

Training Manual
Participants' Guide

Community Based Disaster Risk Management

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Preface

PDMA Sindh recognizes the importance of organized, trained and well prepared communities in the Province for reducing the risks which the people in the Province face. Therefore, the promotion of Community Based Disaster Risk Management-CBDRM is one of the foremost objectives of PDMA, Sindh. The CBDRM approach of PDMA Sindh necessitates that community work cohesively to gain information about the likely hazards in community, undertakes vulnerability assessment, capacity mapping in order to plan and initiate appropriate hazard-specific protective actions, learn relevant response skills, make local resources available, and ensures continuity of risk reduction measures. Moreover, Emergency response as a part of CBDRM is particularly essential in remote villages (*Ghoots*), of province where professional emergency responders and health centers/ hospitals are not immediately accessible.

In the past, several government and non-government agencies have worked to create Disaster Risk Management –DRM and Emergency Response –ER (Basic First Aid, firefighting and Search and Rescue) training material and provide training to the communities. However, PDMA Sindh observed that this work was being done in isolation and with little consensus among various stakeholders regarding standards and quality of training contents. This resulted in varying training materials, training duration, training standards and outcomes, especially those connected to Emergency Response (Basic First Aid, firefighting and Search and Rescue) knowledge, competencies and skills across Province.

Therefore, in an effort to create consistency, standardization and to ensure high quality DRM and ER (First Aid , firefighting and Search and Rescue) training for communities and community level organizations throughout the Province, PDMA Sindh is working in collaboration with World Bank to organize communities across Sindh in the form of Village Disaster management Committees VDMC and trained emergency response teams at the village level for establishing effective disaster/emergency management system in the Province.

However, in order to put forward a need based high quality curriculum for mobilizing and capacity building of communities, extensive consultations and assessments were undertaken to analyse the situation and identify the training needs of communities. The knowledge (training material) contained in the manuals is formulated on the basis of the findings of consultations and analyses. The training material is specifically created according to needs of the rural and urban communities of Sindh, Province. This curriculum will be piloted in six most vulnerable Districts of Sindh, during 2019- 20. It is envisaged that the pilot shall provide PDMA, Sindh the basis on which further revision and refinement of the contents and activities can be undertaken, to formulate a high quality standardized disaster risk management and emergency response curriculum well suited to meet the needs of communities across Sindh, Province.

The CBDRM Manual – Participants Guide provides information and guidelines on reducing disaster risks and managing emergencies at community level. It consists of two parts; the first part exclusively deals with information on community mobilization, disaster risk assessment and planning while the part two provides information about First Aid, Firefighting and Search and Rescue skills required at community level. The knowledge contained in the manual is intended for all the rural and urban communities, especially in Sindh. However, it is essential to supplement the emergency response (Basic First Aid, Firefighting, Search and Rescue) information given in part 2 of the manual with guided skill learning training.

Overview

1. Purpose of - CBDRM Training Manual -Participants Guide

The primary purpose of the manual is to prepare communities to identify risk (*hazards and vulnerability conditions*) in the community and collectively plan to reduce it, while considering local available capacities and resources that can be utilized in reducing disaster risk.

2. Objectives of - CBDRM Training Manual -Participants Guide

- 1) To impart knowledge and skills needed to undertake disaster risk assessment and planning at village and union council level
- 2) To assist communities in organizing village/ union council level disaster management committees UC/V DMC and forming community level emergency response teams -CERT
- 3) To teach basic emergency response skills for rescuing and providing immediate (First-Aid) care to an injured or ill person
- 4) To provide information on fire suppression and basic fire firefighting

3. Contents

The CBDRM Manual – Participants Guide provides information and guidelines on reducing disaster risks and managing emergencies. It consists of two parts; the first part exclusively deals with information on DRM at community level while the part two consists of various emergency response skills required at community level.

1) Part -1 Disaster Risk Management -DRM

- Section- 1 Simplified DRM, Definitions for Communities
- Section- 2 Introduction to CBDRM and its Process at Community Level
- Section- 3 Organizing Communities in Sindh, Province
- Section- 4 Participatory Disaster Risk Assessment Process
- Section- 5 Participatory Disaster Risk Management-DRM Planning

2) Part- 2 Emergency Response (Basic First Aid, Firefighting, Search and Rescue)

- Section- 1 CERT Organization, Roles and Priorities First Aid
- Section- 2 CERT First Aid- Actions & Priorities
- Section- 3 CERT Light Search & Rescue- SAR -Actions & Priorities
- Section- 4 CERT Firefighting & Fire Suppression- Actions & Priorities

4. Intended Audience / Readers

The knowledge contained in the manual is intended for all the members of rural and urban communities, especially in Sindh. However, it is essential to supplement the emergency response (Basic First Aid, Firefighting, Search and Rescue) information given part 2 of the manual with guided skill learning sessions.

5. Prerequisites of Community Level Training Course

Community member of either gender who are 22-45 years with minimum matriculation education, who possess 4 to 5 years of experience in some trade, skill or vocation are suitable to attend this training. It is expected that the participants have reputable standing in the community, an aptitude for helping others and spirit of volunteerism.

6. Duration of Community Level Training Course

The training courses based on this manual are suggested to be designed for 4-5 days. The initial 3 days of training course will be allocated for teaching and imparting necessary knowledge on community mobilization, disaster risk assessment and planning while the 4 and 5 day will be reserved for emergency response (Basic First Aid, Firefighting, Search and Rescue) skill building sessions and practical exercises.

7. The Victim Care/ Emergency Response Steps are Consistent With:

- 1) American Heart Association CPR Guidelines, 2015
- 2) American Red Cross Guidelines for First Aid
- 3) Community Emergency Response Team CERT Basic Training - Federal Emergency Management Agency FEMA, 2011

8. Eligibility to Teach the Part -2 of CBDRM Training Manual – Participants Guide

- Advance First Aid/CPR – Trainer Certification from a recognized organization i.e. Red Cross/Crescent, Rescue 1122 and Civil Defence and others
- Emergency Response (Firefighting and Search and Rescue) - Trainer Certification from a recognized organization / institution i.e. Red Cross/Crescent, Rescue1122 and Civil Defence and others
- Emergency Medical Response Trainer Certification i.e. Advanced Life Support-ALS/ Basic Life Support BLS Trainer Certification from a recognized organization
- Certified Trainer in Emergency Nursing / Paramedics
- Doctor with instructor certification for Emergency Medical Response
- PDMA Sindh certified community level CBDRM training certification

Community Based Disaster Risk Management- CBDRM Training Manual -Participants Guide for Sindh

Part -1 Disaster Risk Management -DRM

- Section- 1 Simplified DRM, Definitions for Communities
- Section- 2 Introduction to CBDRM and its Process at Community Level
- Section- 3 Organizing Communities in Sindh, Province
- Section- 4 Participatory Disaster Risk Assessment Process
- Section- 5 Participatory Disaster Risk Management-DRM Planning

Part- 2 Emergency Response

Basic First Aid, Firefighting, Search and Rescue

- Section- 1 CERT Organization, Roles and Priorities First Aid
- Section- 2 CERT First Aid- Actions & Priorities
- Section- 3 CERT Light Search & Rescue- SAR -Actions & Priorities
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**Community Based Disaster Risk Management-
CBDRM**

**Training Manual Participants Guide
for Sindh**

Part -1

Disaster Risk Management

Acronyms

CBDRM	Community Based Disaster Risk Management
CBO	Community Based Organization
CERT	Community Emergency Response Team
CPR	Cardio Pulmonary Resuscitation
CSO	Civil Society Organization
DMC	Disaster Management Committee
DM	Disaster Management
DPO	District Police Officer
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ER	Emergency Response
EWS	Early Warning System
FEMA	Federal Emergency Management Agency
HVCA	Hazard Vulnerability Capability Assessment
NDMA	National Disaster Management Authority
NGO	Non-Government Organization
PDMA	Provincial Disaster Management Authority
PDRA	Participatory Disaster Risk Assessment
PPE	Personal Protective Equipment
PRA	Participatory Risk Assessment
SAR	Search and Rescue
UC	Union Council
UCDMC	Union Council Disaster Management Committee
UN	United Nations
UNDP	United Nations Development Program
VDMC	Village Disaster Management Committee
WASH	Water, Sanitation and Hygiene
WATSAN	Water and Sanitation

Section- 1

Simplified DRM Definitions for Communities

Section Learning Objectives

The first section aims at making the readers to *understand*:

⇒ Basic concepts & terminologies used in DRM

The terms given below are narrated in very easily and simple language so that they can be easily understood by the local communities.

Source: United Nations, General Assembly, Report on indicators and terminology relating to disaster risk reduction - 1 December 2016

Term	Definition
Capacity	<i>Strengths, abilities and resources available within a community to manage and reduce disaster risks</i>
Emergency	<i>Situation which has the potential to disrupt normal life of people and can cause significant physical damages, but it can be managed and controlled using local resources.</i>
Capacity assessment	<i>To identify and record existing capacities for strengthening and knowing gaps</i>
Disaster	<i>A destructive and harmful event which seriously impact the functioning of a community at a scale that exceeds the capacity of a community to handle using its own resources</i>
Disaster Risk	<i>The potential loss of life, injury, or destruction which could occur within a community</i>
Disaster Risk Assessment	<i>A process to determine the nature and extent of disaster risks by analyzing hazards and evaluating vulnerability conditions</i>

Disaster Risk Reduction	<i>Preventing new and reducing existing disaster risk in community</i>
Community-Based Disaster Risk Management	<i>The involvement of communities in disaster risk management efforts at local level. Combined local action for disaster risk reduction at community level</i>
Hazard	<i>A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and environmental damage. It can be natural or human induced</i>
Early warning system	<i>A system of hazard monitoring, forecasting and dissemination of warning in time to take appropriate actions to reduce disaster risks.</i>
Mitigation	<i>The lessening or minimizing of the adverse impacts of a hazardous event</i>
Preparedness	<i>Activities and action carried out to build capacities needed to efficiently manage all types of emergencies and disasters at community level</i>
Prevention	<i>Activities and measures to avoid existing and new disaster risks.</i>
Resilience	<i>The ability of community to resist and successfully recover from the effects of a hazard</i>
Response	<i>Actions taken before, during and after a disaster to save lives, reduce injuries and avoid/ reduce damages</i>
Vulnerability	<i>Conditions and factors which can increase the susceptibility of an individual or a community to the adverse impacts of hazards. Types physical, social, economic and environmental</i>

Learning and Reflection

Q1: What is Disaster?

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Q2: What is Vulnerability?

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Q3: What is Risk?

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Section- 2

Introduction to CBDRM and its Process at Community Level

Section Learning Objectives

This section aims at making the readers to *understand*:

- ⇒ The concept of community based disaster risk management CBDRM
- ⇒ Different steps involved in CBDRM process
- ⇒ Importance, need and benefits of CBDRM for the communities in Sindh Province

1. What is Community?

Community is the combination of two Latin words. "cam" means together and "muni" means serve. Cam-muni- Serve together.

Numerous definitions and explanations of community exist, however the following simplified version will serve or purpose.

Definition:

"A community is a group of people living in one place i.e. city, town, tribe or village, where daily life of each member involves contact with and dependence on other members".

The term "Community" in disaster risk management-DRM refers to:

A group of people living and sharing same geographical area having common interests and dependence on each other, they generally belong to same ethnicity, religion, language, cast and creed.

Small communities exist within larger communities as villages within Union Councils- UCs, UCs within districts and districts within a province, so on. Depending on their location the communities can be urban or rural.

Examples:

Rural Communities Tharparkar



Urban Community Karachi



2. Community Based Disaster Risk Management- CBDRM

Definition:

“Combined local actions by communities to reduce their vulnerabilities and increase their capacities for achieving disaster risk reduction at community level”

The concept of people helping each other individually or in formal or informal groups during emergencies and crisis is not a new concept.

It is a process in which communities are collectively engaged to identify, analyse, monitor, evaluate and reduce disaster risks. During the process communities become aware of their vulnerabilities and start realizing their potentials and capacities.

In simple word when all people in a community collectively think, plan and execute actions which result in making them, their house, their livelihood sources and community assets safe, this whole process is called CBDRM.

Write any CBDRM Examples from your own community:

1

2

Important Note: *The involvement of most vulnerable social groups which include women, elderly, children, ethnic minorities and disabled is considered as vital in CBDRM process.*

3. Importance and Need for CBDRM Approach

Importance and Need:

- 1) *Based on Community Perceptions and Local Knowledge*
- 2) *It Strengthens Cohesion and Cooperation within the Community*
- 3) *Promotes Community Reliance on Their Own Resources*
- 4) *Prepare Communities as First Responders*
- 5) *It Values the Communities*
- 6) *Promotes Sustainability of Risk Reduction Actions*
- 7) *Valuable and Cost beneficial*

3.1. Based on Community Perceptions and Local Knowledge

The communities have local knowledge of vulnerabilities and traditional coping mechanisms suitable for their own particular conditions and environment.

- Local vulnerability enhancing factors
- Indigenous knowledge and capacities
- Local level priorities and concerns
- Past disasters and their impacts
- Vulnerable areas and Weather pattern

The CBDRM process helps in documenting information which assists government authorities and non-governmental organizations-NGOs to formulate more informed and practical strategies for disaster risk reduction and development in community

3.2. It Strengthens Cohesion and Cooperation within the Community

- Communities working together cohesively in crises situation have a better chance to cope with negative impacts of the event and they perform more effectively.
- CBDRM provides a platform to communities to connect more effectively with local government organizations and social structures i.e. CSOs and CBOs.

3.3. Promotes Community Reliance on Their Own Resources

- Being isolated and cut-off from outside assistance in the face of a disaster can prove to be catastrophic for communities and people, CBDRM approach encourages communities to rely on their own resources.

- Utilizing local knowledge and resources (local coping strategies) until professional assistance arrives significantly reduce community's reliance on outside assistance by minimizing their emergency needs and significantly reduce impacts of disasters.
- Moreover, during the recovery when all the external agencies have left, it is the local communities which struggle to rebuild their community in such situation reliance on their own resources becomes very essential.

3.4. Prepares Communities as the First Responders

- Due to exposure and proximity to hazards local communities are first potential victims and also assume most of the responsibilities in immediate response and dealing with the adverse impacts of hazard. The local communities respond first even before assistance from external organizations arrives, CBDRM approach prepares communities to respond effectively.
- Due to restricted access, mobility and information after a disaster or the speed and suddenness of the event, the initial period immediately following a disaster (usually 2-3 days) the affected communities may need to rely on their own resources.

3.5. It Values the Communities

- CBDRM approach emphasizes that communities are not merely a group of recipients and victims, but an active stakeholder in overall mitigation and prevention of risks.

3.6. Promotes Sustainability of Risk Reduction Actions

- CBDRM approach emphasizes that the communities have a lot to lose if they do not address their own vulnerability; while on the other hand, they gain most if they can reduce the impact of disasters resulting in sustainable community-owned risk reduction action plans

3.7. Valuable and Cost beneficial

- In developing countries and relatively poor economies the CBDRM promotes the idea of indigenous, locally available affordable solutions to reduce disaster risks.

4. Responsibility of CBDRM

The first and foremost responsibility of reducing disaster risk is on all community members.

Although, it is the government which has the primary responsibility of safeguarding the lives, properties and livelihood of its citizen in case of disasters and crises, but the individuals and communities who are

at the forefront of any disastrous event have to realize that the first and foremost responsibility of reducing disaster risk is on all community members.

5. Community Based Disaster Risk Management-CBDRM Process

The CBDRM approach necessitates that community work cohesively to gain information about the likely hazards in community, undertakes vulnerability assessment, capacity mapping in order to plan and initiate appropriate hazard-specific protective actions, learn relevant response skills, make local resources available, and ensures continuity of risk reduction measures (Preparedness, Prevention and Mitigation actions).

CBDRM Process

A process of working together as a team:

1) Participatory Risk Assessment

- Gain information about the likely hazards in community,
- To undertake vulnerability assessment,
- To carry out capacity and resource mapping

2) Participatory Risk Reduction Planning

- To plan and initiate appropriate hazard-specific protective actions and vulnerability reduction measures

3) Community-managed implementation

- To act for reducing risks, prepare and learn relevant response skills,
- To make local capacities and resources available for preparedness, mitigation and prevention of disaster risks

4) Monitoring and evaluation

5) Ensuring continuity of all risk reduction measures/actions

5.1. Participatory Risk Assessment (PRA)

This is a diagnostic process to identify the risks that the community faces and how people overcome those risks. The process involves hazard assessment, vulnerability assessment and capacity assessment. In doing the assessments, people's perception of risk is considered. The details will be covered in subsequent session on participatory risk assessment.

5.2. Participatory Disaster Risk Reduction –DRR Planning

This follows after the analysis of the results of participatory risk assessment. People themselves identify risk reduction measures that will reduce vulnerabilities and enhance capacities. These risk reduction measures are then translated into a community Disaster Risk Reduction plan.

5.3. Community-Managed Implementation

Based on the DRR planning process, the community takes the lead to implement the DRR activities proposed in the DRR plan. At such stage it is of vital importance that community should be fully involved to take the ownership at the phase out stage of the project.

5.4. Participatory Monitoring and Evaluation

This is a communication system in which information regarding the progress of ongoing DRR activities and outcomes of accomplished tasks flows amongst all the people involved in the project i.e. the community members, the implementing staff, support agency, concerned government agencies and the donors.

5.5. Ensuring Continuity and Sustainability

Through inclusive and participatory approach the community not only become part of creating plans and decisions, but through implementation (preparedness, prevention and mitigation actions) and monitoring and evaluation develops direct ownership, thus ensuring continuity and preservation of risk reduction efforts.

6. Benefits of CBDRM for The Communities:

6.1. Participatory Approach- Benefits of Working Together:

- Community level informal committees and teams are organized and constituted.
- All members of community are involved in the process, even if not being part of the informal community committees or teams.
- Participation and inclusion of specific groups like women, elderly, children, disabled and ethnic minorities
- A wider stakeholder involvement (both internal and external) is made possible

Stakeholders -CBDRM

1. Beneficiary Community
2. Beneficiary groups in community such as the extremely vulnerable people at risk
3. Service providers such as local and central government institutions,
4. The non-governmental organizations(NGOs) and International NGOs
5. Community Organization i.e. CSO, LSOs, CBOs
6. Health, social-welfare, educational and religious departments and organizations,

7. Bilateral/ multilateral donor agencies i.e. International Development Organizations and United Nations

Name Stakeholders in your Community

- 1.
- 2.
- 3.

6.2. Benefits of Hazard Vulnerability and Capacity Assessment -(Risk Assessment)

- Use of participatory approach for risk assessment ensures incorporation of community's perception of vulnerability and capacity with expert's knowledge of hazard assessment.
- Although the community takes the lead in hazard vulnerability and capacity assessment, however, the importance of scientific and objective risk assessment and planning inputs is not ignored.



6.3. Benefits of Participatory Disaster Risk Reduction Planning (hazard-specific protective and vulnerability reduction actions)

- The communities are at the heart of decision-making (Planning) and implementation of disaster risk reduction activities giving them more access and control to address root causes of vulnerability.
- The concerns of local communities are integrated in risk reduction planning and they are actively involved in implementation and monitoring & evaluation.



Land Stabilization under One UN DRM Joint Programme (NDMA/UNDP-Pakistan)

6.4. Benefits of Preparedness, Prevention and Mitigation –Actions

- Through inclusive and participator approach the community not only become part of creating plans and decisions, but through implementation (preparedness, prevention and mitigation actions) and monitoring ad evaluation develops direct ownership, thus ensuring continuity and preservation of risk reduction efforts.
- This approach guarantees that the community's real needs and resources are considered and a culture of coping with crisis and culture of disaster risk reduction exists
- Training and capacity building inputs from external organizations are according to community needs and planning objectives
- Preventing and mitigating hazard risks improve the economic status and growth in assets create additional developmental opportunities for the community



Learning and Reflection

Q1: What is Community Based Disaster Risk Management- CBDRM?

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Q2: Why do we need CBDRM?

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Q3: What steps are involved in CBDRM?

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Q4: What are benefits of CBDRM?

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Section- 3

Organizing Communities in Sindh Province

Section Learning Objectives

This section aims at making the readers to *know* and *understand*:

- ⇒ The process of formulation of Disaster Management-DM Committees and Emergency Response- ER teams
- ⇒ Duties, roles and functions of DM Committees and ER Teams at village Level

1. Introduction

The concept of people helping each other individually or in formal or informal groups before and during crisis is not a new concept. Many studies of community behavior following any disastrous event show that communities working together cohesively in crises situation have a better chance to cope with negative impacts of the event and they perform more effectively. Working together as organized unit communities can prepare themselves to effectively reduce disaster risks and lessen injuries, loss of lives, and property damages. Moreover, it is also a fact that that community level disaster risk management – DRM initiatives work more effectively, if they are interconnected with local social and political structures of the community and other existing grassroots organizations i.e. local government organizations/ departments, CSOs and CBOs and NGOs.

2. Community Mobilizations

The people / community members must recognize their importance in bringing about positive change in their lives. They are the most potent agents of change who can bring transformation through their people's collective strength. In the process of community mobilization, the communities collectively identify their priorities, problems, needs and propose solutions, directly or through representation. Working together they appoint/ nominate/ propose certain members/groups within community and empower them to address community's common concerns and problems. This process is known as community mobilization. The community mobilization is based on following principles.

- **People are the primary agent of change:** People living in community are the central actors in bringing social change in their lives. Therefore, all initiatives should recognize this importance of the people's role. If any initiatives by outsiders will try to bring change, without the consent and full participation of people, these may result in negative changes or irrelevant and unwanted changes.
- **Organizing is a means, not a solution:** This principle means that only the establishment of a community organization is not enough. It is only a means to achieve the goal which for disaster management is a disaster resilient community.
- **Humble Start:** This means to keep the structure of the community organization simple and the scale of activities small.
- **People's collective strength is the key:** Involvement of maximum stakeholders should be encouraged for problem identification and finding appropriate solutions.
- **Accountability and Participation:** Community level Organizations should encourage participation and be accountable to all the community members
- **Equal representation of all Groups:** It is essential that all groups/ people within a community be represented alike for building harmony and to address issues and concerns of all members.

3. Formation of DM Committees & Organizing ER Teams at village Level

Although, all the households and members in community are integral part of CBDRM process, however, everybody in a community cannot be made responsible for ensuring execution of risk reduction planned actions. At the same time, we have to acknowledge the limitations and capacity of every community member.

3.1. Identifying Existing Community Social Structures/ Organizations.

As a first step it is important to identify already existing organization (s) within the community. It could be cultural, social or development group / organization. Depending on the community utilizing existing popular group for disaster risk management functions is a choice. As this group could be already serving as community venue for consensus-building and collective actions and linked with the government or NGOs, particularly those mandated to manage disasters locally. However, in case there are no existing informal groups /organizations, the VDMC should be organized. The committee should consist of popular members who are characterized by good representations among the different sections of community. Therefore, it is suggested that the community nominates and appoints informal groups to act or their behalf with full confidence.

Identify 2-3 Existing Community Social Structures/ Organizations in your Community

- 1.
- 2.
- 3.

3.1.1. Village Disaster Management Committees VDMC

Disaster risks can be better managed by a disaster management committee on behalf of all community at local level. The committee will ensure that risks are reduced through implementation of the Community DRM plan. Therefore, it is essential to build such committees to unite the communities to address the issue in organized manners and ensure the sustainability. This committee at village level can be called as Village Disaster Management Committees (VDMCs) and at UC level, it can be called as Union Council Disaster Management Committees (UCDMCs). Training and capacity building of community leaders, members of the committees and volunteers are the essential ingredients in order to enable the communities to reduce the consequences of the disasters in an organized manner.

3.1.2. Potential Members of the VDMCs and UCDMCs

The selection of the members for the VDMC can vary from village to village and as per the requirement of CBDRM designed project the community perceptions. A stronger and well represented and organized village committee is essential for effective response. Depending upon the population of the villages, the VDMC members can be increased or decreased. However, there should be at least 15 to 20 members in a balanced VDMC. The suggested/ potential members of the VDMC can be:

VDMC	UCDMC
<p>Potential members of the VDMC</p> <ol style="list-style-type: none"> 1) Village elder / respectable person /influential 2) Local School teacher 3) Imam Masjid or Religious Representative 4) Lady Health Worker- LHW, Lady / Midwife 5) Youth counselors, 6) Farmer/ Fishermen/ Miners/ Hunter/ Gathers/ Herder/ Business owner/ Kissan Representative 7) Representative 1-2 each from vulnerable group women, minorities and disabled people etc. 	<p>UCDMCs the possible members can be:</p> <ol style="list-style-type: none"> 1) Union Council Secretary 2) 2-4 members from each VDMCs with at least 1 female representatives, 3) Local government officials, 4) In-charge Medical Officer, Member from BHU/Dispensary, 5) School Representative- Member from High School/Middle, 6) Representative of Civil Society Organizations 7) Religious Leader/ Imam Masjid 8) Representative from vulnerable group women, minorities and disabled people 9) The members can be further added and reduced as per requirement of community

3.1.3. Community DM Committee Role and Responsibility

The VDMC and UCDMCs can play a pivotal role as the committee members are locals and at the forefront against the disasters.

Responsibilities:

- Serve as a platform for consensus-building and collective risk reduction planning.
- Lead the implementation of the DRM plan and risk reduction activities at community level
- Motivate and encourage other members of the community to support the activities in the plan.
- Developing linkages with local government authorities and local disaster action planning processes by NGOs and INGOS
- Allocation of resources for local risk reduction and development works.
- UCDMC can play an important role in advocating demands of communities to the District and Tehsil Disaster Management Authorities/Committees.
- Ensure concerns of all segments of community including the vulnerable groups are integrated in planning and implementation
- Arrange basic, TOT and refresher courses for VDMCs and UCDMCs members and community volunteers
- Conduct regular meetings and circulate minutes of the meeting among the local government and other important stakeholders and respective VDMCs
- Stockpiling and maintain emergency response kits and update by provision of required equipment
- Etc.....

Roles and Functions:

- Light Search & rescue
- Basic Firefighting and prevention
- Emergency medical assistance including first aid and physiological support to victims
- Assisting in mass casualty management
- Transportation of victims
- Need assessment survey at community level
- Local health facility preparedness
- Early warning
- Community Evacuation
- Provision of food, water and non-food items
- Availability of Temporary shelter
- Repair of critical facilities before and following disaster i.e. bridges, roads and telephone lines
- Ensuring community assets are secure from the impacts of hazards
- Security measures, tracing lost members and family reunification etc.
- Monitor the on-going programmes/ project
- Organize community drills and simulation exercises along with other organizations and neighboring communities
- Maintain community level record of all CBDRM related projects and Volunteers
- Etc.....

3.1.4. Sub –Committees of VDMC/UCDMC

Depending on the need and requirement the VDMC and UCDMC can have further sub- committees for example first aid sub-committee, search and rescue sub-committee, early warning sub-committee, shelter management sub-committee, evacuation sub-committee, protection sub-committee, monitoring

and evacuation sub-committee, liaison sub-committee, capacity building sub-committee, coordination sub-committee and fund raising sub-committee etc.

3.2. Community Emergency Response teams CERT

Although, the state or government has the primary responsibility of safeguarding the lives, properties and livelihood of its citizen, however, at most of the times the communities who are at the forefront are left alone to bear the brunt. Due to restricted access, mobility and information after a disaster or the speed and suddenness of the event, the initial period immediately following a disaster (usually 2-3 days) the affected communities may need to rely on their own resources. Therefore, being isolated and cut-off from outside assistance in the face of a disaster can prove to be catastrophic for communities and people if they are not organized and prepared.

The community level emergency response preparedness utilizing local knowledge and resources until professional assistance arrives, significantly reduce community's reliance on outside assistance by minimizing their emergency needs and significantly reduce impacts of disasters. Another perspective of looking at the importance of timely and effective emergency response through preparedness is to save precious lives of family members and fellow community members.

3.2.1. Formation of Community Emergency Response teams CERT

The CERT is form of sub-committees of the VDMC or UCDMC. These dedicated groups of community volunteers train, prepare and organize to perform basic lifesaving functions during and after the disaster. A team of CERT can consist of minimum 10 to maximum 15 or more members depending on the need and requirement of community.

3.2.2. Potential Members

The emergency response activities can be tough and strenuous. Therefore, the selection of members of CERT is done while considering this factor.

- They should be maturity and have sense of responsibility
- They should be relatively young and able bodied individuals who have an aptitude for life saving actions.
- They should have respect and empathy for human life and suffering

3.2.3. Role and Responsibilities of CERT

The teams work together in an organized manner under their leader and perform following functions:

- Size-up of the scene -Carryout initial assessment and size-up of the scene
- Locating and turning off utilities, such as electricity and natural gas
- Extinguishing small fires
- Conducting light search and rescue operations
- **START**- Simple Triage and rapid Treatment
 - Assess medical needs, number of wounded/ hurt and types of injuries
 - Victim / patient assessment - ABCD

- Treating life-threatening injuries
- Helping and guiding victims to safety or professional help
- Call for help
- Assist and help professional responders if needed

3.2.4. Organization of CERT

At community level can be further divided into different groups.

- 1) Command and Planning Group
- 2) Operation Group
- 3) Logistics and Communication Group

Operation Group: The operation group performs various functions i.e. Search & Rescue-SAR, First Aid and Firefighting. Therefore, it has further different types of sub-groups

- 1) Search & Rescue Group (Water Rescue, Building Collapse Rescue, flood Rescue)
- 2) First Aid / Medical Response Group
- 3) Firefighting Group

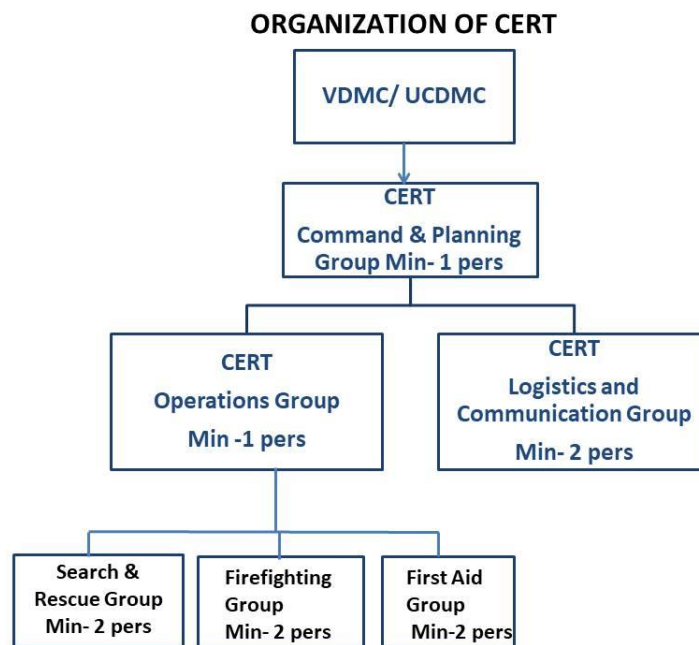


Figure 1: Suggested CERT Organization

Note: This organization is suggested keeping in consideration minimum (essential) 10 volunteers per team. The groups could be expanded if the human and material resources allow. For example, two separate groups could be constituted for command and planning function, similarly two separate groups can be formed for logistics and communication function. Moreover, the number of volunteers in SAR, Firefighting and First Aid could also be reinforced depending on the availability and conditions. The specific function and responsibilities of SAR, Firefighting and First Aid groups will be discussed in part two of the manual.

3.2.5. Importance of ER Training and Capacity Building

In order to prepare the communities to effectively perform emergency response functions needed in the immediate post-disaster period training and capacity building is essential. Trained and equipped community volunteer groups and members of community based organizations can serve as a crucial resource capable of performing (all or some) above mentioned emergency response functions.

Learning and Reflection

Q1: Why do we organize a Community in committees and teams?

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Q2: What are various roles and responsibilities of VDMC?

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Q3: What are roles and responsibilities of Community ERT?

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Section- 4

Participatory Disaster Risk Assessment Process

Section Learning Objectives

This section aims at making the readers to *know* and *understand*:

- ⇒ The process of participatory disaster risk assessment process at community level
- ⇒ Variety of hazards, vulnerabilities and capacities assessment tools employed in disaster risk assessment process at community level

1. Introduction

In Sindh, extreme natural events are not only the cause of increased disaster risk faced by the communities; their vulnerability and exposure to various hazards also play a critical role in exacerbating the risk. On one hand, due to climate change increased number and frequency of natural hazards are resulting in high exposure of communities, assets and infrastructure across the province, while on the other, a diverse range of social, economic, and environmental conditions have enhanced their vulnerabilities to these extreme natural events. Therefore, hazard and vulnerability remain two key fundamental dimensions that should essentially be analysed when undertaking disaster risk assessment at community level.

2. Participatory Disaster Risk Assessment at Community Level

At community level collectively determining risk faced by the community is a known as Participatory Disaster Risk Assessment – PDRA. It is a participatory investigative process designed for communities to identify and assess the hazards, recognize their vulnerability and know the capacities they possess to cope from the effects of hazard or hazards it when it strikes. It is methodical process to identify the risks that communities, villages, town or cities face and how to overcome those risks.



2.1. The steps of PDRA Process involve:

- 1) Hazard Assessment to identify and assess the hazards
- 2) Vulnerability Assessment to recognize their vulnerabilities
- 3) Capacity Assessment to know the capacities
- 4) Analysis and prioritization of risk faced by the community

2.2. Elements at Risk

Through this participatory process we can understand the possible adverse impacts on the 'elements at risk' in community.

Elements at Risk

At community - Elements at Risk

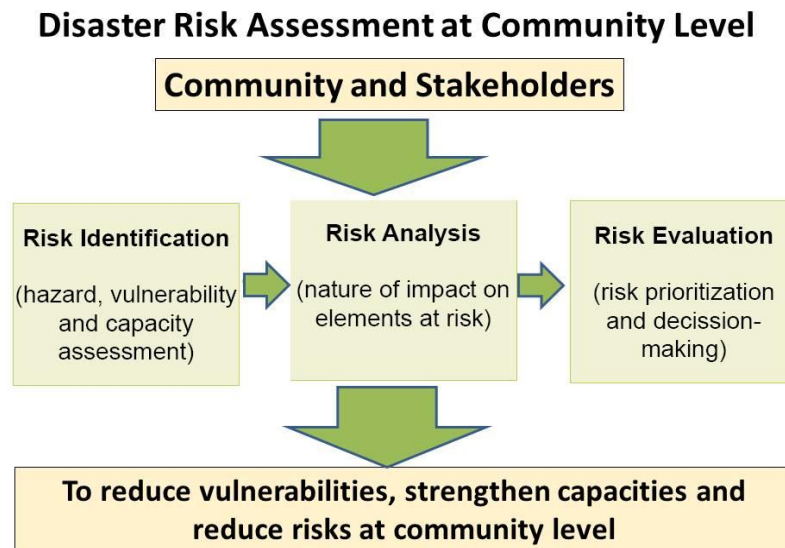
- 1) People living in community children, men and women, elderly, sick, disable minorities etc.
- 2) Physical infrastructures like houses, sheds, floods bunds, dykes, irrigation channels etc.
- 3) Public facilities like schools and hospitals etc.
- 4) Livelihood and economic resources such as farm land, livestock, shops, tractors and boats etc.
- 5) Community resources such as equipment crops, livestock, pastures and forests etc.
- 6) Communication infrastructure to include access roads and bridges etc.

Examples **Elements at Risk** in your Community

1) ---
2) ---
3) ---

3. The steps of PDRA Process

Figure 2: PDRA Steps



3.1. Hazard Assessment

Hazard	<i>A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and environmental damage. It can be natural or human induced</i>
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Hazard assessment explores the physical properties of hazards or threats. Therefore, we need to identify nature and behavior of hazards. Following aspects are probed in detail:

- Intensity and Magnitude.
- Speed of onset
- Frequency
- When (At what time on year)
- Duration

- Warning signs, indicators and signals
- Is there any forewarning (time between warning signs and impact of hazard)

The hazard assessment will be conducted by the local authorities with the involvement of local people, community leaders and the subject experts, especially for hazard assessment.

There are several PRA tools that can help in hazard assessment. Different PRA tools exist however, the most commonly used tools are the following:

Hazard Assessment Tools for communities	<ul style="list-style-type: none">• Hazard Maps: Maps are drawn to locate the probable area covered by a hazard's impact and the elements at risk.• Community Historical profile or time line: These tools can assist us understand how hazards have changed over time; which hazards have happened in the past; or the start of particular hazard occurrence etc.• Seasonal Calendar: This particular tool visualizes the time, frequency and duration of hazards
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- The risk assessment also enables us to understand that as to why particular group or groups in a community are more vulnerable to specific hazards while others are relatively unaffected.
- During the process we also identify the community's coping mechanisms and the resources present in the community.

Figure 3: Community Hazard Maps

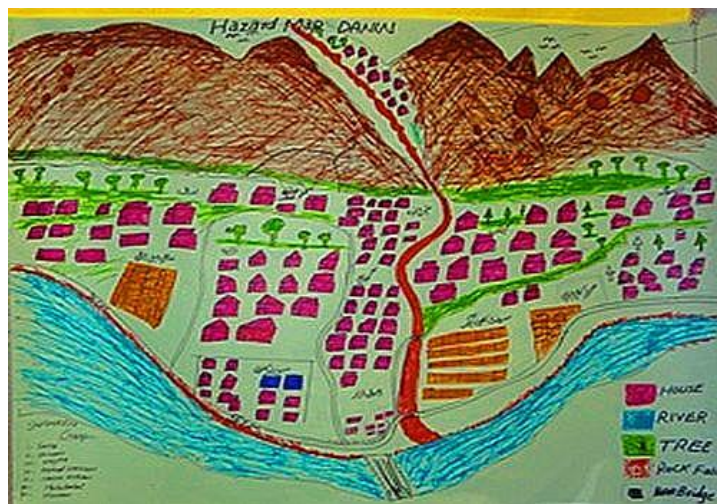


Table 1: Hazard Matrix

Hazard type	Intensity	Warning signs	Speed of onset	Frequency	Duration	When	forewarning	Areas affected
Flood								
Drought								
Earthquake								
Landslides								
Pollution								
Heatwave								
Cyclone								

Table 2: Historical Profile

Hazard Type	Year/ Season	Month	Crops damaged	Boats destroyed	Houses damaged	Deaths/ Injury	Area/ locality	Intensity	Duration
Flood									
Drought									
Earthquake									
Landslides									

Table 3: Seasonal Calendars

Hazard Type	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep
Flood									
Drought									
Earthquake									
Landslides									
Pollution									

3.2. Community Vulnerability Assessment

Vulnerability	<i>Conditions and factors which can increase the susceptibility of an individual or a community to the adverse impacts of hazards. Types physical, social, economic and environmental</i>
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Types	<ul style="list-style-type: none">• <i>Physical</i>• <i>Social</i>• <i>Economic</i>• <i>Environmental</i>
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Physical



Economic



Social



Environmental

This is a process of examining the susceptibility of 'elements at risk' to various hazards and analyzing the causes behind their vulnerability.

- The vulnerability assessment takes into account the physical, geographical, economic, social, political and psychological factors, which make some communities more vulnerable to hazard(s) while others remain relatively protected.
- Poverty status, education, communication and transportation systems, accessibility of public resources such as forest produce, government facilities and drinking water, and presence of agricultural banks/credit banks, NGOs and other service delivery institutions can be used for assessment of vulnerabilities in an area.
- The process will enable us to understand that as to why particular group or groups in a community are more vulnerable to specific hazards while others are relatively unaffected.
- The participatory disaster risk assessment will be conducted by the local authorities with the involvement of local people, community leaders and the subject experts

A variety of tools are used to ensure community's participation in vulnerability assessment, some of the most commonly used tools are as below:

<p>Vulnerability Assessment Tools for Communities</p>	<p>(1) Hazard maps - helps in visualizing the 'elements at risk'. Hazard map drawn to locate the probable area covered by a hazard's impact and interaction with elements at risk</p> <p>(2) Vulnerability Matrix- Helps is identifying the location and extend of damages</p> <p>(3) Transect walk - helps to get a better understanding of the community map and affords opportunity to ask more questions on physical/material vulnerability</p> <p>(4) Seasonal calendar - gives insight on periods of stress, diseases, hunger, debt, etc.</p> <p>(5) Livelihood analysis - gives a picture of the varying effects of hazards on different households and groups</p> <p>(6) Venn diagram - shows the state of coordination among organizations and Government agencies or leadership patterns</p> <p>(7) Community drama - enables people to express what happens during disasters and why</p> <p>(8) Problem tree and Ranking - shows linkage of vulnerabilities and enables the community to express the priority vulnerabilities to address.</p>
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Table 4: Vulnerability Assessment (Hazard) Matrix

Elements at Risk	Flood	Drought	Earthquake	Landslides	Cyclone	Heatwave	Reason of Vulnerability	Location/ Area
People								
Houses								
Bridges								
School								
Health Centre								
Crops								
Boats								

Table 5: Vulnerability Assessment (Socio-economic)

Vulnerability Indicators	Percentage or Number of People without Critical Facilities				
	Area/ Loc	Area/ Loc	Area/ Loc	Area/ Loc	Area/ Loc
Road access					
Drinking Water					
Health Facility					
Education					

Facility					
Toilet					
Electricity					
Telephone/ Mobile					
Television					

Venn diagram: We can carry out Institutional and Social Network Analysis through this tool. It shows the state of coordination among organizations and government agencies, leadership patterns and the relationship of all the above with the communities. Venn diagram helps to reduce/remove the gap between stakeholders and the communities at the later disaster risk reduction phase.

Figure 4: Venn Diagram

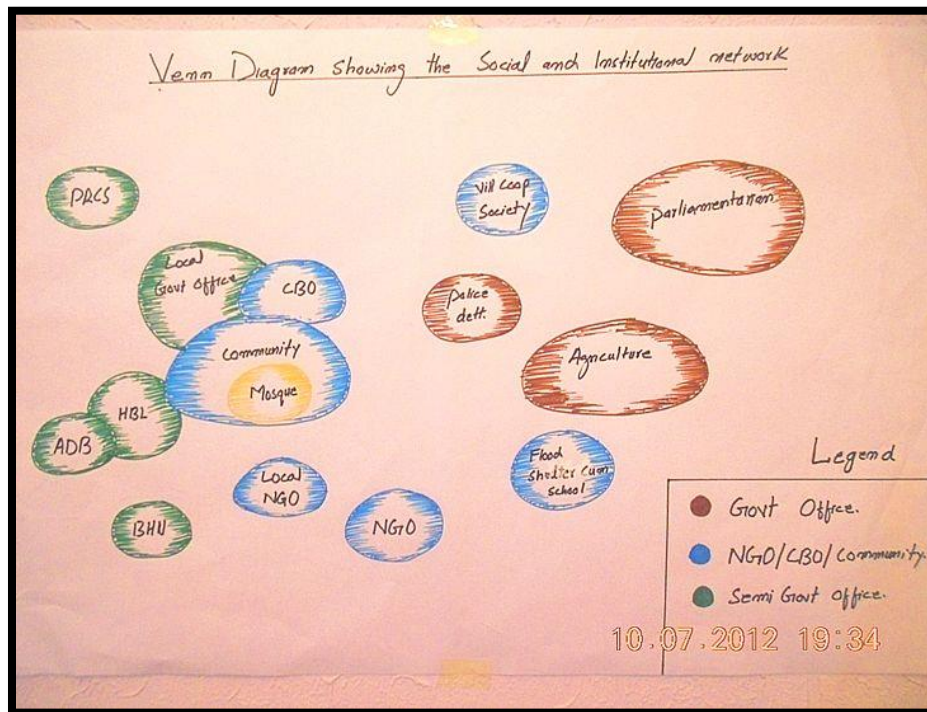


Table 6: Highlighting the Vulnerable Groups

Some Key Questions which are useful for the highlighting the vulnerable groups in a community and can also be used while resource mapping.

- Are there any social/ development/ religious community level organization in village?
- Are women and disable part of the organization?

- Does everyone have equal access to land?
- Do women have access to land?
- Do the poor have access to land?
- Who makes decision on land allocation?
- Where do people go to collect water?
- Who collects water?
- Where do people go to collect firewood?
- Who collects firewood?
- Where do people go for grazing livestock?
- What kind of development activities do you carry out as a whole community? Where?
- Which resource do you have the most problem with?
- Are there disable men, women and children in community?
- Who cares for their needs?
- Do they participate in social/ communal activities?
- Do disable children attend school?
- Do men work locally or work outside community
- Do religious or ethnic minorities exist in community?
- Do they live among or away from community house cluster?
- What jobs/ work/ profession the minorities perform?

3.3. Capacity Assessment

Capacity	<i>Strengths, abilities and resources available within a community to manage and reduce disaster risks</i>
Types	<ul style="list-style-type: none"> ▪ <i>Physical/material:</i> Including cash in the form of money and gold, land, tools, food, jobs, or access to credit. ▪ <i>Social / organizational:</i> Including family to family and brother to brother, sister to sister and cousin to cousin relation, closer social networking, leadership, caring local and national institutions are in place, and where people share the physical resources they have in times of need are more likely to survive. ▪ <i>Attitudinal / Motivational:</i> Including the abilities and confidence in them, having the strength to come out from crises, not depending on fat only, struggling hard for success, strong sense of control over events and the power to change their condition etc.

Capacity is a community's actual or potential ability to withstand disasters through the presence of material and human resources that aid in the prevention and effective response to disasters. This

includes the resources and skills people possess, abilities they can develop, mobilize or have access to which allow them to have more control over shaping their future.

Capacity assessment is the process to determine what people do in times of crisis to reduce the damaging effects of the hazard by:

- Understanding people’s previous experiences with hazards that enabled them to develop coping strategies.
- Analyzing which resources are available and used by the community to reduce risk, who has access to these resources and who controls them.
- Assessing capacities of people at risk is a very important step in choosing strategies for community disaster risk reduction and capability building.

Most widely used tools for Capacity Assessment

<p>Capacity Assessment Tools for Communities</p>	<p>1) Historical Profile: Besides hazard assessment, the historical profile can be used for the capacity assessment. For example, we can see that coping mechanism of the community which they used in past to cope up with the disasters. It will also help to enlist the resources which were successfully used in past.</p> <p>2) Seasonal Calendar: Seasonal calendar would help to find out the mechanism of struggling against the disaster in specific season</p> <p>3) Resource Mapping: This tool is used for making a map showing local resources and capacities on which the communities can rely on the times of disasters and Identify which resources are easily affected by disasters</p>
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Table 7: Community Capacity Resources Mapping (Own)

Resources	Lumber/ Wood	Building / Digging Equipment	Vehicles/Tractors Trolleys/Buses Motorcycle etc.	Boats	Volunteers Trained/ Untrained	Generator/ Fuel	Food items	Medical Supplies	Community Funds	Any Other
Location										
Location										

Table 8: Community Capacity Resource Mapping with Government

Resources	Sand Bags	Equipment	Vehicles	Boats	Dewatering Pumps	Evacuation Centre	Tents	NFI	Food items	Emergency Cash	Medical Supplies
Location											
Location											

Table 9: Sample Questionnaire of Community Capacity Assessment Discussions

<ul style="list-style-type: none"> • No of Community Social & Religious organizations working on disaster response /awareness • No of External actors i.e. NGOs and INGOs working on disaster response and awareness • Early warning systems time of warning in hours • No of villages Covered Out reach of Early warning system • No of literate adults (males/females) • No of disable (adults, children, females/males) • No HH Access to electronic media TV, Radio & internet • Emergency Response Plan Exist Y/N • Evacuation Plan exists Y/N • Early warning available in hours before disaster • No of villages - Out reach of early warning • No of community emergency response teams • No of PRCS volunteers/ teams • No of female community emergency response volunteers • No of Religious/Welfare organization networks working on emergency response • No of External actors i.e. NGOs and INGOs working on emergency response • Is Pak Army involved in emergency Response? Y/N • No of Health facilities and staff • No of Evacuation Centers/ schools used as evacuation centers • No of Displaced Pop last year floods • Risk transfer mechanism such as insurance and loans Exist Y/N <p>Note: <i>The list could be populated as per the need, scope and objective of the assessment. The Presence of service delivery institutions, banking organizations, human resources, status of media, and availability of disaster preparedness services and equipment will reflect the capacity of a community</i></p>

4. Community Risk Analysis

After undertaking hazard, vulnerability and capacity assessment, it is essential to conduct risk analysis. The risk analysis will enable the community and the local authorities to understand the potential impact of various hazard events.

Risk analysis involves the development of risk scenarios based upon the information obtained assessment about hazards, their frequency and intensity and the elements-at-risk. During risk analysis we identify what kind of impact a hazard will have on various at-risk-elements; e.g. people, houses, crops, buildings, roads, schools etc. It also identifies the extent of the impact; e.g. how many people might get killed, how many might be injured, how many hectares of land will be negatively affected or inundated. However, certain communities may be exposed to more than one hazard at the same time. In such situation or area, it will be important to identify the potential losses from the all kinds of hazards or impending hazards.

It has been understood that while working with communities the indigenous knowledge is vital, but scientific data is also important in a situation when the hazard has not yet been experienced by the community e.g. the effects of climate variability on a given community in future or the impact of building a dam on a river system close to community or making communities aware on tsunami hazard which has not yet occurred.

4.1. Risk Maps

Graphic visual representation in shape of risk map can be produced by superimposing the hazard risk maps with physical aspects of vulnerability to various elements at risk and the available resources in community. These hazard maps overlaid with information on physical vulnerability of communities vis-à-vis capacities and resources available can be extremely helpful in the risk analysis. This type of visual risk analysis shows the results of both hazard and vulnerability analysis and at community level it is regarded as an important tool in risk analysis.

4.2. Hazard Probability and damage Matrix

Another way of doing it is by hazard probability (hazard) and damage potential (vulnerability) matrix as shown in the table below.

Table 10: Sample Risk Analysis Matrix

Damage potential	Hazard Probability				
	Very low	Low	Medium	High	Very high
very low	VLR	VLR	LR	LR	LR
low	VLR	LR	LR	MR	MR
medium	LR	LR	MR	HR	HR
high	LR	MR	HR	VHR	VHR
very high	LR	MR	HR	VHR	VHR

H- HIGH, L- LOW, M-MEDIUM, R-RISK, V-VERY , (Source: Singh and Anbalagan 2001)

Table 11: Sample Risk Analysis at Union Council

Serial	Village Name	Hazard Probability-HP	Damage Potential -DP	Risk= (HP x DP)
1	aaa	H-HP	H-DP	HR
2	bbb	L-HP	H-DP	MR

3	<i>ccc</i>	VH-HP	VL-DP	LR
4	<i>ddd</i>	VH-HP	H-DP	VHR

VHR= Very High Risk, HR= High Risk, MR= Medium Risk, LR= low Risk, VLR= Very Low Risk.

5. Risk Evaluation

The final step which follows after the risk analysis is risk evaluation. Its foremost purpose is to decide and plan the future strategies that should be followed for reducing the disaster risks present in the community. This is done by prioritizing various hazard risks which are or which in future can put the community at risk. Moreover, risk evaluation is also useful in prioritizing or ranking the most vulnerable locality, municipality area or community. The process enables community to divert the resources at most needed location or to mitigate the effects of most destructive hazard or hazards.

Learning and Reflection

Q1: What are different steps of Participatory Disaster Risk Assessment?

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Q2: What are various of tools used for hazard assessment?

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Q3: What are various type of tools used for vulnerability assessment?

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Q4: What are various type of tools used for capacity assessment?

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Q5: What are various type of vulnerable people and groups in your community?

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Section- 5

Participatory Disaster Risk Management-DRM Planning

Section Learning Objectives

This section aims at making the readers to *know* and *understand*:

- ⇒ Participatory DRM planning process and its relationship with risk assessment at community level
- ⇒ Essential steps and contents of a practical DRM plan at community level

1. DRM Plan

A DRM plan can be defined as a blueprint, road map, or guide for transforming at-risk communities to become a disaster-resilient community. It helps in the community's progression towards achieving safety, disaster resilience & sustainable development.

2. Participatory DRM Planning

The participatory **disaster risk assessment** includes assessing and analyzing hazards, vulnerabilities and capacities in a community, while devising strategies in shape of concrete action plan to minimize the identified risk is known as **DRM planning**.

The whole process is called DRM planning and the outcome of process is called a DRM plan

2.1. Objective of DRM Planning

The main objective of preparing DRM plan at community level is to identify practical measures to reduce the risks in response to identified or potential hazards, secondary hazards and different types of vulnerability conditions in the community, while considering local available capacities and resources that can be utilized in reducing disaster risk.

2.2. Steps Involved

DRM planning is the best option to make communities safe, self-reliant and resilient. The communities work together in a methodical and strategic manner to undertake following steps:

- (1) Realistically identify and assess the risk (Also called Risk Assessment)
- (2) Mutually agree to plan pre, during and post disaster risk reduction actions/measures
- (3) Consider utilizing local resources and capacities to reduce the exposure and minimize vulnerabilities

3. Suggested Outline of Village /Union Council Level DRM Plans

It is suggested that the community together with the outsiders should develop a DRM plan in the form of written document which provide guiding principles during the implementation, monitoring and evaluation stages. The suggested outline for village/union council level plans can be the following;

- (1) Description of village/union council including location, geography, geology, population distribution, climate, socio-economic characteristics and sources of livelihood etc.;
- (2) Risk profile and summary of the participatory risk assessment findings;
- (3) Aim and objective of DRM Plan
- (4) Risk reduction strategies and activities at village/union council levels;
- (5) Roles and responsibilities of people, committees sub-committees and volunteers involved;
- (6) Schedules and timelines of the proposed risk reduction activities;
- (7) Annexes include;
 - Maps, tables, and matrices from the participatory risk assessment and DRM planning
 - List of community residents, directory of organizations and important local government and media contacts,
 - List of members of the UC/ Village DRM Committee,
 - Inventory of vital community resources for the preparedness activities
 - Operational procedures i.e. reporting requirements and formats; use and replenishment of the community contingency fund
 - Stockpiling and inventory;
 - Details of tasks of the various committees
 - Evacuation procedures and route and procedures in management of the evacuation center and/or Emergency Operations Center etc.
 - Limitations, shortfalls and deficiencies

4. Important Planning Considerations

- It is a participatory process therefore; during the planning it is essential to integrate the inputs from the whole community, preferably through village / Union Council disaster management committees.

- The risk reduction options available during planning process are, either to mitigate the risk or prevent it all together. The options should be discussed amongst the community members under guidance of expert
- During the DRM planning process the affected communities together with outsiders (Experts) mutually plans and agree to identify pre, during and post disaster risk reduction measures.
- There is no dearth of local indigenous knowledge to cope with disasters within communities, therefore, during every stage of planning process their decisions and choices should heard and integrated within the plan.
- The presence of outside assistance in form of DRR experts may be important to initiate and guide the process and train communities, however it not mandatory.
- The communities if trained in DRM planning usually can undertake planning very efficiently on their own.
- It is important to consider the special needs of vulnerable groups i.e. women, children, elderly, disabled and minorities etc. while planning.

5. Sample Village/ Union Council Disaster Risk Management Plan Check List

Village/ Union Council Disaster Risk Management Plan-Check List

Name of the Village..... Union Council..... Date-----

Part No-1-Village Mobilization Sample Check List

S. #.	Activity	Made Yes/ No	Names Attach list	Resources/ village level Attach list	Resources/ Capacities Required	Resources/ Capacities Govt -list	Resources/ Capacities NGO/INGO
1	VDMC						
2	First Aid Team						
3	Search & rescue Team						
4	Firefighting team						
5	EWS Team						
6	Logistics & admin Team						
7	Evacuation Team						
8	Any Other Team						

Part No-2 - Pre-Disaster Action Plan Sample Check List

S. #	Activity	Done	Not Done	When Planned	By Whom
1	Capacity building and training of committee members				
2	Skills training for SAR and firefighting team				
3	Skills training for first aid team				
4	Emergency response kits of teams				
5	Coordination among community members				
6	Hazard, vulnerability, capacity & risk assessment				
7	DRM and preparedness planning for village				
8	Coordination with Govt and NGOs				
9	Early warning actions and teams				
10	Evacuation centers/ shelters				
11	Repair of damaged roads, canals, channels etc.				
12	Establishment of emergency fund				
13	Stockpiling of grains and other food items etc.				
14	Others/ Misc.				

Part No 3- During Disaster Action Plan Sample Check List

S. #	Activity	Done	Not Done	When Planned	By Whom
1	Issuance of early warning				
2	Coordination among all community Teams				
3	Evacuation and transportation				
4	Construction of temporary camp if not available before				
5	Delivery of Rescue services to the affected people				
6	Provide first aid to the affected people				
7	Coordination with government				
8	Provision of food and security to the affected people				
9	Camp management for the affected villagers				
10	Evacuation of livestock				
11	To collect clean food and water				
12	Organizing lights during night				
13	Organizing security				
14	Arrange private and safe space for females				
15	Proper distribution of relief materials				
16	Others				

Part No 4- Post Disaster Action Plan Sample Check List

S. #	Activity	Done	Not Done	When Planned	By Whom
1	Return of displaced population				
2	Garbage disposal and waste management				
3	Damage and need assessment				
4	Repair damages i.e. houses bridges, roads, canals etc.				
5	Arrange dewatering pumps				
6	Equal and fair Distribution of Relief items				
7	Arrange for mosquito nets, repellants, medicines etc.				
8	Decontaminate drinking water sources				
9	Ensuring education of children and health provision				
10	Coordination with NGOs for relief and assistance				
11	Coordination with Government for relief and assistance				
	Others/ misc.				

Learning and Reflection

Q1: What is a Participatory Disaster Risk Management Planning?

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Q2: What are various steps of DRM planning?

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Q3: What is included in outline of Village /Union Council Level DRM Plan?

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Q: What are various type of pre disaster, during and post disaster action which can be taken at village level to reduce risk, describe 3/4 action each?

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Reference and Further Reading- Part 1

- *Participant's workbook on "Community Based Disaster Risk Reduction", Asian Disaster Preparedness Center found at www.adpc.net (2011), Bangkok Thailand.*
- *"Conducting a PRA Training and Modifying PRA Tools to Your Needs" by FAO 1999*
- *Participatory rural appraisal tools and techniques: A guide to PRA, (2010)*
- *Sustainability of Community Based Disaster Management (CBDM)- Users Guide, The United Nations Centre for Regional Development (UNCRD), 2004*
- *National Disaster Management Authority Islamabad Pakistan (2019); CBDRM training toolkit.*
- *World Food Program Islamabad Pakistan (2011); training manual on "Community Based Disaster Risk Management"*
- *National Disaster Management Authority Islamabad Pakistan (2012); "Instructor's Guidelines on Community Based Disaster Risk Management", published under the NDMP Vol-III.*

Community Based Disaster Risk Management- CBDRM

Training Manual Participants Guide for Sindh

Part -2

Basic First Aid, Firefighting, Search and Rescue

Section- 1

CERT

Organization, Roles and Priorities

Section Learning Objectives

- ⇒ To know the importance of emergency response at community Level
- ⇒ To understand roles, responsibilities and organization of CERT in Emergencies
- ⇒ To identify the contents of a CERT Emergency Response Kit

1. Introduction

Although, the state or government has the primary responsibility of safeguarding the lives, properties and livelihood of its citizen, however, at most of the times the communities who are at the forefront are left alone to bear the brunt. Due to restricted access, mobility and information after a disaster or the speed and suddenness of the event, the initial period immediately following a disaster (usually 2-3 days) the affected communities may need to rely on their own resources. Therefore, being isolated and cut-off from outside assistance in the face of a disaster can prove to be catastrophic for communities and people if they are not organized and prepared. Therefore, the ***first and foremost responsibility of community level emergency response preparedness is on all community members.***

The knowledge and skills of community based emergency response activities which include medical first response (First-Aid), search and rescue and firefighting prepare the communities to respond to most common medical situations and trauma injuries which can occur during and after any disaster. Starting at individual level, we can prepare and train our own family members on actions to be taken if someone falls ill or gets injured. However, all households in a community acting together as an organized unit - CERT can prepare and train for working together, such joint actions can effectively reduce injuries, loss of lives and property.

2. Importance of Emergency Response at Community Level

Although, the survival of disaster victims or injured person also largely depend on injuries sustained by the victim, external factors like temperature and environment and victim's access to air and water after the impact. However, various studies confirm that a vast majority of those affected by a disaster usually expire within first 72 hours, if not treated in time. In this regard, the term "golden hour" is a famous term used by hospital staff and emergency medical service (EMS) providers. It implied that an injured patient has 60 minutes (1 Hour) from the time of injury to receive definitive care, after which morbidity and mortality chances increase significantly. This term "Golden Hour" is generally attributed to Dr. R. Adams Cowley, Baltimore's Trauma Institute. In one of his articles in 1975, he stated, "the first hour after injury will largely determine a critically-injured person's chances for survival." This highlights the importance of timely and coordinated response by communities through learning adequate prehospital knowledge about care of disaster / emergency victims. Similarly, domestic fires are one of the leading causes of injuries and deaths in communities and fires often result in considerable economic losses. It is well known fact that Knowledge and training on fire prevention & safety can prove to be most effective way for improving both fire related human and material losses. Therefore, it is the responsibility of all community members to acquaint themselves on this critical subject.

3. Community Emergency Response Team- CERT

The CERT is form of sub-committees of the VDMC or UCDMC. These dedicated groups of community volunteers train, prepare and organize to perform basic lifesaving functions during and after the disaster. A team of CERT can consist of minimum 10 to maximum 15 or more members depending on the need and requirement of community.

3.1. Role and Responsibilities of CERT

The teams work together in an organized manner under their leader and perform following functions during emergency response:

- Size-up of the scene -Carryout initial assessment and size-up of the scene
- Locating and turning off utilities, such as electricity and natural gas
- Extinguishing small fires
- Conducting light search and rescue operations
- **START**- Simple Triage and rapid Treatment
 - Assess medical needs, number of wounded/ hurt and types of injuries
 - Victim / patient assessment - ABCD
 - Treating life-threatening injuries
- Helping and guiding victims to safety or professional help
- Call for help
- Assist and help professional responders *if needed*

Other Functions

Trained and equipped community volunteer groups CERT and members of community based organizations can serve as a crucial resource capable of performing many other emergency response functions as well like:

- Assisting in mass casualty management
- Transportation of victims
- Need assessment survey at community level
- Local health facility preparedness
- Community Evacuation
- Provision of food, water and non-food items
- Availability of Temporary shelter
- Emergency repair of critical facilities following disaster i.e. bridges, roads and telephone
- Security measures, tracing lost members and family reunification

3.2. Organization of CERT

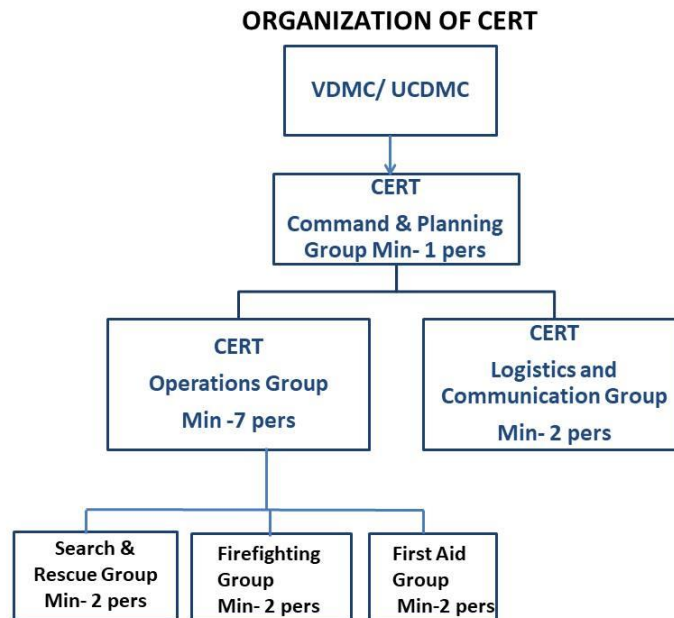
A CERT at community level works under the overall guidance of village disaster management committee- VDMC. It is a form of sub- committee which works within the VDMC/UCDMC. A CERT can be further divided in different groups

- (1) Command and Planning Group
- (2) Operations Group
- (3) Logistics and Communication Group

The operation group performs various functions i.e. Search & Rescue, First Aid and Firefighting; therefore, it can be further sub-divided in different types of sub-groups

- Search & Rescue Group (Water Rescue, Building Collapse Rescue, flood Rescue)
- First Aid / Medical Response Group
- Firefighting Group

Figure 5: Suggested CERT Organization



Note: This organization is suggested keeping in consideration minimum (essential) 10 volunteers per team. The groups could be expanded if the human and material resources allow. For example, 2 separate groups could be constituted for command and planning function, similarly 2 separate groups can be formed for executing logistics and communication function. Moreover, the number of volunteers in SAR, Firefighting a First Aid could also be reinforced depending on need and conditions.

4. Emergency Response Kit (Search & Rescue and First Aid Kits) for CERT

It is necessary for the CERT to arrange their equipment and gear (Search and Rescue and first aid kits) as ready to use for tackling any emergency situation and treat the injuries and illnesses at community level. All CERT members must have access to kits, especially those who are well trained to use it. It is important to store and maintain the kit properly under the guidance of Village DMC. The kits at community level include following:

4.1. Contents of the First Aid Kit

At CERT level, the first aid kits should have following items necessary to provide first aid at community level. However, the number of first aid kits depends upon the available resources and number of trained volunteers at the CERT level.

Contents of First Aid Kit

1. Adhesive tape
2. Anesthetic spray
3. sterile gauze pads
4. bandages
5. oral antihistamine
6. gloves
7. antibiotic cream
8. Non-adhesive pads
9. Pocket mask
10. Wipes
11. Cotton
12. Resealable oven bag
13. Safety pins (large and small)
14. Thermometer
15. Scissors
16. Tweezers

4.2. Contents of Search and Rescue Kit

Though at community level CERT members play a vital role in disaster response, however, they are NOT trained or expected to perform search and rescue functions of professional/ certified responders. Therefore, the CERT search and rescue kit is essentially made up of basic essential items.

Contents of Search and Rescue Kit

Flood

1.	Heavy Duty Steel Strap Cutter with Long Handle
2.	Hammer
3.	Combination Pliers (Set)
4.	Screwdrivers Set
5.	Swiss Pocket Knife
6.	Rubber Boots
7.	Megaphones
8.	Hygiene Kit(Customized kit)

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9.	GPS
10.	Hard hats (with logos)
11.	Customized Signage (Urdu & Sindhi)
12.	Flares / Glow stick
13.	Stretchers
14.	Ziplock Bags
15.	Rain Coat (with PDMA logo)
16.	CPR Mask
17.	CPR Keychain Shield
18.	Sleeping Bags
19.	Tourniquet
20.	Personal Thermos
21.	Emergency Contact Packet
22.	Whistle
23.	Dead Body Bags
24.	Pocket First Aid Kits
25.	Floats
26.	Water Purification Straws

Earthquake

1.	Rope
2.	Tape (masking, packing, duct)
3.	Scissors
4.	Hammer
5.	Crowbar
6.	Vest with pockets (with PDMA logo)

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7.	Safety Goggles
8.	Masks (with PDMA Logo)
9.	Anti-Static Gloves
10.	Gloves (Surgical)
11.	Hygiene Kit
12.	Communication Equipment Handheld (Motorola)
13.	Construction Waist Belt
14.	Jumping Sheet
15.	Emergency Survival Blanket

Section- 2

CERT

First Aid Actions & Priorities

Section Learning Objectives

- ⇒ To know the First Aid priorities to include Size-up and START at the scene
- ⇒ To understand and learn First Aid techniques to manage most common emergency situations

1. Introduction

In this section, the participants of the course- CERT members shall be familiarized with the first aid, they will participate in the demonstration and shall carry out hands on exercises to learn the basic first aid techniques.

2. Definition of First Aid (Emergency Medical Response)

First Aid is the initial immediate assistance or treatment given to someone who is injured or has suddenly fallen ill before the arrival of an ambulance, doctor or other appropriately qualified person. It is performed before the arrival of a doctor or professionally trained emergency medical responder. It generally consists of a series of simple and potentially life-saving techniques that an individual or group can be trained to perform with minimal equipment. At community level the First Aid is the provision of initial medical care for an ill or disaster/emergency victims usually performed by the trained community emergency response team CERT and its members, until professional care arrives or the victim is evacuated to nearest professional health facility.

3. Aims of First Aid (Emergency Medical Response)

- To Save life
- Not to further harm and prevent further damage
- To promote recovery

“Aim is to take care of wounded/ sick person not just the wounds”

4. Role of CERT in Provision of First Aid

Following are some of the important tips that CERT members can take to provide First Aid to the disaster victims. As soon as an accident or injury takes place:

- **Size-up of the scene** - Carryout **initial assessment and size-up of the scene**
- **START**- Simple Triage and rapid Treatment
 - **Initial assessment of patient** - Carryout **initial assessment of patient**
 - **Perform first-aid/basic life support** *if needed*
- **Call for help**
- **Assist and help professional responders** *if needed*

5. Size-Up of The Scene by CERT

On reaching the scene of accident/ emergency the CERT are required to carry out following step. However, the most important aspect while responding to any accident or emergency is to put your safety first and always wear your personal protective equipment- PPE

CERT - Emergency Response Size up

- 1) **Gather facts.** What has happened? How many people appear to be involved? What is the current situation?
- 2) **Assess and communicate the damage.** Try to determine what has happened, what is happening now, and how bad things can really get. Call professional responders/ VDMC
- 3) **Consider probabilities.** What is likely to happen? What could happen through cascading events?
- 4) **Assess your own situation.** Are you in immediate danger? Have you been trained to handle the situation? Do you have the equipment that you need?
- 5) **Establish priorities.** Are lives at risk? Can you help? Remember, life safety is the first priority!
- 6) **Make decisions.** Base your decisions on the answers to Steps 1 through 5 and in accordance with the priorities that you established.
- 7) **Develop a plan of action.** Develop a plan that will help you accomplish your priorities. Simple plans may be verbal set of instruction for team members
- 8) **Take action.** Execute your plan and report the situation accurately to VDMC
- 9) **Evaluate progress.** At intervals, evaluate your progress in accomplishing the objectives in the plan of action to determine what is working and what changes you may have to make to stabilize the situation.

6. START –Simple TRIAGE and Rapid Treatment

The triage term comes from the French verb *trier*, meaning to separate, sort, sift or select. Modern medical triage was invented by *Dr. Dominique Jean Larrey*, as a surgeon during the Napoleonic Wars, who treated the war wounded according to the observed gravity of their injuries. During an emergency CERT face shortages of personnel, supplies and transportation vehicles and they battle against time to save as many victims as possible. **Therefore, in emergency medical response, triage means sorting and**

prioritizing victims for medical attention according to the degree of injury or illness and their expectations for survival.

The goal of triage is to identify critical injuries requiring life-saving intervention in the shortest possible time by providing on spot care to victims with minor or localized injuries so that the health facilities are able to attend to critical victims. Triage saves time and tremendously reduces the burden on health facilities.

6.1. Triage Classifications

The commonly used triage system is the classification of the victims/patient's medical condition into four levels i.e. immediate medical care, delayed care, non-urgent or minor; and dead or near dead. The triage system to prioritize patients and victims is used in many settings i.e. in emergency departments, hospital and in emergency rooms and worldwide various triage systems exists, with different names. However, the triage system utilized in disaster and emergency setting is known as MCI Triage or Disaster Triage and in this system the basic categories of victims and color coding remains uniform universally. The table given below describes in detail the various victim categories and terminologies used in Disaster Triage.

Table 1- Disaster Triage Categories

Category	Color -Tag	Condition	Remarks
Minor	Green	Wait-Relatively minor injuries	<ul style="list-style-type: none"> • Status unlikely to deteriorate over days "walking wounded" • Minor treatment/First aid given on spot
Delayed	Yellow	Delayed/ Observation- Includes serious and potentially life-threatening injuries	<ul style="list-style-type: none"> • Condition and status not expected to deteriorate significantly over several hours • Transport can be delayed.
Immediate	Red	Immediate - Requires urgent medical attention within minutes for survival (up to 60 minutes)	<ul style="list-style-type: none"> • Includes patients with compromised airway, breathing and circulation. • Condition can deteriorate if not treated urgently
Expectant	Black	Expectant- Unlikely to survive given severity of injuries and level of medical care available or dead	<ul style="list-style-type: none"> • Palliative care and pain relief should be provided

7. First Aid Priorities for CERT

During any disaster or emergency situation, the CERT can play a pivotal role to save lives of disaster victims. While their own lives are at risk, it is also important that they should take utmost care to secure their own lives and also the disaster victims. The following priorities are mentioned which need to be considered while providing first aid to the injured person;

- **Prompt and Quick** -CERT members as trained first aider should be **Prompt and Quick**, to render help to the victim, without any delay.
- **Personal Protective Equipment (PPE)**- Before helping others check your **Personal Protective Equipment (PPEs)**
- **Safety First**- Secure the scene with other CERT volunteers– do not attempt to do things beyond your control. In complex situation it is better to involve professionally trained and certified first aid providers
- Assess the situation quickly and calmly
- Protect themselves and casualties from further danger
- Compassion and empathy
- Comfort and reassure the casualties
- Deal with critical and life threatening injuries/victims first

First Aid Techniques to Manage Most Common Emergency Situations

Actions by CERT

1. *Initial Assessment by the First Responder - DR-ABC*
2. *Cardio Pulmonary Resuscitation (CPR)*
3. *Shock or Unconscious Patient/ Victim*
4. *Conscious Choking Patient*
5. *Wounds and Injuries*
6. *Fractures, Dislocation and Sprain*
7. *Spinal Injury*
8. *Burn Injury*
9. *Dehydration and Heat Stroke*
10. *Snakebite*
11. *Drowning*

Initial Assessment by the First Responder

1. Initial Assessment by the First Responder

During any emergency situation, there are three conditions on the spot that immediately threaten life of victims. It is popularly known as ABC which is as follows:

- **A: Airway**
- **B: Breathing**
- **C: Circulation**

In order to check the ABC, the following emergency actions (also called as DRABC) can be taken to provide immediate relief and first aid to the victim:

Action by First Responder at Scene (DRABC)¹

D: 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.



R: 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



A: Airway: Check and open the airway; place one hand on the forehead, tilt the head back and lift the chin.

¹ First Aid Training Co-operative available at <https://firstaidtrainingcooperative.co.uk/acronyms-drabc/>

Chin Lift - Head Tilt



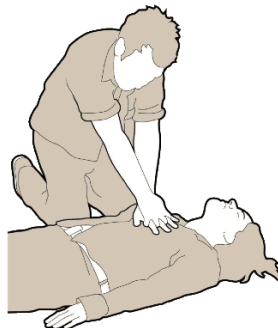
B: Breathing: Check breathing, Look, Listen and feel for breathing. Look for chest movement, listen for sounds of breathing and feel for breath on your cheek. Do this for no more than ten seconds.

LOOK, LISTEN, FEEL



If the victim is breathing normally, assess for life threatening injuries and then place in the recovery position and maintain an open airway.

C: 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.



C: Circulation: Look for blood pumping or pouring out of a wound, control it with direct pressure, look for normal tissue color.



Note: Take permission from victim (if conscious) and always introduce yourself and ask for permission to assist.

Cardio Pulmonary Resuscitation (CPR)

2. Cardio Pulmonary Resuscitation (CPR)²

After the DRABC techniques, if required, the CPR can be performed through three simple steps;

CAB³

- 1) **C-Circulation- Compressing and Call**
- 2) **A-Airway,**
- 3) **B-Breaths**

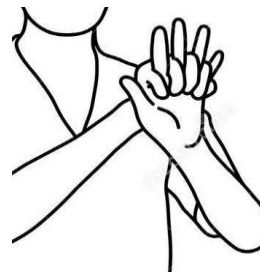
The first step of CPR is to assess the victim and check responsiveness. Check the victim for unresponsiveness. Gently shake the victim and shout, "Are you OK?" If the person answers, CPR is not needed. If there is no response, the person is unresponsive or conscious and showing signs of a stroke, **CALL FOR HELP (emergency number) and return to the victim. Perform CPR.**

When performing chest compressions, proper hand placement is very important. To locate the correct hand position place two fingers at the sternum (the spot where the lower ribs meet) then put the heel of your other hand next to your fingers. Place one hand on top of the other and interlace the fingers. Lock your elbows and using your body's weight, compress the victim's chest.

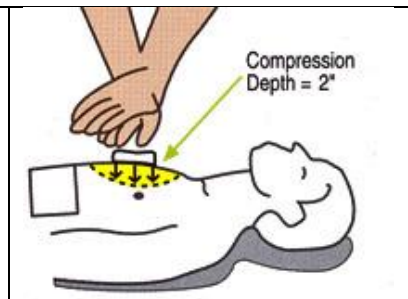
Correct Hand Position



Interlace the fingers







- 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



² American Heart Association guidelines for Cardiopulmonary Resuscitation (CPR) and Emergency Cardiovascular Care (ECC) 2015

³ The change from the traditional ABC (Airway, Breathing, Compressions) sequence in 2010 to the CAB (Compressions, Airway, and Breathing) sequence was confirmed in the 2015 AHA guidelines.

Cardio Pulmonary Resuscitation (CPR)

<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 style="text-align: center;">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 style="text-align: center;">LOOK, LISTEN, FEEL</p>  <p style="text-align: center;"><i>Do not consider gasping to be normal breathing</i></p> <p style="text-align: center;"><i>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 style="text-align: center;">Pinch the nostrils</p>  <p style="text-align: center;">Two Breaths</p>  <p style="text-align: center;">2 breaths and 30 pumps*</p>

***Note:** This ratio is the same for one-person & two-person CPR. In two-person CPR the person pumping the chest stops while the other gives mouth-to-mouth breathing.

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.

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

Shock or Unconscious Patient/ Victim

3. Shock or Unconscious Patient/ Victim

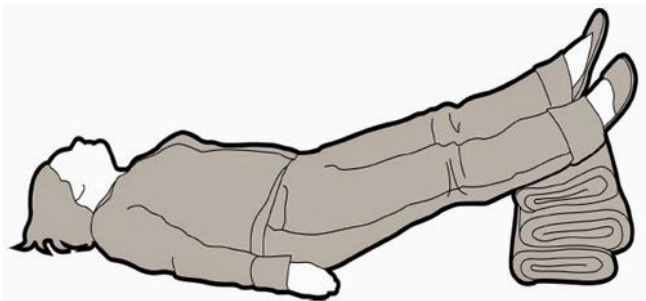
The most common cause of shock is severe blood or body fluid loss. This is life threatening condition occurs when vital organs do not get enough oxygen due to reduced blood circulation.

Normal symptoms: <ol style="list-style-type: none">1) Rapid weak pulse2) Breathing is shallow and rapid3) Pale grey skin,4) Sweaty, cold & clammy skin5) Inner side of lips is grey6) Restless and Anxious7) May be thirsty or nauseous	Causes: <ol style="list-style-type: none">1) Loss of fluid and bloods2) Electric shock or injury3) Allergic reaction4) Also seen in Poisoning5) Heart failure
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Treatment -Action <ol style="list-style-type: none">1) DR-ABC-Danger, Response , Airway, Breathing, Circulation (Call)2) Lower Head- Raise Legs3) Keep warm and comfortable4) Recovery Position5) Nothing to eat or drink6) Call for professional help7) Arrange for Transport to hospital8) Stay with the casualty all the times

Actions

Lower Head- Raise Legs

<ol style="list-style-type: none">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	<p>Lower Head- Raise Legs</p> 
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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




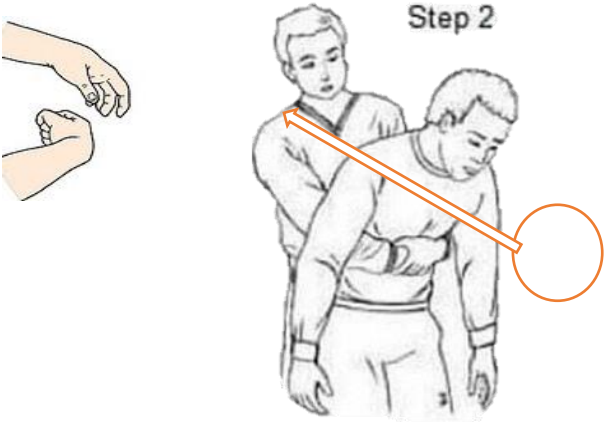


How to Perform Recovery Position

<p>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.</p>	A line drawing showing a rescuer kneeling on one knee to the right of a patient lying on their back. The rescuer is reaching out with their right hand to position the patient's right arm straight out to the side.
<p>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.</p>	A line drawing showing the rescuer lifting the patient's right leg at the knee. The patient's right arm is now bent across their chest. The rescuer is holding the patient's right leg at the knee, preparing to place the foot on the floor.
<p>C- Roll the patient into position. Roll the patient away from you onto their side, carefully supporting their head and neck the whole time.</p>	A line drawing showing the rescuer rolling the patient onto their side. The rescuer is supporting the patient's head and neck with both hands as they roll. The patient's right leg is bent and resting on the floor.
<p>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.</p>	A line drawing showing the patient in the final recovery position on their side. The patient's right leg is bent with the knee touching the ground. The patient's right hand is placed under their chin to support their head. The patient's head is tilted back, and their airway is open.

Choking




4. 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>Step 1</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><i>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</i></p>	<p>Step 2</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><i>Keep doing CPR until the person is breathing on his or her own or until help arrives</i></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.

<p>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</p>	
<p>Step No-2 Place two finger in the middle of infants breastbone and give five quick downwards thrusts</p>	
<p>Step No-3 Look in the mouth if you can see any foreign object. Try to remove the object with your fingers, ONLY IF YOU CAN SEE THE OBJECT- NEVER PUT THE FINGERS IN MOUTH TILL YOU SEE THE OBJECT</p>	

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

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**

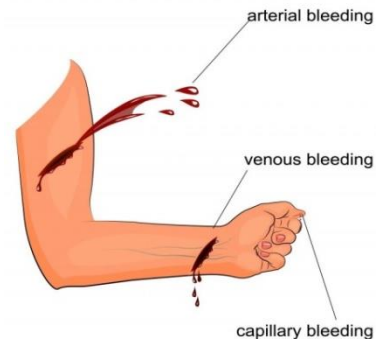
Wounds and Injuries- Controlling Bleeding

5. Controlling Bleeding

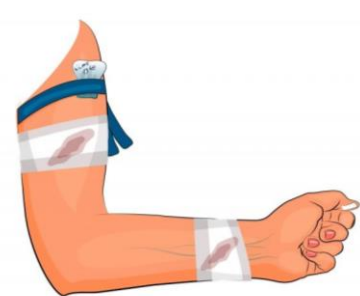
Bleeding can be external with visible wounds or internal with no visible wound. Uncontrolled bleeding initially causes weakness. If bleeding is not controlled, the victim will go into shock within a short period of time, and finally will die. An adult has about five liters of blood. Losing one liter 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> <ul style="list-style-type: none"> • Damage, cuts and tearing of blood vessels by any type of trauma
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Types of External Bleeding

<ul style="list-style-type: none"> • Arterial bleeding - Arteries transport blood under high pressure. Bleeding from an artery is spurting bleeding 	
<ul style="list-style-type: none"> • Venous bleeding - Veins transport blood under low pressure. Bleeding from a vein is flowing bleeding. 	
<ul style="list-style-type: none"> • Capillary bleeding - Capillaries also carry blood under low pressure. Bleeding from capillaries is oozing bleeding. 	

Controlling Bleeding- Actions

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

Controlling Bleeding- Actions

Apply Direct Pressure

- Place direct pressure over the wound by putting a clean dressing over the wound and pressing firmly.
- Add dressing above the first one if it is completely wet.
- Maintain pressure on the dressing over the wound by wrapping the wound firmly with a pressure bandage.
- Pressure can applied for 10-30 minutes

Elevate the Bleeding Body Part

- Elevate the wound above the level of the heart.
- Doing so reduces pain, throbbing, and swelling

Apply Bandages

- After direct pressure applied to control
- Maintain pressure by the dressing over the wound by wrapping the wound firmly with a pressure bandage

Indirect Pressure/ Tourniquet

- Only in case of severe arterial bleeding, not controlled by above methods
- Control by indirect pressure by applying pressure to appropriate point in combination with pressure and elevation
- ***Tourniquet is only applied as last resort if all other methods have failed***
- ***Only to use if arm or leg in partially or completely severed***
- ***Leave a space of 5 cm between wound and tourniquet***
- ***Never cover tourniquet***
- ***Write time when tourniquet was applied***



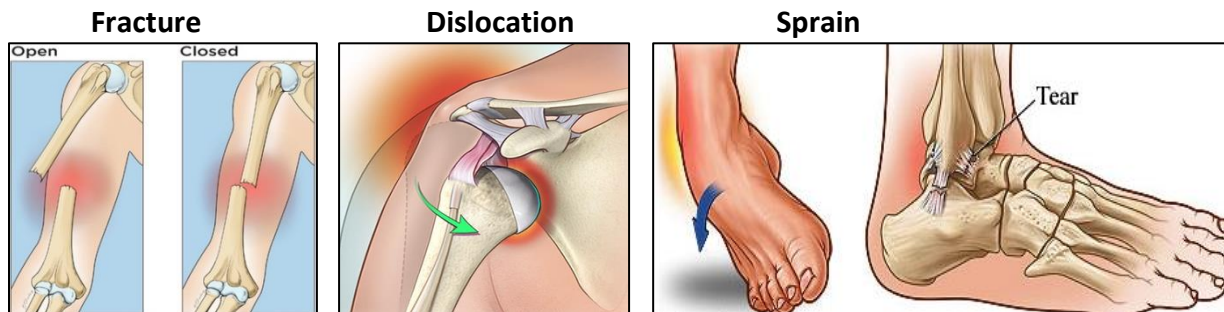
Controlling Bleeding- Important Points

- *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*

Fractures, Dislocation and Sprain

6. Fractures, Dislocation and Sprain

- A **dislocation** is where a bone has been displaced fully or partially from its normal position at a joint.
- A **fracture** is when a bone has been broken. The fractures can be close when there is no skin breakage and open fractures where the bone end breaks through the skin.
- A **sprain** is tear/ injury or over stretching/ pull of ligaments it cause severe pain and swelling but not dislocation or fracture.



Signs and Symptoms

- Severe pain
- Swelling
- Deformity of the injured area (when compared with the uninjured side of the body)
- loss of normal function of the injured part
- discoloration of the skin (i.e. blueness) or bruising
- A visible wound if it is an open fracture
- Altered sensation - e.g. 'pins and needles' - if a nerve is under pressure
- A grating sensation if injured bone ends are rubbing together
- Patient may have heard/felt the bone break

Objective of First Aid

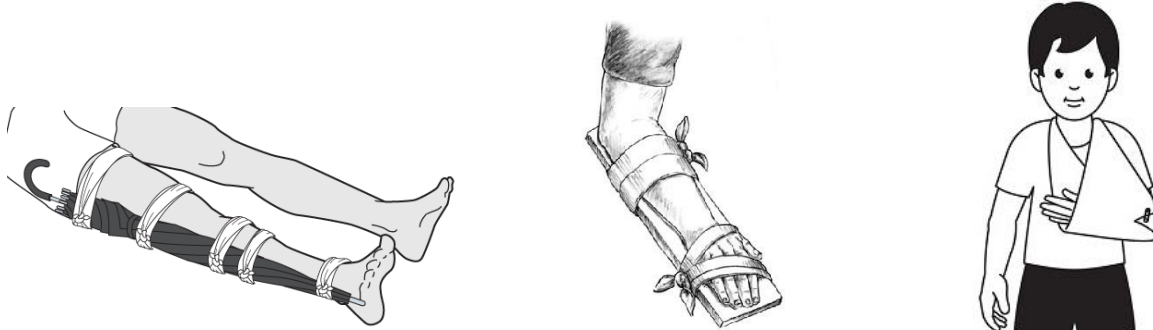
- To reduce the pain and distress
- To reduce further injury and damage
- To prevent patient from shock
- To evacuate to hospital as soon as possible

First Aid Actions- Fractures and Dislocation

- Check airway and breathing
- Stop the bleeding in case of active wound
- Immobilize the affected limb or part
- Use Splint, wooden pieces or hard board with bandage for support and immobilizing
- For arms sling them using triangular bandage

- Make victim comfortable till help arrives
- Call for professional help

Immobilize the affected limb- For arms sling them using triangular bandage



Sprain – First Aid Actions

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

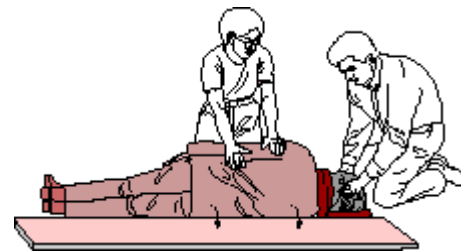
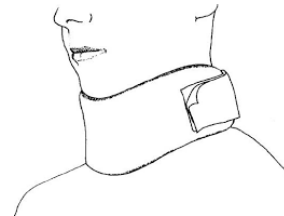
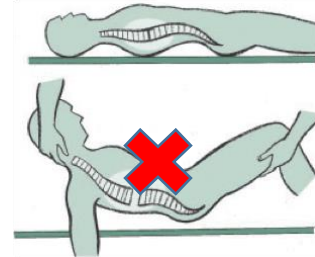
Spinal Injury

7. Spinal Injury

An injury to the backbone is called spinal injury. Victims are at a high risk of spinal injuries, especially as a result of road traffic accident, building collapse and falling from heights.

First Aid Actions- Spinal Injury

- Do not move the victim with suspected spinal injury, unless his/her life is in danger or unconscious
- Lay him/ her straight
- As first priority place cervical collar
- At the same time check and if required open airways
- Keep both feet together and head in neutral position
- Keep the pelvis aligned with shoulders- immobilized
- Transfer/ shift the victim using a spine board if not available use hard board
- If movement is absolutely necessary only so it through log roll method
- In case the victim is wearing a safety helmet never attempt to remove it
- Only remove helmet if the patient vomits, require CPR or u suspect a head injury
- Call for help and shift patient as described above preferably by ambulance



Burn Injury

8. Burn Injury

Burns and scalds are among the most common injuries requiring emergency treatment, especially among children.

Causes

- Fire
- Hot water/ steam
- Chemicals
- Electricity
- Inhalation of very hot gases and steam

Types of Burns

First Degree- Superficial burns which only have damaged the skin, they are very painful area is usually red

Second Degree- The burn injury is deeper and there is scalding and blister formation

Third degree- More than 1st and 2nd degree burns, muscle, bone, nerves are damaged. The burnt area is black or brown and victim feels no pain in burnet part.

First Aid Action- Burn Injury

- Look for shock in burn injury, especially children
- Cool the burn area as soon as possible to avoid further damage by placing under cold running water
- Cover the injured area with clean pad
- Stay with the victim and keep looking for a signs of shock
- Call for professional help
- Transport or shift the patient to hospital



Dehydration and Heat Stroke

9. Dehydration

Dehydration is loss of body fluids faster than the rate patient can make up for the deficiency. If left untreated, someone with dehydration can develop heat exhaustion and shock which is more serious, so it's important to make sure patient rehydrate themselves as soon as possible.

Causes

- Sweating a lot – usually from working in hot conditions for a long time
- Having a fever and sweating
- Severe diarrhea and vomiting, especially in children

Signs and Symptoms

- Headaches and light headedness
- Dry mouth, eyes and lips
- Small amounts of dark urine
- Muscle cramps
- Dry wrinkly skin

Treating dehydration, First Aid Actions:

- 1) Help patient to sit down and give plenty of water to drink.
- 2) Giving an oral rehydration solution –ORS to drink will help replace salt and other minerals which they've lost at the rate of approximately half a glass of water every 15 minutes. Consuming too much water too quickly will cause nausea and vomiting in a survivor of heat sickness.
- 3) In case of any painful cramps, encourage them to rest, help them stretch and massage their muscles that hurt
- 4) Keep checking patient if they still feel unwell after rehydration than call for professional help

10. Heat Stroke

Heat stroke results from prolonged exposure to high temperatures usually in combination with dehydration. Heatstroke occurs when the body fails to regulate its own temperature and body temperature continues to rise, often to 40°C (104°F) or higher.

Heatstroke is a common medical emergency in summers. It can be potentially fatal, sometimes even with immediate treatment it can be life-threatening or result in serious, long-term complications

Causes

In hot summers people get heatstroke after suffering from heat exhaustion. When someone gets dehydrated his/ her sweating might stop which means their body can't cool down itself, in such situation there is high chances for them to develop heatstroke

Signs and Symptoms- key things to look for

- Body temperature above 40°C (104°F)
- Moderate to severe difficulty breathing
- Confusion, severe restlessness, aggressive behavior or anxiety
- Fast heart rate/ full bounding pulse
- Hot flushed and dry skin
- Fast deterioration in the level of response
- Convulsion (seizure)
- Vomiting



Treating Heat Stroke, First Aid Actions:

- 1) Immediately move the patient to a cool place and out of direct sunlight
- 2) Remove unnecessary clothing; expose as much skin surface to the air as possible
- 3) Help the person to lie down and raise the legs
- 4) Cool patient's entire body by sponging or spraying cold water especially head face and neck
- 5) Fan the patient to help lower the body temperature
- 6) Apply ice packs or cold sponge in each armpit and on the back of the neck
- 7) Watch for seizure, unconsciousness and moderate to severe difficulty breathing.
- 8) If victim is a child and has stopped breathing, start rescue breathing.
- 9) Stay with the patient, keep him/her cool and help to take fluids
- 10) Be careful before giving them fluids; make sure the patient is sitting upright and alert to swallow

- 11) We can give 4-6 glasses of fluids (1-2 Liter) in 1 to 2 hours for hydration. Giving an oral rehydration solution –ORS to drink will help replace salt and other minerals which they've lost, at the rate of approximately half a glass of water every 15 minutes. Consuming too much water too quickly will cause nausea and vomiting in a survivor of heat sickness.
- 12) If general situation does not improve, the temperature stays high call for professional help immediately

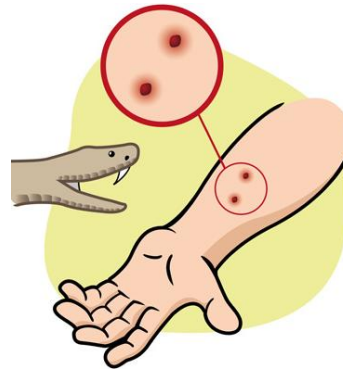
Snakebite

11. Snakebite

Snakebite is a relatively common emergency in some of the districts in Sindh. The effects following snakebite depends on the type and size of the snake and the age and health status of the patient, the location of the bite and its initial management. The common poisonous snakes found in Sindh are Cobra, Viper and kraits.

Signs and Symptoms- key things to look for

- **Two puncture wounds**
- **Swelling and pain around the bite area**
- **Redness and bruising around the bite area**
- Numbness of the face, especially in the mouth
- Elevated heart rate
- Difficulty breathing
- Dizziness, weakness, headaches, blurred vision
- Excessive sweating, fever
- Thirst, nausea, vomiting
- Convulsions




Treating Heat Stroke, First Aid Actions:

- 1) Remain calm, do not panic assure the victim
- 2) Wash the wound
- 3) Remove jewelry, rings and tight clothing
- 4) Apply a (pressure immobilization) bandage to slow the spread of venom
- 5) Check the snugness of the bandage, a finger should easily pass under the bandage.
- 6) Keep victim still he/she should walk only if absolutely necessary
- 7) Use a stretcher to carry the person to a place where transport is available to take them to a health facility
- 8) Vomiting may occur, so place the person on their left side in the recovery position.
- 9) Closely monitor airway and breathing and be

Do Not

- 1) **Apply ice**
- 2) **Cut the wound**
- 3) **Apply suction or suck with mouth**
- 4) **Apply a tourniquet**
- 5) **Burn the wound or use electric shock, such as from a car battery**
- 6) **Use herbs or black stone on wound**
- 7) **Go to traditional healer**
- 8) **Try to capture the snake**





<p>ready to resuscitate if necessary</p> <ol style="list-style-type: none">10) Keep reassuring11) Call for professional help/ ambulance12) Evacuate as soon as possible to hospital	
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Drowning

12. Drowning

Drowning is a situation when a person is unable to breathe because their nose and mouth are submerged in water or in another liquid. As a result, victim inhales/r ingests water or any other liquid through his/ her respiratory track. It is serious life threatening emergency and survival of victim depends on quick rescue and immediate care.

Drowning First Aid

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

Drowning Care

Drowning, First Aid Actions

As soon as the casualty has been rescued from the water.

1. Check for breathing.

Tilt head back and look, listen and feel for breaths. If they are not breathing, move on to the following steps.

2. Immediately Call for emergency help

3. Give five rescue breaths

Tilt their head back, sealing your mouth over their mouth. Pinch their nose and blow into their mouth. Repeat this five (5) times.

4. Give 30 chest compressions.

Push firmly in the middle of their chest and then release. Repeat this 30 times.

5. Give two rescue breaths - Continue CPR

Continue with cycles of 30 chest compressions and two rescue breaths until help arrives

6. If victim starts breathing again at any time, encourage to cough, reassure and put in recovery position

7. On recovery cover with warm clothes and blankets. If they recover completely, replace their wet clothes with dry ones.

8. Keep checking breathing, pulse and level of response until help arrives.

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

Section- 3

CERT

Light Search & Rescue- SAR

Actions & Priorities

Section Learning Objectives

- ⇒ To get knowledge about Light Search and Rescue -SAR
- ⇒ To learn basic requirements of SAR operation
- ⇒ To know the most common techniques employed in light SAR operations

1. Introduction

The main purpose of search and rescue operation during and after emergencies/disasters is to rescue the largest number of people in the shortest period of time, while minimizing risk to rescuers. Due to the specialized nature of their work, most search and rescue teams are professionally trained. SAR operations are highly specialized and on many occasions involve heavy machinery, aeroplanes, helicopter, specialized cameras, acoustic sensors and even dogs to search and rescue the trapped or lost victims. However, at community level CERT are usually trained to work as a team in an organized manner to carry out surface search and light rescue of any lost or trapped victim from their community. The surface search and light rescue are lowest level of SAR professional training.

Experience from previous disasters has shown that the first response to trapped survivors immediately after emergency, accident or disaster is usually by the people present in the vicinity. These spontaneous and untrained people (responders) rush to the site of accident/collapse/ disaster in an attempt to save lives and free the survivors. However, unfortunately, these spontaneous rescue attempts commonly result in serious injuries to untrained responders. Therefore, it has to be kept in mind that SAR operations require training, planning and practice.

2. Definition of Search and Rescue -SAR

At community level SAR is an operation by CERT volunteers to find someone believed to be in distress, lost, trapped, and sick or injured in remote or difficult to access area. In other words, SAR is an

organized mission to locate and remove a person reported as missing. SAR consist of three separate operations/ actions

- 1) Size- up
- 2) Search
- 3) Rescue

2.1. Size-up

Like every other CERT action SAR also requires a deliberate and cautious size up at the beginning of the operation and this size-up has to continue throughout the operation. The size includes following 9 actions to be considered by CERT

CERT - Emergency Response Size up

- 1) **Gather facts.** What has happened? How many people appear to be involved? What is the current situation?
- 2) **Assess and communicate the damage.** Try to determine what has happened, what is happening now, and how bad things can really get. Call professional responders/ VDMC
- 3) **Consider probabilities.** What is likely to happen? What could happen through cascading events?
- 4) **Assess your own situation.** Are you in immediate danger? Have you been trained to handle the situation? Do you have the equipment that you need?
- 5) **Establish priorities.** Are lives at risk? Can you help? Remember, life safety is the first priority!
- 6) **Make decisions.** Base your decisions on the answers to Steps 1 through 5 and in accordance with the priorities that you established.
- 7) **Develop a plan of action.** Develop a plan that will help you accomplish your priorities. Simple plans may be verbal set of instruction for team members
- 8) **Take action.** Execute your plan and report the situation accurately to VDMC
- 9) **Evaluate progress.** At intervals, evaluate your progress in accomplishing the objectives in the plan of action to determine what is working and what changes you may have to make to stabilize the situation.

2.2. Search

Search techniques focus on finding victims/ survivors e.g. in a building collapse the survivors / victims are most likely to be located or trapped inside damaged structures places are called voids; they include spaces that victims get into to protect themselves (under desks, under the stairs, in cupboards). The search can be for floods survivors in water or for fishermen lost out in the sea after a cyclone. When the potential victims are located the rescue operation can begin.

2.3. Rescue

During the rescue phase of operation, the trapped survivors/victims are as safely and quickly extracted as the conditions permit and given necessary first aid as necessary before being evacuated to the hospital. Removal of victims is designed to avoid further injury. In situation involving a large number of victims, START- Triage may be used to prioritize assistance for those who need it most.

The decision to attempt a rescue should be based on three factors

- (1) The overall goal of doing the greatest good for the greatest number of people
- (2) The risks involved to the rescuer- CERT member
- (3) Resources and manpower available

For example, we cannot initiate a water SAR operation without boats and similarly carrying out SAR during an ongoing storm is also inadvisable.

3. Different Methods for Search and Location

After conducting scene size-up, the next priority step is to locate missing and trapped injured persons. The following methods are useful to search and locate the disaster victims by CERT.

3.1. Hailing Search

Hailing search as the name denotes is search by calling out to the victims. After size-up the search team leader signals for silence and call out to survivors. He shouts something like, "**If anyone can hear my voice, come here or respond back.**" After calling be silent and try to listen to anyone who might be responding. If any survivors come to you, ask them for any information that they may have about the building or others who may be trapped, then give them further directions such as, "Stay here" or "Wait outside" (depending on the condition of the building or situation). Remember that even those who are able to get to you may be in shock and confused. When giving directions to survivors, CERT members should look directly at the survivors, speak in short sentences, and keep their directions simple.

3.1.1. Stop Frequently to listen to sounds, observe movements and look for signs of presence of survivors

3.1.2. Use a systematic plan to cover the whole area. Always ensure that all areas of the building are covered. Mark the area already searched to avoid wasting time and efforts.

- Bottom-up/top-down
- Right wall/left wall

3.1.3. Triangulation: This method is used in low visibility and at night when a potential survivor's location is obscured. Three rescuers, guided by survivor sounds, form a triangle around the area and direct flashlights into the area. The light shining from different directions will eliminate shadows that could otherwise hide survivors. Use a systematic search pattern.

3.2. Grid Search

This method is particularly useful if enough trained manpower is available and a large open flat area has to be searched e.g. after a wind storm or after a flood search for missing people along the river banks.

- The area is seen as a grid with searchers initially positioned at one side of the grid.
- The distance between the searchers should be set according to visibility and debris. However, it is always recommended that each searcher can hear and see the other one

- The searchers proceed, maintaining as straight a line as possible across the entire search area. As each searcher moves across the area, they conduct a thorough search for survivors within their designated row of the grid.

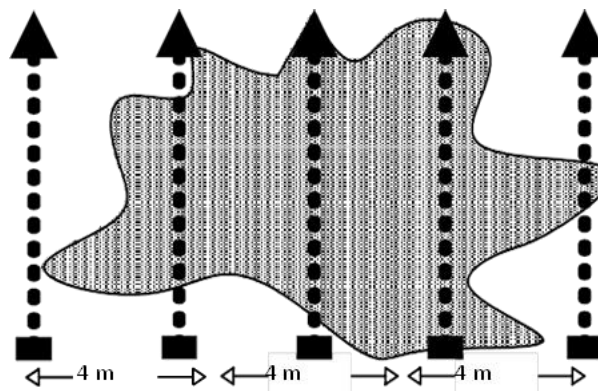
Figure 6: Grid Search



3.3. Line Search

It is similar to grid search however; the searchers are not designated any specific grid they comb the entire area aligned next to each other in straight extended line. The rescuers will hail in the order given, listen and then advance as safety permits. This ensures the entire structure is covered. This method is useful for closed interior spaces where grids cannot be made.

Figure 7: Line Search

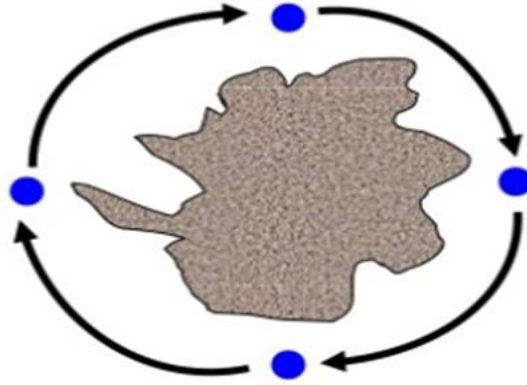


3.4. Perimeter Search


The method is used when it is not possible or unsafe to search an area due to presence of broken glass, falling debris, rubble pile etc. In such case four searchers take positions, equally spaced around the search area. After using appropriate search method, all searchers rotate 90° clockwise. This process can be repeated until all searchers complete four rotations, returning to their original (Each searcher will

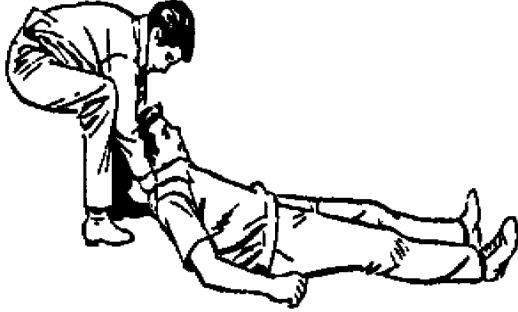
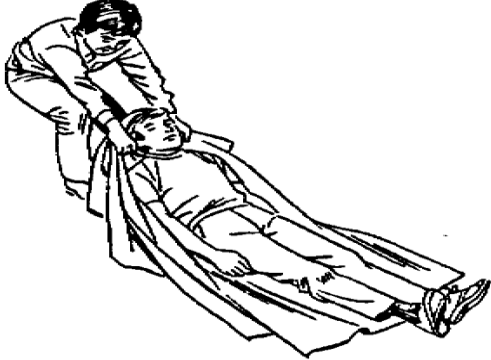

complete a circle around search area)

Figure 8: Perimeter Search



4. Basic Rescue Techniques

ONE RESCUER	
<p>ANKLE PULL</p>  An illustration showing a rescuer in a uniform standing over a victim lying on their back. The rescuer is leaning forward, grasping the victim's ankles and pant cuffs with both hands. The victim's legs are extended straight out, and their head is resting on the ground.	<p>The ankle pull is the fastest method for moving a victim a short distance over a <i>smooth</i> surface. This is not a preferred method of patient movement.</p> <ol style="list-style-type: none">1. Grasp the victim by both ankles and pant cuffs.2. Pull with your legs, not your back.3. Keep your back as straight as possible.4. Try to keep the pull as straight and in-line as possible.5. Keep aware that the head is unsupported and may bounce over bumps and surface imperfections.

<p>SHOULDER PUL</p> 	<p>The shoulder pull is preferred to the ankle pull. It supports the head of the victim. The negative is that it requires the rescuer to bend over at the waist while pulling.</p> <ol style="list-style-type: none">1. Grasp the victim by the clothing under the shoulders.2. Keep your arms on both sides of the head.3. Support the head.4. Try to keep the pull as straight and in-line as possible.
<p>BLANKET PULL</p> 	<p>This is the preferred method for dragging a victim.</p> <ol style="list-style-type: none">1. Place the victim on the blanket by using the "logroll" or the three-person lift.2. The victim is placed with the head approx. 2 ft. from one corner of the blanket.3. Wrap the blanket corners around the victim.4. Keep your back as straight as possible.5. Use your legs, not your back.6. Try to keep the pull as straight and in-line as possible.
<p>ONE-PERSON LIFT</p> 	<p>This only works with a child or a very light person. Place your arms under the victim's knees and around their back.</p>
<p>FIREFIGHTER CARRY</p>	<p>This technique is for carrying a victim longer distances. It is very difficult to get the person up to this position from the ground. Getting the victim into position requires a very strong rescuer or an assistant. The victim is carried over one shoulder.</p>



The rescuer's arm, on the side that the victim is being carried, is wrapped across the victim's legs and grasps the victim's opposite arm.

PACK-STRAP CARRY



When injuries make the firefighter carry unsafe, this method is better for longer distances than the one-person lift.

1. Place both the victim's arms over your shoulders.
2. Cross the victim's arms, grasping the victim's opposite wrist.
3. Pull the arms close to your chest.
4. Squat slightly and drive your hips into the victim while bending slightly at the waist.
5. Balance the load on your hips and support the victim with your legs.

TWO RESCUERS

HUMAN CRUTCH/TWO-PERSON DRAG



For the **conscious victim**, this carry allows the victim to swing their leg using the rescuers as a pair of crutches for the **unconscious victim**, it is a *quick* and easy way to move a victim out of immediate danger.

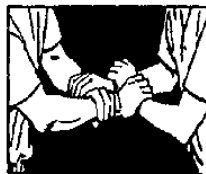
1. Start with the victim on the ground.
2. Both rescuers stand on either side of the victim's chest.
3. The rescuer's hand nearest the feet grabs the victim's wrist on their side of the victim.
4. The rescuer's other hand grasps the clothing of the shoulder nearest them.
5. Pulling and lifting the victim's arms, the rescuers bring the victim into a sitting position.
6. The **conscious victim** will then stand with rescuer assistance.
7. The rescuers place their hands around the victim's waist
8. For the **unconscious victim**, the rescuers will grasp the belt or waistband of the victim's clothing.
9. The rescuers will then squat down.
10. Place the victim's arms over their shoulders so that they end up facing the same direction as the victim.
11. Then, using their legs, they stand with the victim.
12. The rescuers then move out, dragging the victim's legs behind.
- 13.

FOUR-HANDED SEAT



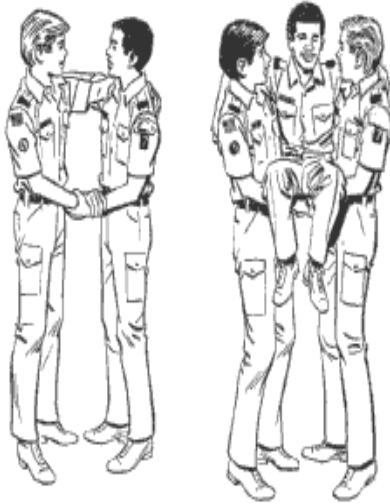
This technique is for carrying conscious and alert victims moderate distances. The victim must be able to stand unsupported and hold themselves upright during transport.

1. Position the hands as indicated in the graphic.
2. Lower the seat and allow the victim to sit.
3. Lower the seat using your legs, not your back.
4. When the victim is in place, stand using your legs, keeping your back straight.



FOUR-HANDED SEAT

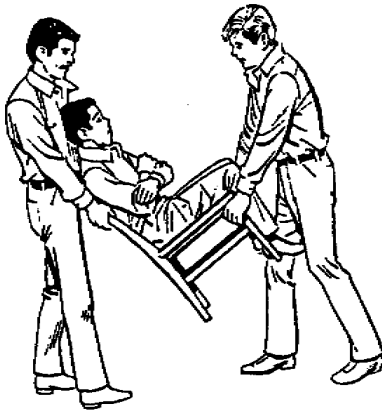
TWO-HANDED SEAT



This technique is for carrying a victim longer distances. This technique can support an unconscious victim.

1. Pick up the victim by having both rescuers squat down on either side of the victim.
2. Reach under the victim's shoulders and under their knees.
3. Grasp the other rescuer's wrists.
4. From the squat, with good lifting technique, stand.
5. Walk in the direction that the victim is facing.

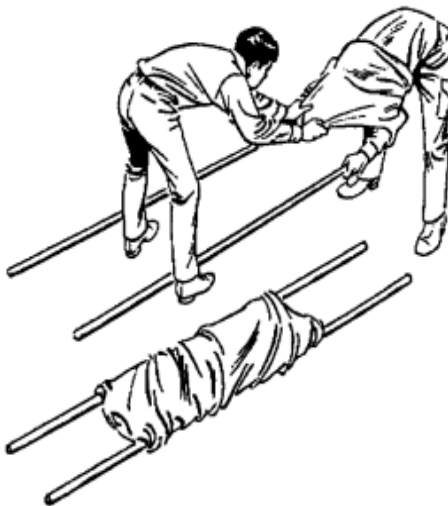
CHAIR CARRY



This is a good method for carrying victims up and down stairs or through narrow or uneven areas.

1. Pick the victim up and place them or have them sit in a chair.
2. The rescuer at the head grasps the chair from the sides of the back, palms in.
3. The rescuer at the head then tilts the chair back onto its rear legs.
4. For short distances or stairwells, the second rescuer should face in and grasp the chair legs.
5. For longer distances, the second rescuer should separate the victim's legs, back into the chair and, on the command of the rescuer at the head, both rescuers stand using their legs.

IMPROVISED STRETCHER



This technique requires two poles/pipes strong enough to support the victim's weight and at least two shirts.

REMEMBER: Rescuers should not give up clothing if, for any reason, this might affect their health, welfare, or reduce their effectiveness.

1. While the first rescuer is grasping the litter poles, the second rescuer pulls the shirt off the head of rescuer one.
2. All buttons should be buttoned with the possible exception of the collar and cuffs.
3. The rescuers then reverse the procedure and switch sides.

BLANKET STRETCHER

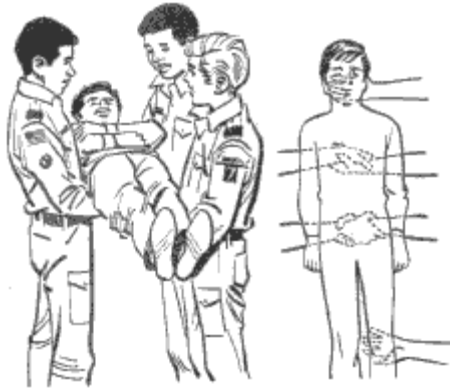


This technique requires two poles and a blanket.

1. Place the blanket down on the ground.
2. Place one pole approx. 1 foot from the middle of the blanket.
3. Fold the short end of the blanket over the first pole.
4. Place the second pole approx. 2 feet from the first (this distance may vary with victim or blanket size).
5. Fold both halves of the blanket over the second pole.

THREE OR MORE RESCUERS

HAMMOCK CARRY



Three or more rescuers get on both sides of the victim. The strongest member is on the side with the fewest rescuers.

1. Reach under the victim and grasp one wrist on the opposite rescuer.
2. The rescuers on the ends will only be able to grasp one wrist on the opposite rescuer.
3. The rescuers with only one wrist grasped will use their free hands to support the victim's head and feet/legs.
4. The rescuers will then squat and lift the victim on the command of the person nearest the head, remembering to use proper lifting techniques.

THREE-PERSON CARRY OR STRETCHER LIFT



This technique is for lifting a patient into a bed or stretcher, or for transporting them short distances.

- Each person kneels on the knee nearest the victim's feet.
- On the command of the person at the head, the rescuers lift the victim up and rest the victim on their knees.

If the patient is being placed on a low stretcher or litter basket:

On the command of the person at the head, the patient is placed down on the litter/stretcher.

If the victim is to be placed on a high gurney/bed or to be carried:

At this point, the rescuers will rotate the victim so that



the victim is facing the rescuers, resting against the rescuers' chests.

- On the command of the person at the head, all the rescuers will stand.
- To walk, all rescuers will start out on the same foot, walking in a line abreast.

Section- 4

CERT

Firefighting & Fire Suppression

Actions & Priorities

Section Learning Objectives

- ⇒ To know about fire, its chemistry, classes and common causes
- ⇒ To learn basic firefighting and fire suppression techniques
- ⇒ To know the use of fire extinguisher
- ⇒ To understand CERT firefighting Safety Rules

1. Introduction

Like other natural and manmade hazards, the Province of Sindh is also prone to fire hazard which frequently occurs due to natural forces and human induced negligence. Fire incidences are more common in major urban areas like Karachi, Sukkur and Hyderabad where the short circuiting, gas leakage and cylinder blasts in the vulnerable commercial and residential buildings are common causes. Similarly, most of the residential and commercial buildings have inadequate fire safety measures, which provoke fire incidences more regularly nowadays. All over Sindh, there are over 12,000 industrial units, but the arrangement for prevention and tackling of fire incidents remained always poor⁴. We all remember the unfortunate incident of Baldia Town Karachi, garment factory fire which occurred in September 2012.

Likewise, fire hazard is also becoming potential threat in rural Sindh due to lack of knowledge and culture of safety, moreover use of flammable house building material, open kitchen fire and extreme hot and dry weather also add to the risk. In May 2017, at least five hundred houses were destroyed when a fire broke out in village *Vakrio* near *Islamkot* town Tharparkar district. The fire broke out due to electric short circuit and swiftly spread to straw thatched house in the village due to strong winds. At least 500 thatched and cemented houses were destroyed.

⁴ Provincial Disaster Management Authority Sindh; <http://www.pdma.gos.pk/new/aboutus/history.php> (2017)

2. Definition of Fire

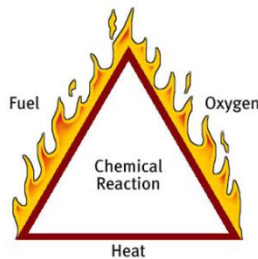
Technically, it is a process in which different substances combine chemically with oxygen from the air and typically give out bright light, heat, and smoke. The process (combustion and burning) gives out heat, light, smoke, fumes.

3. Chemistry of Fire

The process is dependent three elements to exist and continue:

- **Heat:** Heat is essential and required to raise the temperature of a material to its ignition point. In simple words we can say that exposure to heat makes most materials more readily combustible.
- **Fuel:** Fire requires fuel to exist and continue, fuel may be solid, liquid, or gas. The type and quantity of fuel which a fire is using will decide which technique should be used to put it off / extinguish.
- **Oxygen:** Oxygen is needed for a fire to start and continue. Our atmosphere has 21% oxygen along with other gases.

These three elements are called the fire triangle, they combine to create a chemical reaction, which is called fire



CLASSES OF FIRE

For helping us in recognizing various types of fire in order to control and extinguish them, the fires are categorized into classes based on the type of fuel they use to burn. It is extremely important to identify the type of fuel feeding the fire in order to select the correct method and agent for extinguishing the fire.

- **Class A Fires:** Ordinary solid combustible material such as paper, cloth, wood, rubber, and many plastics
- **Class B Fires:** Flammable liquids like oil, petrol and kerosene. These fuels burn only at the surface because oxygen cannot penetrate the fluid.
- **Class C Fires:** fires involving gases e.g. natural gas, methane and LPG. Energized electrical equipment (e.g., wiring, motors).
- **Class D Fires:** Combustible metals e.g. aluminum, magnesium, titanium
- **Class E Fires:** The fires involving live electrical apparatus, however When the electricity is turned off, the fire becomes a Class A fire.
- **Class F Fires:** Fires involving cooking oil and fats are common both in homes, businesses and professional kitchens. They pose a very difficult challenge to extinguish, due to the high temperatures involved.

4. Common Causes of Fire

Both in rural and urban settings, in Sindh the main causes of fire incidents include:

- Electric short circuiting
- Gas leakage
- Liquid Petroleum Gas-LPG/ CNG Cylinder blasts
- Fire at patrol pumps,
- Open fires in rural area kitchens
- Cottage industries in urban areas
- Liquid Petroleum Gas-LPG domestic use and commercial practices

Fire risk exacerbate when above factors combine with the following characteristics of our society:

- Massive culture of smoking
- Disregard of safety measures and careless attitude
- Lack of awareness
- Use of readily combustible building material in houses
- Hot and Dry weather and winds
- Use of unsafe and insecure cooking and commercial heat equipment/practices. etc.

5. Principles of controlling and Fire Extinguishing

We learned earlier that there are 3 conditions essential for a fire to start and continue i.e. fuel, oxygen, and heat (or ignition source). Therefore, if we take out one of them or if one condition is missing the fire will not occur and the fire which is burning will stop - extinguished. Based on these principles, fire extinguishment practices, techniques and agents are considered:

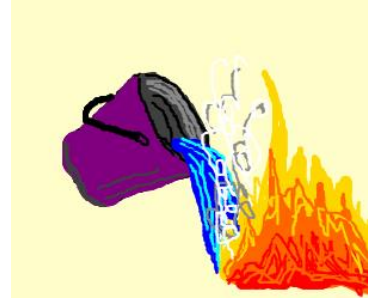
- **Cooling:** Cooling of flame by using water
- **Smothering:** Reduction of flame by blanketing, throwing sand and loose soil etc. aim is to cut off and reduce oxygen supply
- **Starvation:** Removing the fuel

6. Firefighting techniques -CERT

6.1. Cooling of Fire

CERT can utilize water hoses/ pipes if available, and can team up with local community to use buckets for controlling and extinguishing fire.

“Make sure the electricity has been turned off / cut before using water on fire”



6.2. Smothering of Fire

Throwing loose sand, clay and soil with the help of shovels, buckets or any other suitable object is called smothering of fire. This technique is especially very effective in rural Sindh, especially in desert and arid district where availability of water is not easy while sand/ soil which is available everywhere. It was a common practice to keep buckets of sand / clay readily available at petrol pumps, government sensitive building and at airports. This is very effective preparedness techniques and is still in use in government buildings, especially in military and in offices in remote districts.

“Never go too close to the burning fire”



6.3. Starvation

CERT can work as a team to remove the fuel and try to control the fire. In case of domestic fire, it can be done by removing readily burnable items from house. CERT can use long bamboo poles with hooks to remove/ salvage material while staying away at safe distance. If the fire is in open CERT can clear the downwind area where the fire might spread, by cutting bushes, grass and small trees. If the clearing of area is difficult another way is make a barricade of loose soil / sand downwind. The aim is to remove any thing which might assist the fire in burning. Once the fuel is out the fire will die down itself.

“Work in Pairs, never enter a burning building alone”



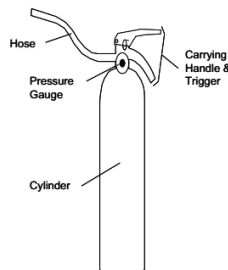
6.4. Combination of Techniques

It is always advisable to size up the situation before deciding what method can be the most effective way to combat the fire. Usually, more than one method can be applied and are useful. For example, one or more CERT teams can try starving the fire, while the others can smother or cool down the flames. Working together as a team, one of the most important tasks of CERT is small fire suppression.

***“Size-up of a situation involving a fire will dictate whether to attempt fire suppression.
CERT are only trained and equipped for suppressing small fires”***

6.5. Use of Fire Extinguishers

A Fire Extinguisher is an active fire protection device used to extinguish or control small fires, often in emergency situations. It is not intended for use on an out-of-control big fire which has reached the ceiling, or has overwhelmed the user. A fire extinguisher consists of a hand-held cylindrical pressure vessel containing an agent which can be discharged to extinguish a fire.



Use of Fire Extinguisher nowadays is more common techniques especially in urban area. They can be seen in all Government offices, commercial buildings and at shopping malls especially in major cities of Province. Fire Extinguishers are easy to use and very effective for small fire. CERT at village level can keep a few fire extinguishers at various common places in community, ready to be used to control any fire incident. We will also learn how to safely operate fire extinguisher.

6.5.1. *There are four types of extinguishers:*

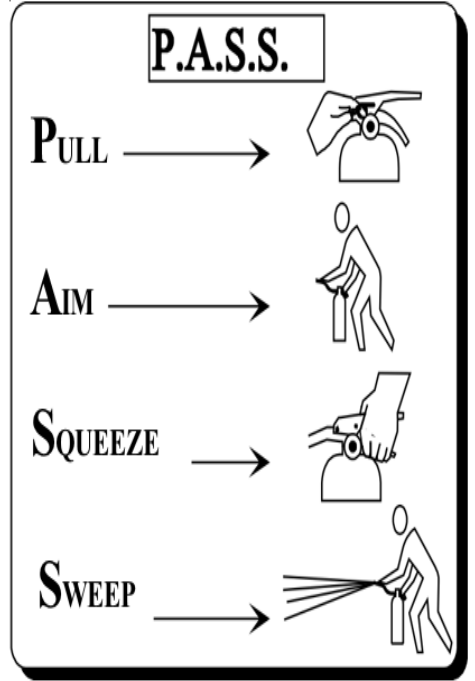
- Water
- Dry chemical
- Carbon dioxide
- Specialized fire extinguishers

6.5.2. *How to use a Fire Extinguisher?*

- Fire extinguishers should not be used by people who have not been trained to use it.
- Before tackling a fire with a fire extinguisher make sure you or someone else has called for professional help
- Before using fire extinguisher raised the fire alarm and while you try to tackle the fire other members of CERT should help people to evacuate safely.
- The common tool while using of fire extinguisher is called as PASS technique which is four step processes to use the said equipment.

PASS

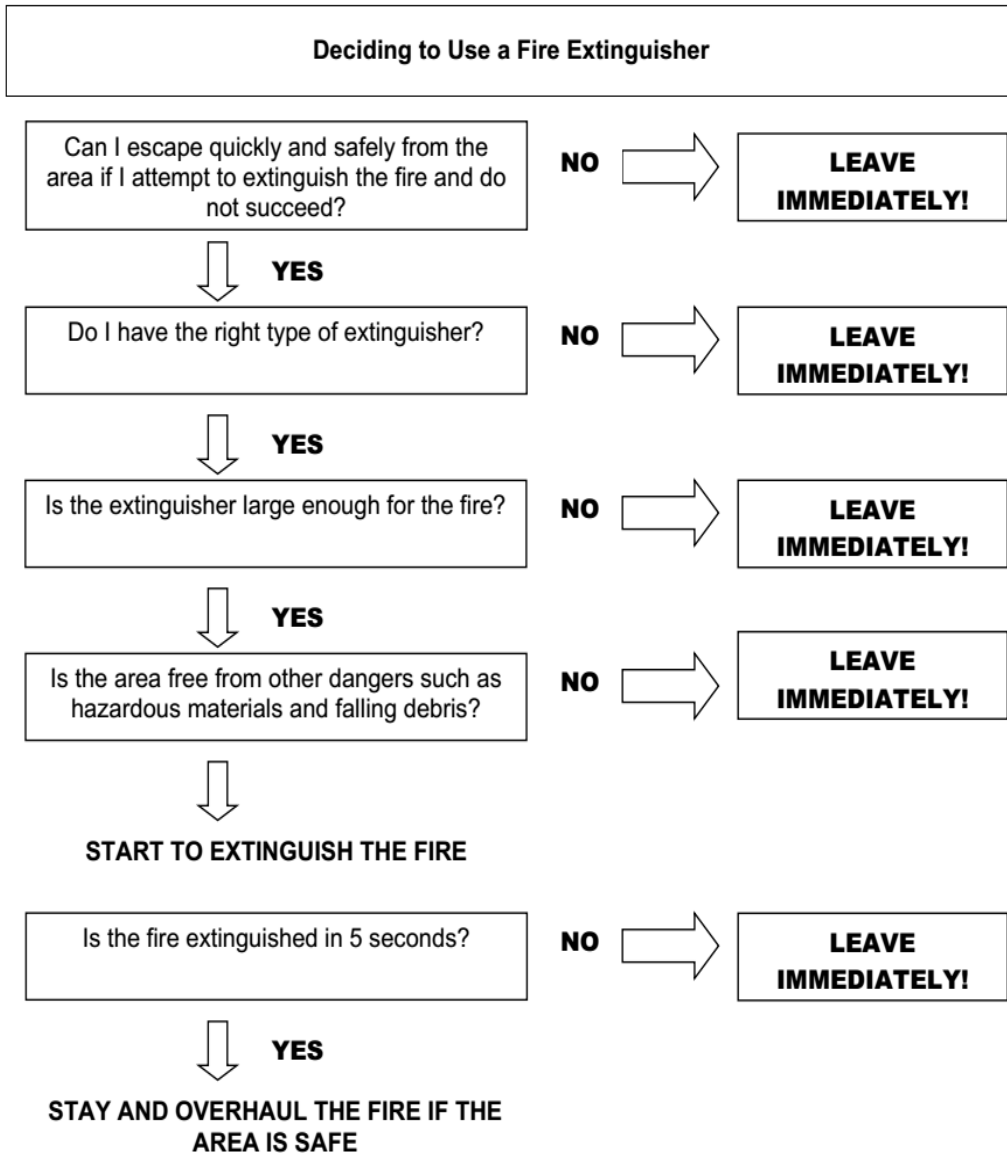
1. **Pull:** Pull the pin; this will break the tamper seal.
2. **Aim:** Aim low, pointing the nozzle or hose at the base of the fire. Do not touch the horn on a CO2 extinguisher, it gets very cold and can damage the skin.
3. **Squeeze:** Squeeze the handle to release the extinguishing agent.
4. **Sweep:** Sweep from side to side at the base of the fire, the fuel source, until the fire is out.



“Never attempt to fight fire beyond the capabilities of the CERT”

“Always Remember SAFETY FIRST”.

7. Deciding to Use Fire Extinguisher



Source: Community Emergency Response Team Basic Training Participant Manual Developed For: National CERT Program FEMA Department of Homeland Security Washington, D.C. January 2011

8. CERT Firefighting Size-up

Size up is a continual process that enables CERT to make decisions and respond appropriately. CERT Emergency Response Size up consists of 9 steps can be used in any emergency situation.

CERT - Emergency Response Size up

- 10) **Gather facts.** What has happened? How many people appear to be involved? What is the current situation?
- 11) **Assess and communicate the damage.** Try to determine what has happened, what is happening now, and how bad things can really get. Call professional responders/ VDMC
- 12) **Consider probabilities.** What is likely to happen? What could happen through cascading events?
- 13) **Assess your own situation.** Are you in immediate danger? Have you been trained to handle the situation? Do you have the equipment that you need?
- 14) **Establish priorities.** Are lives at risk? Can you help? Remember, life safety is the first priority!
- 15) **Make decisions.** Base your decisions on the answers to Steps 1 through 5 and in accordance with the priorities that you established.
- 16) **Develop a plan of action.** Develop a plan that will help you accomplish your priorities. Simple plans may be verbal set of instruction for team members
- 17) **Take action.** Execute your plan and report the situation accurately to VDMC
- 18) **Evaluate progress.** At intervals, evaluate your progress in accomplishing the objectives in the plan of action to determine what is working and what changes you may have to make to stabilize the situation.

9. Role of Community Emergency Response Team in Fire Fighting

Following are some of the important roles and function CERT can perform to protect individuals and their village from fires;

- Closely coordinate and keep contact with the local Fire Brigade department.
- Conduct awareness sessions with the community on firefighting and prevention at village and household levels
- Organize firefighting/ fire safety drills and simulation exercises with participation of the community members/ children etc.
- Arrange fire extinguishers and other community level firefighting equipment.
- Regularly maintain the equipment in Kit like filling of the fire extinguishers and maintenance
- Control and suppress small fires at village level
- During fires help in preventing additional fires by removing fuel sources
- Shutting off utilities which are source of further ignition
- Ensure fire, once extinguished is completely extinguished and stay extinguished. *This process is called as Overhaul*
- CERT can help in assessing the damages in case of fire
- Assisting the community in evacuations process wherever necessary
- Call for help any fire incidence
- Help professional responders, if required

10. Firefighting Useful Tips and Techniques for CERT

Below are some of the common techniques that can be applied at the household level to protect houses and individuals from fire.

10.1. Use of blanket for fire extinguishing

Use of Blanket

- This technique can be used for small scale fire extinguishing.
- Fire blankets are primarily for use on hot oil fires such as frying pans or small deep fat fryers.
- They can also be used on someone whose clothing has caught fire.
- This is smothering technique, stopping access of oxygen and extinguishing fire.



10.2. Stop, Drop and Roll

This technique is very useful for individual when he/she gets fire. Instead of running, stop, drop and roll technique is useful.

- **Stop** – The fire affected person must stop, ceasing any movement which may fan the flames or hamper those attempting to put the fire out
- **Drop** – The fire affected person must drop to the ground, lying down if possible, covering their face with their hands to avoid facial injury
- **Roll** – The fire affected person must roll on the ground in an effort to extinguish the fire by depriving it of oxygen. If the victim is on a rug or one is nearby, they can roll the rug around themselves to further extinguish the flame. Don't stop until the flames have been extinguished.



11. Fire Suppression Safety Rules

As a CERT member and team, small fire suppression is one of your roles. However, your and team members' personal safety must always be your number one priority.

CERT Fire Suppression Safety Rules Always Remembers

- 1) **Careful Size up-**. You will be unable to help anyone if you are injured through careless size up or unsafe acts.
- 2) **PPE-**Use safety equipment at all times. Wear your helmet, goggles, dust mask, leather gloves, and sturdy shoes or boots. If you are not equipped to protect your personal safety, leave the building.
- 3) **Work in team.** Your pair serves an important purpose. They protect your safety. Don't ever try to fight a fire alone.
- 4) **Have a backup team**, whenever possible, never underestimate the fire. A backup team can support your fire suppression efforts and can provide help if you need it.
- 5) **Always have two ways to exit the fire area.** Fires spread much faster than you might think. Always have a backup escape plan in case your main escape route becomes blocked.
- 6) **Look at the door.** If air is being sucked under the door or smoke is coming out the top of the door, do not touch the door.
- 7) **Feel closed doors with the back of the hand**, working from the bottom of the door up. Do not touch the door handle before feeling the door. If the door is hot, there is fire behind it. Do not enter! Opening the door will feed additional oxygen to the fire.
- 8) **Confine the fire**, whenever possible, by closing doors and keeping them closed.
- 9) **Stay low to the ground.** Smoke will naturally rise. Keeping low to the ground will provide you with fresher air to breathe.
- 10) **Maintain a safe distance.** Remember the effective range of your fire extinguisher. Don't get closer than necessary to extinguish the fire.
- 11) **Never turn your back on a fire** when backing out.
- 12) **Overhaul the fire** to be sure that it is extinguished — and stays extinguished.

