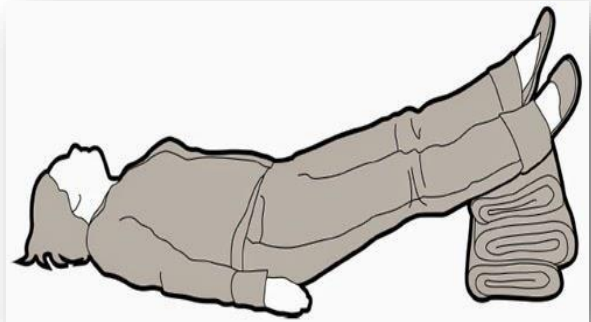
2. Initial Actions for Shock

Actions

Lower Head- Raise Legs

- 1) Help the person to lie down,
- 2) Lower the head raise and support the legs,
- 3) Loosen any tight clothing and reassure the casualty

Lower Head- Raise Legs



Aim is to revive circulation of blood to head and upper body vital organs in body

Recovery Position

If an adult or child is unconscious but breathing normally, place them on their side in the recovery position

Recovery Position



How to Perform Recovery Position

A- With the patient on their back, kneel beside the patient and position their arms. Place the patient's furthest arm directly out from their body.	A line drawing showing a rescuer kneeling on one knee next to a patient lying on their back. The rescuer is reaching out to position the patient's right arm, extending it straight out to the side.
B- Place the patient's nearest arm across their chest. Position the patient's legs. Lift the patient's nearest leg at the knee and place their foot on the floor so the leg is bent.	A line drawing showing the rescuer moving to position the patient's left arm across their chest. The rescuer is also lifting the patient's left leg at the knee, preparing to bend it.
C- Roll the patient into position. Roll the patient away from you onto their side, carefully supporting their head and neck the whole time.	A line drawing showing the rescuer rolling the patient onto their side. The rescuer is supporting the patient's head and neck from behind as they roll.
D- Keep the upper side leg bent with their knee touching the ground to prevent the patient rolling onto their face. Place the patient's hand under their chin to stop their head from tilting and to keep their airway open.	A line drawing showing the patient in the final recovery position on their side. Their right arm is bent with the hand under their chin, and their left leg is bent with the knee touching the ground.

4. Practical Demonstration and Hands-on Practice

- Demonstrate proper leg elevation for shock.
- Demonstrate placing a patient in the recovery position.
- Participants practice in pairs using mannequins or volunteer participants.
- Instructor observes and provides feedback on positioning, safety and airway maintenance.

Activity: Shock and Recovery Position Drill (20–25 minutes)

Objective: Strengthen skills for rapid first aid response to shock and unconscious patients.

Instructions:

1. Divide participants into small groups.
2. Each group practices helping a “shock patient” lie down, raise legs and loosen clothing.
3. Rotate to practice placing a patient in the recovery position.
4. Groups discuss potential challenges and how to overcome them in real emergencies.

Key Takeaways

1. **Early Recognition Saves Lives:** Rapid identification of shock and unconsciousness is critical.
2. **Circulation Support:** Elevating legs helps improve blood flow to vital organs.
3. **Airway Maintenance:** Recovery position keeps airway open and prevents aspiration.
4. **Reassurance Matters:** Calm the patient to reduce stress and anxiety.
5. **Safety First:** Always check for spinal injuries before moving the patient.

Reflection Questions

1. How would you identify shock in a patient at the PHC or community level?
2. What precautions must you take before raising the patient’s legs?
3. Why is the recovery position preferred for unconscious but breathing patients?
4. How would you assist a patient with suspected spinal injury while applying first aid for shock?
5. How can you teach your community members to respond safely to shock emergencies?

SESSION 2.5

MANAGING CHOKING EMERGENCIES AT PHC LEVEL

Introduction

Choking is a life-threatening condition where a victim cannot breathe, speak, or cough due to a blocked airway. Rapid recognition and correct intervention are crucial to prevent severe injury or death. This session introduces first aid measures for conscious adults, children and infants experiencing choking. Participants will practice techniques like back blows, abdominal thrusts (Heimlich maneuver) and appropriate modifications for children.

Session Objectives

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

1. Identify the signs of choking in adults, children and infants.
2. Perform first aid for conscious choking in adults using back blows and abdominal thrusts.
3. Apply modified choking interventions for children and infants.
4. Recognize when to start CPR if the choking victim becomes unconscious.
5. Ensure safe handling of choking victims while minimizing risk of injury.

Content

1. Recognizing Choking


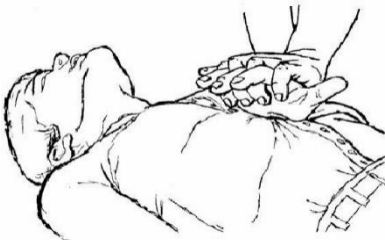
Choking occurs when the airway is blocked by a foreign object. Victims may:

- Be unable to cough, speak, or breathe
- Show distress with clutching the throat
- Exhibit cyanosis (bluish lips or face) in severe cases

Adult Choking:




Conscious Choking

The situation when the victims can't cough, speak or breathe. The following steps can be applied;

<p>1) Give 5 blows on the back</p> <ul style="list-style-type: none">• Bend the person forward at the waist and give 5 back blows between the shoulder blades with the heel of one hand	<p>Heimlich Maneuver</p>  <p>1. Lean the person forward slightly and stand behind him or her.</p> <p>2. Make a fist with one hand.</p> <p>3. Put your arms around the person and gasp your fist with your other hand near the top of the stomach just below the center of the rib cage</p> <p>4. Make a quick hand movement inward and upward.</p>
<p>2) Give 5 Abdominal Thrusts</p> <ul style="list-style-type: none">• Place a fist with the thumb side against the middle of the person's abdomen, just above the navel.• Cover your fist with your other hand.• Give 5 quick, upward abdominal thrusts <p>The technique is called the Heimlich maneuver, or abdominal thrusts. Abdominal thrusts lift your diaphragm and expel air from your lungs. This causes the foreign object to be expelled from your airway</p>	
<p>3) Continue Care</p> <p>Continue sets of 5 back blows and 5 abdominal thrusts until the:</p> <ul style="list-style-type: none">• Object is forced out.• Person can cough forcefully or breathe.• Person becomes unconscious.	
<p>4) Person becomes unconscious</p> <ul style="list-style-type: none">• Start CPR• Look for an object in the mouth or throat. If you see remove it.• Do not do any more Heimlich thrusts. <p>Keep doing CPR until the person is breathing on his or her own or until help arrives</p>	

Child Choking




The children under five years are at very high risk of choking on hard eatables like berries, grapes, hard candies and even bananas. If child is old/ tall enough that you can't hold him/ her on forearm follow the same procedure as for adults however, be careful while applying pressure as children have delicate bone which are still forming.

Step No-1 Place the infant stomach down across your forearm and give five quick forceful blows on infants back with heel of your hand	
Step No-2 Place two finger in the middle of infants breastbone and give five quick downwards thrusts	
Step No-3 Look in the mouth if you can see any foreign object. Try to remove the object with your fingers, Note: Only if you can see the object- never put the fingers in mouth till you see the object	

Note: For children under 6/7 years and older than 3 years use one hand for CPR compression

Point to Remember In case of Choking

DO NOT...

-  ...push fingers in throat or mouth of victim
-  ...make the victim eat or drink anything
-  ...Do not leave the victim alone

4. Practical Demonstration and Hands-on Practice

- Demonstrate adult choking techniques on a mannequin.
- Demonstrate child and infant techniques using pediatric mannequins.
- Participants practice in pairs, with feedback on proper technique, hand placement and safety.

Activity: Choking Rescue Drill (20–25 minutes)

Objective: Build confidence in responding to choking emergencies for adults, children and infants.

Instructions:

1. Divide participants into small groups.
2. Each group practices back blows and abdominal thrusts on adult mannequins.
3. Rotate to practice infant back blows and chest thrusts.
4. Discuss challenges and strategies for safe handling and effective intervention.

Key Takeaways

1. **Immediate Action Saves Lives:** Act promptly when someone is choking.
2. **Back Blows and Abdominal/Chest Thrusts:** These are the primary interventions for conscious victims.
3. **Adapt Technique for Age:** Use modifications for children and infants to prevent injury.
4. **CPR for Unconscious Victims:** Begin CPR if the victim loses consciousness.
5. **Safety First:** Never put fingers blindly into the mouth; only remove visible objects.

Reflection Questions

1. What are the main signs of choking in adults, children and infants?
2. How do back blows and abdominal thrusts work to expel a foreign object?
3. Why is it important to modify technique for children and infants?
4. When should you switch from choking intervention to CPR?
5. How can you teach families in the community to safely respond to choking emergencies?

SESSION 2.6

WOUNDS AND INJURIES- CONTROLLING BLEEDING

Introduction:

According to the World Health Organizations (WHO) Global Safety Report on Road Safety 2013, road accidents and injuries is the 8th leading cause of death globally and by 2030 it is predicted to become the 5th leading cause of death, unless any action is being taken.

Therefore, the only chance of survival for the accident victims remains emergency care and treatment they receive within the first hour of the tragedy (called the golden hour) by a competent health care professional.

Learning Objectives

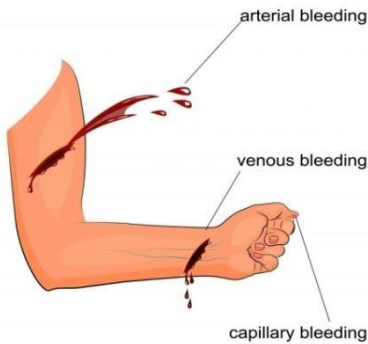
1. Recognize critical injuries based on-mechanisms, injury patterns & changes in vital signs
2. Articulate and demonstrate the structured and sequential approach to evaluation and stabilization of the trauma patient at a primary level of care: A,B,C,D,E
3. Articulate and demonstrate the procedures required to stabilize the trauma patient
4. Understand the importance and procedure of timely and informed transfer

Controlling Bleeding

Bleeding can be external with visible wounds or internal with no visible wound. Uncontrolled bleeding initially causes weakness. If bleeding is not controlled, the victim will go into shock within a short period of time and finally will die. An adult has about five liters of blood. Losing one liter can result in death. There are three types of bleeding and the type can usually be identified by how fast the blood flows:

<p>Causes- Internal Bleeding</p> <ul style="list-style-type: none"> • Trauma to chest, abdomen, or pelvis • Multiple ribs fracture • Pelvic or Femur bone fracture • Certain medical conditions 	<p>Causes- External Visible Bleeding</p> <p>Damage, cuts and tearing of blood vessels by any type of trauma</p>
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Types of External Bleeding

<p>Arterial bleeding - Arteries transport blood under high pressure. Bleeding from an artery is spurting bleeding</p>	
<p>Venous bleeding - Veins transport blood under low pressure. Bleeding from a vein is flowing bleeding.</p>	
<p>Capillary bleeding - Capillaries also carry blood under low pressure. Bleeding from capillaries is oozing bleeding.</p>	

There are four ways to apply pressure to control catastrophic (life-threatening) hemorrhage in trauma patients and are summarized in the table below. Specific injuries and their management is very vital.


<p>Controlling Bleeding- Actions</p> <ol style="list-style-type: none"> 1. Apply Direct Pressure 2. Elevate the Bleeding Body Part 3. Apply Bandages 4. Indirect Pressure 	
--	---

Table : H-life threatening (catastrophic hemorrhage)

<p>1. Direct pressure with hands on the bleeding site</p> <ul style="list-style-type: none"> ▪ This can be done in 1-2 seconds ▪ Anybody can do it (no training needed) ▪ Caution: wear gloves 	 <p style="text-align: center;">Direct</p>	<p>3. Tourniquet: apply circumferential pressure proximal to the bleeding site</p> <ul style="list-style-type: none"> ▪ Improvised or custom-made tourniquet strap
--	--	--

2. Pressure dressing with gauze or cloth applied tightly

- Within a minute and requires no formal training
- Must be tight to stop the bleeding
- If bleeding is severe, care is needed to avoid complications the effect is on top of it



Pressure dressing

3. Wound packing if tourniquet cannot be applied (groin and axilla)

- Need basic skills to perform
- Takes a few minutes to prepare. Wound is packed with thick gauze, cotton or cloth and pressure is applied temporary or may not be effective Tourniquet: apply circumferential pressure proximal to the bleeding site
- Needs a few minutes to apply
- Effective for many hours



Improvised with foley catheter and artery forceps

Controlling Bleeding- Important Points

- Tourniquet is only applied as last resort if all other methods have failed
 - Lay down the casualty in a comfortable position
 - Look and treat for shock if present
- Bleeding from mouth, nose, ears, rectum or other opening signify internal bleeding
 - For internal bleeding apply ice to reduce pain and swelling - call for help

Apply Direct Pressure

- Put firm pressure directly on the wound using a clean cloth or dressing.
- If the first dressing becomes soaked with blood, place another dressing on top of it.
- Keep pressing on the dressing and wrap a pressure bandage firmly around the wound to hold it in place.
- Continue applying pressure for 10–30 minutes.

Elevate the Bleeding Body Part

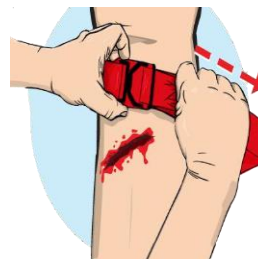
- Lift the injured area above the level of the heart.
- Elevation helps reduce pain, throbbing and swelling.

Apply Bandages

- Once the bleeding starts to slow or stop with direct pressure:
 - Keep the pressure in place by wrapping a firm pressure bandage over the dressing.

Indirect Pressure / Tourniquet

- Use indirect pressure or a tourniquet only for severe arterial bleeding that does not stop with direct pressure and elevation.
- Apply pressure to the correct pressure point along with pressure and elevation to slow the bleeding.
- A tourniquet should be used only as a last resort and only if an arm or leg is partly or completely cut off or bleeding severely.
- Place the tourniquet about 5 cm above the wound.
- Never cover the tourniquet with clothing or bandage.
- Always note the exact time the tourniquet was applied.



SESSION 2.7

FRACTURES, DISLOCATION AND SPRAIN

Introduction

Musculoskeletal injuries such as fractures, dislocations and sprains are common during accidents, disasters and everyday emergencies. Prompt recognition and proper first aid can prevent further injury, reduce pain and improve recovery. This session equips PHC-level responders and CERT members with practical knowledge and techniques to manage these injuries safely until professional care is available.

Session Objectives

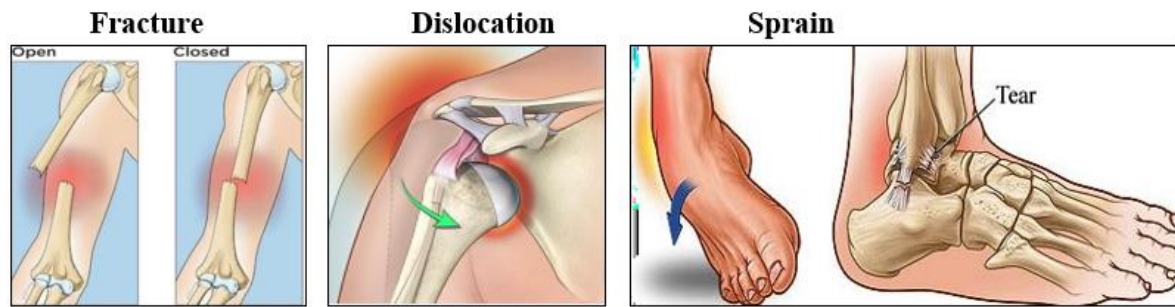
By the end of this session, participants will be able to:

1. Differentiate between fractures, dislocations and sprains.
2. Identify types of fractures (open and closed).
3. Apply basic immobilization techniques for injured limbs.
4. Use slings and supports for upper and lower limb injuries.
5. Understand the importance of minimizing movement and providing comfort.

Content

1. Definitions

Injury Type	Definition / Key Features
Fracture	Break in a bone; can be closed (skin intact) or open (bone protrudes through skin)
Dislocation	Bone displaced from its normal joint position; can be partial or complete
Sprain	Overstretching or tearing of ligaments; pain, swelling, but no bone displacement



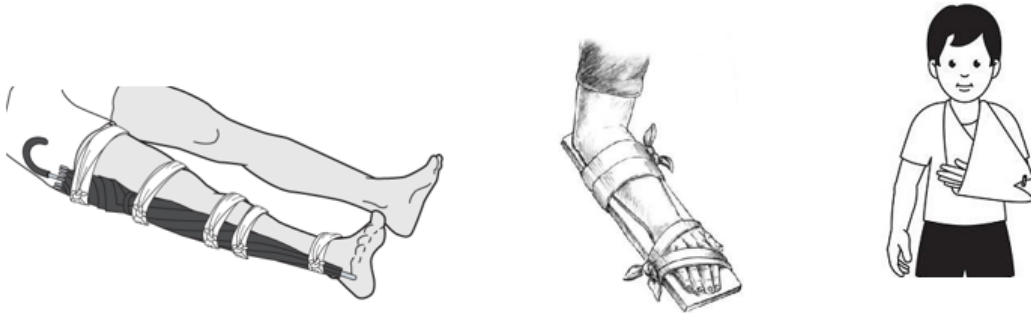
2. First Aid Principles

1. **Immobilization:** Prevent movement of the injured area to avoid further damage.
2. **Pain Reduction:** Support the injured limb to reduce discomfort.
3. **Avoid Manipulation:** Never try to push a dislocated bone back in place unless trained.
4. **Monitor Circulation:** Ensure distal circulation, sensation and movement are intact.
5. **Seek Professional Help:** Arrange for prompt transport to healthcare facility.

3. Immobilization Techniques

Injury	First Aid Action
Fracture	Use splints or padded supports to immobilize the affected limb. Avoid moving the broken bone unnecessarily.
Dislocation	Support the joint in the position found; immobilize with sling or bandage. Do not attempt to relocate.
Sprain	Rest the joint; apply elastic bandage for compression; elevate limb if possible.

Special Note: For arm fractures or injuries: use a **triangular bandage** to make a sling and support the limb.



Sprain – First Aid

R-Rest

I- Ice- pack application to reduce pain and swelling

C-Compression Bandage






E-In case of swelling elevating the affected limb

Also immobilize the affected limb or part till patient can move it him/herself without significant pain



Fractures and Dislocation- Important Points

Do not

-  Move the patient till the affected part has been secured and supported
-  Try to press down directly on broken bones which are out of place
-  Try to force the dislocated joint back to its place
-  Try to move the affected part unnecessarily
-  Force victim/patient to eat or drink

Always Remember !You cannot tell the difference between, fracture, dislocation and sprain

A guide to the 'Rest, Ice, Compression and Referral' technique



Injuries such as **sprains**, **strains** and **fractures** can happen easily. They often happen after accidents or falls, or during sport or other physical activities.



When an injury happens, some internal bleeding and swelling can develop in the injured area. Too much swelling can cause extra damage.

- R** — Rest
- I** — Ice
- C** — Compression
- E** — Elevation
- R** — Referral

RICER is a first aid technique used in the first 48 hours after a sprain, strain or fracture. It can limit swelling and help speed up recovery.

R - Rest, I - Ice, C - Compression



R - Rest

After injury, stop your child taking part in any painful activity. Moving the injured part can increase bleeding and swelling, and slow down the healing process. Don't let your child keep playing.



I - Ice

Use an ice pack to reduce pain and swelling in the affected area. Apply ice for 15 minutes every four hours for 24 hours, then for 15 minutes every four hours for 24 hours.



C - Compression

Bandage the area firmly (but not too tightly), starting just below the injured area and moving up. Overlap each layer by half. Finish bandaging about one hand's width above the injured area.

4. Practical Demonstration and Hands-on Practice

- Demonstrate application of triangular bandage slings for upper limb injuries.

- Demonstrate splinting techniques for arm, forearm and leg fractures using improvised materials.
- Participants practice immobilizing simulated injuries on mannequins or peer volunteers.

Activity: Injury Immobilization Drill (20 minutes)

Objective: Build skill in immobilizing fractures, dislocations and sprains safely.

Instructions:

1. Divide participants into small groups.
2. Each group practices:
 - Making a sling with a triangular bandage
 - Splinting a limb using sticks or rolled cloth
 - Elevating and supporting a sprained ankle or wrist
3. Rotate roles so each participant practices both as first responder and patient.

Key Takeaways

1. Immobilization is the cornerstone of managing fractures, dislocations and sprains.
2. Never attempt to force bones back into place.
3. Support, comfort and reduce movement to prevent further injury.
4. Monitor distal circulation and seek prompt professional care.
5. Proper first aid reduces pain, prevents complications and can save lives in severe injuries.

Reflection Questions

1. How can you differentiate between a fracture, dislocation and sprain in an emergency?
2. Why is it important not to try to relocate a dislocated joint?
3. How would you improvise a splint if professional equipment is not available?
4. What are the key considerations when applying a triangular bandage sling?

SESSION 2.8

MANAGEMENT OF SPINAL INJURIES AT PHC LEVEL

Introduction

Spinal injuries are serious emergencies that can result from road traffic accidents, falls from heights, or building collapses. Improper handling of a patient with a spinal injury can lead to paralysis or other permanent complications. This session equips PHC-level responders and CERT members with knowledge and practical skills to recognize, stabilize and safely manage spinal injury victims until professional medical help arrives.

Session Objectives

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

1. Identify signs and situations that indicate a spinal injury.
2. Apply correct first aid principles to minimize further damage.
3. Demonstrate safe patient positioning and immobilization techniques.
4. Execute safe transfer methods for spinal injury patients, including the log roll.
5. Understand precautions when the patient is wearing a helmet.

Content

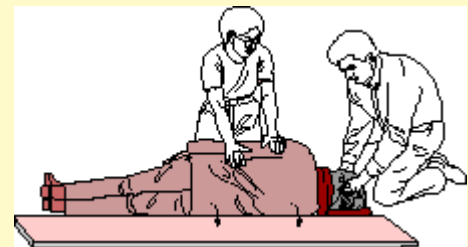
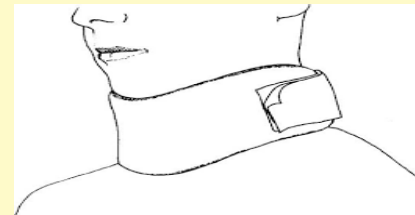
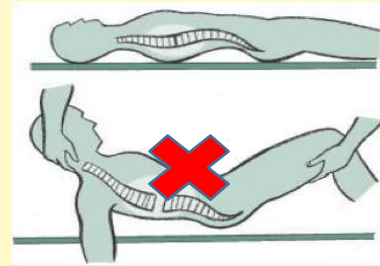
1. Definition and Causes

- **Spinal injury:** Any injury to the backbone or spinal cord.
- **High-risk situations:**
 - Road traffic accidents
 - Falls from heights
 - Building collapses

2. First Aid Actions for Spinal Injury

1. Only move if life is in danger or the patient is unconscious.
2. Keep the back aligned on a firm surface.
3. Apply as first priority to stabilize the neck.
4. Ensure airways are open while maintaining neutral spine position.
5. Keep head neutral, feet together, pelvis aligned with shoulders.
6. Use spine board; if unavailable, use a hard board.
7. Move patient carefully if absolutely necessary, keeping spine aligned.
8. Do not remove unless patient vomits, requires CPR, or has suspected head injury.

Arrange ambulance or professional medical transport immediately.



3. Practical Activity: Spinal Injury Handling Drill (15 minutes)

Objective: Practice safe handling, immobilization and transfer of spinal injury victims.

Instructions:

1. Divide participants into small groups: patient, responders and observers.
2. Demonstrate neutral spine positioning and application of cervical collar.
3. Practice log roll technique using a spine board or improvised hard board.
4. Observer provides feedback on technique, alignment and safety precautions.

Key Takeaways

1. Spinal injuries require minimal movement to prevent permanent damage.
2. Neutral alignment of head, neck and pelvis is essential.
3. Cervical collars should be applied promptly.
4. Helmets should only be removed in life-threatening situations.
5. Safe transfer techniques such as log roll are critical for patient safety.

Reflection Questions

1. What are the key signs that indicate a spinal injury?
2. Why is keeping the spine in neutral alignment critical?
3. When is it acceptable to remove a helmet from a spinal injury patient?
4. How would you improvise a spine board if one is unavailable?
5. What are the main risks of moving a spinal injury patient improperly?

SESSION 2.9

MANAGEMENT OF BURN INJURIES AT PHC LEVEL

Introduction

Burns and scalds are common injuries, especially among children and can range from minor superficial burns to life-threatening deep burns. Prompt and correct first aid can reduce pain, prevent infection and minimize long-term complications. This session equips PHC-level responders and CERT members with the knowledge and practical skills to manage burn injuries effectively at the community level.

Session Objectives

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

1. Identify different types and severity levels of burn injuries.
2. Apply immediate first aid to cool and protect burn injuries.
3. Demonstrate safe covering and dressing of burn wounds.
4. Understand precautions to prevent further injury or infection.
5. Know when to refer patients to higher-level care.

Content

1. Types of Burns

- **Superficial (First-degree):** Red, painful, no blisters, affects top layer of skin.
- **Partial-thickness (Second-degree):** Red, blistered, very painful.
- **Full-thickness (Third-degree):** White or charred skin, may be painless due to nerve damage, serious injury.

First Degree: Are superficial and involve epidermis.

No blisters. Skin is red: Mild pain present, heals spontaneously.



Second Degree Superficial: Involved up to dermis (partial thickness).

Blistering, sloughing of outer skins: **very painful**, blistering, blanches to touch. Usually heals from intact skin appendages with some skin discoloration (7-21 days)

Second Degree Deep: injury through the epidermis deep into dermis. Pale mottled, does not blanch to touch, painful to pin prick. Heals with scarring (>21 days)



Third degree: Full thickness of skin up to fascia. Skin thickened, hard leathery, pale and charred, eschar: **No pain**, No visible skin appendages. Skin grafting necessary



Fourth Degree: Involves deep tissue: muscle & bone. **No pain**



Table: Types of Burns and Their Sources

Type of Burn	Common Sources / Causes
1. Thermal Burns	<ul style="list-style-type: none"> - Fire and heat - Steam burns - Hot liquids (scalds)
2. Electrical Burns	<ul style="list-style-type: none"> - Contact burns - Spark/electrical arc burns - Lightning strikes
3. Chemical Burns	<ul style="list-style-type: none"> - Acids - Alkalis
4. Inhalation Burns	- Inhalation of toxic fumes, smoke, or hot gases

3. First Aid Actions for Burns

Action	Details / Key Points
Cool Burnt Area	Immediately run cool (not ice-cold) water over the burn for 10–20 minutes to stop the burning process.
Remove Constrictive Items	Carefully remove rings, watches, belts, or tight clothing near the burn before swelling occurs.
Cover the Burn	Cover the burn loosely with a sterile, non-stick dressing or clean cloth to protect from infection.
Avoid Home Remedies	Do not apply butter, oils, toothpaste, or ointments, as they can worsen infection.
Pain Management	Administer analgesics as appropriate if available.
Monitor for Shock	Burns covering large areas may cause shock; keep patient lying down, warm and calm.
Refer if Severe	Deep, extensive, chemical, electrical, or facial burns require immediate professional care.

Cool Burnt Area



Cover the injured area



Special Considerations for Burn Patients

The **HABCDE protocol** helps ensure key priorities are met during the initial management of burn patients. These include:

- ✓ Assessing for associated trauma or unstable medical conditions
- ✓ Securing the airway—particularly important because upper airway burns can cause rapid obstruction
- ✓ Initiating IV fluid resuscitation
- ✓ Preventing hypothermia
- ✓ Providing appropriate pain relief, as burns are extremely painful
- ✓ Calculating the Total Burn Surface Area (TBSA) to determine required fluid resuscitation
- ✓ Arranging safe transfer to a designated burn center

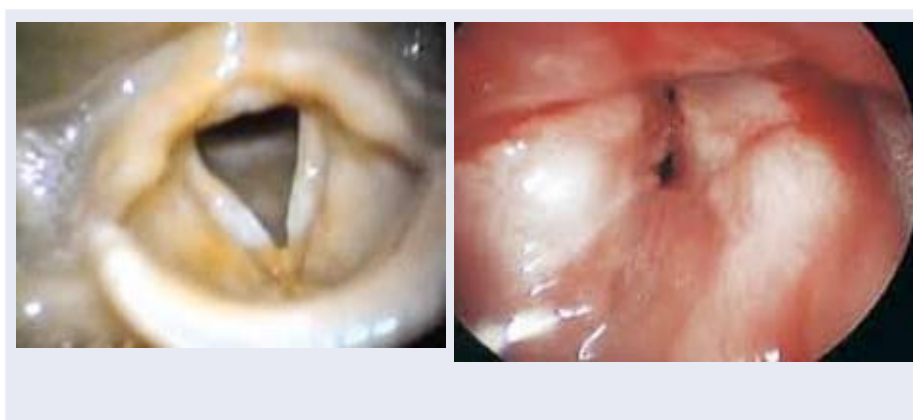
Additional Considerations

Burn injuries often present unique challenges that require heightened attention.

Airway Management

Upper airway involvement must be carefully and proactively assessed in all burn patients. Even patients who appear stable and can talk normally may suddenly develop airway obstruction due to progressive laryngeal edema following burns.

Figure: Airway Edema



Signs Suggestive of Airway Burns

- Facial burns
- Singed facial or nasal hair
- Presence of carbonaceous (sooty) sputum
- Hoarse or altered voice
- Sore throat
- Stridor

Assessment of Burns

Burn assessment involves evaluating both the **surface area** and the **depth** of the burn injury.

1. Surface Area Assessment (TBSA)

Use the **Rule of Nines** for adults and the **Lund and Browder chart** for children.

Key Points for Surface Area Assessment

- **Erythema is not included** in TBSA calculation.
- **Lund and Browder Chart:**
 - Most accurate method
 - Adjusts for changes in body proportions with age
 - Preferred for children
- **Wallace Rule of Nines:**
 - Quick and simple
 - Less accurate in children
- **Palmar Method:**
 - The patient's **palm plus fingers = 1%** of TBSA

2. Depth of Burns

First-Degree Burns

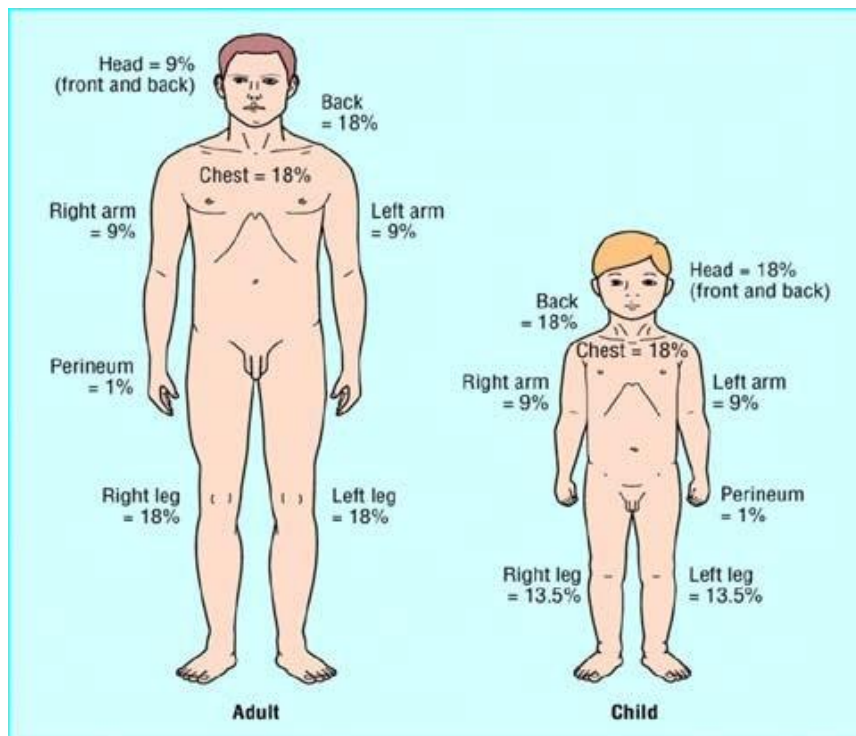
- Involve only the epidermis (superficial burn)
- Wound is pink, blanches with pressure **and** is very painful

Second-Degree Burns

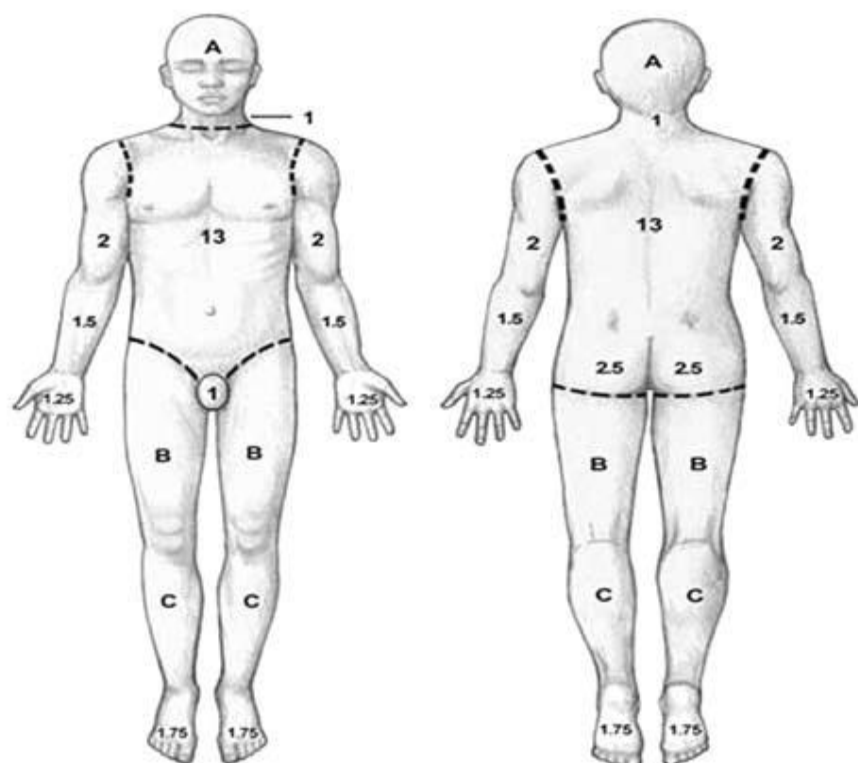
- Depth varies depending on dermal involvement
- Wound appears white to dark red
- Less painful or painless
- No blanching with pressure
- Hair follicles can be easily pulled out

Third-Degree Burns

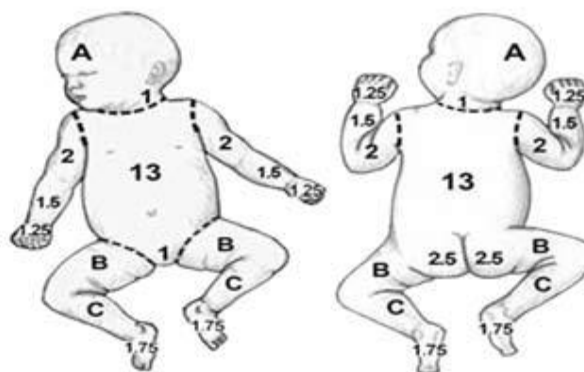
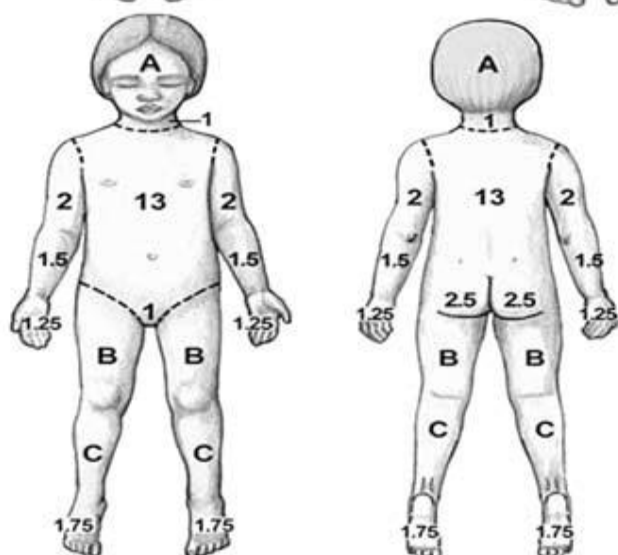
- Full-thickness skin destruction
- May extend to deeper tissues
- Wound is insensate (no pain) due to nerve destruction



Lund and Browder Charts for area of body burnt



Burnt area	%
Head	
Neck	
Trunk (front)	
Trunk (back)	
Arm (right)	
Arm (left)	
Hand (right)	
Hand (left)	
Buttock (right)	
Buttock (left)	
Genitals	
Leg (right)	
Leg (left)	
Feet (right)	
Feet (left)	
Total burn area	



Age (years)	Under 1	2-4	5-9	10-14	15	Adult
A — ½ of head	9½	8½	6½	5½	4½	3½
B — ½ of one thigh	2¼	3¼	4	4½	4½	4¾
C — ½ of one leg	2½	2½	2¾	3	3¾	3

4. Practical Activity: Burn Care Drill (10 minutes)

Objective: Practice immediate cooling, covering and patient reassurance for burn injuries.

Instructions:

1. Demonstrate cooling technique on a mannequin or volunteer using water spray or wet cloth.
2. Participants practice covering the burn with sterile or clean dressing.
3. Discuss scenarios for mild vs. severe burns and referral decisions.

Key Takeaways

1. Immediate cooling is the most important first aid step for burns.
2. Protect the burn with a clean, loose dressing to prevent infection.
3. Never use home remedies that can worsen injury.
4. Monitor for signs of shock, especially in extensive burns.
5. Severe burns require urgent referral to higher-level facilities.

Reflection Questions

1. What is the first step you should take for any burn injury?
2. Why should ice or home remedies not be used on burns?
3. How do you determine whether a burn requires referral to a hospital?
4. What precautions should be taken to prevent infection in burn patients?
5. How would you manage a child with a scald from hot water at home?

SESSION 2.10

DEHYDRATION AND HEAT STROKE MANAGEMENT AT PHC LEVEL

Introduction

Dehydration and heat stroke are common medical emergencies, especially during hot weather or in disaster-affected communities. Dehydration occurs when the body loses fluids faster than it can replace them, which can progress to heat exhaustion and heat stroke. Heat stroke is a life-threatening condition caused by prolonged exposure to high temperatures, resulting in failure of the body's temperature regulation. Early recognition and intervention are critical for preventing complications and fatalities.

Session Objectives

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

1. Recognize the signs and symptoms of dehydration and heat stroke.
2. Administer immediate first aid for dehydration and heat stroke.
3. Implement preventive measures to reduce risk in community settings.
4. Know when to escalate care and refer patients to higher-level facilities.

Content

1. Dehydration

Definition: Loss of body fluids faster than replacement, leading to impaired body function.

Causes:

- Excessive sweating, diarrhea, vomiting
- Insufficient fluid intake
- Fever or prolonged illness

Signs and Symptoms:

- Dry mouth and tongue
- Thirst
- Reduced urine output or dark-colored urine
- Weakness or fatigue
- Dizziness or confusion

First Aid Actions for Dehydration:

Action	Details / Key Points
Rehydrate Patient	Encourage oral fluids: water, ORS (Oral Rehydration Solution), clear soups.
Monitor Vital Signs	Pulse, breathing and alertness should be monitored.
Rest in Shade	Keep patient seated or lying in a cool, shaded area.
Avoid Sugary or Caffeinated Drinks	These can worsen dehydration.
Seek Medical Attention	If severe dehydration or patient unable to drink fluids.

2. Heat Stroke

Definition: Failure of the body's temperature regulation due to prolonged exposure to heat, often in combination with dehydration. Body temperature may reach 40°C (104°F) or higher.

Signs and Symptoms:


- High body temperature
- Hot, dry skin or profuse sweating
- Rapid pulse, dizziness, or fainting
- Confusion, disorientation, or unconsciousness
- Nausea or vomiting

First Aid Actions for Heat Stroke:

Action	Details / Key Points
Move to Cool Area	Place the patient in a shaded or air-conditioned environment.
Cool the Body	Remove excess clothing, apply cool wet cloths, fanning, or immerse in cool water if available.
Rehydrate	Offer water or ORS if patient is conscious and able to drink.
Monitor Vital Signs	Keep track of pulse, breathing and level of consciousness.
Seek Emergency Help	Heat stroke is life-threatening; call ambulance or refer to higher facility immediately.

SPOT A STROKE

LEARN THE WARNING SIGNS AND ACT FAST



B







E

F

A

S

T

BALANCE
 LOSS OF
 BALANCE
 HEADACHE
 OR


EYES
 BLURRED
 VISION

FACE
 ONE SIDE OF
 THE FACE IS
 DROOPING

ARNS
 ARM OR LEG
 WEAKNESS

SPEECH
 SPEECH
 DIFFICULTY

TIME
 TIME TO
 CALL FOR
 AMBULANCE



3. Practical Activity: Heat Emergency Drill (10 minutes)

Objective: Practice recognizing dehydration and heat stroke and applying first aid.

Instructions:

1. Simulate scenarios where a community member shows signs of dehydration or heat stroke.
2. Participants practice moving patient to shade, cooling techniques and encouraging rehydration.
3. Discuss warning signs requiring urgent referral to medical facility.

Key Takeaways

1. Early recognition of dehydration can prevent progression to heat stroke.
2. Cooling the body and rehydration are immediate priorities in heat-related emergencies.
3. Heat stroke is a life-threatening emergency; urgent referral is critical.
4. **Prevention through hydration, rest and shade is essential in hot environments.**

Reflection Questions

1. What are the early warning signs of dehydration?
2. How can dehydration lead to heat stroke?
3. What are the first steps to manage a patient with heat stroke?
4. When should you escalate care and refer a patient with dehydration or heat stroke?
5. How can communities prevent heat-related illnesses during summer or emergencies?

SESSION 2.11

SNAKEBITE MANAGEMENT AT PHC LEVEL

Introduction

Snakebite is a relatively common medical emergency in certain districts, particularly in rural Sindh. The severity of envenomation depends on the type and size of the snake, the victim's age and health, the location of the bite and how quickly first aid is administered. Common venomous snakes in Sindh include Cobra, Viper and Krait. Prompt recognition and proper first aid are crucial to prevent serious complications or death.

Session Objectives

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

1. Identify the signs and symptoms of snakebite.
2. Apply appropriate first aid techniques to minimize venom spread.
3. Avoid harmful interventions commonly practiced in the community.
4. Safely transport and refer the victim to a health facility.

Content

1. Signs and Symptoms of Snakebite



Observation	Details
Bite Marks	Two puncture wounds at the bite site
Local Effects	Swelling, pain, redness, bruising around the bite
Neurological Signs	Numbness around face and mouth, dizziness, headache, blurred vision, convulsions
Cardiovascular	Elevated heart rate
Respiratory	Difficulty breathing
Gastrointestinal	Nausea, vomiting, excessive thirst
Other	Fever, excessive sweating

2. First Aid Actions for Snakebite

Participants should follow these steps immediately after a bite:

Action	Key Points
Stay Calm	Reassure the victim, reduce panic and movement
Wash Wound	Clean bite site gently with soap and water
Remove Constrictions	Remove jewelry, rings, tight clothing from affected limb
Pressure Immobilization	Apply a firm bandage over bite site and immobilize limb; ensure a finger can pass under the bandage
Minimize Movement	Keep victim still; only walk if absolutely necessary
Transport Safely	Use a stretcher to move the victim to a location for professional medical care
Recovery Position	If vomiting occurs, place patient on left side; monitor airway and breathing
Reassure	Continuously calm and support victim
Call for Help	Contact ambulance or nearest health facility for urgent evacuation

3. Actions to Avoid (“Do Not”)

Unsafe Practice	Reason
Apply ice	Can worsen tissue damage
Cut the wound	Increases risk of infection and bleeding
Suck venom with mouth	Ineffective, risk of infection
Apply tourniquet	Can cause tissue necrosis
Burn wound or electric shock	Dangerous and harmful
Use herbs or black stone	No scientific benefit, delays treatment
Visit traditional healer	Delays proper care
Capture the snake	Risky and unnecessary

SIGNS & SYMPTOMS OF SNAKEBITE

NEUROTOXIC

Cobra



SYMPTOMS

- Local pain & swelling (Cobra only)
- Heavy eyelids & weak neck
- Difficulty in swallowing & speaking
- Stomach pain (Krait only)
- Numbness of lips & tongue

SIGNS

- Venom attacks nervous system causing descending paralysis
- Respiratory failure

Krait



HAEMOTOXIC

Russells Viper



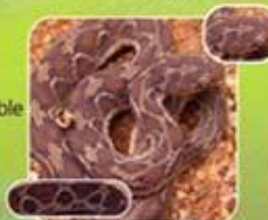
SYMPTOMS

- Local pain
- Bleeding & swelling
- Bruising & bleeding away from bite site

SIGNS

- Venom attacks blood system causing uncontrollable bleeding from the area of snakebite
- Epistaxis
- Conjunctival Haemorrhage
- Internal bleeding
- Shock

Sawscaled Viper



Hump-nosed Pit Viper



Do's in a Snake Bite

FIRST AID FOR SNAKEBITE



Do it **R·I·G·H·T**



REASSURE

- 70% of bites are from non-venomous snakes
- Only 50% of bites from venomous snakes envenomate, the rest are dry bites

IMMOBILISE

- As if for a broken limb with a cloth and/or splint
- NO tight bandages
- NO washing, cutting or sucking bite site

GET TO **H**OSPITAL

- Without delay
- NO traditional treatments

TELL TALE **S**IGNS

- Mark rate of swelling
- Note onset time of symptoms & tell the doctor

4. Practical Activity: Snakebite Response Drill (10 minutes)

Objective: Practice assessment and first aid for snakebite in a controlled setting.

Instructions:

1. Simulate a snakebite scenario using a mannequin or volunteer.
2. Participants identify symptoms, apply pressure immobilization and demonstrate safe transport techniques.
3. Discuss unsafe practices and community myths that should be avoided.

Key Takeaways

1. Early first aid and calm behavior can prevent the spread of venom.
2. Immobilization and minimizing movement are critical before professional care.
3. Never perform harmful interventions such as cutting, suction, or applying ice.
4. Rapid referral to a health facility is essential for survival.

Reflection Questions

1. What are the first signs that indicate a snakebite requires urgent medical attention?
2. How does pressure immobilization help in managing snakebite?
3. Which common community practices should be avoided and why?
4. How would you transport a snakebite victim safely to the PHC or hospital?
5. How can community awareness reduce snakebite fatalities?

SESSION 2.12

DROWNING MANAGEMENT AT PHC LEVEL

Introduction

Drowning occurs when a person is unable to breathe due to submersion in water or any liquid, leading to water entering the respiratory tract. It is a life-threatening emergency where survival depends on prompt rescue and immediate first aid. Primary healthcare staff and community responders need to act quickly to restore breathing and circulation, preventing hypoxia and further complications.

Session Objectives

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

1. Recognize the signs of drowning and respiratory distress.
2. Perform effective CPR and rescue breaths for drowning victims.
3. Place a recovered victim in the correct recovery position.
4. Understand the priorities of care for water-related emergencies.

Content

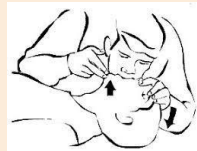



1. Initial Assessment of Drowning Victim

Participants should check:

- Responsiveness of the victim (shout and gently shake).
- Airway obstruction and presence of water.
- Breathing and circulation.

2. Drowning First Aid – CPR Sequence

Step	Action
Rescue Breaths	Give 5 initial rescue breaths to provide oxygen to lungs
Chest Compressions	Administer 30 chest compressions at a rate of 100–120 per minute
Continue CPR	Alternate 2 rescue breaths with 30 compressions until professional help arrives or victim recovers
Recovery Position	If victim starts breathing normally, place on side to maintain open airway

Start with 5 Rescue Breaths	
Give 30 chest compressions	
Continue CPR till recovery	
On breathing - Recovery position	

3. Additional Drowning Care

- Remove wet clothing and keep the victim warm to prevent hypothermia.
- Monitor vital signs continuously until emergency services arrive.
- Ensure safe transport to a health facility if necessary.

4. Practical Activity: Drowning Rescue Drill

Objective: Practice CPR and rescue procedures for a drowning victim.

Instructions:

1. Use a mannequin or simulate a drowning scenario.
2. Practice 5 rescue breaths followed by 30 chest compressions.
3. Place the victim in the recovery position once spontaneous breathing resumes.
4. Discuss challenges in performing CPR in water-related emergencies.

Key Takeaways

1. Quick rescue and immediate first aid are crucial for drowning survival.
2. Rescue breaths followed by chest compressions restore oxygen and circulation.
3. Recovery position prevents airway obstruction after breathing resumes.
4. Continuous monitoring and professional care are essential.

Reflection Questions

1. What are the immediate steps you should take when reaching a drowning victim?
2. Why is it important to give initial rescue breaths before chest compressions in drowning?
3. How does the recovery position help a victim after regaining breathing?
4. What precautions should be taken to prevent hypothermia after a drowning incident?
5. How can PHC staff and community responders prepare for water-related emergencies?